DAKS RESTAURANT / WOODLAWN COURT

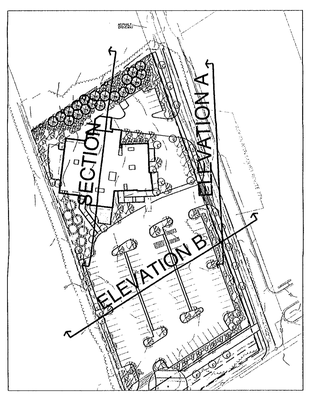
Mount Vernon District Fairfax County, Virginia

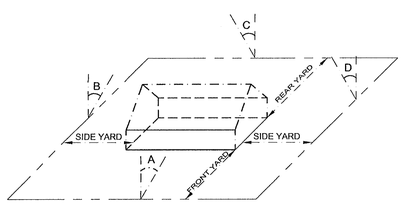
GENERALIZED DEVELOPMENT PLAN

Application No. RZ 2007-MV-004 Staff S.W.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED June 4, 2007
Date of (BOS) (PC) approval June 4, 2007
Sheet 1 of 7

SECTION / ELEVATION KEY MAP

0' 100' 200'





ANGLE OF BULK PLANE FOR THE C-6 ZONING DISTRICT

MINIMUM REQUIRED YARD FOR BUILDING WITH 20' HEIGHT

FRONT YARD : ∠ A 45° WITH A BUILDING HEIGHT OF 20', THE FRONT YARD = 20' BUT NOT LESS THAN 40'.

SIDE YARD : ∠ B NO REQUIREMENT

REAR YARD : ∠ C 20' MINIMUM

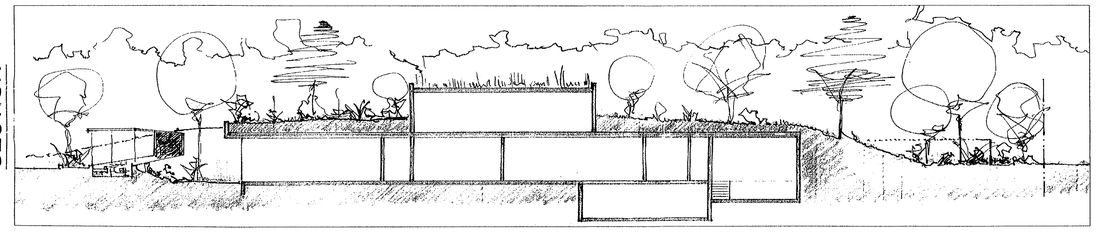
ARCHITECTURAL SECTION AND ELEVATIONS

APPROX. SCALE

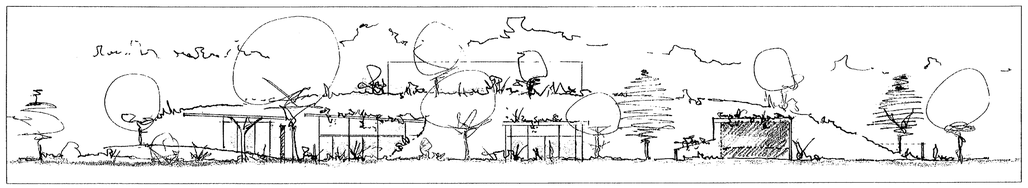
0' 8' 16' 32'

THE BUILDING SECTION / ELEVATIONS PRESENTED ON THIS SHEET ARE PRELIMINARY AND SUBJECT TO ADJUSTMENT AND REFINEMENT WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN. THEY ARE PROVIDED TO ILLUSTRATE THE GENERAL THEME AND CHARACTER OF THE PROPOSED STRUCTURE.

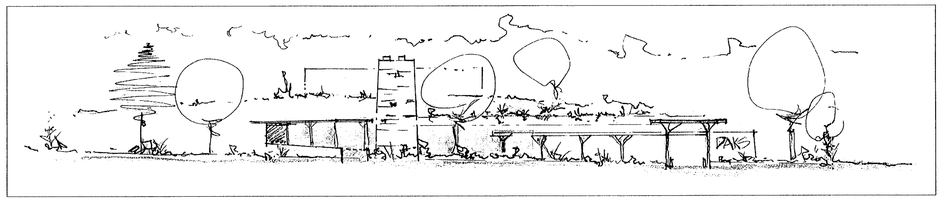
SECTION



ELEVATION "A"

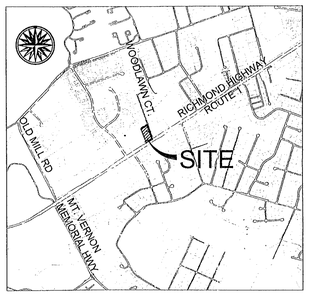


ELEVATION "B"



VICINITY MAP

0' 2000' 4000'



APPLICANT:
BADCO LLC
C/O DAKS
5711 CENTER LANE
FALLS CHURCH, VIRGINIA 22041

Sheet Index

1. COVER SHEET
2. GENERALIZED DEVELOPMENT PLAN/ NOTES/TABULATION
3. STORMWATER MANAGEMENT PRE-DEVELOPMENT DRAINAGE DIVIDES
4. STORMWATER MANAGEMENT POST-DEVELOPMENT DRAINAGE DIVIDES
5. STORMWATER MANAGEMENT OUTFALL ANALYSIS AND NARRATIVE
6. SITE PLAN OF MT. VERNON SUNDAT - FOR INFORMATION ONLY
7. SITE PLAN FOR THE PROPERTY OF ROBERT DODD - FOR INFORMATION ONLY

DAKS RESTAURANT / WOODLAWN COURT
GENERALIZED DEVELOPMENT PLAN

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COMMONWEALTH OF VIRGINIA
PHILIP C. CHAMPAGNE
No. 030073
05/18/07
PROFESSIONAL ENGINEER

DAKS RESTAURANT / WOODLAWN COURT
GENERALIZED DEVELOPMENT PLAN

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Department of Planning & Zoning
MAY 18 2007
Zoning Evaluation Division

REV. MAY 18, 2007
REV. APRIL 20, 2007
REV. MARCH 29, 2007
FEBRUARY 5, 2007
SUBMISSION DATE

M-10623

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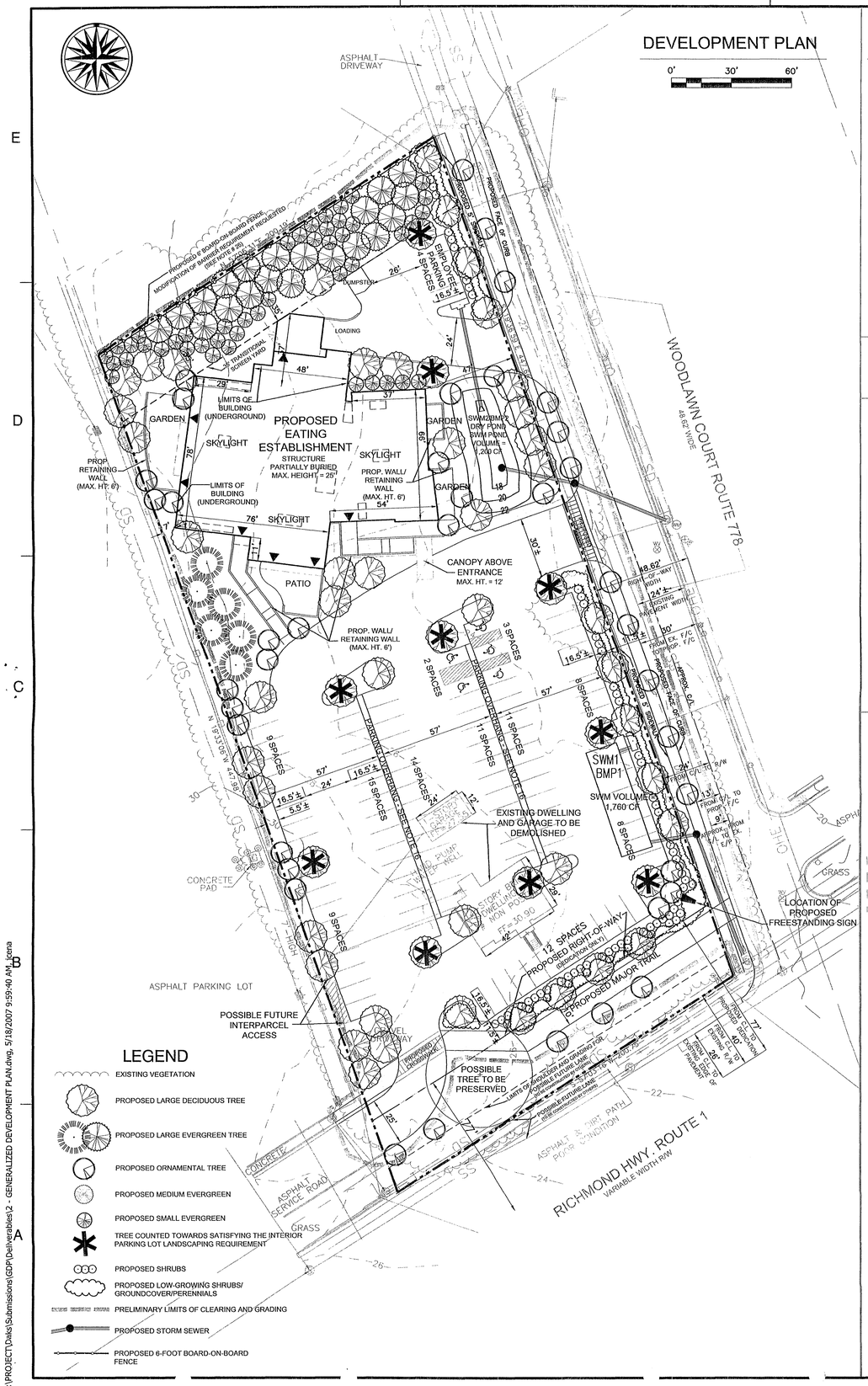
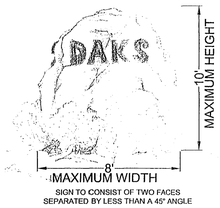
DEVELOPMENT PLAN



