AMENDMENT TO CONCEPTUAL AND FINAL DEVELOPMENT PLAN RZ 1998-PR-027 FOR

OAKTON LIBRARY

ZONING REQUIREMENTS		PROVIDED
1.) EXISTING ZONE:	PARCEL B	PDH-4
2.) MINIMUM LOT AREA:	N/A	LOT AREA: 2.96015 AC. OR 128,944 S.F.
3.) MINIMUM LOT WIDTH:	N/A	LOT WIDTH: 270'
4.) MAXIMUM BUILDING HEIGHT AT MINIMUM SETBACK LINE:	60 FT.	ACTUAL HEIGHT: 31'
5.) MINIMUM SETBACKS (BRL) FRONT: / SIDE: / REAR:	25' / 10' / 25'	ACTUAL SETBACK FRONT: 256.16' SIDE: 39.87' REAR: 62.30'
6.) MAXIMUM FAR:	0.35	ACTUAL FAR: 0.13
7.) OPEN SPACE: 20% OF 2.96 AC. OR 0.592 ACRES REQUIRED		1.24 ACRES, OR 41.80% OF THE SITE
8.) MINIMUM ANGLE OF BULK PLANE: FRONT: / SIDE: / REAR:	35° / 30° / 30°	ACTUAL ANGLE OF BULK PLANE: (SEE DETAILS ON THIS SHEET)

F.A.R. TABULATION:

DESCRIPTION:	AREAS:
EXISTING BUILDING:	N/A
PROPOSED BUILDING:	
1ST FLOOR:	17,332 SF GFA
TOTAL SITE AREA =	2.96 AC. OR 128,944 S.F.
MAXIMUM F.A.R. =	0.35
MAXIMUM FLOOR AREA ALLOWABLE=	45,130 S.F.
PROPOSED F.A.R. =	17,332 SF BLDG. / 128,944 SF SITE / 0.13

PARKING TABULATION:

REQUIRED PARKING FOR THE PROPOSED USE

REQUIRED PARKING DETERMINED IN ACCORDANCE WITH ZONING ORDINANCE SECTION 11-106.14, LIBRARY.

LIBRARY: 7 SP / 1000 SF OF GROSS FLOOR AREA

TOTAL SPACES REQUIRED FOR THE SITE:

7 SPACES/ 1000 SF X 17,332 SF =

122 SPACES REQUIRED

TOTAL SPACES PROVIDED FOR THE SITE:

122 SPACES

NET INCREASE IN PARKING SPACES:

122 SPACES

TOTAL LOADING SPACES REQUIRED FOR THE SITE:

1 SPACE REQUIRED

TOTAL LOADING SPACES PROVIDED FOR THE SITE:

1 SPACE PROVIDED

SCREENING AND BUFFER REQUIREMENTS:

REQUIREMENTS FOR PARCEL B:

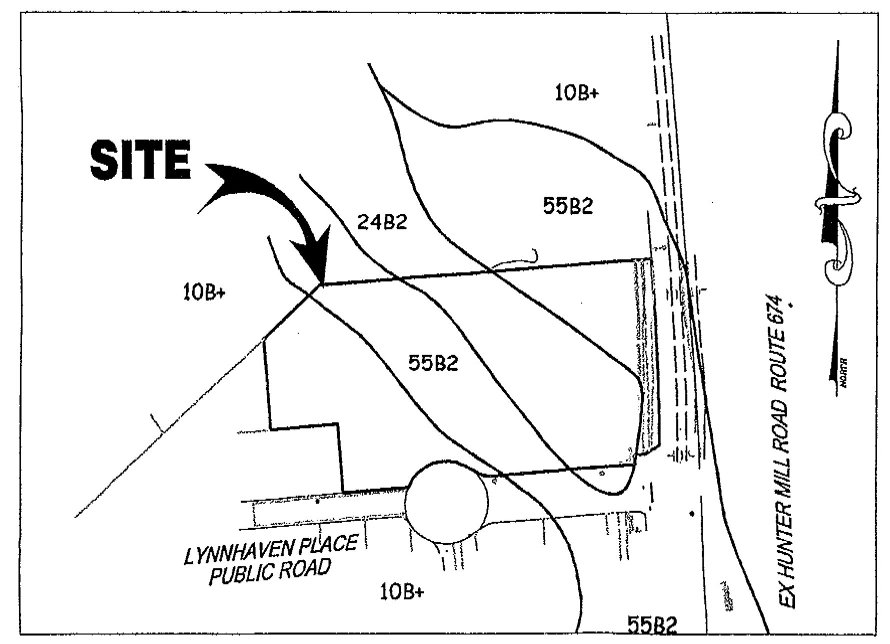
NORTH: TRANSITIONAL SCREENING 1, AND BARRIER TYPE A, B, OR C IS REQUIRED BETWEEN PARCELS.

SOUTH: TRANSITIONAL SCREENING 2, AND BARRIER TYPE D, E, OR F IS REQUIRED BETWEEN PARCELS.

WEST: TRANSITIONAL SCREENING 2, AND BARRIER TYPE D, E, OR F IS REQUIRED BETWEEN PARCELS. PROFFERED AGREEMENT REQUIRES A MINIMUM OF 25' BUFFER AREA WITH A 6' BOARD FENCE WITHIN THE TREE SAVE AREA TO SCREEN THE RESIDENTIAL COMMUNITY TO THE WEST.

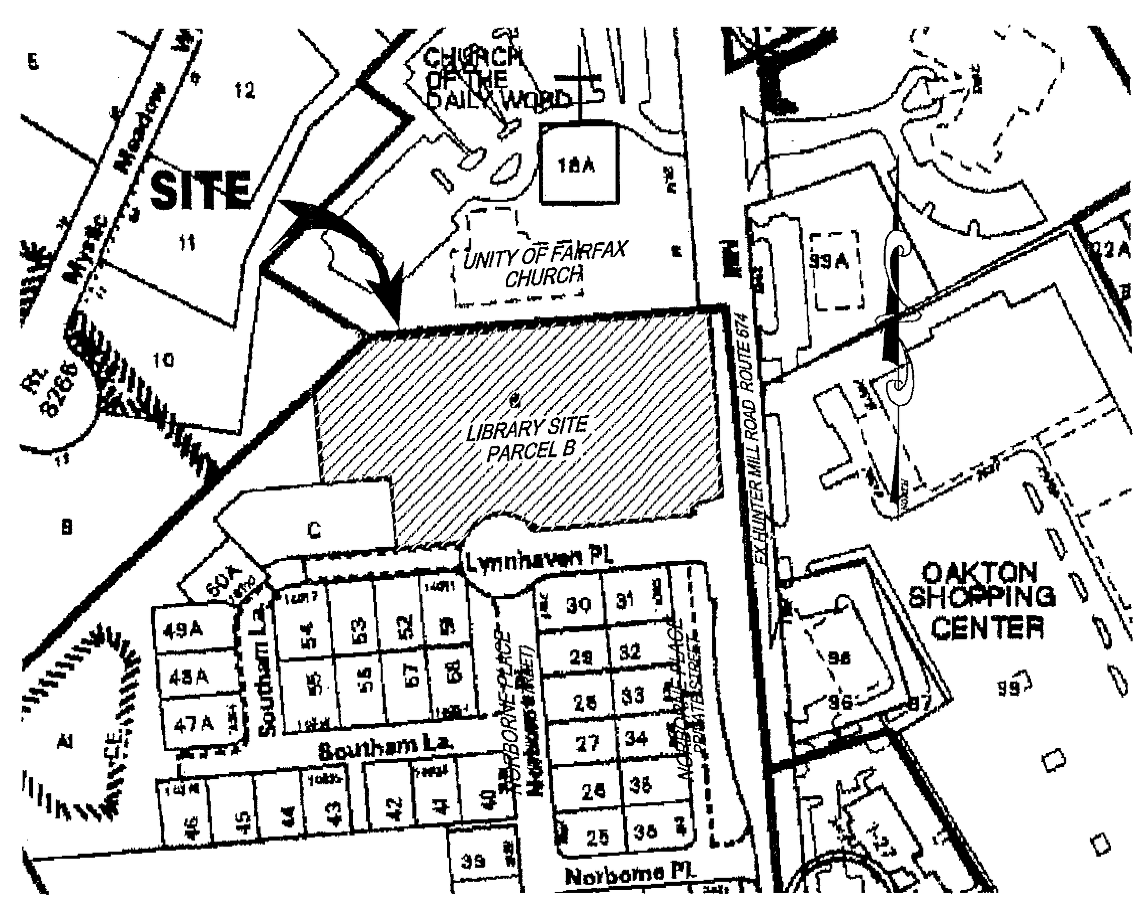
EAST: TRANSITIONAL SCREENING 1, AND BARRIER TYPE A, B, OR C IS REQUIRED BETWEEN PARCELS. HUNTER MILL ROAD REQUIRES MORE STRINGENT REQUIREMENTS BY PROFFERED AGREEMENT.

*A WAIVER / MODIFICATION OF THE SCREENING REQUIREMENTS IS BEING SUBMITTED FOR THIS APPLICATION. SEE SHEETS 3 AND 4 (LANDSCAPE PLANS) FOR REQUESTED MODIFICATIONS.

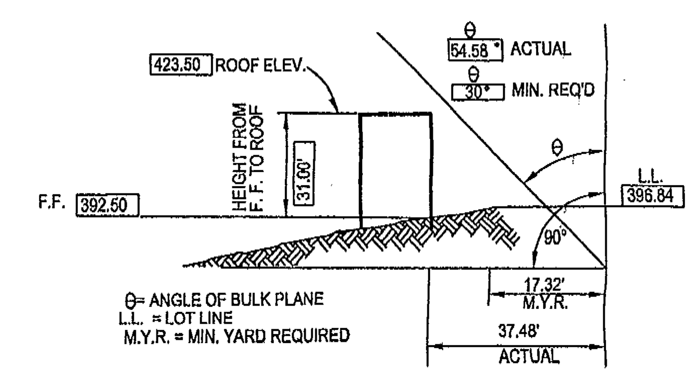


SOIL ID	SOIL NAME	CLASS	FOUNDATION SUPPORT	DRAINAGE	EROSION POTENTIAL
10B+	GLENVILLE	B	FAIR	MARGINAL	MODERATE
24B2	ELIOAK	C	GOOD	GOOD	SEVERE
55B2	GLENELG	C	GOOD	GOOD	SEVERE

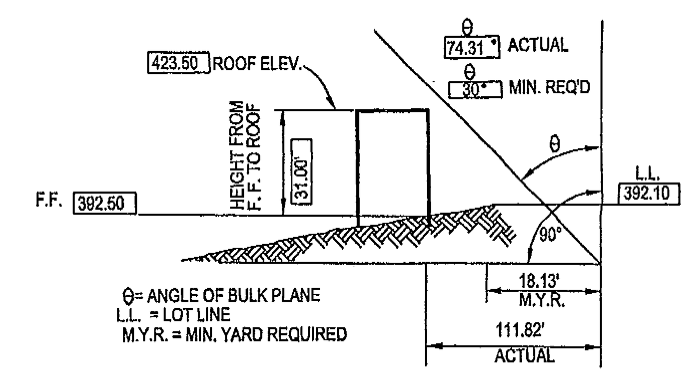
SOILS MAP SCALE: 1" = 200'



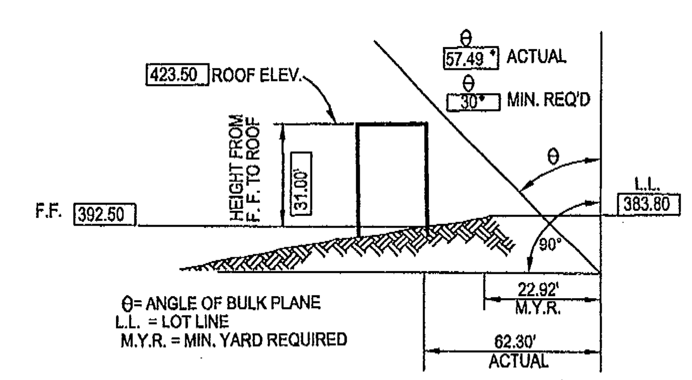
VICINITY MAP SCALE: 1" = 200'



NORTH
DETAIL BULK PLANE
NTS



SOUTH
DETAIL BULK PLANE
NTS



WEST
DETAIL BULK PLANE
NTS

NOTES:

1.) THE PURPOSE OF THIS AMENDMENT IS TO INCLUDE THE DEVELOPMENT OF THE LIBRARY SITE WITHIN THE HEARTHSTONE VILLAGE DEVELOPMENT. THIS PLAN IS TO AMEND PREVIOUSLY APPROVED "CONCEPTUAL AND FINAL DEVELOPMENT PLAN FOR HEARTHSTONE VILLAGE", RZ 1998-PR-027, APPROVED 5/22/2000.

2.) THE PROPERTY WHICH IS THE SUBJECT OF THIS AMENDMENT IS IDENTIFIED ON THE FAIRFAX COUNTY TAX MAP AS 47-2 ((54)), PARCEL B. THE OWNER AND APPLICANT ARE THE FAIRFAX COUNTY BOARD OF SUPERVISORS.

3.) THE BOUNDARY INFORMATION AND TOPOGRAPHY SHOWN HEREON IS FROM A PLAT PREPARED BY PATTON HARRIS RUST AND ASSOCIATES, PC. TOPOGRAPHIC INFORMATION IS FROM AERIAL SURVEY AND EXISTING FAIRFAX COUNTY RECORDS. CONTOUR INTERVAL IS 2'.

4.) ALL NECESSARY PUBLIC UTILITIES ARE READILY ACCESSIBLE TO THE SITE.

5.) STORMWATER MANAGEMENT IS PROVIDED BY AN EXISTING POND FACILITY LOCATED INSIDE THE HEARTHSTONE VILLAGE DEVELOPMENT. BMP IS TO BE PROVIDED BY A REGIONAL FACILITY WHICH WILL BE CONSTRUCTED IN THE FUTURE. ADDITIONAL INFORMATION REGARDING STORMWATER MANAGEMENT MAY BE OBTAINED BY REVIEW OF THE COMPUTATIONS ON THE HEARTHSTONE VILLAGE OAKTON PLAN, #0549-SD-01 BY PATTON, HARRIS, RUST, AND ASSOCIATES, PC. FAIRFAX COUNTY WILL CONTRIBUTE PRO-RATA SHARE FUNDS FOR THE CONSTRUCTION OF THE REGIONAL BMP FACILITY TO MEET BMP REQUIREMENTS FOR THE DEVELOPMENT OF THE LIBRARY SITE BASED ON PROFFER REQUIREMENTS.

6.) THERE IS NO FLOODPLAIN ON THE SITE DESIGNATED BY THE FEDERAL INSURANCE ADMINISTRATION, UNITED STATES GEOLOGICAL SURVEY, OR FAIRFAX COUNTY. THERE ARE NO EXISTING FAIRFAX COUNTY RESOURCE PROTECTION AREA LIMITS WITHIN THE PROJECT SITE.

7.) TO THE BEST OF OUR KNOWLEDGE, ALL EXISTING EASEMENTS GREATER THAN (25) FEET IN WIDTH AND ALL MAJOR UNDERGROUND UTILITIES ARE SHOWN.

8.) TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO GRAVES LOCATED ON THIS SITE.

9.) TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO TOXIC SUBSTANCES, HAZARDOUS WASTE OR PETROLEUM PRODUCTS STORED ON THE SUBJECT PROPERTY. FURTHER, THE PROPOSED USE WILL NOT GENERATE, UTILIZE, STORE, TREAT OR DISPOSE OF SUCH SUBSTANCES ON THE PROPERTY.

10.) THE COMPREHENSIVE TRAILS PLAN SHOWS A TRAIL TO BE CONSTRUCTED ALONG HUNTER MILL ROAD. THIS TRAIL WAS CONSTRUCTED WITH THE HEARTHSTONE VILLAGE DEVELOPMENT.

11.) TO THE BEST OF OUR KNOWLEDGE, THE PROPOSED DEVELOPMENT CONFORMS TO ALL CURRENT APPLICABLE LAND DEVELOPMENT ORDINANCES, REGULATIONS AND ADOPTED STANDARDS.

12.) EXISTING VEGETATION ON THE SUBJECT PARCEL HAS BEEN INVESTIGATED. A GRAPHIC REPRESENTATION OF THE EXISTING VEGETATIVE COVER TO BE PRESERVED IS PROVIDED ON SHEETS 2 AND 3. THE PARCEL HAS AN EXISTING TREE SAVE AREA ALONG THE WESTERN PROPERTY LINE. EXISTING TREES WITHIN THIS AREA ARE TO BE PROTECTED FROM DAMAGE BY PLACING A 4' CHAIN LINK FENCE AT THE DRIP LINE. FENCING IS TO BE REMOVED AFTER CONSTRUCTION ACTIVITY IS COMPLETE.

13.) THE APPLICANT IS SUBMITTING A REQUEST FOR MODIFICATION OF THE TRANSITIONAL SCREENING AND BARRIER REQUIREMENTS ON ALL PROPERTY LINES PER THE ZONING ORDINANCE SECTIONS: 13-304.1, 13-340.3,13-304.5 AND 13-304.14.

14.) PERIPHERAL AND INTERIOR LOT LANDSCAPING FOR THE PROPOSED PARKING LOT WILL BE PROVIDED IN ACCORDANCE WITH ZONING ORDINANCE SECTIONS 13-201 AND 13-202.

15.) ANY SITE SIGNAGE WILL BE IN CONFORMANCE WITH ZONING ORDINANCE ARTICLE 12 PROVISIONS AND WILL BE LOCATED ON THE SUBJECT PROPERTY, IF APPLICABLE.

16.) THE ENTRANCE TO THE LIBRARY SITE HAS BEEN RELOCATED TO THE EAST IN ORDER TO PROVIDE IMPROVED ONSITE TRAFFIC CIRCULATION AND TO ALIGN THE BUILDING IN COMPLIANCE WITH THE LEED DESIGN CRITERIA.

17). THE APPLICANT IS SUBMITTING A REQUEST FOR WAIVER OF THE REQUIREMENT TO PROVIDE AN EXISTING VEGETATION MAP (EVM) REQUIRED FOR DISTURBANCES GREATER THAN 2500 SQUARE FEET FROM ZONING ORDINANCE SECTION 18-202.10S. THE SITE WAS CLEARED OF EXISTING TREES AND RE-GRADED PRIOR TO THIS APPLICATION IN ACCORDANCE WITH FAIRFAX COUNTY PLAN # 0549-SD-01. EXISTING TREES THAT WERE RETAINED ARE SHOWN ON THIS PLAN.

18). THE PROPOSED USE OF THIS PARCEL AS A LIBRARY USE IS IN CONFORMANCE WITH THE 2003 COMPREHENSIVE PLAN OF FAIRFAX COUNTY, AREA II LAND USE RECOMMENDATIONS, PART 2, FIGURE 24, SECTION 2, STATES THAT "LAND FOR LIBRARY OR PARK USES SHOULD BE DEDICATED AS PART OF THIS RESIDENTIAL OPTION."

PCA/FDPA 1998-PR-027

APPLICATION NO ________ STAFF JP

APPROVED DEVELOPMENT PLAN

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

SEE PROFFERS DATED 2/15/06 Conds 2/8/06

DATE OF (BOS) (PC) APPROVAL 2/27/06

SHEET 1 OF 21

MAR 0 7 2006

Zoning Evaluation Division

SHEET INDEX

1.) CDP/FDP AMENDMENT SHEET 1
2.) CDP/FDP AMENDMENT SHEET 2
3.) CDP/FDP AMENDMENT SHEET 3
4.) CDP/FDP AMENDMENT SHEET 4
5.) CDP/FDP AMENDMENT SHEET 5
6-9.) APPROVED CDP/FDP HEARTHSTONE VILLAGE OAKTON
10.) SWM CHECKLIST & LETTERS
11-12.) OFFSITE DRAINAGE SYSTEM
13-14.) OFFSITE DRAINAGE DIVIDES
15.) EX. DRAINAGE COMPS
16.) OUTFALL PLAN VIEW
17.) OUTFALL CROSS SECTIONS
18-20.) SWM CALCULATIONS
21.) SWM NARRATIVES

NO.	DATE	DESCRIPTION	BY	AUTH.

OWNER/DEVELOPER:

BOARD OF SUPERVISORS FAIRFAX COUNTY

SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

Fairfax County Public Works and Environmental Services

Fairfax County Public Library

ENGINEER:

PBS&J

POST, BUCKLEY, SCHUH & JERNIGAN, INC.
3859 CENTERVIEW DRIVE, SUITE 160
CHANTILLY, VIRGINIA 20151
TEL: 703.471.7275 FAX: 703.471.8021

COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER

ENGINEER'S SEAL & SIGNATURE

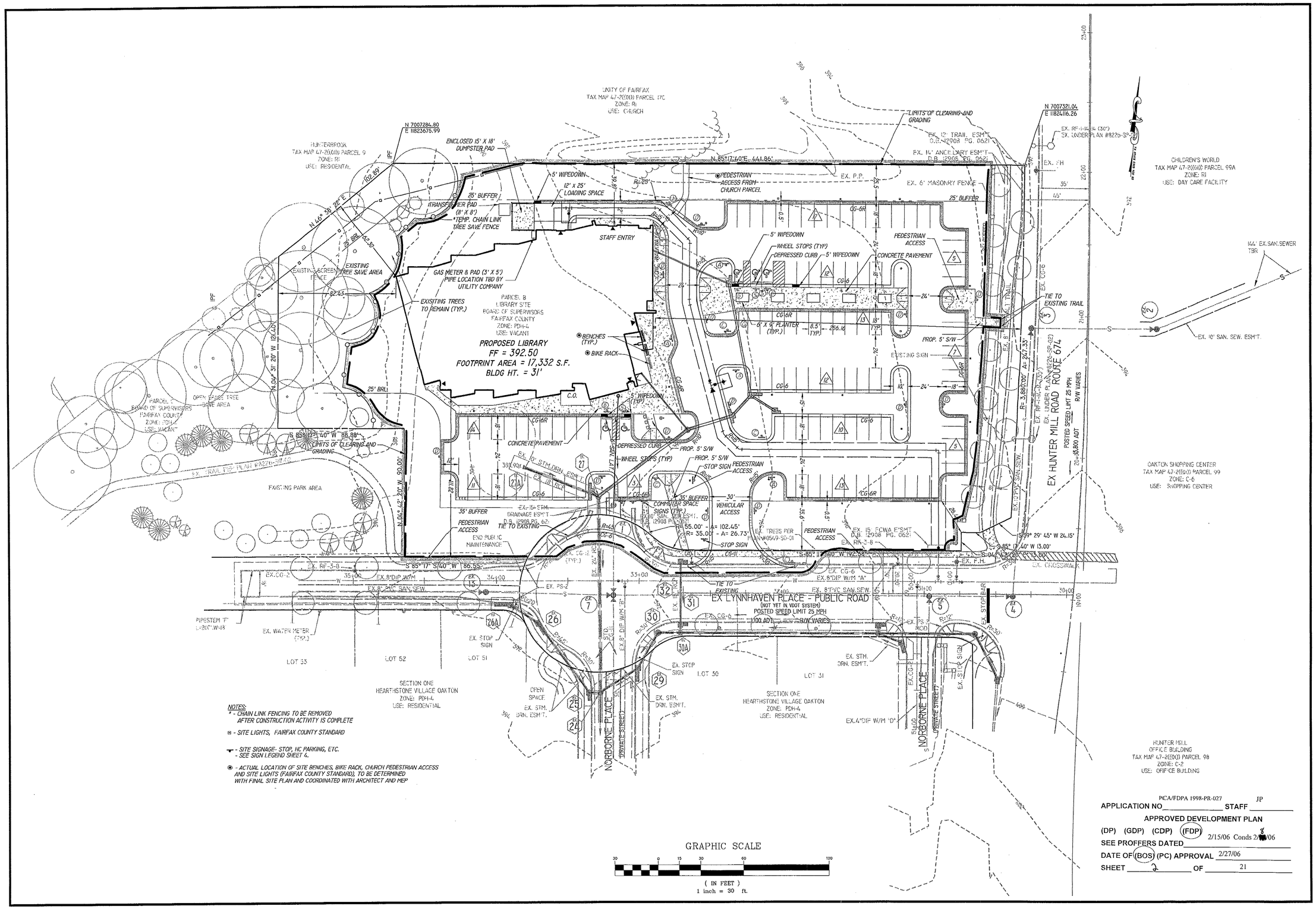
OAKTON LIBRARY

PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT

(RELATED TO RZ-1998-PR-027)

PROJ. NO: 170340		COUNTY NUMBER:
DATE: SEPT., 2005		
DWG. BY: DBD		
DESIGN BY: DBD		SHEET NO:
CHECK BY: JPB		**1** OF 21
SCALE: AS SHOWN		



NOTES:
1 - CHAIN LINK FENCING TO BE REMOVED AFTER CONSTRUCTION ACTIVITY IS COMPLETE

⊗ - SITE LIGHTS, FAIRFAX COUNTY STANDARD

- SITE SIGNAGE- STOP, HC PARKING, ETC.
- SEE SIGN LEGEND SHEET 4.

◉ - ACTUAL LOCATION OF SITE BENCHES, BIKE RACK, CHURCH PEDESTRIAN ACCESS AND SITE LIGHTS (FAIRFAX COUNTY STANDARD), TO BE DETERMINED WITH FINAL SITE PLAN AND COORDINATED WITH ARCHITECT AND MEP

PICA/FDPA 1998-PR-027 JP
APPLICATION NO. _____ STAFF _____
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) 2/15/06 Conds 2/[redacted]/06
SEE PROFFERS DATED _____
DATE OF (BOS) (PC) APPROVAL 2/27/06
SHEET 2 OF 21

NO.	DATE	DESCRIPTION	BY	AUTH.
1	8-12-04	REVISE PER PLANNING & ZONING COMMENTS	TW	

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

Fairfax County Public Library

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COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT
(RELATED TO RZ-1998-PR-027)

PROJ. NO: 170340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	2 OF 21
SCALE: 1" = 30'	

35' WIDE
SCREENING TYPE 2
(GROUP 12) VS (GROUP 1)
BARRIER D,E OR F (REQUIRED)
(WAIVER / MODIFICATION REQUESTED)

	REQUIRED	PROVIDED
1 TREE PER 10LF (122'/10)= (LARGE EVERGREEN)	12.2 TREES	8 TREES
1 TREE PER 5LF (122'/5)= (MEDIUM EVERGREEN)	24.4 TREES	0 TREES
1 TREE PER 30LF (122'/30)= (DECIDUOUS TREE)	4.06 TREES	0TREES

25' WIDE
SCREENING TYPE 1
(GROUP 12) VS (GROUP 4)
BARRIER (A,B OR C) REQUIRED
NO BARRIER PROVIDED
(WAIVER / MODIFICATION REQUESTED)

	REQUIRED	PROVIDED
1 TREE PER 10LF (441'/10)= (LARGE EVERGREEN)	44.1 TREES	28 TREES
1 TREE PER 5LF (441'/5)= (MEDIUM EVERGREEN)	88.2 TREES	0 TREES
CANOPY TREES=	0 TREES	10 TREES

UNITY OF FAIRFAX
TAX MAP 47-2((01)) PARCEL 17C
ZONE: R1
USE: CHURCH

INTERPARCEL PEDESTRIAN CONNECTION SUBJECT TO RELOCATION ON FINAL SITE PLAN

HUNTERBROOK
TAX MAP 47-2((01)) PARCEL 9
ZONE: R1
USE: RESIDENTIAL

NO SCREENING REQUIRED
(GROUP 12) VS (GROUP 12)

PARCEL B
LIBRARY SITE
BOARD OF SUPERVISORS, FAIRFAX COUNTY
ZONE: PDH-4
USE: VACANT

TREE SAVE AREA

EXISITING TREES TO REMAIN (TYP.)

