GENERALIZED DEVELOPMENT PLAN

DEAVERS PROPERTY

MOUNT VERNON DISTRICT
FAIRFAX COUNTY, VIRGINIA

DATE	REVISION
08/18/04	Revisions to layout as per
	Fairfax County Comments
09/03/04	Revisions to layout as per
	Fairfax County Comments
10/08/04	Fairfax County Comments
11/03/04	Fairfax County Comments

ZONING TABULATION:
R-3 CONVENTIONAL

NOTE: PARCEL C AND PARCEL D ARE NOT INCLUDED WITHIN THE FOLLOWING ZONING TABULATIONS. THESE TWO PARCELS ARE ONLY INCLUDED WITHIN THIS GDP SUBMISSION SINCE THEY ARE BEING REZONED.

GROSS SITE AREA: 315,335 SF OR 7.2391 AC.
MINIMUM DISTRICT SIZE: N/A

AVERAGE LOT AREA REQUIRED: 11,500 SF
MINIMUM LOT AREA REQUIRED: 10,500 SF
AVERAGE LOT AREA PROVIDED: 12,173 SF

MINIMUM LOT WIDTH:
INTERIOR LOT: 80 FEET
CORNER LOT: 105 FEET

MAXIMUM BUILDING HEIGHT PERMITTED: 35 FEET
MAXIMUM BUILDING HEIGHT PROPOSED: 35 FEET

MINIMUM YARD REQUIREMENTS:
FRONT: 30'
SIDE: 12'
REAR: 25'

MAXIMUM ALLOWABLE DENSITY:
Maximum allowable density permitted on this site is 3 DU/AC (21 Units)

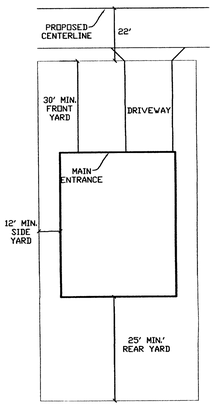
DENSITY CALCULATION:
Proposed Subdivision Density:
18 UNITS / 7.2391 AC = 2.49 DU/AC.

PUBLIC STREET ROW	1.17 AC.
TOTAL AREA IN LOTS	5.03 AC.
PARCEL A	0.17 AC.
PARCEL B	0.64 AC.
PARCEL C (** SEE NOTE ABOVE)	0.03 AC.
PARCEL D (** SEE NOTE ABOVE)	0.02 AC.
PARCEL E (** SEE NOTE BELOW)	0.19 AC.
OUTLOT A	0.03 AC.
OUTLOT B	0.01 AC.
TOTAL	7.29 AC.

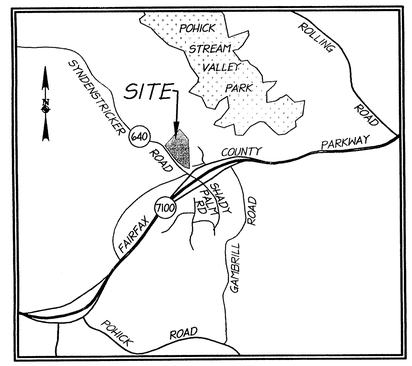
TREE COVER REQUIRED: 20%
TREE COVER PROVIDED: +/- 23%

PARKING REQUIRED: 2 SPACES / DU
PARKING PROVIDED: 2 SPACES / DU

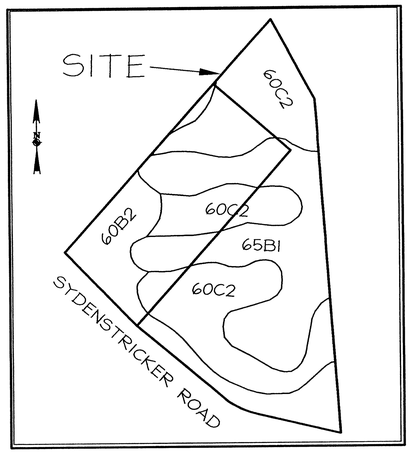
** NOTE: PARCEL E WILL BE A CONSERVATION EASEMENT (WATER QUALITY MANAGEMENT AREA) THAT WILL BE USED TOWARD BMP CREDIT.



TYPICAL HOUSE LOT LAYOUT DETAIL
SCALE: N.T.S.



VICINITY MAP
SCALE: 1" = 2000'



SOILS MAP
SCALE: 1" = 500'

SOIL ID NUMBERS	SERIES NAME	FOUNDATION SUPPORT	SUBSURFACE DRAINAGE	SLOPE STABILITY	ERODABILITY	GEOTECHNICAL REPORT REQ'D
60B2	APPLING UNDULATING	GOOD	GOOD	GOOD	SEVERE	NO
60C2	APPLING ROLLING	GOOD	GOOD	GOOD	SEVERE	NO
65B1	COLFAX UNDULATING	MARGINAL	MARGINAL	GOOD	MODERATE	NO

GENERAL NOTES

1. THE PROJECT CONSISTS OF 18 SINGLE-FAMILY DETACHED DWELLINGS.
2. THE PROPERTY SHOWN HEREON IS IDENTIFIED AS: 89-3((1)), PARCELS 20 AND 21A. THE TOTAL AREA IS 7.2891 ACRES OR 317,513 SQUARE FEET.
3. THE OWNER OF THE PROPERTY IS MARTHA M DEAVERS ET AL, 07229 SYDENSTRICKER ROAD, SPRINGFIELD, VA, 22152. THE APPLICANT FOR THIS GDP SUBMISSION IS GBI CORPORATION.
4. THE PROPERTY IS CURRENTLY ZONED R-1, AND IS PROPOSED TO BE REZONED TO R-3 CONVENTIONAL.
5. BOUNDARY SURVEY SHOWN IS BASED ON A CURRENT FIELD SURVEY BY christopher consultants, ltd. IN JANUARY, 2004.
6. TOPOGRAPHY IS SHOWN AT 2 FOOT CONTOUR INTERVALS AND WAS FIELD SURVEYED BY christopher consultants, ltd. IN JANUARY, 2004.
7. TITLE REPORT FURNISHED BY STEWART TITLE GUARANTY COMPANY, COMMITMENT No. 03012901, DATED DECEMBER 18, 2003.
8. THE PROPERTY SHOWN HEREON IS LOCATED ON F.E.M.A. MAP COMMUNITY PANEL NO. 515525 0075 D, DATED MARCH 5,1990 ZONE X, AN AREA DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN.
9. THIS PROPERTY IS LOCATED WITHIN THE POHICK CREEK WATERSHED.
10. THE PROPOSED LOTS ARE TO BE SERVED BY PUBLIC WATER AND PUBLIC SEWER.
11. CONSTRUCTION OF THE PROPOSED DEVELOPMENT WILL COMMENCE AS SOON AS ALL NECESSARY APPROVALS AND PERMITS ARE OBTAINED, SUBJECT TO MARKET CONDITIONS.
12. NO FLOODPLAINS, RESOURCE PROTECTION AREAS OR ENVIRONMENTAL QUALITY CORRIDORS (EQC) ARE EXISTING ON THIS PROPERTY.
13. THIS DEVELOPMENT PLAN CONFORMS TO ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS, UNLESS OTHERWISE SPECIFICALLY NOTED.
14. ALL STRUCTURES CURRENTLY EXISTING ON THE PROPERTY ARE TO BE DEMOLISHED.
15. THERE ARE NO KNOWN UTILITY EASEMENTS HAVING A WIDTH OF 25 FEET OR GREATER ON SITE.
16. THIS DEVELOPMENT PROPOSAL IS IN CONFORMANCE WITH THE FAIRFAX COUNTY COMPREHENSIVE PLAN RECOMMENDATIONS.
17. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO GRAVES OR BURIAL SITES LOCATED ON THIS PROPERTY.
18. NO ADU'S ARE REQUIRED OR PROPOSED WITH THIS PLAN.
19. THE PROPOSED DEVELOPMENT IS CONSISTENT WITH THE DENSITIES OF ADJACENT COMMUNITIES AND NO ADVERSE EFFECTS TO NEIGHBORING PROPERTIES ARE ANTICIPATED.
20. THE PUBLIC IMPROVEMENTS FOR THIS SITE INCLUDE THE PROPOSED PUBLIC STREETS ON SITE AND THE CONNECTIONS TO THE EXISTING HEATHER POINT DRIVE AND THE EXISTING PAIGE GLEN AVENUE (ELIMINATING THE TEMPORARY CUL-DE-SAC). THESE PUBLIC IMPROVEMENTS SHOWN ARE TO BE PROVIDED SIMULTANEOUSLY WITH SITE CONSTRUCTION.
21. NOT WITHSTANDING THE IMPROVEMENTS AND TABULATIONS SHOWN ON THIS PLAN, THE APPLICANT RESERVES THE RIGHT TO MAKE MINOR MODIFICATIONS TO THE FINAL DESIGN CONCEPTS, TO COMPLY WITH NEW CRITERIA AND REGULATIONS WHICH MAY BE ADOPTED BY FAIRFAX COUNTY SUBSEQUENT TO THE SUBMISSION OF THIS APPLICATION, PROVIDED THAT SUCH MODIFICATIONS ARE CONSISTENT WITH THE APPROVED GDP.
22. STORMWATER MANAGEMENT AND BEST MANAGEMENT PRACTICES ARE BEING PROVIDED FOR THIS SITE BY AN ON-SITE DRY POND AND ON-SITE BIO-RETENTION FACILITY (RAIN GARDEN).
23. BUILDING FOOTPRINTS SHOWN HEREON ARE FOR INFORMATIONAL PURPOSES ONLY AND MAY BE MODIFIED WITH FINAL ENGINEERING AND ARCHITECTURAL DESIGN. IT SHOULD BE UNDERSTOOD THAT FINAL BUILDING LOCATIONS AND FOOTPRINTS WILL ADHERE TO THE MINIMUM BUILDING SETBACKS AND LIMITS OF CLEARING AND GRADING AS SHOWN HEREON. FINAL LOT AREAS ARE SUBJECT TO MINOR MODIFICATIONS WITH FINAL ENGINEERING REQUIREMENTS. ANY REVISIONS TO BE IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED GDP.
24. THIS R-3 CONVENTIONAL DEVELOPMENT PROPOSAL IS IN CONFORMANCE WITH THE FAIRFAX COUNTY COMPREHENSIVE PLAN RECOMMENDATIONS AND CONFORMS TO ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS, UNLESS OTHERWISE SPECIFICALLY NOTED.
25. NO TRAILS ARE DEPICTED ON THE COMPREHENSIVE PLAN AND THEREFORE ARE NOT REQUIRED.
26. NO HAZARDOUS OR TOXIC SUBSTANCES ARE KNOWN TO BE PRESENT ON SITE.
27. A NOISE ATTENUATION FENCE HAS BEEN PROVIDED AS SHOWN ON THE PLAN.