CONCEPTUAL SIGNAGE DESIGN



THE SIGNAGE DESIGN PRESENTED HERE IS TO BE CONSIDERED CONCEPTUAL IN NATURE AND, AS SUCH, MAY BE REVISED OR REFINED AT TIME OF SITE PLAN. ANY SUCH REVISIONS WILL BE IN KEEPING WITH ALL PERTINENT SIGNAGE REGULATIONS SET FORTH IN THE FAIRFAX COUNTY ZONING ORDINANCE.

TABULATION

EXISTING ZONING	R-2, HC,CRD
PROPOSED ZONING	C-6, HC,CRD
TOTAL LAND AREA	2.0± AC
MAXIMUM GROSS FLOOR AREA PERMITTED	39,848± SF
PROPOSED GROSS FLOOR AREA	11,817± SF
MAXIMUM FLOOR AREA RATIO (FAR) PERMITTED	0.40
PROPOSED FLOOR AREA RATIO (FAR)	0.136
PARKING SPACES REQUIRED	119*
ONE SPACE PER 4 SEATS (355÷4)	89
ONE SPACE PER 2 COUNTER SEATS (20 ÷ 2)	10
ONE SPACE PER 2 EMPLOYEES (40 ÷ 2)	20
PARKING SPACES REQUIRED W/PERMITTED 20% REDUCTION	96
PARKING SPACES PROPOSED	106
ACCESSIBLE SPACES (INCLUDED IN TOTAL)	5
MAXIMUM BUILDING HEIGHT PROPOSED	25 FT
OPEN SPACE REQUIRED (15%)	13,066± SF
OPEN SPACE PROPOSED (26%)	22,860± SF

* NOTE THIS PROJECT IS LOCATED IN A REVITALIZATION DISTRICT AND IS ENTITLED TO A 20% REDUCTION IN PARKING.

LANDSCAPE TABULATIONS

THIS INFORMATION IS INTENDED TO REFLECT THE ABILITY TO SATISY MINIMUM LANDSCAPE REQUIRMENTS WITHIN THE PROPOSED DEVELOPMENT PROGRAM. AT TIME OF SITE PLAN, INDIVIDUAL TREES IDENTIFIED MAY VARY AND/OR ADDITIONAL TREES MAY BE IDENTIFIED AS CONTRIBUTING TOWARDS MEETING THE LANDSCAPE REQUIREMENT AND/OR ADDITIONAL TREE COVER MAY BE CLAIMED FOR EXISTING TREES WITH LARGER CALIPER/TREE COVERAGE.

INTERIOR PARKING LOT LANDSCAPING TABULATION

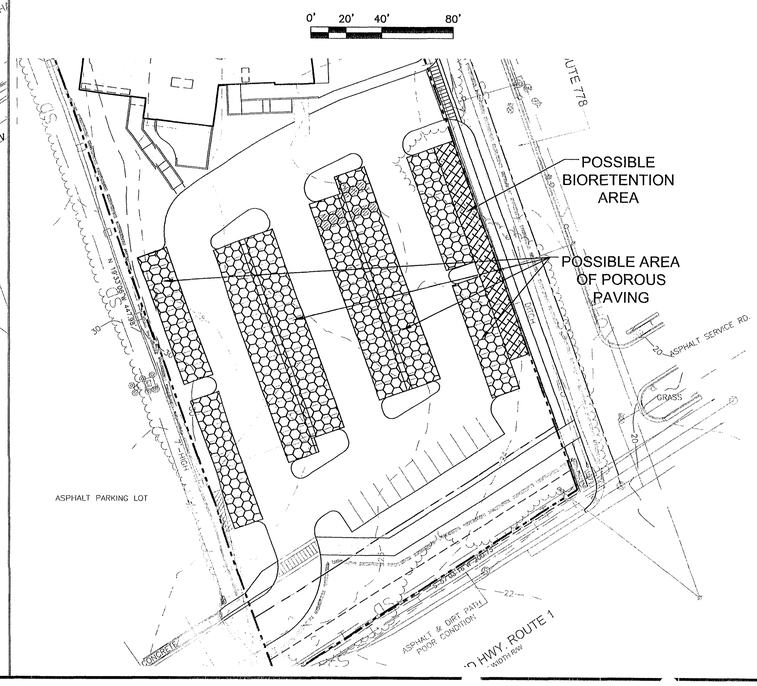
PARKING LOT AREA TO BE COUNTED		39,830 SF	
INTERIOR PARKING LOT LANDSCAPING REQUIRED		1,992 SF	(5%)
INTERIOR PARKING LOT LANDSCAPING PROVIDED		2,000 SF	(5.02%)
10 CAT IV TREES @	200 SF =	2000	
0 CAT III TREES @	150 SF =	0	
0 CAT II TREES @	100 SF =	0	
0 CAT I TREES @	50 SF =	0	
TOTAL AREA REQUIRED		1,992 SF	(5%)
TOTAL AREA PROVIDED		2,000 SF	(5.02%)

TREE COVER TABULATION

GROSS SITE AREA		2.000 AC	
ADJUSTED SITE ATEA		1.597 AC	
LAND DEDICATIONS	7,425 SF		
DEDUCTIONS	0 SF		
BLDG FTPRINT (SITE PLANS)	10,150 SF		
TREE COVER REQUIRED		6,955 SF	(10%)
TREE COVER PROVIDED		19,750 SF	(28.4%)
CREDIT FOR TREES PRESERVED			
0 SF X 1.25	0 SF		
CREDIT FOR TREES PLANTED	19,750 SF		
61 CAT IV TREES	@ 200 SF =	12,200 SF	
20 CAT III TREES	@ 150 SF =	3,000 SF	
23 CAT II TREES	@ 100 SF =	2,300 SF	
45 CAT I TREES	@ 50 SF =	2,250 SF	

