APPLICATION FORM

For Resource Protection Area (RPA) Encroachment Exceptions Pursuant to Article 6 of the Chesapeake Bay Preservation Ordinance; <u>Public Hearing Required</u>

| Part 1 | I | Property | Information |
|--------|---|-----------------|-------------|
|--------|---|-----------------|-------------|

| Property Owner's Name: 7819 SOUTHDC | OWN RD LLC. |
|--|----------------------------------|
| Property Address: 7819 Southdown F | Road, Alexandria, Va. 22308 |
| Description (Lot# Subdivision): Wellington | Villa, Section 1, Part of lot 15 |
| Project Name: Part of Lot 15, Wellin | |
| Tax Map Number: 1022 18 0015A | |
| Magisterial District: Mount Vernon | Permit # |

Part 2 - Exception Type

| Check One | CBPO Section | Exception Types: (Refer to CBPO for detailed list of qualifications and limitations) | |
|--------------|--------------------|--|--|
| X | 118-6-7 | Loss of buildable area within an RPA on a lot or parcel recorded prior to November 18, 2003. The proposed construction encroaches into the seaward 50 feet of the RPA buffer. | |
| | 118-6-8(a) | Accessory structure within the RPA, where the principal structure was established (i.e. RUP issued) as of July 1, 1993 and the proposed construction encroaches into the 1993 RPA. | |
| | 118-6-8 (b) | Accessory structure in the RPA, where the principal structure on the lot or parcel was established (i.e. RUP issued) between July 1, 1993 and November 18, 2003 and the construction encroaches into the 2003 RPA. | |
| | 118-6-9 | General RPA Encroachment request for encroachments into either the 1993 or 2003 RPA that do not qualify for waivers under CBPO Article 5 and do not qualify under any of the above Sections. | |

Part 3 - General Description of Exception Request

| Acres or Square Feet | Description of Exception Request | |
|--|--|--|
| Property Area (acres or square feet) | 29,914 sf | |
| Disturbed Area in RPA (acres or square feet) | 6,577 | |
| Impervious Area within RPA (acres or square feet) | 4062 | |
| Brief Description of Project and RPA Encroachment | Construction of new home and elevated pool that is attached to the principal Structure | |

| Check here if a Special Exception (SE) and/or Rezoning (RZ) application has been/will be submi | tted. The |
|--|-----------|
| public hearing will be conducted by the Board of Supervisors in conjunction with the SE or RZ hearing. | |

| Exception # | |
|-------------|--|
| | |

Part 4 – Submission Checklist

| Check | CBPO Section | Exception Types: (Refer to CBPO for detailed list of qualifications and limitations) | | |
|-------|---------------------------|---|--|--|
| X | 118-6-5(a) | Four (4) copies of this application form, completed and signed by the applicant. | | |
| х | 118-6-5(b) | Four (4) copies of a Water Quality Impact Assessment (WQIA). The WQIA may be submitted with the application as a combined document. | | |
| x | 118-6-5(c) | Fourteen (14) copies of a plat which meets the submission requirements of Zoning Ordinance Section 9-011, paragraph 2. In addition, four (4) letter size copies of the plat that is suitable for reproduction and distribution. | | |
| х | 118-6-5(d) | Photographs of the property showing existing structures, terrain and vegetation | | |
| х | 118-6-5(e) | Four (4) copies of a map identifying classification of soil types, at a scale of one inch equals five hundred feet (1" = 500'), covering an area at least 500 feet beyond the perimeter of the proposed development. | | |
| X | 118-6-5(f) | A statement of justification which addresses how the proposed development compliwith the factors set forth in Sections 118-6-6(a) through (f). (See Part 5 below). | | |
| x | 118-6-3(c) | A List of property owners, with addresses, to be notified (minimum of 5). Include all properties abutting, immediately across the street from, and within 500 feet of the subject property (including all properties which lie in adjacent municipalities). In addition, the name and address of a Homeowners or Civic Association that is within the immediate area that will be notified. | | |
| n/a | 118-6-3(d) | If the exception is associated with a RZ or SE, the notification shall be conducted concurrently with the RZ or SE notification, and the public hearing will be conducted by the Board of Supervisors. Provide a list of owners, with addresses, to be notified in accordance with Zoning Ordinance Article 18 instead of CBPO Section 118-6-3(c). | | |
| Х | 104-1-3(d) | Application Fees (must be paid at the time of submission of the application) | | |
| x | 101-2-9 and 112-17-109 | Exception request fee: \$204 per lot (not to exceed \$876) for individual lots; \$876 for subdivisions or site plans. | | |
| х | 101-2-9 and 112-17-109 | WQIA fee (if submitted as a combined document): \$432 for single lot, \$1,652.40 for subdivision or site plan, per submission. | | |
| х | 101-2-9 and 112-17-109 | A public hearing is required for all exceptions under Article 6. There is an additional fee of \$438 per exception request. | | |

| Exception # | ‡ | |
|-------------|--------------|--|
| | | |

Part 5 Statement of Justification checklist

| Check | CBPO Section | Exception Types: (Refer to CBPO for detailed list of qualifications and limitations) |
|-------|--------------|---|
| x | 118-6-6(a) | The requested exception to the criteria is the minimum necessary to afford relief. |
| x | 118-6-6(b) | Granting the exception will not confer upon the applicant any special privileges that are denied by this part to other property owners who are subject to it provisions and who are similarly situated. |
| х | 118-6-6(c) | The exception is in harmony with the purpose and intent of this Chapter and is not of substantial detriment to water quality. |
| x | 118-6-6(d) | The exception request is not based upon conditions or circumstances that are self-created or self-imposed. |
| x | 118-6-6(e) | Reasonable and appropriate conditions are imposed, as warranted, that will prevent the allowed activity from causing a degradation of water quality. |
| х | 118-6-6(f) | Other findings, as appropriate and required for the specific exception being applied for, are met. The additional criteria are listed in CBPO Sections 118-6-7(a) through (f), CBPO Section 118-6-8(a)(l) and (2), CBPO Section 118-6-8(b)(l) and (2), or CBPO Section 118-6-9. |

Part 6

All information in this application and all documents submitted in support of this request are correct to the best of my knowledge and belief.

| Applicant Nam | _{ne:} | OWN RD LLC | | (please print) |
|----------------|--|---------------------|-----------------------|----------------|
| Authorized Ag | pent(s): Hamid Mat | in | | ., |
| | ation Address: 4124 W | | , Suite M | |
| City: Chantill | ly | _{State:} | _{ZIP:} 20151 | |
| | 03-378-2101 | | | 02 |
| Email Address | h.matin@pdg- | eng.com | | |
| Business Pho | ne Number: 703-378 | -2102 _{Ce} | Il Phone Number: 703 | 3-307-3588 |
| | | | | |
| SUBMIT TO: | Customer and Technical Site and Addressing Cent 12055 Government Cente | ter | | |

Fairfax, Virginia 22035

4124 Walney Road Suite M Chantilly, Virginia 20151 Metro 703.631.2344 703.378.2101

Fax 703.378.2101

STATEMENT OF JUSTIFICATION RPA EXCEPTION 118-6-7

Wellington Sec. 1, Part Lot 15, Tax Map # 102-2 ((18)-0015A 7819 Southdown Road, Alexandria, Va. 22308

We are requesting your approval of the RPA exception due to the loss of buildable area for the above-mentioned project. The lot was created as part of Wellington Subdivision in 1912, and part of it was conveyed in 1923 by deed. The parcel fronts on west side of Potomac River and is located within Wellington Villa neighborhood.

There is an existing house and outbuildings on this property. According to Fairfax County records the hose was built in 1930. The lot was created and constructed prior to adoption of C-Bay Act.

This project consists of demolishing the existing structures, parking area and driveway, and constructing a new house with a pool.

This project meets the exception criteria outlined in the Chesapeake Bay Ordinance under Article 6, Section 118-6-7. The lot was created prior to July 1, 1993, the proposed land disturbance within RPA is less than 10,000 square feet, the impervious area is less than 5000 square feet, it meet the minimum size and setback requirements of R-2 zoning district, and the existing vegetation is being preserved to extend possible. Given the location of this parcel, which includes frontage on Potomac River, the buildable area of the lot is very limited, and the majority of it is lost to 1993 adopted C-Bay Act regulations.

There is bulkhead along the western shores of Potomac River that ranges approximately four to six feet in height. The wetlands are limited to the face of the bulkhead. There is a 100 year flood plain limit mapped on this property that runs approximately, between 15 to 25 feet west of the bulk head. The bulkhead was surveyed and a 100 feet buffer line was established as depicted on the plan and designated as "Field Located RPA".

With this plan, we are proposing 6,577 square feet of disturbance within RPA. We are also proposing to provide five Urban Planter Boxes and provided vegetated buffer area by providing 16 canopy trees, 32 understory trees, and 172 shrubs as shown on the attached plans.

