



# County of Fairfax, Virginia

*To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County*

January 9, 2013

Kelly M. Atkinson, AICP  
Land Design Consultants, Inc.  
4585 Daisy Reid Avenue, Suite 201  
Woodbridge, VA 22192

RE: Rezoning Application RZ 2012-HM-013

Dear Ms. Atkinson:

Enclosed you will find a copy of an Ordinance adopted by the Board of Supervisors at a regular meeting held on January 8, 2013, granting Rezoning Application RZ 2012-HM-013 in the name of Sekas Homes, Ltd. The Board's action rezones certain property in the Hunter Mill District from the R-1 District to the R-2 District to permit residential development at a density of 2.0 dwelling units per acre (du/ac). The subject property is located 2,000 feet N.W. from the intersection of Old Courthouse Road and Drewlaine Drive on approximately 2.5 acres of land, [Tax Map 28-4 ((1)) 12], subject to the proffers dated December 14, 2012.

Sincerely,

Catherine A. Chianese  
Clerk to the Board of Supervisors

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**Office of the Clerk to the Board of Supervisors**  
12000 Government Center Parkway, Suite 533  
Fairfax, Virginia 22035

Phone: 703-324-3151 ♦ Fax: 703-324-3926 ♦ TTY: 703-324-3903  
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<http://www.fairfaxcounty.gov/bosclerk>

cc: Chairman Sharon Bulova  
Supervisor Catherine Hudgins, Hunter Mill District  
Tim Shirocky, Acting Director, Real Estate Division, Dept. of Tax Administration  
Barbara Berlin, Director, Zoning Evaluation Division, DPZ  
Diane Johnson-Quinn, Deputy Zoning Administrator, Dept. of Planning and Zoning  
Thomas Conry, Dept. Manager – GIS - Mapping/Overlay  
Angela K. Rodeheaver, Section Chief, Transportation Planning Division  
Donald Stephens, Transportation Planning Division  
Department of Highways-VDOT  
Sandy Stallman, Park Planning Branch Manager, FCPA  
Charlene Fuhrman-Schulz, Development Officer, DHCD/Design Development Division  
Planning Commission  
Denise James, Office of Capital Facilities/Fairfax County Public Schools  
Karyn Moreland, Chief Capital Projects Sections, Dept. of Transportation

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held in the Board Auditorium in the Government Center at Fairfax, Virginia, on the 8<sup>th</sup> day of January 2013, the following ordinance was adopted:

**AN ORDINANCE AMENDING THE ZONING ORDINANCE  
PROPOSAL NUMBER RZ 2012-HM-013**

**WHEREAS**, Sekas Homes LTD, filed in the proper form an application requesting the zoning of a certain parcel of land herein after described, from the from the R-1 District to the R-2 District and

**WHEREAS**, at a duly called public hearing the Planning Commission considered the application and the propriety of amending the Zoning Ordinance in accordance therewith, and thereafter did submit to this Board its recommendation, and

**WHEREAS**, this Board has today held a duly called public hearing and after due consideration of the reports, recommendation, testimony and facts pertinent to the proposed amendment, the Board is of the opinion that the Ordinance should be amended,

**NOW, THEREFORE, BE IT ORDAINED**, that that certain parcel of land situated in the Hunter Mill District, and more particularly described as follows (see attached legal description):

Be, and hereby is, zoned to the R-2 District, and said property is subject to the use regulations of said R-2 District, and

**BE IT FURTHER ENACTED**, that the boundaries of the Zoning Map heretofore adopted as a part of the Zoning Ordinance be, and they hereby are, amended in accordance with this enactment, and that said zoning map shall annotate and incorporate by reference the additional conditions governing said parcel.

GIVEN under my hand this 8th day of January, 2013.



Catherine A. Chianese  
Clerk to the Board of Supervisors



## PROFFERS

### *Sekas Homes, Ltd.* Wolf Trap Downs, Section 2

December 14, 2012

Pursuant to Section 15.2-2303(A) of the 1950 Code of Virginia, as amended, the Applicant, for himself and his successors or assigns (herein collectively referred to as the "Applicant") in this rezoning application filed on property identified on the Fairfax County Tax Map 28-4 ((1)), Parcel 12 (hereinafter referred to as the "Application Property"), agrees to the following proffers, provided that the Fairfax County Board of Supervisors (hereinafter referred to as the "Board") approves the rezoning of the Application Property from the R-1 zoning district to the R-2 district.

#### 1. **Development Plan**

- a) Subject to the provisions of Section 18-204 of the Fairfax County Zoning Ordinance ("the Ordinance"), development of the portion of the Application Property identified on the Fairfax County Tax Map 28-4 ((1)), Parcel 12 shall be in substantial conformance with the Generalized Development Plan ("GDP") entitled "Wolf Trap Downs, Section 2" containing eleven sheets and prepared by Land Design Consultants, Inc., dated May, 2012 as revised through October 8, 2012.
- b) Pursuant to Paragraph 2 of Section 18-204 of the Zoning Ordinance, minor modifications from the GDP may be permitted as determined by the Zoning Administrator. These modifications may include the locations of utilities and landscaping, minor adjustment of property lines, and the general location, type and size of dwellings on the proposed lots, provided that the minimum building setbacks outlined on the GDP are honored, and the limits of clearing and grading are adhered to.

#### 2. **Homeowners Association**

The Applicant shall use best efforts to annex the Application Property into the existing Wolf Trap Downs Homeowners Association as demonstrated to DPWES at time of subdivision plan approval. In the alternative, the Applicants shall establish a homeowners association for the proposed development for the purpose of, among other things, establishing the necessary residential covenants governing the design and operation of the approved development. Prior to entering into a contract of sale, prospective purchasers shall be notified in writing by the Applicant of the HOA, whether individually or as part of the Wolf Trap Downs HOA, and residential covenants. The initial deeds of conveyance shall expressly contain these disclosures.

#### 3. **Transportation**

- a) Density credit shall be reserved as may be permitted by the provisions of Paragraph 4 of Section 2-308 of the Ordinance for all eligible dedications described herein.
- b) As a condition of subdivision plan approval or upon demand by Fairfax County or the Virginia Department of Transportation ("VDOT"), whichever occurs first, the Applicant shall dedicate and convey, without encumbrances and in fee simple, to the Board of Supervisors, right-of-way for the extension of Drewlaine Drive into the subject property and construct

improvements along the Drewlaine Drive extension, including but not limited to, the proposed 5' sidewalk, as generally shown on the GDP, subject to the approval of VDOT and the Fairfax County Site Development and Inspections Division ("SDID"). The Applicant shall remove the existing temporary cul-de-sac on Drewlaine Drive, adjacent to the subject property, in conjunction with the extension of Drewlaine Drive.

- c) Garages and Driveways. Any conversion of garages or use of garages that precludes the parking of vehicles within the garage is prohibited. This covenant shall be recorded among the land records of Fairfax County prior to the sale of lots and shall run to the benefit of the HOA and to the Board of Supervisors. Prior to recordation, the covenant shall be approved by the Fairfax County Attorney's office. The HOA documents shall expressly state this use restriction. The driveway provided for each unit shall be a minimum of eighteen (18) feet in width and length to permit the parking of two (2) vehicles without overhanging onto the sidewalk. Garages shall be designed to accommodate two (2) vehicles.

#### 4. Landscaping

- a) The first submission of the subdivision plan and all subsequent plan submissions shall include a landscape plan and specifications, for review and approval by the Forest Conservation Branch. The landscape plan and specifications shall incorporate the following:
- Reduce turf areas to minimize mowing operations and the resulting air pollution. Turf shall cover no more than 75% of the pervious area of each lot. Mulched planting beds incorporating groups of trees and other plants shall be used to provide a root zone environment more favorable to trees and shrubs. Areas proposed for turf and mulch beds shall be delineated on the landscape plan submitted with the subdivision plan.
  - Plant trees in areas to contribute to energy conservation for the dwelling on each lot where possible, as depicted in Plate 4-12 of the Public Facilities Manual (PFM), and as determined in consultation with Forest Conservation Branch.
  - Provide a diverse selection of native and non-invasive plants to reduce the need for supplemental watering, and the use of chemical fertilizers, herbicides, and chemical control of insects and diseases.
  - Landscaping implemented with the subdivision plan may be made up of groups of trees including larger, overstory type trees (Category III and IV, as listed in PFM Table 12.19) together with smaller understory type trees (Category II). The plan may show overlap of understory trees by overstory trees as might occur in a natural environment.
  - Inspection of mulch beds for conformance with the approved subdivision plan shall be conducted at the time that the Residential Use Permit is issued for each dwelling. After mulch areas have been accepted, they shall become the responsibility of the homeowner who shall not be precluded from managing or planting these areas according to their preference.
  - The Applicant shall reserve the right to modify the location and species of trees at time of final subdivision plan subject to final engineering and approval by FCB.
- b) The Applicant shall plant smaller understory type trees (Category I or II) adjacent to and/or under the preserved canopy on Lots 4 and 5 to provide additional measures of screening. Specifically, the Applicant shall plant two understory trees on Lot 4 and eight understory trees on Lot 5.