POSSIBLE LOW IMPACT DEVELOPMENT STORMWATER MANAGEMENT STRATEGIES

TO INCLUDE BI0-RETENTION BASIN/FILTER, PERCOLATION TRENCH, RAINSTORE, VEGETATED SWALE AND/OR POROUS PAVING



NOTES

1. THE PROPERTY THAT IS THE SUBJECT OF THIS GENERALIZED DEVELOPMENT PLAN (GDP) IS IDENTIFIED ON THE FAIRFAX COUNTY ZONING MAP AS 101-3 ((1)) 96.
2. THE TOTAL LAND AREA OF THE GDP IS TWO (2) ACRES AND IS LOCATED IN BOTH THE RICHMOND HIGHWAY COMMERCIAL REVITALIZATION DISTRICT AND THE HIGHWAY CORRIDOR OVERLAY DISTRICT.
3. THIS GDP ACCOMPANIES AN APPLICATION TO REZONE THE PROPERTY FROM THE R-2 DISTRICT TO THE C-6 DISTRICT TO PERMIT THE CONSTRUCTION OF AN EATING ESTABLISHMENT.
4. THE BOUNDARY INFORMATION SHOWN HEREON IS FROM A FIELD RUN SURVEY BY DEWBERRY DATED JULY 2006.
5. THE TOPOGRAPHIC INFORMATION SHOWN HEREON IS AT TWO (2) -FOOT CONTOUR ELEVATIONS FROM A FIELD SURVEY BY DEWBERRY DATED JULY 2006.
6. STORMWATER MANAGEMENT (SWM) WILL BE PROVIDED AND WILL COMPLY WITH THE REQUIREMENTS OF THE PUBLIC FACILITIES MANUAL (PFM) AS DETERMINED BY THE DEPARTMENT OF PUBLIC WORKS AND ENVIRONMENTAL SERVICES (DPW&ES). THE LOCATION AND SIZE OF THE ON-SITE FACILITIES SHOWN HEREON ARE APPROXIMATE AND SUBJECT TO REVISION AT TIME OF FINAL ENGINEERING.
7. AT A MINIMUM, PARKING WILL BE PROVIDED IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 11 OF THE ZONING ORDINANCE. THE APPLICANT RESERVES THE RIGHT TO PROVIDE MORE THAN THE MINIMUM REQUIRED NUMBER OF PARKING SPACES AS LONG AS THE REQUIRED OPEN SPACE IS PROVIDED AND SUCH ADDITIONAL PARKING IS IN SUBSTANTIAL CONFORMANCE WITH THE GDP. THE NUMBER AND LOCATION OF ACCESSIBLE PARKING SPACES SHOWN HEREON ARE IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 11 OF THE ZONING ORDINANCE.
8. THERE IS NO FLOODPLAIN, RESOURCE PROTECTION AREA (RPA) OR RELATED ENVIRONMENTAL QUALITY CORRIDOR (EQC) LOCATED ON THE SUBJECT PROPERTY.
9. THE APPLICANT SHALL USE BEST EFFORTS TO RETAIN AND/OR RELOCATE EXISTING MATURE VEGETATION ON THE PROPERTY THAT IS WORTHY OF PRESERVING AND/OR TRANSPLANTING.
10. TO THE BEST OF OUR KNOWLEDGE THERE ARE NO GRAVES LOCATED ON THE SUBJECT PROPERTY.
11. THE SUBJECT PROPERTY IS LOCATED IN THE MOUNT VERNON DISTRICT, SUB-UNIT-A2 OF THE RICHMOND HIGHWAY CORRIDOR AREA IN AREA IV OF THE COMPREHENSIVE PLAN. THE COMPREHENSIVE PLAN RECOMMENDS A COMMUNITY-SERVING RETAIL USE UP TO A 0.35 FAR. THIS APPLICATION IS CONSISTENT WITH THE COMPREHENSIVE PLAN RECOMMENDATION.
12. SPECIAL AMENITIES PROPOSED WITH THIS DEVELOPMENT PROGRAM INCLUDE AN INNOVATIVE STORMWATER MANAGEMENT SYSTEM AND AN ENERGY EFFICIENT BUILDING DESIGN.
13. GIVEN THE RELATIVELY SMALL SIZE OF THE PROPERTY, THERE ARE NO COMMUNITY OR PUBLIC FACILITIES PROPOSED WITH THIS DEVELOPMENT PROGRAM.
14. THE COMPREHENSIVE PLAN IDENTIFIES A MAJOR REGIONAL TRAIL ALONG THE ROUTE 1 FRONTAGE OF THE PROPERTY AND IS PROVIDED AS SHOWN THEREON.
15. THE DEVELOPMENT WILL BE CONSTRUCTED ONCE ALL REQUIRED ZONING ACTIONS AND PERMITS ARE OBTAINED.
16. THE APPLICANT RESERVES THE RIGHT TO ENHANCE PARKING OVERHANG AREAS IN A VARIETY OF MANNERS TO INCLUDE, BUT NOT LIMITED TO, PLANTING OF GRASS, LOW LEVEL PLANTINGS, LOW IMPACT DEVELOPMENT SURFACE TREATMENTS AND/OR PLACEMENT OF TRELLISES OR SIMILAR LATTICE STRUCTURES AS A SUPPORT FOR CLIMBING PLANTS. ANY SUCH PLANTINGS OR STRUCTURES SHALL BE IN SUBSTANTIAL CONFORMANCE WITH THE GDP, SHALL NOT IMPEDE PARKING AND SHALL BE SUBJECT TO THE APPROVAL OF DPW&ES.
17. THERE IS A TWO STORY ABANDONED BRICK HOME AND A ONE STORY GARAGE, BOTH OF WHICH WILL BE RAZED AS PART OF THE DEVELOPMENT PROCESS. THE HOME WAS CONSTRUCTED IN 1938.
18. A STATEMENT OF THE PUBLIC IMPROVEMENTS PROPOSED AND THE TIMING OF SUCH IMPROVEMENTS WILL BE INCLUDED IN THE PROFFERS.
19. SANITARY SEWER AND PUBLIC WATER ARE CURRENTLY AVAILABLE AND WILL BE EXTENDED TO THE SITE AS NEEDED.
20. THERE ARE NO UTILITY EASEMENTS HAVING A WIDTH OF TWENTY-FIVE (25) FEET OR MORE OR MAJOR UNDERGROUND UTILITIES LOCATED ON THE SUBJECT PROPERTY.
21. THE PROPOSAL PRESENTS A UNIQUE VISUAL PRESENCE AND IS LOCATED BETWEEN TWO COMMERCIAL AREAS AND FRONTS ON ROUTE 1. THE PROPOSED DEVELOPMENT WILL HAVE NO NEGATIVE IMPACTS ON THE NEIGHBORING PROPERTIES.
22. A STATEMENT CONFIRMING THE OWNERSHIP OF THE SUBJECT PROPERTY, AND THE APPLICANT'S INTEREST IN SAME, IS PROVIDED IN A SEPARATE ASSOCIATED DOCUMENT.
23. TO THE BEST OF OUR KNOWLEDGE, THE PROPOSED USES WILL NOT GENERATE, UTILIZE, STORE, TREAT AND/OR DISPOSE OF ANY HAZARDOUS OR TOXIC SUBSTANCES AS SET FORTH IN TITLE 40, CODE OF FEDERAL REGULATIONS PARTS 116.4, 302.4 AND 355; ANY HAZARDOUS WASTE AS SET FORTH IN COMMONWEALTH OF VIRGINIA/DEPARTMENT OF WASTE MANAGEMENT VR 672-10-1 – VIRGINIA HAZARDOUS WASTE MANAGEMENT REGULATIONS; AND/OR ANY PETROLEUM PRODUCTS AS DEFINED N TITLE 40, CODE OF FEDERAL REGULATIONS PART 280; HOWEVER, ANY SUCH SUBSTANCES THAT MAY BE UTILIZED, STORED AND/OR DISPOSED OF IN CONJUNCTION WITH THE USES WILL BE IN ACCORDANCE WITH SAID REGULATIONS.
24. THE EXACT LOCATION OF THE PROPOSED ACCESS POINTS ARE SUBJECT TO MODIFICATION BASED ON FINAL DESIGN AND ENGINEERING, AND THE APPROVAL OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT).
25. PURSUANT TO SECT. 17-201 OF THE ZONING ORDINANCE, A WAIVER OF THE SERVICE DRIVE REQUIREMENT ALONG ROUTE 1 IS HEREBY REQUESTED.
26. PURSUANT TO PAR.2 OF SECT.13-304 OF THE ZONING ORDINANCE, A MODIFICATION OF THE BARRIER REQUIREMENT, ALONG THE NORTHERN PROPERTY LINE, IS HEREBY REQUESTED IN FAVOR OF THAT WHICH IS PRESENTED HEREON. FURTHER, AS PERMITTED BY PAR. 4 OF SECT. 13-104 EVERY ATTEMPT WILL BE MADE TO USE EXISTING VEGETATION ALONG THE NORTHERN PROPERTY LINE TO SATISFY THE TRANSITIONAL SCREENING REQUIREMENTS. SHOULD THAT ATTEMPT FAIL, TRANSITIONAL SCREENING WILL BE PROVIDED AS SHOWN HEREON.
27. PURSUANT TO PAR.3 AND 12 OF SECT.13-304 OF THE ZONING ORDINANCE, A WAIVER OF THE TRANSITIONAL SCREENING AND BARRIER REQUIREMENTS ALONG THE SOUTHERN BOUNDARY ARE HEREBY REQUESTED.