7819 Southdown Road, Alexandria, Va. 22308

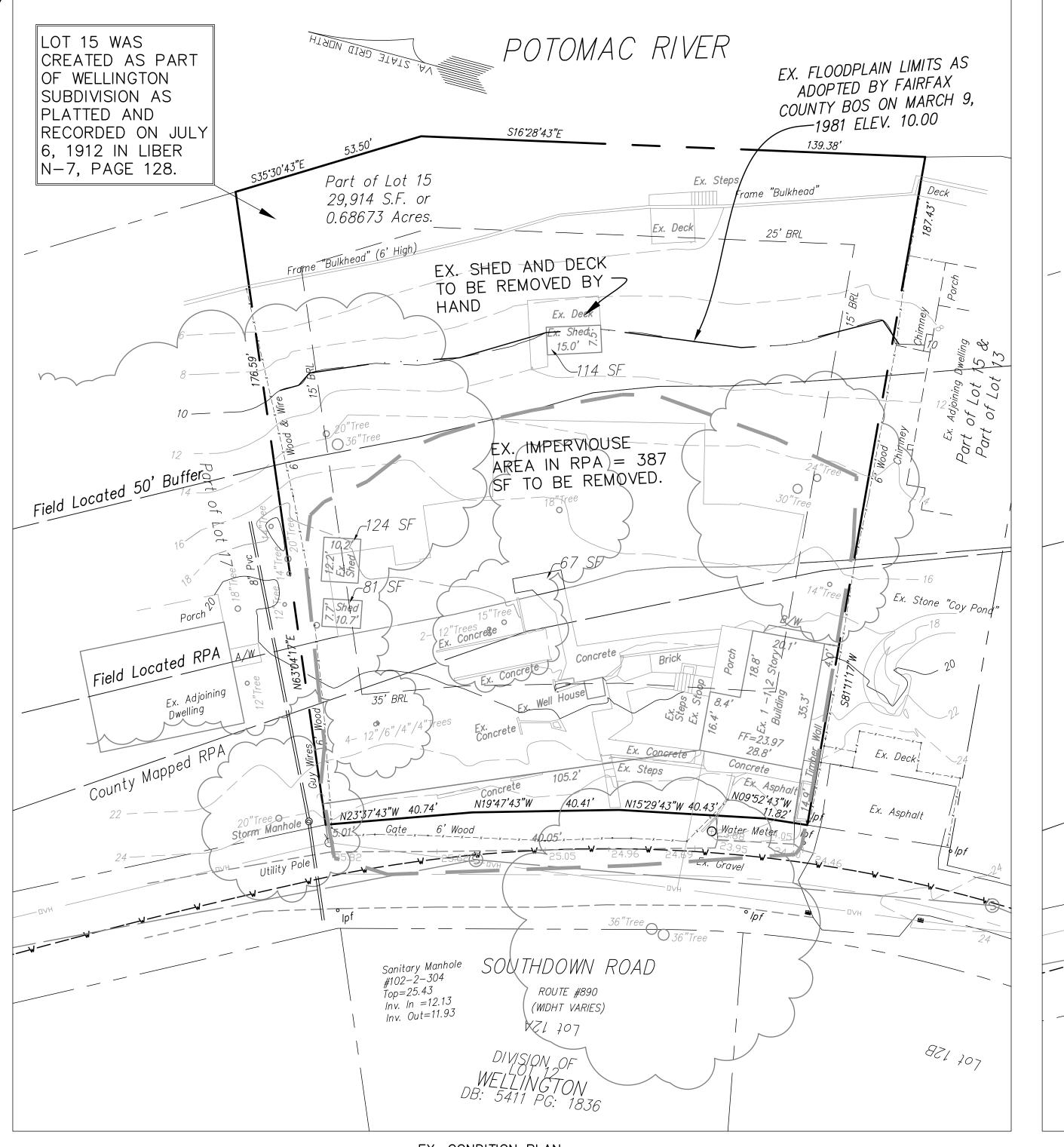
- (a) The approval of this waiver is the minimum necessary to provide relief from the buffer requirements. Given the zoning setback requirements, and the location of RPA, the house was designed to minimize the disturbance in RPA area. The disturbed area does not affect the 50 feet seaward buffer area.
- (b) The approval of this application will not confer any special privileges.
- (c) The exception is in harmony with the purpose and intent of the Chesapeake Bay Ordinance and is not a substantial detriment to water quality.
- (d) This condition is not self-created or self-imposed.
- (e) Stormwater management will be provided by using Urban Planter Boxes to prevent the degradation of water quality and to address stormwater management requirements.
- (f) The project as shown complies with the Performance Criteria as stated under section 118-3-2 and 3. A Water Quality Impact Assessment was filed (see WQIA-2023-00020). The project will comply with all required Erosion and Sedimentation controls per Chapter 104 of the County Code.

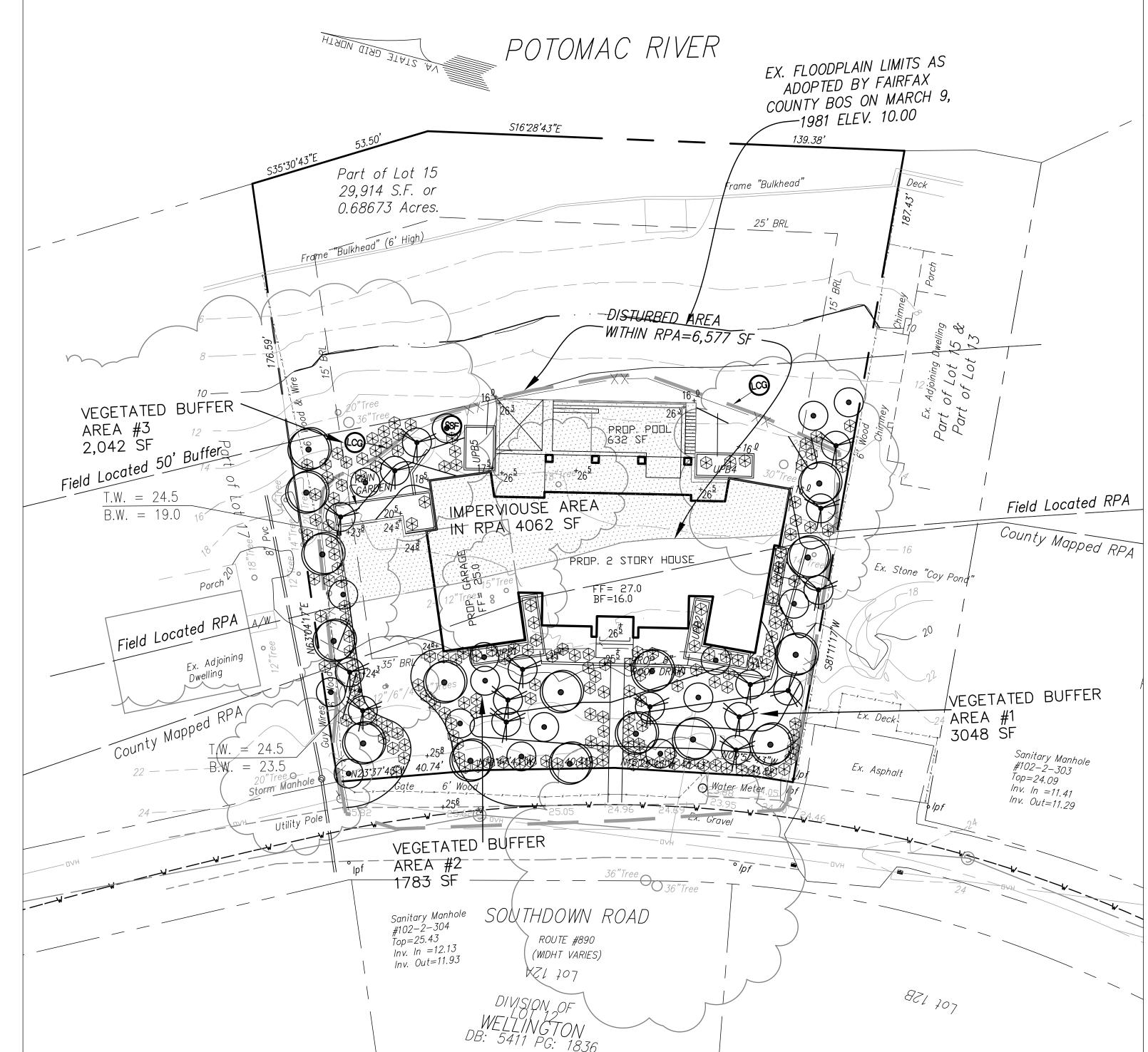
118-3-2 Performance Criteria

- (a) No more land is being disturbed than minimum required to stablish the use and construct the new house and driveway.
- (b) Indigenous vegetation is being preserved to maximum extend possible.
- (c) The amount of impervious cover is minimized to extend possible.
- (d) The project will comply with all requirements of Erosion Sediment Control per Chapter 104 of the County Code.
- (e) As shown on the plans, the project will include five Urban Planter Boxes and will comply with Chapter 124 of the County Code.
- (f) There will be no disturbance to any wetlands. A certification will be provided at the time of submission of Infill Lot Grading Plan.
- (g) The project is being served by public sewer.
- (h) There are no agricultural activities proposed.
- (i) Buildable area is depicted on the plan.

118-3-3 Additional Performance Criteria

- (a) A Water Quality Impact Assessment have been submitted (see plan # WQIA-2023-00020)
- (b) This project is not water dependable.
- (c) This project is outside IDA
- (d) A buffer are greater than disturbed area is being proposed with additional vegetation.
- (e) This is not an agricultural land.
- (f) Please see WQIA plan for additional buffer area is proposed to be stablished.





EX. CONDITION PLAN

Area SF

5.75 I ₍₁₀₎IN/HR

Post- Development

4133

1443

1662

203

7441

1.92 cfs

2.26 cfs

Increase

0.35 cfs

0.41 cfs

(2). IN/HR

Impervious Coverage Computations

Over All

Area AC

0.0239

0.0051

0.0000

0.0000

0.0000

0.0239

0.0073

0.0603

8.78%

0.40

0.6867 AC

Pre- Development

1043

223

1039

320

1.57 cfs

1.85 cfs

2625

Area SF

Total Site Area

Imervious Cover

Building

Driveway

Side Walk

Sheds & Misc

Percent Imperviouseness

Q=CIA

Q (10) Q=CIA

Composite Rational "C" Factor

TOTAL

Q (2)

Pool & Pool Dec

Porch

Patic

29914 SF

| WOIA | NARRATIVE: |
|-----------|-----------------|
| 11 6 17 1 | 11711010711111. |

6.77

Area AC

0.0949

0.0331

0.0000

0.0000

0.0382

0.0047

0.0000

0.1708

24.87%

0.49

- FAIRFAX COUNTY MAPPED RPA AND FIELD LOCATED RPA ARE SHOWN ON THE PLAN.
- RPA ENCROACHMENT IS ANTICIPATED TO BE 6577 SQUARE FEET OF DISTURBED AREA WITHIN RPA.
- THIS WQIA IS INTENDED TO ADDRESS THE VEGETATION REQUIRED BY DISTURBANCE WITHIN RPA AND WATER QUALITY BASED ON ADDITIONAL IMPERVIOUS AREA IN RPA.

NO DISTURBANCE TO WETLANDS IS ANTICIPATED TO OCCUR WITHIN

- THE RE-VEGITATION REQUIRED AS PART OF THIS WQIA IS WILL
- THE PURPOSE OF THIS WQIA IS TO PROVIDE ENHANCEMENT DUE
- TO ADDITIONAL IMPERVIOUS AREA AND DISTURBANCE OF RPA. THE PLAN PROPOSED FIVE PLANTER BOXES THAT ARE DESIGNED
- TO DETAIN 2.56 INCHES OF RAINFALL PLUS A STRUCTURAL RAIN GARDEN AND RE-VEGITATION OF AREA OF 6,877 SQUARE FEET WHICH IS GREATER THAN THE PROPOSED DISTURBED AREA WITHIN RPA. PLEASE REEFER TO SHEET 2 FOR STORMWATER MANAGEMENT AND BMP NARRATIVES.

