LEGEND

PROPOSED	DESCRIPTION	EXISTING
EP	EDGE OF PAVEMENT	EP.
MH	MANHOLE	MH
WV	WATER VALVE	WV
WM	WATER METER	WM
GM	GAS METER	GM
	CURB & GUTTER CG-2	
CG-6R CG-6	TRANSITION FROM CG-6 TO CG-6R	CG-6 CG-6R
	SANITARY SEWER	S
SL	SANITARY LATERAL	SL
C.O.	CLEAN OUT	C.O.
	STORM SEWER	
	WATER MAIN	W
	FIRE HYDRANT	
c	PLUG	c
	OVERHEAD WIRES	
	UTILITY POLE	
T	TELEPHONE	T
G	GAS MAIN	G
E	ELECTRICAL	E
	TRANSFORMER	
	HANDICAP RAMP (CG-12)	
	FENCE	
	TRAFFIC FLOW	
	LIGHT	
	TREES	
	LIMITS OF CLEARING AND GRADING	

PARCEL 1A - SHOPPING CENTER PARKING TABULATION

EX. PARKING PROVIDED:	1689 SPACES (INCLUDING 43 ACCESSIBLE SPACES)
PROPOSED PARKING PROVIDED:	1625 SPACES (INCLUDING 48 ACCESSIBLE SPACES)**
PROPOSED PARKING REQUIRED:	1466 SPACES**

SHOPPING CENTER USES:
±336,333 SF OF GFA @ 4.0 SPACES/1,000 SF OF GFA (SHOPPING CENTER RATE)
=1346 SPACES
EATING ESTABLISHMENTS:
356 SEATS + 62 EMPLOYEES @ 1 SPACE/4 SEATS + 1 SPACE/2 EMPLOYEES
=120 SPACES

PARKING REQUIRED = 1466 SPACES*

* THE SUBJECT PROPERTY IS LOCATED IN THE RICHMOND HIGHWAY COMMERCIAL REVITALIZATION DISTRICT. THE OWNER/APPLICANT MAINTAINS THE ABILITY TO REDUCE THE PARKING BY 20% IN ACCORDANCE WITH SECTION A7-409.3A OF THE FAIRFAX COUNTY ZONING ORDINANCE WITH THE APPROVAL OF APPROPRIATE PARKING STUDIES AND TABULATIONS.

** 5 LOADING SPACES ARE REQUIRED AND PROVIDED FOR THE ENTIRE SHOPPING CENTER.

NOTE: PARKING PROVIDED BASED ON PROPOSED ADDITION OF RELOCATED VEHICLE LIGHT SERVICE ESTABLISHMENT (THIS APPLICATION) AND A FAST FOOD WITH PATIO AND BANK.

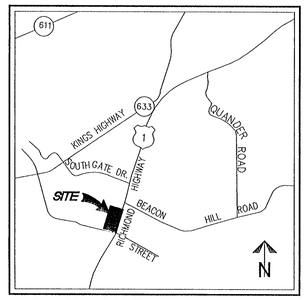
ZONING ORDINANCE TABULATION: (LIMITS OF SPECIAL EXCEPTION)

ZONE: C-6, RICHMOND HIGHWAY COMMERCIAL REVITALIZATION DISTRICT, HIGHWAY CORRIDOR OVERLAY

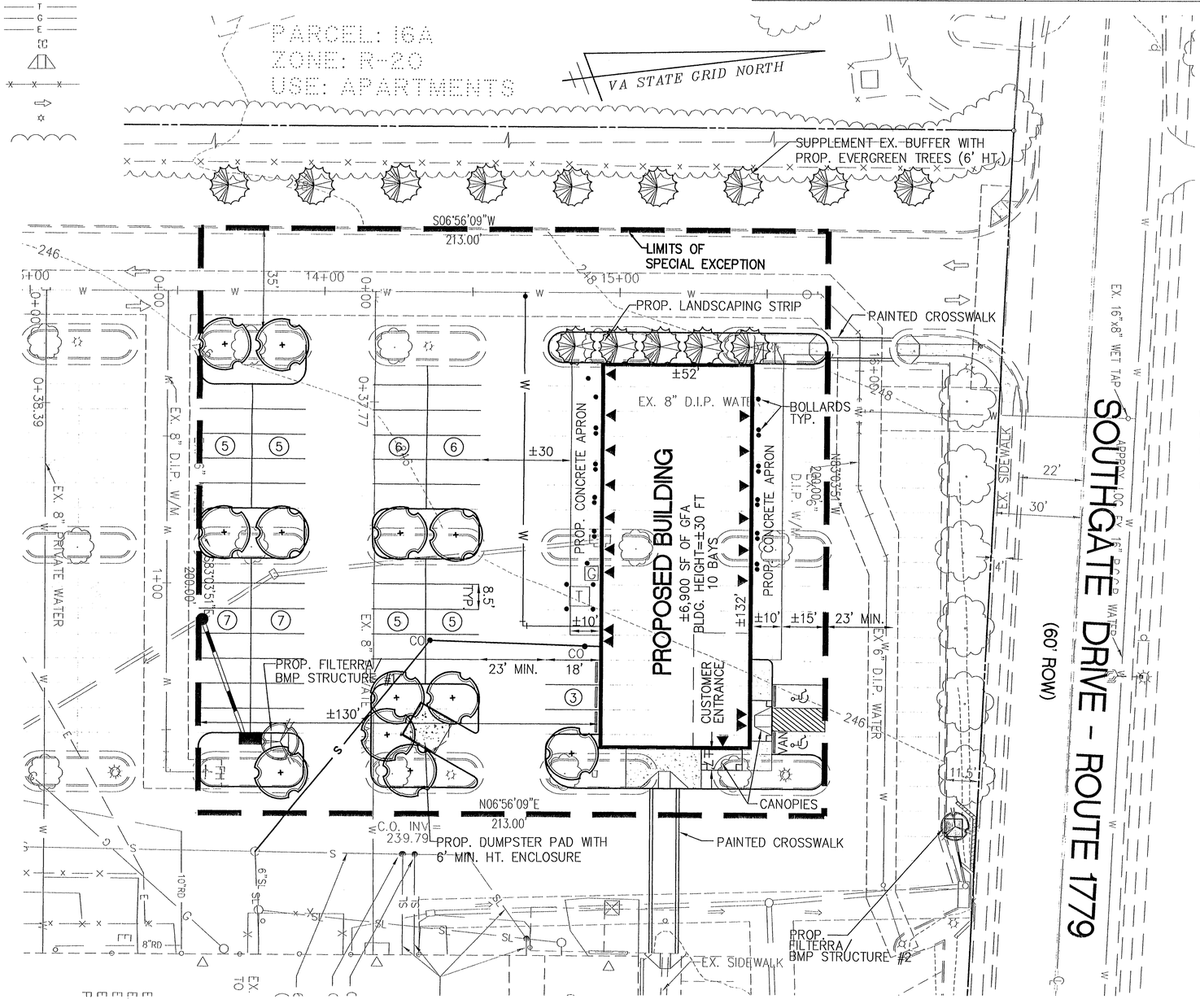
	MINIMUM REQUIRED UNLESS SPECIFIED	PROVIDED
LOT AREA:	40,000 SF	42,600 SF
LOT WIDTH:	200 FT	200 FT
MAXIMUM BUILDING HEIGHT:	50 FEET	±30 FT
YARD REQUIREMENTS:		
FRONT	20 FEET	±25 FT
SIDE	NO REQUIREMENT	N/A
REAR	20 FEET	±130 FT
MAXIMUM FAR:	0.40	±0.16
INTERIOR PARKING		
LOT LANDSCAPING:	5% (1,390 SF)	±8% (±2,250 SF)
TREE COVER:	10% (3,570 SF)	±10% (±3,688 SF)
OPEN SPACE:	15% (6,390 SF)	±15% (±6,499 SF)

EXISTING VEGETATION MAP INFORMATION

COVER TYPE	PRIMARY SPECIES	SUCCESSIONAL STAGE	CONDITION	ACREAGE	COMMENTS
DEVELOPED	N/A	SEE COMMENTS	FAIR	42,600 SF OR 0.98 AC	EXISTING ASPHALT PARKING LOT AND DRIVE AISLES, LANDSCAPE ISLANDS