    TRANSITIONAL SCREENING AND BARRIERS ARE NOT REQUIRED ALONG THE EASTERN AND WESTERN PROPERTY BOUNDARIES.
28. TO THE BEST OF OUR KNOWLEDGE, EXCEPT AS QUALIFIED ABOVE, THE PROPOSED DEVELOPMENT CONFORMS TO ALL CURRENT APPLICABLE LAND DEVELOPMENT ORDINANCES AND ADOPTED STANDARDS.

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DAKS RESTAURANT/ WOODLAWN COURT

GENERALIZED DEVELOPMENT PLAN

MOUNT VERNON DISTRICT
FAIRFAX COUNTY, VIRGINIA

SEAL

COMMONWEALTH OF VIRGINIA
PHILIP C. CHAMPAGNE
No. 030073
05/18/07
PROFESSIONAL ENGINEER

KEY PLAN
Application No. RZ 2007-MV-004 Staff SW.
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED June 4, 2007
Date of (BOS) (PC) approval June 4, 2007
Sheet 2 of 7

SCALE

AS NOTED

No.	DATE	BY	Description
3	05.18.07	JMC	
2	04.20.07	GAH	
1	03.29.07	GAH	

REVISIONS

DRAWN BY	JMC
APPROVED BY	
CHECKED BY	LAM
DATE	FEBRUARY 5, 2007

TITLE
DAKS RESTAURANT/ WOODLAWN COURT
GENERALIZED DEVELOPMENT PLAN

PROJECT NO. M-10623

2

SHEET NO. 2 OF 7

M-10623

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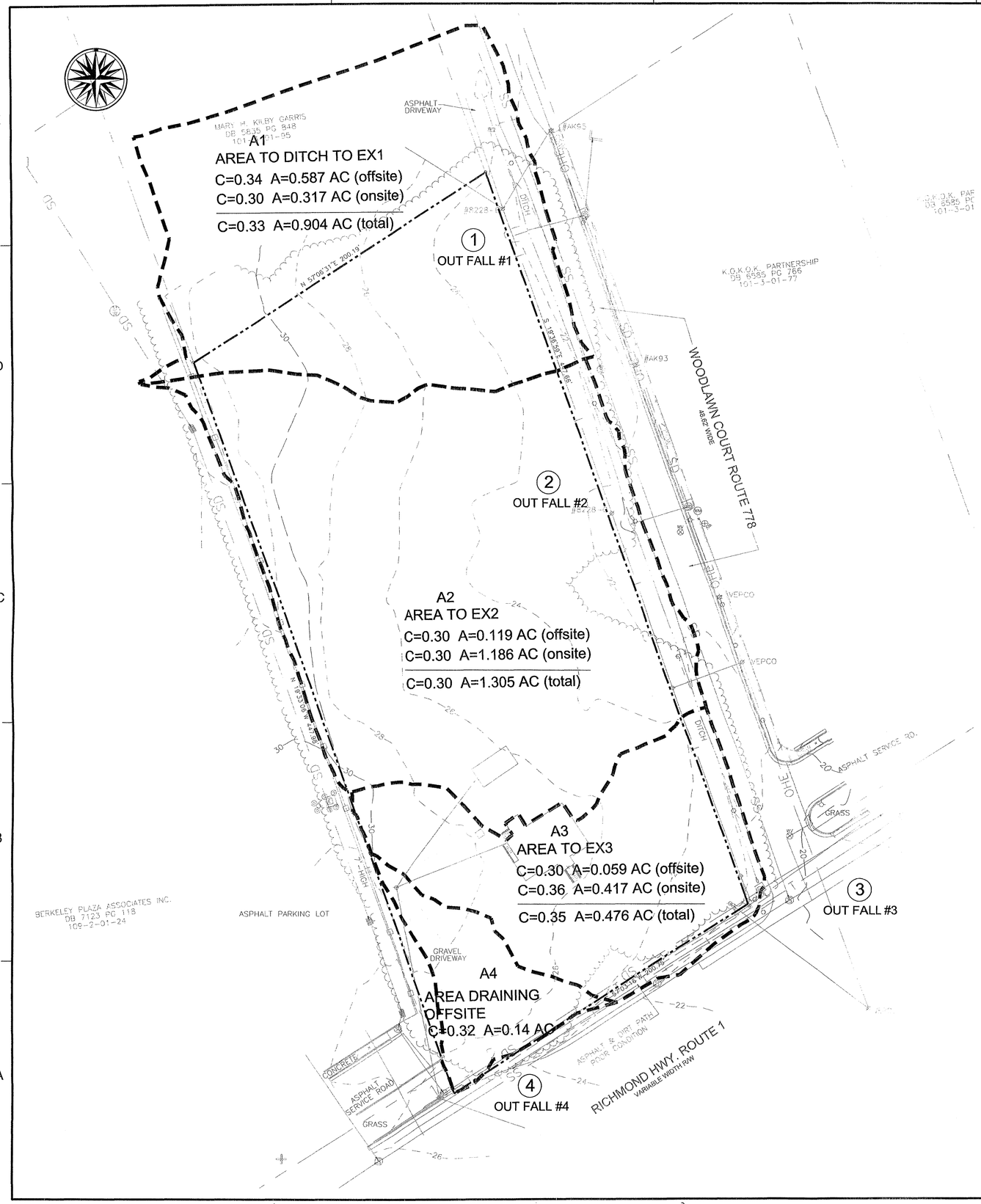


Rz 2007-MV-004

Application No. _____ Staff S.W.

APPROVED DEVELOPMENT PLAN

(DP) (GDP) (CDP) (FDP)

SEE PROFFERS DATED June 4, 2007

Date of (BOS) (PC) approval June 4, 2007

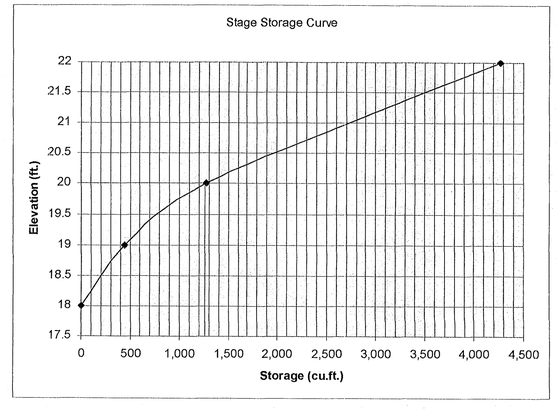
Sheet 3 of 7

STAGE-STORAGE CALCULATIONS

V = h/3 * [A1 + A2 + SQRT(A1*A2)]

ELEV (ft)	h (ft)	AREA (acres)	VOLUME (acre-ft)	TOTAL VOLUME (acre-ft)	TOTAL VOLUME (cubic ft)
18	0	0.007	0.000	0.000	0
19	1	0.014	0.010	0.010	449
20	1	0.024	0.019	0.029	1,267
22	2	0.046	0.069	0.098	4,264

BMP REQUIREMENT = 812 CF
BMP ELEVATION = 20
BMP PROVIDED BY POND = 1,250 CF



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MOUNT VERNON DISTRICT
FAIRFAX COUNTY, VIRGINIA

SEAL

COMMONWEALTH OF VIRGINIA
PHILIP C. CHAMPAGNE
NO. 030073
05/18/07
PROFESSIONAL ENGINEER

KEY PLAN

SCALE
0' 30' 60'