OPEN SPACE TREE SAVE AREA

NO SCREENING REQUIRED
(GROUP 12) VS (GROUP 12)

EXISTING PARK AREA

PARCEL C
BOARD OF SUPERVISORS, FAIRFAX COUNTY
ZONE: PDH-4
USE: VACANT

CHILDREN'S WORLD
TAX MAP 47-2((01)) PARCEL 99A
ZONE: R1
USE: DAY CARE FACILITY

NO BUFFER PROVIDED
EXISTING STREETSCAPE IS PER PROFFERED REQUIREMENTS
(WAIVER REQUESTED)

EX. HUNTER MILL ROAD ROUTE 674
13,800 ADT
R/W VARIES

OAKTON SHOPPING CENTER
TAX MAP 47-2((01)) PARCEL 99
ZONE: C-6
USE: SHOPPING CENTER

LYNNHAVEN PLACE PUBLIC ROAD
1100 ADT

SECTION ONE
HEARTHSTONE VILLAGE OAKTON
ZONE: PDH-4
USE: RESIDENTIAL

LOT 53 LOT 52 LOT 51 LOT 30 LOT 31

OPEN SPACE

35' WIDE
SCREENING TYPE 2
(GROUP 12) VS (GROUP 1)
BARRIER D,E OR F (REQUIRED)
2-4' BERM PROVIDED (IN PLACE OF BARRIER)
(WAIVER / MODIFICATION REQUESTED)

	REQUIRED	PROVIDED
1 TREE PER 10LF (402'/10)= (LARGE EVERGREEN)	40.2 TREES	21 TREES
1TREE PER 5LF (402'/5)= (MEDIUM EVERGREEN)	80.4 TREES	0 TREES
1 TREE PER 30LF (402'/30)= (DECIDUOUS TREE)	13.4 TREES	13 TREES
UNDERSTORY TREES=	0 TREES	19 TREES
EVERGREEN SHRUBS=	0 SHRUBS	51 SHRUBS

NORBORNE PLACE (PRIVATE STREET)

NOTE: FOR PLANT SCHEDULE SEE SHEET #4

HUNTER MILL
OFFICE BUILDING
TAX MAP 47-2((01)) PARCEL 98
ZONE: C-2
USE: OFFICE BUILDING

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

PCA/FDPA 1998-PR-027
APPLICATION NO _____ STAFF JP
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 2/15/06 Conds 2/8/06
DATE OF (BOS) (PC) APPROVAL 2/27/06
SHEET 3 OF 21

THIS SHEET IS FOR LANDSCAPING ONLY

NO.	DATE	DESCRIPTION	BY	AUTH.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12015 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

Fairfax County Public Library

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COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT
(RELATED TO RZ-1998-PR-027)

PROJ. NO: 1/03340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	3 OF 21
SCALE: 1" = 30'	

Required Tree Cover Calculation OPTION A

Gross Site Area :		128,937.60 SF
Bldg. Footprint :		17,332 SF
Adj. Gross Site Area :		111,605.60 SF
Required Tree Cover : (PDH-4)	20% Adj. Gross Site Area=	22,321.12 SF
Allowance for Tree Preservation @	1.25 x 12,113 SF	15,141.25 SF
Tree Cover provided per plant schedule:		**20,175 SF**
Total Tree Cover Provided		35,316.25 SF
Required Tree Cover :		22,321.12 SF

OPEN SPACE CALCULATIONS

AREA OF OPEN SPACE
3,245 SF
3,053 SF
+ 47,600 SF
53,898 SF OR 1.2373 AC. = PROPOSED OPEN SPACE AREA

REQUIRED OPEN SPACE = 20% OF TOTAL SITE AREA
SITE AREA = 2.96 AC. OR 128,937.60 SF

20% x 128,937.60 SF = 25,78.52 SF OR 0.59 AC. REQUIRED OPEN SPACE AREA

53,898 SF PROPOSED OPEN SPACE / 128,937.60 SF TOTAL SITE AREA x 100 = 41.80 % PROPOSED OPEN SPACE

Plant Schedule and Canopy Coverage Calculation for Oakton Library

Symbol	Qty.	Botanical Name	Common Name	Status	Size	Comments	Canopy Coverage Allowance (SF)	Proposed Canopy Coverage Provided (SF)	Percent of All Species
Deciduous Shade Trees									
Ar	16	Acer rubrum	Red Maple	Native	3" - 3.5" cal.	B&B	250	4,000	8.7%
OV	8	Ostrya virginia	Eastern Hophornbeam	Native	3" - 3.5" cal.	B&B	250	2,000	4.4%
NS	15	Nyssa sylvatica	Black Gum	Native	2" cal	B&B	175	2,625	8.2%
FP	17	Quercus phellos	Willow Oak	Native	3" - 3.5" cal.	B&B	250	4,250	9.3%
Evergreen Trees									
IA	16	Ilex opaca	American Holly	Native	6' tall	B&B	75	1,200	8.74%
CJ	8	Cryptomeria japonica	Japanese Cryptomeria		6' - 7' tall	B&B	125	1,000	4.4%
JV	12	Juniperus virginiana	Eastern Red Cedar	Native	6' - 7' tall	B&B	175	2,100	6.6%
PV	21	Pinus virginiana	Virginia Pine	Native	6' - 7' tall	B&B	75	1,575	11.5%
Understory Trees									
CC	14	Cercis canadensis	Eastern Redbud	Native	6-8' multi-stem	B&B	75	1,050	7.7%
CM	5	Cornus mas	Corneliancherry Dogwood		5-6' multi-stem	B&B	75	375	2.7%
Shrubs									
IC	51	Ilex crenata "Soft Touch"	Soft Touch Japanese Holly		18-24"	Container			27.9%
						Total Proposed Canopy Coverage		20,175	100.0%

SIGN TYPE "A" (A)

STANDARD WORDING WITH AN ARROW AT BOTTOM POINTING TO THE RIGHT. ONE SIGN MOUNTED PARALLEL TO THE LINE OF CURBING OR PAVEMENT EDGE AT END OF PAINTED AREA.

SIGN TYPE "C" (C)

STANDARD WORDING WITH AN ARROW AT BOTTOM POINTING TO THE LEFT. ONE SIGN MOUNTED PARALLEL TO THE LINE OF CURBING OR PAVEMENT EDGE AT END OF PAINTED AREA.

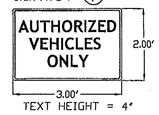
SIGN TYPE "D" (D)

STANDARD WORDING WITH AND ARROW. TWO SIGNS, BACK TO BACK, MOUNTED PERPENDICULAR TO LINE OF CURBING OR PAVEMENT EDGE.

SIGNAGE NOTES:

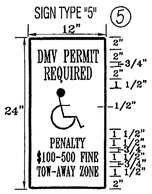
1. SIGNAGE PROVIDED WITH THIS PLAN FOR INFORMATION PURPOSES ONLY.
2. FINAL SITE PLANS WILL INCLUDE EXACT NUMBER AND TYPE OF SIGNS REQUIRED.

SIGN TYPE "1" (1)

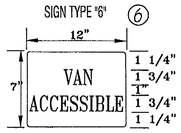


ALL PROPOSED SIGNAGE SHALL BE IN ACCORDANCE WITH THE MUTCD STANDARDS.

SIGN TYPE "5" (5)



SIGN TYPE "6" (6)



PCA/FDPA 1998-PR-027
APPLICATION NO_____ STAFF JP

APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) 2/15/06 Conds 2/~~20~~8/06
SEE PROFFERS DATED_____
DATE OF (BOS) (PC) APPROVAL 2/27/06
SHEET 4 OF 21

Interior Parking Lot Landscaping Calculations

(20 or more parking spaces)

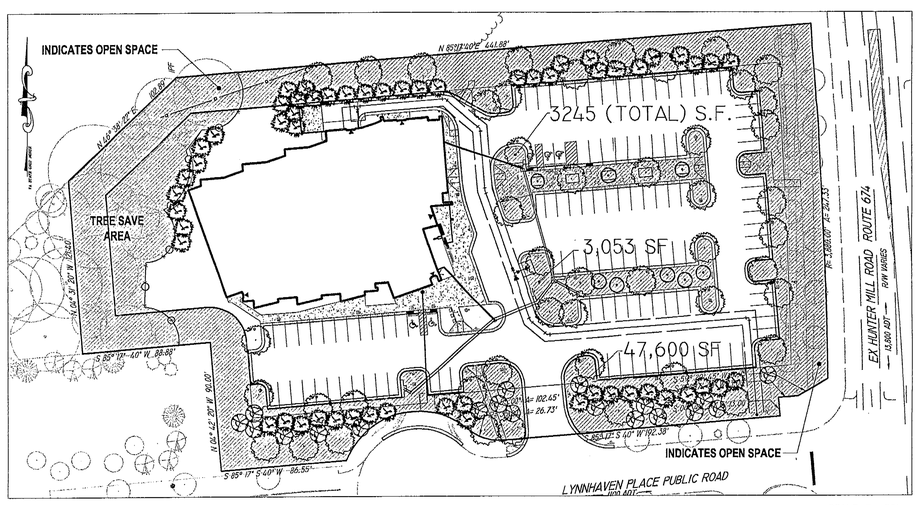
Area of Parking Lot (SF): 46,467 SF
5.0% OF PARKING LOT AREA (46,467 x 0.05= 2,323.35 SF)

Tree Cover Required: 2,323.35 SF
Tree Cover Provided: 8,875.00 SF
(25 DECIDIOUS TREES @ 250 SF= 6,250 SF)
(15 DECIDIOUS TREES @ 175 SF= 2,625 SF)

Required Tree Cover (5% of Parking Lot Area): 2,323.35 SF

NOTES:

1. LANDSCAPE PLANTINGS ARE SHOWN FOR QUANTITY, LOCATION AND TYPE ONLY AND SUBJECT TO RELOCATION PER FINAL ENGINEERING.
2. FINAL PLANTINGS WILL BE CHOSEN TO MEET LEED DESIGN CRITERIA IF APPLICABLE.
3. SPECIES OF ALL PLANTINGS TO BE NATIVE AND DROUGHT TOLERANT WHERE POSSIBLE



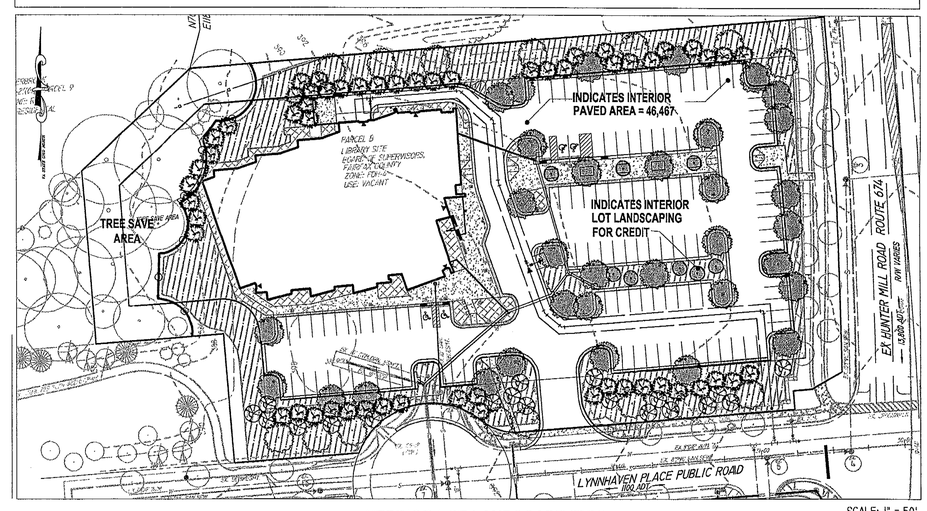
OPEN SPACE EXHIBIT

SCALE: 1" = 50'

INTERIOR LOT LANDSCAPE LEGEND

AREA TO BE SEEDED

AREA TO BE SODDED



INTERIOR LOT LANDSCAPE EXHIBIT

SCALE: 1" = 50'

THIS SHEET IS FOR LANDSCAPING ONLY

NO.	DATE	DESCRIPTION	BY	APPR.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0074
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

Fairfax County Public Library

ENGINEER:
PBSJ
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
3859 CENTERVIEW DRIVE, SUITE 160
CHANTILLY, VIRGINIA 20151
TEL: 703-471-7725 FAX: 703-471-8821

COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER

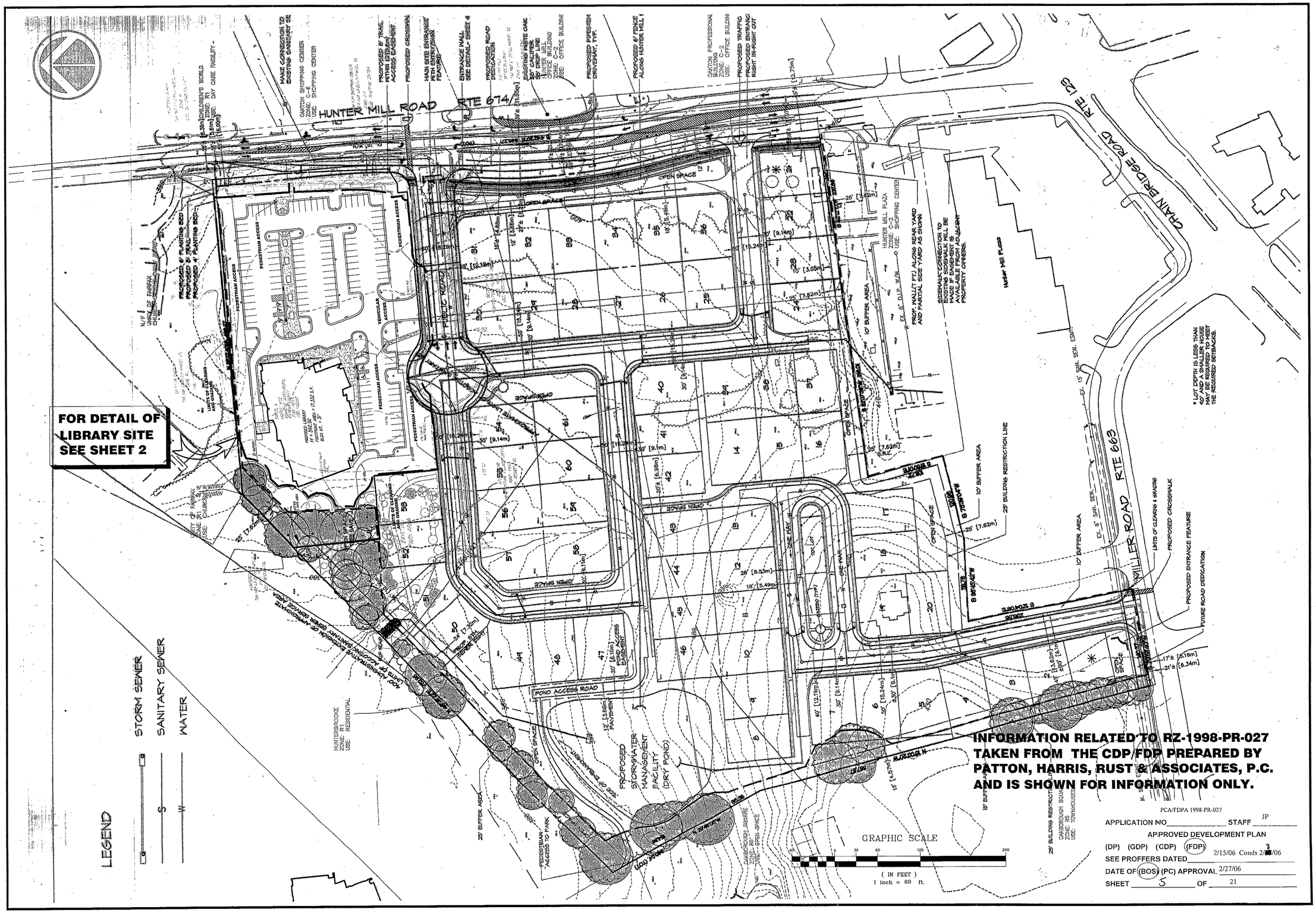
ENGINEER'S SEAL & SIGNATURE

OAKTON LIBRARY

PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

LANDSCAPE DETAILS

PROJ. NO: 170340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	4 OF 21
SCALE: AS SHOWN	



FOR DETAIL OF LIBRARY SITE SEE SHEET 2

INFORMATION RELATED TO RZ-1998-PR-027 TAKEN FROM THE CDP/FDP PREPARED BY PATTON, HARRIS, RUST & ASSOCIATES, P.C. AND IS SHOWN FOR INFORMATION ONLY.

PCA/FDPA 1998-PR-027

APPLICATION NO _____ STAFF JP

APPROVED DEVELOPMENT PLAN

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

SEE PROFFERS DATED 2/15/06 Conds 2/[illegible]/06

DATE OF (BOS) (PC) APPROVAL 2/27/06

SHEET 5 OF 21

NO.	DATE	DESCRIPTION	BY	AUTH.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

Fairfax County Public Works and Environmental Services

Fairfax County Public Library

ENGINEER:
PBS&J
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
3859 CENTERVIEW DRIVE, SUITE 160
CHANTILLY, VIRGINIA 20151
TEL: 703.471.7275 FAX: 703.471.8021

COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT
(RELATED TO RZ-1998-PR-027)

PROJ. NO: 170340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	5 OF 21
SCALE: 1" = 30'	

CONCEPTUAL AND FINAL DEVELOPMENT PLAN
FOR
HEARTHSTONE VILLAGE
RZ 1998-PR-027

GENERAL NOTES

1. The property delineated by this plan is located on Fairfax County Tax Assessment map 47-2 ((1)), Parcels 19, 20, 21, 22, 24, 25, and a portion of 27E.

2. The owners of the subject property are the following: Parcel 19 is now in the name of John L. Borellias, as recorded in Deed Book 8676 at Page 915;

   Parcels 20, 21, 22, 25 are now in the name of Fancroft et ux and Stepco et ux, as recorded in the Deed Book 4899 at page 224, Deed Book 5605 page 674, Deed Book 5134 page 189 and Deed Book 4414 at page 367;

   Parcel 27E is now in the name Acorn Associates, A Virginia Limited Partnership, as recorded in Deed Book 6160 at page 1749; respectively, all among the land records of Fairfax County, Virginia.

   Parcel 24 in the name of Walter David Kauffman as recorded in Deed Book 450 at page 0001; respectively, all among the land records of Fairfax County, Virginia.

   The contract purchaser/developer is Hearthstone Vanguard Joint Venture.

3. The subject property consists of 18.93 Acres and is undeveloped, except for the residence on Parcel 24. The current zoning is R-1 (13.65 AC) and C-2 (5.27 AC). This Conceptual and Final Developement Plan is for a rezoning application to the PDH-4, Planned Development District. In addition, 3.0 ± acres will be dedicated for a future library site.

4. The plan has been prepared without the benefit of a title report, and therefore does not necessarily indicate all encumbrances in the property. To the best of our knowledge, there are no existing easements with a width greater than 25' on site.

5. The boundary information is from a plat prepared by Patton Harris Rust and Associates, p.c. Topographic information is from Aerial Survey from available county records. The contour interval is 2 feet.

6. Ingress and egress to the property is via Hunter Mill Road and Miller Road.

7. Existing land use and zoning adjacent to the site are:
   west: R-5 Use: Residential/Single Family Attached
   north: R-1 Use: Church
   east: C-2 Use: Office Building
   south: C-8 Use: Shopping Center

8. The subject property is located in Area II, Fairfax Planning District, Fox Lake Community Planning Sector (F4). The proposed development conforms to the recently approved out of turn plan ammendment (95-36) of the Comprehensive Plan. No adverse effects are foreseen on adjacent properties.

9. No floodplain exists on the subject property as delineated by the Federal Insurance Administration, United States Geological Survey, or Fairfax County. No Resource Protection Area (RPA), Resource Management Area (RMA) or Environmental Quality Corridor (EQC) exists on the subject property as per the Fairfax County Chesapeake Bay Preservation Area maps.

10. To the best of our knowledge, the proposed development will be in conformance with applicable ordinances, regulations, and adopted standards except as noted.

11. Development of this project shall commence at such time as appropriate County approvals have been obtained and subject to the discretion of the owner.

12. Public water service to the site shall be an extension of existing water mains provided by the Fairfax County Water Authority (FCWA). Detailed service to the units and the library shall be completed during final site plan engineering.

13. All structures on the site were constructed around 1926 and are all proposed to be demolished.

14. Public sanitary sewer will be provided by an extension of existing facilities. Detailed service shall be completed during final site plan engineering.

15. An air quality permit shall be obtained and provided prior to commencement of construction, if required.

16. Parking will be provided in conformance with Article 11 of the zoning ordinance. See Separate Parking Tabulations.

17. To the best of our knowledge and belief, there are no graves or burial sites located on this site.

18. No hazardous or toxic substances are present on site as set forth in Title 40, Code of Federal Regulations Parts 116.4, 302.4 and 355; all hazardous waste as set forth in Commonwealth of Virginia/Department of Waste Management Regulations VR 672-10-1 - Virginia Hazardous Waste Management Regulations; and/or petroleum products as defined in Title 40, Code of Federal Regulations Part 280; none are generated, utilized, stored, treated, and/or disposed of on site and the size and contents of any existing or proposed storage tanks or containers.

19. Owner/applicant reserves the right to make minor modifications and adjustments to the final design of the proposed planting areas prior to site plan submittal. In no case shall there be a reduction in the total quantity of landscaping proposed hereon or the amount of open space.

20. Pursuant to Section 16-204 of the Zoning Ordinance, minor modifications to building footprints and lot dimensions may be made, due to final engineering and architectural design prior to site plan submission.

21. A grouping of trees will be preserved within designated open space areas on the site. In addition open space park areas will be provided throughout the development, as generally shown on the plan.

22. Special amenities within the proposed development include landscaped streetscape, open space park areas, and unique residential unit types.

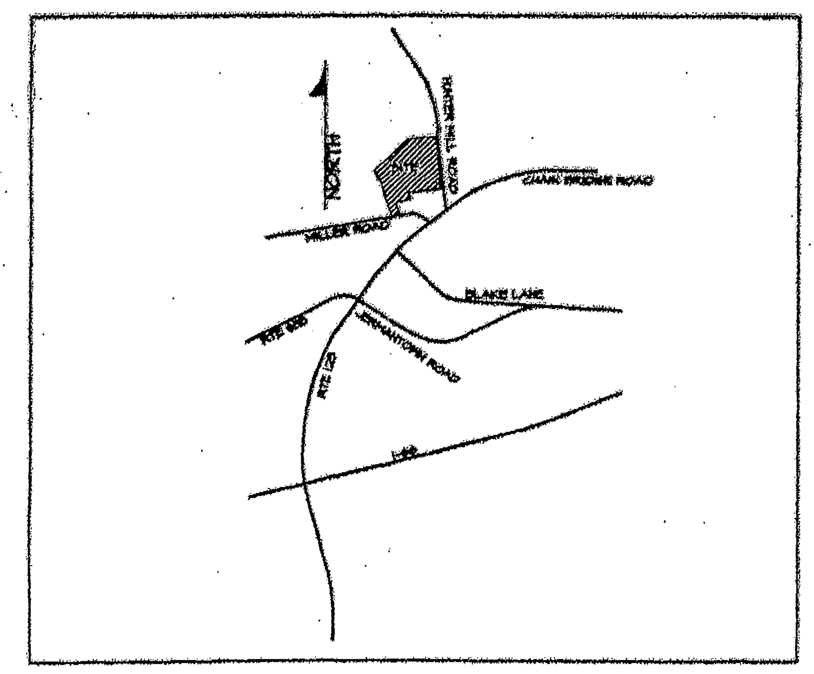
23. The site is in the Difficult Run drainage shed. There is a regional stormwater management pond (D31) planned downstream on the north side of Marbury Road. BMP requirements for this site are provided by that pond. A dry stormwater management pond is proposed on the subject property to accommodate peak shaving.

24. A bicycle trail and an equestrian trail is shown on the Comprehensive Plan along Hunter Mill Road. A bicycle/hiker trail is proposed along the south frontage to connect to the existing 4'sidewalk to the south. No Pedestrian access is existing to the north. No equestrian trail exists to the north or south.
   -refer to "WAIVERS," this sheet.

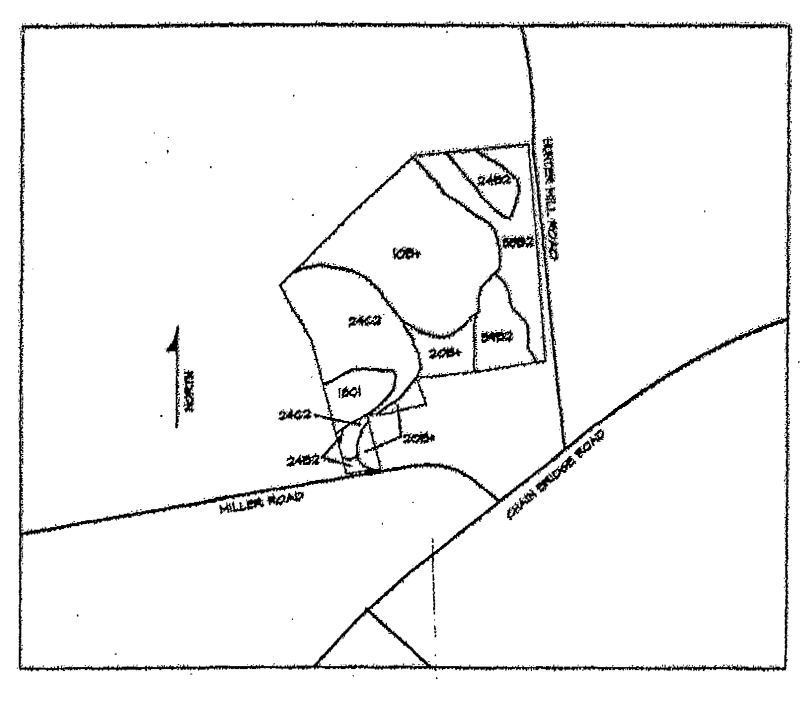
   Sidewalks/walkways internal to the project shall be provided as generally shown on the plan.

25. Approximate limits of clearing and grading are shown on the GDP, but may vary based on final engineering and design.

26. Proposed public improvements include Hunter Mill road widening and extension of public utilities to the subject property.



VICINITY MAP
Scale: 1"=2,000'



SOILS MAP (Reference: Fairfax County Soils Maps)
Scale: 1"=500'

TABULATIONS

Total Site Area	18.93 Acres
Library Site Area	3.0 ± Acres
Residential Site Area	15.93 ± Acres
Existing Zoning *	R-1, C-2
Proposed Zoning	PDH-4
Proposed Unit Type	Single Family Detached
Proposed Number of Units	61 units

DENSITY:
Permitted: 4.0 - 4.5 Dwelling Units/acre per Comprehensive Plan
Proposed: 3.2 Dwelling Units/acre (61 Units/18.93 ± Acres)

Proposed Zoning: PDH-4

Bulk Regulations

Minimum Yard Requirements	Required	Provided
Single Family Detached		
-Front	---	7'
-Side	---	5'
-Rear	25'*	18'-25'

* Where lots abut the property boundaries, the yard requirements must meet the 25' rear yard standard for an R-4 zoning district.

Open Space	Required	Provided
Singe Family Lots	20% (3.19 AC)	21% (3.35 AC)
Library Site	20% (0.6 AC)	20% (0.6 AC)
Total	20% (3.79 AC)	20.9% (3.95 AC)

Lot Width		
Single Family Detached		
-Minimum Interior Lot	---	60'
-Minimum Corner Lot	---	70'

Maximum Building Height		
-Single Family Detached	35'	35'

Parking Tabulation	Required	Provided
Itemized Required by Unit Type:		
Single Family Detached		
61 x 2 spaces =	122 spaces	122 spaces**

** This includes garage parking only. Street parking is not included.

WAIVERS

1. A waiver of the equestrian trail along the Hunter Mill Road frontage is requested.
2. A waiver of the 600' length of private streets is requested.