VICINITY MAP SCALE: 1"=2000'



0 10 20
(IN FEET)
1 INCH = 20'

NOTES:

1. OWNER/APPLICANT: SAUL HOLDINGS LIMITED PARTNERSHIP
   SUITE 1500
   7501 WISCONSIN AVE.
   BETHESDA, MD 20814
2. PROPOSED USE IS A VEHICLE LIGHT SERVICE ESTABLISHMENT, CATEGORY 5 SPECIAL EXCEPTION.
3. PROPERTY IS DELINEATED ON ASSESSMENT MAP NUMBER 093-1-((1)) PORTION OF LOT 1A IS ZONED C-6. THIS SITE IS WITHIN THE RICHMOND HIGHWAY COMMERCIAL REVITALIZATION DISTRICT AND HIGHWAY CORRIDOR OVERLAY DISTRICT.
4. THE TOTAL SITE AREA IS 1,406,117 SF OR 32.28 AC. THE SITE AREA FOR THE LIMITS OF SPECIAL EXCEPTION IS 42,600 SF OR 0.98 AC.
5. THIS LIMITS OF SPECIAL EXCEPTION IS FOR A PORTION OF 093-1-((1)) LOT 1A CONSISTING OF 42,600 SF OR 0.98 AC. FLOOR AREA RATIO FOR THE PROPOSED AND EXISTING BUILDINGS ON THE ENTIRE SITE IS ±0.30. THE FLOOR AREA RATIO FOR THE PROPOSED BUILDING WITHIN THE LIMITS OF THE SPECIAL EXCEPTION IS ±0.16.
6. TO THE BEST OF OUR KNOWLEDGE, ALL UTILITY EASEMENTS HAVING A WIDTH OF 25 FEET OR MORE ON THIS PROPERTY ARE SHOWN.
7. THIS PLAT DOES NOT SHOW ALL COVENANTS, EASEMENTS, RESTRICTIONS OR DEDICATIONS WHICH MAY EXIST IN THE CHAIN OF TITLE.
8. THE PROPOSED DEVELOPMENT CONFORMS TO ALL APPLICABLE FAIRFAX COUNTY ORDINANCES, REGULATIONS AND ADOPTED STANDARDS, EXCEPT AS NOTED.
9. BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM A FIELD SURVEY PERFORMED BY THIS FIRM. CONTOUR INTERVAL IS 2 FEET.
10. PROPERTY IS SERVED BY PUBLIC WATER AND SEWER.
11. ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP 5155250136D. DATED MARCH 1990, THIS PROPERTY IS SHOWN AS ZONE X, AREAS DETERMINED TO BE OUTSIDE OF THE 500-YEAR FLOOD PLAIN.
12. NO RESOURCE PROTECTION AREAS OR ENVIRONMENTAL QUALITY CORRIDORS, AS DEFINED, ARE DELINEATED ON THIS PROPERTY. THIS SITE IS WITHIN AN RMA.
13. NO GRAVES OR OTHER EVIDENCE OF BURIAL PLACES ARE FOUND ON THIS PROPERTY.
14. PROPOSED CHANGES TO THE SITE WILL NOT RESULT IN AN INCREASE IN THE AMOUNT OF IMPERVIOUS AREA, THEREFORE, NO SWM FACILITIES WILL BE PROVIDED AS PART OF THIS DEVELOPMENT (SEE SHEETS 2-4 FOR SWM, BMP, AND OUTFALL ANALYSIS).
15. THIS PLAN IS CONCEPTUAL AND IS INTENDED TO BE USED IN CONJUNCTION WITH THE LAND USE APPROVAL PROCESS ONLY. IT IS NOT AN ENGINEERING CONSTRUCTION DRAWING. MINOR DEVIATIONS AND ADJUSTMENTS MAY BE REQUIRED.
16. LIMITS OF CLEARING AND GRADING FOR THIS SITE WILL CORRESPOND TO THE LIMITS OF SPECIAL EXCEPTION WITH THE EXCEPTION OF THE CASE OF MINOR GRADING OUTSIDE THE LIMITS NECESSITATED BY THE TOPOGRAPHY OF THE SITE AND UTILITY CONNECTIONS.
17. THERE ARE NO EXISTING SIGNS WITHIN THE LIMITS OF SPECIAL EXCEPTION. ALL PROPOSED SIGNS WILL BE IN CONFORMANCE WITH ARTICLE 12 OF THE FAIRFAX COUNTY ZONING ORDINANCE. ALL EXISTING LIGHTING WILL REMAIN.
18. THERE ARE NO PROPOSED IMPROVEMENTS ALONG SOUTHGATE DRIVE.

SHEET INDEX:

1. SPECIAL EXCEPTION PLAN
1A. OVERALL SITE EXHIBIT (FOR INFORMATION ONLY)
2. PRELIMINARY STORMWATER MANAGEMENT PLAN
3. DRAINAGE DIVIDES AND ADEQUATE OUTFALL PLAN (FOR INFORMATION ONLY)
4. STORM SEWER COMPUTATIONS (FOR INFORMATION ONLY)

LANDSCAPE LEGEND

PROPOSED DECIDUOUS TREES 2"/ 2 1/2" CALIPER

PROPOSED EVERGREEN TREES 6' HT.

SMALL FLOWERING DECIDUOUS TREE 6' HT.

EXISTING 30' LIGHT POLES

Application No(s): SE 2005-LE-001 Staff: C. Lewis
APPROVED SE / SP PLAN
SEE DEV CONDS DATED 6-16-05
Date of (BOS) (BZA) approval 6-20-05
Sheet 1 of 5

RECEIVED
Department of Planning & Zoning
JUN 02 2005
Zoning Evaluation Division

WALTER L. PHILLIPS
INCORPORATED
CIVIL ENGINEERS LAND SURVEYORS PLANNERS LANDSCAPE ARCHITECTS
207 PARK AVENUE FALLS CHURCH, VIRGINIA 22046
(703) 532-6163 FAX (703) 533-1301

DATE: 12/02/04 REV. 1/20/05
REV. 3/3/05 REV. 5/31/05
SCALE: 1" = 20' DRAWN: MEF

COMMONWEALTH OF VIRGINIA
MARK E. FRANK
No. 9909
5-31-05
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