TREE REQUIREMENT DISTURBED AREA WITHIN RPA = 6,577 SF VEGETATED BUFFER AREA PROVIDED:

= 6,873 SF

LANDSCAPE AREA = 6,873 SF OR 0.1578 AC. OVERSTORY REQUIRED: 100 x 0.1578 =16 TRREES UNDERSTORY REQUIRED: 200 x 0.1578= 32 TREES SHRUBS REQUIRED: $1089 \times 0.1578 = 172$ SHRUBS

TREE PLANTING SCHEDULE

PROP. PLANTING PLAN

| QTY. | SYMBOL | CATEGORY | SIZE * | TYPE |
|------|------------|-------------|----------|-------|
| 16 | \odot | CANOPY TREE | 2" CAL | В & В |
| 32 | \bigcirc | UNDER STORY | 1" CAL | CONT |
| 172 | ↔ | SHRUBS | 18" HIGH | CONT |

SEE PLANT LIST ON SHEET 2

GENERAL NOTES:

- 1. CURRENT OWNER: 7819 SOUTHDOWN RD LLC, DEED BOOK: 27530, PAGE: 595, PROPERTY ADDRESS, 7819 SOUTHDOWN ROAD, ALEXANDRIA, VIRGINIA 22308, 2. THE PROPERTY ON THIS PLAN IS IDENTIFIED ON TAX MAP #102-2-((18)) AS PARCEL
- 0015A AND IS ZONED R-2(Residential 2 DU/AC). THE ASSESSED AREA IS 30,579 SQUARE FEET or 0.72 ACRES.
- 3. THE PROPERTY IS CURRENTLY ZONED R-2, WITH THE FOLLOWING REGULATIONS FOR SET BACKS: FRONT YARD= 35'
 - REAR YARD= 25' TOPO AND BOUNDARY INFORMATION IS BASED ON AN ACTUAL FIELD RUN SURVEY BY

SIDE YARD= 15'

- THIS FIRM.
- CONTOUR INTERVAL = 2'. VERTICAL DATUM IS NGVD 1929. THIS PLAN HAS BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND
- THEREFORE DOES NOT NECESSARILY INDICATE ALL ENCUMBRANCES ON THE PROPERTY. 7. TO THE BEST KNOWLEDGE OF THE SURVEYOR AND DEVELOPER, THERE ARE NO EXISTING GRAVES ON-SITE.
- THE STREET SHOWN HEREON IS A PUBLIC RIGHT-OF-WAY.
- 9. NO MORE LAND SHALL BE DISTURBED THAN IS NECESSARY TO PROVIDE FOR THE SINGLE-FAMILY DWELLING.
- 10. INDIGENOUS VEGETATION SHALL BE PRESERVED TO THE MAXIMUM EXTENT POSSIBLE.

SHEET INDEX

- WQIA
- WQIA DETAILS URBAN PLANTER BOX DESIGN

GROUP, SIGN DE SIONAL PR0F DESIGN BY: DRAWN BY: PJT CHECKED BY: HM DATE: JAN 2023 SCALE: 1"=20'

JOB NO.: **00518**

DRAWING NO.:**518—WQIA—**

SHEET 1 OF 4

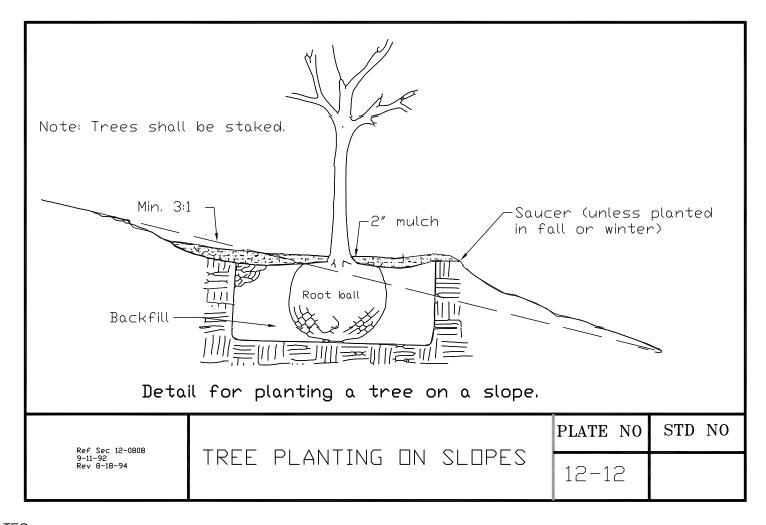
PART WELLING

HAMID MATIN

Lic. No. 017821

TYPICAL PLANT MATERIAL LIST

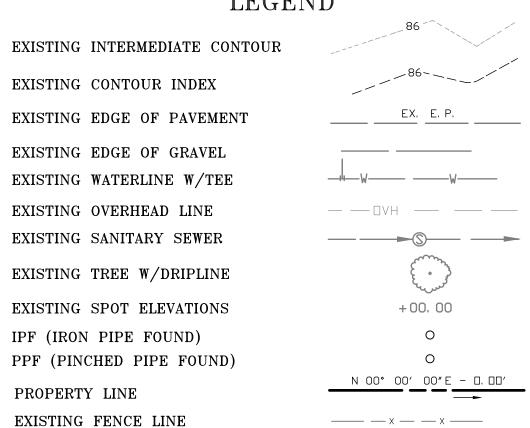
NATIVE UNDERERSTORY TREES NATIVE OVERSTORY TREES AMELANCHIER CANADENSIS SERVICEBERRY ACER RUBRUM RED MAPLE CARPINUS CAROLINA ACER SACCHARUM SUGAR MAPLE IRONWOOD/AMERICAN HORNBEAM CERCIS CADENENSIS BETULA NIGRA RIVER BIRCH REDBUD CHIONANTHUSVIRGINICUS CELTIS OCCIDENTALIS HOCKBERRY FRINGETREE CORNUS FLORIDA FLOWERING DOGWOOOD DIOSPYROS VIGINIANA PERSIMMON MAGNOLIA VIRGINIANA FAGUS AMERICANA AMREICAN BEECH WEETBAY MAGNOLIA OXYDENDRON ARBOREUM FRAXINUS AMERICANA WHITE ASH SOURWOOD SALIX NIGRA FRAXINUS PENNSYLVANICA GREEN ASH BLACK WILLOW JUGLANS NIGRA WALNUT LIRIODENDRON TULIPFERA TULIP POPLAR NATIVE SHRUBS LIQUIDAMBER STYRACIFLUA SWEETGUM ARONIA FRUCTICOSA RED CHOKECHERRY NYSSA SYVATICA BLACK GUM CEPHALATHUS OCCIDENTALIS BUTTONBUSH PLATANUS OCCIDENTALIS SYCAMORE CORNUS RACEMOSA GRAYSTEM DOGWOOD QUERCUS ALBA WHITE OAK CORNUS STOLOIFERA REDTWIG DOGWOOD SWAMP WHITE OAK QUERCUS BICOLOR HAMAMELIS VIRGINIANA WITCH HAZEL QUERCUS COCCINIA SCARLET OAK POSSUMHAW ILEX DECIDUOS QUERCUS IMBRICARIA SHINGLE OAK ILEX GLABRA INKBERRY SWAMP CHESTNUT OAK QUERCUS MICHAUZIL ILEX VERICLLATA WINTERBERRY QUERCUS PALUSTRIS PIN OAK SWAMP AZALEA RHODODENDRON VISCOSUM QUERCUS PHELLOS WILLOW OAK SALIX DISCOLOR PUSSY WILLOW QUERCUS PRINUS CHESTNUT OAK VACCIMIUM CORYBOSUM HIGHBUSH BLUEBERRY QUERCUS RUBRA RED OAK AMERICAN BASSWOOD TILIA AMERICANA TSUGA CANADENSIS CANDIAN HEMLCK



NOTE 1 AL

- 1. ALL LANDSCAPE PLANT MATERIALS SHALL CONFORM TO THE LATEST VERSION OF THE AMERICAN STANDARD OF NURSERY STOCK (ANSI Z60.1). PLANT MATERIAL SHALL BE OF STANDARD QUALITY OR BETTER, TRUE TO NAME AND TYPE OF THEIR SPECIES OR VARIETY.
- 2. LANDSCAPE PLANT MATERIALS SHALL BE PLANTED IN ACCORDANCE WITH EITHER THE STANDARDIZED LANDSCAPE SPECIFICATIONS ADOPTED BY THE VIRGINIA NURSERYMEN'S ASSOCIATION, THE VIRGINIA SOCIETY OF LANDSCAPE ENGINEERS, OR THE VIRGINIA CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS,
- 3. NO LANDSCAPING MATERIAL MAY BE PLANTED WITHIN 4 FEET OF ANY FIRE HYDRANT OR SIAMESE CONNECTION.
- 4. NO TREES MAY BE PLANTED WITHIN ANY EASEMENT.
- 5. SHRUBS WHICH ARE UPRIGHT IN NATURE SHALL BE A MINIMUM OF TWENTY FOUR (24") INCHES IN HEIGHT AT THE TIME OF PLANTING, AND SHRUBS WHICH ARE SPREADING IN NATURE SHALL BE A MINIMUM OF EIGHTEEN (18") INCHES IN DIAMETER AT THE TIME OF PLANTING.
- 6. CONTRACTOR TO COORDINATE WITH URBAN FORESTRY BRANCH OF FAIRFAX COUNTY BEFORE PLANTING ANY TREES. TEL. #703-324-1770

LEGEND



RPA Boundary Location Certification (The following certification statement is to be placed on the plan, signed, and sealed by the licensed professional submitting the plan.) KENTLAND FARMLOT 19 RPA Boundary Location Certification The lot depicted on this infill lot grading plan includes an RPA. The locations of all RPA features have been verified in the field. Checklist of RPA features which are present: YES NO (1) A tidal wetland; **√** (3) A water body with perennial flow; A nontidal wetland connected by surface flow and contiguous to a tidal wetland or water body with perennial flow; (5) A buffer area as follows: **√** (I) Any land whithin a major flood plain; V (II) Any land within 100 feet of a feature listed in (1) through (4). Supporting Documents: Jurisdictional determination or verification letter from the U.S. Army Corps of Engineers for all Waters of the U.S. I hereby certify that: Each of the individual features listed above, which together comprise the RPA, have been reviewed and the locations of the features and final RPA boundary shown on the plan are in conformance with the requirements of the Chesapeake Bay Preservation Ordinance 04/13/2023 017821 Hamid Matin, P.E. Virginia license number

STORMWATER MANAGEMENT NARRATIVE:
STORMWATER DETENTION IS BEING PROVIDED THROUGH FIVE
PLANTER BOXES AND THE RAIN GARDEN. THEY ARE SIZED FOR 2.56
INCHES OR RAINFALL THAT PROVIDES FOR DETENTION VOLUME FOR
THE RESIDENTIAL DETACHED INFILL PROJECTS.
THE DETENTION VOLUME IS PROVIDED FOR 5822 SQUARE FEET OF
IMPERVIOUS AREA. THIS WILL PROVIDE FOR THE INCREASE IN
IMPERVIOUS AREA PLUS 1,006 SQUARE FEET OF ADDITIONAL
IMPERVIOUS AREA. THE RUNOFF VOLUME WILL BE REDUCED TO LESS
THAN PRE-EXISTING CONDITIONS.