No.	DATE	BY	Description
3	05.18.07	JMC	
2	04.20.07	GAH	
1	03.29.07	GAH	

REVISIONS

DRAWN BY JMC
APPROVED BY
CHECKED BY LAM
DATE FEBRUARY 5, 2007

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DAKS RESTAURANT/ WOODLAWN COURT
GENERALIZED DEVELOPMENT PLAN
EXISTING DRAINAGE DIVIDES

PROJECT NO. M-10623

3

SHEET NO. 3 OF 7

M-10623

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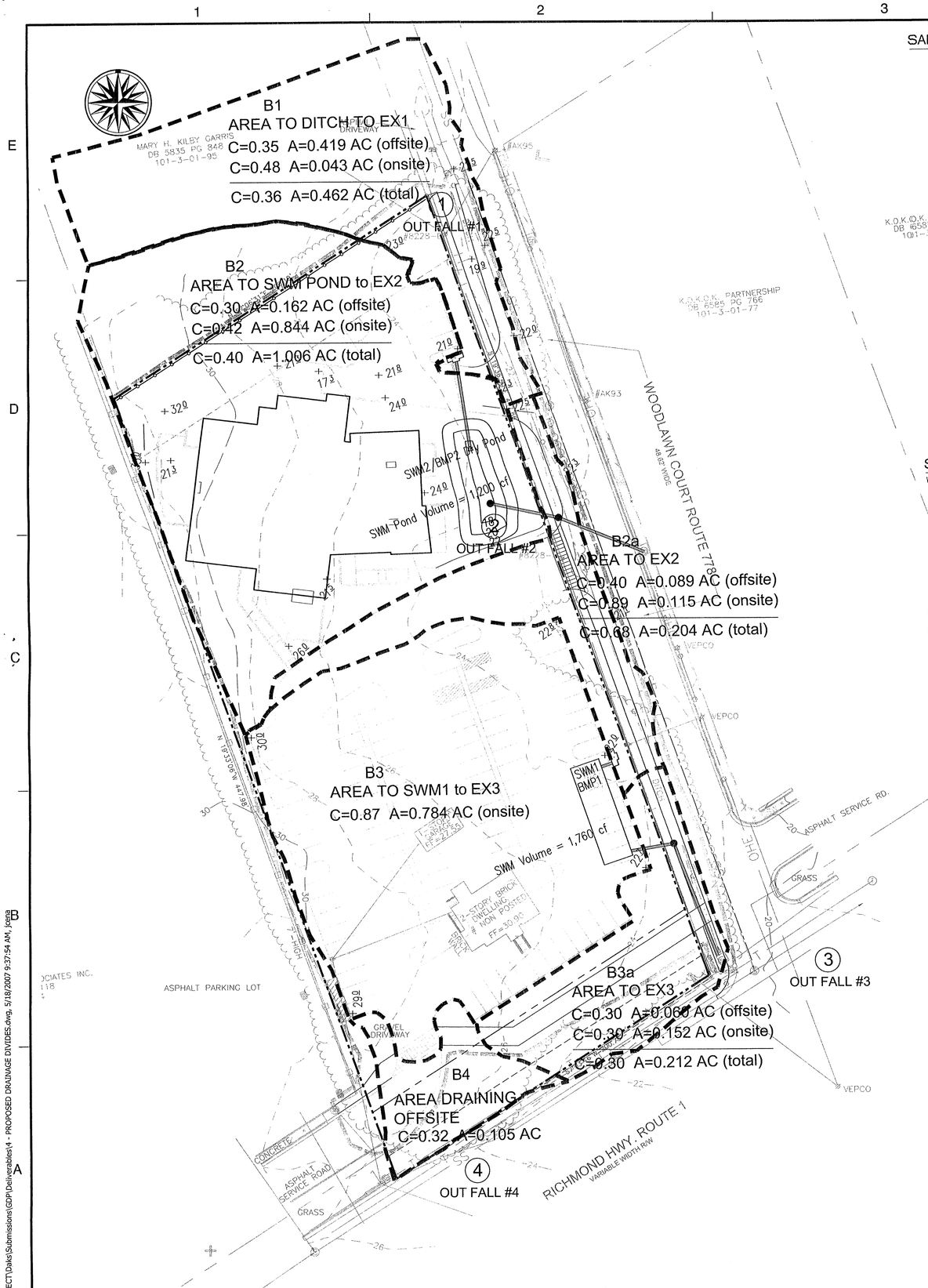

SAND FILTER SWM1/BMP #1 COMPUTATIONS

Worksheet 1: Computations Common to all Sand Filter BMPs

Part 1: Compute Post-Development Site Impervious Acreage (Ia):

structures	=	ft2
parking lot	= 29,711	ft2
roadway	=	ft2
sidewalk	=	ft2
other	=	ft2
	=	ft2
	=	ft2
	=	ft2

Total = 29,711 ft2/43,560 = Ia = 0.682 acres

Part 2: Compute Water Quality Volume to be Treated:

WQV = Ia = 1816 x 0.682 = 1,239 ft3

Part 3: Identify Critical Site Parameters:

Storm Sewer invert at proposed connection point	= 13.83	ft.
Length of outflow line (BMP-storm sewer)	= 88	ft.
Minimum BMP outflow invert @ minimum 0.5% grade	= 14.43	ft.
Site Plan surface elevation at BMP location	= 23	ft.
Inflow invert to BMP from drainage system plan	= 20	ft.
Flow splitter weir or bypass pipe invert (usually set at maximum BMP ponding depth)	=	ft.
BMP outflow possible by gravity – YES		

Overflow weirs and orifices or bypass pipes shall be designed to pass the peak flow rate of the 10-year storm (5 min. Tc) using Rational Method (Q=CIA)

Q_{10} = CIA = (0.87)(7.27)(0.784) = 4.96 cfs

1) When designing overflow weirs, size the weir by solving the following formula for H:

$Q10 = 3.0LH^{1.5}$

where:
Q10 = peak flow rate for the 10-year storm (cfs)
H = the depth of ponded water above the crest of the weir (ft.)
L = length of the weir (ft.)

$4.96 = 3.0 \times 8 \times H^{1.5}$

$H^{1.5} = 0.207$; H = 0.35 ft.

SAND FILTER COMPUTATIONS

Worksheet 5: Computations for Delaware Sand Filter

Part 4: Considering data on Worksheet 1, select maximum ponding depth over filter:

2h = 2.0 ft;

h = 1.0 ft;

From WORKSHEET 1;

Ia = 0.682 acres

WQV = 1,239 ft^3

Part 5: Compute Area of Filter (Afm) and Sediment Pool (Asm):

b) If 2h ≤ 2.67 ft., use the formula:

$A_{sm} = A_{fm} = \frac{1816\ Ia}{(4.1h + 0.9)} = \frac{WQV}{(4.1h + 0.9)}$

= 1239 / [(4.1 x 1.0) + 0.9]

= 247.8 ft^2

Part 6: Considering Site Constraints, Select filter (Wf) and Sediment Pool width (Ws) and Compute Filter Length (Lf) and Adjusted Filter Area (Af) and Sediment Chamber Area (As):

$W_s = W_f$ 8 ft;

$L_s = L_f = A_{fm}/W_f$

= 248 / 8

= 31 , say 55 ft

$A_s = A_f = W_f \times L_f$ = 8 x 55

= 440.0 ft^2

Part 7: Compute Storage in Filter Voids (Vv):

(assume 40% voids in filter media)

$V_v = A_f \times d_f \times 0.4$

Vv = 440 x 1.5 x 0.4

Vv = 264 ft^3

Part 8: Compute Flow Through Filter During Filling Period (Vq):

(assume 1-hour to fill per D.C. practice)

$V_Q = \frac{kAf(df + h)}{df}$; use k = 2 ft/day = 0.0833 ft/hr

V_Q = [0.0833 x 440 x (1.5 + 1.0)]/ 1.5

V_Q = 61 ft^3

Part 9: Compute Net Flow Volume to be Stored Awaiting Filtration(Vst):

Vst = WQV – V_v – V_Q

Vst = 1239 – 264 – 61

Vst = 914 ft^3

Part 10: Compute Storage Above Filter and Sediment Pool(Vfs):

Vfs = 2h (Af + As)

Vfs = 2.0 (440 + 440)

Vfs = 1,760 ft^3

Part 11: Compute Storage Deficit(Vd):

Vd = Vst – Vfs

Vd = 914 – 1,760

Vd = –846 ft^3

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

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

☒ 2. A graphic depicting the stormwater management facility(ies) and limits of clearing and grading accommodate the stormwater management facility(ies), storm drainage pipe systems and outlet protection, pond spillways, access roads, site outfalls, energy dissipation devices, and stream stabilization measures as shown on Sheet 5.

