CENTREVILLE SQUARE

SULLY DISTRICT   FAIRFAX COUNTY, VIRGINIA

FAST FOOD SPECIAL EXCEPTION PLAT

NOTES

1. OWNER/ APPLICANT:
   CENTREVILLE SQUARE PROJECT, L.P.
   SUITE 300
   9302 LEE HIGHWAY
   FAIRFAX, VA 22031
2. THE PROPERTY SHOWN ON THIS PLAN IS IDENTIFIED AS MAP #54-3-01-0014 ON THE FAIRFAX COUNTY TAX MAP.
3. THIS APPLICATION IS FOR A CHANGE IN USE ONLY. THERE ARE NO PROPOSED IMPROVEMENTS OR NEW CONSTRUCTION OTHER THAN BUILDING AND PEDESTRIAN ENTRANCE MODIFICATIONS WHICH MAY BE REQUIRED TO ACCOMMODATE THE NEW FAST FOOD USES.
4. THIS PROPERTY IS CURRENTLY ZONED C-7, REGIONAL RETAIL COMMERCIAL DISTRICT. PER ZONING ORDINANCE SEC. 4-705(1)(A)(2) A SPECIAL EXCEPTION IS REQUESTED FOR USE OF UP TO FOUR FAST FOOD RESTAURANTS (WITHOUT DRIVE-THRUS) ON THIS PROPERTY. THIS IS A CATEGORY 5 SPECIAL EXCEPTION.
5. THE EXISTING CONDITIONS, BOUNDARY, AND TOPOGRAPHIC INFORMATION HAS BEEN PREPARED USING RECORD INFORMATION AND HAS NOT BEEN SURVEYED. CONTOUR INTERVAL IS TWO (2) FEET.
6. THERE ARE NO PROPOSED SPECIAL AMENITIES FOR THIS PROPERTY.
7. PROPERTY IS SERVED BY PUBLIC WATER AND SEWER.
8. A REVIEW OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 515525 0025 D, REVISED MARCH 5, 1990, SHOWS THE PROPERTY TO LIE IN ZONE X, "AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN."
9. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO GRAVES LOCATED ON THE SITE.
10. TO THE BEST OF OUR KNOWLEDGE, ALL UTILITY EASEMENTS HAVING A WIDTH OF 25 FEET OR MORE ON THIS PROPERTY ARE SHOWN.
11. TO THE BEST OF OUR KNOWLEDGE AND BELIEF, THERE ARE NO HAZARDOUS SUBSTANCES ON THIS PROPERTY.
12. THERE ARE NO SCENIC ASSETS OR NATURAL FEATURES ON THIS PROPERTY DESERVING OF PROTECTION AND/OR PRESERVATION.
13. ACCORDING TO FAIRFAX COUNTY MAPPING THIS SITE LIES OUTSIDE THE RESOURCE PROTECTION AREA (RPA).
14. THIS SPECIAL EXCEPTION APPLICATION DOES NOT REQUIRE ANY CLEARING OR GRADING ACTIVITIES, THEREFORE THERE IS NO LIMITS OF CLEARING AND GRADING SHOWN ON THE SE PLAT. THIS DOES NOT PRECLUDE THE OWNER FROM SUBMITTING REVISIONS TO THE SITE PLAN IN THE FUTURE. SINCE THERE IS NO LIMITS OF CLEARING AND GRADING, AN EXISTING VEGETATION MAP IS NOT REQUIRED.
15. ALL EXISTING BUILDINGS/STRUCTURES WERE CONSTRUCTED IN 1988 AND ARE TO BE RETAINED.
16. ALL NEW SIGNAGE WILL BE SUBJECT TO CURRENT ORDINANCE REGULATIONS.

OUTFALL NARRATIVE

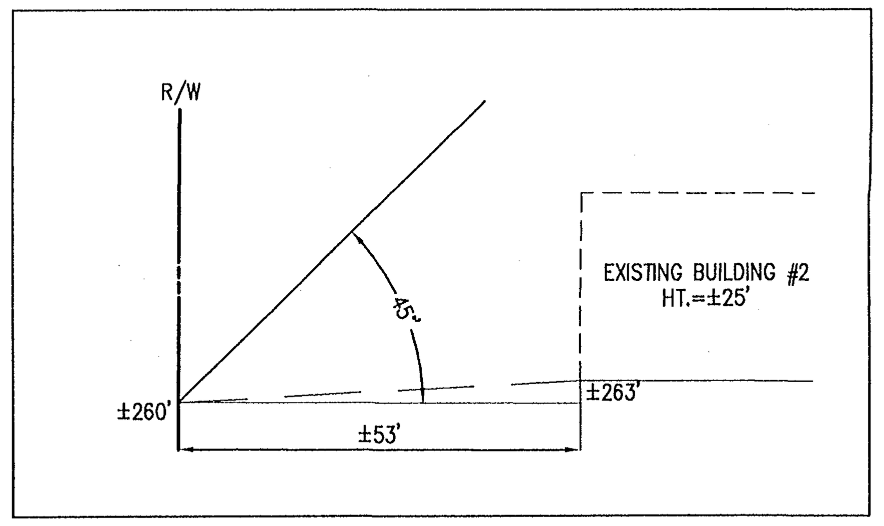
THERE IS NO NEW CONSTRUCTION WHICH WOULD CHANGE THE EXISTING RATIO OF IMPERVIOUS SURFACES OR EXISTING STORMWATER DRAINAGE SYSTEM. THIS APPLICATION IS FOR A CHANGE OF USE ONLY. THE PROPOSED REDEVELOPMENT WILL NOT INCREASE THE IMPERVIOUS RUNOFF FROM THIS PROPERTY. THEREFORE, THERE WILL BE NO ADVERSE IMPACT TO THE EXISTING OUTFALL.

SWM/BMP NARRATIVE

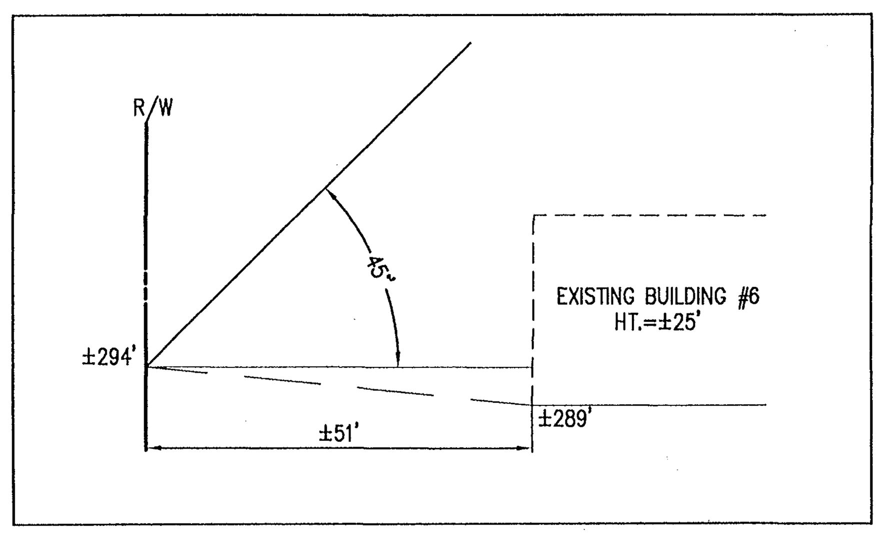
THERE IS NO NEW CONSTRUCTION WHICH WOULD CHANGE THE EXISTING RATIO OF IMPERVIOUS SURFACES OR EXISTING STORMWATER DRAINAGE SYSTEM. THE PROPOSED FAST FOOD USES WILL NOT INCREASE THE IMPERVIOUS RUNOFF FROM THIS PROPERTY; THEREFORE, NO ADDITIONAL DETENTION WILL BE REQUIRED. FOR INFORMATIONAL PURPOSES, ATTACHED ARE THE SWM/BMP SHEETS FROM THE APPROVED SITE PLAN FOR INFORMATION.

MODIFICATIONS REQUESTED

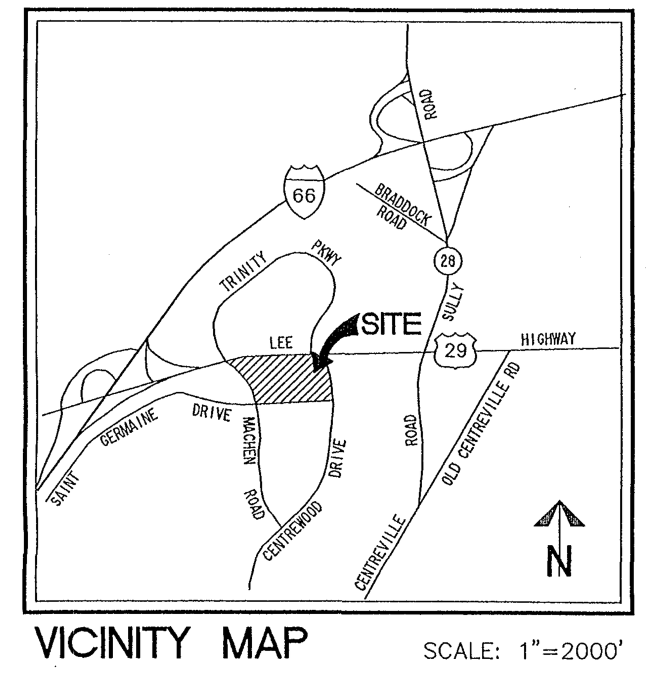
1. REQUEST A MODIFICATION OF THE 10' TRAIL REQUIREMENT ALONG LEE HIGHWAY TO ALLOW THE EXISTING 4' SIDEWALK TO REMAIN.



LEE HIGHWAY
ANGLE OF BULK PLANE DETAIL
SCALE 1"=20'



CENTREWOOD DRIVE
ANGLE OF BULK PLANE DETAIL
SCALE 1"=20'



VICINITY MAP   SCALE: 1"=2000'

STORMWATER MANAGEMENT CHECKLIST

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

The following information is required to be shown or provided in all zoning applications, or a waiver request of the submission requirement with justification shall be attached. Note: Waivers will be acted upon separately. Failure to adequately address the required submission information may result in a delay in processing this application.

This information is required under the following Zoning Ordinance paragraphs:
Special Permits (8-011 2J & 2L) — Special Exceptions (9-011 2J & 2L)
Cluster Subdivision (9-615 1G & 1N) — Commercial Revitalization Districts (9-622 2A (12) & (14))
Development Plans PRC District (16-302 3 & 4L) — PRC Plan (16-303 1E & 1O)
FDP P Districts (except PRC) (16-502 1F & 1Q) — Amendments (18-202 10F & 10I)

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

* [X] 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 N/A.