BMP/ NUTRIENT REMOVAL NARRATIVE:
THIS PLAN PROPOSES FIVE OVERSIZED PLANTER BOXES THAT WILL
ACT AS BIORETENTION FACILITY AND ONE ADDITIONAL STRUCTURAL
RAIN GARDEN AT THE END OF THE DRIVEWAY THAT WILL CAPTURE
AND TREAT 1,786 SQUARE FEET OF IMPERVIOUS AREA. DUE TO THE
SIZE OF PLANTER BOXES, WE HAVE USED THE BIORETANTION LEVEL
TWO CATEGORY THAT REMOVES 50 PERCENT OF NUTRIENTS.
IN ADDITION WE ARE PROPOSING A REV-VEGITATION AREA OF 6,873
SQUARE FEET THAT WILL ENHANCES THE WATER QUALITY BY
ANOTHER 25%. THE RE-VEGITATION AREA ARE DESIGNATED IN A
WAY TO RECEIVE AND TREAT MOST OF THE RUNOFF FROM THE
IMPERVIOUS SURFACES.
IN OUT PROFESSIONAL OPINION, THE PROPOSED MANUFACTURED
BMP PLUS THE RE-VEGITATION AREA, WILL ENHANCES THE WATER
QUALITY TO BETTER THAN PRE-DEVELOPE CONDITIONS.

| MATER QUALITY IMPACT ASSESSMENT PLAN PART OF LOT 15 WELLINGTON, SEC. 1 TM: 102-2-((18))-0015A #7819 SOUTHDOWN ROAD ALEXANDRIA, VIRGINIA 22308 MOUNT VERNON DISTRICT #1 - FARIFAX COUNTY, VIRGINIA **REMSION BLOCK** **R | | | | |) | | |
|--|--------------------------------------|------------------|--|----------|-------------------|----------------------------------|-------------------------------------|
| WATER QUALITY IMPACT ASSESSMENT PLAN PART OF LOT 15 WELLINGTON, SEC. 1 DB: N-7 PG: 127 TM: 102-2-((18))-0015A TM: 102-2-((18))-0015A NO. NO. | | | | | | | KEVISION BLOCK |
| WATER QUALITY IMPACT ASSESSME PART OF LOT 15 WELLINGTON, SEC DB: N-7 PG: 127 TM: 102-2-((18))-0015/4 TM: VERNON DISTRICT #1 - FARIFAX | | | | | | .02 | |
| · > | WATER QUALITY IMPACT ASSESSMENT PLAN | PART OF LOT 15 | WELLINGTON, SEC. 1 | | | #7819 SOUTHDOWN ROAD ALEXANDRIA, | JUNT VERNON DISTRICT #1 — FARIFAX . |
| | | SIGN GROUP, INC. | Y ROAD, SUITE M | | | PHONE (703) 631-2344 | FAX. (703) 378-2102 |
| FAX. (703) 531–2344 FAX. (703) 378–2102 | • | PROFESSIONAL DE | 4124 WALNE | | | INFERS SURVEYORS CONSULTANT | |
| DESIGN GROUP, INC WALNEY ROAD, SUITE M NTILLY, VIRGINIA 20151 PHONE (703) 631-2344 FAX. (703) 378-2102 | DES | IGN E | 3 Y: | | ЯМ | | j j |
| PROFESSIONAL DESIGN GROUP, INC. 4124 WALNEY ROAD, SUITE M CHANTILLY, VIRGINIA 20151 ENGINEERS, SURVEYORS, CONSULTANT FAX. (703) 378-2102 | DRA | | ? Y: | | P J 77 | - | |
| PROFESSIONAL DESIGN GROUP, INC RATISH WALNEY ROAD, SUITE M CHANTILLY, VIRGINIA 20151 BY STAN STRUCTORS, CONSULTANT FAX. (703) 378-2102 | CHF | | RY | | ΗМ | | |
| PROFESSIONAL DESIGN GROUP, INC HA124 WALNEY ROAD, SUITE M CHANTILLY, VIRGINIA 20151 ENGINEERS, SURVEYORS, CONSULTANT FAX. (703) 378-2102 | | CKED | | | | | |
| PROFESSIONAL DESIGN GROUP, INC A124 WALNEY ROAD, SUITE M CHANTILLY, VIRGINIA 20151 ENGINEERS, SURVEYORS, CONSULTANT FAX. (703) 378-2102 | DA I | TE: 4 | ###################################### | 392) | B17 | | |

DRAWING NO .: 518-WQIA-

SHEET 2 OF 4

URBAN BIORETENTION PLANTER BOX (UPB1) - GENERAL NOTES:

THE RESIDENTIAL STRUCTURE, AND A UPB1 OR UPB2 (A SECOND CATEGORY OF URBAN BIORETENTION PLANTER BOX -SEE UPB2 DESIGN SHEET) MAY BE PROPOSED IF THE ENTIRE FACILITY IS TO BE MORE THAN 10 FEET FROM THE STRUCTURE.

AN URBAN BIORETENTION PLANTER BOX (UPB1 - THIS DESIGN SHEET) IS REQUIRED IF ANY PART OF THE FACILITY IS TO BE LOCATED WITHIN 10 FEET OF

- THIS UPB1 DESIGN QUALIFIES FOR LEVEL 1 BMP CREDIT, PER VIRGINIA DEQ STORMWATER DESIGN SPECIFICATION NO. 9 (DEQ-9). HOWEVER, NO UPB1 CAN RECEIVE DISCHARGE FROM ANY OTHER FACILITY, FOR THIS DESIGN, SO BMPS IN-SERIES CANNOT BE PROPOSED.
- ONLY IMPERVIOUS ROOF AREA IS PERMITTED TO BE DRAINED TO A UPB1, AND THE MAXIMUM ROOF AREA CONTRIBUTING TO A SINGLE UPB1 IS LIMITED TO 2,500 SQ.FT., PER DEQ-9. A UPB2 MUST BE PROPOSED IF IMPERVIOUS AREA OTHER THAN JUST ROOF AREA IS INTENDED TO BE DRAINED TO A
- THE UPB1 MUST BE SELF-CONTAINED AND WATER-TIGHT, AND MUST BE A PRECAST OR CAST-IN-PLACE CONCRETE VAULT (COMPRISED OF FOUR WALLS &
- A FLOOR, BUT NO TOP), A MOLDED POLYPROPYLENE CELL, OR A CONCRETE MASONRY UNIT (CMU) STRUCTURE WITH A CONCRETE-SLAB BOTTOM. THE INSIDE LENGTH (L) AND WIDTH (W) DIMENSIONS MUST BE A MINIMUM OF 2 FEET EACH. THE STANDARD INSIDE DEPTH DIMENSION MUST BE 4 FEET +
- PORTION OF FILTER MEDIA DEPTH > 18 INCHES (SEE UPB1 GENERALIZED SEC A-A AND TYP. UPB1 PLANVIEW, ON THIS SHEET). THE UNDERDRAIN OUTLET PIPE MUST DISCHARGE TO A DRY WELL OUTLET (PREFERRED), OR TO THE EROSION-PROTECTED SURFACE OF ADJACENT OR FARTHER DCWNGRADIENT GROUND, OR TO AN EXISTING ADEQUATE CONVEYANCE FACILITY (AS LONG AS THE DISCHARGE POINT IS AT LEAST 10 FEET FROM THE BUILDING, 10 FEET FROM THE PROPERTY LINE OF DOWNGRADIENT PROPERTY, AND 5 FEET FROM ALL OTHER PROPERTY LINES). SEE
- PRETREATMENT/OUTLET PROTECTION DETAILS SHEET. ATRIUM OR DOME GRATES OR EQUIVALENT TRASH SCREENING STRUCTURES MUST BE INSTALLED ON TOP OF ALL 8-INCH GRAVEL CHIMNEY PIPES AND 4-INCH AUXILIARY OVERFLOW PIPES.
- A REASONABLY-SCALED FACILITY DRAINAGE AREA MAP MUST BE PROVIDED ON THIS SHEET TO IDENTIFY THE ROOF AREA REQUIRED TO DRAIN TO EACH UPB1 PROPCSED ON THIS SHEET. ALL CONTRIBUTING DOWNSPOUTS, ALL INFLOW AND OUTFLOW CONVEYANCE CONNECTIONS AND EROSION PROTECTIONS, AND ALL OUTLETS MUST ALSO BE SHOWN, ALONG WITH THE EXISTING AND PROPOSED ELEVATION CONTOURS, AND PERTINENT ELEVATION SPOT SHOTS
- THE CONTRACTOR IS TO ENSURE THE SPECIFIC GUTTERS AND DOWNSPOUTS DISCHARGE INTO THE SPECIFIC UPB1(S), AS DESIGNATED ON THE APPROVED FLAN. THE COUNTY SITE INSPECTOR MUST BE NOTIFIED IMMEDIATELY IF IT BECOMES APPARENT THIS REQUIREMENT CANNOT BE MET. THE PROPERTY OWNER/DEVELOPER AND DESIGN ENGINEER SHALL THEN BE RESPONSIBLE FOR PROPERLY REVISING THE APPROVED PLAN TO RESOLVE THE
- APPARENT DESIGN DISCREPANCIES. . ALL UPB1 MATERIALS MUST MEET THE REQUIREMENTS AND SPECIFICATIONS OF THE FAIRFAX COUNTY PUBLIC FACILITIES MANUAL (PFM) & DEQ BMP
- SPECIFICATION #9.