AS APPROVED 5.22.00 BY THE BOARD OF SUPERVISORS SUBJECT TO APPROVED PROFFERS AND CONDITIONS.

PCA/FDPA 1998-PR-027
APPLICATION NO ____ STAFF JP
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 2/15/06 Conds 2/8/06
DATE OF (BOS) (PC) APPROVAL 2/27/06
SHEET 6 OF 21

PHR&A
Patton Harris Rust & Associates, pc.
Engineers, Surveyors, Planners, Landscape Architects
14532 Lee Road
Chantilly, Virginia 20151-1679
703-449-6700
Offices: Fairfax, Va. Bridgewater, Va. Leesburg, Va. Virginia Beach, Va. Chantilly, Va. Winchester, Va. Woodbridge, Va. Martinsburg, WV

DESIGN	PHR&A/TG	SURVEY	PHR&A
DRAWN	PJS	DATE	NOV. 1999
CHECKED	DHS	SCALE	1" = 60'
SHEET	1 OF 4	FILE NO.	9103-3-1

PROFESSIONAL SEAL

NO.	DESCRIPTION	DATE	REV'D	REW'D	APPROVED	DATE
	Public road to library	4.5.00	pjs			
	adjust side yard, add traffic island	3.21.00	pjs			
1	Architectural changes	3.9.00	pjs			

REVISION

TITLE: NOTES & TABULATIONS

PROJECT: HEARTHSTONE VILLAGE OAKTON
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA.

SHT.Z1 OF 46

THIS SHEET IS FOR INFORMATION ONLY

OWNER/DEVELOPER:
BOARD OF SUPERVISORS FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

Fairfax County Public Works and Environmental Services
Fairfax County Public Library

ENGINEER:
PBS&J
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
3859 CENTERVIEW DRIVE, SUITE 160
CHANTILLY, VIRGINIA 20151
TEL: 703.471.7275 FAX: 703.471.8021

COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

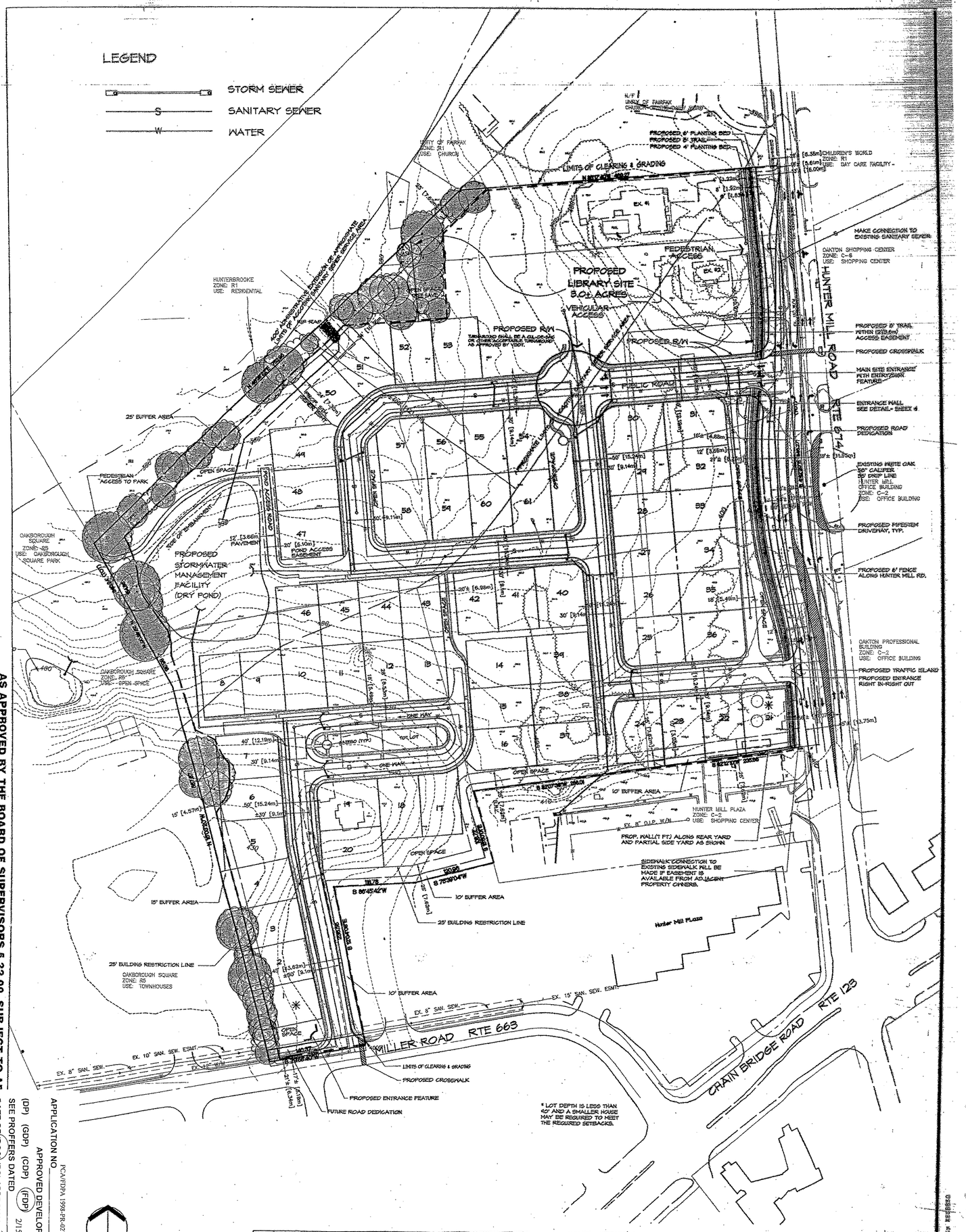
OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT

NO.	DATE	DESCRIPTION	BY	AUTH.

PROJ. NO:	170340
DATE:	SEPT., 2005
DWG. BY:	DBD
DESIGN BY:	DBD
CHECK BY:	JPB
SCALE:	AS SHOWN

COUNTY NUMBER: 0549-SP-01-1
SHEET NO: 6 OF 21



AS APPROVED BY THE BOARD OF SUPERVISORS 5.22.00, SUBJECT TO AP

APPLICATION NO. PCA/FDPA 1998-PR-027 STAFF JJP

APPROVED DEVELOPMENT PLAN (DP) (GDP) (CDP) (FDP) 2/15/06 Conds.2/16/06

SEE PROFFERS DATED

DATE OF (BOS) (PC) APPROVAL 2/27/06

SHEET 1 OF 21

SHT.22 OF 46

NO.	DESCRIPTION	DATE	REV'D	REW'D	APPROVED	DATE
3	Public road to library	4.5.00	PJS			
2	adjust side yard, add					
	traffic island	5.21.00	PJS			
1	Architectural Changes	5.9.00	PJS			

REVISION

PROFESSIONAL SEAL — COMMONWEALTH OF VIRGINIA — COUNTY OF FAIRFAX — DAVID H. SHELER — LANDSCAPE ARCHITECT

PHR&A

Patton Harris Rust & Associates, pc.
Engineers, Surveyors, Planners, Landscape Architects
14532 Lee Road
Chantilly, Virginia 20151-1676
703-449-6700

Offices: Fairfax, Va. Bridgewater, Va. Leesburg, Va. Virginia Beach, Va. Chantilly, Va. Winchester, Va. Woodbridge, Va. Martinsburg, W.Va.

PROJECT
HEARTHSTONE VILLAGE
OAKTON
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA.

TITLE
CONCEPTUAL/FINAL DEVELOPEMENT PLAN

DESIGN	PHR&A/TG	SURVEY	PHR&A
DRAWN	PJS	DATE	NOV. 1999
CHECKED	DHS	SCALE	1" = 60'
SHEET	2 OF 4	FILE NO.	9103-34

THIS SHEET IS FOR INFORMATION ONLY

DATE: SEPT. 2005	PROJ. NO. 17D140	COUNTY NUMBER: 0945-SP-01-1	
DESIGN BY: DBD	DWN. BY: DBD		
CHECK BY: JPB	SCALE: AS SHOWN	SHEET NO. 7 OF 21	

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT

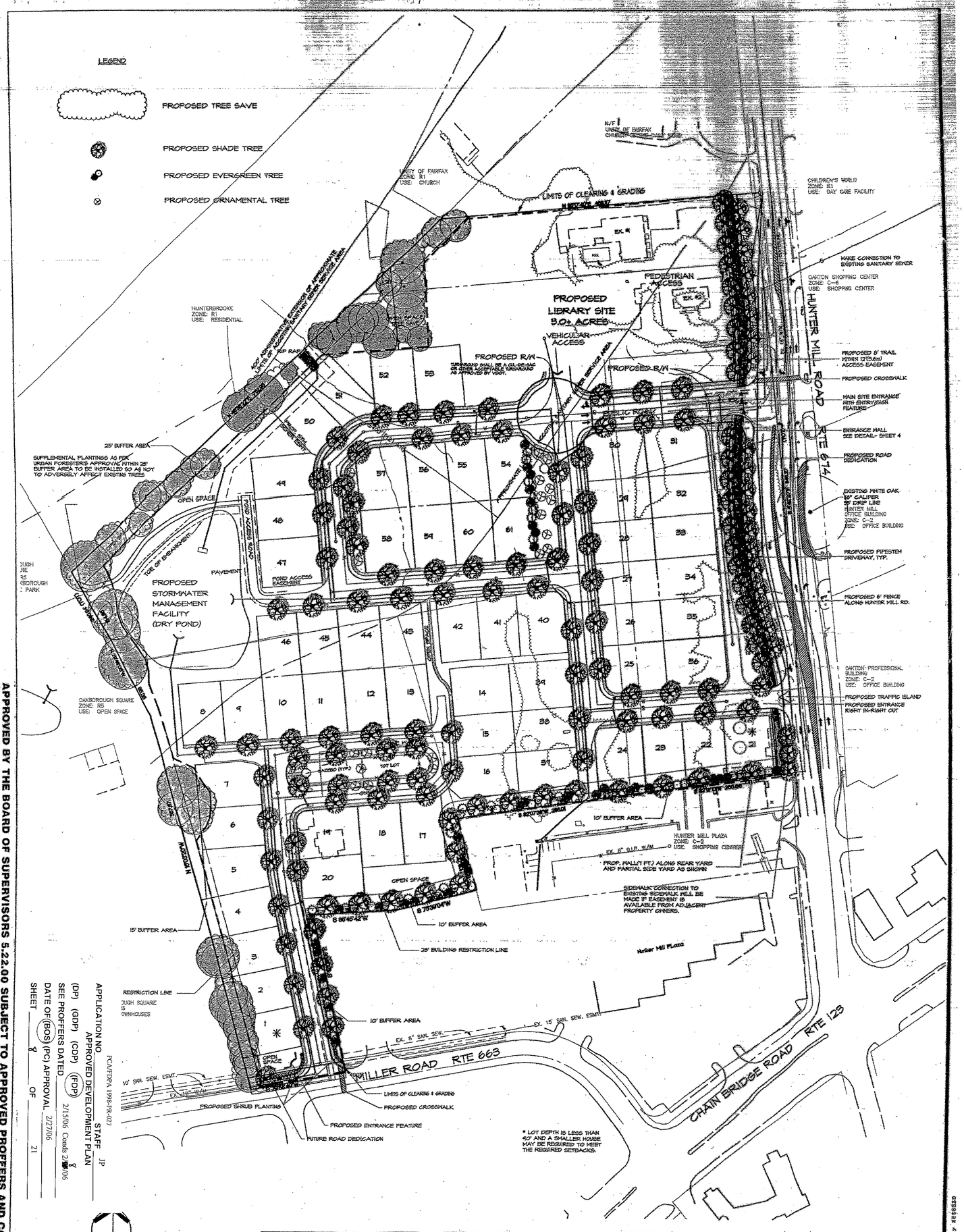
ENGINEERS SEAL & SIGNATURE — COMMONWEALTH OF VIRGINIA — JAMES P. BECK No. 23880 — PROFESSIONAL ENGINEER — 10/10/05

ENGINEER:
PBS&J
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
3859 CENTERVIEW DRIVE, SUITE 160
CHANTILLY, VIRGINIA 20151
TEL: 703.471.7275 FAX: 703.471.6021

Fairfax County Public Library

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

NO.	DATE	DESCRIPTION	BY	AUTH.



APPROVED BY THE BOARD OF SUPERVISORS 5.22.00 SUBJECT TO APPROVED PROFFERS AND CONDITIONS.

APPLICATION NO. PCA/FDPA 1998-PR-027
APPROVED DEVELOPMENT PLAN STAFF JP
(DP) (GDP) (CDP) (FDP) X
SEE PROFFERS DATED 2/15/06 Conds 2/27/06
DATE OF (BOS) (PC) APPROVAL 2/27/06
SHEET 8 OF 21

SHT.23 OF 46

NO.	DESCRIPTION	DATE	REVS'D	REV'D	APPROVED	DATE
3	Public road to library	4.5.00	PJS			
2	adjust side yard, add traffic island	5.21.00	PJS			
1	Architectural Changes	9.9.00	PJS			

REVISION

PROFESSIONAL SEAL

PHR&A
Fairfax, Va. Bridgewater, Va. Leesburg, Va. Virginia Beach, Va. Chantilly, Va. Winchester, Va. Woodbridge, Va. Martinsburg, W.V.
Fairfax Harris Rust & Associates, pc.
Engineers, Surveyors, Planners, Landscape Architects
14532 Lee Road
Chantilly, Virginia 20151-1679
703-449-6100

PROJECT
HEARTHSTONE VILLAGE
OAKTON
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA.

TITLE
CDP/FDP LANDSCAPE PLAN

DESIGN	PHR&A/TG	SURVEY	PHR&A
DRAWN	PJS	DATE	NOV. 1999
CHECKED	DHS	SCALE	1" = 60'
SHEET	3 OF 4	FILE NO.	9103-3-1

THIS SHEET IS FOR INFORMATION ONLY

PROJ. NO.	1170040	DATE:	SEPT. 2005
DESIGN BY:	DBD	DWG. BY:	DBD
CHECK BY:	JPR	SCALE:	AS SHOWN
SHEET NO.	8 OF 21	COUNTY NUMBER:	0649-SP-01-1

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT

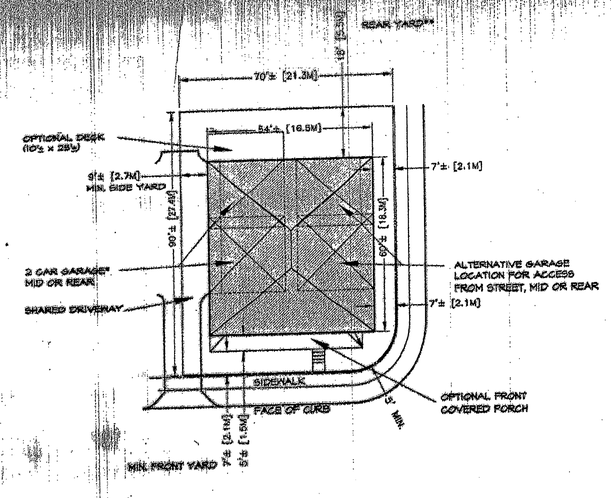
ENGINEERS SEAL & SIGNATURE
COMMONWEALTH OF VIRGINIA
JAMES P. JORDEK
PROFESSIONAL ENGINEER
10/18/05

ENGINEER:
PBS&J
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
3859 CENTERVIEW DRIVE, SUITE 160
CHANTILLY, VIRGINIA 20151
TEL: 703.471.7275 FAX: 703.471.8021

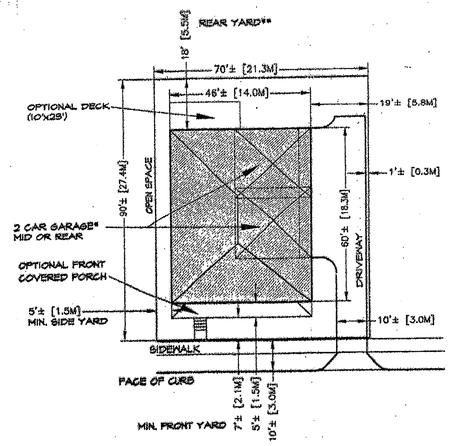
Fairfax County Public Works and Environmental Services
Fairfax County Public Library

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

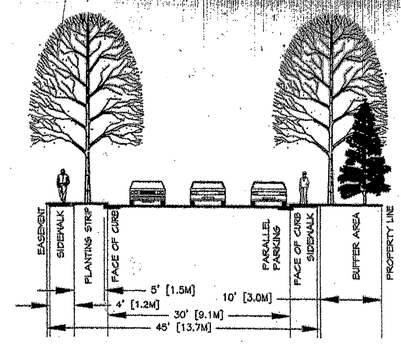
NO.	DATE	DESCRIPTION	BY	AUTH.



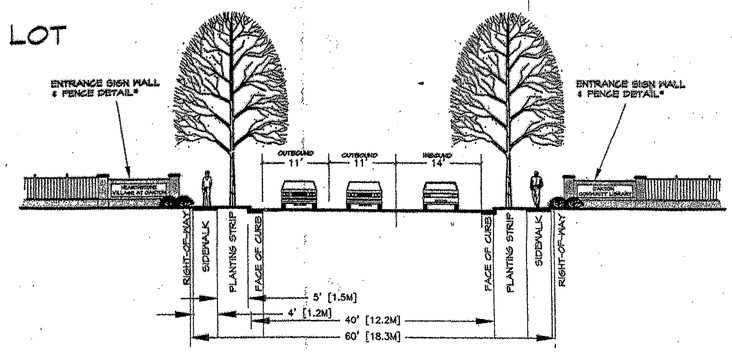
TYPICAL 70' WIDE CORNER LOT
SCALE: 1"=20'



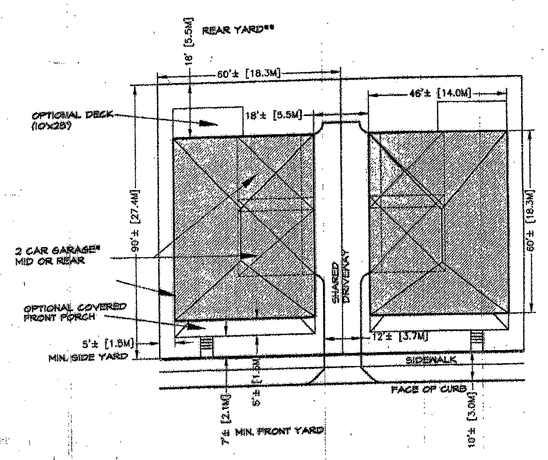
TYPICAL 70' WIDE INTERIOR LOT
(LOTS 14 & 39)
SCALE: 1"=20'



PRIVATE ENTRANCE ROAD ONTO MILLER ROAD, PARKING ONE SIDE
(APPROXIMATELY 300 LF)
SCALE: 1"=10'



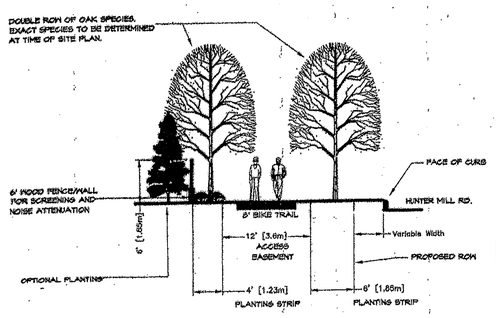
PUBLIC ROAD AT NORTH ENTRANCE ONTO HUNTER MILL ROAD
(APPROXIMATELY 400 LF)
SCALE: 1"=10'



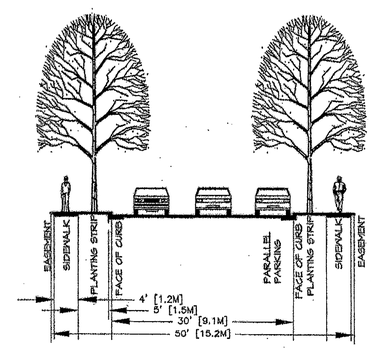
TYPICAL 60' WIDE LOT
SCALE: 1"=20'

* LOCATION OF GARAGE MAY VARY. DEPENDING ON THE GRADING OF THE LOT, THE GARAGE MAY BE LOCATED AT EITHER THE MID OR THE REAR OF THE HOUSE.

* 25' REAR YARD WHERE SHOWN. BUILDING DIMENSIONS MAY BE ADJUSTED TO MEET THE 25' BUILDING RESTRICTION LINE.



TYPICAL SECTION OF SCREENING ALONG HUNTER MILL ROAD
SCALE: NO SCALE



PRIVATE ROAD, PARKING ONE SIDE, TWO WAY
SCALE: 1"=10'

AS APPROVED BY THE BOARD OF SUPERVISORS 5.22.00, SUBJECT TO APROVED PROFFERS AND CONDITIONS

PHR&A
Offices:
Fairfax, Va.
Bridgewater, Va.
Lynchburg, Va.
Virginia Beach, Va.
Chantilly, Va.
Winchester, Va.
Woodbridge, Va.
Martinsburg, Wv.
Patton Harris Rust & Associates, pc.
Engineers • Planners • Surveyors • Landscape Architects
14532 Lee Road
Chantilly, Virginia 20151-1676
703-818-1000

DESIGN	PHR&A/TG	SURVEY	PHR&A
DRAWN	PJS	DATE	NOV. 1998
CHECKED	DHS	SCALE	1" = 60'
SHEET	4 OF 4	FILE NO.	9109-51

NO.	DATE	DESCRIPTION	BY	AUTH.

NO.	DESCRIPTION	DATE	REV'D	REW'D	APPROVED	DATE
3	Public road to library	4.5.00	pjs			
2	adjust side yard, add traffic island	3.21.00	pjs			
1	Architectural changes	5.15.00	pjs			

REVISION

TITLE: DETAILS

PROJECT: HEARTHSTONE VILLAGE
OAKTON
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA.

PCA/FDPA 1998-PR-027 JP
APPLICATION NO. _____ STAFF
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) 2/15/06 Conds 2/[illegible]/06 X
SEE PROFFERS DATED
DATE OF (BOS) (PC) APPROVAL 2/27/06
SHEET 9 OF 21

SHT.Z4 OF [illegible]6

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12015 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAFAI, DPWES
(703) 324-5169 BUILDING DESIGN BRANCH

Fairfax County Public Library

ENGINEER:
PBSJ
POST BUCKLEY, SCHUH & JERNIGAN, INC.
3959 CENTERVIEW DRIVE, SUITE 150
CHANTILLY, VIRGINIA 20151
TEL: 703.471.7275 FAX: 703.471.8021

COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

THIS SHEET IS FOR INFORMATION ONLY

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT

PROJ. NO: 170340	COUNTY NUMBER: 0549-SP-01-1
DATE: SEPT., 2005	
DWG. BY: DBD	SHEET NO:
DESIGN BY: DBD	9 OF 21
CHECK BY: JPB	
SCALE: AS SHOWN	

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 14.

[X] 3. Provide:

Facility Name/ Type & No. (e.g. dry pond A, bmp, trench, underground vault, etc.)	On-site area served (acres)	Off-site area served (acres)	Drainage area (acres)	Footprint area (sf)	Storage Volume (cf)	If pond, dam height (ft)
ONE EX. DRY POND	2.99 AC	29.31 AC	24.33 AC	26,050 SF	176,334 CF	6.25 FT
					Totals	

[X] 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet 11. Pond inlet and outlet pipe systems are shown on Sheet 12.

[X] 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet 12. Type of maintenance access road surface noted on the plat is GRAVEL (asphalt, geoblock, gravel, etc.).

[X] 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet 14.

[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 AND 21.

[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 21.

[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 21.

[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 AND 2.

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

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

COMMONWEALTH OF VIRGINIA
FAIRFAX COUNTY

BOARD OF SUPERVISORS
Fairfax, Virginia 22035

SUPERVISOR LINDA Q. SMYTH
Providence District
8739 Lee Highway
Fairfax, Virginia 22031

Email: provdist@fairfaxcounty.gov
Phone: (703) 560-6946, *TTY:* 711
Fax: (703) 207-3541

On the web: www.fairfaxcounty.gov/providence

BOARD MATTER
September 12, 2005

Oakton Library
Authorization of Inclusion of County Owned Property in PCA 2004-0335 / FDPA 2004-0335 & Concurrent Processing of Site Plan

Mr. Chairman:

I bring before the Board today good news regarding the Oakton Library. As you know Mr. Chairman, the greater Oakton community and Providence District are patiently looking forward to the construction of the Oakton Library. I anticipate that the Oakton Library will not only serve as a repository of books but will also become a binding cultural center where all residents can meet to create and renew the bonds of community. Chairman Connolly, residents of the Oakton Community, the Board of Supervisors and I have worked diligently for many years to develop a library in Oakton. The planning for the Oakton Library has progressed to the point that site plans and zoning applications are ready to be submitted. To facilitate these next steps in the process I make the following motions.

Motion:
I move that the Board of Supervisors authorize the inclusion of real property owned by Fairfax County identified as Tax Map No. 47-2-((54))- B in the pending submission of PCA 2004-0335 /FDPA 2004-0335 to facilitate the development of a library on this site.

I further move that the Board authorize the County Executive to act as the agent of the Board in the submission of PCA 2004-0335 /FDPA 2004-0335.

Finally, I move that the Board approve concurrent processing for both the site plan and the building plans for the proposed library building while the PCA & FDPA applications are being processed.

This motion does not relieve the applicants from compliance with the provisions of all applicable ordinances, regulations, and adopted standards and does not prejudice in any way the consideration of the pending review of the PCA and FDPA applications.