* [X] 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)
(e.g. dry pond A, infil. trench, underground vault, etc.)						
Totals						

* [X] 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet N/A. Pond inlet and oulet pipe systems are shown on Sheet N/A.

* [X] 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet N/A. Type of maintenance access road surface noted on the plat is N/A (asphalt, geoblock, gravel, etc.).

* [X] 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet N/A.

[X] 7. A 'stormwater management narrative' which contains a description of how detention and best management practices requirements will be met is provided on Sheet 1.

[X] 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 1.

[X] 9. A description of how the outfall requirements, including contributing drainage areas of the Public Facilities Manual will be satisfied is provided on Sheet 1.

[X] 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 1 & 2.

[X] 11. A submission waiver is requested for N/A.

[ ] 12. Stormwater management is not required because N/A.

* THIS APPLICATION IS FOR A CHANGE IN USE ONLY. THE PROPOSED REDEVELOPMENT WILL NOT INCREASE THE IMPERVIOUS RUNOFF FROM THIS PROPERTY. THEREFORE, NO ADDITIONAL DETENTION WILL BE REQUIRED.

ZONING TABULATION

ZONE: C-7, REGIONAL RETAIL COMMERCIAL DISTRICT

	REQUIRED	PROVIDED PER APPROVED SITE PLAN*	PROVIDED PER SE LIMITS PER THIS PLAN
MIN. LOT AREA:	40,000 SF	±11.2165 AC OR ±488,590 SF	±120,710 SF OR ±2.77 AC
MIN. LOT WIDTH:	200 FT	±1,075 FT	±227 FT
MAX. BLD. HT:	90 FT	±25 FT	±25 FT
MIN. YARD REQUIREMENTS:			
FRONT	45° ABP, NOT LESS THAN 40 FT	±51 FT	±79 FT
SIDE	NONE	N/A	N/A
REAR	20 FT	NONE	±48 FT
MAX. FAR:	0.80	±0.22, ±107,460 SF OF GFA	±0.19, ±23,350 SF OF GFA
OPEN SPACE	15%	±29.8%	±20%
TREE COVER	10%	±15%	±14%
INTERIOR PARKING LOT LANDSCAPING	5%	±6.2%	±5%

* INFORMATION TAKEN FROM 1988 APPROVED SITE PLAN #4817-SP-03-1

PARKING TABULATION

LIMITS OF SPECIAL EXCEPTION: *

USE: SHOPPING CENTER**
RATE: 4 SPACES/1000 SF OF GFA
±18,400 SF/1000 x 4 = 74 SPACES

USE: EATING ESTABLISHMENT
RATE: 1 SPACE/4 SEATS, 1 SPACE/2 BAR STOOLS, 1 SPACE/2 EMPLOYEES
±200 SEATS/4 = 50 SPACES
±12 BAR STOOLS/2 = 6 SPACES
±20 EMPLOYEES/2 = 10 SPACES

TOTAL PARKING REQUIRED = 140 SPACES
TOTAL PARKING PROVIDED = 160 SPACES (INCLUDING 5 HANDICAP)

OVERALL SITE PARKING:

USE: SHOPPING CENTER**
RATE: 4 SPACES/1000 SF OF GFA
±84,000 SF/1000 x 4 = 336 SPACES

USE: OFFICE
RATE: 3.6 SPACES/1000 SF OF GFA
±16,300 SF/1000 x 3.6 = 59 SPACES

USE: EATING ESTABLISHMENT
RATE: 1 SPACE/4 SEATS, 1 SPACE/2 BAR STOOLS, 1 SPACE/2 EMPLOYEES
±350 SEATS/4 = 88 SPACES
±12 BAR STOOLS/2 = 6 SPACES
±40 EMPLOYEES/2 = 20 SPACES

TOTAL PARKING REQUIRED = 509 SPACES
TOTAL PARKING PROVIDED = 580 SPACES (INCLUDING 12 HANDICAP)

*PARKING TOTALS BASED ON ONE EATING ESTABLISHMENT REMAINING. IF THIS EATING ESTABLISHMENT CONVERTS TO A FAST FOOD USE, THE TOTAL REQUIRED PARKING WOULD BE REDUCED.
**SE FAST FOOD USES ARE PARKED AT THE SHOPPING CENTER RATE

SHEET INDEX

1. COVER SHEET
2. SPECIAL EXCEPTION PLAT
3. APPROVED SITE PLAN DETENTION COMPUTATIONS AND DETAILS (FOR INFORMATION ONLY)
4. APPROVED SITE PLAN STORM INLET COMPUTATIONS AND DETAILS (FOR INFORMATION ONLY)
5. APPROVED SITE PLAN DETENTION COMPUTATIONS AND DETAILS (FOR INFORMATION ONLY)

RECEIVED
Department of Planning & Zoning
MAR 20 2007
Zoning Evaluation Division

Application No. SE 2006-SU-034 Staff T.Strunk

APPROVED SE SP PLAN
SEE DEV CONDS DATED June 4, 2007
Date of (BOS) (BZA) approval June 4, 2007

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: NONE | DATE: 11/16/06; REV. 3/20/07 | DRAWN: MRW

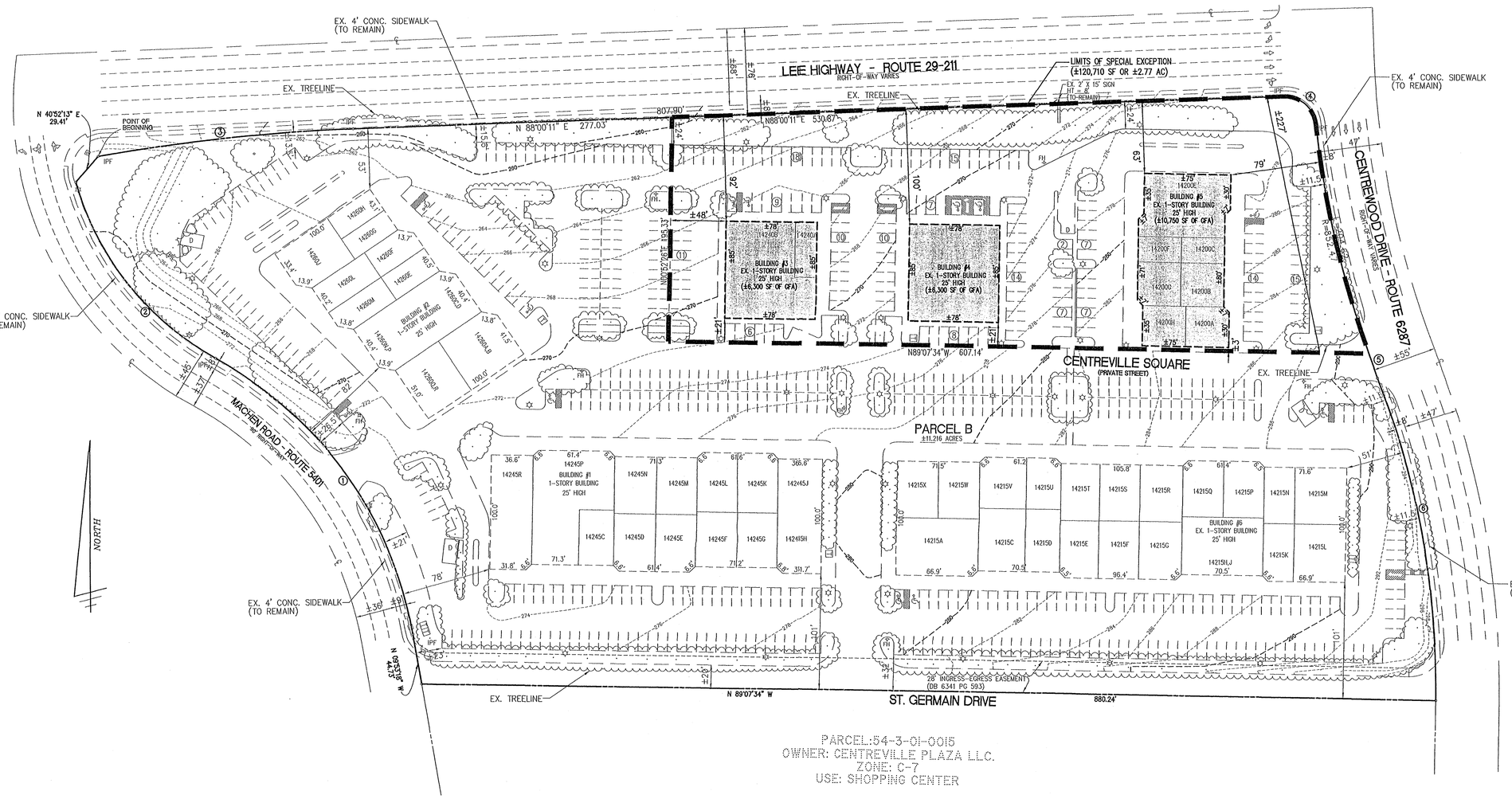
COMMONWEALTH OF VIRGINIA
TERRANCE M. ANDERSON
No. 9909
3-20-07
PROFESSIONAL ENGINEER

REVISION APPROVED BY

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

COVER SHEET

CENTREVILLE SQUARE
SULLY DISTRICT
FAIRFAX COUNTY, VIRGINIA



NOTES:
1. ALL SITE CONDITIONS ARE EXISTING AS SHOWN.
2. APPLICANT REQUESTS UP TO A TOTAL OF FOUR FAST FOOD RESTAURANTS (WITHOUT DRIVE-THRUS) WITHIN THE THREE BUILDING PADS SHADED WITHIN THE LIMITS OF SPECIAL EXCEPTION. ALL BY-RIGHT USES SHALL ALSO BE ALLOWED EXCEPT ADULT VIDEO RENTAL STORES WHICH SHALL BE PROHIBITED.