#### 5. Tree Preservation

Existing Vegetation Map/Tree Preservation: The Applicant shall submit an Existing Vegetation Map/Tree Preservation Plan as part of the first and all subsequent subdivision plan submissions to identify the trees onsite and address the preservation of the trees, as shown on the

Generalized Development Plan. The Existing Vegetation Map/Tree Preservation Plan shall be prepared by a professional with experience in the preparation of these plans, such as a certified arborist, Registered Consulting Arborist or landscape architect, and shall be subject to the review and approval of Forest Conservation Branch (FCB), SDID.

The Existing Vegetation Map/Tree Preservation Plan shall consist of tree survey that includes the location, species, size, crown spread and condition rating percentage of all trees 12 inches in diameter and greater, and 25 feet to either side of the limits of clearing and grading shown on the GDP for the entire site. The tree preservation plan shall provide those areas outside of the limits of clearing and grading shown on the GDP and those additional areas in which trees can be preserved as a result of final engineering and as determined by FCB. The condition analysis ratings shall be prepared using methods outlined in the latest edition of the Guide for Plant Appraisal published by the International Society of Arboriculture. Specific tree preservation activities that will maximize the survivability of any tree identified to be preserved, such as: crown pruning, root pruning, mulching, fertilization, and others as necessary, shall be included in the plan.

Tree Preservation Walk-through: The Applicant shall retain the services of a certified arborist, Registered Consulting Arborist or landscape architect and shall have the limits of clearing and grading marked with a continuous line of flagging prior to the walk-through meeting. During the tree preservation walk-through meeting, the Applicant's certified arborist or landscape architect shall walk the limits of clearing and grading with an FCB, SDID representative to determine where adjustments to the clearing limits can be made to increase the area of tree preservation and/or to increase the survivability of trees at the edge of the limits of clearing and grading, and such adjustment shall be implemented. Trees that are identified as dead or dying may be removed as part of the clearing operation. Any tree that is so designated shall be removed using a chain saw and such removal shall be accomplished in a manner that avoids damage to surrounding trees and associated understory vegetation. If a stump must be removed, this shall be done using a stump grinding machine in a manner causing as little disturbance as possible to the adjacent trees and associated understory vegetation and soil conditions.

Tree Preservation Fencing: All trees shown to be preserved on the tree preservation plan shall be protected by tree protection fence. Tree protection fencing in the form of four (4) foot high, fourteen (14) gauge welded wire attached to six (6) foot steel posts driven eighteen (18) inches into the ground and placed no further than ten (10) feet apart or, super silt fence, to the extent that required trenching for super silt fence does not sever or wound compression roots which can lead to structural failure and/or uprooting of trees, shall be erected at the limits of clearing and grading as shown on the demolition, and phase I and II erosion and sediment control sheets, as may be modified by the Root Pruning proffer below.

All tree protection fencing shall be installed after the tree preservation walk-through meeting but prior to any clearing and grading activities. The installation of all tree protection fencing shall be performed under the direct supervision of a certified arborist, and accomplished in a manner that does not harm existing vegetation that is to be preserved. Three (3) days prior to the commencement of any clearing, grading or demolition activities, but subsequent to the installation of the tree protection devices, the FCB, SDID, shall be notified and given the opportunity to inspect the site to ensure that all tree protection devices have been correctly installed. If it is determined that the fencing has not been installed correctly, no grading or construction activities shall occur until the fencing is installed correctly, as determined by FCB, SDID.

Root Pruning: The Applicant shall root prune as needed to comply with the tree preservation requirements of these proffers. All treatment shall be clearly identified, labeled, and detailed on the erosion and sediment control sheets of the subdivision plan submission. The details for these treatments shall be reviewed and approved by FCB, SDID, accomplished in a manner that protects affected and adjacent vegetation to be preserved, and may include, but not limited to the following:

- a) Root pruning shall be done with a trencher or vibratory plow to a depth of 18 inches,
- b) Root pruning shall take place prior to any clearing and grading,
- c) Root pruning shall be conducted with the on-site supervision of a certified arborist;
- d) FCB, SDID shall be informed in writing when all root pruning and tree protection fence installation is complete.

Site Protection: This proffer shall preclude the removal, disturbance, cutting, destroying, or otherwise harming of any trees, shrubs, or other vegetation on the subject property, except as necessary for (a) the control of invasive species of vines and other vegetation; (b) removal of dead or dying vegetation; (c) the routine maintenance of existing conditions, such a minor tree limbing or trimming, provided that such activity is consistent with the Tree Preservation Plan; or (d) the removal of trees in order to prevent the endangerment of life or property, meet insurance requirements or damaged due to natural disasters beyond the control of the Applicant.

Site Monitoring: During any clearing or tree/vegetation/structure removal on the Application Property, a representative of the Applicant shall be present to monitor the process and ensure that the activities are conducted as proffered and as approved by FCB.

The Applicant shall retain the services of a certified arborist, Registered Consulting Arborist or landscape architect to monitor all construction and demolition work in order to ensure conformance with all tree preservation proffers, and FCB approvals. The monitoring schedule shall be described and detailed in the Landscaping and Tree Preservation Plan, and reviewed and approved by FCB, SDID.

Tree Value Determination: The Applicant shall contract a Certified Arborist to determine the monetary value of each tree (herein, the "Tree Value") 12 inches in diameter and larger shown to be preserved in the tree inventory. Tree Value shall be determined using the Trunk Formula Method contained in the 9<sup>th</sup> Edition of the Guide for Plant Appraisal, published by the International Society of Arboriculture, and shall be subject to approval by the Forest Conservation Branch Division, DPWES (FCBD) with review and approval of the subdivision plan. The Location Factor of the Trunk Formula Method shall be based on projected post-development Contribution and Placement ratings. The Site rating component shall be equal to at least 80%.

The combined total of monetary values identified in the approved Tree Conservation Plan for trees designated to be preserved shall serve as a baseline sum in determining the amount of the Tree Bond, as discussed below.

Tree Bond: At the time of subdivision plan approval, the Applicant shall both post a cash bond and a letter of credit (herein, the "Tree Bond") payable to the County of Fairfax to ensure preservation and/or replacement of the trees for which a Tree Value has been determined as described above (herein, the "bonded trees"). The Tree Bond shall be held by the County as a cash reserve that can be used by the County to ensure the preservation, replacement, removal and/or treatment of the trees identified in the Tree Conservation Plan and as approved on the subdivision plan, and for work relating to the protection and management of undisturbed areas identified on the approved GDP. The letter of credit shall be equal to 50% of the replacement value of the bonded trees. The cash deposit shall consist of 33% of the amount of the letter of credit.

At any time prior to final bond release, should any bonded trees die, be removed, or severely decline as determined by FCB due to unauthorized construction activities, the Applicant shall replace such trees at its expense. The replacement trees shall be of equal size, species and/or canopy cover as approved by FCB. In addition to this replacement obligation, the Applicant shall also make a payment equal to the value of any bonded tree that is dead or dying or improperly removed due to unauthorized construction activity. This payment shall be equal to the Tree Value determined during reviewed and approved of the subdivision and paid to a fund established by

the County for the furtherance of tree conservation objectives. At the time of approval of the final RUP, the Applicant shall be entitled to request a release of any monies remaining in the cash bond and a reduction in the letter of credit to an amount up to 20% of the total amounts originally committed.

Any cash or funds remaining in the Tree Bond shall be released two years from the date of the project's final bond release, or sooner, if approved in writing by FCB.

Areas to be Left Undisturbed and Adherence to Limits of Clearing and Grading: The limits of clearing and grading shown on the GDP shall be strictly adhered to. The subdivision plan shall clearly identify these areas as shown on the GDP.

As part of the subdivision plan, the Applicant shall provide management practices for the protection of understory plant materials, leaf litter and soil conditions found in areas to be left undisturbed, subject to the approval of the FCB. The Applicant shall actively monitor the site to ensure that inappropriate activities such as the storage of construction materials, dumping of construction debris, and traffic by construction equipment and personnel do not occur within these areas. The Applicant shall restore understory plant materials, leaf litter and soil conditions to the satisfaction of FCB if these are found to be damaged, removed or altered in a manner not allowed in writing by the FCB.

If it becomes necessary to install utilities determined necessary by DPWES within areas to be left undisturbed, they shall be located and installed in the least disruptive manner possible as determined by FCB in coordination with the Site Development and Inspections Division, DPWES. In addition, the Applicant shall develop and implement a replanting plan for the portions of protected areas disturbed for utility installation taking into account planting restrictions imposed by utility easement agreements.