PCA/FDPA 1998-PR-027
APPLICATION NO. _____ STAFF JP
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) 2/15/06 Conds 2/8/06
SEE PROFFERS DATED _____
DATE OF (BOS) (PC) APPROVAL 2/27/06
SHEET 10 OF 21

NO.	DATE	DESCRIPTION	BY	A.O.T.L.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5190 BUILDING DESIGN BRANCH

Fairfax County Public Library

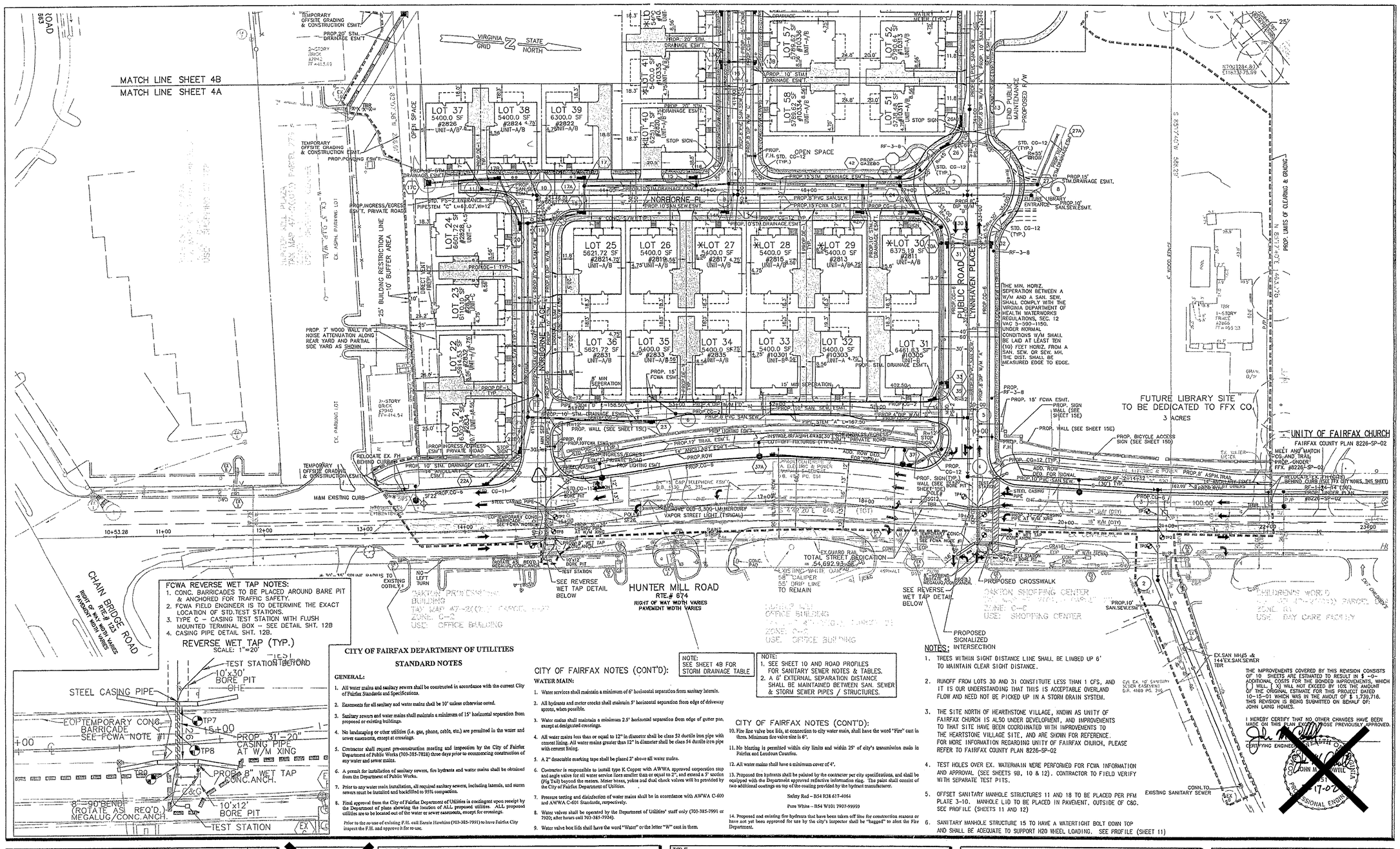
ENGINEER:
PBS&J
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
3959 CENTERVIEW DRIVE, SUITE 160
CHANTILLY, VIRGINIA 20151
TEL: 703.471.7275 FAX: 703.471.8021

COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT
SWM CHECKLIST & LETTERS
(RELATED TO RZ-1998-PR-027)

PROJ. NO: 170340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	10 OF 21
SCALE: AS SHOWN	



FCWA REVERSE WET TAP NOTES:

1. CONC. BARRICADES TO BE PLACED AROUND BARE PIT & ANCHORED FOR TRAFFIC SAFETY.
2. FCWA FIELD ENGINEER IS TO DETERMINE THE EXACT LOCATION OF STD.TEST STATIONS.
3. TYPE C – CASING TEST STATION WITH FLUSH MOUNTED TERMINAL BOX – SEE DETAIL SHT. 12B
4. CASING PIPE DETAIL SHT. 12B.

CITY OF FAIRFAX DEPARTMENT OF UTILITIES

STANDARD NOTES

GENERAL:

1. All water mains and sanitary sewers shall be constructed in accordance with the current City of Fairfax Standards and Specifications.
2. Easements for all sanitary and water mains shall be 10' unless otherwise noted.
3. Sanitary sewers and water mains shall maintain a minimum of 15' horizontal separation from proposed or existing buildings.
4. No landscaping or other utilities (i.e. gas, phone, cable, etc.) are permitted in the water and sewer easements, except at crossings.
5. Contractor shall request pre-construction meeting and inspection by the City of Fairfax Department of Public Works (703-385-7828) three days prior to commencing construction of any water and sewer mains.
6. A permit for installation of sanitary sewers, fire hydrants and water mains shall be obtained from the Department of Public Works.
7. Prior to any water main installation, all required sanitary sewers, including laterals, and storm sewers must be installed and backfilled to 95% compaction.
8. Final approval from the City of Fairfax Department of Utilities is contingent upon receipt by the Department of plans showing the location of ALL proposed utilities. ALL proposed utilities are to be located out of the water or sewer easements, except for crossings.

Prior to the re-use of existing F.H. call Earnie Hawkins (703-385-7991) to have Fairfax City inspect the F.H. and approve it for re-use.

CITY OF FAIRFAX NOTES (CONT'D):

WATER MAIN:

1. Water services shall maintain a minimum of 6' horizontal separation from sanitary laterals.
2. All hydrants and meter crocks shall maintain 5' horizontal separation from edge of driveway aprons, when possible.
3. Water mains shall maintain a minimum 2.5' horizontal separation from edge of gutter pan, except at designated crossings.
4. All water mains less than or equal to 12" in diameter shall be class 52 ductile iron pipe with cement lining. All water mains greater than 12" in diameter shall be class 54 ductile iron pipe with cement lining.
5. A 2" detectable marking tape shall be placed 2' above all water mains.
6. Contractor is responsible to install type K Copper with AWWA approved compression stop and angle valve for all water service lines smaller than or equal to 2", and extend a 5' section (Pig Tail) beyond the meters. Meter boxes, yokes and dual check valves will be provided by the City of Fairfax Department of Utilities.
7. Pressure testing and disinfection of water mains shall be in accordance with AWWA C-600 and AWWA C-651 Standards, respectively.
8. Water valves shall be operated by the Department of Utilities' staff only (703-385-7991 or 7920; after hours call 703-385-7924).
9. Water valve box lids shall have the word "Water" or the letter "W" cast in them.

NOTE:
SEE SHEET 4B FOR STORM DRAINAGE TABLE

NOTE:
1. SEE SHEET 10 AND ROAD PROFILES FOR SANITARY SEWER NOTES & TABLES.
2. A 6' EXTERNAL SEPARATION DISTANCE SHALL BE MAINTAINED BETWEEN SAN. SEWER & STORM SEWER PIPES / STRUCTURES.

CITY OF FAIRFAX NOTES (CONT'D):

10. Fire line valve box lids, at connection to city water main, shall have the word "Fire" cast in them. Minimum fire valve size is 6".
11. No blasting is permitted within city limits and within 25' of city's transmission main in Fairfax and Loudoun Counties.
12. All water mains shall have a minimum cover of 4'.
13. Proposed fire hydrants shall be painted by the contractor per city specifications, and shall be equipped with the Department approved reflective information ring. The paint shall consist of two additional coatings on top of the coating provided by the hydrant manufacturer.

Safety Red – B54 R38 617-4064

Pure White – B54 W101 7907-99993

14. Proposed and existing fire hydrants that have been taken off line for construction reasons or have not yet been approved for use by the city's inspector shall be "flagged" to alert the Fire Department.

NOTES:

1. TREES WITHIN SIGHT DISTANCE LINE SHALL BE LIMBED UP 6' TO MAINTAIN CLEAR SIGHT DISTANCE.
2. RUNOFF FROM LOTS 30 AND 31 CONSTITUTE LESS THAN 1 CFS, AND IT IS OUR UNDERSTANDING THAT THIS IS ACCEPTABLE OVERLAND FLOW AND NEED NOT BE PICKED UP IN A STORM DRAIN SYSTEM.
3. THE SITE NORTH OF HEARTHSTONE VILLAGE, KNOWN AS UNITY OF FAIRFAX CHURCH IS ALSO UNDER DEVELOPMENT, AND IMPROVEMENTS TO THAT SITE HAVE BEEN COORDINATED WITH IMPROVEMENTS TO THE HEARTSTONE VILLAGE SITE, AND ARE SHOWN FOR REFERENCE. FOR MORE INFORMATION REGARDING UNITY OF FAIRFAX CHURCH, PLEASE REFER TO FAIRFAX COUNTY PLAN 8226-SP-02
4. TEST HOLES OVER EX. WATERMAIN WERE PERFORMED FOR FCWA INFORMATION AND APPROVAL (SEE SHEETS 9B, 10 & 12). CONTRACTOR TO FIELD VERIFY WITH SEPARATE TEST PITS.
5. OFFSET SANITARY MANHOLE STRUCTURES 11 AND 18 TO BE PLACED PER FFM PLATE 3-10. MANHOLE LID TO BE PLACED IN PAVEMENT, OUTSIDE OF C&G. SEE PROFILE (SHEETS 11 AND 12)
6. SANITARY MANHOLE STRUCTURE 15 TO HAVE A WATERTIGHT BOLT DOWN TOP AND SHALL BE ADEQUATE TO SUPPORT H20 WHEEL LOADING. SEE PROFILE (SHEET 11)

THE IMPROVEMENTS COVERED BY THIS REVISION CONSISTS OF 10 SHEETS ARE ESTIMATED TO RESULT IN $ -0- ADDITIONAL COSTS FOR THE BONDED IMPROVEMENTS, WHICH [ ] WILL [X] WILL NOT EXCEED BY 10% THE AMOUNT OF THE ORIGINAL ESTIMATE FOR THIS PROJECT DATED 10-15-01 WHICH WAS IN THE AMOUT OF $ 1,739,716. THIS REVISION IS BEING SUBMITTED ON BEHALF OF: JOHN LAING HOMES.

I HEREBY CERTIFY THAT NO OTHER CHANGES HAVE BEEN MADE ON THIS PLAN EXCEPT THOSE PREVIOUSLY APPROVED.

CERTIFYING ENGINEER OR LANDSCAPE ARCHITECT

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APPROVED	DATE
4	REVISED HUNTER MILL RD	07/10/02	JMM			
3	LOT 21-30, 34-40, 51, 58 RE-SITES	06/11/02	JMM			
2	REV W/M "B" FOR REV. WET TAP	06/02	CTN			
1	LOT 31-33 RE-SITES	06/02	CTN			

REVISION

PROFESSIONAL SEAL

PROJECT
HEARTHSTONE VILLAGE OAKTON
Section 1
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA.

TITLE
SITE LAYOUT PLAN

PHR&A
Patton Harris Rust & Associates,pc.
Engineers,Surveyors,Planners,Landscape Architects
14532 Lee Road
Chantilly, Virginia 20151-1679
703-449-6700

Offices:
Fairfax,Va.
Bridgewater,Va.
Leesburg,Va.
Virginia Beach,Va.
Chantilly,Va.
Winchester,Va.
Woodbridge,Va.

DESIGN: CTN/MAT	SURVEY: PHR&A
DRAWN: WP	DATE: APRIL, 2001
CHECKED: RAM	SCALE: 1"=40'
SHEET 4A OF 47	FILE NO. 09103-4-1

PCA/FDPA 1998-PR-027

APPLICATION NO. _____ STAFF JP

APPROVED DEVELOPMENT PLAN

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

SEE PROFFERS DATED 2/15/06 Conds 2/8/06

DATE OF (BOS) (PC) APPROVAL 2/27/06

SHEET 11 OF 21

NO.	DATE	DESCRIPTION	BY	APR.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0050
ATTN: JOHN W. KEARNEY, P.WES.
(703) 324-5160 BUILDING DESIGN BRANCH

Fairfax County Public Library

ENGINEER:
PBS&J
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
3959 CENTERVIEW DRIVE, SUITE 160
CHANTILLY, VIRGINIA 20151
TEL: 703-471-7215 FAX: 703-471-8221

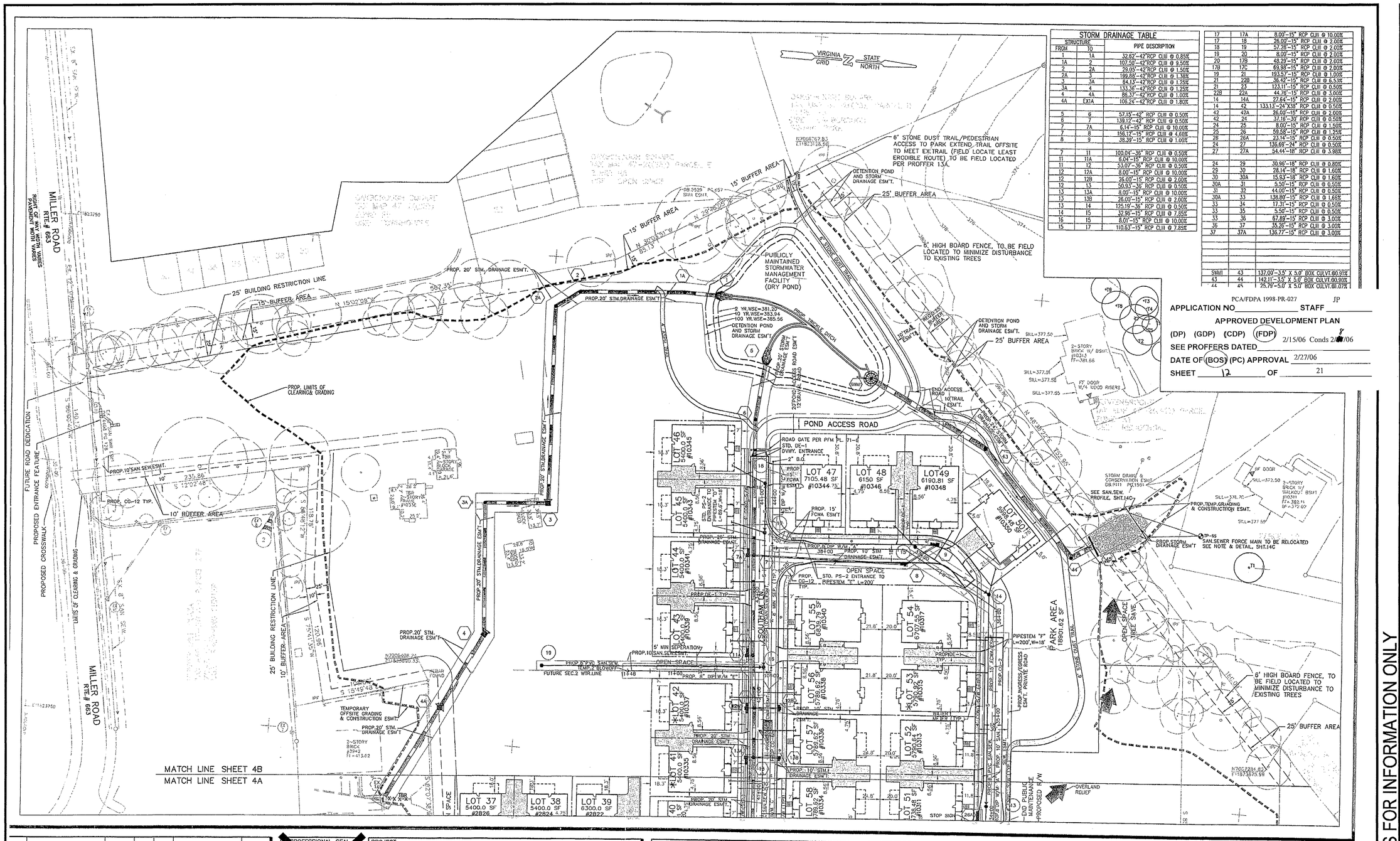
COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

THIS SHEET IS FOR INFORMATION ONLY

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP
OFFSITE DRAINAGE SYSTEM
(RELATED TO RZ-1998-PR-027)

PROJ. NO: 170340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	11 OF 21
SCALE: AS SHOWN	



STORM DRAINAGE TABLE		
STRUCTURE FROM	STRUCTURE TO	PIPE DESCRIPTION
1	1A	32.62'-42" RCP CLIII @ 0.85%
1A	2	107.50'-42" RCP CLIII @ 9.50%
2	2A	29.05'-42" RCP CLIII @ 1.50%
2A	3	199.88'-42" RCP CLIII @ 1.38%
3	3A	64.13'-42" RCP CLIII @ 1.25%
3A	4	133.36'-42" RCP CLIII @ 1.25%
4	4A	86.37'-42" RCP CLIII @ 1.00%
4A	EX1A	106.24'-42" RCP CLIII @ 1.80%
5	6	57.15'-42" RCP CLIII @ 0.50%
6	7	139.12'-42" RCP CLIII @ 0.50%
7	7A	6.14'-15" RCP CLIII @ 10.00%
7	8	156.19'-15" RCP CLIII @ 4.60%
8	9	39.39'-15" RCP CLIII @ 1.00%
7	11	100.04'-36" RCP CLIII @ 0.50%
11	11A	6.04'-15" RCP CLIII @ 10.00%
11	12	53.07'-36" RCP CLIII @ 0.50%
12	12A	8.00'-15" RCP CLIII @ 10.00%
12	12B	26.00'-15" RCP CLIII @ 2.00%
12	13	50.93'-36" RCP CLIII @ 0.50%
13	13A	8.00'-15" RCP CLIII @ 10.00%
13	13B	26.00'-15" RCP CLIII @ 2.00%
13	14	125.19'-36" RCP CLIII @ 0.50%
14	15	32.99'-15" RCP CLIII @ 7.55%
16	15	8.01'-15" RCP CLIII @ 10.00%
15	17	110.63'-15" RCP CLIII @ 7.85%
17	17A	8.00'-15" RCP CLIII @ 10.00%
17	18	26.00'-15" RCP CLIII @ 2.00%
18	19	57.28'-15" RCP CLIII @ 2.00%
19	20	8.00'-15" RCP CLIII @ 2.00%
20	17B	48.29'-15" RCP CLIII @ 2.00%
17B	17C	69.98'-15" RCP CLIII @ 2.00%
19	21	193.57'-15" RCP CLIII @ 1.00%
21	22B	36.42'-15" RCP CLIII @ 6.53%
21	23	123.11'-15" RCP CLIII @ 0.50%
22B	22A	44.76'-15" RCP CLIII @ 3.00%
14	14A	27.84'-15" RCP CLIII @ 2.00%
14	42	133.13'-24"X38" RCP CLIII @ 0.50%
42	42A	26.00'-15" RCP CLIII @ 2.00%
42	24	37.16'-30" RCP CLIII @ 0.50%
24	25	8.00'-15" RCP CLIII @ 1.50%
25	26	59.58'-15" RCP CLIII @ 1.25%
26	26A	23.14'-15" RCP CLIII @ 0.50%
24	27	136.69'-24" RCP CLIII @ 0.50%
27	27A	54.44'-18" RCP CLIII @ 3.98%
24	29	30.98'-18" RCP CLIII @ 0.80%
29	30	28.14'-18" RCP CLIII @ 1.60%
30	30A	15.93'-18" RCP CLIII @ 1.60%
30A	31	5.50'-15" RCP CLIII @ 0.50%
31	32	44.00'-15" RCP CLIII @ 0.50%
30A	33	138.80'-15" RCP CLIII @ 1.66%
33	34	17.31'-15" RCP CLIII @ 0.50%
33	35	5.50'-15" RCP CLIII @ 0.50%
33	36	67.89'-15" RCP CLIII @ 3.00%
36	37	35.26'-15" RCP CLIII @ 3.00%
37	37A	136.77'-15" RCP CLIII @ 3.00%
SWM1	43	137.00'-3.5' X 5.0' BOX CULVT.@0.91%
43	44	142.11'-3.5' X 5.0' BOX CULVT.@0.90%
44	45	25.79'-5.0' X 5.0' BOX CULVT.@1.07%

PCA/FDPA 1998-PR-027 JP

APPLICATION NO. _____ STAFF _____

APPROVED DEVELOPMENT PLAN

(DP) (GDP) (CDP) (FDP) 2/15/06 Conds 2/27/06

SEE PROFFERS DATED _____

DATE OF (BOS) (PC) APPROVAL 2/27/06

SHEET 12 OF 21

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APPROVED	DATE
1	REV. PIPE TABLE & LOT LINES 47-50	7/10/02	JMM			

REVISION

PROFESSIONAL SEAL

PROJECT

HEARTHSTONE VILLAGE OAKTON
Section 1
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA.

TITLE

SITE LAYOUT PLAN

PHR&A

Patton Harris Rust & Associates,pc.
Engineers,Surveyors,Planners,Landscape Architects
14532 Lee Road
Chantilly, Virginia 20151-1679
703-449-6700

Offices:
Fairfax,Va.
Bridgewater,Va.
Leesburg,Va.
Virginia Beach,Va.
Chantilly,Va.
Winchester,Va.
Woodbridge,Va.

DESIGN CTN/MAT	SURVEY PHR&A
DRAWN WP	DATE APRIL, 2001
CHECKED RAM	SCALE 1"=40'
SHEET C401SIT 4B OF 47	FILE NO. 09103-4-1

NO.	DATE	DESCRIPTION	BY	AUTH.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

Fairfax County Public Library

ENGINEER:
PBS&J
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
3859 CENTERVIEW DRIVE, SUITE 160
CHANTILLY, VIRGINIA 20151
TEL: 703-471-7255 FAX: 703-471-8021

COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER

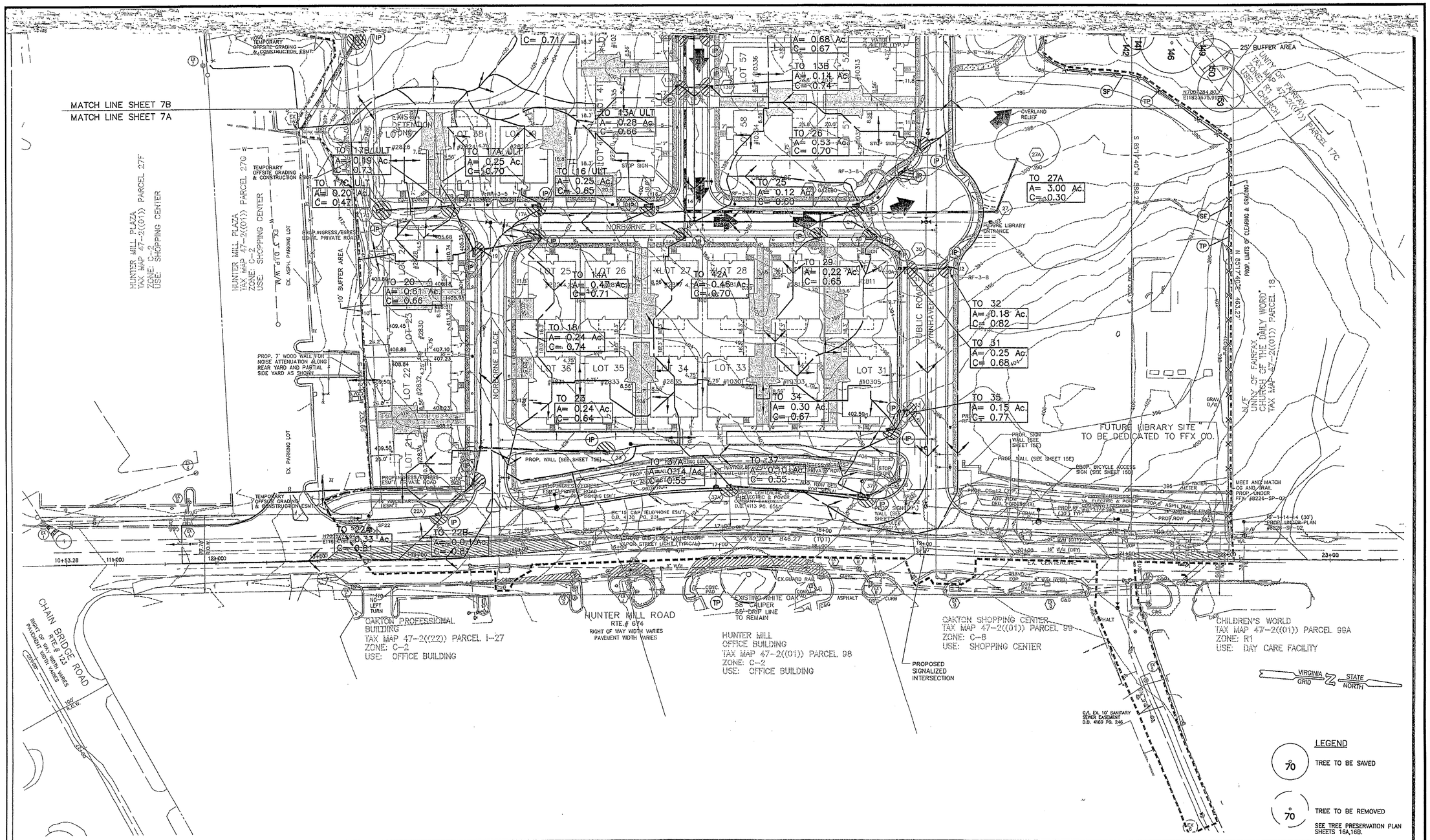
ENGINEERS SEAL & SIGNATURE

THIS SHEET IS FOR INFORMATION ONLY

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT
OFFSITE DRAINAGE SYSTEM
(RELATED TO RZ-1998-PR-027)

PROJ. NO: 1/0340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	12 OF 21
SCALE: AS SHOWN	



NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APPROVED	DATE
1	REVISED HUNTER MILL RD	07/10/02	JMM			

REVISION

PROFESSIONAL SEAL

PROJECT
HEARTHSTONE VILLAGE OAKTON
Section 1
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA.

TITLE
EROSION AND SEDIMENT
CONTROL PHASE II

PHR&A
Patton Harris Rust & Associates,pc.
Engineers,Surveyors,Planners,Landscape Architects
14532 Lee Road
Chantilly, Virginia 20151-1679
703-449-6700

Offices:
Fairfax,Va.
Bridgewater,Va.
Leesburg,Va.
Virginia Beach,Va.
Chantilly,Va.
Winchester,Va.
Woodbridge,Va.