50 0 25 50 100 200
(IN FEET)
1 INCH = 50'

CURVE TABLE

CURVE	RADIUS	ARC	DELTA	TANGENT	CHORD	BEARING
1	345.00'	306.41'	50°53'15"	164.14'	296.44'	N 35°19'56" W
2	255.00'	200.79'	45°06'52"	105.92'	195.64'	N 38°13'09" W
3	1,635.06'	222.68'	07°48'12"	111.51'	222.51'	N 84°06'05" E
4	27.00'	40.48'	85°54'14"	25.14'	36.79'	S 49°02'42" E
5	855.00'	227.13'	15°13'15"	114.24'	226.47'	S 13°42'12" E
6	745.00'	288.50'	22°11'16"	146.08'	286.70'	S 10°13'12" E

Application No. SE 2006-SU-034 Staff T.Strunk

APPROVED SE SP PLAN
SEE DEV CONDS DATED June 4, 2007
Date of (BOS) (BZA) approval June 4, 2007

Sheet 2 of 5

SPECIAL EXCEPTION PLAT

CENTREVILLE SQUARE

SULLY DISTRICT

FAIRFAX COUNTY, VIRGINIA

WALTER L. PHILLIPS
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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: 11/16/06; REV. 3/20/07 DRAWN: MRW

COMMONWEALTH OF VIRGINIA
TERRANCE ANDERSON
9909
3-20-07
PROFESSIONAL ENGINEER

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

REVISION APPROVED BY

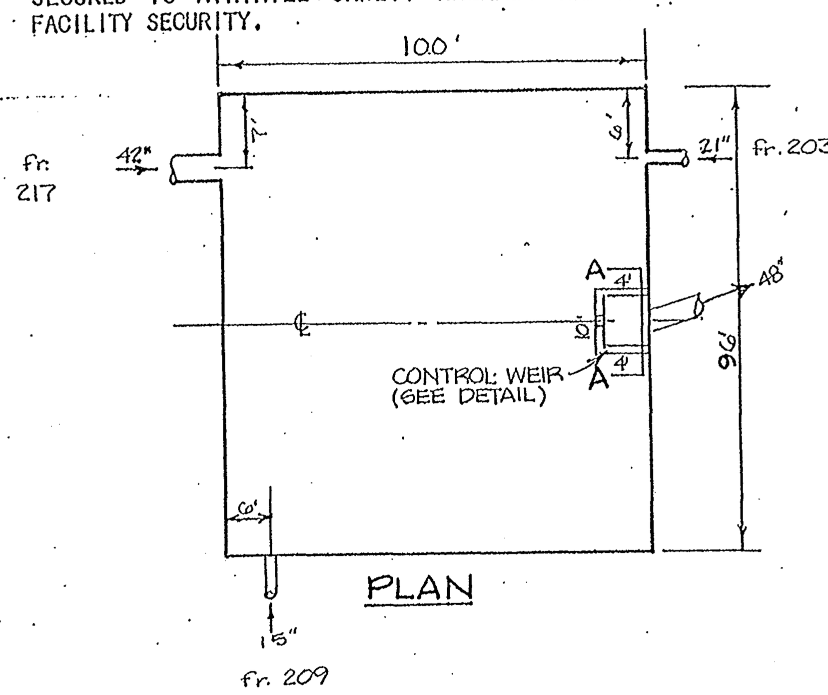
File No. FV-14 Tax Map No. 54-3 Job No. 86052 Cadd Dwg. File: 86052SE\86052SE Xref:

NOTES:

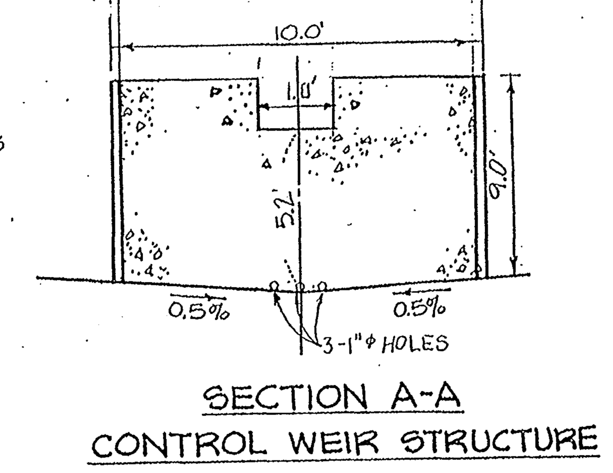
1. SEE ARCHITECTURAL PLANS FOR ALL CONSTRUCTION STANDARDS AND SPECIFICATIONS FOR THIS STRUCTURE.

2. ACCESS OPENINGS SHALL BE PROVIDED FOR INSPECTION AND MAINTENANCE. ALL OPENINGS SHALL BE PROPERLY SECURED TO MINIMIZE SAFETY HAZARDS AND MAXIMIZE FACILITY SECURITY.

3. SEDIMENT AND DEBRIS SHALL BE REMOVED PERIODICALLY FROM THIS STRUCTURE TO ASSURE MAXIMUM DRAIN EFFICIENCY.

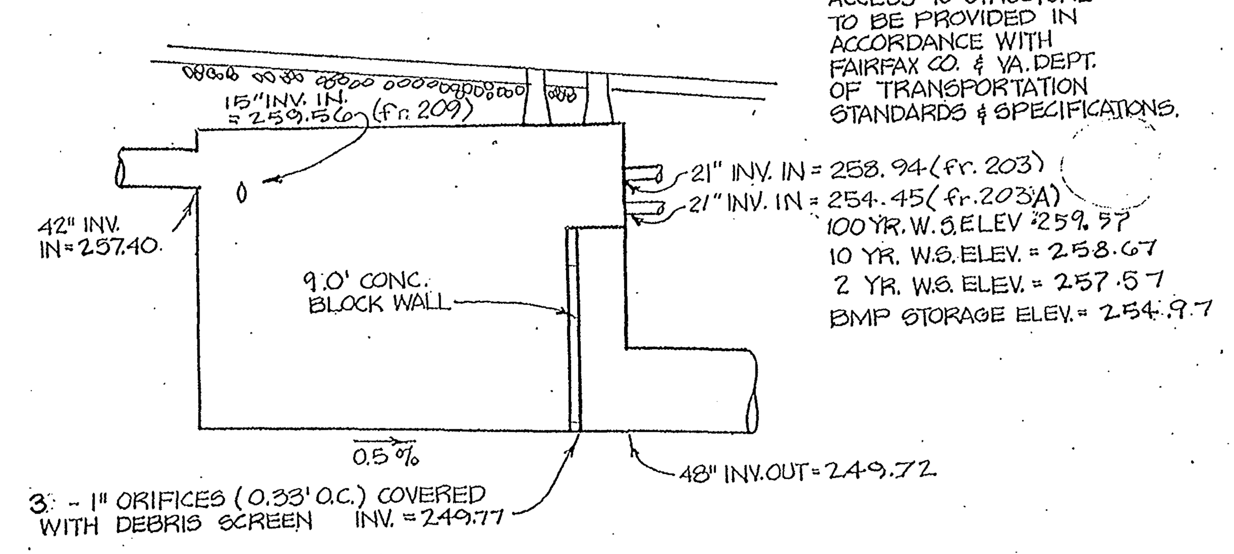


PLAN



SECTION A-A

CONTROL WEIR STRUCTURE



ACCESS TO STRUCTURE TO BE PROVIDED IN ACCORDANCE WITH FAIRFAX CO. & VA. DEPT. OF TRANSPORTATION STANDARDS & SPECIFICATIONS.

(1/16) BMP / DETENTION STORAGE STRUCTURE

N.T.S. SEE NOTES 1-3 ABOVE.

BMP FACILITY #3

2-YR. STORM ROUTING A×C = 0.3 IMP. AC.

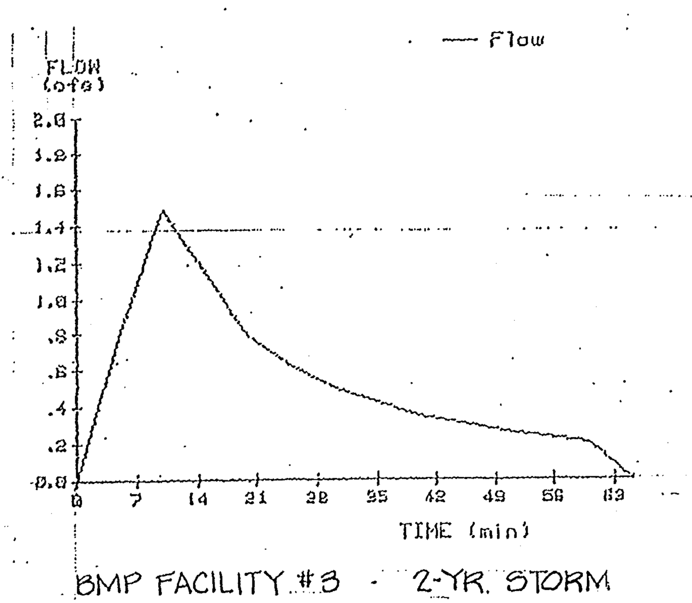
ELAPSED TIME (min)	TOTAL INFLOW (cfs)	TOTAL OUTFLOW (cfs)	DOWNSTREAM OUTFLOW (cfs)	WATER ELEVATION (ft)	STORAGE VOLUME (ft3)
10.00	1.48	.01	.01	1.44	342.16
15.00	1.13	.01	.01	3.07	730.71
20.00	.78	.23	.23	4.23	1006.82
25.00	.61	.63	.63	4.29	1020.86
30.00	.50	.51	.51	4.27	1016.71
35.00	.42	.43	.43	4.26	1013.75
40.00	.35	.36	.36	4.25	1011.22
45.00	.30	.31	.31	4.24	1009.37
50.00	.26	.26	.26	4.24	1007.91
55.00	.23	.23	.23	4.23	1006.80

10-YR. STORM ROUTING A×C = 0.3 IMP. AC.

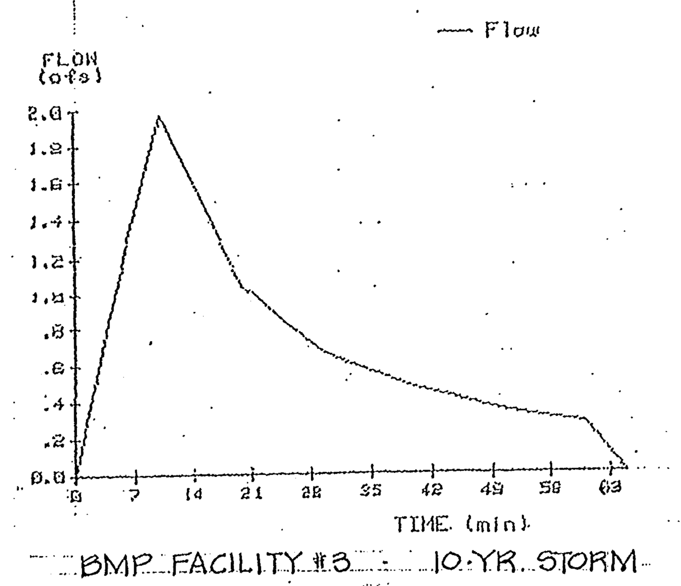
ELAPSED TIME (min)	TOTAL INFLOW (cfs)	TOTAL OUTFLOW (cfs)	DOWNSTREAM OUTFLOW (cfs)	WATER ELEVATION (ft)	STORAGE VOLUME (ft3)
10.00	1.97	.01	.01	1.92	455.90
15.00	1.51	.01	.01	4.10	974.49
20.00	1.05	1.10	1.10	4.36	1037.67
25.00	.81	.84	.84	4.32	1028.24
30.00	.66	.68	.68	4.30	1022.55
35.00	.56	.57	.57	4.28	1018.79
40.00	.47	.48	.48	4.27	1015.56
45.00	.41	.42	.42	4.26	1013.31
50.00	.35	.36	.36	4.25	1011.18
55.00	.31	.31	.31	4.24	1009.68

100-YR. STORM ROUTING A×C = 0.3 IMP. AC.