REVISION APPROVED BY

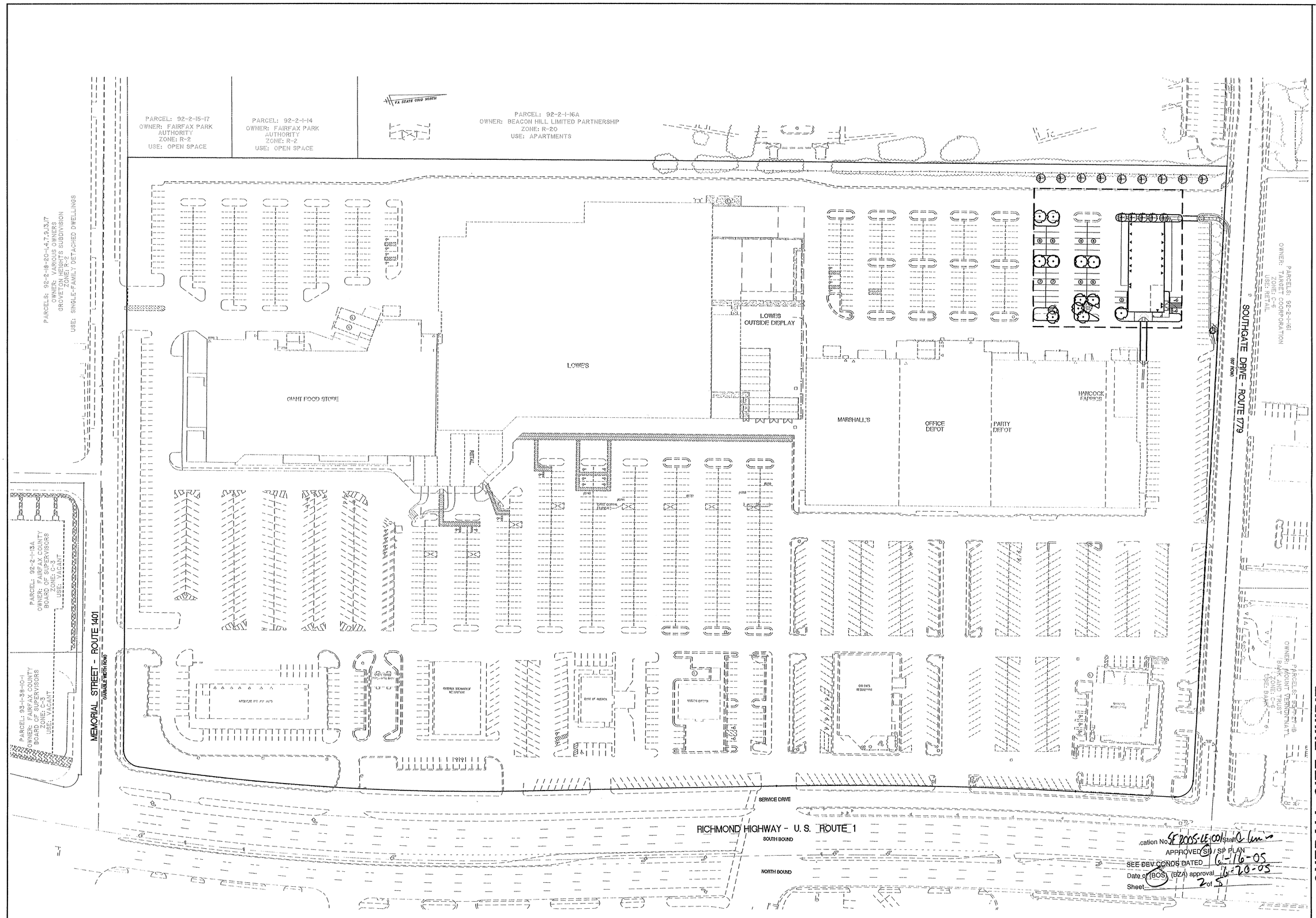
SPECIAL EXCEPTION PLAT - SE 2005-LE-001

BEACON MALL

VEHICLE LIGHT SERVICE ESTABLISHMENT

LEE DISTRICT

FAIRFAX COUNTY, VIRGINIA



FOR INFORMATION ONLY

WALTER L. PHILLIPS
INCORPORATED
CIVIL ENGINEERS LAND SURVEYORS PLANNERS LANDSCAPE ARCHITECTS
207 PARK AVENUE FALLS CHURCH, VIRGINIA 22046
(703) 532-6163 FAX (703) 533-1301 WWW.WLPINC.COM

SCALE: 1"=50' | DATE: 12/02/04 REV. 3/3/05 REV. 5/31/05 REV. 1/20/05 | DRAWN: MEF

COMMONWEALTH OF VIRGINIA
TERRANCE M. ANDERSON
5918
5-31-05
PROFESSIONAL ENGINEER

REVISION APPROVED BY

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

OVERALL SITE EXHIBIT

BEACON MALL
LEE DISTRICT
FAIRFAX COUNTY, VIRGINIA

File No. FB-10 Tax Map No. 093-1 Job No. 94-075 Cadd Dwg. File: 94075SEoverall3 Xref:

SHEET: 1A OF 4

STORMWATER MANAGEMENT SUMMARY (ENTIRE SITE)

I. SPECIAL EXCEPTION AREA PRE-DEVELOPMENT (EXISTING CONDITIONS)

A. CONTRIBUTING AREAS:

0.09 AC. @ 0.30 (GREEN AREA ON-SITE)
0.89 AC. @ 0.90 (ROOFS, DRIVEWAYS, SIDEWALKS, ETC.)

B. WEIGHTED "C":

$$\frac{(0.09)(0.30)+(0.89)(0.90)}{0.98} = 0.84$$

C. TIME OF CONCENTRATION = 5 MIN.

D. RUNOFF:
Q2 = (0.84)(5.45)(0.98) = 4.49 CFS
Q10 = (0.84)(7.27)(0.98) = 5.98 CFS
Q100 = 1.25(0.84)(9.84)(0.98) = 10.13 CFS

II. SPECIAL EXCEPTION AREA POST-DEVELOPMENT (PROPOSED CONDITIONS)

A. CONTRIBUTING AREAS:

0.15 AC. @ 0.30 (GREEN AREA ON-SITE)
0.83 AC. @ 0.90 (ROOFS, DRIVEWAYS, SIDEWALKS, ETC.)
0.98 AC.

B. WEIGHTED "C":

$$\frac{(0.15)(0.30)+(0.83)(0.90)}{0.98} = 0.81$$

C. RUNOFF:
Q2 = (0.81)(5.45)(0.98) = 4.33 CFS
Q10 = (0.81)(7.27)(0.98) = 5.77 CFS
Q100 = 1.25(0.81)(9.84)(0.98) = 9.76 CFS

PROPOSED CHANGES TO THE SITE WILL NOT RESULT IN AN INCREASE IN THE AMOUNT OF IMPERVIOUS AREA, THEREFORE, NO SWM FACILIITES WILL BE PROVIDED AS PART OF THIS DEVELOPMENT.

BMP FACILITY DESIGN CALCULATIONS

II. WATERSHED INFORMATION

PART 1: LIST ALL OF THE SUBAREAS AND "C" FACTORS USED IN THE BMP COMPUTATIONS

SUBAREA DESIGNATION AND DESCRIPTION (1)	"C" (2)	ACRES (3)
A_1 AREA TO STORMFILTER	0.90	0.16
A_2 UNCONTROLLED ONSITE	0.79	0.82
TOTAL		0.98

PART 2: COMPUTE THE WEIGHTED AVERAGE "C" FACTOR FOR THE SITE

(A) AREA OF THE SITE (a) 0.98 ACRES

(B) SUBAREA DESIGNATION (1)	"C" (2)		ACRES (3)	PRODUCT (4)
A_1 AREA TO STORMFILTER	0.90	x	0.16	= 0.14
A_2 UNCONTROLLED ONSITE	0.79	x	0.82	= 0.65
			(b) TOTAL	= 0.79

(C) WEIGHTED AVERAGE "C" FACTOR (b)/(a) = (c) 0.81

PART 3: COMPUTE THE TOTAL PHOSPHORUS REMOVAL FOR THE SITE

SUBAREA DESIGNATION (1)	BMP TYPE (2)	REMOVAL EFF. (%) (3)	AREA RATIO (4)	"C" FACTOR RATIO (5)	PRODUCT (6)
A_1	FILTERRA #1	60	x 0.16/0.98	x 0.90/0.81	= 10.88
				(a) TOTAL =	10.88%