RZ
Application No 2004-MV-019 Staff K CROOKSHANKS
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
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Date of BOS (PC) approval 1-10-05
Sheet 1 of 8

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Department of Planning & Zoning
NOV 04 2004
Zoning Evaluation Division

REQUESTED MODIFICATIONS

1. DURING SUBMISSION FOR THE FINAL SUBDIVISION PLAN, THE APPLICANT REQUEST A FAIRFAX COUNTY PUBLIC FACILITIES MODIFICATION FOR SECTION 7-0406.8A OF THE PFM, TO ALLOW FOR A REDUCTION FOR THE MINIMUM RIGHT-OF-WAY RADIUS FOR THE NORTHERLY MOST CUL-DE-SAC ON SITE TO 40'.

COMMONWEALTH OF VIRGINIA
WILLIAM R. ZINK
No. 21914
11/03/2004
PROFESSIONAL ENGINEER

APPLICANT
GBI CORPORATION
6408 GROVEDALE DRIVE, SUITE 202
ALEXANDRIA, VIRGINIA 22310
(703) 922-1850 FAX: (703) 922-1855

SHEET INDEX

1. COVER SHEET
2. EXISTING CONDITIONS
3. EXISTING VEGETATION MAP
4. GENERALIZED DEVELOPMENT PLAN
5. LANDSCAPE PLAN
6. BIORETENTION FACILITY LAYOUT AND COMPUTATIONS
7. SWM/BMP COMPUTATIONS
8. SWM/BMP COMPUTATIONS

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703.273.6820 · fax 703.273.7636

DATE	REVISION
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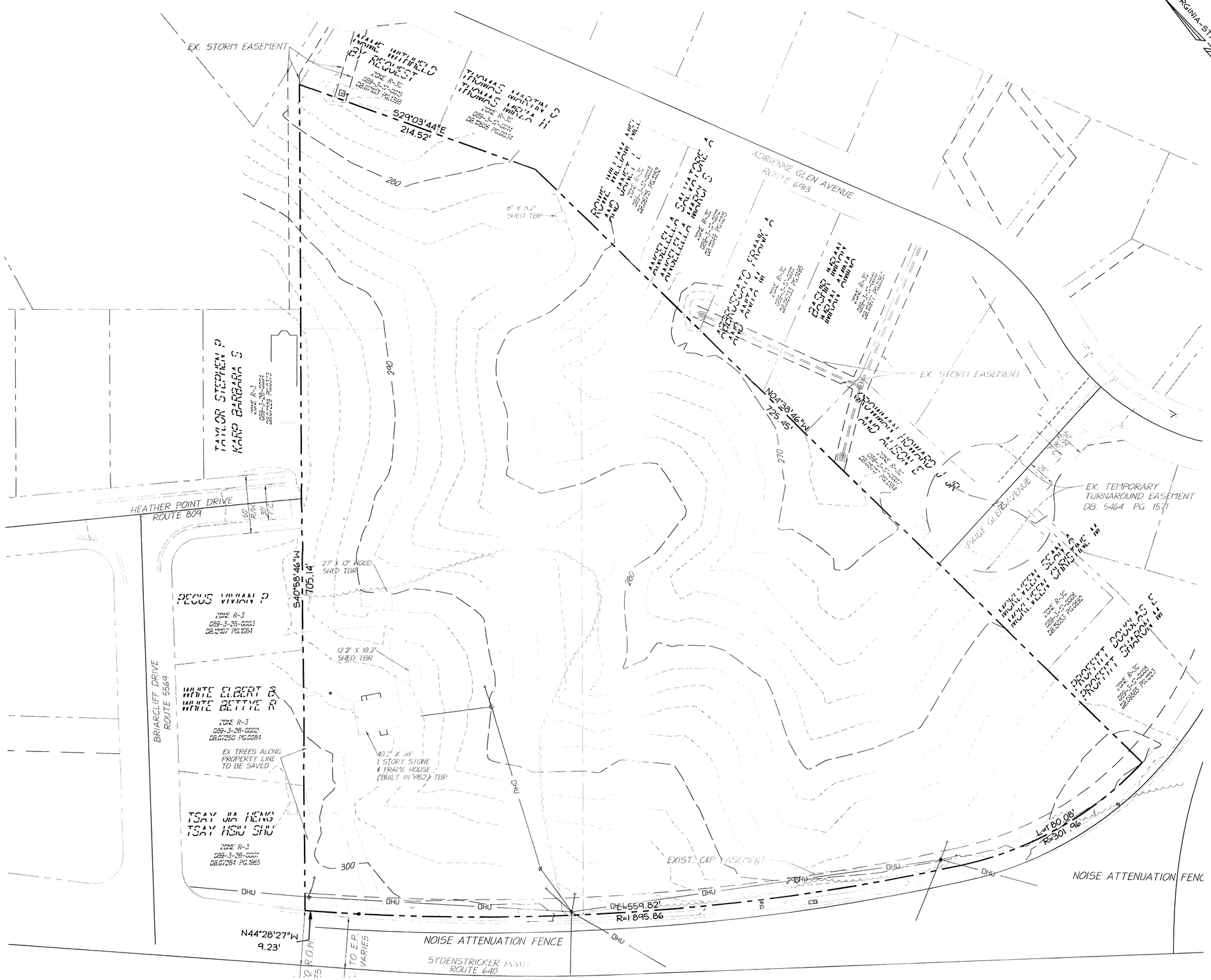

RZ 2004-MV-019
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APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 1-3-05
Date of (BOS) (PC) approval 1-10-05
Sheet 2 of 8

LEGEND

- EXISTING CONTOUR
- EXISTING WOODS LINE
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- E.P. : EDGE OF PAVEMENT
- TBR : TO BE REMOVED
- EDGE OF PAVEMENT
- FENCE (ALL TYPES)
- EXISTING WATER LINE
- EXISTING CURB AND GUTTER

40 20 0 40 80
GRAPHIC SCALE
SCALE: 1" = 40'

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COMMONWEALTH OF VIRGINIA
WILLIAM R. ZINK
No. 21914
10/8/2004
PROFESSIONAL ENGINEER

EXISTING CONDITIONS

DEAVERS PROPERTY
GENERALIZED DEVELOPMENT PLAN
MOUNT VERNON DISTRICT - FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=40'
DATE: 3/03/04
DESIGN: JR
DRAWN: DCS
CHECKED:
SHEET No. 2 OF 8

C- 4799

EXISTING VEGETATION MAP COVER TYPE SUMMARY TABLE

AREA	COVER TYPE	PRIMARY SPECIES	SUCCESSIONAL STAGE	CONDITIONS	ACREAGE
A	DEVELOPED LAND	GENERAL LANDSCAPE TREE SPECIES INCLUDES: HOLLY, OAK, MAPLE, FIR & SPRUCE	EARLY	GENERALLY HEALTHY STAND OF NURSERY STOCK PLANTS AND SHRUBS. SPECIES VARY	2.5931 AC.
B	UPLAND FOREST	AMERICAN BEECH, VIRGINIA PINE, HOLLY, OAK & SASSAFASS	MID	GENERALLY HEALTHY STAND. DOMINATE SPECIES IS OAK AND AMERICAN BEECH. OLD STAND WITH AVERAGE 12"-20" DBH. TREE STAND IN AVERAGE CONDITION.	4.6960 AC.

EVM DATA PROVIDED BY "christopher consultants, ltd."

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LEGEND

EXISTING DEVELOPED LAND

A EVM DESIGNATION

50 25 0 50 100
GRAPHIC SCALE
1" = 50'

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COMMONWEALTH OF VIRGINIA
WILLIAM R. ZINK
No. 21914
8/18/04
PROFESSIONAL ENGINEER

EXISTING VEGETATION MAP

DEAVERS PROPERTY
GENERALIZED DEVELOPMENT PLAN
MOUNT VERNON DISTRICT - FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=50'
DATE: 3/03/04
DESIGN: JR
DRAWN: DAD/DCS
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SHEET No. 3 OF 8