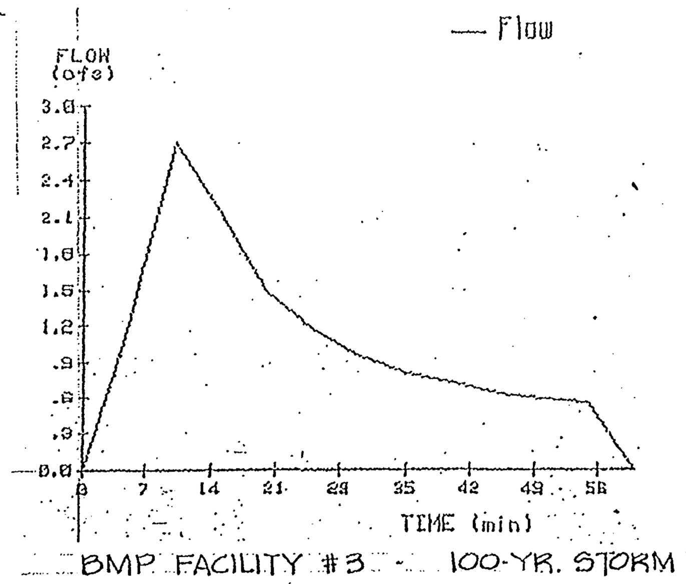
ELAPSED TIME (min)	TOTAL INFLOW (cfs)	TOTAL OUTFLOW (cfs)	DOWNSTREAM OUTFLOW (cfs)	WATER ELEVATION (ft)	STORAGE VOLUME (ft3)
10.00	2.70	.01	.01	2.46	586.20
15.00	2.15	2.20	2.20	4.53	1076.59
20.00	1.48	1.56	1.56	4.43	1053.79
25.00	1.17	1.21	1.21	4.38	1041.29
30.00	.95	.98	.98	4.34	1033.12
35.00	.81	.83	.83	4.32	1027.82



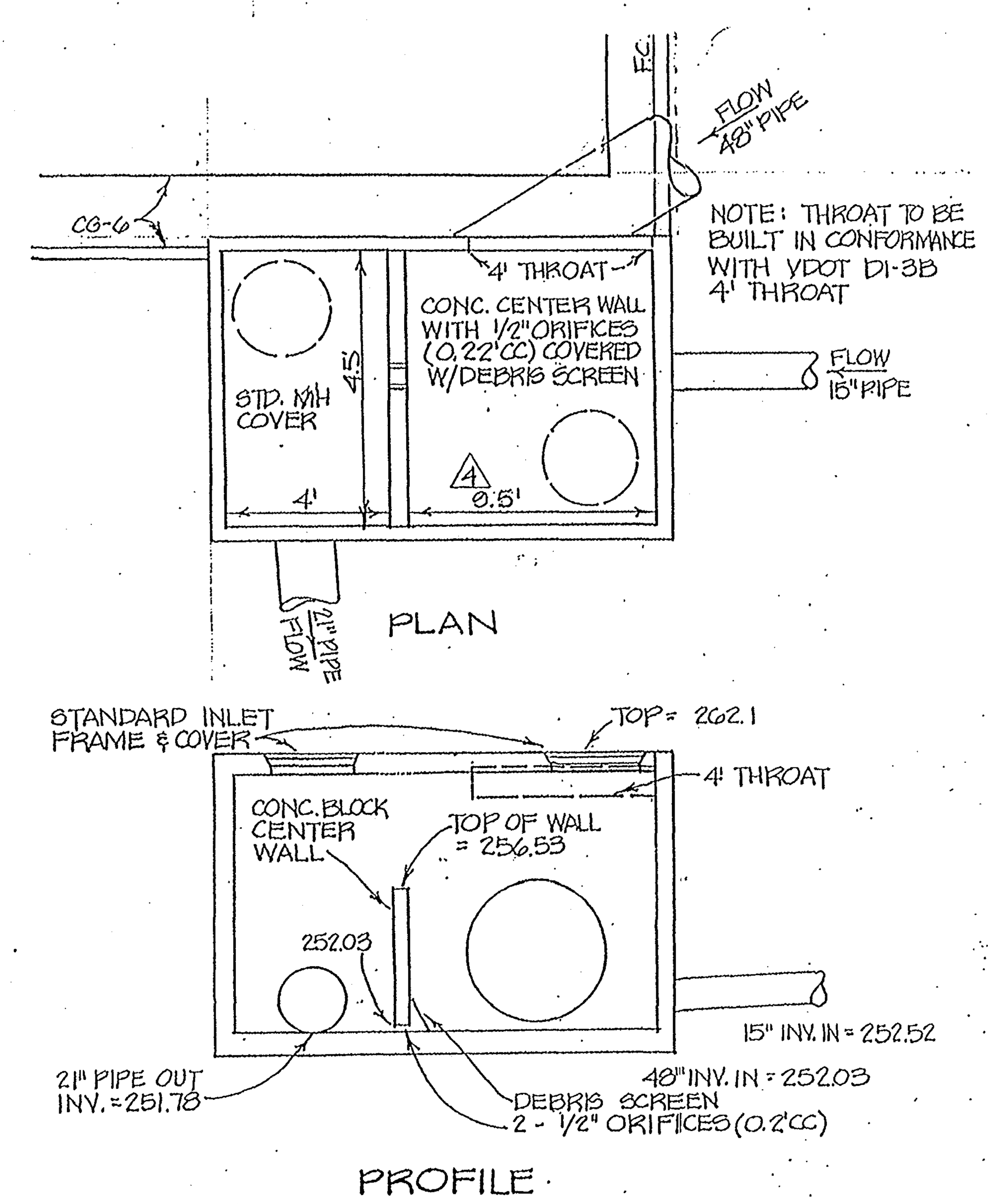
BMP FACILITY #3 - 2-YR. STORM



BMP FACILITY #3 - 10-YR. STORM



BMP FACILITY #3 - 100-YR. STORM

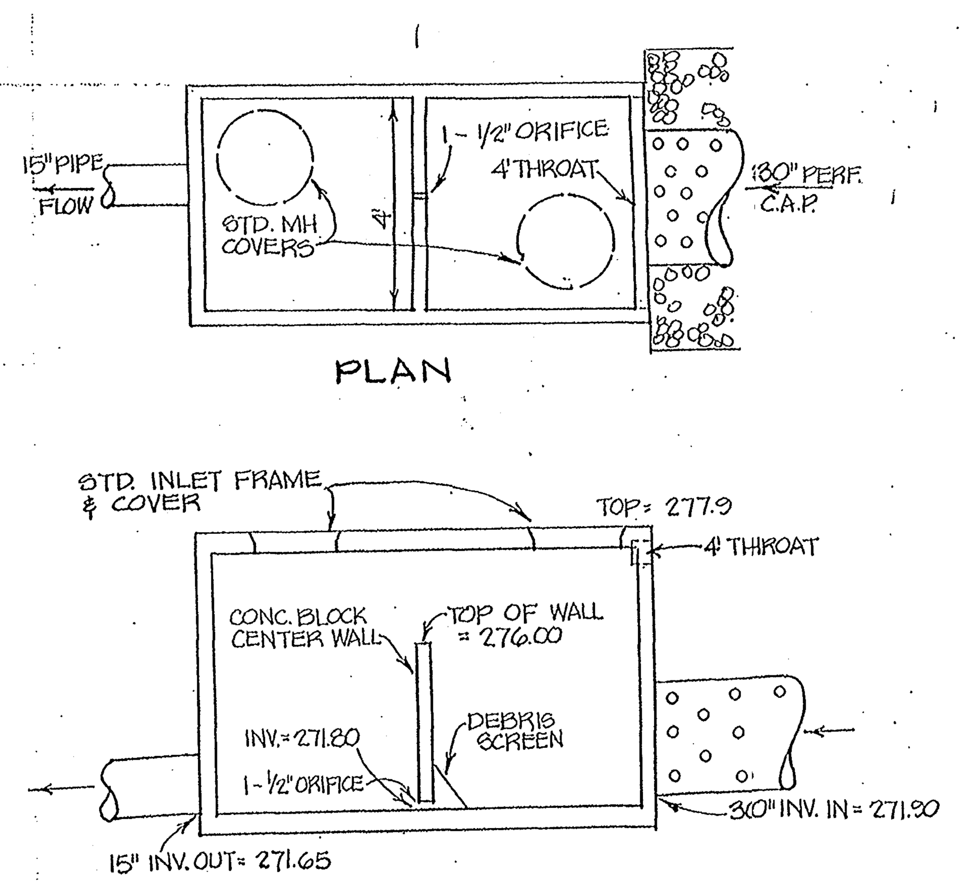


PROFILE

STRUCTURE TO MEET ALL STANDARDS AND SPECIFICATIONS FOR VDOT STD. JB-1 EXCEPT AS MODIFIED ABOVE

(3/16) MODIFIED JB-1 (STRUCTURE 251)

NOT TO SCALE

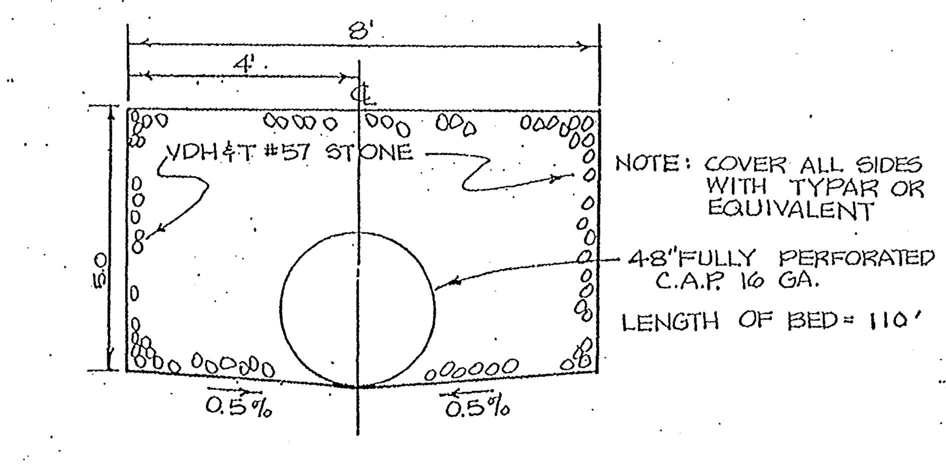


PROFILE

STRUCTURE TO MEET ALL STANDARDS AND SPECIFICATIONS FOR VDOT STD. JB-1, EXCEPT AS MODIFIED ABOVE

(4/16) MODIFIED JB-1 (STRUCTURE 42)

N.T.S.