PERIMETER IS PROPERLY SEALED WITH FLEXIBLE, WATERTIGHT SEAL SUCH AS KOR-N-SEAL OR APPROVED EQUAL

- REFER TO THE LANDSCAPING PLAN FOR PROPOSED UPB1 PLANT/VEGETATION SCHEDULES AND LAYOUTS. . A UPB1 MUST MAINTAIN A MINIMUM SETBACK OF 2 FEET FROM ANY PROPERTY LINE, AND ITS HEIGHT ABOVE THE GROUND MUST NOT EXCEED THE
- . UNLESS OUTLET AND/OR INFLOW PIPES ARE CAST-IN-PLACE WITH PLANTER BOX SHELL, ENSURE ANNULAR SPACE BETWEEN A PIPE AND WALL CUT-OUT

MAXIMUM FENCE HEIGHT PERMITTED IN THE YARD IN WHICH IT IS LOCATED (TYPICALLY 4 FEET IN THE FRONT YARD AND 7 FEET IN THE SIDE AND REAR

- . A UPB1 WILL NOT REQUIRE GROUNDWATER/BEDROCK TESTING AND THE 2 FOOT SEPARATION WHEN APPROPRIATE BUOYANCY CALCULATIONS DEMONSTRATE THE WEIGHT OF THE PLANTER BOX SHELL, BY ITSELF, IS SUFFICIENT TO PRODUCE A SAFETY FACTOR OF AT LEAST 1.5, ASSUMING GROUNDWATER TABLE AT GROUND SURFACE.
- PRETREATMENT NOTES SEE THE "PRETREATMENT/OUTLET PROTECTION DETAILS" SHEET FOR THE SPECIFICATIONS AND DETAILS FOR THE PRETREATMENT PRACTICES SELECTED FOR EACH PROPOSED UPB1 IN THE DESIGN DATA TABLES (THIS SHEET), INCLUDING:
- GUTTER SCREEN MUST BE INSTALLED ALONG THE ENTIRE SECTION OF ROOF THAT IS TO DRAIN TO A UPB1, IN ORDER TO HELP MAINTAIN THE CAPACITY OF THE CONTRIBUTING GUTTERS AND DOWNSPOUTS.
- AN IN-LINE LEAF STRAINER MUST BE INSTALLED ON EACH DOWNSPOUT THAT IS TO BE CONNECTED TO A PIPE, IN ORDER TO HELP MAINTAIN PIPE
- INFLOW ROCK MUST BE INSTALLED WHERE A DOWNSPOUT OR INFLOW PIPE ENTERS A UPB1 IN ORDER TO HELP PREVENT THE EROSION OF MULCH &

STRUCTURE AND FOUNDATION NOTES:

- MEANS AND METHODS OF STRUCTURAL SUPPORT OF THE UPB ARE THE RESPONSIBILITY OF THE DESIGN ENGINEER AND ARE NOT REPRESENTED BY
- ANY FAIRFAX COUNTY DETAIL PERMITTED UPB1 CONTAINERS ARE LISTED IN GENERAL NOTE 4, ABOVE. THE STRUCTURAL DESIGN AND WATERPROOFING, PER VRC R401.6, OF A UPB CONTAINER IS THE RESPONSIBILITY OF THE DESIGN ENGINEER. EXTERIOR STRUCTURAL SUPPORT MAY BE REQUIRED FOR MOLDED POLYPROPYLENE CELLS. LINER-CONTAINMENT FACILITIES ARE PROHIBITED.
- CONCRETE AND MASONRY UPB CONTAINERS SHALL HAVE LIQUID-APPLIED OR CEMENTITIOUS INTERIOR WATERPROOFING COMPLYING WITH VRC R406. SHEET MATERIALS (R406.2.1-4) SHALL NOT BE USED.
- . FOUNDATION WATERPROOFING IS REQUIRED ON ADJACENT STRUCTURE WALLS PER VRC R406 WHEN A UPB IS LOCATED ADJACENT TO OR WITHIN 12" OF THE STRUCTURE
- STRUCTURAL OR ARCHITECTURAL PLANS MUST INCLUDE A SECTION OF EACH UPB SHOWING STRUCTURAL SUPPORT FOR THE UPB AND DEMONSTRATING THAT THE UPB DOES NOT ADVERSELY IMPACT THE FOUNDATION OF THE RES DENTIAL STRUCTURE.
- ANY UPB PLACING SURCHARGE LOADS ON STRUCTURE WALLS OR LOADING DIRECTLY ON FOOTERS COMMON TO THE PRINCIPAL STRUCTURE
- REQUIRES ENGINEERING DESIGN FOR THE STRUCTURE BE INCLUDED IN THE ARCHITECTURAL PLANS SUBMITTED TO THE BUILDING DIVISION. FOUNDATION DRAINS SHALL NOT BE INTERRUPTED BY THE UPB WHERE REQUIRED BY VRC R405.

MATERIAL SPECIFICATIONS FOR UPB1(S):

| MATERIAL OF CONTOATION OF OR OF DIO | | | | | | |
|---|--|--|--|--|--|--|
| MATERIAL | SPECIFICATION | NOTES | | | | |
| FILTER MEDIA COMPOSITION (per DEQ-9) | FILTER MEDIA TO CONTAIN: 80% - 90% SAND 10%-20% SOIL FINES 3%-5% ORGANIC MATTER | THE VOLUME OF FILTER MEDIA BASED ON 110% OF THE PLAN VOLUME, TO ACCOUNT FOR SETTLING OR COMPACTION. | | | | |
| FILTER MEDIA TESTING (per DEQ-9) | AVAILABLE P BETWEEN L+ AND M, PER DCR 2005 NUTRIENT MANAGEMENT CRITERIA. | THE MEDIA SHOULD BE CERTIFIED BY THE SUPPLIER. | | | | |
| MULCH LAYER | USE AGED, DOUBLE SHREDDED HARDWOOD BARK MULCH (PARTICLE SIZE > 0.5-INCH). | LAY A 2-INCH LAYER, FREE OF CHEMICALS AND EXTRANEOUS MATERIAL, ABOVE THE FILTER BED. | | | | |
| ALTERNATIVE SURFACE COVER | USE RIVER STONE, PEA GRAVEL, COIR MATTING, OR JUTE MATTING. | LAY A 2-INCH LAYER TO SUPPRESS WEED GROWTH. | | | | |
| CHOKING LAYER | LAY A 3-INCH LAYER OF CHOKER STONE (TYPICALLY #8 OR UNDERDRAIN STONE. | #89 WASHED GRAVEL), ABOVE THE 9-INCH LAYER OF | | | | |
| STONE FOR UNDERDRAIN AND STORAGE LAYER | VDOT #57 STONE SHOULD BE DOUBLE-WASHED AND CLEAN AND FREE OF ALL FINES. | LAY A 9-INCH LAYER ON THE UPB1 FLOOR AND OVER THE UNDERDRAIN, AFTER THE PIPES HAVE BEEN PLACED. | | | | |
| UNDERDRAINS | USE 4-INCH RIGID SCHEDULE 40 PVC PIPE, WITH 3/8-INCH PERFORATIONS AT 6 INCHES ON CENTER; LAY UNDERDRAIN AT 0.5% SLOPE (MIN.), AND SPACE PARALLEL PIPE RUNS AT NO MORE THAN 20 FEET. | LAY UNDERDRAIN ON THE UPB1 FLOOR, ALONG ITS LENGTH, AND CONNECT TO THE EXTERIOR OUTFALL WITH NON-PERFORATED PIPE. ENSURE 1 OF 3 EVENLY SPACED (IN GENERAL) ROWS OF PERFORATIONS ALONG THE PIPE LENGTH, IS FACE-DOWN. | | | | |
| GRAVEL CHIMNEY PIPE | USE 8-INCH RIGID SCHEDULE 40 PVC PIPE, WITH 1/2-INCH PERFORATIONS PROVIDED ONLY WITHIN BOTTOM 9 VERTICAL INCHES. FOOTPLATE TO BE FASTENED TO FLOOR, AND COMPOSED OF RIGID PLASTIC OR NON-CORROSIVE METAL MATERIALS. | PIPE MUST BE ANCHORED TO FOOTPLATE. PERFORATIONS COMPRISING A ROW ARE TO BE LOCATED AT 4 INCHES ON CENTER AROUND THE PIPE PERIMETER, AND FOUR EVENLY-SPACED (AT 2 INCHES ON CENTER) ROWS ARE REQUIRED WITHIN THE BOTTOM 9 INCHES OF PIPE. | | | | |
| PLANT MATERIALS | -SELECT NATIVE PERENNIAL SEDGES OR GRASSES, HERBACEOUS PLANTS, OR SHRUBSSHRUBS A MINIMUM OF 30 INCHES HIGH SHOULD BE PLANTED A MINIMUM OF 10 FEET ON-CENTERPLANT GROUND COVER PLUGS AT 12 TO 18 INCHES ON- CENTER; PLANT CONTAINER-GROWN PLANTS AT 18 TO 24 INCHES ON-CENTER, DEPENDING ON THE INITIAL PLANT SIZE AND HOW LARGE IT WILL GROWTREES, LARGE SHRUBS, TURF, THE USE OF SEEDS, AND | -PLANT MATERIALS MUST BE SELECTED PER THE RECOMMENDED PLANT LIST AND INCLUDED IN THE LANDSCAPING PLAN. SEE THE LANDSCAPING PLAN FOR DETAILSPLANT SPACING MUST BE SUFFICIENT TO ENSURE A MINIMUM OF 75% COVERAGE WITHIN 2 YEARSPLANTS SHOULD COME FROM QUALIFIED SUPPLIERS, BE APPROPRIATE FOR STORMWATER APPLICATIONS, | | | | |

MAINTENANCE NOTES FOR UPB1(S):

PERMITTED.

A PRIVATE MAINTENANCE AGREEMENT (PMA) IS REQUIRED BEFORE PLAN APPROVAL.

PLANTING ANNUALS OR VEGETABLES, IS NOT

- FIRST YEAR MAINTENANCE OPERATIONS SHOULD INCLUDE: A) INSPECTING FACILITIES AT LEAST TWICE AFTER STORMS EXCEEDING 1/2-INCH. FOR THE FIRST 6 MONTHS AFTER INSTALLATION; AND B) WATERING ONCE A WEEK DURING THE FIRST 2 MONTHS, AND AS NEEDED DURING THE FIRST GROWING SEASON (APRIL-OCTOBER).
- THIRD-PARTY LANDSCAPE MAINTENANCE CONTRACTS FOR UPB1(S) SHOULD INCLUDE SPECIFICS ABOUT UNIQUE BIORETENTION LANDSCAPING NEEDS, SUCH AS: MAINTAINING THE ELEVATION DIFFERENCES REQUIRED FOR NEEDED PONDING, PROPER MULCHING, SEDIMENT AND TRASH REMOVAL, AND LIMITED USE OF FERTILIZERS AND PESTICIDES.
- CONSULT THE PMA ATTACHMENT A OR FAIRFAX FACT SHEET FOR BIORETENTION PRACTICES, FOR ADDITIONAL INFORMATION.