DESIGN CTN	SURVEY PHR&A
DRAWN WP	DATE APRIL, 2001
CHECKED RAM	SCALE 1"=40'
SHEET C202ESC 7A OF 47	FILE NO. 09103-4-1

PCA/FDPA 1998-PR-027

APPLICATION NO _____ STAFF JP

APPROVED DEVELOPMENT PLAN

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

SEE PROFFERS DATED 2/15/06 Conds 2/8/06

DATE OF (BOS) (PC) APPROVAL 2/27/06

SHEET 13 OF 21

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NO.	DATE	DESCRIPTION	BY	AUTH.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

Fairfax County Public Library

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TEL: 703.471.7275 FAX: 703.471.8021

COMMONWEALTH OF VIRGINIA
JAMES P. BECK
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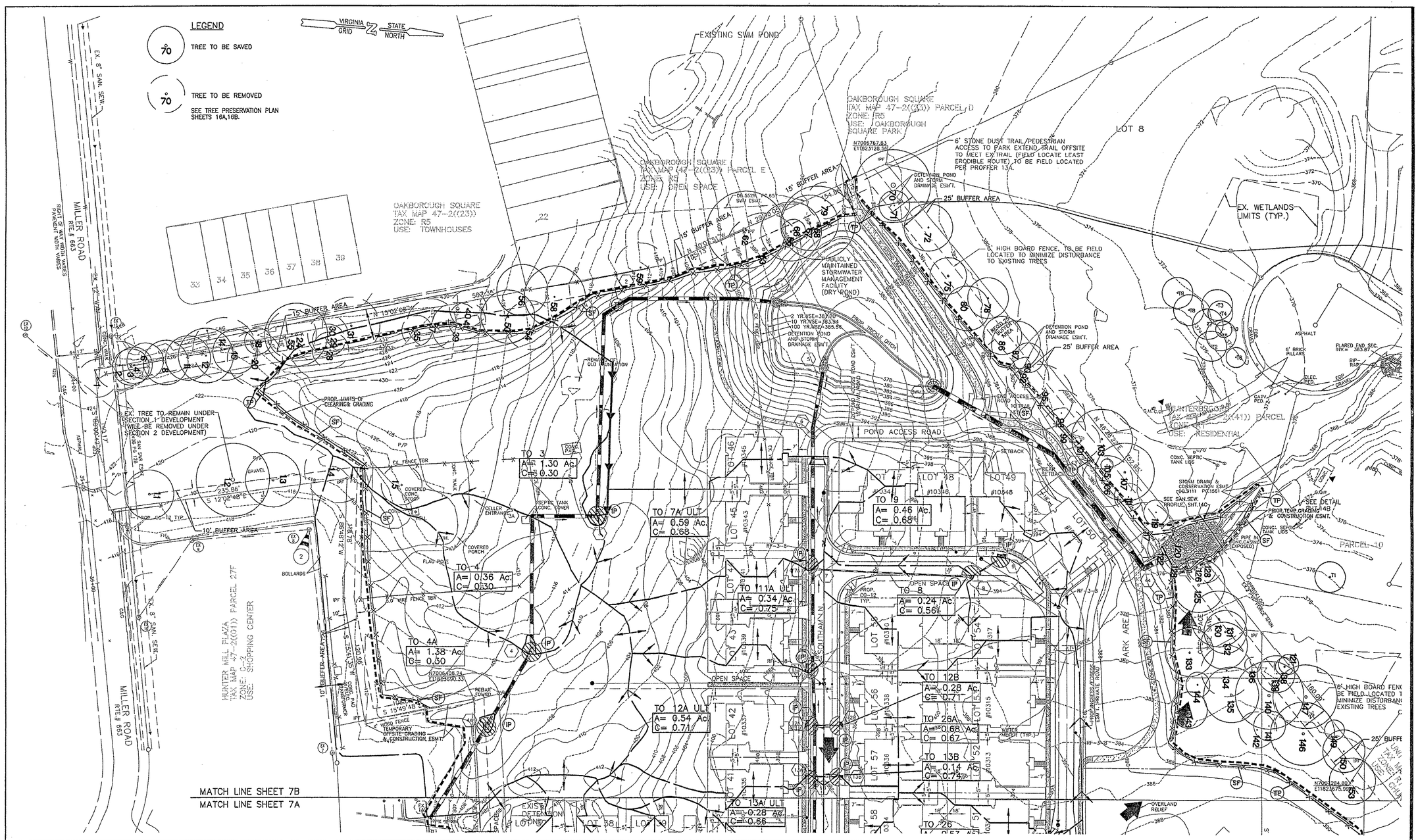
10/10/05
PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT
OFFSITE DRAINAGE DIVIDES
(RELATED TO RZ-1998-PR-027)

PROJ. NO: 170340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	13 OF 21
SCALE: AS SHOWN	



NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APPROVED	DATE

REVISION

PROFESSIONAL SEAL

PROJECT
HEARTHSTONE VILLAGE OAKTON
Section 1
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA.

TITLE
EROSION AND SEDIMENT CONTROL PHASE II

PHR&A
Patton Harris Rust & Associates,pc.
Engineers,Surveyors,Planners,Landscape Architects
14532 Lee Road
Chantilly, Virginia 20151-1679
703-449-6700

Offices:
Fairfax,Va.
Bridgewater,Va.
Leesburg,Va.
Virginia Beach,Va.
Chantilly,Va.
Winchester,Va.
Woodbridge,Va.

DESIGN CTN	SURVEY PHR&A
DRAWN WIP	DATE APRIL, 2001
CHECKED RAM	SCALE 1"=40'
SHEET C203ESC 7B OF 46	FILE NO. 09103-4-1

PCA/FDPA 1998-PR-027
APPLICATION NO _____ STAFF JP
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 2/15/06 Conds 2/27/06
DATE OF (BOS) (PC) APPROVAL 2/27/06
SHEET 14 OF 21

NO.	DATE	DESCRIPTION	BY	AUTH.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

Fairfax County Public Library

ENGINEER:
PBS&J
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
3959 CENTERVIEW DRIVE, SUITE 150
FAIRFAX, VIRGINIA 22030
TEL: 703.471.7215 FAX: 703.471.8021

COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

THIS SHEET IS FOR INFORMATION ONLY

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT
OFFSITE DRAINAGE DIVIDES
(RELATED TO RZ-1998-PR-027)

PROJ. NO: 170340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	14 OF 21
SCALE: AS SHOWN	

STORM SEWER DESIGN COMPUTATIONS

FROM	TO	DA ACRES	C	Inc. A*C	Accum. A*C	Tc (min.)	I in/hr	Inc Q cfs	Accum. Q cfs	Slope %	PIPE SIZE(inch.)	VELOCITY (fps)	LENGTH (ft)	CAPACITY (cfs)	INVERT UP (ft)	INVERT DOWN (ft)	UPSTREAM TOP (ft)
27A	27	3.00	0.30	0.90	0.90	5.00	7.27	6.54	6.54	3.98%	18	10.84	54.44	20.95	388.90	386.73	388.90
27	24	0.00	0.00	0.00	0.90	5.00	7.27	0.00	6.54	0.50%	24	10.23	136.69	16.00	386.48	385.80	391.53
26A	26***	0.68	0.67	0.46	0.46	5.00	7.27	3.31	3.31	0.50%	15	2.70	23.14	4.57	386.48	386.37	391.30
26	25***	0.53	0.70	0.37	0.83	5.00	7.27	2.70	6.01	1.25%	15	4.90	59.58	7.22	386.12	385.37	390.95
25	24***	0.12	0.60	0.07	0.90	5.00	7.27	0.52	6.53	1.50%	15	5.32	8.00	7.91	385.12	385.00	392.55
38A	38	0.32	0.81	0.26	0.26	5.00	7.27	1.88	1.88	3.00%	15	6.77	124.95	11.19	399.08	395.33	403.40
38	37	0.06	0.90	0.05	0.31	5.00	7.27	0.39	2.28	3.00%	15	6.77	31.88	11.19	395.08	394.12	400.50
37	36	0.26	0.55	0.14	0.46	5.00	7.27	1.04	3.32	3.00%	15	6.77	35.26	11.19	393.87	392.82	400.29
36	33	0.00	0.00	0.00	0.46	5.00	7.27	0.00	3.32	3.00%	15	6.77	67.69	11.19	392.57	390.53	398.25
35	33	0.15	0.77	0.12	0.12	5.00	7.27	0.84	0.84	0.50%	15	2.84	5.50	4.57	390.56	390.53	396.07
34	33	0.30	0.67	0.20	0.20	5.00	7.27	1.46	1.46	0.50%	15	3.31	17.31	4.57	392.75	392.66	396.97
33	30A***	0.00	0.00	0.00	0.77	5.00	7.27	0.00	5.62	1.66%	15	7.28	138.81	8.32	390.28	387.97	396.24
32	31	0.18	0.82	0.15	0.15	5.00	7.27	1.07	1.07	0.50%	15	3.04	44.00	4.57	388.47	388.25	392.45
31	30A	0.25	0.68	0.17	0.32	5.00	7.27	1.24	2.31	0.50%	15	3.73	5.50	4.57	388.00	387.97	392.45
30A	30	0.00	0.00	0.00	1.09	5.00	7.27	0.00	7.93	1.60%	18	7.85	15.93	13.29	387.72	387.47	392.58
30	29	0.00	0.00	0.00	1.09	5.00	7.27	0.00	7.93	1.60%	18	7.85	28.14	13.29	387.22	386.77	392.23
29	24	0.22	0.65	0.14	1.23	5.00	7.27	1.04	8.97	0.80%	18	6.05	30.96	9.39	386.52	386.27	391.99
24	42***	0.00	0.00	0.00	3.03	5.00	7.27	0.00	22.04	0.50%	30	4.49	37.16	29.00	383.96	383.77	392.30
42A	42	0.46	0.70	0.32	0.32	5.00	7.27	2.34	2.34	2.00%	15	6.23	26.00	9.14	387.99	387.47	393.80
42	14***	0.00	0.00	0.00	3.35	5.00	7.27	0.00	24.38	0.50%	30 (24x38 HEP)	4.97	133.13	29.00	383.57	382.91	393.55
22A	22	0.33	0.81	0.27	0.27	5.00	7.27	1.94	1.94	3.00%	15	6.84	44.55	11.19	403.46	402.12	408.22
22	21	0.00	0.00	0.00	0.27	5.00	7.27	0.00	1.94	5.46%	15	8.46	43.59	15.09	401.87	399.49	407.57
23	21	0.24	0.64	0.15	0.15	5.00	7.27	1.12	1.12	0.50%	15	3.08	123.11	4.57	400.10	399.49	405.81
21	19	0.00	0.00	0.00	0.42	5.00	7.27	0.00	3.06	1.00%	15	5.19	193.57	6.46	399.24	397.30	407.58
17C	17B	0.20	0.47	0.09	0.09	5.00	7.27	0.68	0.68	2.00%	15	4.36	69.98	9.14	401.01	399.61	404.57
17B	20	0.19	0.73	0.14	0.23	5.00	7.27	1.01	1.69	2.00%	15	5.68	48.29	9.14	399.36	398.39	404.79
20	19	0.61	0.66	0.40	0.64	5.00	7.27	2.93	4.62	2.00%	15	7.47	8.00	9.14	398.14	397.98	405.14
19	18	0.00	0.00	0.00	1.06	5.00	7.27	0.00	7.68	2.00%	15	8.34	57.28	9.14	397.05	395.91	404.87
18	17	0.24	0.74	0.18	1.23	5.00	7.27	1.29	8.97	2.00%	15	8.49	26.00	9.14	395.66	395.14	403.15
17A	17	0.25	0.70	0.18	0.18	5.00	7.27	1.27	1.27	10.00%	15	9.25	8.00	20.43	395.94	395.14	403.15
17	15	0.00	0.00	0.00	1.41	5.00	7.27	0.00	10.24	7.85%	15	15.20	110.63	18.10	395.94	387.25	402.89
16	15	0.25	0.65	0.16	0.16	5.00	7.27	1.18	1.18	10.00%	15	9.05	8.01	20.43	391.44	390.64	399.41
15	14***	0.00	0.00	0.00	1.57	5.00	7.27	0.00	11.42	7.85%	15	15.60	32.96	18.10	387.00	384.41	399.16
14A	14	0.47	0.71	0.33	0.33	5.00	7.27	2.43	2.43	2.00%	15	6.30	27.64	9.14	389.22	388.67	398.30
14	13***	0.00	0.00	0.00	5.26	5.00	7.27	0.00	38.23	0.50%	36	5.41	125.19	47.16	382.41	381.76	398.01
13A	13	0.28	0.66	0.18	0.18	5.00	7.27	1.34	1.34	10.00%	15	9.40	8.00	20.43	388.08	387.28	398.05
13B	13	0.14	0.74	0.10	0.10	5.00	7.27	0.75	0.75	2.00%	15	4.49	26.00	9.14	389.82	389.30	396.05
13	12***	0.00	0.00	0.00	5.55	5.00	7.27	0.00	40.33	0.50%	36	5.71	50.93	47.16	381.58	381.33	395.79
12A	12	0.54	0.71	0.38	0.38	5.00	7.27	2.79	2.79	10.00%	15	11.65	8.00	20.43	387.72	386.92	395.70
12B	12	0.28	0.71	0.20	0.20	5.00	7.27	1.45	1.45	2.00%	15	5.44	26.00	9.14	390.08	389.56	395.72
12	11***	0.00	0.00	0.00	6.13	5.00	7.27	0.00	44.56	0.50%	36	6.30	53.07	47.16	381.13	380.86	395.44
11A	11	0.34	0.75	0.26	0.26	5.00	7.27	1.85	1.85	10.00%	15	10.34	6.04	20.43	388.02	387.42	396.00
11	7***	0.00	0.00	0.00	6.38	5.00	7.27	0.00	46.42	0.50%	36	6.57	100.04	47.16	380.66	380.16	395.71
7A	7	0.59	0.68	0.40	0.40	5.00	7.27	2.92	2.92	10.00%	15	11.81	6.14	20.43	389.52	388.91	397.49
9	8	0.46	0.68	0.31	0.31	5.00	7.27	2.27	2.27	1.00%	15	4.80	38.39	6.46	389.73	389.34	393.48
8	7***	0.24	0.56	0.13	0.45	5.00	7.27	0.98	3.25	4.60%	15	2.65	156.12	13.85	389.09	381.91	393.84

STORM SEWER DESIGN COMPUTATIONS(CONT.)

FROM	TO	DA ACRES	C	Inc. A*C	Accum. A*C	Tc (min.)	I in/hr	Inc Q cfs	Accum. Q cfs	Slope %	PIPE SIZE(inch.)	VELOCITY (fps)	LENGTH (ft)	CAPACITY (cfs)	INVERT UP (ft)	INVERT DOWN (ft)	UPSTREAM TOP (ft)
7	6***	0.00	0.00	0.00	7.23	5.00	7.27	0.00	52.58	0.50%	42	5.47	139.12	71.14	379.66	378.97	397.20
6	5***	0.00	0.00	0.00	7.23	5.00	7.27	0.00	52.58	0.50%	42	5.47	57.15	71.14	378.77	378.48	398.10
				CA=	11.09	FROM UPSTREAM OF EX1A											
EX1A	4A	1.10	0.30	0.33	11.42	5.00	7.27	2.40	83.02	1.80%	42	14.75	106.24	134.97	400.87	398.96	412.50
4A	4	1.38	0.30	0.41	11.83	5.00	7.27	3.01	86.03	1.00%	42	11.75	86.37	100.60	398.71	397.85	404.50
4	3A	0.36	0.30	0.11	11.94	5.00	7.27	0.79	86.82	1.25%	42	12.90	133.36	112.48	397.60	395.93	407.00
3A	3	0.00	0.00	0.00	11.94	5.00	7.27	0.00	86.82	1.25%	42	12.90	64.13	112.48	395.68	394.88	410.72
3	2A	1.30	0.30	0.39	12.33	5.00	7.27	2.84	89.65	1.38%	42	13.51	199.88	118.18	394.63	391.87	407.00
2A	2	0.00	0.00	0.00	12.33	5.00	7.27	0.00	89.65	1.50%	42	13.97	29.05	123.21	391.62	391.19	410.20
2	1A	0.00	0.00	0.00	12.33	5.00	7.27	0.00	89.65	9.50%	42	27.89	107.50	310.08	390.94	380.72	411.25
1A	1***	0.00	0.00	0.00	12.33	5.00	7.27	0.00	89.65	0.85%	42	10.98	32.62	92.75	380.47	380.20	393.67
SWM-1	43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	217.71*	0.91%	3.5'x5'	10.75**	137.00	245.39	376.00	374.76	383.81
43	44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	217.71*	0.90%	3.5'x5'	10.71**	142.18	244.03	374.51	373.23	382.25
44	45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	217.71*	1.07%	3.5'x5'	11.38**	25.79	266.08	372.78	372.50	383.00

* The SOF (100 year) outflow through the combined spillway from the SWM pond is 217.71 cfs. The 10 year outlow is 86.45 cfs. See TR-55 computations for areas, runoff curve numbers and time of concentration.

** Velocities in the outflow pipe system are based on 10 yr. flow.

*** These pipe runs are designed to flow under pressure head. See HGL computations.

STORM INLET COMPUTATIONS

NUMBER	TYPE	LENGTH (FT)	DRAINAGE AREA (AC)	C	CA	I (IN/HR)	Q INCR (CFS)	Q CARRY OVER (CFS)	QT GUTTER FLOW (CFS)	S GUTTER SLOPE (FT/FT)	SX CROSS SLOPE (FT/FT)	T (SPREAD)	W (FT)	SW (FT/FT)	d (FT)	Efficiency	h (FT)	Q intercepted	d/h for Sump	CARRYOVER TO (CFS)	REMARKS
17B	DI-3B	6.0	0.19	0.73	0.14	7.27	1.01	0	1.01	0.0184	0.0200	4.23	2.0	0.0833		0.98		0.99		0.02 TO 17A	ON GRADE
17A	DI-3B	8.0	0.25	0.70	0.18	7.27	1.27	FROM 20,17B (0.42)	1.69	0.0231	0.0208	5.49	2.0	0.0833		0.96		1.62		0.07 TO 16	ON GRADE
16	DI-3B	8.0	0.25	0.65	0.16	7.27	1.18	FROM 17A (0.07)	1.25	0.0338	0.0208	3.86	2.0	0.0833		0.98		1.23		0.02 TO 13A	ON GRADE
22A	DI-3B	6.0	0.33	0.81	0.26	4.00	1.06	0	1.06	0.0213	0.0208	1.97	2.0	0.0833		1.00		0.53		0.00	ON GRADE
20	DI-3B	8.0	0.61	0.66	0.40	7.27	2.93	0	2.93	0.0142	0.0208	8.48	2.0	0.0833		0.87		2.53		0.40 TO 17A	ON GRADE
18	DI-3B	8.0	0.24	0.74	0.18	7.27	1.30	0	1.30	0.0489	0.0208	3.40	2.0	0.0833		0.95		1.23		0.07 TO 14A	ON GRADE
14A	DI-3B	8.0	0.47	0.71	0.34	7.27	2.46	FROM 18 (0.07)	2.53	0.0338	0.0208	6.24	2.0	0.0833		0.82		2.06		0.47 TO 42A	ON GRADE
25	DI-3B	6.0	0.12	0.60	0.07	7.27	0.53	0	0.53	0.0338	0.0208	1.81	2.0	0.0833		1.00		0.53		0.00	ON GRADE
42A	DI-3B	8.0	0.46	0.70	0.32	7.27	2.33	FROM 14A (0.47)	2.80	0.0338	0.0208	6.60	2.0	0.0833		79.00		2.20		0.60 TO 29	ON GRADE
29	DI-3B	10.0	0.22	0.65	0.14	7.27	1.05	FROM 42A (0.61)	1.65	0.0338	0.0208	4.77	2.0	0.0833		1.00		1.65		0.00	ON GRADE
7A	DI-3B	8.0	0.59	0.68	0.40	7.27	2.92	0	2.92	0.0151	0.0208	8.34	2.0	0.0833		0.86		2.51		0.41 TO 11A	ON GRADE
11A	DI-3B	8.0	0.34	0.75	0.25	7.27	1.84	FROM 7A (0.41)	2.25	0.0151	0.0208	7.29	2.0	0.0833		0.93		2.10		0.15 TO 12A	ON GRADE
13A	DI-3B	8.0	0.28	0.66	0.19	7.27	1.37	FROM 16 (0.02)	1.39	0.0170	0.0208	5.35	2.0	0.0833		1.00		1.39		0.00	ON GRADE
12A	DI-3C	10.0	0.54	0.71	0.38	7.27	2.79	FROM 11A (0.15)	2.94	0.0010	0.0208	9.93		0.0833	0.498		0.458		1.09		SUMP
13B	DI-3B	4.0	0.14	0.74	0.10	7.27	0.73	0	0.73	0.0170	0.0208	3.28	2.0	0.0833		0.88		0.65		0.09 TO 12B	ON GRADE
12B	DI-3C	6.0	0.28	0.71	0.20	7.27	1.46	FROM 13B (0.090)	1.55	0.0010	0.0208	8.17		0.0833	0.462		0.458		1.01		SUMP
8	DI-3B	6.0	0.24	0.56	0.13	7.27	0.98	0	0.98	0.0220	0.0208	3.41	2.0	0.0833		0.95		0.93		0.05 TO 9	ON GRADE
9	DI-3B	8.0	0.46	0.68	0.31	7.27	2.28	FROM 8 (0.05)	2.33	0.0010	0.0200	9.83		0.0833	0.490		0.458		1.07		SUMP
26A	DI-3B	12.0	0.65	0.67	0.46	7.27	3.31	0	3.31	0.0125	0.0208	6.26	2.0	0.0833		0.99		3.30		0.01 TO 26	ON GRADE
23	DI-3C	6.0	0.24	0.64	0.15	7.27	1.10	FROM 8 (0.05)	1.10	0.0010	0.0208	6.50		0.0833	0.427		0.458		0.93		SUMP
38A	DI-3B	6.0	0.32	0.81	0.26	4.00	1.05	0	1.05	0.0218	0.0208	6.05	2.0	0.0208		0.74		0.78		0.27 TO 38	ON GRADE
38	DI-3B	6.0	0.06	0.90	0.05	4.00	0.22	FROM 38A (0.27)	0.49	0.0232	0.0098	7.19	2.0	0.0098		0.82		0.40		0.09 TO 35	ON GRADE
37	DI-3B	4.0	0.26	0.55	0.14	4.00	0.58	0	0.58	0.0232	-0.0098	2.00	2.0	0.0833	0.170	0.78	0.458	0.45		0.13 TO 35	ON GRADE
34	DI-3B	8.0	0.30	0.67	0.20	7.27	1.43	0	1.43	0.0400	0.0208	4.02	2.0	0.0833		0.95		1.35		0.08 TO 35	ON GRADE
35	DI-3B	6.0	0.15	0.77	0.12	4.00	0.47	FROM 34,37,38 (0.30)	0.77	0.0272	0.0208	2.67	2.0	0.0833		0.99		0.76		0.01 TO 31	ON GRADE
32	DI-3B	6.0	0.18	0.82	0.15	4.00	0.60	0	0.60	0.0157	0.0208	2.75	2.0	0.0833		1.00		0.60		0.00	ON GRADE
31	DI-3B	6.0	0.25	0.68	0.17	4.00	0.68	0	0.69	0.0157	0.0208	3.19	2.0	0.0833		1.00		0.69		0.00	ON GRADE

YARD INLET COMPUTATIONS

INLET NO.	TYPE OF INLET	NUMBER OF THROATS	TOTAL LENGTH (FT)	DRAIN AREA (AC)	C	CA	I (IN/HR)	Q INCR (CFS)	Q/L	H/h	H	THROAT ELEV. (FT)	TOP ELEV. (FT)	10 YR. WSE (FT)	REMARKS
3	YI-1	1	4	1.30	0.30	0.39	7.27	2.84	1.42	1.45	0.73	407.00	407.83	407.73	1 THROAT
4	YI-1	1	4	0.36	0.30	0.11	7.27	0.79	0.40	0.60	0.30	407.00	407.83	407.30	1 THROAT
4A	YI-1	2	8	1.38	0.30	0.41	7.27	3.02	0.75	0.89	0.45	404.50	405.33	404.95	2 THROATS
17C	YI-1	1	4	0.20	0.47	0.09	7.27	0.67	0.33	0.51	0.26	404.00	404.83	404.26	1 THROAT

50% CLOGGING FACTOR ASSUMED FOR DESIGN

HGL COMPUTATIONS

INLET STATION (1)	OUTLET WATER (2)	D_o(in.) (3)	Q_o(cfs) (4)	L_o(ft) (5)	$S_{fo(ft/ft)}$ (6)	H_f (7)	JUNCTION LOSSES: V_o (8)	H_o (9)	Q_i (10)	V_i (11)	Q_iV_i (12)	$V_i^2/2g$	H_i (13)	Angle θ (14)	Angle (k)	H_{delta} (15)	H_t (16)	(VDOT) 1.3*H_t (17)	(VDOT) 0.5*H_t (18)	Final H (19)	Calc'd Water Surface Elev. (20)	UPSTREAM INVERT + 0.8D	Rim Elev. (21)	HGL Depth Under Rim	UPSTREAM INVERT
6	383.94	42	52.58	57.15	0.0027	0.15	5.47	0.02	52.58	5.47	287.39	0.46	0.05	10	0.000	0.00	0.07			0.22	384.16	382.46	398.10	13.94	379.66
7	384.16	42	52.58	139.12	0.0027	0.38	5.47	0.02	46.42	6.57	304.78	0.67	0.07	0	0.000	0.00	0.09			0.47	384.63	383.06	397.20	12.57	380.66
11	384.63	36	46.42	100.04	0.0050	0.60	6.57	0.03	44.56	6.30	280.92	0.62	0.06	2	0.000	0.00	0.10			0.60	385.23	383.53	395.71	10.48	381.13
12	385.23	36	44.56	53.07	0.0045	0.24	6.30	0.03	40.33	5.71	230.09	0.51	0.05	2	0.000	0.00	0.08			0.32	385.55	383.98	395.44	9.89	381.58
13	385.55	36	40.33	50.93	0.0037	0.19	5.71	0.03	38.23	5.41	206.79	0.45	0.05	0	0.000	0.00	0.07			0.26	385.80	384.81	395.79	9.99	382.41
14	385.80	36	38.23	125.19	0.0033	0.41	5.41	0.02	24.38	4.97	121.12	0.38	0.04	89	0.418	0.16	0.22			0.63	386.44	385.57	398.01	11.57	383.57
42	386.44	30	24.38	133.13	0.0035	0.47	4.97	0.02	22.04	4.49	98.98	0.31	0.03	1	0.000	0.00	0.05			0.52	386.96	385.96	393.55	6.59	383.96
24	386.96	30	22.04	37.16	0.0029	0.11	4.49	0.02	6.53	5.32	34.78	0.44	0.04	90	0.420	0.18	0.24			0.35	387.31	388.08	392.30	4.99	386.48
25	387.31	15	6.53	59.58	0.0087	0.52	4.90	0.02	6.01	4.90	29.43	0.37	0.04	68	0.366	0.14	0.19			0.71	388.02	387.32	392.55	4.53	386.12
26	388.02	15	6.01	54.44	0.0039	0.21	10.84	0.09	3.31	2.70	8.94	0.11	0.01	22	0.160	0.02	0.12			0.33	388.35	387.72	390.95	2.60	386.12
26A	388.35	15	3.31	23.14	0.0028	0.06	2.70	0.01	–	–	–	–	–	–	–	–	0.01			0.07	388.42	386.48	391.30	2.88	386.48
8	384.63	15	3.25	156.12	0.0025	0.39	2.65	0.01	–	–	–	–	–	–	–	–	0.01			0.40	385.03	390.73	393.84	8.81	389.73
15	386.44	15	11.42	32.96	0.0313	1.03	15.60	0.19	10.24	15.20	155.68	3.59	0.36	3	0.000	0.00	0.55			1.58	388.02	396.94	399.16	11.14	395.94
29	387.31	18	8.97	30.96	0.0073	0.23	6.05	0.03	7.93	7.85	62.22	0.96	0.10	30	0.210	0.20	0.33			0.55	387.86	387.52	391.99	4.13	386.52
30	387.96	18	7.93	28.14	0.0057	0.16	7.85	0.05	7.93	7.85	62.22	0.96	0.10	60	0.340	0.33	0.47			0.63	388.59	388.22	390.95	2.36	387.22
30A	388.59	18	7.93	15.93	0.0057	0.09	7.85	0.05	2.31	3.73	8.61	0.22	0.02	90	0.420	0.09	0.16			0.25	388.84		392.58	3.74	387.72
31	388.84	15	2.31	5.50	0.0013	0.01	3.73	0.01	1.07	3.04	3.26	0.14	0.01	0	0.000	0.00	0.03			0.03	388.87		392.45	3.58	388.00
32	388.87	15	1.07	44.00	0.0003	0.01	3.04	0.01	–	–	–	–	–	–	–	–	0.01			0.02	388.89		392.45	3.56	388.25
27	387.31	24	6.54	136.69	0.0008	0.11	10.23	0.08	6.54	10.84	70.93	1.82	0.18	0	0.000	0.00	0.26			0.37	387.68		391.53	3.85	386.48
27A	387.68	18	6.54	54.44	0.0039	0.21	10.84	0.09	–	–	–	–	–	–	–	–	0.09			0.30	387.98		388.90	0.92	388.90
1A	383.94	42	89.65	32.62	0.0079	0.26	10.98	0.09	89.65	27.89	2500.44	12.08	1.21	5	0.000	0.00	1.30			1.56	385.50	383.27	393.67	8.17	380.47
2	385.50	42	89.65	107.50	0.0079	0.85	27.89	0.60	89.65	13.97	1252.46	3.03	0.30	33	0.228	0.69	1.60			2.45	387.95	393.74	393.67	8.72	390.94

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APPROVED	DATE

REVISION

PROFESSIONAL SEAL — COMMONWEALTH OF VIRGINIA, JOHN M. ... No. ...696 ...-23-01

PROJECT
HEARTHSTONE VILLAGE OAKTON
Section 1
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA.