NOTE: COVER ALL SIDES WITH TYPAR OR EQUIVALENT

48" FULLY PERFORATED C.A.P. 16 GA.

LENGTH OF BED = 110'

(2/16) DETENTION BED

STRUCTURE

100 - YEAR STORM OVERFLOW COMPUTATIONS

WEIR FLOW EQUATION: $Q = 2.7\ L\ H^{3/2}$
2.7 = WEIR CONSTANT
L = LENGTH OF WEIR
H = WATER SURFACE ELEVATION ABOVE WEIR

DETENTION/BMP #1:

ACRES TO FACILITY = 17.26 AC.
(BREAKDOWN OF AREA ON SHEET 19)

$C = 0.82$
$t_c = 10$ MIN.
$I = 8.10$ IN/HR
$Q = CIA$
$Q = (0.82)(8.10)(17.9) = 119$ CFS

$L = 10'$
REQUIRED HEAD OVER WEIR =

$Q = 2.7\ L\ H^{3/2}$

$H = \left[\frac{Q}{2.7\ L}\right]^{2/3}$

$= \left[\frac{119}{2.7(10)}\right]^{2/3} = 2.7'$

HEAD PROVIDED = 6.3' (MORE THAN ADEQUATE TO PROVIDE 100-YEAR OVERFLOW RELIEF)

DETENTION/BMP #2:

ACRES TO FACILITY = 1.96 AC.
(BREAKDOWN OF AREA ON SHEET 19)

$C = 0.77$
$t_c = 10$ MIN
$I = 8.10$ IN/HR
$Q = CIA$
$Q = (0.77)(8.10)(2.0) = 12.5$ CFS
$L = 4.5'$

REQUIRED HEAD OVER WEIR:

$H = \left[\frac{Q}{2.7\ L}\right]^{2/3}$

$H = \left[\frac{12.5}{2.7(4.5)}\right]^{2/3} = 1.0'$

HEAD PROVIDED = 3.0 (MORE THAN ADEQUATE TO PROVIDE 100-YEAR OVERFLOW RELIEF)

BMP #3:

ACRES TO FACILITIES = 0.37
$C = 0.81$
$t_c = 10$ MIN
$I = 8.10$ IN/HR
$Q = CIA$
$Q = (0.37)(8.10)(0.81) = 2.4$ CFS
$L = 4'$

REQUIRED HEAD OVER WEIR:

$Q = 2.7\ H^{3/2}$

$H = \left[\frac{Q}{2.71}\right]^{2/3}$

$H = \left[\frac{2.4}{2.7(4)}\right]^{2/3} = 0.4'$

HEAD PROVIDED = 1.0'

(1/16) STORM DRAINAGE OUTFALL (THROUGH EX. STR. #6)

THE STORM WATER RUN-OFF FROM THIS SITE DISCHARGES THROUGH A 6' X 6' BOX CULVERT UNDER ROUTE 29-211. THIS CULVERT DISCHARGES INTO AN EXISTING STREAM BED ON THE NORTH SIDE OF ROUTE 29-211. BMP/DETENTION FACILITIES ON-SITE LIMIT THE RELEASE OF POST-DEVELOPMENT RUN-OFF TO A LEVEL BELOW THE PRE-DEVELOPMENT RATE. THERE IS NO ADVERSE IMPACT DOWNSTREAM DUE TO THIS DEVELOPMENT.
CAP. OF 6'x6' CULVERT =:

$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$

$= \frac{1.49}{.013}(6\times6)\left(\frac{6\times6}{4\times6}\right)^{2/3}(0.017)^{1/2} = 705$ CFS

REQUIRED FLOW:
Q (FROM SITE) = 23 CFS
Q (FROM OFF SITE) = 349 CFS (PER APPROVED 4817-SP-01, CENTREWOOD BY SPRINGFIELD ASSOC.)
Q (TOTAL) = 372 CFS < 705 CFS
REQUIRED FLOW IS LESS THAN CAPACITY FLOW. THEREFORE, OUTFALL IS ADEQUATE.

CONDENSED DRAINAGE ANALYSIS
(ON-SITE ONLY)

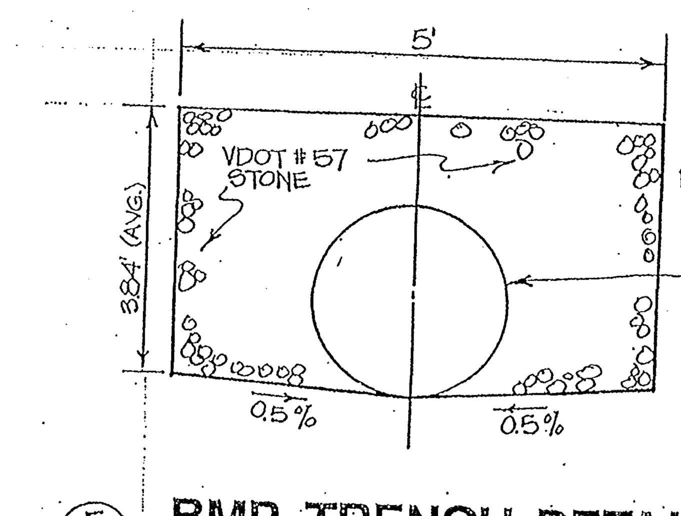
CENTREVILLE SQUARE PHASE I — Site Name — 4817-SP-05-1 County Plan Number
Drainage Shed(s) CUB RUN Site Area 11.22 Acre(s)
* Pre Development Peak Runoff (10 year, 2 hour storm = Q10) 23.2 Cubic Feet/Second (c.f.s.)
* Post Development Peak Runoff (10 year, 2 hour storm = Q10) 51.1 Cubic Feet/Second (c.f.s.) [without detention]
Post Development Peak Runoff (10 year, 2 hour storm = Q10) 22.8 Cubic Feet/Second (c.f.s.) [after detention - if applicable]

** Pre Development Volume Runoff (2 year, 2 hour storm = Vp) 0.167×0.35×11.22=0.66 Acre Feet (Ac. Ft.)
Post Development Volume Runoff (2 year, 2 hour storm = Vd) 0.167×0.77×11.22=1.44 Acre Feet (Ac. Ft.)

Any Runoff Increase
* Peak Runoff (Q10) 0 c.f.s.
** Volume Runoff (Av= Vd-Vp) 0.78 Ac. Ft.

Prepared by: PAUL A. NASH Date: 10-2-87 Phone: 532-6163
County Plan Reviewer:

NOTE:
THIS PLAN REPLACES WEST DETENTION PONDS WITH A LARGE BMP CONCRETE VAULT SERVING CENTREWOOD SHOPPING CENTER AND PHASE I



NOTE: COVER ALL SIDES WITH TYPAR OR EQUIVALENT

30" FULLY PERFORATED C.A.P. 16 GA.

LENGTH OF BED = 95'

(5/16) BMP TRENCH DETAIL

N.T.S.

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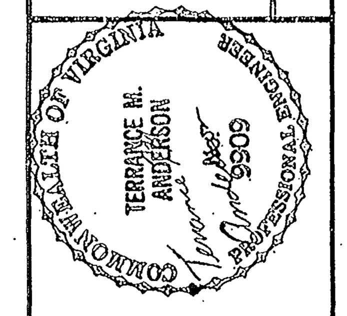
207 PARK AVENUE FALLS CHURCH, VIRGINIA 22046
(703) 532-6163



REVISIONS
4 STRUCTURE DIM.

SCALE: N.T.S. DATE: 6-19-87 10-6-87 12/13/87 2/10/88 DRAWN: SHEET 16 OF 26

DETENTION COMPUTATIONS & DETAILS

PHASE 1
CENTREVILLE SQUARE
SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

Application No. SE 2006-SU-034 Staff T.Strunk

APPROVED SE SP PLAN
SEE DEV CONDS DATED June 4, 2007
Date of (BOS) (BZA) approval June 4, 2007