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C- 4799

DATE	REVISION
5/14/04	County Comments
	Dim. C.L. to E.P. and R.O.W.
08/18/04	Revisions to layout as per
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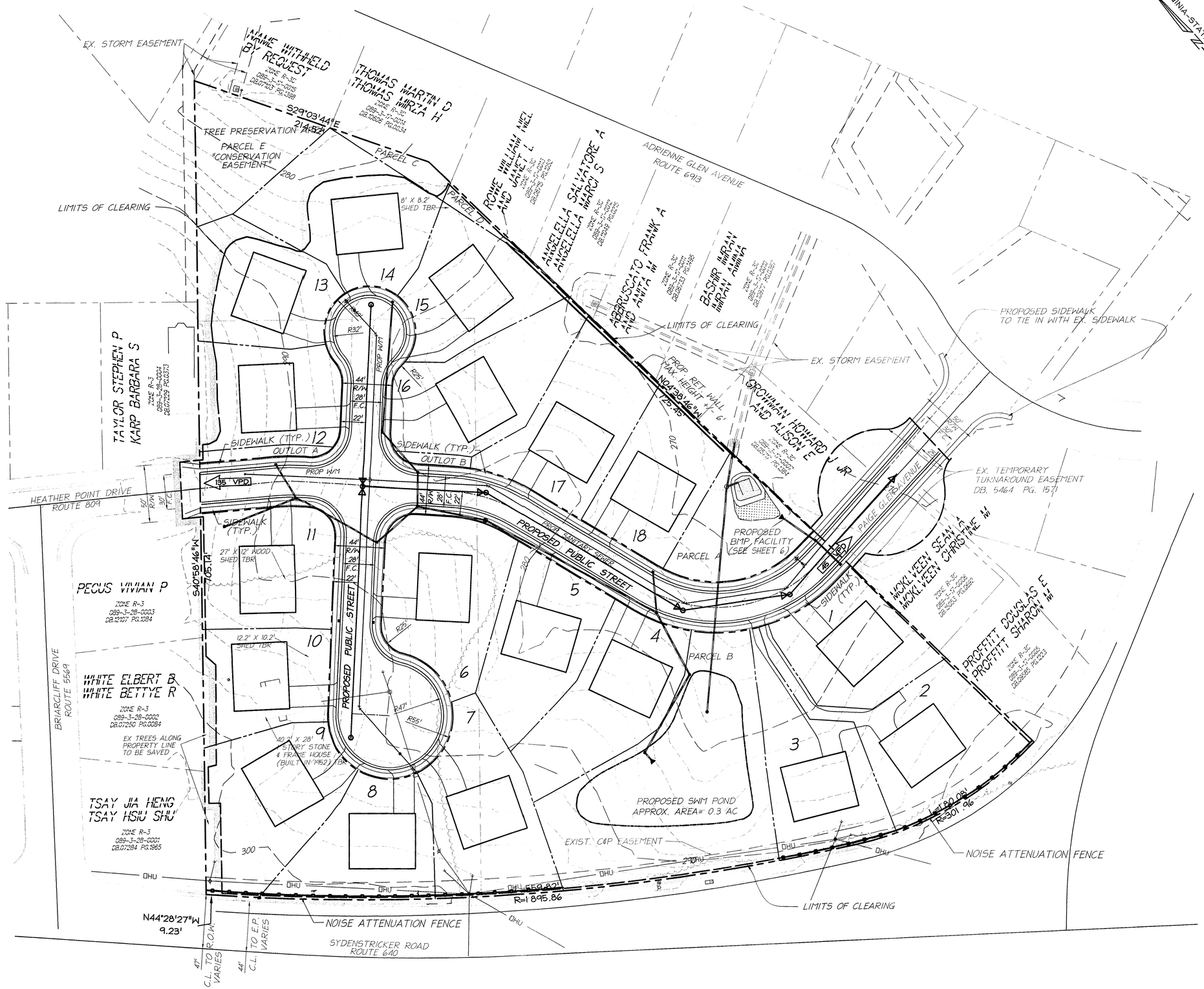

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LEGEND

- : LIMITS OF CLEARING AND GRADING
- 48 : EXISTING CONTOUR
- 48 : PROPOSED CONTOUR
- +48.3 : PROPOSED SPOT ELEVATION
- : EXISTING WOODS LINE
- : EXISTING STORM SEWER
- : PROPOSED STORM SEWER
- : EXISTING SANITARY SEWER
- : PROPOSED SANITARY SEWER
- W : EXISTING WATER LINE
- W : PROPOSED WATER LINE
- : EXISTING CURB AND GUTTER
- : PROPOSED CURB AND GUTTER
- E.P. : EDGE OF PAVEMENT
- TBR : TO BE REMOVED
- : EDGE OF PAVEMENT
- : FENCE
- : ACOUSTICAL FENCE

40 20 0 40 80
GRAPHIC SCALE
SCALE: 1" = 40'

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COMMONWEALTH OF VIRGINIA
WILLIAM R. ZINK
No. 21914
11/03/2004
PROFESSIONAL ENGINEER

GENERALIZED DEVELOPMENT PLAN

DEAVERS PROPERTY
GENERALIZED DEVELOPMENT PLAN
MOUNT VERNON DISTRICT - FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=40'
DATE: 3/03/04
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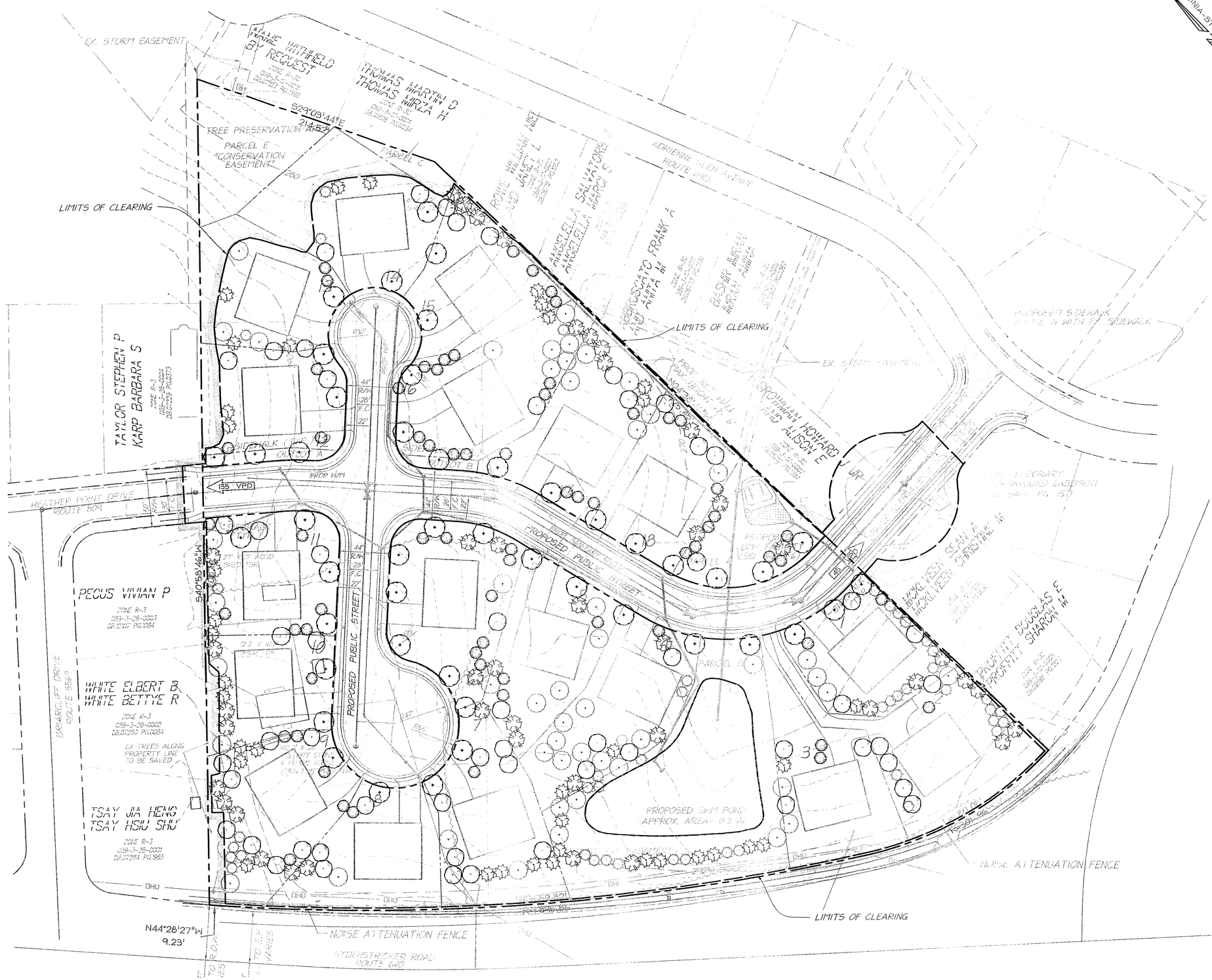

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NOTE

THE PLANTING PLAN IS COMPRISED OF AT LEAST 90% TREES THAT ARE NATIVE OR DESIRABLE SPECIES TO ACHIEVE THE 1.10 TREE COVER CREDIT. THIS MAY BE SUBJECT TO CHANGE PRIOR TO FINAL ENGINEERING.