FILTERRA #2 IS OUTSIDE OF SITE LIMITS AND IS EXCLUDED FROM THIS PRELIMINARY CALCULATION

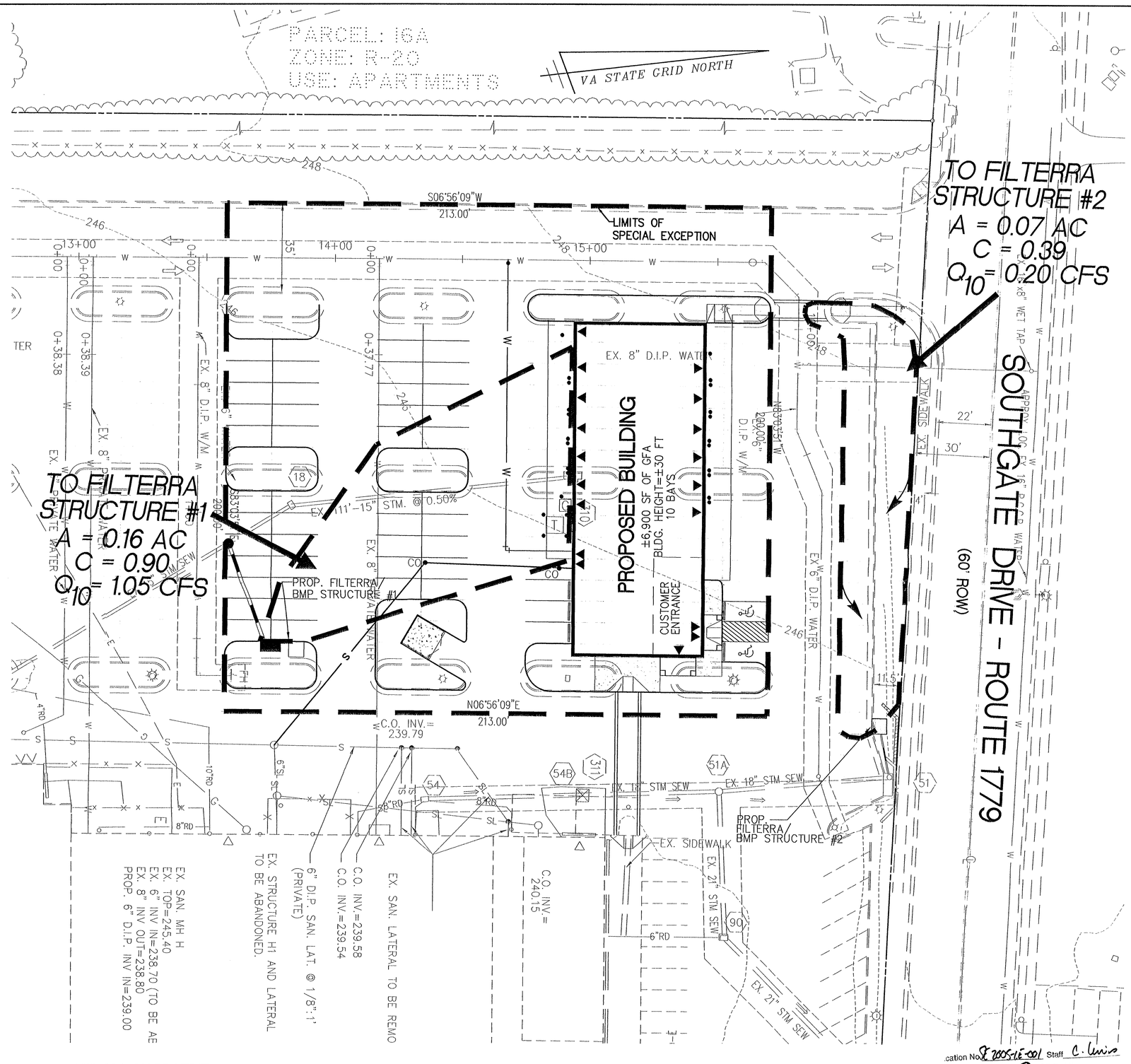
PART 4: DETERMINE COMPLIANCE WITH PHOSPHORUS REMOVAL REQUIREMENT

(A) SELECT REQUIREMENT (a) 6.67%

* WATER SUPPLY OVERLAY DISTRICT (OCCOQUAN WATERSHED) = 50 %
* CHESAPEAKE BAY PRESERVATION AREA (NEW DEVELOPMENT) = 40 %
* CHESAPEAKE BAY PRESERVATION AREA (REDEVELOPMENT) = [1-0.9 x ("C"PRE/"C"POST)] x 100 = [1-0.9 x (0.84/0.81)] x 100 = 6.67%

(B) IF LINE 3(a) 10.88 ≥ LINE 4(a) 6.67 THEN PHOSPHORUS REMOVAL REQUIREMENT IS SATISFIED.

THIS PLAN IS CONCEPTUAL AND IS INTENDED TO BE USED IN CONJUNCTION WITH THE LAND USE APPROVAL PROCESS ONLY. IT IS NOT AN ENGINEERING CONSTRUCTION DRAWING; AND, MINOR DEVIATIONS AND ADJUSTMENTS MAY BE REQUIRED.



OUTFALL NARRATIVE

THE PROPOSED DEVELOPMENT WITHIN THE LIMITS OF SPECIAL EXCEPTION WILL RESULT IN AN OVERALL DECREASE IN IMPERVIOUS AREA. THE C-FACTOR FOR THE AREA IS PROPOSED TO DECREASE FROM 0.84 TO 0.81, THEREFORE NO ADDITIONAL DETENTION IS REQUIRED FIOR THE REDEVELOPMENT. RUNOFF FROM THE APPLICATION AREA SHEET FLOWS TO A STORM SEWER SYSTEM THAT RUNS THROUGH THE BEACON MALL SITE, AND CONTINUES TO FLOW, AFTER LEAVING THE SITE, THROUGH A STORM SEWER SYSTEM DOWN MEMORIAL STREET. ULTIMATE OUTFALL FOR THE SITE IS INTO A FLOODPLAIN APPROXIMATELY 1400 LINEAR FEET DOWNSTREAIM. PLEASE REFERENCE THE ATTACHED INFORMATION ONLY SHEETS FROM APPROVED SITE PLAN #7473-SP-06, WHICH DEMONSTRA'TE ONSITE STORM SEWER CAPACITY AND OUTFALL LOCATIONS. DUE TO THE FACT THAT IMPERVIOUS AREA IS BEING DECREASED WITH THIS APPLICATION, IT IS THE OPINION OF THE SUBMITTING ENGINEER THAT THE OUTFALL IS ADEQUATE.

BMP NARRATIVE

BMP FOR THE LIMITS OF SPECIAL EXCEPTION WILL BE PROVIDED BY A FILTERRA STRUCTURAL DEVICE WHICH HAS A PHOSPHORUS REMOVAL EFFICIENCY OF 60%. ±7,000 SF OF SITE AREA FLOWS TO THE STORMFILTER, PROVIDING ±10% TOTAL PHOSPHORUS REMOVAL. THIS EXCEEDS THE ±6.67% REDEVELOPMENT PHOSPHORUS REMOVAL REQUIREMENT. A SUPPLEMENT FILTERRA/BMP STRUCTURE HAS BEEN ADDED TO TREAT WATER OUTSIDE THE LIMITS OF THE SPECIAL EXCEPTION SITE AREA.

Application No. S 2005-LE-001 Staff C. Lewis
APPROVED SE / SP PLAN
SEE DEV CONDS DATED 6-16-05
Date (BOS) / (BZA) approval 6-20-05
3 of 5

WALTER L. PHILLIPS
INCORPORATED
CIVIL ENGINEERS LAND SURVEYORS PLANNERS LANDSCAPE ARCHITECTS
207 PARK AVENUE, FALLS CHURCH, VIRGINIA 22046
(703) 532-6163 FAX (703) 533-1301

DATE: 12/02/04 REV. 1/20/05
REV. 3/3/05 REV. 5/31/05
DRAWN: MEF
SCALE: 1" = 20'

COMMONWEALTH OF VIRGINIA
TERRANCE M. FLANNERY
5-31-05
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

REVISION APPROVED BY

PRELIMINARY STORMWATER MANAGEMENT PLAN

BEACON MALL

PROP. VEHICLE LIGHT SERVICE ESTABLISHMENT

LEE DISTRICT

FAIRFAX COUNTY, VIRGINIA

SHEET: 2 OF 4

File No. FB-10 Tax Map No. 93-1 Job No. 94-075 Cadd Dwg. File: 94075SE5 Xref:

OUTFALL NARRATIVE

THIS PROJECT CONSISTS OF THE REDEVELOPMENT OF AN APPROXIMATE 13-ACRE PORTION OF EXISTING BEACON MALL. DUE TO A REDUCTION IN OVERALL IMPERVIOUS AREA FOLLOWING DEVELOPMENT, THE OVERALL RUNOFF PROCLUDED IS DECREASED. ALL RUNOFF LEAVES THE SITE VIA ONE OF FIVE SEPARATE STORM OUTFALLS.

NOTE: RUNOFF FROM OUTFALLS #1 – #4 ARE CONVEYED TO AN ADEQUATE STORM SEWER SYSTEM ON ROUTE 1 THAT EVENTUALLY LEADS TO AN ADEQUATE 48" STORM PIPE BETWEEN STRUCTURES 69 AND 100 LEADING TO THE EAST UNDER RTE. 1 AT THE INTERSECTION WITH MEMORIAL STREET.