Sheet 3 of 5

REVISION APPROVED BY DIVISION OF DESIGN REVIEW

NO.	DESCRIPTION	DATE	REV BY	APPROVED

FILE NO.: FV TAX MAP NO: JOB NO: 87-010

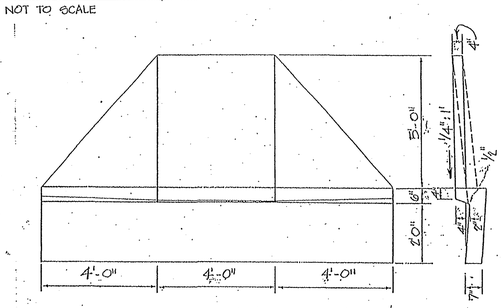
FOR INFORMATIONAL PURPOSES

STORM WATER INLET COMPUTATIONS

INLET NUMBER	INLET TYPE	INLET LENGTH	STATION	DRAINAGE AREA (AC)	C	CA	Σ CA	IN/HR Q 10YR (CFS)	Q 100YR (CFS)	T_{10YR} FLOW	T_{100YR} FLOW	T (SPREAD)	W (FT)	W/T	S_x (FT/FT)	S_w/S_x	E_a (FIG)	a	$S_w = a/(1/n)$	S_e (FT/FT) = $S_x + S_w S_e$	I_{10YR} FLOWS INTERCEPTED	L_T (FT)	E_o (FIG)	E_f (FIG)	E_{10YR} (FIG)	Q_{10YR} INTERCEPTED	Q BYPASS OVER CTR	T SPREAD @ GRD. PT	SHEET OF REMARK
2C	MM	4'		0.10	0.81	0.08		35	0.3		0.3	0.019	0.005								7.6	0.15	0.46	0.33		8'		
⚠ 2BA	SE	6'		0.10	0.81	0.08		35	0.3		0.3	0.01	0.006	2	2	1.0	0.083	2.3	1.0	3.1	0.13	0.17	3.3	1.2	1.0	0.3		0'		
2B	SE	6'		0.19	0.81	0.15		35	0.5		0.5	0.025	0.036										9.6	0.13	0.46	0.28		5'		
2C	SE	6'		0.06	0.81	0.05		35	0.2		0.2	0.013	0.05										9.6	0.13	0.46	0.28		10'		
2G	9A			0.27	0.81	0.22		35	0.8		0.8	0.02	0.046										6.3	0.17	0.46	0.31		8'		
2F	9A			0.35	0.81	0.28		35	1.0		1.0	0.022	0.032										6.3	0.17	0.46	0.31		7'		
2E	9A			0.20	0.81	0.16		35	0.6		0.6	0.022	0.028										6.3	0.17	0.46	0.31		6'		
2D	9A			0.31	0.81	0.25		35	0.9		0.9	0.05	0.095										6.3	0.17	0.46	0.31		3.5'		
2H	9M			0.11	0.81	0.10		35	0.4		0.4	0.022	0.035										6.3	0.17	0.46	0.31		5'		
2I	9M			0.16	0.81	0.13		35	0.5		0.5	0.021	0.047										6.3	0.17	0.46	0.31		6'		
2J	9B	6'		0.08	0.81	0.06		35	0.2		0.2	0.012	0.02	2	2	1.0	0.083	4.1	1.0	3.5	0.15	0.17	5.0	1.2	1.0	0.2		0'		
2G	9B	4'		0.20	0.81	0.16		35	0.6		0.6	0.015	0.05										7.6	0.15	0.46	0.33		10'		
2H	9B	4'		0.32	0.81	0.26		35	1.0		1.0	0.022	0.05										7.6	0.15	0.46	0.33		4'		
2G	9B	4'		0.21	0.81	0.17		35	0.6		0.6	0.022	0.031										7.6	0.15	0.46	0.33		3'		
2G	9B	4'		0.31	0.81	0.25		35	0.9		0.9	0.032	0.023										7.6	0.15	0.46	0.33		5'		
2G	9B	4'		0.27	0.81	0.18		35	0.6		0.6	0.05	0.055										7.6	0.15	0.46	0.33		3'		
2D	9B	4'		0.40	0.81	0.32		35	1.1		1.1	0.027	0.058										7.6	0.15	0.46	0.33		6'		
2D	9B	4'		0.25	0.81	0.20		35	0.7		0.7	0.01	0.057	3	2	0.67	0.083	1.46	0.92	3.7	0.16	0.20	4.2	0.95	0.95	0.7		0'		
2A	9B	4'		0.42	0.81	0.34		35	1.2		1.2	0.017	0.035										7.6	0.17	0.46	0.37		5'		
2C	9B	6'		0.49	0.81	0.40		35	1.4		1.4	0.021	0.024										9.6	0.16	0.46	0.35		7'		
2B	9B	4'		0.29	0.81	0.23		35	0.8		0.8	0.017	0.017										7.6	0.15	0.46	0.33		4'		
2A	9B	4'		0.26	0.81	0.21		35	0.7		0.7	0.01	0.009										7.6	0.15	0.46	0.33		4'		
2E	9B	6'		0.81	0.60	0.49		35	1.7		1.7	0.021	0.041										9.6	0.18	0.46	0.35		6'		
2G	9A			0.05	0.81	0.04		35	0.1		0.1	0.025	0.02	2.4	2	0.83	0.83	4.15	0.88	3.5	0.15	0.17	2.7	1.0	1.0	0.1		0		
2G2	9B			0.67	0.81	0.54		35	1.9		1.9	0.017	0.064										13.6	0.16	0.46	0.33		9		
2G1	9B	4'		0.17	0.81	0.14		35	0.5		0.5	0.012	0.058										7.6	0.15	0.46	0.33		3		
4T	2C	6'		0.26	0.81	0.21		35	0.7		0.7	0.01	0.012										9.6	0.13	0.46	0.28		6		
4Z	9B	4'		0.27	0.81	0.22		35	1.1		1.1	0.025	0.048										9.6	0.16	0.46	0.35		6		

4/17 HANDICAP RAMP DETAIL

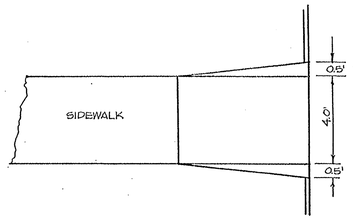
NOT TO SCALE



NOTE: DETAIL 1, SH. 17 NOTE (SHOWN AT RIGHT) APPLIES. THIS RAMP TO BE USED IN PLACE OF CCR-2 ONLY WHERE DESIGNATED ON LAYOUT PLAN.

1/17 HANDICAP RAMP DETAIL - CCR-2

NOT TO SCALE

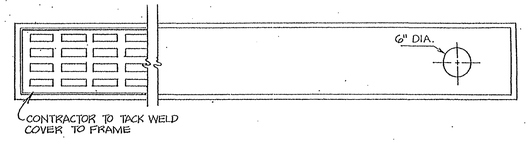


ALL MATERIALS AND CONSTRUCTION OF THIS DESIGN IN A RIGHT-OF-WAY SHALL MEET VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS AND STANDARDS AND ARE TO BE MAINTAINED BY VDOT.

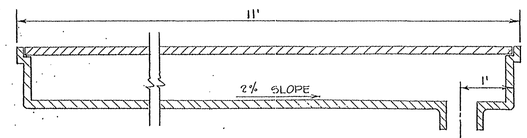
2/17 TRENCH DRAIN DETAIL

NOT TO SCALE

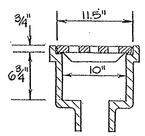
PLAN



PROFILE



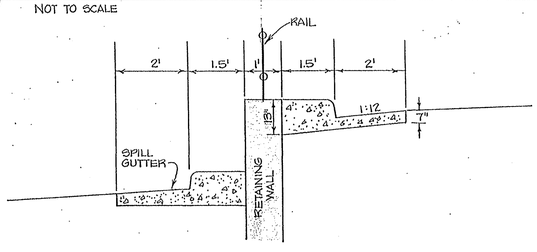
SECTION



NOTE: TRENCH DRAIN TO BE NEENAH CATALOG NO. R-4995-A1 (OR EQUIVALENT) TYPE M TRENCH DRAIN WITH 11' FLAT GRATED COVER, BOTTOM OUTLET AND CLOSED ENDS. CONTRACTOR TO CONNECT 6" DIA. OUTLET WITH 6" D.I.P. AT MIN. 2% SLOPE TO OUTFALL.

3/17 RETAINING WALL SKETCH

NOT TO SCALE

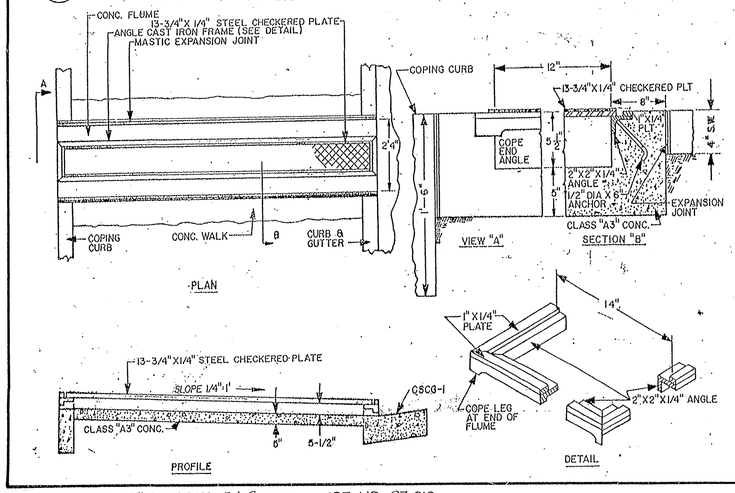


NOTE: SEE ARCHITECT'S PLANS FOR DIMENSIONS AND DETAILS. THIS DETAIL FOR LAYOUT INFORMATION ONLY.

5/17 SCUPPER DETAIL

NOT TO SCALE

NOTES:
1. FRAME CORNERS ARE MITERED AND WELDED.
2. ALL FRAME PARTS ARE TO BE WELDED INTO A SINGLE UNIT.
3. CHECKERED PLATE IS TO BE REMOVABLE.



Application No. SE 2006-SU-034 Staff T.Strunk

APPROVED SE SP PLAN
SEE DEV CONDS DATED June 4, 2007
Date of (BOS) (BZA) approval June 4, 2007

Sheet 4 of 5

REVISION APPROVED BY DIVISION OF DESIGN REVIEW					
NO.	DESCRIPTION	DATE	REV BY	APPROVED	DATE

FOR INFORMATIONAL PURPOSES

FILE NO.: FV TAX MAP NO: 54-3 JOB NO: 87-010

WALTER L. PHILLIPS
INCORPORATED
CIVIL ENGINEERS LAND SURVEYORS PLANNERS
207 PARK AVENUE FALLS CHURCH, VIRGINIA 22046
(703) 532-6183

SCALE: AS NOTED DATE: 6/19/87 DRAWN: SHEET 17 OF 26

REVISIONS
△ GRADE CHECK 9/25/98

STORM INLET COMPUTATIONS & DETAILS

PHASE 1
CENTREVILLE SQUARE
SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

10-6-87, 12/23/87, 2/10/88

SHEET 4 OF 5

DETENTION AND BMP STORAGE DESIGN

BMP DESIGN

STEP 1: (A) AREA OF SITE = 11.22 AC. (PARCEL B)
+ 9.74 AC. (CENTREWOOD PLAZA SHOPPING
20.96 AC. CENTER)

(B) SUMMATION OF C × A =

7.97 (PARCEL B)
+7.96 (CENTREWOOD SHOPPING CENTER)
15.93 IMP AC.

(C) WEIGHTED "C" VALUE = 15.93 / 20.96 = 0.76

(D) CHART A VALUE FOR BMP STORAGE = 2,500 CF/ACRE

(E) BMP STORAGE REQUIRED = 2,500 X 20.96 = 52,400 CF

STEP 2:

I. BMP FACILITY #1
(A) AREA OF DRAINAGE INTO BMP #1 =

8.00 (PARCEL B)
+9.26 (CENTREWOOD PLAZA SHOPPING CENTER)
17.26 AC.