LEGEND

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- : EXISTING CONTOUR
- 48 : PROPOSED CONTOUR
- +48.3 : PROPOSED SPOT ELEVATION
- : EXISTING WOODS LINE
- : EXISTING STORM SEWER
- : PROPOSED STORM SEWER
- : EXISTING SANITARY SEWER
- : PROPOSED SANITARY SEWER
- W : EXISTING WATER LINE
- W : PROPOSED WATER LINE
- : EXISTING CURB AND GUTTER
- : PROPOSED CURB AND GUTTER
- E.P. : EDGE OF PAVEMENT
- TBR : TO BE REMOVED
- : EDGE OF PAVEMENT
- X—X—X—X—X—X—X : FENCE
- : ACCOUSTICAL FENCE
- : LARGE DECIDUOUS TREES
- : LARGE DECIDUOUS TREES
- : MEDIUM DECIDUOUS TREES
- : SMALL DECIDUOUS TREES
- : LARGE EVERGREEN TREES
- : MEDIUM EVERGREEN TREES
- : SMALL EVERGREEN TREES

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40 20 0 40 80
GRAPHIC SCALE
SCALE: 1" = 40'

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COMMONWEALTH OF VIRGINIA
WILLIAM R. ZINK
No. 21914
11/03/2004
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LANDSCAPE PLAN

DEAVERS PROPERTY
GENERALIZED DEVELOPMENT PLAN
MOUNT VERNON DISTRICT - FAIRFAX COUNTY, VIRGINIA

SCALE: 1" = 40'
DATE: 3/03/04
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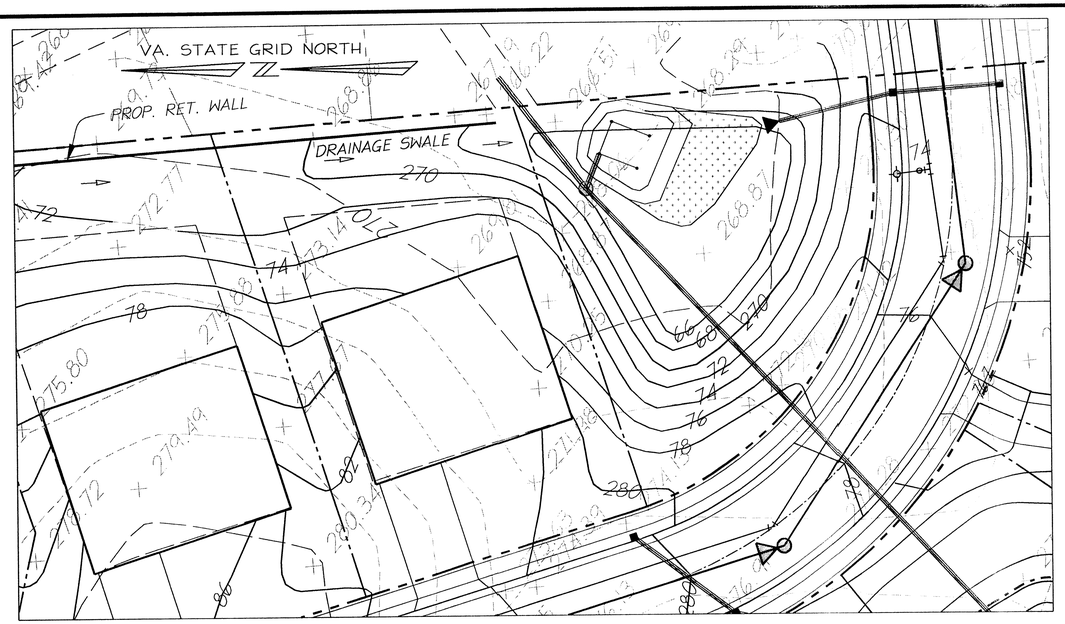
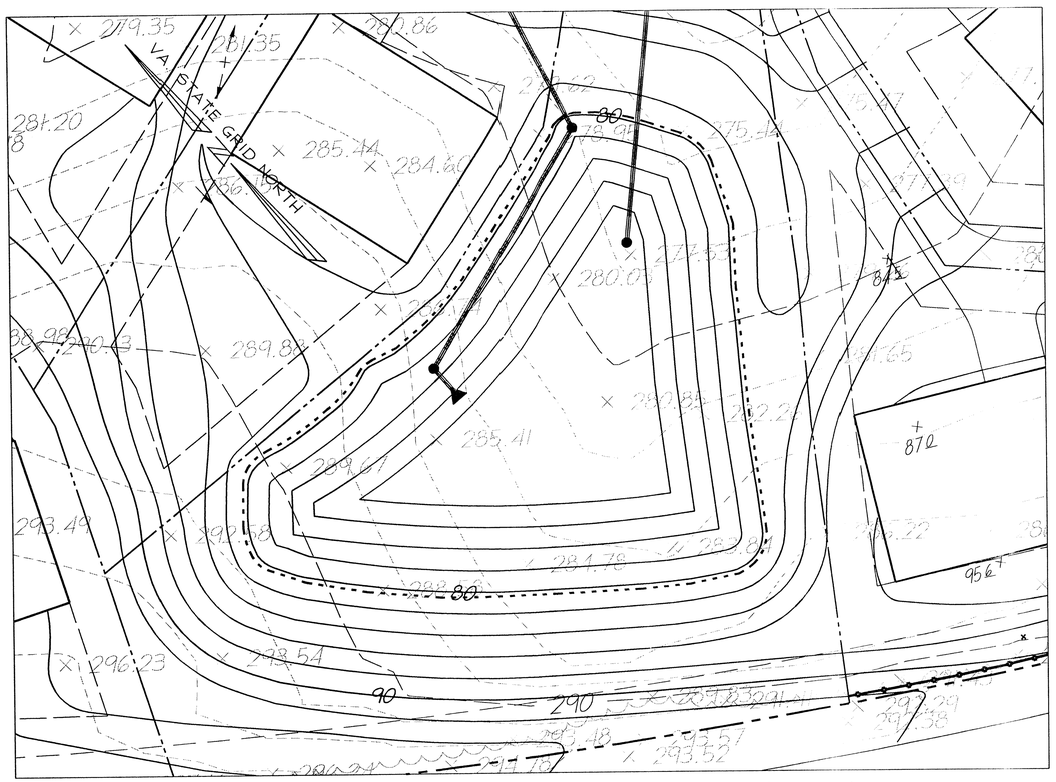


BIORETENTION FACILITY GRADING PLAN

20 10 0 20 40

GRAPHIC SCALE
SCALE: 1" = 20'

CONSTRUCTION NOTE:
BIORETENTION FACILITIES SHALL BE CONSTRUCTED AFTER THE SITE WORK IS COMPLETE AND STABILIZATION MEASURES HAVE BEEN IMPLEMENTED.



STORMWATER MANAGEMENT GRADING PLAN

SCALE: 1" = 20'

BIORETENTION FACILITY

THIS BIORETENTION FACILITY (RAIN GARDEN) IS PROPOSED WITH THE DEVELOPMENT OF THIS SITE. A REQUEST WILL BE SUBMITTED TO THE DIRECTOR FOR PERMISSION TO UTILIZE THIS INNOVATIVE BMP TECHNIQUE IS PROVIDED WITH THE SUBDIVISION PLAN.

THE BIORETENTION FACILITY HAS BEEN GRADED SUCH THAT THE WATER QUALITY VOLUME REQUIRED WILL BE DETAINED IN THE RAIN GARDEN. FLOW EXCEEDING THIS VOLUME WILL CONTINUE OVER THE WIER AND INTO THE CLEAR WELL CHAMBER. THE CHAMBER CONNECTS TO A CLOSED SYSTEM THAT WILL CONVEY THE FLOW TO THE EXISTING INLET STRUCTURE DOWNSTREAM.

WATER QUALITY WILL BE PROVIDED IN THE RAIN GARDEN BY THE INFILTRATION THROUGH THE PLANTING MATERIALS TO THE PLANTING SOIL AND UNDERDRAINS LOCATED BENEATH THE GARDEN. THE PROPOSED UNDERDRAINS AT THE BOTTOM OF THIS FACILITY WILL DRAIN TO THE PROPOSED CLEAR WELL CHAMBER. AN ORIFICE CAP WILL BE INSTALLED ON THE OUTLET PIPE FROM THIS STRUCTURE WITH A SIZE OF 7/12"(DESIGNED IN ACCORDANCE WITH COMPUTATIONS ON THIS SHEET). AFTER FLOWING THROUGH THE ORIFICE, THE WATER WILL BE RELEASED INTO THE OFFSITE STORM SYSTEM DOWNSTREAM. THIS FACILITY WILL BE PRIVATELY MAINTAINED BY FAIRFAX COUNTY.

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ULTRA-URBAN BMP COMPUTATIONS

WORKSHEET E: COMPUTATIONS COMMON TO ALL BMPS

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

Structures	=		sf			ac
parking lot	=		sf			ac
roadway	=		sf			ac
sidewalk	=		sf			ac
other	=	61148	sf	/43,560 = Ia	=	1.40 ac
	=		sf			ac
	=		sf			ac
Total	=	61148	sf	/43,560 = Ia	=	1.40 ac

(Note: This value may already be computed on Worksheet A)

Part 2: Computer Water Quality Volume to be Treated:

WQV = 1816*Ia = 1816 x 1.40 = 2542 cf

Part 3: Identify Critical Site Parameters:

Storm sewer invert at proposed connection point =	??	ft
Length of outflow line (BMP - storm sewer) =	N/A	ft
Minimum BMP outflow invert @ minimum 0.5 grade =	N/A	ft
Site Plan surface elevation at BMP location =	267.50	ft
Inflow invert to BMP from drainage system plan =	??	ft
Flow splitter weir or bypass pipe invert (usually set at maximum BMP pond depth)	0.50	ft
BMP outflow possible by gravity ; Pumped BMP Req'd		

An overflow weir has been provided to pass the peak flow rate of the 10-year storm (7.27 in/hr., 5 min. TOC) using the Rational Method (Q = CIA). Refer to computations below.