SUGGESTED MAINTENANCE ACTIVITIES FOR UPB1(S)

AND CONSIST OF NATIVE SPECIES.

| MAINT | ENANCE TASKS | FREQUENCY |
|-------|--|----------------------|
| • | SPOT WEEDING, EROSION REPAIR, TRASH & SEDIMENT REMOVAL, DEBRIS REMOVAL FROM GRAVEL CHIMNEY PIPE, AND MULCH RAKING | TWICE DURING APROCT. |
| • | ADD REINFORCEMENT PLANTING TO MAINTAIN THE DESIRED VEGETATION DENSITY OF 75-90% | |
| • | REMOVE INVASIVE AND DEAD PLANTS USING RECOMMENDED CONTROL METHODS | |
| • | INSPECT INLETS AND PRETREATMENT DEVICES INCLUDING GUTTERS, DOWNSPOUTS & GRAVEL CHIMNEY PIPES, AND INSPECT THE OUTLET SYSTEM, INCLUDING UNDERDRAIN CAPS, DISCHARGE PIPES, DRY WELLS, POP UP EMITTERS FOR BLOCKAGES AND CLOGS. | AS NEEDED |
| • | SPRING INSPECTION AND CLEANUP | |
| • | SUPPLEMENT MULCH TO MAINTAIN A 2-INCH LAYER | |
| • | PRUNE SHRUBS | |
| • | REPAIR PHYSICAL DETERIORATION OF PLANTER BOX | ANNUALLY |
| • | REMOVE, THOROUGHLY WASH AND RESTORE THE UPPER 6-INCHES OF GRAVEL IN THE GRAVEL CHIMNEY PIPE. DO THIS INSTEAD FOR THE UPPER 12-INCHES, IF DIRT & DEBRIS ARE EVIDENT AT THE 6-INCH DEPTH | |
| • | REPLACE THE MULCH OR SURFACE COVER LAYER | EVERY 3 YEARS |

CONSTRUCTION NOTES FOR UPB1(S):

CONSTRUCTION OF A UPB1'S OUTER SHELL OR CONTAINER AND ANY REQUIRED FOUNDATION MUST BE APPROPRIATELY SEQUENCED WITH THE CONSTRUCTION OF THE RESIDENTIAL STRUCTURE, AS AN ACCESSORY STRUCTURE. THE SITE PREPARATION AND PROTECTION PRACTICES NORMALL APPLIED FOR SUCH A STRUCTURE ARE ACCEPTABLE. ALSO, ENSURE THE EMERGENCY OVERFLOW WEIR NOTCH IS INSTALLED IN THE APPROPRIATE SHELL/CONTAINER WALL, AND AT THE DESIGN LOCATION, ELEVATION, AND LENGTH; AND THE WALL OPENING FOR THE UNDERDRAIN OUTLET IS

- PROPERLY LOCATED AND SIZED.
- INSTALLATION OF THE UPB1'S INTERNAL BIORETENTION COMPONENTS SHOULD THEN PROCEED ALONG THE FOLLOWING STEPS: INSTALL THE APPROVED <u>WATERPROOFING</u>, AS REQUIRED;
 - INSTALL THE <u>UNDERDRAIN</u> SYSTEM ON THE FLOOR OF THE UPB1 SHELL, ENSURING MINIMUM PIPE SLOPES ARE MAINTAINED AND THE CONNECTED (NON-PERFORATED) 4-INCH OVERFLOW PIPE EXTENDS VERTICALLY TO AT LEAST THE TOP OF THE SHELL WALLS. ALSO, INSTALL THE FOOTPLATE FOR THE 8-INCH GRAVEL CHIMNEY PIPE ON THE UPB1 FLOOR, ANCHOR THE PIPE TO THE PLATE (WITH THE PERFORATED SECTION OF THE PIPE LOCATED NEAREST THE PLATE), AND ENSURE THE PIPE TOP REACHES AT LEAST TO TOP OF THE SHELL WALLS; ENSURE THE UNDERDRAIN SYSTEM IS CONNECTED TO THE OUTLET PIPE, AND CAN FREELY DRAIN, AND PACK A 9-INCH DEPTH OF #57 STONE AROUND THE UNDERDRAIN AND VERTICAL PIPES;
 - PLACE A 3-INCH LAYER OF CHOKER STONE/PEA GRAVEL ABOVE THE 9-INCH #57 STONE LAYER, AND AROUND THE PERIMETER(S) OF THE VERTICAL PIPE(S); OBTAIN THE THOROUGHLY MIXED SOIL MEDIA FROM A QUALIFIED VENDOR, STORE MATERIAL ON AN ADJACENT IMPERVIOUS AREA OR PLASTIC SHEETING, AND VERIFY THE MEDIA MEETS THE SPECIFICATIONS. KEEP THE MEDIA MOISTENED TO AVOID SEPARATION DURING INSTALLATION PLACE AND SPREAD THE MEDIA BY HAND ABOVE THE CHOKER STONE AND AROUND THE PERIMETER(S) OF THE VERTICAL PIPE(S), IN 8- TO 12-INCH LIFTS (WITH NO MACHINERY ALLOWED DIRECTLY ON THE MEDIA), UNTIL THE DESIRED TOP ELEVATION OF THE MEDIA HAS BEEN
- ACHIEVED. (SEE SECTION A-A ON THIS SHEET FOR THE REQUIRED SOIL MEDIA DEPTH.) LIFTS MAY BE LIGHTLY WATERED TO ENCOURAGE SETTLEMENT. AFTER THE FINAL LIFT IS PLACED, THE MEDIA SHOULD BE RAKED (TO LEVEL IT), SATURATED, AND ALLOWED TO SETTLE FOR AT LEAST ONE WEEK. APPLY ADDITIONAL MEDIA, AS NEEDED, TO ACHIEVE THE DESIGN ELEVATION; FILL THE CHIMNEY PIPE(S) WITH #57 STONE, TO 8 INCHES ABOVE THE MEDIA SURFACE, AND CUT THE TOPS OF THE 4-INCH AUXILIARY OVERFLOW AND 8-INCH CHIMNEY PIPES TO THE RESPECTIVE DESIGN ELEVATIONS (THE GRAVEL LEVEL(S) SHOULD BE ABOUT 6-INCHES BELOW THE
- TOP(S) OF THE 8-INCHES CHIMINEY PIPE(S), AT THIS POINT). INSTALL THE TRASH GRATES/SCREENS; PREPARE PLANTING HOLES FOR ANY SHRUBS, INSTALL THE PLANT MATERIAL PER THE LANDSCAPING PLAN AND PFM 12-0505, AND WATER ACCORDINGLY. PLANTING MUST TAKE PLACE AFTER INSTALLATION IS COMPLETED AND DURING THE FOLLOWING PERIODS: MARCH 15 THROUGH JUNE 15, AND SEPT. 15 THROUGH NOV. 15, UNLESS OTHERWISE APPROVED BY THE DIRECTOR. INSTALL ANY TEMPORARY IRRIGATION;
- PLACE 2-INCH SURFACE COVER LAYER, TYPICALLY MULCH, ABOVE THE FILTER MEDIA. IF THE DESIGN SPECIFIES COIR OR JUTE MATTING BE USED IN LIEU OF MULCH, THE MATTING WILL NEED TO BE INSTALLED PRIOR TO PLANTING (STEP G), AND HOLES OR SLITS WILL HAVE TO BE CUT THE MATTING TO INSTALL THE PLANTS
- INSTALL THE PRETREATMENT PRACTICES AND CONNECT INFLOW DOWNSPOUT(S) AND/OR PIPES TO THE UPB1(S).

 THE UPB1(S) MUST BE INSPECTED AT 12-24 HOURS AND 36-48 HOURS AFTER A SIGNIFICANT RAINFALL (0.5-1.0 INCHES) OR ARTIFICIAL FLOODING TO DETERMINE THAT THE FACILITY IS DRAINING PROPERLY. RESULTS OF THE INSPECTION MUST BE PROVIDED TO LDS BEFORE THE RELEASE
- CONSTRUCTION INSPECTION MUST BE PROVIDED IN ACCORDANCE WITH PFM 6-1307.11. CONSTRUCTION CONTRACTS SHOULD INCLUDE A CARE & REPLACEMENT WARRANTY TO ENSURE 85% PLANT SURVIVAL DURING THE FIRST GROWING SEASON FOLLOWING INSTALLATION.

CERTIFICATION OF NO CHANGE I HEREBY CERTIFY THAT NO CHANGES HAVE BEEN MADE TO, OR ARE PROPOSED FOR, THE UPB1 STANDARD DESIGN SHEET NOTES, SPECIFICATIONS OR DETAILS; AND NO CHANGES HAVE BEEN MADE TO, OR ARE PROPOSED FOR, THE DESIGN CALCULATIONS GENERATED FOR THIS PROJECT BY THE UPB1 STANDARD DESIGN CALCULATIONS SPREADSHEET.