Any work occurring in or adjacent to the areas to be left undisturbed, such as root pruning, installation of tree protection fencing and silt control devices, removal of trash, or plant debris, or extraction of trees designated to be removed shall be performed in a manner that minimizes damage to any tree, shrub, herbaceous, or vine plant species that grows in the lower canopy environment; and minimizes impacts to the existing top soil and leaf litter layers that provide nourishment and protection to that vegetation, all as approved by FCB. The use of power equipment in these areas shall be limited to small hand-operated equipment such as chainsaws. Any work that requires the use of larger motorized equipment such as, but not limited to, tree transplanting spades, skid loaders, tractors, trucks, stump-grinders, or any accessory or attachment connected to such equipment shall not occur unless reviewed and approved in writing by FCB.

## **6. Storm Water Management**

- a) If approved by SDID, Stormwater Management and Best Management Practices (BMP's) shall be accomplished through the provision of one infiltration trench or alternative Low Impact Development technique on Outlot A, as generally shown on Sheets 2, 8, 8A and 8B of the GDP and in accordance with the requirements of the Fairfax County Public Facilities Manual (PFM) or any approved modifications. Maintenance access will be provided via the proposed private maintenance access easement and road. The 12' access road will be provided in accordance with PFM 6-1306.3F. The Applicant reserves the right to use a permeable surface, subject to approval by SDID. The Applicant reserves the right to use a modular, crate infiltration system in order to meet Stormwater Management/Best Management Practices, in lieu of an aggregate infiltration trench, if approved by Fairfax County. The size and location of the facility may be subject to final modifications based on

final engineering provided it is in substantial conformance with the GDP. The stormwater facility shall be designed to meet the adequate outfall as outlined in PFM 6-0203.4C.

- b) The homeowners of the lots within Wolf Trap Downs, Section 2 shall be responsible for implementing the maintenance contract and funding mechanism to provide maintenance for the proposed stormwater facility. The maintenance responsibilities and funding mechanisms for the lots within Wolf Trap Downs, Section 2 will be outlined in the Homeowner's Association documents as well as in a disclosure memorandum for any contract for sale. In the event Wolf Trap Downs, Section 2 joins the Homeowner's Association for Wolf Trap Downs, Section 1, the homeowners of Section 2 will not be responsible for funding and maintenance of the stormwater facility on Tax Map 28-4 ((35)) Parcel A in Wolf Trap Downs, Section 1. Similarly, the homeowners of Section 1 will not be responsible for the funding and maintenance of the stormwater facility on proposed Outlot A in Wolf Trap Downs, Section 2.
- c) Prior to bond release, the Applicant shall contribute \$10,000 to the Homeowner's Association for the subject property for use in maintaining the proposed stormwater facility on Outlot A. This proffer is only applicable if stormwater management is provided as stated in Proffer 6A.
- d) After establishing the HOA pursuant to these proffers, the Applicant shall provide the HOA with written materials describing proper maintenance of the stormwater facility in accordance with the PFM and County guidelines.
- e) As an alternative to providing an infiltration trench or Alternative Low Impact Development on Outlot A and subject to the discretion of the Applicant and approval by the Manors at Wolftrap HOA, SDID and any approved waivers or modifications, the Applicant will provide improvements to existing stormwater facility #1413DP on Tax Map 28-4 ((34)) B located in the Manors at Wolf Trap subdivision. Improvements shall include, but not be limited to, re-grading to provide additional capacity and replacing or modifying the existing riser structure. No trees shall be removed to accommodate the proposed improvements. In the event SDID approves this alternative, the Applicant shall send a certified letter to the Manors at Wolf Trap Homeowner's Association (HOA) to notify them of the proposed work within an existing public stormwater management easement.
- f) Prior to bond release, the Applicant shall contribute \$10,000 to the Manors at Wolf Trap Homeowner's Association for use in maintaining Outlot B on Tax Map 28-4 ((34)) B. This proffer is only applicable if stormwater management is provided as stated in Proffer 6E.

## **7. Contributions**

- a) Prior to bond release, the Applicant shall contribute \$10,716 to the Board of Supervisors for use by the Fairfax County Park Authority for its use in establishing and maintaining parks and recreational facilities in the Hunter Mill District of Fairfax County.
- b) At the time of issuance of the first Building Permit, Applicant shall contribute \$9,378 to the Board of Supervisors for capital improvements to the public schools in the Marshall High School pyramid and/or to Cluster II schools that encompass this area at the time of Building Permit approval. Said contribution shall be deposited with SDID for transfer to Fairfax County Public Schools. Following approval of this Application and prior to the Applicant's payment of the amounts set forth in this Proffer, if Fairfax County should increase the ratio of students per high rise multifamily unit or the amount of the contribution per student, the Applicant shall increase the amount of the contribution for that phase of development to reflect the then current ratio and/or contribution. If the County should decrease the ratio or contribution amount, the Applicant shall provide the greater of the two amounts.

- c) Prior to the issuance of the first Building Permit, the Applicant shall contribute to the Fairfax County Housing Trust Fund a sum equal to one-half of one percent (0.5%) of the value of all of the units approved on the property. The percentage shall be based on the aggregate sales price of all of the units subject to the contribution, as if all of those units were sold at the time of the issuance of the first building permit, and is estimated through comparable sales of similar type units. The projected sales price shall be as determined by the Department of Housing and Community Development (HCD) in consultation with the Applicant to assist the County in its goal to provide affordable dwellings.

## **8. Escalation in Contribution Amounts**

For all proffers specifying contribution amounts or budgets for operational expenses, the contribution and/or budget amount shall escalate on a yearly basis from the base year of 2013 and change effective each January 1 thereafter, based on changes in the Consumer Price Index for all urban consumers (not seasonally adjusted) ("CPI-U"), both as permitted by Virginia State Code Section 15.2-2303.3.

## **9. Architecture**

The design and architecture of the approved units shall be in substantial conformance with the illustrative elevations contained in the GDP, or of comparable quality. The Applicant reserves the right to use an alternative product than what is shown on the illustrative elevations provided it is consistent with the illustrative elevations. The exterior facades of the new homes constructed on the site shall be covered with masonry (cultured stone, stone or brick) from finished grade to first floor on all four sides. Masonry and/or cementitious siding (e.g., HardiPlank by James Hardie Building Products), or a combination thereof shall be applied from the first floor to the roof line. All units shall be limited to a maximum of thirty-five (35) feet in height as measured in the Fairfax County Zoning Ordinance.

Further, the dwelling on Lot 5 shall incorporate a minimum of 50% (not including trim, gutter, etc.) masonry materials on the rear.

## **10. Green Building**

Qualification in accordance with ENERGY STAR<sup>®</sup> for Homes as determined by the submission of documentation to the Environment and Development Review Branch of DPZ from a home energy rater certified through the Residential Energy Services Network (RESNET) program that demonstrates that the dwelling unit has attained the ENERGY STAR<sup>®</sup> for Homes qualification prior to issuance of the Residential Use Permit.

## **11. Lighting and Signs**

- a) All exterior lighting shall be in conformance with Part 9 of Article 14 of the Zoning Ordinance.
- b) No temporary signs (including "Popsicle" style paper or cardboard signs) which are prohibited by Article 12 of the Zoning Ordinance, and no signs which are prohibited by Chapter 7 of Title 33.1 or Chapter 8 of Title 46.2 of the Code of Virginia shall be placed on or off-site by the Applicant or at the Applicant's direction to assist in the initial marketing and sale of homes on the Property. Furthermore, the Applicant shall direct its agents and employees involved in marketing and/or home sales for the Property to adhere to this Proffer.

## 12. Telecommuting

All dwellings shall be pre-wired with broadband, high capacity data/network connections in multiple rooms, in addition to standard phone lines.

## 13. Universal Design

At the time of initial purchase, the following Universal Design options shall be offered to each purchaser at no additional cost: step-less entry from the garage to house or into the front door, main doors on 1<sup>st</sup> floor level 36" wide, lever door handles instead of knobs, light switches 44"-48" high, thermostats a maximum of 48" high, and/or electrical outlets a minimum of 18" high.

At the time of initial purchase, additional Universal Design options shall be offered to each purchaser at the purchaser's sole cost. These additional options may include, but not be limited to, first floor bedroom and 1<sup>st</sup> floor bathroom, clear space under the kitchen counters, curb less shower (or shower with a curb of less than 4.5" high), five foot turning radius near 1<sup>st</sup> floor bathroom commode, grab bars in 1<sup>st</sup> floor bathroom that are ADA compliant, 1<sup>st</sup> floor bathroom console sink in lieu of cabinet style vanity.