WORKSHEET L1: COMPUTATIONS FOR BIORETENTION FILTER

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

dp =	0.5 ft
From Worksheet E;	
Ia =	1.40 ac
WQV =	2542 sf

Outflow by gravity possible: YES

Effluent pump required: NO

Part 5: Compute Minimum Area of Bioretention Filter (Afm):

Afm = 900 x Ia = 900 x 1.40 1260 sf

Part 6: Compute Site Constraints, Select Final Filter Area (AF):

AF = 1265 sf

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

Vv = AF x 0.2 df = 1265 x 0.2 x 5 = 1265 cf

Part 8: Compute Flow Through Filter During Filling Period (VQ):
(Assume 1-hour to fill per D.C. practice)

VQ = 75 x Ia = 75 x 1.4 = 105 cf

Part 9: Compute Total Basin Unit Storage (Vst):

Vst = WQV - Vv - VQ = 2542 - 1265 - 105 = 1172 cf

Part 10: Compute Minimum Area of Storage Basin (AB):

AF x dp = 1265 x 0.5 = 632.5 cf
If Vst < AF x dp make Ab = AF
If Vst > AF x dp make Ab = Vst/dp = 2344

Part 10: (Alternative): Compute Excess Storage Requirement (SE) and Store Outside Bioretention Filter Basin (I.e. underground pipe gallery, etc):

SE = Vst - (AF x dp) = 540 cf

Part 11: Compute Peak Flow Rate for Orifice(s) for 24-Hour Drawdown:

$$QP = \frac{WQV}{(0.5 \times 3{,}600 \times 24)} = 0.0588 \text{ cfs}$$

Part 12: Compute Outflow Manifold Pipe Orifice Area to Provide 24-Hour Drawdown:

$$AO = \frac{QP}{0.6(64.4 \times hmax)^{0.5}} = 0.0588 / (0.6 \times (64.4 \times 6)^{0.5}) = 0.0030 \text{ sf}$$

Part 13: Compute Diameter of Required Orifice(s) (Do):

Do = 2.0 x (Ao / 3.1416)^0.5 = 2.0 x (0.0030 / 3.1416)^0.5 = 0.0618 ft x 12 = 0.74 in

Note: At least one Bioretention Filter per development project must be equipped with a monitoring manhole downstream of the Clearwell (Manifold Orifice Chamber) and upstream of the large storm overflow pipe.

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Sheet 6 of 8

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COMMONWEALTH OF VIRGINIA
WILLIAM R. ZINK
No. 21914
10/8/2004
PROFESSIONAL ENGINEER

BIORETENTION FACILITY LAYOUT AND COMPUTATIONS

DEAVERS PROPERTY
GENERALIZED DEVELOPMENT PLAN
MOUNT VERNON DISTRICT - FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=20'
DATE: 3/03/04
DESIGN: JR
DRAWN: MAC
CHECKED:
SHEET No. 6 OF 8

C- 4799

STORMWATER MANAGEMENT/BMP NARRATIVE

The Deavers Property consists of 7.3 acres. The following calculations address storage and release requirements and design for the proposed on-site dry pond. The pond, located in the southern portion of the property, is proposed to satisfy detention requirements and achieve phosphorous removal (best management practices - BMP). In addition, a bioretention facility (raingarden) is proposed on the eastern property boundary, to treat additional runoff for phosphorous removal before leaving the site. The dry pond satisfies the detention requirements set fourth by Fairfax County, in that the post development release rate is less than the pre-development release rate. Together, the pond and rain garden facilities meet the Fairfax County requirement that the phosphorous load be reduced by 40% on the site after development. Both the bioretention facility and the dry stormwater management pond will be located within an easement and maintained by Fairfax County.

5.54 acres (0.35 acres being off-site) drain to the pond. 1.40 acres drain to the bioretention facility; 1.17 acres of the developed area runs off uncontrolled. As shown on this sheet, the maximum 10-year release on the pond is 7.85 cfs, and the pond is designed for 7.66 cfs. The pond is designed to detain 77,079 cubic feet, which is more than the required volume. See calculations on this sheet.

As stated above, 40% phosphorous removal is required for to satisfy BMP requirements. As the calculations show, 40.04% shall be provided.

2. FLOW DATA

PRE-DEVELOPED RUNOFF

	AREA	2-YR C	10-YR C	100-YR C	2-YR CA	10-YR CA	Cf =1.25 100-YR CA
ONSITE A1	7.47	0.35	0.35	0.35	2.61	2.61	3.27
OFFSITE A2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OFFSITE A3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Cw	Cw	Cw	2-YR CA	10-YR CA	100-YR CA
TOTALS:	7.47	0.35	0.35	0.35	2.61	2.61	3.27

Tc = 10 min

	I	CA	Q2	Q10	Q100
2-YR	5.45	2.61	14.25		
10-YR	7.27	2.61		19.01	
100-YR	9.84	3.27			32.16

POST-DEVELOPED RUNOFF

	AREA	2-YR C	10-YR C	100-YR C	2-YR CA	10-YR CA	Cf =1.25 100-YR CA
A1 - CONTROLLED TO POND	5.19	0.60	0.60	0.60	3.11	3.11	3.89
A2 - ONSITE UNCONTROLLED	1.40	0.60	0.60	0.60	0.84	0.84	1.05
A3 - ONSITE UNCONTROLLED	0.15	0.60	0.60	0.60	0.09	0.09	0.11
A4 - ONSITE UNCONTROLLED	0.49	0.60	0.60	0.60	0.29	0.29	0.37
A5 - ONSITE UNCONTROLLED	0.53	0.60	0.60	0.60	0.32	0.32	0.40
A6 - OFFSITE TO POND	0.35	0.00	0.00	0.00	0.00	0.00	0.00
		Cw	Cw	Cw	2-YR CA	10-YR CA	100-YR CA
TOTALS:	8.11	0.57	0.57	0.57	4.65	4.65	5.82

Tc = 5 min

	I	CA	Q2	Q10	Q100
2-YR	5.45	4.65	25.36		
10-YR	7.27	4.65		33.83	
100-YR	9.84	5.82			57.23

POST-DEVELOPED POND HYDROGRAPHS

	AREA	2-YR C	10-YR C	100-YR C	2-YR CA	10-YR CA	Cf=1.25 100-YR CA
TOTAL AREA TO POND - A1, A6	5.54	0.56	0.56	0.56	3.11	3.11	3.89

Tc = 5 min

	I	CA	Q2	Q10	Q100
2-YR	5.45	3.11	16.97		
10-YR	7.27	3.11		22.64	
100-YR	9.84	3.89			38.30

MAXIMUM ALLOWABLE POND RELEASE

	PRE-DEV. RUNOFF		POST-DEV. ON SITE UNCONTROLLED		POST-DEV. OFFSITE CONTROLLED			
Q2 =	14.25	-	8.39	+	0.00	=	5.86	CFS
Q10 =	19.01	-	11.19	+	0.00	=	7.82	CFS

ACTUAL POND RELEASE

	BMP	Q2	Q10	SDF	FBH
DISCHARGE (CFS)	0.23	4.46	7.66	24.50	47.94
WSEL (FT)	278.00	278.48	278.83	279.28	279.72

NOTE: ALL 100-YR CALCULATIONS HAVE UTILIZED A Cf FACTOR OF 1.25

3. POST-DEVELOPMENT INFLOW HYDROGRAPH

TIME (MIN)	FAIRFAX COUNTY HYDROGRAPH tc = 5 MIN 2-YR IN/HR	10-YR IN/HR	100-YR IN/HR	POND PREDEVELOPED - SITE 2-YR INFLOW Q (CFS)	10-YR INFLOW Q (CFS)	POST DEVELOPED - TO POND 2-YR INFLOW Q (CFS)	10-YR INFLOW Q (CFS)	SDF (100-YR*1.25) (CFS)	FBH (SDF*1.5) (CFS)
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	5.45	7.27	9.84	14.25	19.01	16.97	22.64	38.30	57.45
10	3.51	4.68	6.37	9.18	12.24	10.93	14.57	24.80	37.19
15	2.60	3.46	4.73	6.80	9.05	8.10	10.77	18.41	27.62
20	2.08	2.77	3.74	5.44	7.24	6.48	8.63	14.56	21.84
25	1.72	2.29	3.13	4.50	5.99	5.36	7.13	12.18	18.28
30	1.46	1.94	2.65	3.82	5.07	4.55	6.04	10.32	15.47
35	1.28	1.68	2.33	3.35	4.39	3.99	5.23	9.07	13.60
40	1.10	1.47	2.07	2.88	3.84	3.43	4.58	8.06	12.09
45	1.00	1.31	1.88	2.61	3.42	3.11	4.08	7.32	10.98
50	0.89	1.18	1.69	2.33	3.09	2.77	3.67	6.58	9.87
55	0.82	1.08	1.55	2.14	2.82	2.55	3.36	6.03	9.05
60	0.74	0.99	1.42	1.93	2.59	2.30	3.08	5.53	8.29
65	0.68	0.91	1.30	1.78	2.38	2.12	2.83	5.06	7.59
70	0.62	0.83	1.18	1.62	2.17	1.93	2.58	4.59	6.89
75	0.56	0.74	1.07	1.46	1.93	1.74	2.30	4.16	6.25
80	0.49	0.66	0.95	1.28	1.73	1.53	2.06	3.70	5.55
85	0.43	0.58	0.83	1.12	1.52	1.34	1.81	3.23	4.85
90	0.37	0.50	0.71	0.97	1.31	1.15	1.56	2.76	4.15
95	0.31	0.41	0.59	0.81	1.07	0.97	1.28	2.30	3.44
100	0.25	0.33	0.47	0.65	0.86	0.78	1.03	1.83	2.74
105	0.19	0.25	0.36	0.50	0.65	0.59	0.78	1.40	2.10
110	0.12	0.17	0.24	0.31	0.44	0.37	0.53	0.93	1.40
115	0.06	0.08	0.12	0.16	0.21	0.19	0.25	0.47	0.70
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