TITLE
STORM SEWER AND INLET COMPUTAIONS

PHR&A
Patton Harris Rust & Associates,pc.
Engineers,Surveyors,Planners,Landscape Architects
14532 Lee Road
Chantilly, Virginia 20151-1679
703-449-6700

Offices: Fairfax,Va. Bridgewater,Va. Leesburg,Va. Virginia Beach,Va. Chantilly,Va. Winchester,Va. Woodbridge,Va.

DESIGN CTN	SURVEY PHR&A
DRAWN WP	DATE APRIL, 2001
CHECKED RAM	SCALE AS SHOWN
SHEET C802UTL 13B OF 46	FILE NO. 09103-4-1

THIS SHEET IS FOR INFORMATION ONLY

NO.	DATE	DESCRIPTION	BY	AUTH.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

Fairfax County Public Works and Environmental Services
Fairfax County Public Library

ENGINEER:
PBS&J
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
3859 CENTERVIEW DRIVE, SUITE 160
CHANTILLY, VIRGINIA 20151
TEL: 703.471.7275 FAX: 703.471.8021

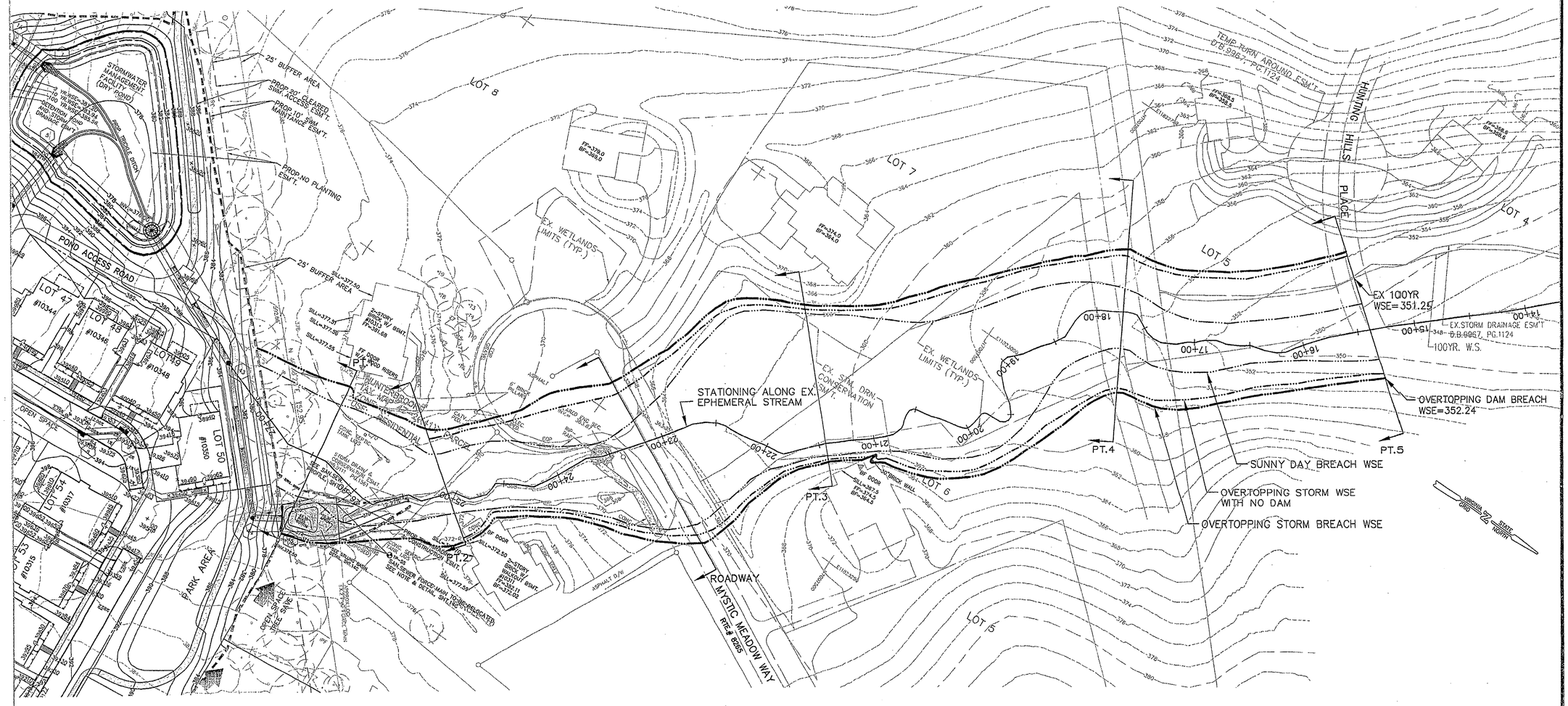
COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT EX. DRAINAGE COMPS (RELATED TO RZ-1998-PR-027)

PROJ. NO: 170340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	15 OF 21
SCALE: AS SHOWN	

PCA/FDPA 1998-PR-027
APPLICATION NO __________ STAFF JP
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) 2/15/06 Conds 2/8/06
SEE PROFFERS DATED __________
DATE OF (BOS) (PC) APPROVAL 2/27/06
SHEET 15 OF 21



PCA/FDPA 1998-PR-027

APPLICATION NO. _____ STAFF JP

APPROVED DEVELOPMENT PLAN

(DP) (GDP) (CDP) (FDP) 3

SEE PROFFERS DATED 2/15/06 Conds 2/[redacted]/06

DATE OF (BOS) (PC) APPROVAL 2/27/06

SHEET 16 OF 21

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APPROVED	DATE

REVISION

PROFESSIONAL SEAL

PROJECT
HEARTHSTONE VILLAGE OAKTON
Section 1
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA.

TITLE
DAM BREACH ANALYSIS
PLAN VIEW

PHR&A
Patton Harris Rust & Associates, pc.
Engineers, Surveyors, Planners, Landscape Architects
14532 Lee Road
Chantilly, Virginia 20151-1679
703-449-6700

Offices:
Fairfax, Va.
Bridgewater, Va.
Leesburg, Va.
Virginia Beach, Va.
Chantilly, Va.
Winchester, Va.
Woodbridge, Va.

DESIGN CTN	SURVEY PHR&A
DRAWN WP	DATE JULY, 2001
CHECKED RAM	SCALE 1"=40'
SHEET C708SWM 141 OF 46	FILE NO. 09103-4-1

NO.	DATE	DESCRIPTION	BY	AUTH.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

Fairfax County Public Library

ENGINEER:
PBSJ
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
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CHANTILLY, VIRGINIA 20151
TEL: 703-471-7275 FAX: 703-471-8021

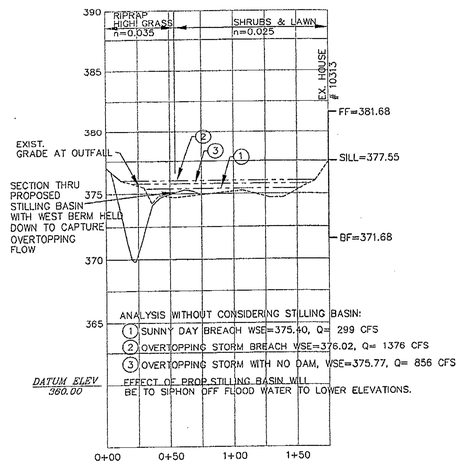
COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

THIS SHEET IS FOR INFORMATION ONLY

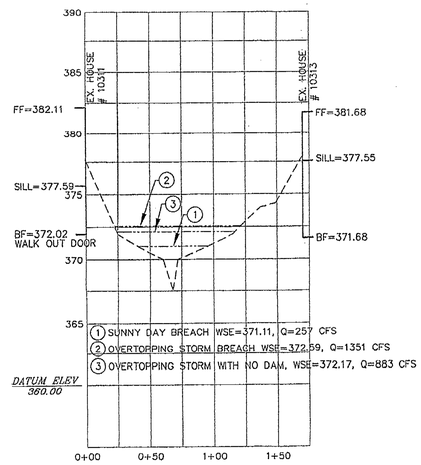
OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT
POND OUTFALL PLAN VIEW
(RELATED TO RZ-1998-PR-027)

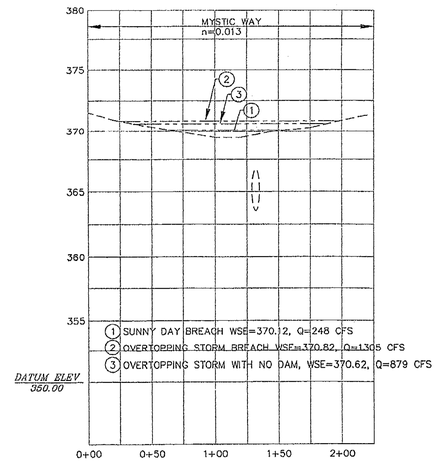
PROJ. NO: 170340	COUNTY NUMBER:
DATE: SEPT. 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	16 OF 21
SCALE: AS SHOWN	



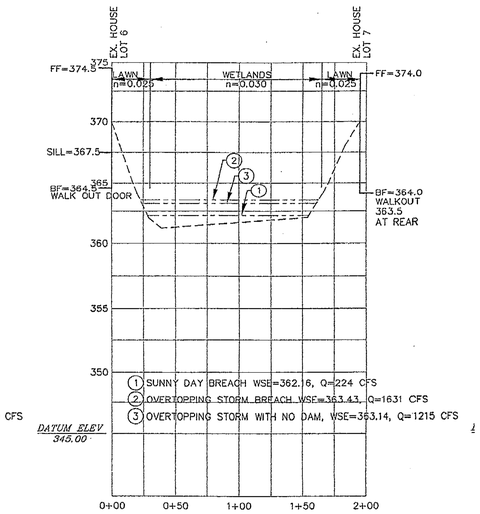
X-SECTION 1-1
PT.1 @ STA 26+45



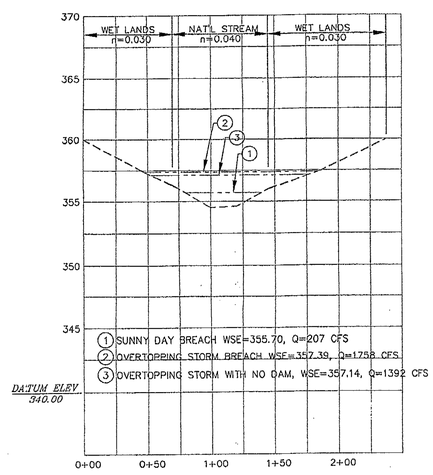
X-SECTION 2-2
PT.2 @ STA 25+10



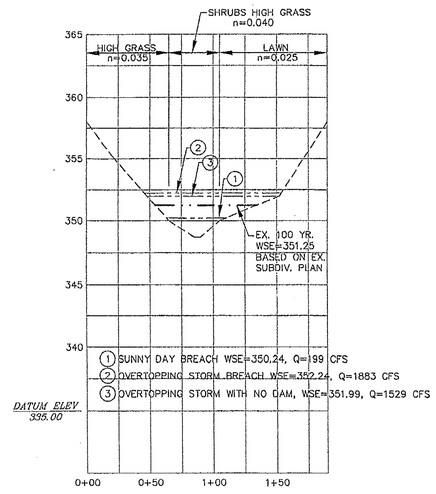
X-SECTION - ROADWAY
ROADWAY STA 23+15
ASSUMES CULVERT IS PLUGGED



X-SECTION 3-3
PT.3 @ STA 21+43



X-SECTION 4-4
PT.4 @ STA 17+76



X-SECTION 5-5
PT.5 @ STA 15+40

PCA/FDPA 1998-PR-027

APPLICATION NO. _____ STAFF JP

APPROVED DEVELOPMENT PLAN

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

SEE PROFFERS DATED 2/15/06 Conds 2/28/06

DATE OF (BOS) (PC) APPROVAL 2/27/06

SHEET 17 OF 21

NO.	DESCRIPTION	DATE	REVS'D	REW'D	APPROVED	DATE

REVISION

PROFESSIONAL SEAL — COMMONWEALTH OF VIRGINIA — JOHN C. CORN No. 6962 — 1-23-01

PROJECT
HEARTHSTONE VILLAGE OAKTON
Section 1
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA.

TITLE
DAM BREACH ANALYSIS
X-SECTIONS

PHR&A
Patton Harris Rust & Associates, pc.
Engineers, Surveyors, Planners, Landscape Architects
14532 Lee Road
Chantilly, Virginia 20151-1679
703-449-6700

Offices:
Fairfax, Va.
Bridgewater, Va.
Leesburg, Va.
Virginia Beach, Va.
Chantilly, Va.
Winchester, Va.
Woodbridge, Va.

DESIGN CTN	SURVEY PHR&A
DRAWN WP	DATE JULY 2001
CHECKED RAM	SCALE H:1"=50', V:1"=5'
SHEET C709SWM 14J OF 46	FILE NO. 09103-4-1

NO.	DATE	DESCRIPTION	BY	AUTH.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

Fairfax County Public Library

ENGINEER:
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CHANTILLY, VIRGINIA 20151
TEL: 703.471.7275 FAX: 703.471.8021

COMMONWEALTH OF VIRGINIA — JAMES P. BECK No. 23880 — 10/10/05 — PROFESSIONAL ENGINEER

ENGINEERS SEAL & SIGNATURE

THIS SHEET IS FOR INFORMATION ONLY

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT
OUTFALL CROSS SECTIONS
(RELATED TO RZ-1998-PR-027)

PROJ. NO: 170340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	17 OF 21
SCALE: AS SHOWN	

STORMWATER MANAGEMENT NARRATIVE

The stormwater management for this site will be accomplished through the use of an onsite publicly maintained dry pond. In addition, in accordance with the approved CDP/FDP plan (RZ 1998-PR-027), the proposed onsite dry pond will also provide the following: (1) The existing Hunter Mill Plaza detention facility will be removed and therefore peak shaving detention will be provided for the post developed increase in runoff from Hunter Mill Plaza. (2) In accordance with Proffer 5(b), the SWM pond is oversized to further reduce the 10 year flow by approximately 20%.

SCS TR-55 hydrology was used to compute the flow from subareas. Runoff from areas to be by-passed through the pond is based on the existing development rate for those areas (see Summary, below).

SWM For Future Library Site

In accordance with proffer 19A(1), the future library site is served by the proposed SWM facility as stated in the proffer, Fairfax County is to reimburse the developer for its pro-rata share of the SWM Construction costs.

Combined Principal / Emergency Spillway

Due to the topography of the off-site land below the dam on adjacent property, and the location of the facility relative to the receiving outfall channel which is lies within an existing storm drainage easement, the pond design proposes use of a combined principal / emergency spillway riser pipe which accommodates the 2, 10 and 100 (SDF) year release while maintaining FBH freeboard. The combined spillway is used instead of an emergency spillway because an emergency spillway would be partially in a fill condition and would require additional easements from off-site properties. A combined spillway is considered justifiable due to these conditions.

Maintenance Responsibility

The proposed pond treats water from hunter Mill Road, the future library site, offsite areas and the subdivision property, and is proposed to be publicly maintained.

Outfall System

Flows released from the pond are conveyed from the pond to the existing receiving channel approximately 300 feet away through three runs of 3' x 5' box culvert. Since the box culvert is proposed in lieu of circular ASTM C361 pipe for the run between SWM1 and structure 43, and since the remaining box culvert system between 43 and the receiving channel is a closed system, concrete cradles and drainage blankets are not proposed from SWM1 to 43.

SWM pond design details are shown on Sheet 14B.

STORMWATER MANAGEMENT SUMMARY

See TR-55 computations, sheet 14D.

AREAS to POND:	Acres	Runoff Curve Number
ByPass:Exist.School	3.0	85
ByPass:Lots 30A,31,30-Exist.Commercial	3.9	90
ByPass: Portion of Exist.Oakborough Townhouses	1.1	80
Detained:Hunter Mill Plaza	5.4	65 (PRE), 98 (POST)
Detained:Oakton Village- Proposed Site	18.93	65 (PRE), 80 (POST)
Total to Proposed Pond:	32.33	

PREDEVELOPMENT FLOWS (TR-55)	2 Year	10 Year
ByPass Areas (3 ac + 3.9 ac + 1.1 ac)	14.96 cfs*	35.77 cfs*
Detained Areas (5.4 ac + 18.93 ac)	25.59 cfs	72.64 cfs

*At existing development rate

POSTDEVELOPMENT FLOWS (TR-55)		
ByPass Areas (3 ac + 3.9 ac + 1.1 ac)	14.96 cfs*	35.77 cfs*
Detained Areas (5.4 ac + 18.93 ac)	65.23 cfs	133.59 cfs

*At existing development rate

ALLOWABLE RELEASE FROM PROPOSED SWM FACILITY

Allowable Release = Qpre + QByPass

2 Year: 25.59 cfs + 14.96 cfs = 40.55 cfs
2 year allowable release = 40.55 cfs

10 Year: 72.64 + 35.77 cfs = 108.41 cfs
20 % Overdetention Adjustment required by Proffer Condition #5b:
108.41 cfs x 0.80 = 86.73 cfs
10 year allowable release = 86.73 cfs

Routing Summary: (Combined Principal / Emergency Spillway)

	2 Yr.	10 yr.	100 yr.
Allowable:	40.55 cfs	86.73 cfs	--
Proposed:	40.34 cfs	86.45 cfs	217.71 cfs

Proposed release is less than allowable, therefore the detention requirement has been met.

DAM BREACH ANALYSIS

See Dam Breach Analysis sheets 14F-J

BEST MANAGEMENT PRACTICES (BMP)

See BMP correspondence, this sheet.
As evidenced by the water quality waiver approval, the BMP requirement for this project will be met by payment of pro rata share for planned regional facility D-31.

OUTFALL NARRATIVE / ADEQUATE OUTFALL

The 3.5' x 5.0' box culvert system pipe from this SWM pond discharges 40.34 cfs from a two year storm and 86.45 cfs on a ten year storm. The discharge from this pipe is into an existing natural channel, recorded previously as a drainage easement within the Hunterbrooke subdivision. As required, the new facility reduces the 10 year discharge by 20 %, therefore the existing channel is currently carrying runoff in excess of that released from this facility. This channel will carry the two year discharge at a depth of 0.92 ft and velocity of 4.64 fps, and the ten year discharge at a depth of 1.34 ft and velocity of 5.67 fps. To preclude erosion, a 47' long stilling basin and 14' of additional rip rapped channel projection are proposed down stream from the discharge end of the pipe (see sheet 14c). An expansion of the existing offsite storm drainage easement is proposed in order to fully contain the 10 year depth of flow at the apron of the stilling basin. Based on the above, it is the design engineer's opinion that adequate outfall exists, and no adverse effects downstream are expected. In addition a Dam Breach analyses has been prepared to show the down stream impact of extreme storm events, see narrative sheet 14F and analysis 14F-J.

OVERLAND EMERGENCY RELIEF

This site has been designed to ensure that adequate overland relief is provided. Should the on-site stormpipe drainage system fail, the proposed grades will direct runoff around buildings and through the site along roadways and at ground surface without flooding the ground floors of proposed buildings. In addition, emergency overland flows will remain within the natural drainage patterns, overtopping roadways but not encroaching upon structures.

Note:

See Sheet 5B for SWM Pond Grading
See Sheet 7A-B for Storm Pipe Drainage Divides
See Sheet 13C for Storm Pipe Computations
See Sheet 14B for Outfall Pipe Profile
See Sheet 14J-F for SWM details, Pond Routing & Dam Breach Analysis

FAIRFAX COUNTY
VIRGINIA

DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL SERVICES

Environmental and Facilities Review Division
12055 Government Center Parkway, Suite 555
Fairfax, Virginia 22035-5503

Telephone: (703) 324-1720 Fax: (703) 324-8359

RECEIVED
SEP 15

September 11, 2000

Robert A. Munse, P.E.
Patton Harris Rust & Associates, P.C.
14532 Lee Road
Chantilly, Virginia 20151-1679

Subject: Hearthstone Village, Tax Map #47-2-001-19, 20, 21, 22, 24, 25 & 27E part, Providence District

Reference: Water Quality Control Waiver #022504

Dear Mr. Munse:

Your request to waive the requirement of the Chesapeake Bay Preservation Ordinance for water quality control on the subject site is not required as compliance will be met under Section 118-3-2(6)(B) upon payment of Pro Rata Share.

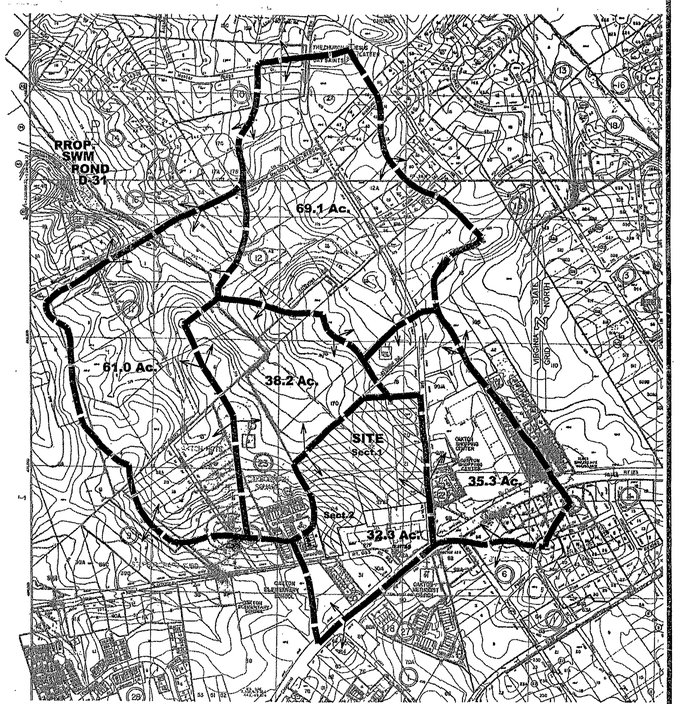
If further assistance is desired, please contact me at (703) 324-1720.

Sincerely,

Valerie Tucker, Engineer III

VT/dah

cc: Scott St. Clair, Acting Director, Stormwater Planning Division, DPWES
Craig Carinci, Director, Environmental and Facilities Inspections Division, DPWES
Emeka Nwosu, Engineer III, Environmental and Facilities Review Division, DPWES
Waiver File



OFFSITE DRAINAGE DIVIDE MAP
SCALE: 1"=2000'

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APPROVED	DATE

REVISION

PROFESSIONAL SEAL

PROJECT
HEARTHSTONE VILLAGE OAKTON
Section 1
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA.

TITLE
STORMWATER MANAGEMENT
COMPUTATIONS:
COMPLIANCE

PHR&A
Patton Harris Rust & Associates, pc.
Engineers, Surveyors, Planners, Landscape Architects
14532 Lee Road
Chantilly, Virginia 20151-1679
703-449-6700

Offices:
Fairfax, Va.
Bridgewater, Va.
Leesburg, Va.
Virginia Beach, Va.
Chantilly, Va.
Winchester, Va.
Woodbridge, Va.

DESIGN	PS	SURVEY	PHR&A
DRAWN	PS	DATE	OCT., 2000
CHECKED	DS	SCALE	AS SHOWN
SHEET	C700SWM 14A OF 46	FILE NO.	09103-4-1

PCA/FDPA 1998-PR-027
APPLICATION NO. _____ STAFF JP
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 2/15/06 Conds 2/15/06
DATE OF (BOS) (PC) APPROVAL 2/27/06
SHEET 18 OF 21

NO.	DATE	DESCRIPTION	BY	APPR.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
SUITE 533
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COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

THIS SHEET IS FOR INFORMATION ONLY

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT
SWM CALCULATIONS
(RELATED TO RZ-1998-PR-027)

PROJ. NO: 170340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	18 OF 21
SCALE: AS SHOWN	

TR-55
BY-PASS AREAS

Worksheet 2: Runoff curve number and runoff

Project: *Hearthstone* By: *ctn* Date: *8/9/00*
Location: *Pond design-offsite only (above HMPlaza)* Checked: ____ Date: ____
Condition: *Pre = Post - ByPass*

1. Runoff Curve Number (CN)

Soil name and hydrologic group (appendix A)	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	Figure 2-3	Figure 2-4	Area (acres)	Product of CN x Area
Elioak (C)	*School: grass, pav.*	*85*			*3*	*255*
Lloyd,Elioak, Meadowville (C/B)	*Lots 30A,31,30: Commercial-pav./grass*	*90*			*3.9*	*351*
Elioak, rocky land (C)	*Oakborough townhouses: pav-grass*	*80*			*1.1*	*88*
						0
						0
						0
						0
				Totals =	*8*	*694*

1. Use only one CN source per line.

CN (weighted) = (total product) / (total area) = *694* / *8* = *86.75*

Use CN = *86.75*

Therefor, S = (1000/CN) - 10 = *1.527*

Therfore Ia = 0.2 * S = *0.305*

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... years	*1*	*2*	*10*	*50*	*100*
Rainfall, P (24-hour) ...... inches	*2.7*	*3.2*	*5.2*	*7*	*7.3*
Runoff, Q ..... inches	*1.46*	*1.89*	*3.73*	*5.45*	*5.74*

Worksheet 4: Graphical Peak Discharge Method (TR-55)

Project: *Hearthstone* By: *ctn* Date: *8/09/00*
Location: *Pond design-offsite only (above HMPlaza)* Checked: ____ Date: ____
Condition: *Pre = Post - ByPass*
Pre=Post for area above Hunter Mill Plaza

1. Drainage Area.......... Am = *8* acres = 0.0125 square miles
Runoff Curve Number .... CN = *86.75*
Time of Concentration .. Tc = *0.13* hours (for qu use *0.13*)
Rainfall Distribution Type = *II*
% Pond/Swamp Area in Watershed *NONE*
Potential retention .... S = *1.527* inches
S = (1000 / CN) - 10

2. Frequency	years	*1*	*2*	*10*	*50*	*100*
3. Rainfall, P (24-hour)	inches	*2.7*	*3.2*	*5.2*	*7*	*7.3*
4. Initial abstraction, Ia (Use CN with table 4-1.)	inches	*0.857*	*0.857*	*0.857*	*0.857*	*0.857*
5. Compute Ia/P		*0.317*	*0.268*	*0.165*	*0.122*	*0.117*
SCS peak discharge coeff, C_0 (TR-55 Table F-1)		*2.44956*	*2.47947*	*2.52474*	*2.54337*	*2.54558*
SCS peak discharge coeff, C_1 (TR-55 Table F-1)		*-0.62032*	*-0.62137*	*-0.61754*	*-0.61596*	*-0.61577*
SCS peak discharge coeff, C_2 (TR-55 Table F-1)		*-0.10692*	*-0.12421*	*-0.14865*	*-0.15871*	*-0.15990*
Intermediate computation, log qu =		*2.908556*	*2.926286*	*2.94969672*	*2.959329*	*2.960472*
6. Unit peak discharge, qu (Use Tc and Ia/P with exhibit 4-II, or App F)	csm/in	*810*	*844*	*891*	*911*	*913*
7. Runoff, Q; Q = ((P - Ia)^2) / ((P - Ia) + S)	inches	*1.01*	*1.42*	*3.21*	*4.92*	*5.21*
8. Pond/swamp adjustment factor, Fp (Use % area with table 4-2)		*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
9. Peak discharge, qp (Where qp = qu*Am*Q*Fp)	cfs	*10.21*	*14.96*	*35.77*	*56.00*	*59.44*