OUTFALL #1

LEADING TO EXISTING STRUCTURE 40B ON RTE. 1 IS A 21" PIPE SLOPED AT 2.5%. WITH A 10-YEAR CAPACITY OF 25 CFS, THIS PIPE IS ADEQUATE TO CONVEY THE POST--DEVELOPMENT 10-YEAR RUNOFF OF 17 CFS. IMMEDIATELY UPSTREAM, THE EXISTING 18" PIPE BETWEEN STRUCTURES 41 AND 41A IS TO BE UPSIZED TO A 21" PIPE IN ORDER TO CONTAIN THE 10-YEAR STORM WITHIN THE SYSTEM CONSTRAINTS. (SEE HGL PROFILE ON SHEET 15 AND HGL COMPUTATIONS ON SHEET 17.)

OUTFALL #2

LEADING TO STRUCTURE 28 ON RTE. 1 IS A 21" PIPE SLOPED AT 1.3%. WITH A 10-YEAR CAPACITY OF 18 CFS AND DESIGN RUNOFF OF 23 CFS, THIS PIPE OPERATES UNDER PRESSURE FLOW FOR THE 10-YEAR STORM. A HYDRAULIC GRADE LINE ANALYSIS ON THIS SYSTEM AS SHOWN ON SHEET 17 AND PROFILED ON SHEET 14 DEMONSTRATES THE OUTFALL IS ADEQUATE TO CONVEY THE DESIGN RUNOFF.

OUTFALL #3

LEADING TO STRUCTURE 29A ON RTE. 1 IS AN 18" PIPE SLOPED AT 0.8%. WITH A 10-YEAR CAPACITY OF 9.5 CFS AND DESIGN RUNOFF OF 14.4 CFS, THIS PIPE OPERATES UNDER PRESSURE FLOW FOR THE 10-YEAR STORM. A HYDRAULIC GRADE LINE ANALYSIS ON THIS SYSTEM AS SHOWN ON SHEET 17 AND PROFILED ON SHEET 16 DEMONSTRATES THE OUTFALL IS ADEQUATE TO CONVEY THE DESIGN RUNOFF.

OUTFALL #4

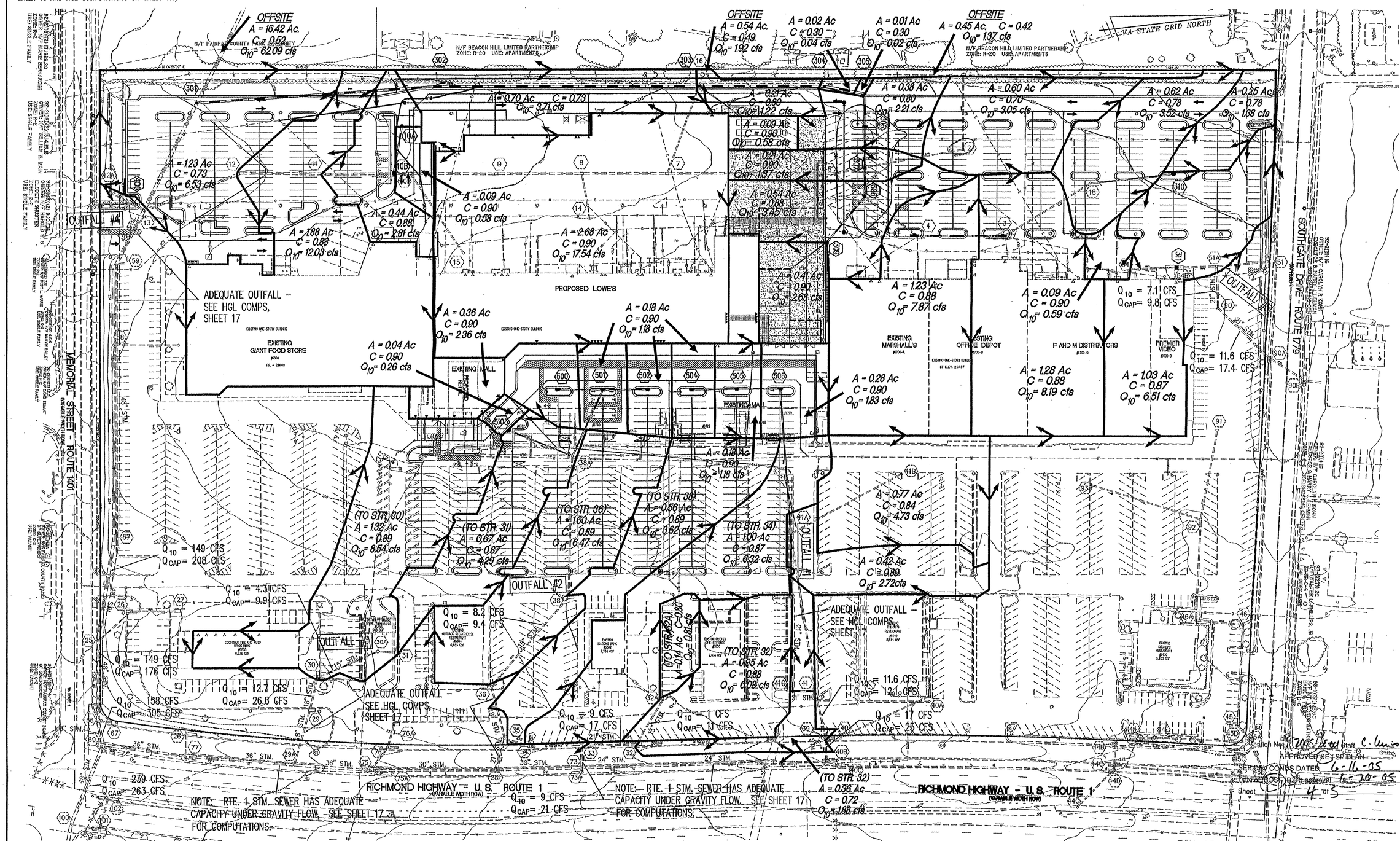
LEADING TO STRUCTURE 69 ON RTE. 1 IS A 48" PIPE SLOPED AT 4.5%, WITH A 10-YEAR CAPACITY OF 305 CFS. THIS PIPE IS ADEQUATE TO CONVEY THE POST-DEVELOPMENT 10-YEAR RUNOFF OF 158 CFS. UPSTREAM FROM THIS PIPE ENDING AT STRUCTURE 57 ARE TWO LENGTHS OF 48" PIPE ADEQUATELY SIZED TO CONVEY THE 10-YEAR STORM. UPSTREAM FROM STRUCTURE 57 AND ENDING AT STRUCTURE 13 ARE TWO LENGTHS OF 48" PIPE WHICH OPERATE UNDER PRESSURE FLOW. A HYDRAULIC GRADE LINE ANALYSIS ON THIS SYSTEM AS SHOWN ON SHEET 17 AND PROFILED ON SHEET 16 DEMONSTRATES THE OUTFALL IS ADEQUATE TO CONVEY THE DESIGN RUOFF.

OUTFALL #5

LEADING TO STRUCTURE 90 ON SOUTHGATE DRIVE IS A 21" PIPE SLOPED AT 1.2% WITH A 10-YEAR CAPACITY OF 17.4 CFS. THE PIPE IS ADEQUATELY SIZED TO CONVEY THE POST-DEVELOPMENT 10-YEAR RUNOFF OF 11.6 CFS.

ADEQUATE OUTFALL STATEMENT

BECAUSE THE POST-DEVELOPMENT 10-YEAR RUNOFF IS CONTAINED WITHIN THE EXISTING CLOSED STORM SEWER PIPE OUTFALLS #1 THROUGH #5 AS DESCRIBED ABOVE, IT IS THE OPINION OF THE ENGINEER THAT THE OUTFALL IS ADEQUTE.