## 14. Other

- a) During development of the subject site, the telephone number of the site superintendent that shall be present on-site during construction shall be provided to the Hunter Mill District Supervisor's Office.
- b) Outdoor construction activity shall be limited to between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday and 8:00 a.m. and 5:00 p.m. on Saturdays. No outdoor construction activities shall be permitted on Sundays or on federal holidays. The site superintendent shall notify all employees and subcontractors of these hours of operation and shall ensure that the hours of operation are respected by all employees and subcontractors. Construction hours shall be posted on-site in both English and Spanish. This proffer applies to the original construction only and not to future additions and renovations by homeowners.
- c) Any extension into the minimum required side and rear yards for covered and uncovered decks shall be permitted in accordance with Section 2-412 of the Fairfax County Zoning Ordinance. Restrictions placed on the location of covered and uncovered decks per Section 2-412 of the Zoning Ordinance shall be disclosed to all prospective homeowners as a disclosure memorandum prior to entering into a contract of sale, included in the Homeowner's Association documents, and included as a covenant in the deed of subdivision. In accordance with the Zoning Ordinance, any sunrooms or enclosed porches may not encroach into the minimum required setbacks as shown on Sheet 2 of the GDP. This shall be disclosed to all prospective homeowners as a disclosure memorandum prior to entering into a contract of sale, included in the Homeowner's Association documents, and included as a covenant in the deed of subdivision.
- d) The Applicant shall include the Approved Landscaping Plan from the Subdivision Plan, including a detail for each lot that clearly identifies trees to be preserved, any Maintenance Responsibilities for the proposed vegetation (to be prepared by a Certified Arborist) and information regarding the County's Tree Conservation Ordinance to all prospective homeowners. This shall be provided to all prospective homeowners in a disclosure memorandum prior to entering into a contract of sale, included in the Homeowner's Association documents, and included as a covenant in the deed of subdivision.

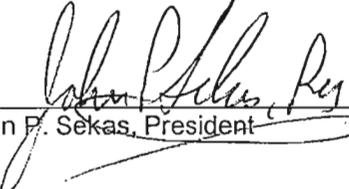
e) As part of the development of the subject property, the Applicant shall record a variable width private tree preservation easement behind lots 1-5 and as generally shown on the GDP. The purpose of this easement is to preclude the removal of any existing and proposed vegetation. No disturbance, including but not limited to recreational amenities, or building shall occur in this easement except for necessary utility construction, as required by Fairfax County, planting of additional vegetation in order to enhance the capacity of the area to buffer adjacent property, or for the removal of trees identified as diseased, dead, dying, or hazardous and selective maintenance to remove noxious and poisonous vegetation. Any work proposed within the easement shall be reviewed and approved by Fairfax County Urban Forest Management Division staff. The location and purpose of this easement shall be disclosed to all prospective homeowners as a disclosure memorandum prior to entering into a contract of sale and shall also be included in the Homeowner's Association documents. This easement shall be noted as a covenant in the deed of subdivision and recorded in the Land Records of Fairfax County. This easement shall be granted to and enforced by the HOA and shall run with the land.

f) Subject to approval by DPWES and the lot owner, the Applicant may vacate and relocate the 10' sanitary sewer easement (Deed Book 9664, Page 1574) located on Tax Map 28-4 ((34)) Lot 10. The Applicant shall work with the homeowner to relocate the 10' easement further south and away from the dwelling on Lot 10. Any options to relocate this easement shall not result in the removal of vegetation shown to be preserved on the GDP.

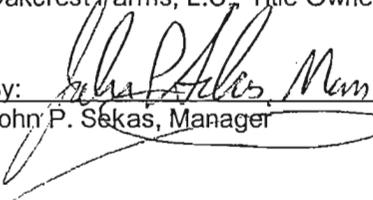
g) In the event SWM/BMP is provided offsite as described in Proffer 6E, the Applicant shall utilize Outlot A as open space to be maintained by the HOA for the subdivision. The Applicant reserves the right to modify the shape and location of this open space parcel provided there is no reduction in the size of the open space parcel.

Signatures:

Sekas Homes, Ltd., Applicant, Tax Map 028- 4 ((1)) Parcel 12

By:   
John P. Sekas, President

Oakcrest Farms, L.C., Title Owner of Tax Map 028- 4 ((1)) Parcel 12

By:   
John P. Sekas, Manager







**PLANTING SCHEDULE**

SYMBOL	TYPE	SIZE
	LARGE EVERGREEN	6'-8' HT.
	LARGE DECIDUOUS	2" CAL.
	CAT. 4 DECIDUOUS (ENERGY CONSERV. CREDIT)	2" CAL.

THE LANDSCAPING DEPICTED HEREIN SHALL CONSIST OF NATIVE AND PROVEN DESIRABLE SPECIES WHICH INCLUDE BUT ARE NOT LIMITED TO EASTERN RED CEDAR, NORWAY SPRUCE, AMERICAN HOLLY, RED THORN, HILSON OAK, RIVER BIRCH, BLACK OAK, DOGWOOD, JAPANESE MAPLE, AND CHERRY. THE SPECIFIC TREE TYPES AND LOCATION SHALL BE DESIGNATED ON A LANDSCAPE PLAN SUBMITTED WITH THE SUBDIVISION PLAN. THE TREES SHOWN HEREON ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE APPLICANT RESERVES THE RIGHT TO MODIFY THE SPECIES AND LOCATION FROM THAT PROVIDED HEREIN AT TIME OF FINAL SUBDIVISION PLAN AND SUBJECT TO APPROVAL BY LIFT.

**FAIRFAX COUNTY PUBLIC FACILITIES MANUAL**

Trunks of trees to be planted or preserved for energy conservation must be placed within the zone in order to receive credit.

Place Category 4 deciduous trees further from buildings.

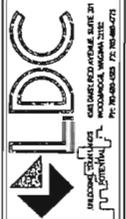
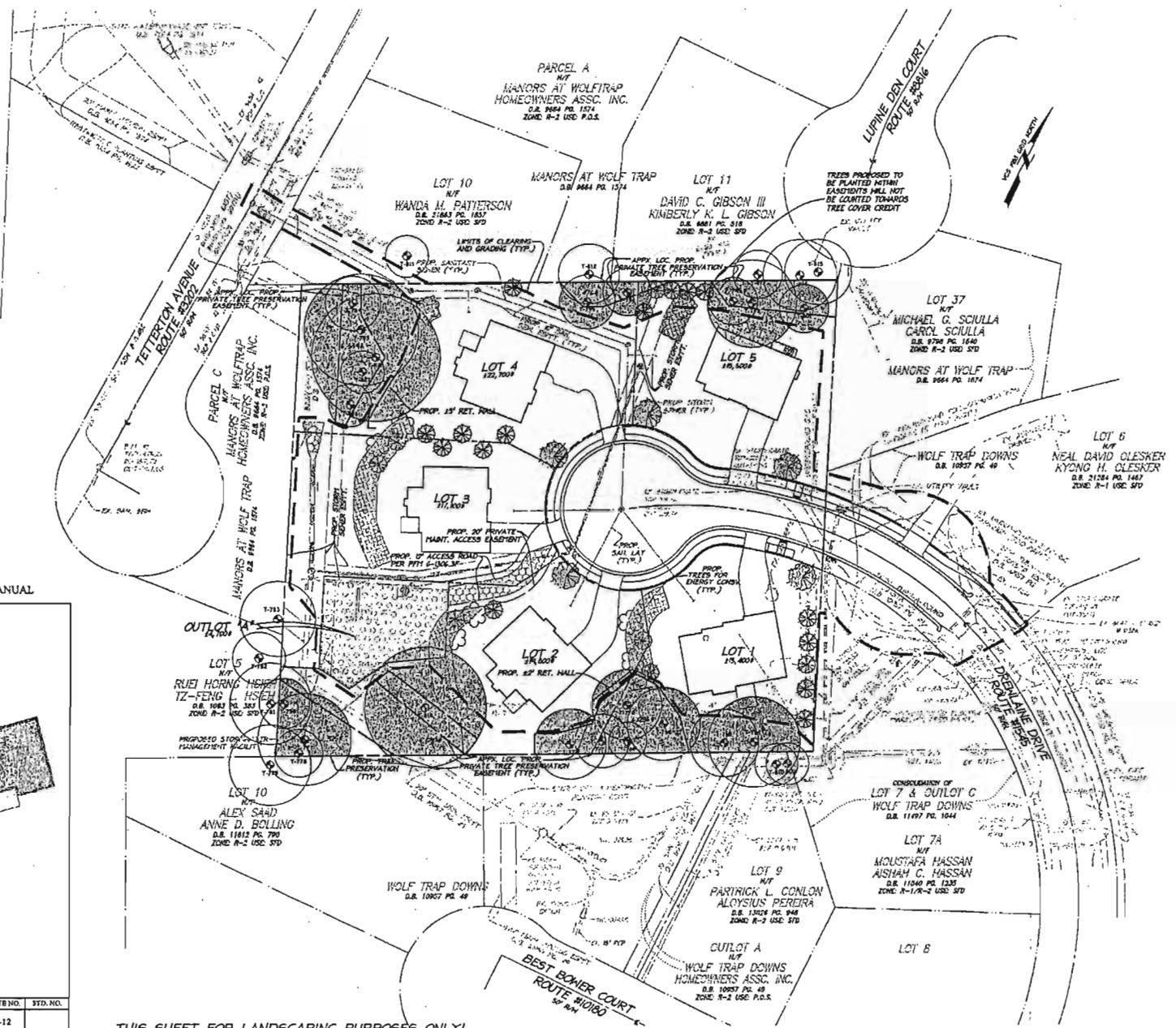
Place Category 3 deciduous trees closer to buildings.