TR55-offsite only.xls 4Qpre

TR-55
DETAINED AREAS PREDEVELOPED

Worksheet 2: Runoff curve number and runoff

Project: *Hearthstone* By: *ctn* Date: *8/09/00*
Location: *Pond design - detained area only* Checked: ____ Date: ____
Condition: *Existing / Predeveloped*

1. Runoff Curve Number (CN)

Soil name and hydrologic group (appendix A)	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	Figure 2-3	Figure 2-4	Area (acres)	Product of CN x Area
						0
						0
						0
Meadowville, Orange (B,D)	*preHunter Mill Plaza:woods, good*	*65*			*5.4*	*351*
Genveille,glenelg, Meadowville (B-D)	*preHearthstone: woods, good*	*65*			*18.93*	*1230.45*
						0
						0
					Totals = *24.33*	*1581.45*

1. Use only one CN source per line.

CN (weighted) = (total product) / (total area) = *1581.45* / *24.33* = *65*

Use CN = *65.00*

Therefor, S = (1000/CN) - 10 = *5.385*

Therfore Ia = 0.2 * S = *1.077*

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #4	Storm #5
Frequency ..... years	*1*	*2*	*10*	*50*	*100*
Rainfall, P (24-hour) ...... inches	*2.7*	*3.2*	*5.2*	*7*	*7.3*
Runoff, Q ..... inches	*0.38*	*0.60*	*1.79*	*3.10*	*3.34*

Worksheet 4: Graphical Peak Discharge Method (TR-55)

Project: *Hearthstone* By: *ctn* Date: *09-Aug-00*
Location: *Pond design - detained area only* Checked: ____ Date: ____
Condition: *Existing / Predeveloped*

1. Drainage Area.......... Am = *24.33* acres = 0.0380 square miles
Runoff Curve Number .... CN = *65*
Time of Concentration .. Tc = *0.10* hours (for qu use *0.10*)
Rainfall Distribution Type = *II*
% Pond/Swamp Area in Watershed *NONE*
Potential retention .... S = *5.385* inches
S = (1000 / CN) - 10

2. Frequency	years	*1*	*2*	*10*	*50*	*100*
3. Rainfall, P (24-hour)	inches	*2.7*	*3.2*	*5.2*	*7*	*7.3*
4. Initial abstraction, Ia (Use CN with table 4-1.)	inches	*0.857*	*0.857*	*0.857*	*0.857*	*0.857*
5 Compute Ia/P		*0.317*	*0.268*	*0.165*	*0.122*	*0.117*
SCS peak discharge coeff, C_0 (TR-55 Table F-1)		*2.44918*	*2.47947*	*2.52474*	*2.53846*	*2.54558*
SCS peak discharge coeff, C_1 (TR-55 Table F-1)		*-0.62026*	*-0.62137*	*-0.61754*	*-0.61637*	*-0.61577*
SCS peak discharge coeff, C_2 (TR-55 Table F-1)		*-0.10669*	*-0.12421*	*-0.14865*	*-0.15606*	*-0.15990*
Intermediate computation, log qu =		*2.962749*	*2.976631*	*2.99362876*	*2.99878*	*3.001452*
6. Unit peak discharge, qu (Use Tc and Ia/P with exhibit 4-II, or App F)	csm/in	*918*	*948*	*985*	*997*	*1003*
7. Runoff, Q; Q = ((P - Ia)^2) / ((P - Ia) + S)	inches	*0.47*	*0.71*	*1.94*	*3.27*	*3.51*
8. Pond/swamp adjustment factor, Fp (Use % area with table 4-2)		*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
9. Peak discharge, qp (Where qp = qu*Am*Q*Fp)	cfs	*16.40*	*25.59*	*72.64*	*124.10*	*133.87*

TR55-3.xls 4Qpre

TR-55
DETAINED AREAS DEVELOPED

Worksheet 2: Runoff curve number and runoff

Project: *Hearthstone* By: *ctn* Date: *8/09/00*
Location: *Pond design - detained area only* Checked: ____ Date: ____
Condition: *Developed / Proposed*

1. Runoff Curve Number (CN)

Soil name and hydrologic group (appendix A)	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	Figure 2-3	Figure 2-4	Area (acres)	Product of CN x Area
						0
						0
						0
Meadowville, Orange (B,D)	*Hunter Mill Plaza:commercial, pav*	*98*			*5.4*	*529.2*
Genveille,glenelg, Meadowville (B-D)	*Hearthstone: SFH, 0.2 acre lots, open space*	*80*			*18.9*	*1514.4*
						0
						0
					Totals = *24.33*	*2043.6*

1. Use only one CN source per line.

CN (weighted) = (total product) / (total area) = *2043.6* / *24.33* = *83.9950678*

Use CN = *83.99507*

Therfor, S = (1000/CN) - 10 = *1.905*

Therfore Ia = 0.2 * S = *0.381*

2. Runoff

	Storm #1	Storm #2	Storm #3	Storm #3	Storm #4
Frequency ..... years	*1*	*2*	*10*	*50*	*100*
Rainfall, P (24-hour) ...... inches	*2.7*	*3.2*	*5.2*	*7.0*	*7.3*
Runoff, Q ..... inches	*1.27*	*1.68*	*3.45*	*5.14*	*5.42*

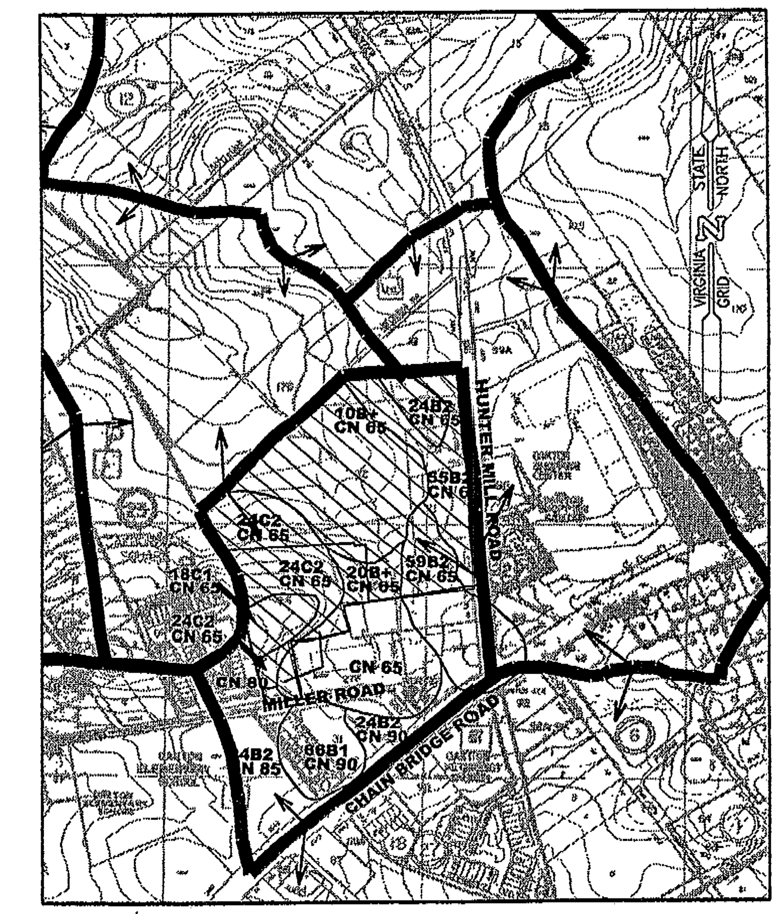
Worksheet 4: Graphical Peak Discharge Method (TR-55)

Project: *Hearthstone* By: *ctn* Date: *09-Aug-00*
Location: *Pond design - detained area only* Checked: ____ Date: ____
Condition: *Developed / Proposed*

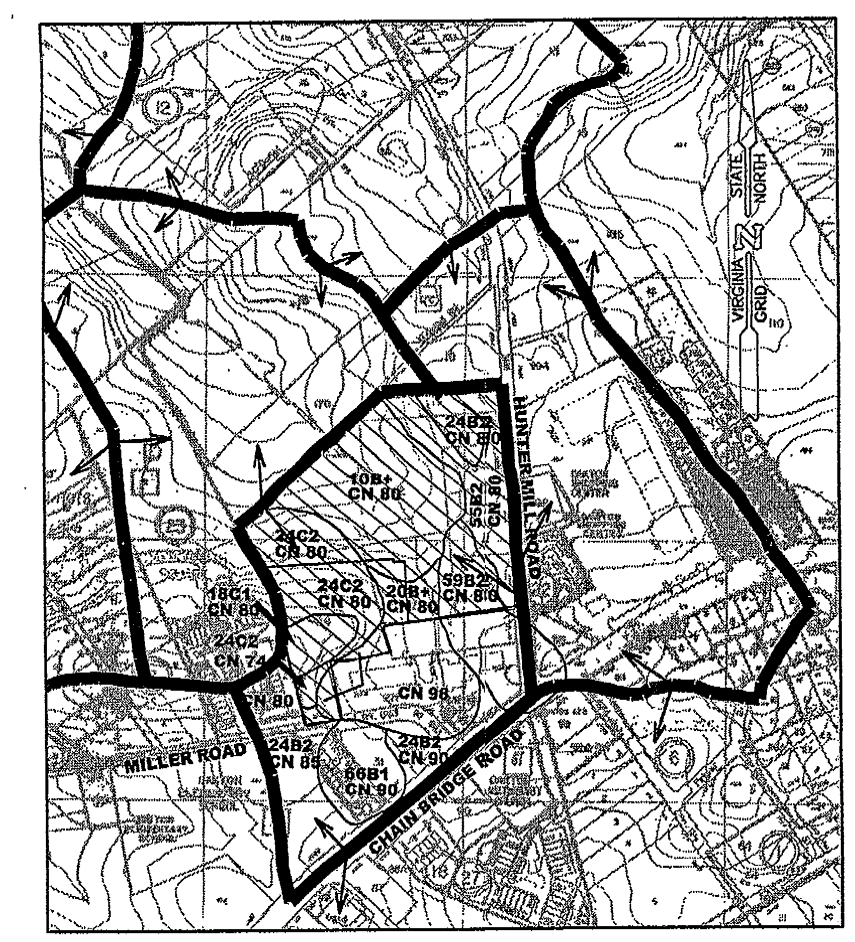
1. Drainage Area......... Am = *24.33* acres = 0.0380 square miles
Runoff Curve Number .... CN = *83.99507*
Time of Concentration .. Tc = *0.03* hours (for qu use *0.10*)
Rainfall Distribution Type = *II*
% Pond/Swamp Area in Watershed *NONE*
Potential retention .... S = *1.91* inches
S = (1000 / CN) - 10

2. Frequency	years	*1*	*2*	*10*	*50*	*100*
3. Rainfall, P (24-hour)	inches	*2.7*	*3.2*	*5.2*	*7*	*7.3*
4. Initial abstraction, Ia (Use CN with table 4-1.)	inches	*0.353*	*0.353*	*0.353*	*0.353*	*0.353*
5. Compute Ia/P		*0.131*	*0.110*	*0.068*	*0.050*	*0.048*
SCS peak discharge coeff, C_0 (TR-55 Table F-1)		*2.53972*	*2.54870*	*2.55323*	*2.55323*	*2.55323*
SCS peak discharge coeff, C_1 (TR-55 Table F-1)		*-0.61627*	*-0.61551*	*-0.61512*	*-0.61512*	*-0.61512*
SCS peak discharge coeff, C_2 (TR-55 Table F-1)		*-0.15674*	*-0.16158*	*-0.16403*	*-0.16403*	*-0.16403*
Intermediate computation, log qu =		*2.99925*	*3.002621*	*3.004323*	*3.004323*	*3.004323*
6. Unit peak discharge, qu (Use Tc and Ia/P with exhibit 4-II, or App F)	csm/in	*998*	*1006*	*1010*	*1010*	*1010*
7. Runoff, Q; Q = ((P - Ia)^2) / ((P - Ia) + S)	inches	*1.30*	*1.71*	*3.48*	*5.17*	*5.45*
8. Pond/swamp adjustment factor, Fp (Use % area with table 4-2)		*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
9. Peak discharge, qp (Where qp = qu*Am*Q*Fp)	cfs	*49.16*	*65.23*	*133.59*	*198.36*	*209.32*

TR55-3.xls 4Qpost



DRAINAGE MAP
WITH HYDROLOGIC DATA
PRE-DEVELOPED



DRAINAGE MAP
WITH HYDROLOGIC DATA
POST-DEVELOPED

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APPROVED	DATE

REVISION

PROFESSIONAL SEAL — COMMONWEALTH OF VIRGINIA, JOHN M. ... 595 ... -73-01, PROFESSIONAL ENGINEER

PROJECT
HEARTHSTONE VILLAGE OAKTON
Section 1
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA.

TITLE
STORMWATER MANAGEMENT COMPUTATIONS AND DETAILS:
TR55 DATA

PHR&A
Patton Harris Rust & Associates,pc.
Engineers,Surveyors,Planners,Landscape Architects
14532 Lee Road
Chantilly, Virginia 20151-1679
703-449-6700

Offices: Fairfax,Va. Bridgewater,Va. Leesburg,Va. Virginia Beach,Va. Chantilly,Va. Winchester,Va. Woodbridge,Va.

DESIGN CTN	SURVEY PHR&A
DRAWN WP	DATE OCT., 2000
CHECKED RAM	SCALE N/A
SHEET C702SWM 14D OF 46	FILE NO. 09103-4-1

APPLICATION NO PCA/FDPA 1998-PR-027 STAFF JP
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) 2/15/06 Conds 2/8/06
SEE PROFFERS DATED
DATE OF (BOS) (PC) APPROVAL 2/27/06
SHEET 19 OF 21

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NO.	DATE	DESCRIPTION	BY	AUTH.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS FAIRFAX COUNTY
SUITE 533
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FAIRFAX, VIRGINIA 22035-0056
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COMMONWEALTH OF VIRGINIA — JAMES P. BECK No. 23880 10/10/05 — PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

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PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT
SWM CALCULATIONS
(RELATED TO RZ-1998-PR-027)

PROJ. NO: 170340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	19 OF 21
SCALE: AS SHOWN	

POND-2 Version: 5.20 S/N: 1903052001 Page 1
EXECUTED: 06-01-2001 15:48:34 2 YEAR Return Freq: 2 years

HEARTHSTONE SWM POND
2 year

Inflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\POST2 .HYD
Rating Table file: p:\project\09103\4-1\engr\comps\pond\POND2 .PND

—INITIAL CONDITIONS—
Elevation = 376.00 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

2 year

GIVEN POND DATA / COMPUTATIONS

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)	2S/t (cfs)	2S/t + 0 (cfs)
376.0	0.0	0	0.0	0.0
376.3	0.0	13	0.1	0.1
376.6	0.2	105	0.6	0.8
376.9	1.6	355	2.0	3.6
377.2	3.7	842	4.7	8.4
377.5	6.1	1,645	9.1	15.2
377.8	8.8	2,843	15.8	24.6
378.1	11.7	4,499	25.0	36.7
378.4	14.7	6,473	36.0	50.7
378.7	17.7	8,727	48.5	66.2
379.0	20.8	11,278	62.7	83.5
379.3	23.8	14,144	78.6	102.4
379.6	26.7	17,346	96.4	123.1
379.9	29.5	20,900	116.1	145.6
380.2	32.2	24,768	137.6	169.8
380.5	34.8	28,771	159.8	194.6
380.8	37.2	32,897	182.8	220.0
381.1	39.4	37,149	206.4	245.8
381.4	42.3	41,528	230.7	273.0
381.7	46.7	46,036	255.8	302.5
382.0	51.7	50,674	281.5	333.2
382.3	57.0	55,453	308.1	365.1
382.6	62.6	60,381	335.5	398.1
382.9	68.1	65,461	363.7	431.8
383.2	73.6	70,695	392.8	466.4
383.5	79.0	76,086	422.7	501.7
383.8	84.2	81,635	453.5	537.7
384.1	89.1	87,346	485.3	574.4
384.4	93.7	93,215	517.9	611.6
384.7	98.0	99,244	551.4	649.4
385.0	101.8	105,436	585.8	687.6
385.3	105.1	111,792	621.1	726.2
385.6	108.0	118,314	657.3	765.3
385.9	110.2	125,005	694.5	804.7
386.2	111.9	131,863	732.6	844.5
386.5	113.0	138,877	771.5	884.5
386.8	113.5	146,048	811.4	924.9
387.1	113.2	153,377	852.1	965.3
387.4	112.2	160,867	893.7	1005.9
387.7	110.5	168,519	936.2	1046.7
388.0	108.0	176,334	979.6	1087.6

Time Increment (t) = 0.100 hrs.

POND-2 Version: 5.20 S/N: 1903052001 Page 3
EXECUTED: 06-01-2001 15:48:34 2 YEAR Return Freq: 2 years

Pond File: p:\project\09103\4-1\engr\comps\pond\POND2 .PND
Inflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\POST2 .HYD
Outflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\2OUT .HYD

INFLOW HYDROGRAPH / ROUTING COMPUTATIONS

TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
9.0	0.0	0.0	0.0	0.0	0.00	376.00
9.1	0.0	0.0	0.0	0.0	0.00	376.00
9.2	0.0	0.0	0.0	0.0	0.00	376.00
9.3	0.0	0.0	0.0	0.0	0.00	376.00
9.4	0.0	0.0	0.0	0.0	0.00	376.00
9.5	0.0	0.0	0.0	0.0	0.00	376.00
9.6	0.0	0.0	0.0	0.0	0.00	376.00
9.7	0.0	0.0	0.0	0.0	0.00	376.00
9.8	0.0	0.0	0.0	0.0	0.00	376.00
9.9	0.0	0.0	0.0	0.0	0.00	376.00
10.0	0.0	0.0	0.0	0.0	0.00	376.00
10.1	0.0	0.0	0.0	0.0	0.00	376.00
10.2	0.0	0.0	0.0	0.0	0.00	376.00
10.3	0.0	0.0	0.0	0.0	0.00	376.00
10.4	0.0	0.0	0.0	0.0	0.00	376.00
10.5	0.0	0.0	0.0	0.0	0.00	376.00
10.6	0.0	0.0	0.0	0.0	0.00	376.00
10.7	0.0	0.0	0.0	0.0	0.00	376.00
10.8	0.0	0.0	0.0	0.0	0.00	376.00
10.9	0.0	0.0	0.0	0.0	0.00	376.00
11.0	1.8	1.8	0.4	1.8	0.71	376.71
11.1	2.1	3.9	0.5	4.3	1.91	376.94
11.2	2.3	4.4	0.5	4.9	2.16	376.98
11.3	2.6	4.9	0.6	5.4	2.41	377.02
11.4	3.0	5.6	0.7	6.2	2.75	377.06
11.5	3.4	6.4	0.8	7.1	3.14	377.12
11.6	3.8	7.2	0.9	8.0	3.54	377.18
11.7	6.5	10.3	1.8	11.2	4.70	377.32
11.8	9.1	15.6	4.0	17.4	6.73	377.57
11.9	11.8	20.9	7.1	24.9	8.87	377.81
12.0	23.5	35.3	16.6	42.4	12.93	378.22
12.1	45.8	69.3	43.6	85.9	21.18	379.04
12.2	74.5	120.3	100.7	163.8	31.53	380.13
12.3	61.7	136.2	159.6	236.9	38.65	381.00
12.4	33.3	95.0	174.0	254.6	40.34	381.20
12.5	19.7	53.0	151.4	227.0	37.80	380.88
12.6	13.8	33.5	117.3	184.9	33.78	380.38
12.7	10.7	24.5	83.8	141.8	29.03	379.85
12.8	8.6	19.3	55.3	103.1	23.89	379.31
12.9	7.6	16.2	34.2	71.5	18.65	378.79
13.0	6.6	14.2	20.0	48.4	14.21	378.35
13.1	6.1	12.7	11.2	32.7	10.73	378.00
13.2	5.6	11.7	6.3	22.9	8.31	377.75
13.3	5.2	10.8	3.8	17.1	6.63	377.56
13.4	4.9	10.1	2.6	13.9	5.64	377.44
13.5	4.6	9.5	2.1	12.1	5.02	377.36
13.6	4.4	9.0	1.8	11.1	4.66	377.32
13.7	4.2	8.6	1.6	10.4	4.41	377.29
13.8	4.0	8.2	1.4	9.8	4.19	377.26
13.9	3.8	7.8	1.2	9.2	3.99	377.24
14.0	3.6	7.4	1.1	8.6	3.79	377.21
14.1	3.5	7.1	1.0	8.2	3.60	377.19
14.2	3.3	6.8	0.9	7.8	3.43	377.16
14.3	3.2	6.5	0.9	7.4	3.27	377.14
14.4	3.1	6.3	0.8	7.2	3.17	377.12
14.5	3.0	6.1	0.8	6.9	3.06	377.11
14.6	2.9	5.9	0.8	6.7	2.96	377.09
14.7	2.8	5.7	0.7	6.5	2.86	377.08
14.8	2.7	5.5	0.7	6.2	2.76	377.07
14.9	2.7	5.4	0.7	6.1	2.71	377.06
15.0	2.6	5.3	0.7	6.0	2.66	377.05
15.1	2.6	5.2	0.7	5.9	2.61	377.04
15.2	2.5	5.1	0.7	5.8	2.56	377.04
15.3	2.5	5.0	0.6	5.7	2.51	377.03
15.4	2.4	4.9	0.6	5.5	2.46	377.02
15.5	2.4	4.8	0.6	5.4	2.41	377.02
15.6	2.3	4.7	0.6	5.3	2.36	377.01
15.7	2.3	4.6	0.6	5.2	2.31	377.00
15.8	2.2	4.5	0.6	5.1	2.26	376.99
15.9	2.2	4.4	0.5	5.0	2.21	376.99
16.0	2.1	4.3	0.5	4.8	2.16	376.98

POND-2 Version: 5.20 S/N: 1903052001 Page 1
EXECUTED: 06-01-2001 15:48:34 10 YEAR Return Freq: 10 years

HEARTHSTONE SWM POND
10 YEAR

Inflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\POST10 .HYD
Rating Table file: p:\project\09103\4-1\engr\comps\pond\POND2 .PND

—INITIAL CONDITIONS—
Elevation = 376.00 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

10 year

GIVEN POND DATA / COMPUTATIONS

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)	2S/t (cfs)	2S/t + 0 (cfs)
376.0	0.0	0	0.0	0.0
376.3	0.0	13	0.1	0.1
376.6	0.2	105	0.6	0.8
376.9	1.6	355	2.0	3.6
377.2	3.7	842	4.7	8.4
377.5	6.1	1,645	9.1	15.2
377.8	8.8	2,843	15.8	24.6
378.1	11.7	4,499	25.0	36.7
378.4	14.7	6,473	36.0	50.7
378.7	17.7	8,727	48.5	66.2
379.0	20.8	11,278	62.7	83.5
379.3	23.8	14,144	78.6	102.4
379.6	26.7	17,346	96.4	123.1
379.9	29.5	20,900	116.1	145.6
380.2	32.2	24,768	137.6	169.8
380.5	34.8	28,771	159.8	194.6
380.8	37.2	32,897	182.8	220.0
381.1	39.4	37,149	206.4	245.8
381.4	42.3	41,528	230.7	273.0
381.7	46.7	46,036	255.8	302.5
382.0	51.7	50,674	281.5	333.2
382.3	57.0	55,453	308.1	365.1
382.6	62.6	60,381	335.5	398.1
382.9	68.1	65,461	363.7	431.8
383.2	73.6	70,695	392.8	466.4
383.5	79.0	76,086	422.7	501.7
383.8	84.2	81,635	453.5	537.7
384.1	89.1	87,346	485.3	574.4
384.4	93.7	93,215	517.9	611.6
384.7	98.0	99,244	551.4	649.4
385.0	101.8	105,436	585.8	687.6
385.3	105.1	111,792	621.1	726.2
385.6	108.0	118,314	657.3	765.3
385.9	110.2	125,005	694.5	804.7
386.2	111.9	131,863	732.6	844.5
386.5	113.0	138,877	771.5	884.5
386.8	113.5	146,048	811.4	924.9
387.1	113.2	153,377	852.1	965.3
387.4	112.2	160,867	893.7	1005.9
387.7	110.5	168,519	936.2	1046.7
388.0	108.0	176,334	979.6	1087.6

Time Increment (t) = 0.100 hrs.

POND-2 Version: 5.20 S/N: 1903052001 Page 3
EXECUTED: 06-01-2001 15:48:34 10 YEAR Return Freq: 10 years

Pond File: p:\project\09103\4-1\engr\comps\pond\POND2 .PND
Inflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\POST10 .HYD
Outflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\10OUT .HYD

INFLOW HYDROGRAPH / ROUTING COMPUTATIONS

TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
10.0	0.0	0.0	0.0	0.0	0.00	376.00
10.1	0.0	0.0	0.0	0.0	0.00	376.00
10.2	0.0	0.0	0.0	0.0	0.00	376.00
10.3	0.0	0.0	0.0	0.0	0.00	376.00
10.4	0.0	0.0	0.0	0.0	0.00	376.00
10.5	0.0	0.0	0.0	0.0	0.00	376.00
10.6	0.0	0.0	0.0	0.0	0.00	376.00
10.7	0.0	0.0	0.0	0.0	0.00	376.00
10.8	0.0	0.0	0.0	0.0	0.00	376.00
10.9	0.0	0.0	0.0	0.0	0.00	376.00
11.0	3.7	3.7	0.4	3.7	1.65	376.91
11.1	4.2	7.9	1.0	8.3	3.66	377.19
11.2	4.7	8.9	1.4	9.9	4.22	377.27
11.3	5.2	9.9	1.9	11.3	4.73	377.33
11.4	6.0	11.2	2.4	13.1	5.34	377.40
11.5	6.9	12.9	3.1	15.3	6.11	377.50
11.6	7.7	14.6	4.1	17.7	6.80	377.58
11.7	13.1	20.8	7.1	24.9	8.86	377.81
11.8	18.5	31.6	14.5	38.7	12.14	378.14
11.9	23.9	42.4	25.1	56.9	15.90	378.52
12.0	47.6	71.5	50.8	96.6	22.88	379.21
12.1	92.7	140.3	122.2	191.1	34.43	380.46
12.2	151.0	243.7	251.6	365.9	57.16	382.31
12.3	125.0	276.0	362.2	527.6	82.75	383.72
12.4	67.4	192.4	381.7	554.6	86.45	383.94
12.5	39.9	107.3	334.8	469.0	77.05	383.39
12.6	28.0	67.9	276.0	402.7	63.37	382.64
12.7	21.8	49.8	224.8	325.8	50.50	381.93
12.8	17.5	39.3	181.4	264.1	41.35	381.30
12.9	15.4	32.9	141.0	214.3	36.66	380.73
13.0	13.4	28.8	105.4	169.8	32.20	380.20
13.1	12.4	25.8	75.8	131.2	27.71	379.71
13.2	11.4	23.8	52.9	99.6	23.35	379.26
13.3	10.7	22.1	36.4	75.0	19.28	378.85
13.4	10.0	20.7	25.2	57.1	15.95	378.52
13.5	9.4	19.4	17.8	44.6	13.40	378.27
13.6	8.9	18.3	13.0	36.1	11.56	378.09
13.7	8.4	17.3	10.0	30.3	10.17	377.94
13.8	8.0	16.4	7.9	26.4	9.22	377.84
13.9	7.6	15.6	6.5	23.5	8.49	377.77
14.0	7.3	14.9	5.7	21.4	7.89	377.70
14.1	7.0	14.3	5.0	20.0	7.46	377.65
14.2	6.7	13.7	4.5	18.7	7.11	377.61
14.3	6.4	13.1	4.0	17.6	6.79	377.58
14.4	6.2	12.6	3.6	16.6	6.51	377.55
14.5	6.1	12.3	3.3	15.9	6.30	377.52
14.6	5.9	12.0	3.1	15.3	6.13	377.50
14.7	5.7	11.6	2.9	14.7	5.90	377.48
14.8	5.6	11.3	2.7	14.2	5.73	377.45
14.9	5.4	11.0	2.6	13.7	5.57	377.43
15.0	5.3	10.7	2.5	13.3	5.42	377.41
15.1	5.2	10.6	2.4	13.0	5.30	377.40
15.2	5.1	10.3	2.3	12.7	5.19	377.39
15.3	5.0	10.1	2.2	12.4	5.09	377.37
15.4	4.9	9.9	2.1	12.1	4.99	377.36
15.5	4.8	9.7	2.0	11.8	4.89	377.35
15.6	4.7	9.5	1.9	11.5	4.79	377.34
15.7	4.6	9.3	1.8	11.2	4.69	377.32
15.8	4.5	9.1	1.7	10.9	4.59	377.31
15.9	4.4	8.9	1.7	10.6	4.49	377.30

POND-2 Version: 5.20 S/N: 1903052001 Page 1
EXECUTED: 06-01-2001 15:49:15 SDF Return Freq: 100 years

SDF ROUTING
HEARTHSTONE SWM POND

Inflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\POST100 .HYD
Rating Table file: p:\project\09103\4-1\engr\comps\pond\PONDX .PND

—INITIAL CONDITIONS—
Elevation = 383.94 ft
Outflow = 6.86 cfs
Storage = 8835 cu-ft

SDF

INTERMEDIATE ROUTING

GIVEN POND DATA / COMPUTATIONS

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)		2S/t (cfs)	2S/t + 0 (cfs)	
376	0	0		0	0	
376.3	0	12		0.1	0.1	
376.6	0	97		0.5	0.5	
376.9	0	327		1.8	1.8	
377.2	0	775		4.3	4.3	
377.5	0	1	513		8.4	8.4
377.8	0	2	614		14.5	14.5
378.1	0	4	140		23	23
378.4	0	5	986		33.3	33.3
378.7	0	8	131		45.2	45.2
379	0	10	598		58.9	58.9
379.3	0	13	404		74.5	74.5
379.6	0	16	578		92.1	92.1
379.9	0	20	138		111.9	111.9
380.2	0	24	42		133.6	133.6
380.5	0	28	81		156	156
380.8	0	32	240		179.1	179.1
381.1	0	36	522		202.9	202.9
381.4	0	40	928		227.4	227.4
381.7	0	45	461		252.6	252.6
382	0	50	121		278.5	278.5
382.3	0	54	908		305	305
382.6	0	59	820		332.3	332.3
382.9	0	64	856		360.3	360.3
383.2	0	70	22		389	389
383.5	0	75	316		418.4	418.4
383.8	0	80	742		448.6	448.6
384.1	14.7	86	299		479.4	494.1
384.4	42.7	91	993		511.1	553.8
384.7	79.1	97	823		543.5	622.6
385	122.3	103	792		576.6	698.9
385.3	171.4	109	901		610.6	782
385.6	225.7	116	163		645.3	871
385.9	238.8	122	548		680.8	919.6
386.2	244.1	129	94		717.2	961.3
386.5	249.5	135	808		754.5	1004
386.8	254.8	142	696		792.8	1047.6
387.1	259.8	149	758		832	1091.8
387.4	264.7	156	998		872.2	1136.9
387.7	269.7	164	417		913.4	1183.1
388	774.1	172	18		955.7	1729.8

Time Increment (t) = 0.100 hrs.