WALTER L. PHILLIPS
INCORPORATED
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207 PARK AVENUE FALLS CHURCH, VIRGINIA 22046
(703) 532-6163 FAX (703) 533-1301

DATE: FEBRUARY 25, 1998 REV. 4-14-98
REV. 3-6-98 5-13-98
DRAWN: KJC / TOM O / KJC
SCALE: 1" = 60'

COMMONWEALTH OF VIRGINIA
DAVID K. CULVER
NO. 017143
7-13-98
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

DRAINAGE DIVIDES AND ADEQUATE OUTFALL PLAN

REVISION APPROVED BY

BEACON MALL

LEE DISTRICT
FAIRFAX COUNTY, VIRGINIA

Station No. 20/5 Exist. Stat. C. Lewis
APPROVED SE/SP PLAN
SE/SP PLAN CONDS DATED 6-16-05
Date of BOS/BZA approval 6-20-05
Sheet 4 of 5

File No. FB-10 Tax Map No. 92-2 Job No. 94-075 Cadd Dwg. File: 94075DD1 Xref: 94075BS1

FOR INFORMATION ONLY
PER APPROVED SITE PLAN 7472-SP-06

SHEET 3 OF 4 SHEET: 18 OF 29

STORM SEWER DESIGN COMPUTATIONS

*	*	*	*		*	*	*		*	*	*	*	*	*	*
FROM POINT (1)	TO POINT (2)	AREA DRAIN "A" ACRES (3)	RUN-OFF COEF. C (4)	CA INCRE-MENT (5)	ACCUM-ULATED (6)	INLET TIME MIN-UTES (7)	RAIN FALL IN/HR (8)	RUNOFF Q C.F.S. (9)	INVERT ELEV'S UPPER END (10)	LOWER END (11)	LENGTH FT. (12)	SLOPE FT./FT. (13)	DIA. IN. (14)	CAPA-CITY C.F.S. (15)	VEL. F.P.S. (16)
504	505	.18	.90	.16	.16	5	7.27	1.16	240.70	240.40	60	.005	15	4.57	3.1
505	506	.18	.90	.16	.32	5	7.27	2.33	240.30	240	60	.005	15	4.57	3.7
506	EX. 41A	.28	.90	.25	.57	5	7.27	4.14	239.90	239.31	196	.003	18	5.75	3.5
EX. 41B	EX. 41A	.77	.84	.65	.65	5	7.27	4.73	240.41	239.31	169	.007	15	5.21	5.0
EX. 41A	41C	.42	.89	.37	1.59	5	7.27	11.56	239.09	238.13	213	.0045	21	10.63	5.3
41C	EX. 41	0	0	.00	1.59	5	7.27	11.56	238.08	237.95	31	.0042	21	10.27	5.3
EX. 41	EX. 39	0	0	.00	1.59	5	7.27	11.56	237.90	237.22	63	.011	18	12.10	6.5
EX. 40	EX. 39	.92	.80	.74	.74	5	7.27	5.38	238.73	237.77	15	.064	18	26.76	11.8
EX. 39	EX. 40B	.21	.75	.16	2.33	5	7.27	16.94	236.97	236.22	30	.025	21	25.05	11.2
EX. 32A	EX. 32	.14	.80	.11	.11	5	7.27	.80	236.28	234.32	69	.028	15	10.89	5.2
EX. 32	EX. 33	1.31	.88	1.15	1.27	5	7.27	9.23	234.17	233.31	75	.011	21	16.99	7.1
EX. 33	EX. 73	.11	.65	.07	1.34	5	7.27	9.74	232.66	232.13	31	.017	24	29.58	8.4
EX. 73A	EX. 73	.58	.83	.48	.48	5	7.27	3.49	233.57	233.53	5	.008	15	5.78	4.9
502	501	.18	.90	.16	.16	5	7.27	1.16	239.97	239.67	60	.005	15	4.57	3.1
500	501	.36	.90	.32	.32	5	7.27	2.33	239.97	239.67	60	.005	15	4.57	3.7
503	EX. 38A	.04	.90	.04	.04	5	7.27	.29	239.53	239.07	92	.005	15	4.57	2.1
501	EX. 38A	.18	.90	.16	.64	5	7.27	4.65	239.57	239.07	100	.005	18	7.43	4.4
EX. 39A	EX. 38	0	0	.00	.64	5	7.27	4.65	238.97	236.18	191	.015	15	7.81	6.7
EX. 38	EX. 36	.56	.89	.49	1.13	5	7.27	8.22	236.08	232.76	158	.021	15	9.36	8.6
EX. 36	EX. 35	1	.89	.89	2.02	5	7.27	14.69	232.51	231.48	73	.014	18	12.47	8.3
EX. 35	EX. 28	.23	.88	.20	3.09	5	7.27	22.46	231.06	230.47	45	.013	21	18.14	9.3
EX. 34	EX. 35	1	.87	.87	.87	5	7.27	6.32	232.33	231.74	40	.015	15	8.20	7.2
EX. 31	EX. 30	.67	.87	.58	.58	5	7.27	4.22	231.81	229.71	89	.024	15	9.92	7.8
EX. 30	EX. 29	1.32	.89	1.17	1.75	5	7.27	12.72	229.61	226.67	45	.065	18	26.84	15
EX. 29	EX. 29A	.26	.89	.23	1.98	5	7.27	14.39	226.45	225.83	77	.008	18	9.45	8.1
EX. 79	EX. 77			.00	.16	5	7.27	1.16	222.84	222.83	33	.0003	18	1.82	1.1
EX. 40C	EX. 49B	.09	.71	.06											
FROM RTE.	1	.24	.90	.22	.28	5	7.27	2.04	236.53	236.17	22	.016	18	13.45	5.4
EX. 40B	EX. 73	.09	.74	.07	2.62	5	7.27	19.05	236.14	232.20	331	.012	24	24.68	8.4
EX. 73	EX. 28	0	0	.00	4.44	5	7.27	32.28	231.78	229.69	114	.018	30	55.49	11.5
EX. 28	EX. 75	0	0	.00	7.53	5	7.27	54.74	229.54	226.32	166	.019	30	57.13	13.0
EX. 75	EX. 29A	.11	.67	.07	8.21	5	7.27	59.69	226.12	224.31	103	.018	36	88.49	13.0
EX. 29A	EX. 77	0	0	.00	10.19	5	7.27	74.08	224.15	221.37	145	.019	36	91.94	14.2
EX. 77	EX. 69	.55	.84	.46	10.81	5	7.27	78.59	221.30	218.82	114	.022	36	98.48	15.1
EX. 69	EX. 100	.21	.87	.18	32.83	5	7.27	238.67	214.12	210.35	113	.033	48	262.50	23.0
EX. 75A	EX. 75				.36	5	7.27	2.62	227.61	226.58	16	.064	24	57.26	9.3
EX. 76	EX. 75	.22	.49	.11	.25	5	7.27	1.82	227.65	227.02	40	.016	24	28.53	5.1
310	EX. 18	.25	.78	.20	.20	5	7.27	1.45	242.36	241.80	111	.005	15	4.57	3.2
EX. 18	EX. 3	.62	.78	.48	.68	5	7.27	4.94	241.70	240.59	135	.008	15	5.80	5.3
EX. 3	EX. 4	1.28	.88	1.13	1.81	5	7.27	13.16	240.50	239.35	117	.010	21	15.85	7.4
EX. 4	308	1.23	.88	1.08	2.89	5	7.27	21.01	239.30	238.17	85	.013	21	17.72	8.7
308	307	.54	.90	.49	3.75	5	7.27	27.26	238.07	237.33	39	.019	24	31.18	11.1
309	308	.41	.90	.37	.37	5	7.27	2.69	238.97	238.17	80	.010	15	6.46	4.1
307	306	.21	.90	.19	4.55	5	7.27	33.08	237.23	235.83	56	.025	24	35.77	12.9
306	305	.38	.80	.30	4.85	5	7.27	35.26	235.73	235.28	45	.010	33	52.90	9.5
305	304	.01	.30	.00	4.85	5	7.27	35.26	235.18	234.62	56	.010	33	52.90	9.5
304	303	.02	.30	.01	4.86	5	7.27	35.33	234.52	232.83	169	.010	33	52.90	9.5
303	302	.21	.80	.17	5.37	5	7.27	39.04	232.73	229.21	352	.010	33	52.90	9.6
302	301	.70	.73	.51	5.88	5	7.27	42.75	229.11	225.93	318	.010	33	52.90	9.8
301	EX. 13	0	0	0	14.42	5	7.27	104.83				.006	48	108	9.7
10A	10B	2.68	.90	2.41	2.41	5	7.27	17.52	232.28	230.62	83	.020	21	23	10.4
10B	EX. 11	.09	.90	.08	2.49	5	7.27	18.10	230.42	228.91	93	.016	33	67.52	9.7
EX. 11	EX. 12	.44	.88	.39	2.88	5	7.27	20.94	228.80	227.83	110	.009	36	63.20	8.1
EX. 12	EX. 13	1.88	.88	1.65	4.53	5	7.27	32.93	227.53	225.60	139	.014	36	78.90	10.7
EX. 13	EX. 59	0	0	.00	19.85	5	7.27	144.31	224.10	224.07	86	.0003	48	28.73	11.3
EX. 59	EX. 58	.42	.76	.28	20.13	5	7.27	146.35	223.95	222.40	107	.014	48	173	15.2
EX. 58	EX. 57	0	0	0	20.13	5	7.27	146.35	222.33	219.85	268	.009	48	138.50	11.4
EX. 57	EX. 25	.70	.89	.62	20.75	5	7.27	150.86	220.16	217.37	133	.021	48	208.20	18.0
EX. 27	EX. 26	1.04	.89	.93	.93	5	7.27	6.76	230.52	227.40	58	.054	15	14.97	11.9
EX. 26	EX. 25	.27	.86	.23	1.16	5	7.27	8.43	226.89	224.41	60	.041	15	13.20	11.3
EX. 25	EX. 56	0	0	0	21.91	5	7.27	159.29	217.31	215.65	110	.015	48	176.50	15.8
EX. 67	EX. 56	.43	.49	.21	.21	5	7.27	1.53	219.93	218.41	24	.063	15	16.10	8.3
EX. 56	EX. 69	0	0	0	22.12	5	7.27	160.81	215.61	214.07	34	.045	48	304.70	24.5