13 ft energy conservation credit tree placement zone

PLATE NO.	STD. NO.
4-12	

ENERGY CONSERVATION TREE CANOPY CREDIT

THIS SHEET FOR LANDSCAPING PURPOSES ONLY!



LANDSCAPE PLAN

WOLF TRAP DOWNS, SEC. 2

NO.	DATE	DESCRIPTION	BY	REVISION APPROVED BY	DATE
1	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
2	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
3	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
4	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
5	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
6	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
7	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
8	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
9	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
10	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
11	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
12	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
13	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
14	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
15	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
16	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
17	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
18	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
19	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		
20	07/10/2012	ISSUED FOR PERMITS	W. M. HARRIS		

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE.

W. M. HARRIS  
LANDSCAPE DESIGN CONSULTANTS

SCALE: 1" = 30'

SHEET 2A OF 8

DATE: JULY 2012  
DRAFT: KRM  
CHECK: WJH  
FILE NUMBER: 0040-1-0-308











**STORMWATER MANAGEMENT NARRATIVE**

THE STORMWATER MANAGEMENT REQUIREMENTS FOR THE SUBJECT PROPERTY SHALL BE SATISFIED VIA THE CONSTRUCTION OF AN INFILTRATION TRENCH. THIS FACILITY SHALL BE DESIGNED IN ACCORDANCE WITH THE PUBLIC FACILITIES MANUAL (PFM).

THE INFILTRATION TRENCH HAS BEEN DESIGNED FOR THE 10 YEAR 2 HOUR STORM IN ORDER TO PROVIDE DETENTION FOR THE 1, 2 & 10 YEAR STORM EVENTS AND TO MEET BMP REQUIREMENTS. THE SITE CURRENTLY HAS SEVERAL EXISTING BUILDINGS, PAVED SURFACES, AND SOME TREES. CURRENTLY, APPROXIMATELY 7.27 CFS OF RUNOFF IS LEAVING THE SUBJECT PROPERTY UNCONTROLLED AND UNTREATED, WITH THE PROPOSED ATTENUATION. THE POST DEVELOPMENT RUNOFF WILL BE REDUCED SUBSTANTIALLY. THEREFORE, THERE WILL BE A REDUCTION IN RUNOFF LEAVING THE PROPERTY AS A RESULT OF THE PROPOSAL. THE TRENCH HAS BEEN SIZED TO PROVIDE WATER QUALITY AND QUANTITY CONTROL FOR THE SUBJECT PROPERTY AND TO PROVIDE STORAGE FOR THE 1-YEAR STORM VOLUME AS OUTLINED IN THE DETENTION METHOD FOR ADEQUATE OUTFALL, PFM SECTION 6-0203.AC.

ON JULY 23, 2007, TERRA ENGINEERING SERVICES, INC. COMPLETED INFILTRATION TESTING IN THE VICINITY OF THE INFILTRATION TRENCH. FOR THIS FIELD INVESTIGATION, NO ROCKS OR GROUNDWATER WAS ENCOUNTERED THROUGH A DEPTH OF 10 FEET, WHICH IS APPROX. 4.0 FEET BELOW THE PROPOSED BOTTOM OF THE INFILTRATION TRENCH. AN AVERAGE INFILTRATION RATE GREATER THAN THE MINIMUM REQUIRED (2.0 HOURS PER INCH OBSERVED) WAS OBSERVED. THEREFORE, LDC BELIEVES THE RESULTS OF THIS SUBSURFACE EXPLORATION ILLUSTRATES ADEQUACY OF THE PROPOSED INFILTRATION TRENCH.

THE FINAL DESIGN OF THE INFILTRATION TRENCH IS SUBJECT TO FURTHER REVIEW BY A GEOTECHNICAL ENGINEER AND SOIL ENGINEERING. ADDITIONAL INFILTRATION TESTING WILL OCCUR AT THE TIME OF SUBDIVISION PLAN SUBMISSION PER THE REQUIREMENTS OF THE PFM. ALL INFILTRATION TESTING SHALL BE IN ACCORDANCE WITH CHAPTER 5, STANDARD 5.10 OF THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK.

THE FACILITY SHALL BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION AND THE MAINTENANCE SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS.

THE PROPOSED DWELLING ON LOT 2 IS NOT WITHIN THE 500' BREAK IRADIATION EDGE OF THE EXISTING UPSTREAM POND.

**DRAINAGE DIVIDE DIVERSION STATEMENT:**

THE PROJECT IS LOCATED WITHIN THE DIFFICULT RUN WATERSHED. THE PROPOSED CHANGES IN THE NATURAL DRAINAGE DIVIDES ARE PROPOSED AS A PART OF THIS PROJECT. THE CHANGES ARE INTENDED TO ASSIST IN COLLECTING STORMWATER DISCHARGE IN ORDER TO MEET DETENTION, BMP & ADEQUATE OUTFALL REQUIREMENTS AS OUTLINED IN THE PFM. DETENTION RELEASE RATE COMPUTATIONS WILL BE PROVIDED ON THE SUBDIVISION PLAN THAT DEMONSTRATE THAT THE POST DEVELOPED DESIGN TO ALL OUTFALLS IS LESS THAN THE PREDEVELOPED AND NO ADVERSE IMPACTS WILL BE EXPERIENCED BY ANY DOWNSTREAM PROPERTIES. NO CHANGES ARE PROPOSED TO ANY FUTURE DRAINAGE DIVIDES. THESE FUTURE DIVERSIONS WITHIN AN INDIVIDUAL FUTURE WATERSHED AREA ARE ALLOWED PER PFM SECTION 6-0203.3A (SEE THE OUTFALL ANALYSIS ON THIS SHEET).

**STORMWATER MANAGEMENT CHECKLIST**

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

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

This information is required under the following Zoning Ordinance paragraphs:  
 Special Permits (S-011, S-1, S-2, S-3)  
 Special Rezonings (R-011, S-1, S-2, S-3)  
 Special Rezonings (S-011, S-1, S-2, S-3)  
 Development Plans (P-011, S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-29, S-30, S-31, S-32, S-33, S-34, S-35, S-36, S-37, S-38, S-39, S-40, S-41, S-42, S-43, S-44, S-45, S-46, S-47, S-48, S-49, S-50, S-51, S-52, S-53, S-54, S-55, S-56, S-57, S-58, S-59, S-60, S-61, S-62, S-63, S-64, S-65, S-66, S-67, S-68, S-69, S-70, S-71, S-72, S-73, S-74, S-75, S-76, S-77, S-78, S-79, S-80, S-81, S-82, S-83, S-84, S-85, S-86, S-87, S-88, S-89, S-90, S-91, S-92, S-93, S-94, S-95, S-96, S-97, S-98, S-99, S-100)  
 Amendments (A-001, A-002, A-003, A-004, A-005, A-006, A-007, A-008, A-009, A-010, A-011, A-012, A-013, A-014, A-015, A-016, A-017, A-018, A-019, A-020, A-021, A-022, A-023, A-024, A-025, A-026, A-027, A-028, A-029, A-030, A-031, A-032, A-033, A-034, A-035, A-036, A-037, A-038, A-039, A-040, A-041, A-042, A-043, A-044, A-045, A-046, A-047, A-048, A-049, A-050, A-051, A-052, A-053, A-054, A-055, A-056, A-057, A-058, A-059, A-060, A-061, A-062, A-063, A-064, A-065, A-066, A-067, A-068, A-069, A-070, A-071, A-072, A-073, A-074, A-075, A-076, A-077, A-078, A-079, A-080, A-081, A-082, A-083, A-084, A-085, A-086, A-087, A-088, A-089, A-090, A-091, A-092, A-093, A-094, A-095, A-096, A-097, A-098, A-099, A-100)

- 1. Plot is at a minimum scale of 1"=50' (unless it is depicted on one sheet with a minimum scale of 1"=100').
- 2. A graphic depicting the stormwater management facilities and limits of clearing and grading accommodates the stormwater management facilities, shows drainage pipe systems and extent protection, pond spillways, access roads, site utility, energy dissipation devices, and stream stabilization measures as shown on Sheet 2.
- 3. Provide:  