☒ 3. Provide:

Facility Name/ Type & No.	On-site area served (acres)	Off-site area served (acres)	Drainage area (acres)	Footprint area (sf)	Storage Volume (cf)	If pond, dam height (ft)
Dry Pond	0.844	0.162	1.006	656.5	1,200	2.0
(e.g. dry pond A, infil, trench, underground, vault, etc.)						
Underground	0.784	0	0.784	612.5	2,450	
Totals	1.628	0.162	1.790			

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

☒ 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 N/A (e.g. asphalt, geoblock, gravel, etc.).

☒ 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet 2.

☒ 7. A stormwater management narrative which contains a description of how detention and best management practice requirements will be met is provided on Sheet 4.

☒ 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 3.

☒ 9. A description of how the outfall requirements, including contributing drainage areas of the Public Facilities Manual will be satisfied is provided on Sheet 3.

☒ 10. Existing topography with maximum contour intervals of two (2) feet and a note as to whether it is an air survey or field run is provided on Sheets 4.

☐ 11. A submission waiver is requested for N/A.

☐ 12. Stormwater management is not required because N/A.

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(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED June 4, 2007
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Sheet 4 of 7

BMP Facility Design Calculation

Plan Name: Daks Restaurant **Date** Nov-06
Plan Number: **Engineer:**

BMP Narrative

I. Water Quality Narrative

The proposed pond will address BMP requirements for the proposed site. This pond design provides a total phosphorus removal of 44% which exceeded the minimum 40% requirement per the occoquan method .

The best management requirements for the site, incuding that required for the improvements proposed with this
The best management requirements for the site, were estimated as reflected in the computations on this sheet. Areas B2 drain to the pond SWM vault at a proposed runoff coeficient of C = 0.42 The computations reflect that the proposed pond will provide a total phosphorus removal of 44% which exceeds the minimum requirement. As a result, the proposed pond will provide adequate BMP for the proposed improvements.

II. Watershed Information

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

Subarea Designation and Description	"C"	Acres
Area 'B1' Onsite Uncontrolled	0.48	0.043
Area 'B2' Onsite Controlled	0.42	0.844
Area 'B2a' Onsite Uncontrolled	0.89	0.115
Area 'B3' Onsite Controlled	0.87	0.784
Area 'B3a' Onsite Uncontrolled	0.30	0.152
Area 'B4' Onsite Uncontrolled	0.32	0.105
Area 'B1' Offsite Uncontrolled	0.35	0.419
Area 'B2' Offsite Controlled	0.30	0.162
Area 'B2a' Offsite Controlled	0.40	0.089
Area 'B3a' Offsite Controlled	0.30	0.06

IIIa. Phosphorus Removal - "Occoquan Method"

This section is for the use in the jurisdictions which do not utilize CBLAD's "Chesapeake Bay Method" for phosphorus removal calculations. The "Chesapeake Bay Method" is addressed in Section IIIB of this worksheet. Please check with you local jurisdiction to determine which method to use.

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

Area of the Site = (a) 2.043

Sub Area Designation	"C"	Acres	Product
Area 'B1' Onsite Uncontrolled	0.48	0.043	0.02
Area 'B2' Onsite Controlled	0.42	0.844	0.35
Area 'B2a' Onsite Uncontrolled	0.89	0.115	0.10
Area 'B3' Onsite Controlled	0.87	0.784	0.68
Area 'B3a' Onsite Uncontrolled	0.30	0.152	0.05
Area 'B4' Onsite Uncontrolled	0.32	0.105	0.03
		(b)	1.24
(c) Weighted Average "C" Factor	(b)/(a)=(c)	0.61	

Part 3: Compute the total Phosphorus Removal for the Site

Sub Area Designation	Area (Acres)	"C" Value	BMP type	Removal Eff (%)	Area Ratio	"C" Factor Ratio	Product
Area 'B1' Onsite Uncontrolled	0.043	0.48	Uncontrolled	-	-	-	0.00%
Area 'B2' Onsite Controlled	0.844	0.42	Dry Pond	40%	0.413118	0.6926821	11.45%
Area 'B2a' Onsite Uncontrolled	0.115	0.89	Uncontrolled	-	-	-	0.00%
Area 'B3' Onsite Controlled	0.784	0.87	Sand Filter	60%	0.3837494	1.4348416	33.04%
Area 'B3a' Onsite Uncontrolled	0.152	0.30	Uncontrolled	-	-	-	0.00%
Area 'B4' Onsite Uncontrolled	0.105	0.32	Uncontrolled	-	-	-	0.00%
Area 'B1' Offsite Uncontrolled	0.42	0.35	Uncontrolled	-	-	-	0.00%
Area 'B2' Offsite Controlled	0.16	0.30		-	-	-	0.00%
Area 'B2a' Offsite Controlled	0.089	0.40	Uncontrolled	-	-	-	0.00%
Area 'B3a' Offsite Controlled	0.06	0.30	Uncontrolled	-	-	-	0.00%
						(a) Total	44.48%

Part 4: Determine Compliance with Phosphorus Removal Requirement

Since 43.98% > 40% Phosphorus removal requirement is satisfied.

Weighted Average "C" Factor for Proposed BMP facility = 0.42

Determine the Storage Required for Facility

(A) Extended Detention Dry Pond
Chart A6-40 value (Appendix 4-3) for BMP storage per acre
[(4375xC)-875] or [31.25 x %imp] = (a) 962.5 cf/ac
Design 1 (48 hour drawdown)
Dry Pond Volume 812.35 cf

Dewberry

Dewberry & Davis LLC
8403 ARLINGTON BLVD.
FAIRFAX, VA 22031
PHONE: 703.849.0100
FAX: 703.849.0519
www.dewberry.com

DAKS RESTAURANT/ WOODLAWN COURT

GENERALIZED DEVELOPMENT PLAN

MOUNT VERNON DISTRICT
FAIRFAX COUNTY, VIRGINIA

SEAL

COMMONWEALTH OF VIRGINIA
PHILIP C. CHAMPAGNE
No. 030073
05/18/07
PROFESSIONAL ENGINEER

KEY PLAN

SCALE
0' 30' 60'