UPB1-3

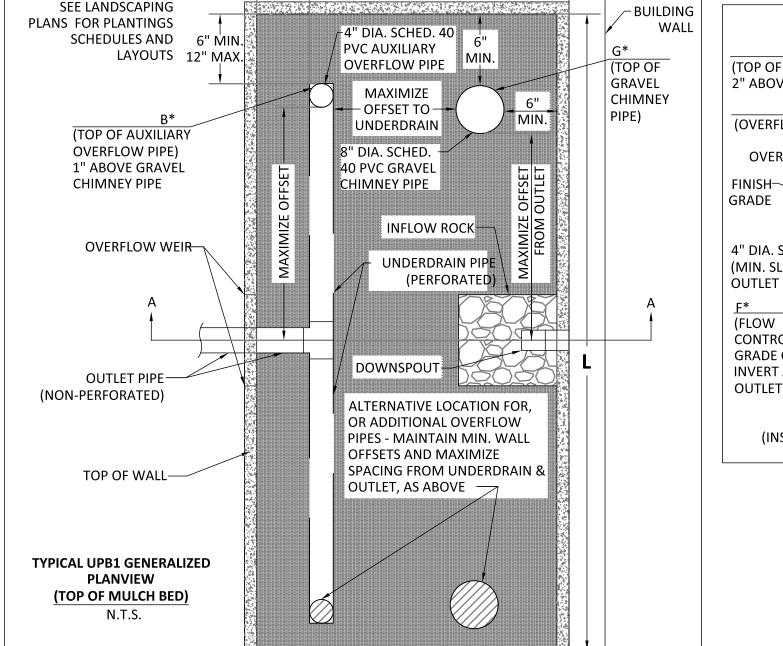
UPB1- 4

UPB1-5

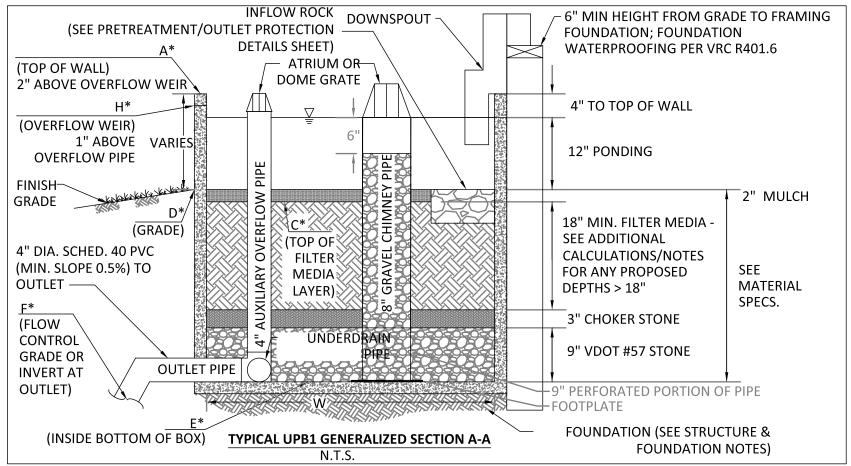
Gutter Screen

Gutter Screen

Gutter Screen



| | Dist | Distance to Structure Centerline Along Selected Wall & CL Offset Distance from Selected Wall | | | | | | | | | | | | | |
|-------------|-------------------------------|--|-----------|-----------------|--------------------------------------|------|-----------|------------------|-----------|------|-----------|------|--|--|--|
| Planter Box | Dist. from Inside Left Corner | | | | Offset Distance from Referenced Wall | | | | | | | | | | |
| ID | 4" Outlet Pipe Weir Crest | | Crest | 8" Chimney Pipe | | | | 4" Overflow Pipe | | | | | | | |
| | Ft. to CL | Along | Ft. to CL | Along | Ft. to CL | From | Ft. to CL | From | Ft. to CL | From | Ft. to CL | From | | | |
| UPB1- 1 | 19.00 | FW | 19.00 | FW | 1.00 | LW | 1.00 | BW | 0.69 | RW | 0.69 | FW | | | |
| UPB1- 2 | 17.00 | RW | 17.00 | RW | 1.00 | LW | 1.00 | BW | 0.69 | RW | 0.69 | FW | | | |
| UPB1- 3 | 8.00 | FW | 8.00 | FW | 1.00 | LW | 1.00 | BW | 0.69 | LW | 0.69 | FW | | | |
| UPB1- 4 | 10.00 | FW | 10.00 | FW | 1.00 | LW | 1.00 | BW | 0.69 | LW | 0.69 | FW | | | |
| UPB1- 5 | 4.00 | LW | 4.00 | LW | 1.00 | RW | 1.00 | BW | 0.69 | RW | 0.69 | FW | | | |



| Planter Box | ID fo | r Roof Gut | | FREATME for Inflov | | | ownspout | : | OUTLE | T PROTE | CTION |
|----------------------|-------|------------|-------|-----------------------|---------|--------|----------|-------|-------|---------|-------|
| Planter Boy | ın | | PRE | TREATME | ENT PRA | CTICES | | Т | OUTLE | T DDOTE | CTION |
| | | | | | | | | | | | |
| л Б1- 0 | 24.00 | 20.70 | 22.00 | 24.00 | 20.00 | 12.00 | 20.01 | 20.00 | 2.0 | | ' |
| IPB1- 5 | 24.00 | 23.75 | 22.50 | 24.80 | 20.00 | 12.00 | 23.67 | 23.83 | 2.3 | 1 | 1 |
| JPB1- 4 | 17.00 | 16.75 | 15.50 | 16.00 | 13.00 | 12.00 | 16.67 | 16.83 | 2.7 | 1 | 1 |
| JPB1- 3 | 21.00 | 20.75 | 19.50 | 18.00 | 17.00 | 16.00 | 20.67 | 20.83 | 2.0 | 1 | 1 |
| | 25.00 | 24.75 | 23.50 | 24.00 | 21.00 | 16.00 | 24.67 | 24.83 | 3.0 | 1 | 1 |
| JPB1- 2 | | | | | | | | | | | |

Inflow Rock

Inflow Rock

URBAN BIORETENTION - PLANTER BOX (UPB1) - FOR INFILL LOTS: DESIGN DATA

25.00 | 24.75 | 23.50 | 25.00 | 21.00 | 16.00 | 24.67 | 24.83 | 3.7 | 1

B C D E F G H Len. (ft) Pipes Pipes

In-line leaf strainer/separator

In-line leaf strainer/separator

Inflow Rock In-line leaf strainer/separator

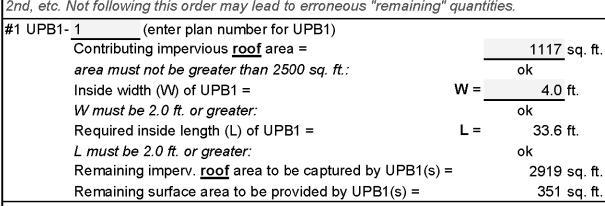
URBAN BIORETENTION FOR INFILL LOTS: PLANTER BOX (UPB1) DESIGN QUANTITIES TABLE (A UPB1 may be located within 10' of a residential structure and MUST drain only roof area)

A separate stand-alone design & Design Quantities Table is required for each lot

| | Enter the requested design data in the yellow cells below. | |
|-------|--|-------------|
| N; | Net additional impervious area created by proposed project: | 4816 sq. ft |
| | MUST match net additional impervious area value identified on Cover Sh | neet |
| | For UPB1(s) proposed on this sheet: | |
| | Total impervious <u>roof</u> area to be drained to UPB1(s): | 4036 sq. ft |
| | only <u>roof</u> area MUST drain into UPB1(s) | |
| ГІМ | % of equivalent net impervious area to be drained to UPB1(s): | 84 % |
| I IIN | Total required stormwater volume to be detained by UPB1(s): | 861 cu. ft |
| | Total required surface area of UPB1(s): | 485 sq. ft |
| SE | Number of individual UPB1(s) proposed: | 5 |
| | Is Water Quality credit to be claimed for proposed UPB1(s)? | YES |
| | Approx. total TP removed by proposed UPB1(s) - Level 1 Design: | 0.11 lb./yr |

Provide the contributing impervious <u>roof</u> area and inside width (W) dimension for each proposed UPB1, below, to obtain the required inside length (L) dimension and other design quantities. NOTE: the minimum allowed dimension for both L & W is 2.0', and the maximum allowed contributing impervious roof area to a UPB1 is 2500 sq. ft.

Data table #1 (below) MUST be used 1st for entering the individual UPB1 design data, #2 used



| #2 UPB1 | - 2 (enter plan number for UPB1) | | |
|---------|--|-----|--------------|
| | Contributing impervious <u>roof</u> area = | | 897 sq. ft. |
| | area must not be greater than 2500 sq. ft.: | | ok |
| | Inside width (W) of UPB1 = | W = | 4.0 ft. |
| | W must be 2.0 ft. or greater: | _ | ok |
| | Required inside length (L) of UPB1 = | L = | 27.0 ft. |
| | L must be 2.0 ft. or greater: | | ok |
| | Remaining imperv. <u>roof</u> area to be captured by UPB1(s) | = | 2022 sq. ft. |
| | Remaining surface area to be provided by UPB1(s) = | | 243 sq. ft. |

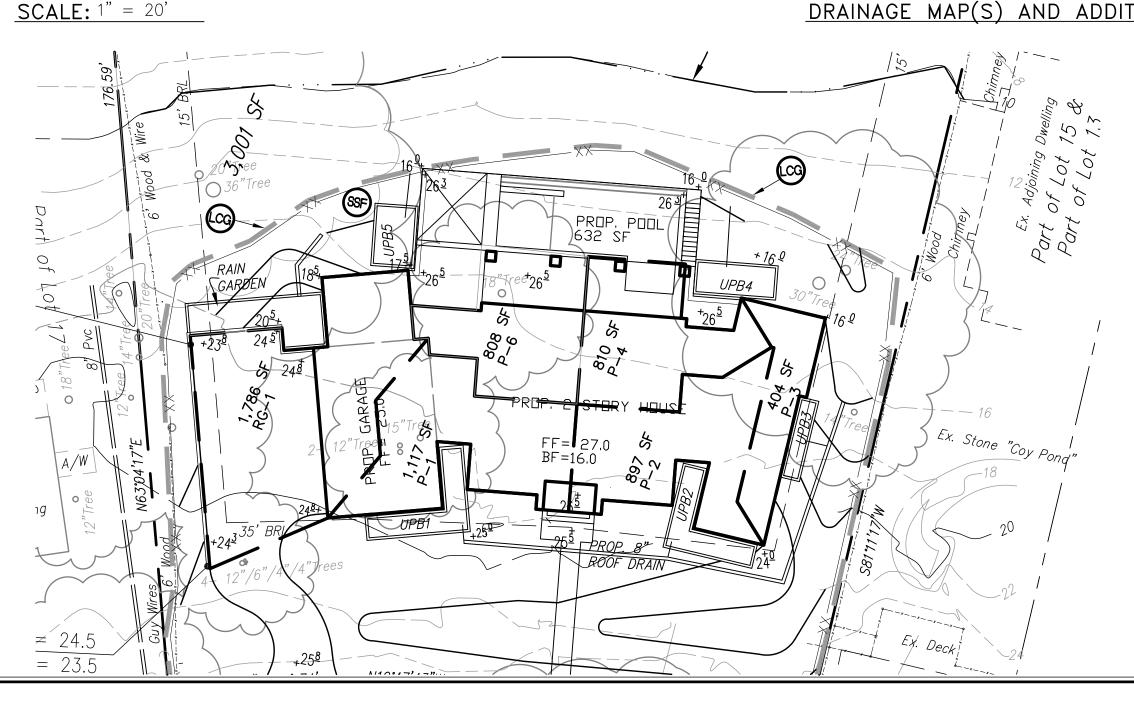
| #3 UPB1- 3 (enter plan number for UPB1) | | |
|--|---------|--------------|
| Contributing impervious <u>roof</u> area = | | 404 sq. ft. |
| area must not be greater than 2500 sq. ft.: | _ | ok |
| Inside width (W) of UPB1 = | W = | 3.0 ft. |
| W must be 2.0 ft. or greater: | _ | ok |
| Required inside length (L) of UPB1 = | L = | 16.2 ft. |
| L must be 2.0 ft. or greater: | | ok |
| Remaining imperv. <u>roof</u> area to be captured by UPB | 31(s) = | 1618 sq. ft. |
| Remaining surface area to be provided by UPB1(s) = | = | 194 sq. ft. |
| | | |

| #4 | I UPB1- | 4 | (enter plan number for UPB1) | | |
|----|---------|-------------|--|------------|-------------|
| | | Contributir | ng impervious <u>roof</u> area = | | 810 sq. ft. |
| | | area must | not be greater than 2500 sq. ft.: | | ok |
| | | Inside widt | th (W) of UPB1 = | W = | 6.0 ft. |
| | | W must be | e 2.0 ft. or greater: | | ok |
| | | Required i | nside length (L) of UPB1 = | L = | 16.2 ft. |
| | | L must be | 2.0 ft. or greater: | | ok |
| | | Remaining | imperv. <u>roof</u> area to be captured by UPB1(s) | = | 808 sq. ft. |
| | | Remaining | surface area to be provided by UPB1(s) = | | 97 sq. ft. |
| | | | | - | |

| #5 UPB1- <u>5</u> (enter plan number for UPB1) | | |
|---|----------|-------------|
| Contributing impervious <u>roof</u> area = | | 808 sq. ft. |
| area must not be greater than 2500 sq. ft.: | | ok |
| Inside width (W) of UPB1 = | w = | 8.0 ft. |
| W must be 2.0 ft. or greater: | | ok |
| Required inside length (L) of UPB1 = | L = | 12.1 ft. |
| L must be 2.0 ft. or greater: | | ok |
| Remaining imperv. <u>roof</u> area to be captured by UP | B1(s) = | 0 sq. ft. |
| Remaining surface area to be provided by UPB1(s) |) = | 0 sq. ft. |
| _ | <u> </u> | <u> </u> |

| | | | Remaining imp Remaining sur |
|---------------------|--------------|--------------------|--------------------------------|
| DRAINAGE MAP(S) AND |) ADDITIONAL | CALCULATIONS/NOTES | |