POND RATING CURVE

Rating Curve Calculation for Riser Structure

BMP orifice
Opening Area = 0.049 sq ft
BMP elevation = 273.50

Control Weir
Length = 3 ft

Weir
Length = 12.417 feet
C = 3
Q = CLH^3/2

Orifice
Opening Area = 7.26 sq ft
C = 0.6
Q = CA(2gH)^.5

Structure top @ 275.00

Barrel length = 192.8 ft
Barrel Diameter= 18

5. RATING CURVE

Elevation	Riser Stage (ft)	Q BMP orifice (cfs)	Q control weir (cfs)	Q weir top (cfs)	Q orifice top (cfs)	barrel inlet flow control (cfs)	barrel outlet flow control (cfs)	Q controlling (cfs)
271.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
271.50	0.50	0.17	0.00	0.00	0.00	6.01	4.27	0.17
272.00	1.00	0.24	0.00	0.00	0.00	8.50	6.04	0.24
272.50	1.50	0.29	0.00	0.00	0.00	10.42	7.40	0.29
273.00	2.00	0.33	0.00	0.00	0.00	12.03	8.54	0.33
273.50	2.50	0.37	0.00	0.00	0.00	13.45	9.55	0.37
274.00	3.00	0.41	3.18	0.00	0.00	14.73	10.46	3.59
274.50	3.50	0.44	9.00	0.00	0.00	15.91	11.30	9.44
275.00	4.00	0.47	16.53	0.00	0.00	17.01	12.08	17.01
275.50	4.50	0.50	25.46	13.17	24.72	18.04	12.81	12.81
276.00	5.00	0.53	35.58	37.25	34.96	19.02	13.50	13.50
276.50	5.50	0.55	46.77	68.43	42.81	19.94	14.16	14.16
277.00	6.00	0.58	58.93	105.36	49.44	20.83	14.79	14.79
277.50	6.50	0.60	72.00	147.25	55.27	21.68	15.40	15.40
278.00	7.00	0.62	85.91	193.56	60.55	22.50	15.98	15.98
278.50	7.50	0.65	100.62	243.92	65.40	23.29	16.54	16.54
279.00	8.00	0.67	116.09	298.01	69.91	24.05	17.08	17.08
279.50	8.50	0.69	132.27	355.60	74.15	24.79	17.61	17.6
280.00	9.00	0.71	149.15	416.48	78.17	25.51	18.12	18.12
280.50	9.50	0.73	166.68	480.49	81.98	26.21	18.61	18.61
281.00	10.00	0.75	184.86	547.48	85.63	26.89	19.10	19.10
281.50	10.50	0.76	203.65	617.32	89.12	27.56	19.57	19.57

4. STAGE-STORGE CURVE

Elev. (ft)	Area (sf)	Storage (cf)
71.00	0	0
71.50	3054	764
72.00	3467	2394
72.50	3902	4236
73.00	4361	6302
73.50	4842	8603
74.00	5336	11147
74.50	5850	13944
75.00	6380	17001
75.50	6926	20328
76.00	7489	23931
76.50	8068	27821
77.00	8663	32003
77.50	9275	36488
78.00	9948	41294
78.50	10586	46427
79.00	11239	51883
79.50	11905	57669
80.00	12588	63793
80.50	13283	70260
81.00	13992	77079

OUTFALL NARRATIVE

Pre-development runoff for the site flows to the existing storm sewer system to the east of the property. Two 6' yard inlets, located on adjacent properties, collect the runoff and it is conveyed approximately 350' to the outfall, where it daylights to a perennial stream within an existing storm drainage easement. Based on preliminary design, no improvements to the existing stream are anticipated.

At final design, inverts, diameters, lengths, and conditions of the downstream conveyance system will be provided. Also, at final design, cross sections will be provided along the perennial stream.

Based on our engineering review of the site outfalls, there are no proposed offsite improvements required.

DRAINAGE DIVIDE PLAN
SCALE : 1"=60'

RZ 2004-MV-019 Application No. Staff KC
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 1-3-05
Date of (BOS) (PC) approval 1-10-05
Sheet 7 of 8

DATE	REVISION
08/18/04	Revisions to layout as per
	Fairfax County Comments
09/03/04	Revisions to layout as per
	Fairfax County Comments

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
9900 main street (fourth floor) fairfax va. 22031-3907
703.273.6820 · fax 703.273.7636

COMMONWEALTH OF VIRGINIA
WILLIAM R. ZINK
No. 21914
8/18/04
PROFESSIONAL ENGINEER

SWM AND BMP COMPUTATIONS

DEAVERS PROPERTY
GENERALIZED DEVELOPMENT PLAN

MOUNT VERNON DISTRICT - FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=60'
DATE: 3/03/04
DESIGN: JR
DRAWN: DAD
CHECKED:
SHEET No. 7 OF 8

C- 4799

P:\Projects\04-06-01\C-4799\07-POND COMPS.dwg, 09/07/2004 02:13:30 PM, FxHP1050+final.pc3, christopher consultants, ltd, Jim Rector

2-YEAR HYDROGRAPH REPORT

Hydrograph Report

Page 1

Hydraflow Hydrographs by Intelisolve

Hyd. No. 3

pond outflow

Hydrograph type = Reservoir
Storm frequency = 2 yrs
Inflow hyd. No. = 1
Max. Elevation = 74.08 ft

Peak discharge = 4.51 cfs
Time interval = 5 min
Reservoir name = sydenstricker pon
Max. Storage = 11,585 cuft

Storage Indication method used.

Outflow hydrograph volume = 23,172 cuft

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
5	7.99	71.62	—	—	—	—	—	—	—	—	—	0.19
10	14.31 <<	72.55	—	—	—	—	—	—	—	—	—	0.29
15	10.57	73.39	—	—	—	—	—	—	—	—	—	0.36
20	7.34	73.84	—	—	—	—	—	—	—	—	—	2.55
25	5.66	74.03	—	—	—	—	—	—	—	—	—	3.92
30	4.63	74.08 <<	—	—	—	—	—	—	—	—	—	4.51 <<
35	3.89	74.07	—	—	—	—	—	—	—	—	—	4.39
40	3.30	74.04	—	—	—	—	—	—	—	—	—	4.01
45	2.83	74.00	—	—	—	—	—	—	—	—	—	3.57
50	2.43	73.95	—	—	—	—	—	—	—	—	—	3.27
55	2.15	73.90	—	—	—	—	—	—	—	—	—	2.96
60	1.87	73.85	—	—	—	—	—	—	—	—	—	2.65
65	1.71	73.81	—	—	—	—	—	—	—	—	—	2.38
70	1.56	73.78	—	—	—	—	—	—	—	—	—	2.14
75	1.40	73.74	—	—	—	—	—	—	—	—	—	1.93
80	1.24	73.71	—	—	—	—	—	—	—	—	—	1.74
85	1.09	73.68	—	—	—	—	—	—	—	—	—	1.55
90	0.93	73.66	—	—	—	—	—	—	—	—	—	1.38
95	0.78	73.63	—	—	—	—	—	—	—	—	—	1.21
100	0.62	73.61	—	—	—	—	—	—	—	—	—	1.05
105	0.47	73.58	—	—	—	—	—	—	—	—	—	0.89
110	0.31	73.56	—	—	—	—	—	—	—	—	—	0.73
115	0.16	73.53	—	—	—	—	—	—	—	—	—	0.57
120	0.00	73.51	—	—	—	—	—	—	—	—	—	0.41
125	0.00	73.48	—	—	—	—	—	—	—	—	—	0.37
130	0.00	73.46	—	—	—	—	—	—	—	—	—	0.37
135	0.00	73.43	—	—	—	—	—	—	—	—	—	0.36
140	0.00	73.41	—	—	—	—	—	—	—	—	—	0.36
145	0.00	73.39	—	—	—	—	—	—	—	—	—	0.36
150	0.00	73.36	—	—	—	—	—	—	—	—	—	0.36
155	0.00	73.34	—	—	—	—	—	—	—	—	—	0.36
160	0.00	73.32	—	—	—	—	—	—	—	—	—	0.35
165	0.00	73.29	—	—	—	—	—	—	—	—	—	0.35
170	0.00	73.27	—	—	—	—	—	—	—	—	—	0.35
175	0.00	73.25	—	—	—	—	—	—	—	—	—	0.35
180	0.00	73.23	—	—	—	—	—	—	—	—	—	0.35
185	0.00	73.20	—	—	—	—	—	—	—	—	—	0.34
190	0.00	73.18	—	—	—	—	—	—	—	—	—	0.34

Continues on next page...

pond outflow

Page 2

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
195	0.00	73.16	—	—	—	—	—	—	—	—	—	0.34
200	0.00	73.14	—	—	—	—	—	—	—	—	—	0.34
205	0.00	73.11	—	—	—	—	—	—	—	—	—	0.34
210	0.00	73.09	—	—	—	—	—	—	—	—	—	0.34
215	0.00	73.07	—	—	—	—	—	—	—	—	—	0.33
220	0.00	73.05	—	—	—	—	—	—	—	—	—	0.33
225	0.00	73.03	—	—	—	—	—	—	—	—	—	0.33
230	0.00	73.00	—	—	—	—	—	—	—	—	—	0.33
235	0.00	72.98	—	—	—	—	—	—	—	—	—	0.33
240	0.00	72.96	—	—	—	—	—	—	—	—	—	0.32
245	0.00	72.93	—	—	—	—	—	—	—	—	—	0.32
250	0.00	72.91	—	—	—	—	—	—	—	—	—	0.32
255	0.00	72.89	—	—	—	—	—	—	—	—	—	0.32
260	0.00	72.86	—	—	—	—	—	—	—	—	—	0.32
265	0.00	72.84	—	—	—	—	—	—	—	—	—	0.32
270	0.00	72.82	—	—	—	—	—	—	—	—	—	0.31
275	0.00	72.79	—	—	—	—	—	—	—	—	—	0.31
280	0.00	72.77	—	—	—	—	—	—	—	—	—	0.31
285	0.00	72.75	—	—	—	—	—	—	—	—	—	0.31
290	0.00	72.73	—	—	—	—	—	—	—	—	—	0.31
295	0.00	72.70	—	—	—	—	—	—	—	—	—	0.30
300	0.00	72.68	—	—	—	—	—	—	—	—	—	0.30
305	0.00	72.66	—	—	—	—	—	—	—	—	—	0.30
310	0.00	72.64	—	—	—	—	—	—	—	—	—	0.30
315	0.00	72.62	—	—	—	—	—	—	—	—	—	0.30
320	0.00	72.59	—	—	—	—	—	—	—	—	—	0.30
325	0.00	72.57	—	—	—	—	—	—	—	—	—	0.29
330	0.00	72.55	—	—	—	—	—	—	—	—	—	0.29
335	0.00	72.53	—	—	—	—	—	—	—	—	—	0.29
340	0.00	72.51	—	—	—	—	—	—	—	—	—	0.29
345	0.00	72.49	—	—	—	—	—	—	—	—	—	0.29
350	0.00	72.46	—	—	—	—	—	—	—	—	—	0.28
355	0.00	72.44	—	—	—	—	—	—	—	—	—	0.28
360	0.00	72.42	—	—	—	—	—	—	—	—	—	0.28
365	0.00	72.39	—	—	—	—	—	—	—	—	—	0.28
370	0.00	72.37	—	—	—	—	—	—	—	—	—	0.27
375	0.00	72.35	—	—	—	—	—	—	—	—	—	0.27
380	0.00	72.33	—	—	—	—	—	—	—	—	—	0.27
385	0.00	72.30	—	—	—	—	—	—	—	—	—	0.27
390	0.00	72.28	—	—	—	—	—	—	—	—	—	0.27
395	0.00	72.26	—	—	—	—	—	—	—	—	—	0.26
400	0.00	72.24	—	—	—	—	—	—	—	—	—	0.26
405	0.00	72.22	—	—	—	—	—	—	—	—	—	0.26
410	0.00	72.20	—	—	—	—	—	—	—	—	—	0.26
415	0.00	72.18	—	—	—	—	—	—	—	—	—	0.26
420	0.00	72.15	—	—	—	—	—	—	—	—	—	0.25
425	0.00	72.13	—	—	—	—	—	—	—	—	—	0.25
430	0.00	72.11	—	—	—	—	—	—	—	—	—	0.25
435	0.00	72.09	—	—	—	—	—	—	—	—	—	0.25
440	0.00	72.07	—	—	—	—	—	—	—	—	—	0.25
445	0.00	72.05	—	—	—	—	—	—	—	—	—	0.25