(B) SUMMATION OF C × A TO BMP #1 =

6.38 (PARCEL B)
+7.43 (CENTREWOOD PLAZA SHOPPING CENTER)
13.81 IMP AC.

(C) WEIGTED "C" VALUE = 0.80
(D) CHART A VALUE FOR BMP STORAGE = 2650 CF/ACRE
(E) BMP #1 STORAGE REQUIRED = 2650 X 17.26 = 45,739 CF

II. (A) AREA DRAINAGE INTO BMP #2 =

1.96 AC. (PARCEL B)

(B) SUMMATION OF A×C TO BMP #2 =

1.51 IMP AC. (PARCEL B)

(C) WEIGHTED "C" VALUE = 0.77

(D) CHART A VALUE FOR BMP STORAGE = 2500 CF/ACRE

(E) BMP #2 STORAGE REQUIRED = 2500 X 1.96 / 2 = 2450 CF

III. A. AREA DRAINAGE INTO BMP #3 = 0.37 AC.
B. SUMMATION OF C×A TO BMP #3 = 0.30
C. WEIGHTED "C" VALUE = 0.81
D. CHART A VALUE FOR BMP STORAGE = 2,700 CF/AC
E. BMP #3 STORAGE REQUIRED = 999 CF

IV. TOTAL BMP STORAGE REQUIRED = 45,739
2,450
+ 999
49,188 CF

STEP 3: UNCONTROLLED SHEET FLOW = 0 ACRES
STEP 4: 49,188 CF = 94% (52,400)

FACILITIES PROVIDED:

BMP #1: SIZE = 102' X 92' X 5.2' =
VOLUME = 48797 CF

BMP #2: SIZE = 48" PERF. CAP IN 8' X 5' GRAVEL TRENCH, 110' LONG
VOLUME = 2590 CF

BMP #3: SIZE = 30" PERF. CAP. IN 5' X 3.84' GRAVEL TRENCH, 95' LONG
VOLUME = 1009 CF

LOW FLOW CONTROL DESIGN (40 HR. DRAWDOWN)

BMP #1

AVG. FLOW = BMP STORAGE / 40 HRS. = 48797 / 40 X 3600 = 0.34 CFS

HEAD = 10 YR. ELEV. - INV. ELEV. + 0.25 = 8.9 + 0.25 = 9.15'

Q = 0.6 X $A_{REQ'D}$ X 2 gh

Q = 0.34 CFS

$A_{REQ'D}$ = 0.0117 f^2 = 1.68 IN^2

NO. OF 1" DIA. HOLES

AREA OF 1" HOLE = 0.79 IN^2
NO. OF HOLES = 1.68 / 0.79 = 2.1 3 - 1" HOLES

BMP #2

AVG. FLOW = 2590 / 40 X 3600 = 0.018 CFS

HEAD = 10 YR. ELEV. - INV. ELEV. + 0.25 = 5.53 + 0.25 = 5.78'

Q = 0.018 CFS

$A_{REQ'D}$ = 0.0016 f^2 = 0.22 In^2

AREA OF OF 1/2" HOLE = 0.19 IN^2

NO. OF HOLES 0.22 / 0.19 = 1.2 2 - 1/2" HOLES

BMP #3

AVG. FLOW = 1009 / 40 X 3,600 = 0.0070 CFS

HEAD = 276.0 - 271.9 = 4.1'

$A_{REQ'D}$ = 0.0007 f^2 = 0.1034 IN^2

NO. OF 1/2" HOLES = 0.10 / 0.19 = 0.53 1 - 1/2"

PHOSPHOROUS CONTROL

TOTAL SITE AREA = 11.22 AC (PARCEL B)
9.74 AC (CPSC)
20.96

TOTAL AREA TO BMP FACILITIES = 10.33 AC (PARCEL B)
9.26 AC (CPSC)
19.59 AC

AREA OF PARKING LOT = 5.33 AC (PARCEL B)
4.71 AC (CPSC)
10.04 AC

AREA OF ST. GERMAIN DRIVE = 0.52 AC (PARCEL B)
0.57 AC (CPSC)
1.09 AC

REMAINING AREA TO BMP FACILITIES = 4.48 AC
3.98 AC
8.46 AC

AREA TO BE SWEPT THREE TIMES WEEKLY = 10.04+1.09 = 11.13 AC
(THIS AREA GOES TO BMP FACILITIES)

BMP_X = 11.13 / 20.96 [1-(1-0.4)(1-0.4)] = 0.340

BMP_Y = 8.46 / 20.96 (0.4) = 0.162

BMP_{TOTAL} = 0.502

TOTAL PHOSPHOROUS REMOVAL = 50.2%

NOTE: SEE SHEET 22 FOR LETTER RE: VACUUM SWEEPING.

DETENTION SUMMARY:

1. PREDEVELOPMENT SITE CONDITIONS

AREA = 11.22 (PARCEL B)
+ 9.74 (CENTREWOOD PLAZA SHOPPING CENTER)
20.96

C_2 = 0.20

C_{10} = 0.35

t_c = 10 MIN.

I_2 = 4.44 IN/HR.

I_{10} = 5.92 IN/HR.

Q_2 = 18.6CFS

Q_{10} = 43.4 CFS

2. POST DEVELOPMENT SITE CONDITIONS

AREA = 20.96 AC.

C = 0.77

t_c = 10 MIN

I_2 = 4.44 IN/HR.

I_{10} = 5.92 IN/HR.

Q_2 = 71.7 CFS

Q_{10} = 95.5 CFS

3. RUN-OFF REDUCTION REQUIRED

Q_2 = 71.7 - 18.6 = 53.1 CFS

Q_{10} = 95.5 - 43.4 = 52.1 CFS

4. RUN-OFF TO DETENTION

t_c = 10 MIN

I2 = 4.44 IN/HR

I_{10} = 5.92 IN/HR

A. DETENTION #1

AREA = 8.00 (PARCEL B)
+9.26 (CETREWOOD PLAZA SHOPPING CENTER)
17.26

C = 0.80

Q_2 = 0.80 (4.44) 17.26 = 61.3 CFS

Q_{10} = 0.80 (5.92) 17.26 = 81.7 CFS

B. DETENTION #2

AREA = 1.96 AC (PARCEL B)

C = 0.77

Q_2 = 0.77 (4.44) 1.96 = 6.7 CFS

Q_{10} = 0.77 (5.92) 1.96 = 8.9 CFS

C. BMP #3 *
AREA = 0.37 AC.
C = 0.80
Q_2 = 0.37(0.80)(4.44) = 1.5 CFS
Q_{10} = 0.37(0.80)(5.92) = 2.0 CFS

5. UNDETAINED ON-SITE IMPERVIOUS AREA

AREA = 0.80 (PARCEL B)
+0.48 (CENTREWOOD PLAZA SHOPPING CENTER)
1.37

C = (0.80) (0.60 + (0.48)(0.81) / 1.37 = 0.67

A X C = 0.92 IMP AC.

6. ALLOWABLE RELEASE FROM DETENTION FACILITIES =

$Q_{ALLOWABLE}$ = $Q_{PREDEVELOPMENT}$ - $Q_{UNDETAINED}$

$Q_{PREDEVELOPMENT}$ = $Q_{DETENTION\ \#1}$ + $Q_{DETENTION\ \#2}$ + $Q_{BMP\#3}$ + $Q_{UNDETAINED}$

(SEE FOLLOWING CHARTS)

* FOR ROUTING & HYDROGRAPHS OF BMP #3, SEE SH. 16

SEE SHEET 16 OF 26
FOR BMP FACILITY #3
STORM ROUTING

POST DEVELOPMENT RUNOFF 2-YR. & 10-YR. SUMMARY

2 YEAR DETENTION RELEASE TABLE

TIME	BMP/DETENTION FACILITY RELEASE (CFS) #1	#2	#3	UNDETAINED RELEASE (CFS) A X C = 0.92	TOTAL (CFS)
5	0	0	0	2.2	2.2
10	0.2	1.0	0	4.1	5.3
15	0.3	6.4	0	3.1	9.8
20	0.5	2.5	0.2	2.2	5.4
25	3.9	3.7	0.6	1.7	9.9
30	6.3	2.1	0.5	1.4	10.3
35	8.6	2.1	0.4	1.2	12.3
40	10.5	1.6	0.4	1.0	13.5
45	11.1	1.6	0.3	0.8	13.8
50	11.8	1.1	0.3	0.7	13.9
55	11.1	1.1	0.2	0.6	13.0

10 YEAR DETENTION RELEASE TABLE

5	0	0.1	0	3.0	3.1
10	0.2	2.1	0	5.4	7.7
15	0.5	12.7	0	4.2	17.4
20	7.4	1.1	1.1	2.9	12.5
25	13.8	5.0	0.8	2.2	21.8
30	17.5	2.1	0.7	1.8	22.1
35	18.1	3.2	0.6	1.5	23.4
40	18.9	2.1	0.5	1.3	22.8
45	19.6	2.1	0.4	1.1	23.2
50	19.6	1.4	0.4	1.0	22.4

BMP DETENTION FACILITY #1

10 YEAR STORM ROUTING IMP AC = 14.0 #1

TIME (MIN)	Q IN. (CFS)	Q AVG (CFS)	VOL. (CF)	STORAGE (CF)	TOTAL VOL. IN (CF)	TRIAL WS ELEV.	OUTFLOW (CFS)	AVG OUTFLOW (CFS)	TOTAL VOL OUT (CF)	BAL. IN STORAGE	CORR. WS ELEV.
5	47.5	23.8	7125	0	7125	0.8	0	0	0	7125	0.8
10	86.4	67.0	20085	7125	27210	2.9	0.2	0.1	30	27180	2.9
15	66.1	76.3	22875	27180	50055	5.3	0.5	0.4	105	49950	5.5
20	45.8	56.0	16785	49950	66735	7.1	7.4	4.0	1185	65550	7.0
25	35.5	40.7	12195	65550	77745	8.1	13.8	10.6	3180	74565	8.0
30	29.1	32.3	9690	74565	84255	8.6	17.5	15.7	4695	79560	8.6
35	24.4	26.8	8025	79560	87585	8.7	18.1	17.8	5340	82245	8.8
40	20.6	22.5	6750	82245	88995	8.8	18.9	18.5	5550	83445	8.9
45	19.1	19.9	5955	83445	89400	8.9	19.6	19.3	5775	83625	8.9
50	17.2	18.2	5460	83625	89085	8.9	19.6	19.6	5880	83205	8.9
55	15.8	16.5	4950	83205	88155	8.8	18.9	19.3	5775	82383	8.8