No.	DATE	BY	Description
3	05.18.07	JMC	
2	04.20.07	GAH	
1	03.29.07	GAH	

REVISIONS

DRAWN BY JMC
APPROVED BY
CHECKED BY LAM
DATE FEBRUARY 5, 2007

TITLE
DAKS RESTAURANT/ WOODLAWN COURT
GENERALIZED DEVELOPMENT PLAN
PROPOSED DRAINAGE DIVIDES

PROJECT NO. M-10623

4

SHEET NO. 4 OF 7

M-10623

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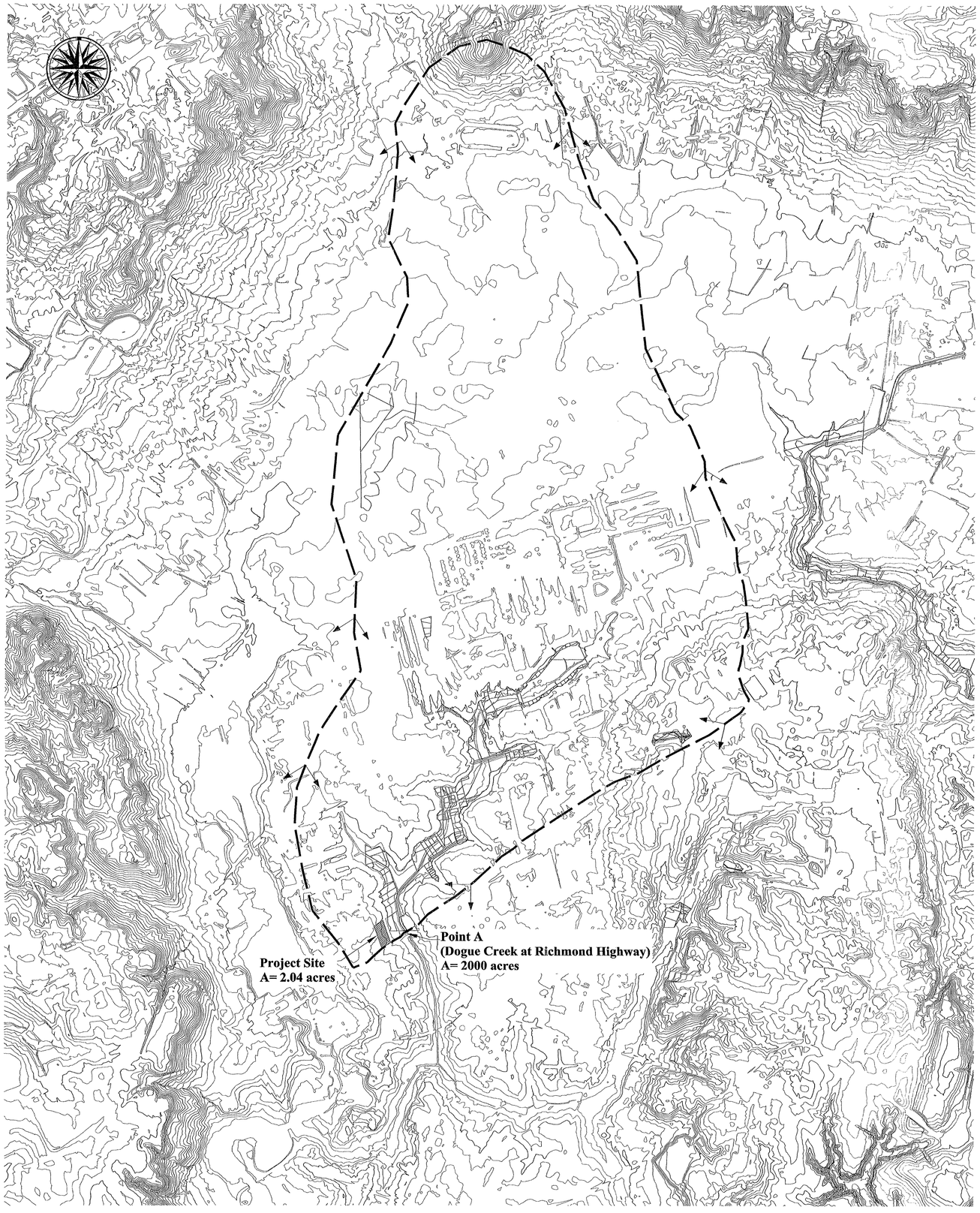

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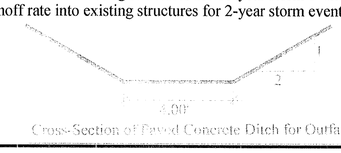

Cross-Section of Paved Concrete Ditch for Outfall 2

SWM NARRATIVE:

The Daks Restaurant site is located in the North East corner of the intersection of Richmond Highway Route 1 and Woodlawn Court Route 78. The site is identified as Fairfax County Zoning Map 101-3 ((1)) lot 96 of 2.0 acres. The proposed plan includes the addition of a restaurant building, a parking lot and two entrances to the property. The proposed plan results more than 20% imperviousness of the site. This increase will be controlled by a SWM extended dry detention pond that will located along the west border of the site and an underground SWM detention facility. The pond will discharge at a controlled rate of 1.84 cfs to match existing discharge rate and the underground SWM facility will also discharge at a controlled rate of 0.75 cfs to match the existing discharge rate into the existing stormwater system. The dry pond does not present a flood risk to the underground portion of the building since this is a dry pond and the 10-year WSEL is estimated at 20. The design of the building indicates that the finished floor of the building is at 24.

The project site is located at the bottom of a 2000 acre drainage area into Dogue Creek and the receiving channel from our site (the paved concrete ditch) has adequate capacity to convey the proposed development runoff. The concrete channel has a capacity of 53 cfs as shown on sheet 6. The post development runoff will increase from the existing flow of 14 cfs to 18.3 cfs for which the concrete channel will be adequate.

Water Quality Requirements:

Sand Filter SWM1 and Extended Detention Dry Pond SWM2: Due to the increase in imperviousness, an extended detention dry pond and a SWM vault will provide water quality requirements. The proposed site is divided into two areas B2 and B3. SWM2 will treat area B2 and SWM1 will treat B3. The pond's riser structure and the vault's sand filter will be designed to release stored runoff into the soil, recharging groundwater to treat stormwater therefore providing the required 40% phosphorus removal (see attached calculations.)

Water Quantity (Detention) Requirements:

Sand Filter SWM1 and Extended Detention Dry Pond SWM2: The proposed development requires a detention volume of 2,900 cf. The proposed sand filter SWM1 and SWM pond SWM2 will provide detention to match the total discharge rates at the outfalls to the existing discharge rates.

The sand filter computations on sheet 4 show that the vault will provide 1,760 cf in addition to 914 cf required for water quality. The dry pond will also provide 1,200 cf (including volume for BMP) for a total detention volume of 2,960 cf. The required detention for the proposed development is 2,900 cf.

Outfall Analysis:

Outfall 1 is downstream of outfall 2. The flow from the two outfalls is conveyed by a 21" RCP pipe to EX4 that drains into a 300 LF, 4' wide concrete paved ditch (type A) that drains into Dogue Creek. A representative cross-section of the concrete ditch showing adequacy is shown on this sheet. The cross-section is referenced from site plan drawings on sheets 6 and 7.

Outfall 3 is downstream of outfall 4. The flow from the two outfalls is conveyed by a 30" RCP that drains into Dogue Creek at the point where Dogue Creek crosses Richmond Highway through a box culvert assembly. The project site is part of a drainage area approximately 2000 acres as shown by the drainage map on this sheet at point A therefore the watershed is more than 100 times our contributing site.

Outfall 1 (non-concentrated):

Outfall 1 is located near the north-east border of the site. The runoff to this outfall sheet flows into a ditch along Woodlawn Court and eventually into the existing stormwater sewer system through existing structure EX1. The comparison of runoff from existing site conditions to proposed site conditions can be found in the table below. The proposed development results in a decrease in runoff from 2.17 cfs to 1.22 into existing structure EX1 for outfall 1.

Outfall 2:

Outfall 2 is located south of outfall 1 along Woodlawn Court. The runoff to this outfall is from the proposed dry pond and the entrance to the parking lot on site that does not drain into a SWM facility. The outfall drains into the existing stormwater sewer system through existing structure EX2. The proposed dry pond will provide detention to bring the total runoff entering the outfall to match the existing condition of 2.85 cfs into existing structure EX2.

Outfall 3:

Outfall 3 is located near the south-east corner of the site. The runoff to this outfall is from the southern half of the property and does not drain into the proposed SMW pond. An underground SWM detention pond and sand filter is provided for this runoff. The outfall drains into the existing stormwater sewer system through existing structure EX3. The underground SWM facility will provide detention to bring the total runoff into the outfall to match the existing condition of 1.21 cfs. The comparison of runoff from the existing site conditions to proposed site conditions can be found in the table below.

Outfall 4 (non-concentrated):

Outfall 4 is located on the south-west border of the site along Richmond Highway. The runoff to this outfall sheet flows into the existing stormwater system at EX5. The comparison of runoff from the existing site conditions to proposed site conditions can be found in the table below. The proposed development results in a decrease in runoff from the site draining to offsite drainage areas from 0.33 cfs to 0.24 cfs for outfall 4.

Outfall	Existing 2-yr Q (cfs)	Proposed 2-yr Q (cfs)	Existing 10-yr Q (cfs)	Proposed 10-yr Q (cfs)	Proposed 10-yr Q (cfs)
1	1.77	0.99	2.17	1.22	--
2	2.32	1.52**	2.85	1.84*	2.93
		0.82		1.01	--
3	0.99	0.61**	1.21	0.75*	4.96
		0.38		0.46	--
4	0.27	0.20	0.33	0.24	--

* Existing runoff rate into existing structures for 10-year storm event.
** Existing runoff rate into existing structures for 2-year storm event.