Continues on next page...

10-YEAR HYDROGRAPH REPORT

Hydrograph Report

Page 1

Hydraflow Hydrographs by Intelisolve

Hyd. No. 3

pond outflow

Hydrograph type = Reservoir
Storm frequency = 10 yrs
Inflow hyd. No. = 1
Max. Elevation = 74.33 ft

Peak discharge = 7.43 cfs
Time interval = 5 min
Reservoir name = sydenstricker pon
Max. Storage = 12,983 cuft

Storage Indication method used.

Outflow hydrograph volume = 30,519 cuft

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
5	10.11	71.72	—	—	—	—	—	—	—	—	—	0.20
10	18.41 <<	72.85	—	—	—	—	—	—	—	—	—	0.32
15	14.09	73.81	—	—	—	—	—	—	—	—	—	2.34
20	9.77	74.23	—	—	—	—	—	—	—	—	—	6.30
25	7.56	74.33	—	—	—	—	—	—	—	—	—	7.43 <<
30	6.16	74.31	—	—	—	—	—	—	—	—	—	7.17
35	5.19	74.25	—	—	—	—	—	—	—	—	—	6.46
40	4.39	74.18	—	—	—	—	—	—	—	—	—	5.66
45	3.76	74.11	—	—	—	—	—	—	—	—	—	4.88
50	3.23	74.05	—	—	—	—	—	—	—	—	—	4.23
55	2.86	74.01	—	—	—	—	—	—	—	—	—	3.66
60	2.49	73.96	—	—	—	—	—	—	—	—	—	3.32
65	2.27	73.91	—	—	—	—	—	—	—	—	—	3.02
70	2.08	73.87	—	—	—	—	—	—	—	—	—	2.75
75	1.87	73.83	—	—	—	—	—	—	—	—	—	2.50
80	1.65	73.79	—	—	—	—	—	—	—	—	—	2.27
85	1.46	73.76	—	—	—	—	—	—	—	—	—	2.04
90	1.24	73.73	—	—	—	—	—	—	—	—	—	1.82
95	1.03	73.69	—	—	—	—	—	—	—	—	—	1.60
100	0.84	73.66	—	—	—	—	—	—	—	—	—	1.39
105	0.62	73.63	—	—	—	—	—	—	—	—	—	1.18
110	0.40	73.59	—	—	—	—	—	—	—	—	—	0.97
115	0.22	73.56	—	—	—	—	—	—	—	—	—	0.76
120	0.00	73.53	—	—	—	—	—	—	—	—	—	0.55
125	0.00	73.50	—	—	—	—	—	—	—	—	—	0.37
130	0.00	73.48	—	—	—	—	—	—	—	—	—	0.37
135	0.00	73.45	—	—	—	—	—	—	—	—	—	0.36
140	0.00	73.43	—	—	—	—	—	—	—	—	—	0.36
145	0.00	73.41	—	—	—	—	—	—	—	—	—	0.36
150	0.00	73.38	—	—	—	—	—	—	—	—	—	0.36
155	0.00	73.36	—	—	—	—	—	—	—	—	—	0.36
160	0.00	73.33	—	—	—	—	—	—	—	—	—	0.35
165	0.00	73.31	—	—	—	—	—	—	—	—	—	0.35
170	0.00	73.29	—	—	—	—	—	—	—	—	—	0.35
175	0.00	73.27	—	—	—	—	—	—	—	—	—	0.35
180	0.00	73.24	—	—	—	—	—	—	—	—	—	0.35
185	0.00	73.22	—	—	—	—	—	—	—	—	—	0.35
190	0.00	73.20	—	—	—	—	—	—	—	—	—	0.35

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pond outflow

Page 2

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
195	0.00	73.17	—	—	—	—	—	—	—	—	—	0.34
200	0.00	73.15	—	—	—	—	—	—	—	—	—	0.34
205	0.00	73.13	—	—	—	—	—	—	—	—	—	0.34
210	0.00	73.11	—	—	—	—	—	—	—	—	—	0.34
215	0.00	73.09	—	—	—	—	—	—	—	—	—	0.34
220	0.00	73.06	—	—	—	—	—	—	—	—	—	0.33
225	0.00	73.04	—	—	—	—	—	—	—	—	—	0.33
230	0.00	73.02	—	—	—	—	—	—	—	—	—	0.33
235	0.00	73.00	—	—	—	—	—	—	—	—	—	0.33
240	0.00	72.98	—	—	—	—	—	—	—	—	—	0.33
245	0.00	72.95	—	—	—	—	—	—	—	—	—	0.32
250	0.00	72.93	—	—	—	—	—	—	—	—	—	0.32
255	0.00	72.90	—	—	—	—	—	—	—	—	—	0.32
260	0.00	72.88	—	—	—	—	—	—	—	—	—	0.32
265	0.00	72.86	—	—	—	—	—	—	—	—	—	0.32
270	0.00	72.83	—	—	—	—	—	—	—	—	—	0.31
275	0.00	72.81	—	—	—	—	—	—	—	—	—	0.31
280	0.00	72.79	—	—	—	—	—	—	—	—	—	0.31
285	0.00	72.77	—	—	—	—	—	—	—	—	—	0.31
290	0.00	72.74	—	—	—	—	—	—	—	—	—	0.31
295	0.00	72.72	—	—	—	—	—	—	—	—	—	0.31
300	0.00	72.70	—	—	—	—	—	—	—	—	—	0.30
305	0.00	72.68	—	—	—	—	—	—	—	—	—	0.30
310	0.00	72.65	—	—	—	—	—	—	—	—	—	0.30
315	0.00	72.63	—	—	—	—	—	—	—	—	—	0.30
320	0.00	72.61	—	—	—	—	—	—	—	—	—	0.30
325	0.00	72.59	—	—	—	—	—	—	—	—	—	0.30
330	0.00	72.57	—	—	—	—	—	—	—	—	—	0.29
335	0.00	72.55	—	—	—	—	—	—	—	—	—	0.29
340	0.00	72.53	—	—	—	—	—	—	—	—	—	0.29
345	0.00	72.50	—	—	—	—	—	—	—	—	—	0.29
350	0.00	72.48	—	—	—	—	—	—	—	—	—	0.29
355	0.00	72.46	—	—	—	—	—	—	—	—	—	0.28
360	0.00	72.43	—	—	—	—	—	—	—	—	—	0.28
365	0.00	72.41	—	—	—	—	—	—	—	—	—	0.28
370	0.00	72.39	—	—	—	—	—	—	—	—	—	0.28
375	0.00	72.37	—	—	—	—	—	—	—	—	—	0.27
380	0.00	72.34	—	—	—	—	—	—	—	—	—	0.27
385	0.00	72.32	—	—	—	—	—	—	—	—	—	0.27
390	0.00	72.30	—	—	—	—	—	—	—	—	—	0.27
395	0.00	72.28	—	—	—	—	—	—	—	—	—	0.27
400	0.00	72.26	—	—	—	—	—	—	—	—	—	0.26
405	0.00	72.23	—	—	—	—	—	—	—	—	—	0.26
410	0.00	72.21	—	—	—	—	—	—	—	—	—	0.26
415	0.00	72.19	—	—	—	—	—	—	—	—	—	0.26
420	0.00	72.17	—	—	—	—	—	—	—	—	—	0.26
425	0.00	72.15	—	—	—	—	—	—	—	—	—	0.25
430	0.00	72.13	—	—	—	—	—	—	—	—	—	0.25
435	0.00	72.11	—	—	—	—	—	—	—	—	—	0.25
440	0.00	72.09	—	—	—	—	—	—	—	—	—	0.25
445	0.00	72.07	—	—	—	—	—	—	—	—	—	0.25

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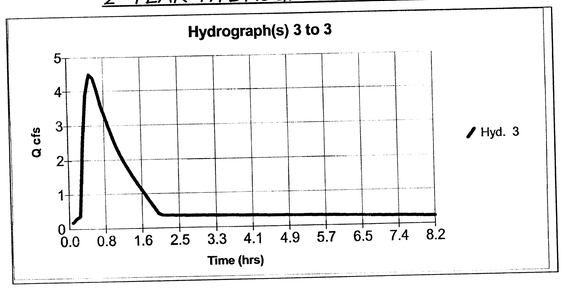
2-YEAR HYDROGRAPH REPORT



100-YEAR HYDROGRAPH REPORT

Hydrograph Report

Page 1

Hydraflow Hydrographs by Intelisolve

Hyd. No. 3

pond outflow

Hydrograph type = Reservoir
Storm frequency = 100 yrs
Inflow hyd. No. = 1
Max. Elevation = 75.35 ft

Peak discharge = 12.60 cfs
Time interval = 5 min
Reservoir name = sydenstricker pon
Max. Storage = 19,357 cuft

Storage Indication method used.