FROM POINT	TO POINT	AREA DRAIN "A" ACRES	RUN-OFF COEF. C	CA INCRE-MENT	ACCUM-ULATED	INLET TIME MIN-UTES	RAIN FALL IN/HR	RUNOFF Q C.F.S.	INVERT ELEV'S UPPER END	LOWER END	LENGTH FT.	SLOPE FT./FT.	DIA. IN.	CAPA-CITY C.F.S.	VEL. F.P.S.
OFFSITE	301	16.42	.52	8.54	8.54	5	7.27	62.09				.006	48	108	9.1
EX. 1	EX. 2	.45	.42	.19	.19	5	7.27	1.38	242.76	240.53	102	.022	15	9.47	5.5
EX, 2	307	.60	.70	.42	.61	5	7.27	4.43	240.31	237.43	134	.021	15	9.47	7.6
TRENCH D	303	.09	.90	.08	.08	5	7.27	.58							
EX. 16	303	.54	.49	.26	.26	5	7.27	1.89	239.18	238.84	17	.020	15	9.14	5.9
400	13	1.23	.73	.90	.90	5	7.27	6.54	229.80	229.18	35	.020	15	9.14	8.1
EX. 54	311	.09	.90	.08	.08	5	7.27	.58	240.99	240.64	62	.006	18	7.93	2.7
311	EX. 51A	1.03	.87	.90	.98	5	7.27	7.12	240.63	240.33	53	.006	18	7.93	5.2
EX. 51A	EX. 90	0	0		.98	5	7.27	7.12	239.90	239.68	57	.004	21	9.77	4.5
EX. 90	EX. 90A	.71	.87	.62	1.60	5	7.27	11.63	239.58	238.44	94	.012	21	17.43	7.7

STORM INLET COMPUTATIONS

INLET NUMBER	INLET TYPE	INLET LENGTH (FEET)	STATION	DRAINAGE AREA (ACRES)	C	CA	W CA	I IN/HR	Q INCR (CFS)	Q CARRYOVER (CFS)	Q_T GUTTER FLOW	S GUTTER SLOPE (FT./FT.)	S_X CROSS SLOPE (FT./FT.)	T (SPREAD)	W (FT.)	W/T	Sw (FT./FT.)	Sw/Sx	Eo (# 10)	a	Sw' = a/(12W)	Se (FT./FT.) = Sx + Sw'Eo	LT (FT) 15 / P EFFEC LENGTH (FT)	L/LT / d (FT)	E (# 16) / h (FT)	Q INTERCEPTED CFS / d/h	Qb CARRYOVER T SPREAD • SAG (FT)	REMARKS
500	DI-3C	6	0.00	0.09	0.90	0.08	0.16	7.27	1.18	0.00	1.18	0.010	0.025	2.79	-----	-----	-----	-----	-----	-----	-----	-----	9.60	0.14	0.46	0.31	5.66	
501	DI-3C	6	0.00	0.09	0.90	0.08	0.16	7.27	1.18	0.00	1.18	0.010	0.025	2.79	-----	-----	-----	-----	-----	-----	-----	-----	9.60	0.14	0.46	0.31	5.66	
502	DI-3C	6	0.00	0.09	0.90	0.08	0.16	7.27	1.18	0.00	1.18	0.010	0.025	2.79	-----	-----	-----	-----	-----	-----	-----	-----	9.60	0.14	0.46	0.31	5.66	
503	DI-3C	6	0.00	0.02	0.90	0.02	0.04	7.27	0.26	0.00	0.26	0.010	0.020	1.28	-----	-----	-----	-----	-----	-----	-----	-----	9.60	0.05	0.46	0.11	2.60	
504	DI-3C	6	0.00	0.02	0.90	0.02	0.04	7.27	0.26	0.00	0.26	0.010	0.020	1.28	-----	-----	-----	-----	-----	-----	-----	-----	9.60	0.05	0.46	0.11	2.60	
505	DI-3C	6	0.00	0.02	0.90	0.02	0.04	7.27	0.26	0.00	0.26	0.010	0.020	1.28	-----	-----	-----	-----	-----	-----	-----	-----	9.60	0.05	0.46	0.11	2.60	
506	DI-3C	6	0.00	0.09	0.90	0.08	0.23	7.27	1.70	0.00	1.70	0.010	0.025	4.56	-----	-----	-----	-----	-----	-----	-----	-----	9.60	0.18	0.46	0.39	7.24	
310	DI-3C	6	0.00	0.13	0.78	0.10	0.20	7.27	1.42	0.00	1.42	0.010	0.027	3.30	-----	-----	-----	-----	-----	-----	-----	-----	9.60	0.16	0.46	0.35	5.93	
EX. 3	DI-3C	10	0.00	0.64	0.88	0.56	1.13	7.27	8.19	0.00	8.19	0.020	0.025	7.66	-----	-----	-----	-----	-----	-----	-----	-----	13.60	0.41	0.46	0.90	16.36	
EX. 4	DI-3C	10	0.00	0.62	0.88	0.55	1.09	7.27	7.93	0.00	7.93	0.020	0.025	7.55	-----	-----	-----	-----	-----	-----	-----	-----	13.60	0.40	0.46	0.87	16.02	
306	DI-3C	6	0.00	0.20	0.80	0.16	0.32	7.27	2.33	0.00	2.33	0.010	0.040	3.77	-----	-----	-----	-----	-----	-----	-----	-----	9.60	0.22	0.46	0.48	5.57	
305	DI-3B	4	0.00	0.01	0.30	0.00	0.00	7.27	0.02	0.00	0.02	0.010	0.020	0.65	2.00	3.06	0.08	4.20	1.00	3.50	0.15	0.17	1.20	3.33	1.00	0.02	0.00	
304	DI-3B	4	0.00	0.02	0.30	0.01	0.01	7.27	0.04	0.00	0.04	0.010	0.020	0.85	2.00	2.36	0.08	4.20	1.00	3.50	0.15	0.17	1.60	2.50	1.00	0.04	0.00	
303	DI-3B	6	0.00	0.16	0.75	0.12	0.12	7.27	0.87	0.00	0.87	0.01	0.02	4.28	2.00	0.47	0.08	4.20	0.93	3.50	0.15	0.16	5.90	1.02	1.00	0.87	0.00	
302	DI-3C	10	0.00	0.20	0.73	0.15	0.51	7.27	3.72	0.00	3.72	0.010	0.025	7.35	-----	-----	-----	-----	-----	-----	-----	-----	13.60	0.24	0.46	0.52	9.66	
10A	DI-3C	4	0.00	0.05	0.90	0.05	0.08	7.27	0.59	0.00	0.59	0.031	0.045	1.46	-----	-----	-----	-----	-----	-----	-----	-----	7.60	0.10	0.46	0.22	2.32	
400	DI-3C	20	0.00	0.37	0.73	0.27	0.92	7.27	6.69	0.00	6.69	0.012	0.014	3.11	-----	-----	-----	-----	-----	-----	-----	-----	23.60	0.25	0.46	0.55	17.67	
41A	DI-1			0.42	0.89	0.37		7.27	2.70		L=9'		L/2=4.5'		Q/L=0.60		d=0.36'											
EX. 11	4.7X3.5 '		GRATE	0.44	0.88	0.39		7.27	2.80		L=16.4'		L/2=8.2'		Q/L=0.34		d=0.26'											
EX. 12	4.5X3.2 '		GRATE	1.88	0.88	1.65		7.27	12.0		L=15.4'		L/2=7.7'		Q/L=1.60		d=0.58'											
307	DI-1			0.25	0.90	0.23		7.27	1.64		L=9'		L/2=4.5'		Q/L=0.36		d=0.29'											
308	DI-1			0.63	0.90	0.57		7.27	4.10		L=9'		L/2=4.5'		Q/L=0.91		d=0.45'											
311	DI-1			1.03	0.87	0.90		7.27	6.50		L=9'		L/2=4.5'		Q/L=1.45		d=0.58'											