Facility Name	On-site area (sq ft)	Off-site area (sq ft)	Drainage (cfs)	Footprint (sq ft)	Storage (cu ft)	if pond, dam height (ft)
INFILTRATION TRENCH (1) 161 AC	3,000 AC	12.8 AC	14,232 CF	14,232 SF	14,232 CF	N/A
EX. SWAMP POND (2) 1387 DWP						
TOTALS						
- 4. On-site drainage channels, culverts and pipe systems are shown on Sheet 2, 3 & 4. Off-site drainage channels and pipe systems are shown on Sheet 2, 3 & 4.
- 5. Maintenance access (road) to stormwater management facilities are shown on Sheet 2, 3 & 4. Type of maintenance access road surface noted on the plan is GRASS, PAVEMENT, GRAVEL, ETC.
- 6. Landscaping and tree placement shown in and near the stormwater management facility is shown on Sheet 2, 3 & 4.
- 7. A "stormwater management manual" which contains a description of how detention and best management practices requirements will be met is provided on Sheet 2, 3 & 4.
- 8. A description of the existing conditions at each numbered site noted extend 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 (MID) shall be provided on Sheet 2, 3 & 4.
- 9. A description of how the runoff measurements, including soil surface drainage areas of the Public facilities Manual will be satisfied is provided on Sheet 2, 3 & 4.
- 10. Existing topography with maximum contour intervals of two (2) feet and a note as to whether it is an survey or field run is provided on Sheet 2, 3 & 4.
- 11. A subsection meter is requested for \_\_\_\_\_.
- 12. Stormwater management is not required because \_\_\_\_\_.

**OUTFALL NARRATIVE**

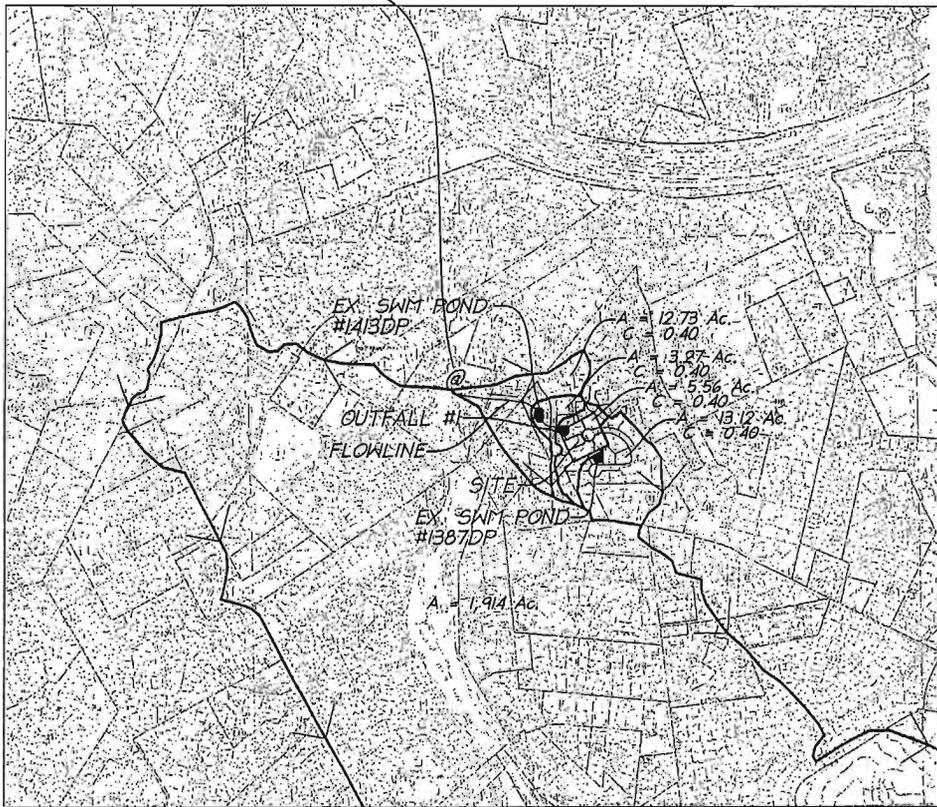
THE SUBJECT PROPERTY IS LOCATED WITHIN THE DIFFICULT RUN WATERSHED. THE SUBJECT PROPERTY MAINTAINS ONE STORM DRAINAGE OUTFALL. THERE ARE NO EXISTING FLOODPLAIN OR RPA AREAS ON THE SUBJECT PROPERTY. AS A RESULT OF THE DEVELOPMENT OF THE SUBJECT PROPERTY AN INCREASE IN RUNOFF WILL BE EXPERIENCED. AN INFILTRATION TRENCH IS PROPOSED TO MEET DETENTION REQUIREMENTS FOR THE SUBJECT PROPERTY. THE LAYOUT OF THE SITE HAS BEEN DESIGNED TO MINIMIZE THE IMPACTS TO DOWNSTREAM PROPERTIES. THE INTENT SHALL BE TO MAINTAIN THE EXISTING DRAINAGE PATTERNS AND TO NOT HAVE A NEGATIVE IMPACT ON ADJACENT PROPERTIES. NO DOWNSTREAM WATER REQUIREMENTS ARE WITHIN THE INFLUENCE AREA OF THE PROPOSED PROJECT AND NO BATHYMETRIC NOTIFICATIONS OR SURVEYS ARE REQUIRED.

OUTFALL #1 DISCHARGE LEAVES THE SUBJECT PROPERTY VIA AN EXISTING STORM GUTTER SYSTEM BUILT IN ASSOCIATION WITH THE "WATERS AT HOLE TRAP" SUBDIVISION PLAN (1986-50-03). THE EXISTING STORM GUTTER SYSTEM HAS ADEQUATE CAPACITY FOR THE DISCHARGE FROM THE SUBJECT PROPERTY AND CONVEYS THE DISCHARGE TO AN EXISTING SHOT POND ALSO BUILT IN ASSOCIATION WITH THE "WATERS AT HOLE TRAP" SUBDIVISION PLAN (SHOT POND #1400P). THE EXISTING DRY DETENTION POND DISCHARGES INTO AN EXISTING CONVEYANCE CHANNEL WITHIN AN EXISTING STORMWATER MANAGEMENT ESTABLISHMENT (D.B. #64, P.G. 1874) AND THEN OUTFALLS TO THE NORTHWEST INTO AN EXISTING DRAINAGE EASEMENT ON THE 1.000' SUBDIVISION (D.B. #16, P.G. 78) AND THEN INTO AN EXISTING STORM DRAINAGE EASEMENT ON THE SPRING LAKE SECTION 2 SUBDIVISION (D.B. #174, P.G. 23) AND THEN INTO THE WOLFTRAP CREEK FLOODPLAIN (D.B. #540, P.G. 348). STORMWATER MANAGEMENT AND BEST MANAGEMENT PRACTICES FOR THE SITE ARE PROVIDED BY THE PROPOSED INFILTRATION TRENCH (SEE "STORMWATER MANAGEMENT INFORMATION" ON THIS SHEET FOR INFILTRATION TRENCH INFORMATION). CROSS-SECTIONS WILL BE PROVIDED FOR THE CONVEYANCE CHANNEL TO WOLFTRAP CREEK TO DEMONSTRATE THAT AN ADEQUATE OUTFALL EXISTS FOR THE SUBJECT PROPERTY PER PFM SECTION 6-0203.

THIS OUTFALL CONVEYS 2.50 ACRES OF DRAINAGE FROM THE SUBJECT PROPERTY IN THE PRE-DEVELOPED CONDITION. AS A RESULT OF THE PROPOSED INFILTRATION TRENCH, DETENTION OF THE 100 AND 10 YEAR STORM EVENT WILL BE PROVIDED. THE DETENTION METHOD FOR ADEQUATE OUTFALL WILL BE USED AS OUTLINED IN PFM SECTION 6-0203.3A. STORAGE OF THE 1-YEAR STORM VOLUME WILL BE PROVIDED IN THE PROPOSED INFILTRATION TRENCH AND THE DISCHARGE FROM THE SITE SHALL BE REDUCED BY THE REQUIRED PROPORTIONAL IMPROVEMENT AS OUTLINED IN PFM SECTION 6-0203.3A. DEFINED CHANNEL OUTFALL REQUIREMENTS FOR THIS OUTFALL WILL BE DEMONSTRATED BY CROSS-SECTIONS FROM THE OUTFALL FROM THE SITE TO THE WOLFTRAP CREEK FLOODPLAIN AND THE EXISTENCE OF AN EXISTING STORM GUTTER SYSTEM. THE EXTENT OF REVIEW FOR THE SITE IS WHERE THE CONVEYANCE CHANNEL JOINS THE WOLFTRAP CREEK FLOODPLAIN AS DEFINED BY THE TOTAL DRAINAGE AREA BEING 100 TIMES THE SUBJECT PROPERTY AREA AS OUTLINED IN PFM SECTIONS 6-0203.1 & 6-0203.2B. AT THE POINT WHERE THE CONVEYANCE CHANNEL FROM THE EXISTING SHOT POND JOINS WITH WOLFTRAP CREEK, THE TOTAL DRAINAGE AREA IS 1,900 ACRES WHICH IS GREATER THAN 100 TIMES THE DEVELOPMENT SITE AREA OF 2.50 ACRES MAKING THIS THE EXTENT OF THE STUDY AREA FOR THE OUTFALL. THE EXISTING FLOODPLAIN CHANNEL HAS BEEN INVESTIGATED AND FOUND TO HAVE A DEFINED BED AND BANK CHANNEL. THIS OUTFALL IS ADEQUATE IN ACCORDANCE WITH SECTIONS 6-0203.1, 6-0203.3 & 6-0203.4 OF THE PUBLIC FACILITIES MANUAL.