Outflow hydrograph volume = 57,513 cuft

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
5	14.30	71.91	—	—	—	—	—	—	—	—	—	0.23
10	31.49 <<	73.55	—	—	—	—	—	—	—	—	—	0.68
15	25.15	74.77	—	—	—	—	—	—	—	—	—	10.88
20	17.26	75.22	—	—	—	—	—	—	—	—	—	12.40
25	13.61	75.35 <<	—	—	—	—	—	—	—	—	—	12.60 <<
30	11.11	75.34	—	—	—	—	—	—	—	—	—	12.58
35	9.45	75.24	—	—	—	—	—	—	—	—	—	12.44
40	8.44	75.09	—	—	—	—	—	—	—	—	—	12.24
45	7.50	74.91	—	—	—	—	—	—	—	—	—	11.58
50	6.93	74.72	—	—	—	—	—	—	—	—	—	10.58
55	6.43	74.53	—	—	—	—	—	—	—	—	—	9.55
60	6.14	74.41	—	—	—	—	—	—	—	—	—	8.36
65	5.64	74.31	—	—	—	—	—	—	—	—	—	7.18
70	5.14	74.23	—	—	—	—	—	—	—	—	—	6.32
75	4.53	74.13	—	—	—	—	—	—	—	—	—	5.34
80	4.09	74.12	—	—	—	—	—	—	—	—	—	5.03
85	3.58	74.07	—	—	—	—	—	—	—	—	—	4.46
90	3.08	74.03	—	—	—	—	—	—	—	—	—	3.92
95	2.56	73.98	—	—	—	—	—	—	—	—	—	3.46
100	2.06	73.92	—	—	—	—	—	—	—	—	—	3.09
105	1.55	73.86	—	—	—	—	—	—	—	—	—	2.68
110	1.01	73.79	—	—	—	—	—	—	—	—	—	2.23
115	0.50	73.72	—	—	—	—	—	—	—	—	—	1.76
120	0.00	73.64	—	—	—	—	—	—	—	—	—	1.28
125	0.00	73.58	—	—	—	—	—	—	—	—	—	0.87
130	0.00	73.53	—	—	—	—	—	—	—	—	—	0.59
135	0.00	73.51	—	—	—	—	—	—	—	—	—	0.40
140	0.00	73.48	—	—	—	—	—	—	—	—	—	0.37
145	0.00	73.46	—	—	—	—	—	—	—	—	—	0.37
150	0.00	73.43	—	—	—	—	—	—	—	—	—	0.36
155	0.00	73.41	—	—	—	—	—	—	—	—	—	0.36
160	0.00	73.39	—	—	—	—	—	—	—	—	—	0.36
165	0.00	73.36	—	—	—	—	—	—	—	—	—	0.36
170	0.00	73.34	—	—	—	—	—	—	—	—	—	0.36
175	0.00	73.32	—	—	—	—	—	—	—	—	—	0.35
180	0.00	73.29	—	—	—	—	—	—	—	—	—	0.35
185	0.00	73.27	—	—	—	—	—	—	—	—	—	0.35
190	0.00	73.25	—	—	—	—	—	—	—	—	—	0.35

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pond outflow

Page 2

Hydrograph Discharge Table

Time (min)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
195	0.00	73.22	—	—	—	—	—	—	—	—	—	0.35
200	0.00	73.20	—	—	—	—	—	—	—	—	—	0.35
205	0.00	73.18	—	—	—	—	—	—	—	—	—	0.34
210	0.00	73.16	—	—	—	—	—	—	—	—	—	0.34
215	0.00	73.13	—	—	—	—	—	—	—	—	—	0.34
220	0.00	73.11	—	—	—	—	—	—	—	—	—	0.34
225	0.00	73.09	—	—	—	—	—	—	—	—	—	0.34
230	0.00	73.07	—	—	—	—	—	—	—	—	—	0.33
235	0.00	73.05	—	—	—	—	—	—	—	—	—	0.33
240	0.00	73.02	—	—	—	—	—	—	—	—	—	0.33
245	0.00	73.00	—	—	—	—	—	—	—	—	—	0.33
250	0.00	72.98	—	—	—	—	—	—	—	—	—	0.33
255	0.00	72.96	—	—	—	—	—	—	—	—	—	0.32
260	0.00	72.93	—	—	—	—	—	—	—	—	—	0.32
265	0.00	72.91	—	—	—	—	—	—	—	—	—	0.32
270	0.00	72.89	—	—	—	—	—	—	—	—	—	0.32
275	0.00	72.86	—	—	—	—	—	—	—	—	—	0.32
280	0.00	72.84	—	—	—	—	—	—	—	—	—	0.32
285	0.00	72.82	—	—	—	—	—	—	—	—	—	0.31
290	0.00	72.79	—	—	—	—	—	—	—	—	—	0.31
295	0.00	72.77	—	—	—	—	—	—	—	—	—	0.31
300	0.00	72.75	—	—	—	—	—	—	—	—	—	0.31
305	0.00	72.73	—	—	—	—	—	—	—	—	—	0.31
310	0.00	72.70	—	—	—	—	—	—	—	—	—	0.30
315	0.00	72.68	—	—	—	—	—	—	—	—	—	0.30
320	0.00	72.66	—	—	—	—	—	—	—	—	—	0.30
325	0.00	72.64	—	—	—	—	—	—	—	—	—	0.30
330	0.00	72.62	—	—	—	—	—	—	—	—	—	0.30
335	0.00	72.59	—	—	—	—	—	—	—	—	—	0.30
340	0.00	72.57	—	—	—	—	—	—	—	—	—	0.29
345	0.00	72.55	—	—	—	—	—	—	—	—	—	0.29
350	0.00	72.53	—	—	—	—	—	—	—	—	—	0.29
355	0.00	72.51	—	—	—	—	—	—	—	—	—	0.29
360	0.00	72.49	—	—	—	—	—	—	—	—	—	0.29
365	0.00	72.46	—	—	—	—	—	—	—	—	—	0.28
370	0.00	72.44	—	—	—	—	—	—	—	—	—	0.28
375	0.00	72.42	—	—	—	—	—	—	—	—	—	0.28
380	0.00	72.39	—	—	—	—	—	—	—	—	—	0.28
385	0.00	72.37	—	—	—	—	—	—	—	—	—	0.27
390	0.00	72.35	—	—	—	—	—	—	—	—	—	0.27
395	0.00	72.33	—	—	—	—	—	—	—	—	—	0.27
400	0.00	72.30	—	—	—	—	—	—	—	—	—	0.27
405	0.00	72.28	—	—	—	—	—	—	—	—	—	0.27
410	0.00	72.26	—	—	—	—	—	—	—	—	—	0.26
415	0.00	72.24	—	—	—	—	—	—	—	—	—	0.26
420	0.00	72.22	—	—	—	—	—	—	—	—	—	0.26
425	0.00	72.20	—	—	—	—	—	—	—	—	—	0.26
430	0.00	72.17	—	—	—	—	—	—	—	—	—	0.26
435	0.00	72.15	—	—	—	—	—	—	—	—	—	0.25
440	0.00	72.13	—	—	—	—	—	—	—	—	—	0.25
445	0.00	72.11	—	—	—	—	—	—	—	—	—	0.25

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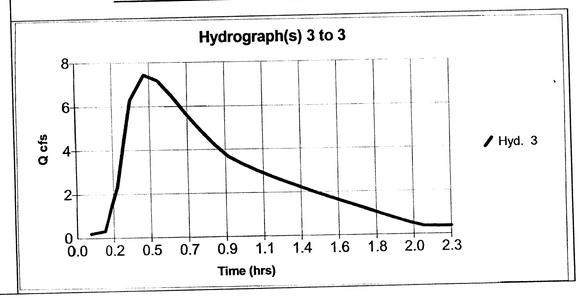
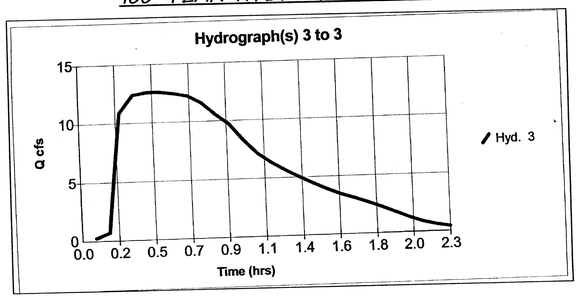
10-YEAR HYDROGRAPH REPORT



100-YEAR HYDROGRAPH REPORT



DATE	REVISION
04/03/04	Sheet added as per Fairfax County Comments

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COMMONWEALTH OF VIRGINIA
WILLIAM R. ZINK
No. 21914
8/18/04
PROFESSIONAL ENGINEER

SWM AND BMP COMPUTATIONS

DEAVERS PROPERTY
GENERALIZED DEVELOPMENT PLAN
MOUNT VERNON DISTRICT – FAIRFAX COUNTY, VIRGINIA

SCALE: 1"=50'
DATE: 3/03/04
DESIGN: TLS
DRAWN: TLS
CHECKED:
SHEET No. 8 OF 8

RZ 2004-MV-019
Application No. Staff KC
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 1-3-05
Date of (BOS) (PC) approval 1-10-05
Sheet 8 of 8

C- 4799