2 YEAR STORM ROUTING IMP AC = 14.0

TIME (MIN)	Q IN. (CFS)	Q AVG (CFS)	VOL. (CF)	STORAGE (CF)	TOTAL VOL. IN (CF)	TRIAL WS ELEV.	OUTFLOW (CFS)	AVG OUTFLOW (CFS)	TOTAL VOL OUT (CF)	BAL. IN STORAGE	CORR. WS ELEV.
5	35.6	17.8	5340	0	5340	0.6	0	0	0	5340	0.6
10	64.8	50.2	15060	5340	20400	2.2	0.2	0.1	30	20370	2.2
15	49.6	57.2	17160	20370	37530	4.0	0.5	0.2	45	37485	4.0
20	34.4	42.0	12600	37485	50085	5.3	0.5	0.4	120	49965	5.4
25	26.6	30.5	9150	49965	59115	6.4	3.9	2.2	660	58455	6.3
30	21.8	24.2	7260	58455	65715	6.9	6.3	5.1	1530	64185	6.9
35	18.3	20.1	6015	64185	70200	7.3	8.6	7.5	2235	67965	7.3
40	15.4	16.9	5055	67965	73020	7.6	10.5	9.6	2865	70155	7.6
45	13.2	14.3	4290	70155	74445	7.7	11.1	10.8	3240	71205	7.7
50	11.4	12.3	3690	71205	74895	7.8	11.8	11.5	3435	71460	7.7
55	10.1	10.7	3219	71460	74679	7.7	11.1	11.5	3435	71244	7.7

100 YEAR STORM ROUTING IMP AC = 14.0

TIME (MIN)	Q IN. (CFS)	Q AVG (CFS)	VOL. (CF)	STORAGE (CF)	TOTAL VOL. IN (CF)	TRIAL WS ELEV.	OUTFLOW (CFS)	AVG OUTFLOW (CFS)	TOTAL VOL OUT (CF)	BAL. IN STORAGE	CORR. WS ELEV.
5			8055	0	8055	0.8	0	0	0	8055	0.8
10			26790	8055	33840	3.6	0.2	0.1	30	33810	3.6
15			31860	33810	65670	6.5	5.0	3.0	900	64770	6.9
20			23040	64770	88010	9.0	20.4	13.1	3930	84080	9.0
25			17415	84080	102095	9.8	46.4	33.4	10020	92075	9.8
30			12915	92075	105988	9.8	46.4	46.4	13920	92068	9.8
35			10906	92068	102974	9.6	37.9	42.2	12645	90329	9.6

BMP DETENTION FACILITY #2

10 YEAR STORM ROUTING A_xC = 1.5 IMP AC

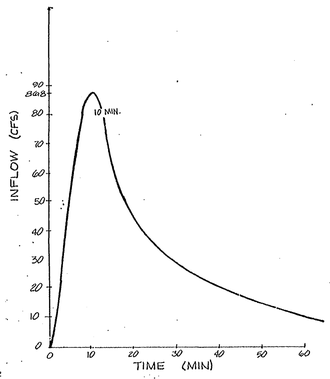
TIME (MIN)	Q_{IN} (CFS)	AVE Q IN (CFS)	VOL. (CF)	STORAGE (CF)	TOTAL VOL. IN (CF)	TRIAL WS ELEV.	OUTFLOW (CFS)	AVE. OUTFLOW (CFS)	TOTAL VOL. OUT (CF)	BAL. IN STOR. (CF)	CORR. WS ELEV.
5	4.9	2.45	735	0	735	1.80	0.08	0.04	12	723	1.8
10	8.9	6.9	2070	723	2793	4.80	2.10	1.09	327	2466	4.7
15	6.8	7.85	2355	2466	4821	5.53	12.70	7.4	2220	2601	5.5
20	4.7	5.75	1725	2601	4326	4.70	1.10	6.9	2070	2256	4.5
25	3.7	4.2	1260	2256	3516	5.05	5.00	3.05	915	2601	5.05
30	3.0	3.35	1005	2601	3606	4.80	2.10	3.55	1065	2541	4.9
35	2.5	2.75	825	2541	3366	4.70	3.20	2.65	795	2571	4.9
40	2.1	2.3	690	2571	3261	4.80	2.1	2.65	795	2466	4.7
45	1.8	2.0	589	2466	3055	4.80	2.1	2.10	630	2425	4.7
50	1.6	1.7	510	2425	2935	4.70	1.4	1.75	525	2410	4.7

2 YEAR STORM ROUTING A_xC = 1.51 IMP AC.

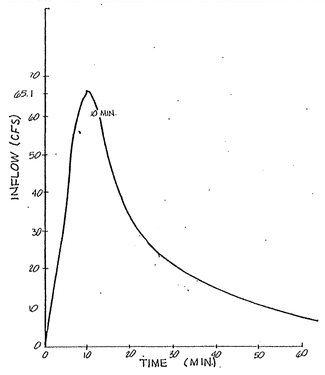
TIME (MIN)	Q_{IN} (CFS)	AVE Q IN (CFS)	VOL. (CF)	STORAGE (CF)	TOTAL VOL. IN (CF)	TRIAL WS ELEV.	OUTFLOW (CFS)	AVE. OUTFLOW (CFS)	TOTAL VOL. OUT (CF)	BAL. IN STOR. (CF)	CORR. WS ELEV.
5	3.7	1.85	555	0	555	1.40	0.02	0.01	3	552	1.4
10	6.7	5.2	1560	552	2112	4.20	0.98	0.50	150	1962	4.2
15	5.1	5.9	1770	1962	3737	5.15	6.4	3.7	1107	2625	5.2
20	3.6	4.35	1305	2625	3930	4.85	2.5	4.45	1335	2595	4.8
25	2.8	3.2	960	2595	3555	4.95	3.7	3.10	930	2625	5.0
30	2.3	2.55	765	2625	3390	4.80	2.1	2.90	870	2520	4.9
35	1.9	2.1	630	2520	3150	4.80	2.1	2.10	630	2520	4.9
40	1.6	1.75	525	2520	3045	4.75	1.6	1.85	555	2490	4.8
45	1.4	1.5	450	2490	2940	4.75	1.6	1.60	480	2460	4.7
50	1.2	1.3	390	2460	2850	4.60	1.05	1.33	399	2451	4.7
55	1.0	1.1	336	2451	2787	4.60	1.05	1.05	315	2474	4.7

100 YEAR STORM ROUTING IMP AC = 1.51

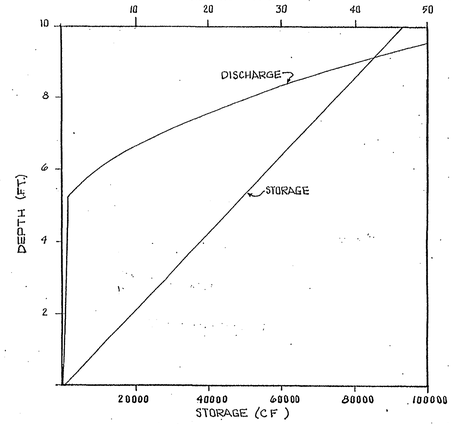
TIME (MIN)	Q_{IN} (CFS)	AVE Q IN (CFS)	VOL. (CF)	STORAGE (CF)	TOTAL VOL. IN (CF)	TRIAL WS ELEV.	OUTFLOW (CFS)	AVE. OUTFLOW (CFS)	TOTAL VOL. OUT (CF)	BAL. IN STOR. (CF)	CORR. WS ELEV.
5	5.5	2.8	834	0	834	1.9	0.10	0.05	15	819	1.9
10	12.2	8.9	2660	819	3479	5.1	5.8	2.95	885	2594	5.1
15	9.8	11.0	3295	2594	5889	5.5	12.2	9.0	2700	3189	5.5
20	6.7	8.3	2476	3189	5665	5.2	7.1	9.7	2895	2770	5.2
25	5.3	6.0	1798	2770	4568	5.1	5.8	6.5	1935	2633	5.1



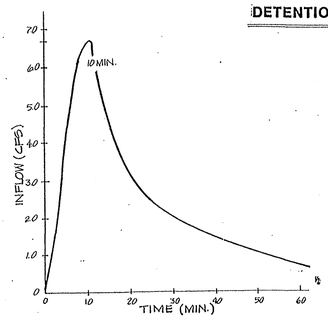
BMP DETENTION #1
10 YEAR STORM



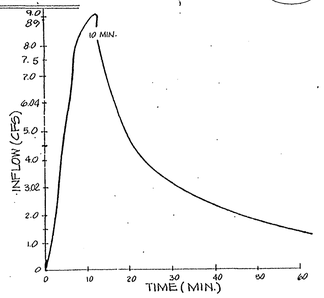
BMP DETENTION # 1
2 YEAR STORM



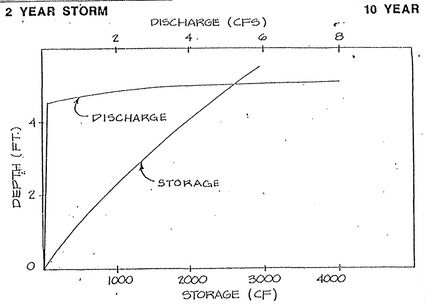
DETENTION FACILITY #1



BMP DETENTION # 2
2 YEAR STORM



BMP DETENTION #2
10 YEAR STORM



DETENTION FACILITY # 2

NOTE:
SEE SHEET 16 FOR 100-YR. OVERFLOW COMPUTATIONS, CONDENSED DRAINAGE ANALYSIS & ADEQUATE OUTFALL INFO.

DIVISION OF DESIGN REVIEW

NO.	DESCRIPTION	DATE	REV BY	APPROVED	DATE

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

SHEET 18 OF 26
DRAWN:
DATE: 6-19-87
SCALE: N.T.S.

COMMONWEALTH OF VIRGINIA
TERRANCE M. ANDERSON
No. 9009
PROFESSIONAL ENGINEER

REVISIONS

Application No. SE 2006-SU-034 Staff T.Strunk

APPROVED SE SP PLAN
SEE DEV CONDS DATED June 4, 2007
Date of (BOS) (BZA) approval June 4, 2007

Sheet 5 of 5

DETENTION COMPUTATIONS & DETAILS

PHASE 1
CENTREVILLE SQUARE
SPRINGFIELD DISTRICT
FAIRFAX COUNTY, VIRGINIA

SHEET 5 OF 5

FOR INFORMATIONAL PURPOSES