IT IS OUR PROFESSIONAL OPINION THAT ALL OUTFALLS ARE ADEQUATE IN ACCORDANCE WITH THE PFM.

① EXTENT OF REVIEW FOR OUTFALL #1 SEE THIS SHEET FOR "OUTFALL NARRATIVE"



**DRAINAGE AREA MAP**  
SCALE = 1" = 500'

**STORMWATER MANAGEMENT INFORMATION**

TYPE OF FACILITY = INFILTRATION TRENCH

FACILITY PERFORMANCE = 100% (100%)

INFILTRATION TRENCH #1

APPROXIMATE REQUIRED 10-YEAR VOLUME = 14,200 CF

APPROXIMATE AVAILABLE VOLUME = 14,200 CF

APPROXIMATE SURFACE AREA = 14,200 SF

APPROXIMATE FURNISHED GRADE = 1366.8

APPROXIMATE GRADE FROM BOTTOM TO TOP = 1361.0

**PRE-DEVELOPMENT SUBJECT PROPERTY**

A = 2.50 AC, C = 0.40, 10-YEAR, 1.7-1.85 BMP, 10-12.1 BMP

Q = (0.40)(2.50)(2.50) = 6.25 CFS

Q<sub>d</sub> = (0.40)(1.7)(2.50) = 1.91 CFS

**POST-DEVELOPMENT SUBJECT PROPERTY**

A = 2.50 AC, C = 0.40, 10-YEAR, 1.7-1.85 BMP, 10-12.1 BMP

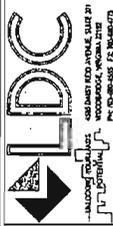
Q = (0.40)(2.50)(2.50) = 6.25 CFS (DETENTION PROVIDED BY INFILTRATION TRENCH #1)

Q = 12.01 AFTER DETENTION

Q = (0.40)(1.7)(2.50) = 1.91 CFS (DETENTION PROVIDED BY INFILTRATION TRENCH #1)

Q = 12.78 AFTER DETENTION

● - DENOTES OUTFALL



STORMWATER MANAGEMENT INFORMATION

WOLF TRAP DOWNS, SEC. 2

WATER MAIN DISTRICT PROJECT GENERAL ENGINEER

NO.	DESCRIPTION	DATE APPROVED	BY
1	DESIGN		
2	REVISION		
3	REVISION		
4	REVISION		
5	REVISION		
6	REVISION		
7	REVISION		
8	REVISION		
9	REVISION		
10	REVISION		

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON NO OTHER CHANGES HAVE BEEN MADE.

*[Signature]*  
 WALTER H. WATSON  
 LICENSE NO. 1101  
 PROFESSIONAL ENGINEER

SCALE: N/A

SHEET 8 OF 8

DATE: MAY, 2007

DRAWN: K714 CHECK: M711

FILE NUMBER: 0204-1-2-3-08



**FOR INFORMATIONAL PURPOSES ONLY!**

THE INFORMATION PROVIDED ON THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY. THE FINAL DESIGN OF THE STORMWATER MANAGEMENT/DESIGN MANAGEMENT PRACTICES FACILITY WILL OCCUR AT THE TIME OF FINAL SUBDIVISION PLANS. THE INFORMATION SHOWN HEREON IS APPROXIMATE. THE APPLICANT RESERVES THE RIGHT TO MAKE ADJUSTMENTS TO THIS INFORMATION AND THE DESIGN WITHOUT THE NEED FOR A PROFFER CONDITION AMENDMENT OR PROFFER INTERPRETATION, PROVIDED IT IS IN ACCORDANCE WITH THE PUBLIC FACILITIES MANUAL.

**1-YEAR STORM VOLUME COMPUTATION FOR I.T.-1**

- PER CHAPTER 5 - VIRGINIA SWF HANDBOOK VOLUME II  
 1. 1-YEAR RAINFALL DEPTH (P) FOR FAIRFAX COUNTY = 2.7 IN  
 2. SOILS DRAINING TO INFILTRATION TRENCH ARE HYDROLOGIC SOIL GROUP "B" 1 "D"  
 (GLENNEL, COODORUS 1 HATBORO, URBAN-WHEATON, 1 WHEATON-GLENNEL)  
 3. RCI = 76 (0.54 AC IMPERVIOUS ROH=6, 0.80 AC OF "B" GRASS ROH=4, 0.17 AC OF "D" GRASS ROH=6)  
 4. TOTAL CONTROLLED DRAINAGE AREA TO INFILTRATION TRENCH = 1.41 ACRES  
 5. S = (ROH/RCI) \* 10 = (1000/76) = 13.16  
 6. RUNOFF Q = ((P-.25)^2)/(S+0.8) = ((2.7-.25)^2)/(13.16+0.8) = 0.20 CFS  
 7. V<sub>10</sub> = AREA/RUNOFF Q = 1.41 AC \* (120 IN/1 FT) IN) = 0.001 AC-FT = 6.74 CF

**2 1/2 YR STORM VOL COMP - OUTFALL #1 (FX FORESTED COND.)**

- PER CHAPTER 5 - VIRGINIA SWF HANDBOOK VOLUME II  
 1. RAINFALL DEPTH (P) FOR FAIRFAX COUNTY = 3.2 IN (2 YR), 6.2 IN (10 YR)  
 2. SOILS DRAINING TO OUTFALL ARE HYDROLOGIC SOIL GROUP "B" 1 "D"  
 (GLENNEL, COODORUS 1 HATBORO, URBAN-WHEATON, 1 WHEATON-GLENNEL)  
 3. WEIGHTED RCI FOR GOOD FORESTED CONDITION = 62  
 (1.76 AC SOIL GROUP "B" ROH=55, 0.71 AC SOIL GROUP "D" ROH=77)  
 4. TOTAL DRAINAGE AREA OF SITE TO OUTFALL #1 = 2.50 ACRES  
 5. S = (ROH/RCI) \* 10 = (1000/62) = 16.13  
 6. RUNOFF Q = ((P-.25)^2)/(S+0.8) = ((3.2-.25)^2)/(16.13+0.8) = 0.16 CFS  
 7. V<sub>10</sub> = AREA/RUNOFF Q = 2.50 AC \* (120 IN/1 FT) IN) = 0.004 AC-FT  
 8. YEAR: 10 YEAR  
 9. RUNOFF Q = ((P-.25)^2)/(S+0.8) = ((6.2-.25)^2)/(16.13+0.8) = 1.53 CFS  
 7. V<sub>10</sub> = AREA/RUNOFF Q = 2.50 AC \* (120 IN/1 FT) IN) = 0.30 AC-FT