HYDRAULIC GRADE LINE COMPUTATIONS

(REFER TO STORM SEWER PROFILE SHEETS 14, 15 AND 16 FOR HYDRAULIC GRADE LINE PROFILE)

INLET STATION	OUTLET WATER SURFACE ELEV.	Do	Qo	Lo	Sfo%	Hf	Vo	Ho	Qi	Vi	QiVi	Vi^2/2G	Hi	ANGLE	Hd	Ht	1.3* Ht	0.5* Ht	FINAL H	INLET WATER SURFACE ELEV.	RIM ELEV.	DIFF.
57–58	23.35	48	147	268	.0105	2.81	11.70	.11	147	11.70	1720	2.13	.21	0	.00	.32	.32	.16	2.97	26.32	35.95	9.63
58–59	26.32	48	147	107	.0105	1.12	11.70	.11	145	11.60	1662	2.09	.21	30	.44	.74	.96	.48	1.60	27.92	34.50	6.58
59–13	27.92	48	145	86	.0102	.86	11.40	.20	76	10.50	798	1.71	.17	40	.46	.83	1.08	.54	1.40	29.14	34.40	5.26
13–12	29.14	36	74	139	.0123	1.72	10.50	.09	65	6.50	423	.65	.07	20	.10	.26	.34	.17	1.89	31.03	35.48	4.45
28–35	31.85	21	23.10	45	.0213	.96	9.60	.07	15.30	8.70	133.11	1.16	.12	30	.24	.43	.56	.28	1.24	33.09	35.04	1.95
35–36	33.09	18	15.30	73	.0212	1.53	8.66	.06	8.80	8.70	76.56	1.18	.12	50	.38	.56	.73	.36	1.89	34.98	37.11	2.13
36–38	34.98	15	8.80	158	.0186	2.94	8.70	.06	5.23	6.80	35.56	.72	.07	40	.19	.32	.42	.21	3.15	38.13	40.78	2.65
38–38A	38.13	15	5.23	191	.0066	1.26	6.80	.04				.00	.00	90	.00	.04	.05	.03	1.30	39.43	43.60	4.17
39–41	38.42	18	11.60	63	.0140	.88	6.60	.04	11.60	5.30	61.48	.44	.04	10	.00	.08	.10	.05	.93	39.35	43.20	3.85
41–41C	39.35	21	11.6	31	.0050	0.16	4.82	.02	11.6	4.82	56	.36	.04	90	.15	.21	.21	.11	.27	39.62	42.90	3.28
41C–41A	39.62	21	11.6	213	.0050	1.07	4.82	.02	5	4.97	25	.38	.04	10	.00	.06	.08	.04	1.11	40.73	43.80	3.07
29A–29	27.03	18	14.40	77	.0185	1.42	8.10	.05	12.70	15	190.50	3.50	.35	0	.00	.40	.52	.26	1.69	28.72	33.52	4.80

SWM NARRATIVE

(INCLUDING DETAILED DRAINAGE ANALYSIS AND COMPLIANCE WITH LETTER TO THE INDLUSTRY 21–88.)

PROPOSED AS PART OF THIS CONSTRUCTION IS A SIGNIFICANT REDUCTION IN IMPERVIOUS AREA IN ORDER TO MEET INTERIOR PARKING LOT LANDSCAPING, PERIMETER PARKING LOT LANDSCAPING, TRANSITION YARD AND OPEN SPACE ORDINANCE REQUIREMENTS, A TOTAL NET CONVERSION FROM IMPERVIOUS TO LANDSCAPED AREA OF 58,400 SF IS PROPOSED. AS A RESULT, THE OVERALL "C" FACTOR WITHIN THE SITE PLAN LIMITS WILL DECREASE FROM C_{PRE} = 0.87 TO C_{POST} = 0.81. THEREFORE, THE FOLLOWING TOTAL REDUCTION IN PEAK RUNOFF IS PROPOSED:

SITE AREA = 13.7 ACRES
TIME OF CONCENTRATION = 5 MIN. FOR PREDEVELOPMENT AND POSTDEVELOPMENT: I_2 = 5.45 IN/HR, I_{10} = 7.27 IN/HR

PREDEVELOPMENT PEAK RUNOFF
Q_2 = 65.0 CFS
Q_{10} = 86.7 CFS

POSTDEVELOPMENT PEAK RUNOFF
Q_2 = 60.5 CFS
Q_{10} = 80.7 CFS

NET REDUCTION IN STORMWATER RUNOFF
2-YR STORM = 4.5 CFS
10-YR STORM = 6.0 CFS

AS A RESULT OF THIS DEVELOPMENT, THERE IS A DECREASE IN STORMWATER RUNOFF. ADDITIONALLY, THERE WILL BE NO ADVERSE DOWNSTREAM EFFECTS AS A RESULT OF THIS DEVELOPMENT. THEREFORE, NO STORMWATER DETENTION IS REQUIRED IN ACCORDANCE WITH LETTER TO THE INDUSTRY 21–88.

ABBREVIATED STORMWATER DETENTION SUMMARY

(PER LETTER TO THE INDUSTRY 21–88)

1) DETAILED DRAINAGE ANALYSIS (SEE SWM NARRATIVE THIS SHEET.)
2) FOLLOWING DEVELOPMENT, THERE WILL BE AN OVERALL DECREASE IN STORMWATER RUNOFF.
3) THERE WILL BE NO ADVERSE EFFECTS DOWNSTREAM AFTER DEVELOPMENT.

ication No. SE 2005-LE-001 Staff C. Lmo
APPROVED (SE) / SP PLAN
SEE DEV CONDS DATED 6-16-05
Date of (BOS) (BZA) approval 6-20-05
Sheet 5 of 5

FOR OVERLAND RELIEF NARRATIVE AND COMPUTATIONS, SEE SHEET 17A.
FOR ADEQUATE OUTFALL NARRATIVE, SEE SHEET 18.

WALTER L. PHILLIPS
INCORPORATED
CIVIL ENGINEERS LAND SURVEYORS PLANNERS LANDSCAPE ARCHITECTS
207 PARK AVENUE FALLS CHURCH, VIRGINIA 22046
(703) 532-6163 FAX (703) 533-1301

DATE: FEBRUARY 17, 1998
3-6-98 REV. 4-14-98, 5-13-98
DRAWN: KJC
SCALE: N/A

COMMONWEALTH OF VIRGINIA
DAVID K. OLIVER
NO. 017143
5-13-98
PROFESSIONAL ENGINEER

REVISION APPROVED BY

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

STORM SEWER COMPUTATIONS

BEACON MALL
LEE DISTRICT
FAIRFAX COUNTY, VIRGINIA