POND-2 Version: 5.20 S/N: 1903052001 Page 3
EXECUTED: 06-01-2001 15:49:15 SDF Return Freq: 100 years

Pond File: p:\project\09103\4-1\engr\comps\pond\PONDX .PND
Inflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\POST100 .HYD
Outflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\SDFOUTX .HYD

INFLOW HYDROGRAPH / ROUTING COMPUTATIONS

TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
10.9	0	0	448.6	448.6	0	383.8
11	5.8	5.8	450.6	454.4	1.87	383.84
11.1	6.6	12.4	453.7	463	4.66	383.9
11.2	7.3	13.9	455.3	467.6	6.14	383.93
11.3	8.1	15.4	456.4	470.7	7.15	383.95
11.4	9.4	17.5	457.6	473.9	8.18	383.97
11.5	10.7	20.1	458.9	477.7	9.39	383.99
11.6	12	22.7	460.3	481.6	10.65	384.02
11.7	20.4	32.4	464.2	492.7	14.23	384.09
11.8	28.9	49.3	465.9	513.5	23.8	384.2
11.9	37.3	66.2	467.1	532.1	32.53	384.29
12	74.3	111.6	466.9	578.7	55.87	384.51
12.1	144.7	219	458	686.9	114.94	384.95
12.2	235.7	380.4	427.2	836.4	204.62	385.48
12.3	195	430.7	422.5	857.9	217.71	385.56
12.4	105.2	300.2	450	722.7	136.34	385.09
12.5	62.3	167.5	464.7	617.5	76.41	384.68
12.6	43.7	106	467.4	570.7	51.63	384.47
12.7	33.9	77.6	467.8	545	38.58	384.36
12.8	27.3	61.2	466.9	529	31.09	384.28
12.9	24.1	51.4	466.2	518.3	26.03	384.22
13	20.9	45	465.8	511.2	22.72	384.19
13.1	19.3	40.2	465.5	506	20.26	384.16
13.2	17.8	37.1	465.3	502.6	18.65	384.14
13.3	16.7	34.5	465.1	499.8	17.34	384.13
13.4	15.6	32.3	464.9	497.4	16.22	384.12
13.5	14.7	30.3	464.8	495.2	15.22	384.11
13.6	13.9	28.6	464.5	493.4	14.46	384.1
13.7	13.2	27.1	463.8	491.6	13.87	384.08
13.8	12.5	25.7	463.1	489.5	13.21	384.07
13.9	11.9	24.4	462.4	487.5	12.56	384.06
14	11.4	23.3	461.7	485.7	11.97	384.04

POND-2 Version: 5.20 S/N: 1903052001 Page 1
EXECUTED: 06-01-2001 15:49:15 FBH Return Freq: 1.5 X 100years

FBH ROUTING
HEARTHSTONE SWM POND

Inflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\FBH .HYD
Rating Table file: p:\project\09103\4-1\engr\comps\pond\PONDX .PND

—INITIAL CONDITIONS—
Elevation = 383.94 ft
Outflow = 6.86 cfs
Storage = 8835 cu-ft

FBH

INTERMEDIATE ROUTING

GIVEN POND DATA / COMPUTATIONS

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)		2S/t (cfs)	2S/t + 0 (cfs)	
376	0	0		0	0	
376.3	0	12		0.1	0.1	
376.6	0	97		0.5	0.5	
376.9	0	327		1.8	1.8	
377.2	0	775		4.3	4.3	
377.5	0	1	513		8.4	8.4
377.8	0	2	614		14.5	14.5
378.1	0	4	140		23	23
378.4	0	5	986		33.3	33.3
378.7	0	8	131		45.2	45.2
379	0	10	598		58.9	58.9
379.3	0	13	404		74.5	74.5
379.6	0	16	578		92.1	92.1
379.9	0	20	138		111.9	111.9
380.2	0	24	42		133.6	133.6
380.5	0	28	81		156	156
380.8	0	32	240		179.1	179.1
381.1	0	36	522		202.9	202.9
381.4	0	40	928		227.4	227.4
381.7	0	45	461		252.6	252.6
382	0	50	121		278.5	278.5
382.3	0	54	908		305	305
382.6	0	59	820		332.3	332.3
382.9	0	64	856		360.3	360.3
383.2	0	70	22		389	389
383.5	0	75	316		418.4	418.4
383.8	0	80	742		448.6	448.6
384.1	14.7	86	299		479.4	494.1
384.4	42.7	91	993		511.1	553.8
384.7	79.1	97	823		543.5	622.6
385	122.3	103	792		576.6	698.9
385.3	171.4	109	901		610.6	782
385.6	225.7	116	163		645.3	871
385.9	238.8	122	548		680.8	919.6
386.2	244.1	129	94		717.2	961.3
386.5	249.5	135	808		754.5	1004
386.8	254.8	142	696		792.8	1047.6
387.1	259.8	149	758		832	1091.8
387.4	264.7	156	998		872.2	1136.9
387.7	269.7	164	417		913.4	1183.1
388	774.1	172	18		955.7	1729.8

Time Increment (t) = 0.100 hrs.

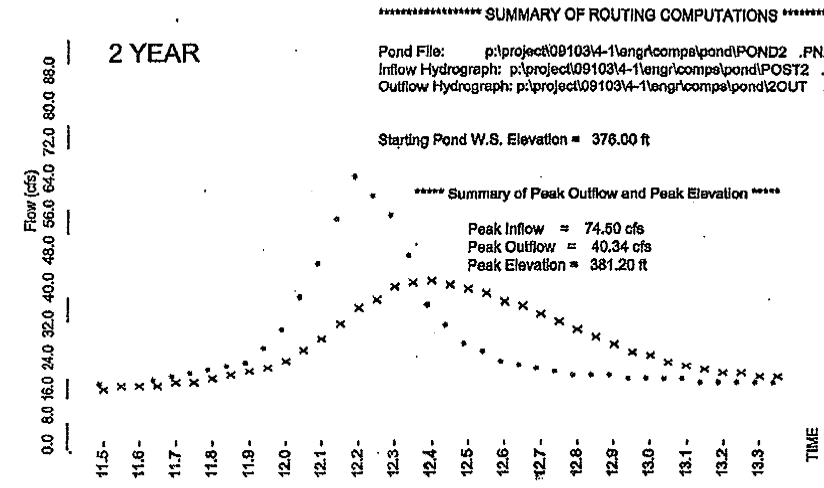
POND-2 Version: 5.20 S/N: 1903052001 Page 3
EXECUTED: 06-01-2001 15:49:15 FBH Return Freq: 1.5 X 100 years

Pond File: p:\project\09103\4-1\engr\comps\pond\PONDX .PND
Inflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\FBH .HYD
Outflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\FBHOUTX .HYD

INFLOW HYDROGRAPH / ROUTING COMPUTATIONS

TIME (hrs)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
11	8.7	8.7	461.7	457.3	2.81	383.86
11.1	9.9	18.6	456.3	470.3	7	383.94
11.2	10.95	20.9	458.7	477.1	9.21	383.99
11.3	12.15	23.1	460.4	481.8	10.72	384.02
11.4	14.1	26.3	462.1	486.6	12.27	384.05
11.5	16.05	30.2	464.1	492.2	14.08	384.09
11.6	18	34.1	465	498.1	16.56	384.12
11.7	30.6	48.6	465.9	513.6	23.83	384.2
11.8	43.35	74	467.5	539.9	36.17	384.33
11.9	55.95	99.3	467.6	566.8	49.61	384.46
12	111.45	167.4	462.7	635	86.14	384.75
12.1	217.05	328.5	437.1	791.2	177.05	385.33
12.2	353.55	570.6	507.8	1007.7	249.95	386.53
12.3	292.5	646.1	620.8	1153.9	266.53	387.51
12.4	157.8	450.3	556.2	1071.1	257.46	386.96
12.5	93.45	251.3	433.6	807.4	186.93	385.39
12.6	65.55	159	466.1	592.6	63.23	384.57
12.7	50.85	116.4	466.7	582.5	57.91	384.53
12.8	40.95	91.8	468.1	558.5	45.2	384.42
12.9	36.15	77.1	467.8	545.2	38.67	384.36
13	31.35	67.5	467.2	535.3	34.05	384.31
13.1	28.95	60.3	466.8	527.5	30.39	384.27
13.2	26.7	55.7	466.5	522.4	27.98	384.24
13.3	25.05	51.8	466.2	518.2	26	384.22
13.4	23.4	48.5	466	514.7	24.33	384.2
13.5	22.05	45.5	465.8	511.4	22.82	384.19
13.6	20.85	42.9	465.6	508.7	21.53	384.17
13.7	19.8	40.7	465.5	506.3	20.4	384.16
13.8	18.75	38.6	465.3	504	19.34	384.15
13.9	17.85	36.6	465.2	501.9	18.36	384.14
14	17.1	35	465.1	500.2	17.53	384.13

**************** SUMMARY OF ROUTING COMPUTATIONS ****************



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Inflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\POST2 .HYD
Outflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\2OUT .HYD

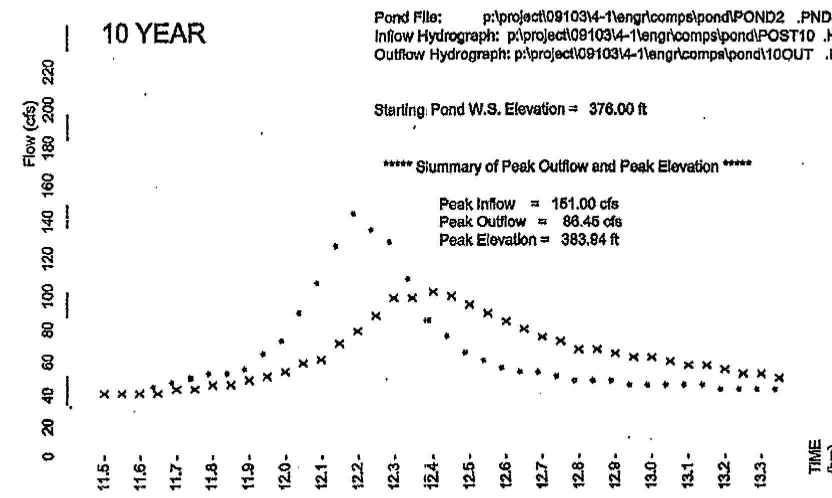
Starting Pond W.S. Elevation = 376.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 74.50 cfs
Peak Outflow = 40.34 cfs
Peak Elevation = 381.20 ft

* File: p:\project\09103\4-1\engr\comps\pond\POST2 .HYD Qmax = 74.5 cfs
x File: p:\project\09103\4-1\engr\comps\pond\2OUT .HYD Qmax = 40.3 cfs

**************** SUMMARY OF ROUTING COMPUTATIONS ****************



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Inflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\POST10 .HYD
Outflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\10OUT .HYD

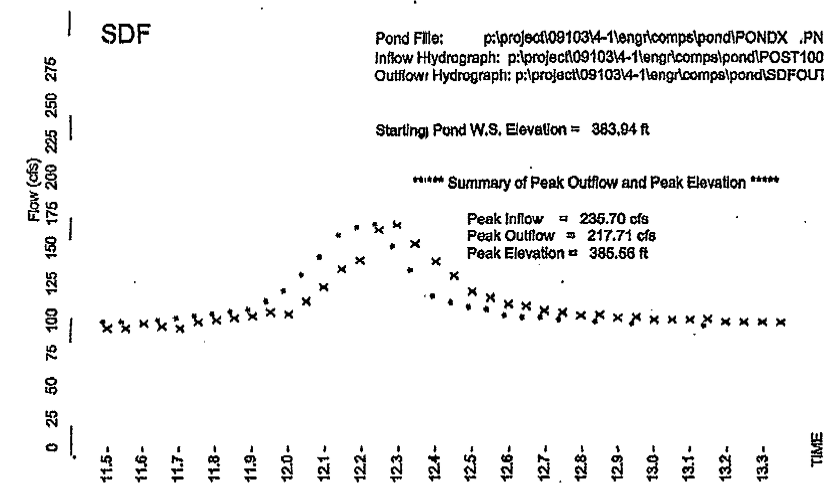
Starting Pond W.S. Elevation = 376.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 151.00 cfs
Peak Outflow = 86.45 cfs
Peak Elevation = 383.94 ft

* File: p:\project\09103\4-1\engr\comps\pond\POST10 .HYD Qmax = 151.0 cfs
x File: p:\project\09103\4-1\engr\comps\pond\10OUT .HYD Qmax = 86.4 cfs

**************** SUMMARY OF ROUTING COMPUTATIONS ****************



Pond File: p:\project\09103\4-1\engr\comps\pond\PONDX .PND
Inflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\POST100 .HYD
Outflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\SDFOUTX .HYD

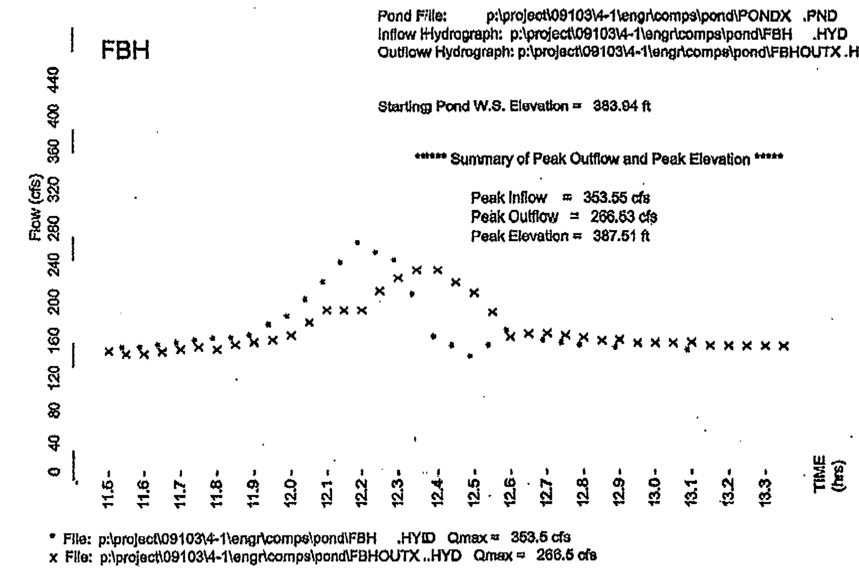
Starting Pond W.S. Elevation = 383.94 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 235.70 cfs
Peak Outflow = 217.71 cfs
Peak Elevation = 385.56 ft

* File: p:\project\09103\4-1\engr\comps\pond\POST100 .HYD Qmax = 235.7 cfs
x File: p:\project\09103\4-1\engr\comps\pond\SDFOUTX ..HYD Qmax = 217.7 cfs

**************** SUMMARY OF ROUTING COMPUTATIONS ****************



Pond File: p:\project\09103\4-1\engr\comps\pond\PONDX .PND
Inflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\FBH .HYD
Outflow Hydrograph: p:\project\09103\4-1\engr\comps\pond\FBHOUTX .HYD

Starting Pond W.S. Elevation = 383.94 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 353.55 cfs
Peak Outflow = 266.53 cfs
Peak Elevation = 387.51 ft

* File: p:\project\09103\4-1\engr\comps\pond\FBH .HYD Qmax = 353.5 cfs
x File: p:\project\09103\4-1\engr\comps\pond\FBHOUTX ..HYD Qmax = 266.5 cfs

NO.	DESCRIPTION	DATE	REVS'D	REVW'D	APPROVED	DATE

REVISION

PROFESSIONAL SEAL

PROJECT
HEARTHSTONE VILLAGE OAKTON
Section 1
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VA.

TITLE
STORMWATER MANAGEMENT COMPUTATIONS AND DETAILS:
POND ROUTING

PHR&A

Patton Harris Rust & Associates,pc.
Engineers,Surveyors,Planners,Landscape Architects
14532 Lee Road
Chantilly, Virginia 20151-1679
703-449-6700

Offices:
Fairfax,Va.
Bridgewater,Va.
Leesburg,Va.
Virginia Beach,Va.
Chantilly,Va.
Winchester,Va.
Woodbridge,Va.

DESIGN CTN	SURVEY PHR&A
DRAWN WP	DATE OCT., 2000
CHECKED RAM	SCALE N/A
SHEET C703SWM 14E OF 46	FILE NO. 09103-4-1

PCA/FDPA 1998-PR-027
APPLICATION NO__________ STAFF JP
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP) 2/15/06 Conds 2/8/06
SEE PROFFERS DATED__________
DATE OF (BOS) (PC) APPROVAL 2/27/06
SHEET 20 OF 21

THIS SHEET IS FOR INFORMATION ONLY

NO.	DATE	DESCRIPTION	BY	AUTH.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS FAIRFAX COUNTY
SUITE 533
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0056
CONTACT: KATAYOON SHAYA, DPWES
(703) 324-5160 BUILDING DESIGN BRANCH

Fairfax County Public Works and Environmental Services
Fairfax County Public Library

ENGINEER:
PBS&J
POST, BUCKLEY, SCHUH & JERNIGAN, INC.
3859 CENTERVIEW DRIVE, SUITE 160
CHANTILLY, VIRGINIA 20151
TEL: 703.471.7275 FAX: 703.471.8021

COMMONWEALTH OF VIRGINIA
JAMES P. BECK
No. 23880
10/10/05
PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

OAKTON LIBRARY
PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT SWM CALCULATIONS (RELATED TO RZ-1998-PR-027)

PROJ. NO: 170340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	20 OF 21
SCALE: AS SHOWN	

OUTFALL NARRATIVE

THE DEVELOPMENT OF THE OAKTON LIBRARY FACILITY WILL IMPACT ONE OUTFALL, AS DESCRIBED BELOW.

OUTFALL #1

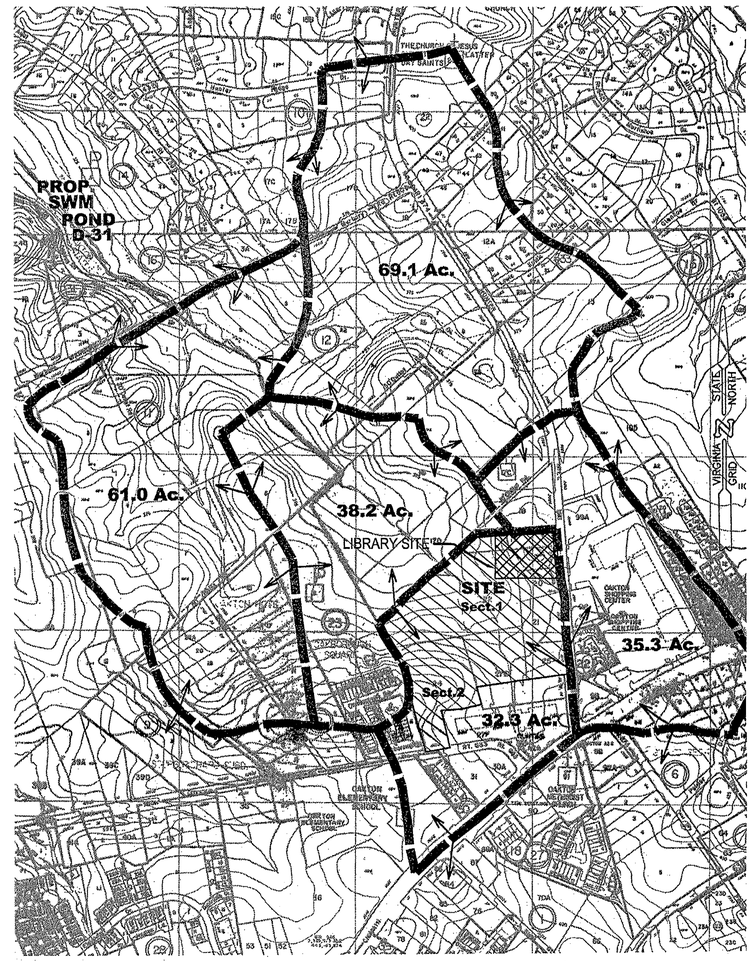
OUTFALL #1 IS AN EXISTING 24" RCP AT 0.50% THAT WAS CONSTRUCTED WITH THE HEARTHSTONE VILLAGE OAKTON, SECTION 1 SUBDIVISION PLAN. THE EXISTING PIPE AND DOWNSTREAM SYSTEM HAS CAPACITY TO CONVEY STORMWATER FLOW FROM THE LIBRARY SITE TO THE STORMWATER MANAGEMENT POND. IT IS OUR OPINION THAT SINCE THE EXISTING PIPE SYSTEM HAS ADEQUATE CAPACITY TO CONVEY THE ANTICIPATED FLOW IT CONSTITUTES AN ADEQUATE OUTFALL TO THE EXISTING POND FACILITY. PBS&J HAS INCLUDED INFORMATION REGARDING THE OUTFALL FROM THE EXISTING POND, INCLUDING PLAN VIEW AND CROSS SECTION INFORMATION TO DEMONSTRATE THE ADEQUACY OF THE EXISTING NATURAL CHANNEL DOWNSTREAM OF THE EXISTING POND TO CONVEY ANTICIPATED FLOWS. SEE SHEETS 11-20 FOR INFORMATION REGARDING THE ADEQUACY OF THE EXISTING STORM DRAINAGE SYSTEM TO THE EXISTING POND AND ULTIMATE OUTFALL.

SWM NARRATIVE

THE EXISTING STORM SEWER SYSTEM FOR THE HEARTHSTONE VILLAGE OAKTON, SECTION 1 OUTFALLS TO AN EXISTING SWM POND LOCATED SOUTHWEST OF THE LIBRARY SITE. THIS EXISTING POND WAS DESIGNED AND APPROVED ON DECEMBER 21, 2001 WITH FAIRFAX COUNTY PLAN #0549-SD-01. THE CONTRIBUTING DRAINAGE AREAS INCLUDING THE LIBRARY SITE WERE ASSUMED TO HAVE A POST DEVELOPMENT CURVE NUMBER IN CONFORMANCE WITH THE TYPE OF DEVELOPMENT PROPOSED WITH THIS PLAN. THE EXISTING POND FACILITY IS ADEQUATE FOR BOTH THE 2 YEAR AND 10 YEAR STORMS. SEE SHEETS 18-20 FOR EXISTING POND DESIGN AND ROUTING INFORMATION. THEREFORE, IT IS OUR OPINION THAT THE EXISTING POND PROVIDES ADEQUATE DETENTION FOR THE PROPOSED DEVELOPMENT.

BEST MANAGEMENT PRACTICES (BMP)

THE BMP REQUIREMENT FOR THIS PROJECT WAS PREVIOUSLY WAIVED WITH THE APPROVAL OF WATER QUALITY CONTROL WAIVER #022504 (SEPT. 11, 2000) ASSOCIATED WITH THE HEARTHSTONE VILLAGE, PHASE I PLAN (FAIRFAX COUNTY PLAN # 0549-SD-01). SEE SHEET 18 FOR WAIVER APPROVAL LETTER FROM FAIRFAX COUNTY, DPWES. THE LIBRARY PROPERTY WAS PREVIOUSLY PART OF PARCELS 19, 20, AND 22 ON TAX MAP 47-2 ((1)) MENTIONED IN THE WAIVER APPROVAL LETTER. NEW TAX MAP REFERENCE IS 47-2((54)), PARCEL B.



OFFSITE DRAINAGE DIVIDE MAP

NTS

PCA/FDPA 1998-PR-027

APPLICATION NO. _____ STAFF JP

APPROVED DEVELOPMENT PLAN

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

SEE PROFFERS DATED 2/15/06 Conds 2/28/06

DATE OF (BOS) (PC) APPROVAL 2/27/06

SHEET 21 OF 21

NO.	DATE	DESCRIPTION	BY	AUTH.

OWNER/DEVELOPER:
BOARD OF SUPERVISORS
FAIRFAX COUNTY
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COMMONWEALTH OF VIRGINIA
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10/10/05
PROFESSIONAL ENGINEER
ENGINEER'S SEAL & SIGNATURE

OAKTON LIBRARY

PROVIDENCE DISTRICT FAIRFAX COUNTY, VIRGINIA

CDP/FDP AMENDMENT
SWM NARRATIVES
(RELATED TO RZ-1998-PR-027)

PROJ. NO: 170340	COUNTY NUMBER:
DATE: SEPT., 2005	
DWG. BY: DBD	
DESIGN BY: DBD	SHEET NO:
CHECK BY: JPB	21 OF 21
SCALE: AS SHOWN	