**2 1/2 YR STORM VOLUME COMP - OUTFALL #1 (DEVELOPED)**

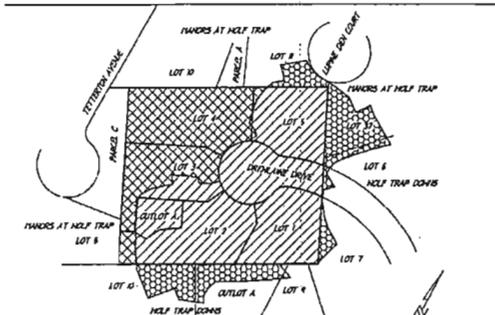
- PER CHAPTER 5 - VIRGINIA SWF HANDBOOK VOLUME II  
 1. RAINFALL DEPTH (P) FOR FAIRFAX COUNTY = 3.2 IN (2 YR), 6.2 IN (10 YR)  
 2. SOILS DRAINING TO OUTFALL ARE HYDROLOGIC SOIL GROUP "B" 1 "D"  
 (GLENNEL, COODORUS 1 HATBORO, URBAN-WHEATON, 1 WHEATON-GLENNEL)  
 3. WEIGHTED RCI FOR DEVELOPED SITE = 76  
 (0.84 AC IMPERVIOUS ROH=6, 1.18 AC GRASS SOIL GROUP "B" ROH=4, 0.43 AC GRASS SOIL GROUP "D" ROH=6)  
 4. TOTAL DRAINAGE AREA OF SITE TO OUTFALL #1 = 2.50 ACRES  
 5. S = (ROH/RCI) \* 10 = (1000/76) = 13.16  
 6. RUNOFF Q = ((P-.25)^2)/(S+0.8) = ((3.2-.25)^2)/(13.16+0.8) = 0.15 CFS  
 7. V<sub>10</sub> = AREA/RUNOFF Q = 2.50 AC \* (120 IN/1 FT) IN) = 0.30 AC-FT  
 8. YEAR: 10 YEAR  
 9. RUNOFF Q = ((P-.25)^2)/(S+0.8) = ((6.2-.25)^2)/(13.16+0.8) = 2.70 CFS  
 7. V<sub>10</sub> = AREA/RUNOFF Q = 2.50 AC \* (120 IN/1 FT) IN) = 0.563 AC-FT
- REDUCTION REQUIRED FOR PROPORTIONAL IMPROVEMENT PER PFI SECTION 6-1000.4(1)(F):  
 10 YEAR: R<sub>1</sub> = (1 - (0.563/0.30)) \* 100 = 60%  
 10 YEAR: R<sub>1</sub> = (1 - (0.30/0.563)) \* 100 = 47%
- SEE DETENTION RELEASE RATE COMPUTATIONS FOR REDUCTION.

**DETENTION RELEASE RATES - OUTFALL #1**

- PREDEVELOPED SITE CONDITIONS - OUTFALL #1**  
 DISTINGUISH AREA DRAINING TO OUTFALL #1  
 AREA = 2.50 AC, C = 0.45, T = 5 MIN  
 2 YEAR STORM (NO REDUCTION REQUIRED, SEE COFF.)  
 C = 0.45, H = 0.49 MPH, A = 0.91 AC  
 10 YEAR STORM (REDUCTION REQUIRED, SEE COFF.)  
 C = 0.45, H = 0.37 MPH, A = 2.50 AC  
 10 YEAR STORM (REDUCTION REQUIRED, SEE COFF.)  
 C = 0.45, H = 0.45 MPH, A = 0.37 AC, T = 5 MIN

**POST DEVELOPMENT SITE CONDITIONS - OUTFALL #1**

- CRUDE AREA DRAINING OFF UNCONTROLLED TO OUTFALL #1  
 INFILTRATION TRENCH #1 (ON-SITE) PROVIDES DETENTION FOR THE 1 1/2 YEAR STORM EVENTS  
 TOTAL POST DRAINAGE AREA = 2.50 AC  
 UNCONTROLLED AREA = 0.84 AC, C = 0.45, T = 5 MIN  
 2 YEAR STORM  
 C = 0.45, H = 0.49 MPH, A = 0.91 AC  
 10 YEAR STORM (REDUCTION REQUIRED, SEE COFF.)  
 C = 0.45, H = 0.37 MPH, A = 2.50 AC  
 10 YEAR STORM (REDUCTION REQUIRED, SEE COFF.)  
 C = 0.45, H = 0.45 MPH, A = 0.37 AC, T = 5 MIN



**BYP FACILITY DESIGN CALCULATIONS**

1. WATERSHED IDENTIFICATION

SUBAREA DESIGNATION AND DESCRIPTION	SQ FT	ACRES	BYP TRAP WATSON
A <sub>1</sub> - DEVELOPED BY CONTROLS (INFILTRATION TRENCH #1)	0.54	1.21	☐
A <sub>2</sub> - DEVELOPED W/OUT CONTROLS (OUTFALL #1)	0.43	0.99	☐
A <sub>3</sub> - OFF-SITE UNCONTROLLED TO I.T. #1	0.40	0.92	☐

BYP MAP 1"=100'

**2. WEIGHTED C<sub>f</sub> FACTOR FOR THE SITE**

- (A) AREA OF THE SITE (A) 2.50 ACRES  
 (B) SUBAREA DESIGNATION AND DESCRIPTION  

SUBAREA DESIGNATION	TYPE	AREA (A)	C <sub>f</sub> FACTOR	PRODUCT
A <sub>1</sub> - DEVELOPED BY CONTROLS (INFILTRATION TRENCH #1)	1	0.54	1.0	0.54
A <sub>2</sub> - DEVELOPED W/OUT CONTROLS (OUTFALL #1)	2	0.43	0.8	0.34
A <sub>3</sub> - OFF-SITE UNCONTROLLED TO I.T. #1	3	0.40	0.5	0.20

 (C) WEIGHTED AVERAGE C<sub>f</sub> FACTOR (Σ(A<sub>i</sub>C<sub>f</sub>)/A) = (C) 0.50 (D) TOTAL = 1.25

**3. IMPERVIOUS PERCENTAGE FOR THE SITE**

SUBAREA DESIGNATION	TYPE	AREA (A)	IMP. PERCENTAGE	PRODUCT
A <sub>1</sub> - DEVELOPED BY CONTROLS (INFILTRATION TRENCH #1)	1	0.54	100%	0.54
A <sub>2</sub> - DEVELOPED W/OUT CONTROLS (OUTFALL #1)	2	0.43	100%	0.43
A <sub>3</sub> - OFF-SITE UNCONTROLLED TO I.T. #1	3	0.40	0%	0.00

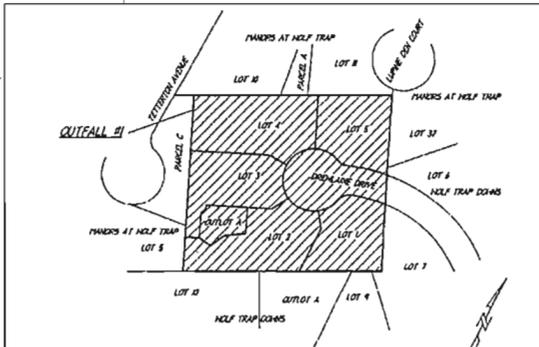
(C) TOTAL = 0.97

\* NOTE: AN INFILTRATION TRENCH DESIGNED FOR THE 1 1/2 YEAR STORM EVENTS PROVIDES THE PROPORTIONAL REDUCTION EFFICIENCY & PROVIDES DETENTION FOR THE 1 1/2 YEAR STORM EVENTS.

**4. COMPLIANCE WITH IMPERVIOUS REDUCTION REQUIREMENT**

REQUIRED IMPERVIOUS REDUCTION PER WATERSHED	40%
IMPERVIOUS REDUCED FROM LINE (4) ABOVE	43.6%

1 IMPERVIOUS REDUCTION REQUIREMENT HAS BEEN MET

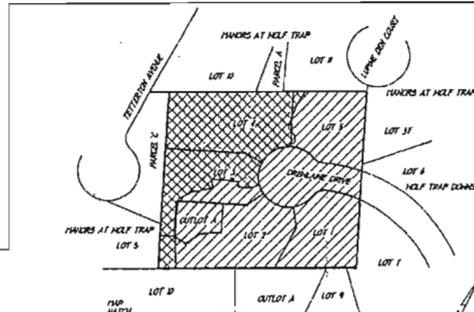


AREA DESCRIPTION

AREA DESCRIPTION	ACRES	C <sub>f</sub> FACTOR	IMP. WATSON
PREDEVELOPED SITE AREA TO OUTFALL #1	2.50	0.40	☐

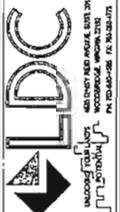
PREDEVELOPED DRAINAGE AREA MAP 1"=100'

UNCONTROLLED AREA NOT DRAINING TO I.T. #1 DRAINING TOWARDS OUTFALL #1 = 0.84 ACRES, C<sub>f</sub> = 0.50  
 CONTROLLED AREA DRAINING TO INFILTRATION TRENCH #1 DRAINING TOWARDS OUTFALL #1 = 1.66 AC, C<sub>f</sub> = 0.54  
 POST DEVELOPED DRAINAGE AREA MAP 1"=100'



MAP LEGEND

☐	UNCONTROLLED AREA NOT DRAINING TO I.T. #1 DRAINING TOWARDS OUTFALL #1
☐	CONTROLLED AREA DRAINING TO INFILTRATION TRENCH #1 DRAINING TOWARDS OUTFALL #1



INFILTRATION TRENCH SUPPLEMENTAL INFORMATION

WOLF TRAP DOWN, SEC. 2

FAIRFAX COUNTY, VIRGINIA

NO.	DATE	DESCRIPTION	APPROVED BY

I HEREBY CERTIFY THAT OTHER THAN THE REVISIONS SHOWN HEREON, NO OTHER CHANGES HAVE BEEN MADE TO THIS SHEET.



SCALE: N/A  
 SHEET 8B OF 8  
 DATE: AUG. 2010  
 DRAFTER: CHUCK SOR  
 FILE NUMBER: 11111  
 DRAWN BY: JMM