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Sheet 5 of 7

Dewberry

Dewberry & Davis LLC
8403 ARLINGTON BLVD.
FAIRFAX, VA 22031
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FAX: 703.849.0519
www.dewberry.com

DAKS RESTAURANT/ WOODLAWN COURT

GENERALIZED DEVELOPMENT PLAN

MOUNT VERNON DISTRICT
FAIRFAX COUNTY, VIRGINIA

SEAL
COMMONWEALTH OF VIRGINIA
PHILIP C. CHAMPAGNE
No. 030073
05/16/07
PROFESSIONAL ENGINEER

KEY PLAN

SCALE
0' 1000' 2000'

No.	DATE	BY	Description
3	05.18.07	JMC	
2	04.20.07	GAH	
1	03.29.07	GAH	

REVISIONS

DRAWN BY JMC
APPROVED BY
CHECKED BY LAM
DATE FEBRUARY 5, 2007

TITLE
DAKS RESTAURANT/ WOODLAWN COURT
GENERALIZED DEVELOPMENT PLAN
SWM/OUTFALL NARRATIVES

PROJECT NO. M-10623

5

SHEET NO. 5 OF 7

M-10623

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NOTE:
6" INDICATES NO PARKING SIGN (1 REQ'D)

WOODLAWN COURT #778

TYPICAL SECTION-WOODLAWN CT (TS-2)

NOTE: 12" COMPACTED SUB-BASE MATERIAL TO V.D.H. SPEC. SEC. 208. (SUBJECT TO REVISION UPON SUBMISSION OF SOIL REPORT.)

TRUE NORTH

PROVIDE WHEEL BUMPERS 1½' FROM EDGE OF PVMT. 34 PARKING SPACES

1-STORY BUILDING
FIN. FLOOR = 18.5
No. 8670
BLDG HT = 17 FT.
GROSS FLOOR AREA = 8100
NET FLOOR AREA = 3530

CANOPY AT CUSTOMER SERVICE

10 PARKING SPACES

S 12°25' E 447.67'

ROBT DODD (RES.)

R.E. 0.5
H.D. GILKERSON (RES.)

U.S. ROUTE No 1
RICHMOND HWY

PAVED DITCH TYPE "A"
NO SCALE

TYPICAL SEC. U.S. #1 & SERV. DR.
NO SCALE

PROVIDE STD TRAFFIC DELINEATORS

PROVIDE BOND & AGREEMENT (FOR CONST. TO P.R. R/W WHEN SERVICE DRIVE IS CONST. ON ADJACENT PROPERTY)

ALL WATER IS BEING DISCHARGED AT NATURAL GROUND ELEVATION AT THIS POINT & NATURAL DRAINAGE DIVIDES HAVE BEEN IGNORED.

CERTIFICATE
I HEREBY CERTIFY THAT THE PROPERTY SHOWN HEREON IS NOW IN THE NAME OF W.H. MOORE & G.Y. CARVER & WAS ACQUIRED APRIL 20, 1966 IN D.B. 2663 P. 558.

OWNER & DEVELOPER
W.H. MOORE & G.Y. CARVER
AREA OF SITE: 1.3 ACS.
ZONED: CG
PROVIDED PARKING 53 SPACES
REQUIRED PARKING
USE: NEW CAR AGENCY

JUN 17 1969

RZ 2007-MV-004
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APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED June 4, 2007
Date of BOS (PC) approval June 4, 2007
Sheet 6 of 7

SITE PLAN
MT. VERNON SUNDAY INC.
LEE DISTRICT
FAIRFAX COUNTY - VIRGINIA

PLAN 1"=20'
SCALE: PROFILE 1"=50' HORIZ. 1"=5' VERT.
NOV. 1968
REVISED
MARCH 14, 1969
MAY 1969

WESLEY N. HIGHWAY
CERTIFIED SURVEYOR
FAIRFAX COUNTY, VA.

FOR INFORMATION ONLY

SHEET 6 OF 7
M-10623

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(DP) (SDP) (CDP) (FDP)
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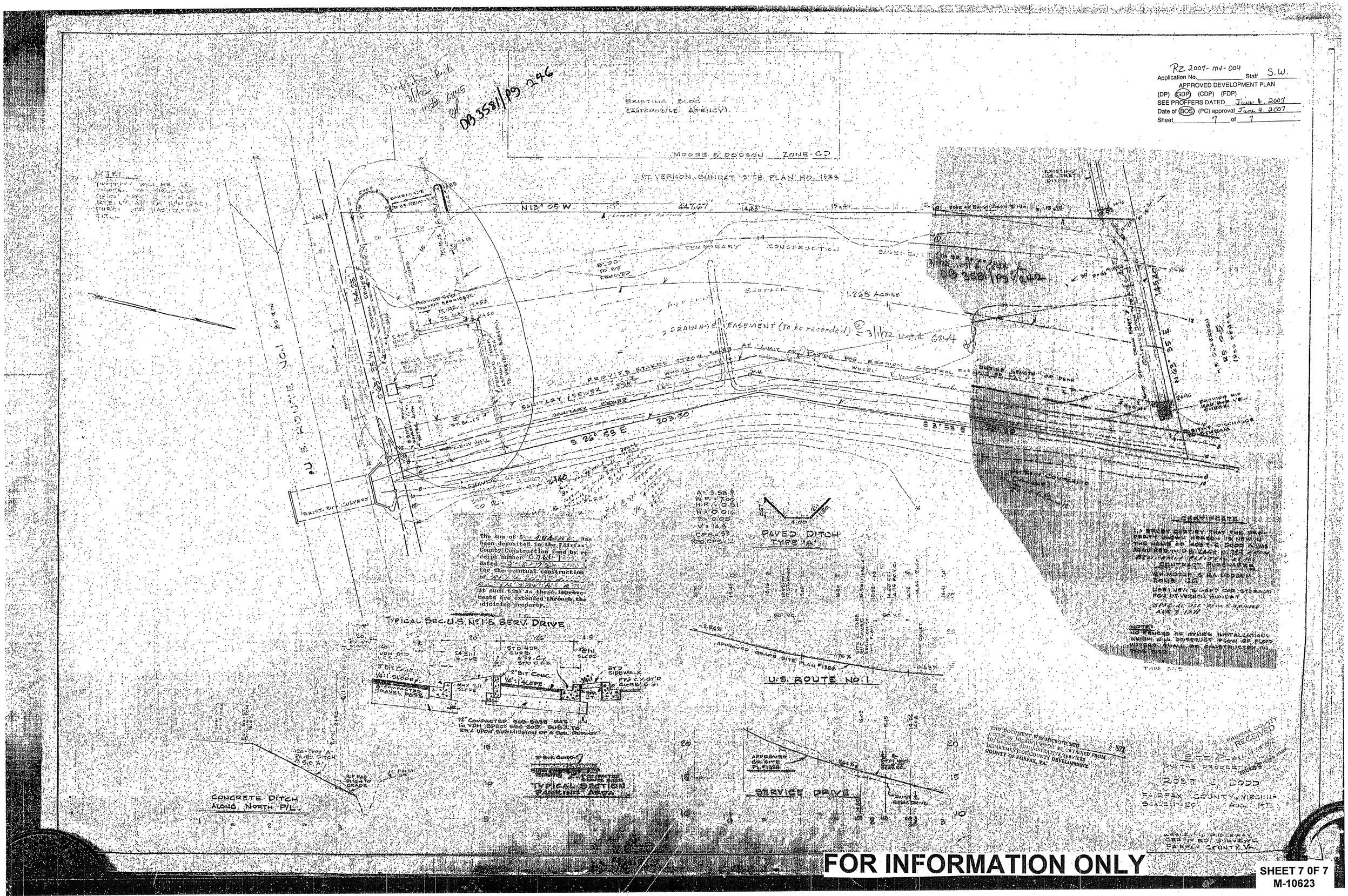

SHEET 7 OF 7
M-10623