Grass



| | | RAIN GARI | DEN | | | |
|------------------------|----------|-----------|---------|-----------------------|-----|--|
| Filtering Design | | | Level | Two | | |
| Drainage Area | CDA | 1786.00 | sf | | | |
| Imerviouse Area | | 1786.00 | sf | | | |
| RV Managed Turf | Rvt | 0.20 | | 0.15,0.20.0.22,0.25 | | |
| Ruoff Corfficient | Rv | 0.95 | | | | |
| Volume Required | Tv | 362 | cf | Based on 2.56 in rain | | |
| Void Ration (SOIL) | V_{r} | 0.25 | | | | |
| Void Ration (STONE) | V_{r} | 0.40 | | | | |
| Soil Depth | d | 2.00 | ft | | | |
| Surface Depth Used | d | 1.00 | ft | | | |
| Stone Depth Used | d | 2.00 | ft | | | |
| Reservoir Surface Area | SA stone | 157.38 | sq. ft. | Area Provided | 160 | |

| SEAL | DESIGN ENGINEER / SURVEYOR |
|------|--|
| | PROFESSIONAL DESIGN GROUF |
| | 4124 WALNEY ROAD, SUITE M CHANTILLY, VIRGINIA 20151 |
| | PROJECT MANAGER NAME: HAMID MATIN |
| | PHONE: 703-378-2101 E-MAIL: h.matin@pdg-eng.com |
| | CONTACT NAME: |
| | |

OF LOT TON,

SHEET <u>3</u> OF <u>4</u>

AN BIORETENTION LANTER BOX 1 (UPB1)

URBAI PL

4/12/2023 Linear Development Project? No Site Information

Drainage Area A

Land Cover Summary-Post Post-Development New Impervious

New Impervious Cover (acres) Rv(impervious)

Post-Development Treatment Volume (acre-ft)

Post-Development Treatment Volume (cubic feet)

Post-Development TP Load (lb/yr)

Drainage Area A Land Cover (acres)

Post-Development Project (Treatment Volume and Loads)

Enter Total Disturbed Area (acres) → 0.42

Check:
BMP Design Specifications List: 2013 Draft Stds & Specs Linear project? No Land cover areas entered correctly? ✓ Total disturbed area entered? ✓

| | A Soils | B Soils | C Soils | D Soils | Totals |
|--|---------|---------|---------|---------|--------|
| Forest/Open Space (acres) undisturbed forest/open space | | | | | 0.00 |
| Managed Turf (acres) disturbed, graded for yards or other turf to be | | | | 0.63 | 0.63 |
| Impervious Cover (acres) | | | | 0.06 | 0.06 |
| | | | | | 0.69 |

| | A Soils | B Soils | C Soils | D Soils | Totals |
|---|---------|---------|---------|---------|--------|
| Forest/Open Space (acres) undisturbed, protected forest/open space or reforested | | | | | 0.00 |
| Managed Turf (acres) disturbed, graded for yards or other turf to be | | | | 0.52 | 0.52 |
| Impervious Cover (acres) | | | | 0.17 | 0.17 |
| Area Check | OK. | OK. | OK. | OK. | 0.69 |

| onstants | | Runoff Coefficients (Rv) | | | | | | | | |
|-------------------------------|------|--------------------------|---------|---------|---------|---------|--|--|--|--|
| nual Rainfall (inches) | 43 | | A Soils | B Soils | C Soils | D Soils | | | | |
| get Rainfall Event (inches) | 1.00 | Forest/Open Space | 0.02 | 0.03 | 0.04 | 0.05 | | | | |
| al Phosphorus (TP) EMC (mg/L) | 0.26 | Managed Turf | 0.15 | 0.20 | 0.22 | 0.25 | | | | |
| al Nitrogen (TN) EMC (mg/L) | 1.86 | Impervious Cover | 0.95 | 0.95 | 0.95 | 0.95 | | | | |
| get TP Load (Ib/acre/vr) | 0.41 | (t) | | 5 | | | | | | |

| Land Cover Sun | Post (Final) | Land Cover Summary | | ary-Pre | Land Cover Summ | | |
|--|---|--|--------------------------------------|-------------------------------|--|------|--------------------------------------|
| Post-ReDevel | mpervious | Post ReDev. & New I | Pre-ReDevelopment Listed Adjusted Po | | | | |
| Forest/Open Space Cover (acres) | 0.00 | Forest/Open Space Cover (acres) | | | Forest/Open Space Cover (acres) | | |
| Weighted Rv(forest) | 0.00 | Weighted Rv(forest) | 0.00 | 0.00 | Weighted Rv(forest) | | |
| % Forest | 0% | % Forest | 0% | 0% | % Forest | | |
| Managed Turf Cover (acres) | 0.52 | Managed Turf Cover (acres) | 0.52 | 0.63 | Managed Turf Cover (acres) | | |
| Weighted Rv (turf) | 0.25 | Weighted Rv (turf) | 0.25 | 0.25 | Weighted Rv(turf) | | |
| % Managed Turf | 75% | % Managed Turf | 90% | 91% | % Managed Turf | | |
| ReDev. Impervious Cover (acres) | 0.17 | Impervious Cover (acres) 0.17 | | 0.06 | Impervious Cover (acres) | | |
| Rv(impervious) | 0.95 | Rv(impervious) | 0.95 | 0.95 | Rv(impervious) | | |
| % Impervious | 25% | % Impervious | 10% | 9% | % Impervious | | |
| Total ReDev. Site Area (acres) | Area (acres) 0.69 | Final Site Area (acres) | 0.58 | 0.69 | Total Site Area (acres) | | |
| ReDev Site Rv | 0.42 | Final Post Dev Site Rv | 0.32 | 0.31 | Site Rv | | |
| Post-ReDevelopment Treatment Volume (acre-ft) | 0.0243 | Development Treatment Volume (acre-ft) | 0.0156 | 0.0179 | re-ReDevelopment Treatment Volume (acre-ft) | | |
| Post-ReDevelopment Treatment Volume (cubic feet) | 1,058 | Final Post- Development Treatment Volume (cubic feet) | 679 | 779 | e-ReDevelopment Treatment Volume (cubic feet) | | |
| Post-ReDevelopment Load (TP) (Ib/yr)* | 0.49 0.43 Final Post- Development TP Load (lb/yr) | Development TP Load 0.66 | 0.43 Development TP Load | 0.49 0.43 Development TP Load | 0.49 0.43 Development TP Load 0.66 | 0.49 | Pre-ReDevelopment TP Load (lb/yr) |
| Post-ReDevelopment TP | 0.96 | Final Post-Development TP Load per acre (lb/acre/yr) | 0.74 | 0.71 | Pre-ReDevelopment TP Load per acre {lb/acre/yr} | | |
| Load per acre (lb/acre/yr) | | | | | | | |

| ¹ Adjusted Land Cover Summary: Pre ReDevelopment land cover minus pervious land cover (forest/open space or managed turf) acreage proposed for new impervious cover. | | TP Load Reduction Required for Redeveloped Area (lb/yr) | 0.04 | TP Load Reduction Required for New Impervious Area (lb/yr) O.19 |
|---|--|--|------|--|
| Adjusted total acreage is consistent with Post-ReDevelopment acreage (minus acreage of new impervious cover). | | 1-111 | | V=11.1 |
| Column I shows load reduction requriement for new impervious cover (based on new development load limit, 0.41 lbs/acre/year). | | | | |
| | Post-Development Requirement for | r Site Area | | |
| | TP Load Reduction Required (lb/yr) | 0.24 | | |
| 70 | | -17 | | |
| | Nitrogen Loads (Informational Pur | rposes Only) | | |
| Pre-ReDevelopment TN Load (lb/yr) | Final Post-Development TN Load (Post-Re Development & New Impervious) (lb/yr) | | 4.76 | |
| | | - Beautiful and the second and the s | | - |

| rainage Area A Land Cover (acres) | | | | | | | 1 | | | | | | |
|--|-----------------------------------|--|--|--|---|--|---|---|---|--|---|---|------------------------------------|
| Forest/Open Space (acres) | A Soils | B Soils | C Soils | D Soils | Totals 0.00 | Land Cover Rv 0.00 | 1 | | | | | | * |
| Managed Turf (acres) | | | | | 0.00 | 0.00 | 1 | | | | | | |
| Impervious Cover (acres) | | | | 0.13 | 0.13 | 0.95 | 1 | Total | al Phoenhorus Aus | ailable for Remova | lin D A A (lb/yr) | 0.28 | 1 |
| imperious sover (acres) | | | | Total | | 0.55 | J | | | nt Treatment Volu | | 1,000,000 | f . |
| | | 120077 007 | 22800 81 | | | | | | rost bevelopille | nt ireatment void | ille iii D.A. A (it) | | 3 |
| tormwater Best Managem | ent Praction | ces (RR = R | unoff Redu | iction) | I | | | | Dhaanhanna | Hutunatad | | | Select from dropdown I |
| Practice | Runoff Reduction Credit (%) | Managed Turf Credit Area (acres) | Impervious Cover Credit Area (acres) | Volume from Upstream Practice (ft ³) | Runoff Reduction (ft ³) | Remaining Runoff Volume (ft ³) | Total BMP Treatment Volume (ft ³) | Phosphorus Removal Efficiency (%) | Phosphorus Load from Upstream Practices (lb) | Untreated Phosphorus Load to Practice (Ib) | Phosphorus Removed By Practice (lb) | Remaining Phosphorus Load (Ib) | Downstream Practice to Employed |
| Vegetated Roof (RR) |). | | 40 40 | | de Company | # T | te. | | | | | | |
| 1.a. Vegetated Roof #1 (Spec #5) | 45 | | | | 0 | 0 | 0 | 0 | | 0.00 | 0.00 | 0.00 | |
| 1.b. Vegetated Roof #2 (Spec #5) | 60 | | | | 0 | 0 | 0 | 0 | | 0.00 | 0.00 | 0.00 | |
| Rooftop Disconnection (RR) | | | | | | | | | | | | | |
| 2.a. Simple Disconnection to A/8 Soils | 50 | | | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| (Spec #1) 2.b. Simple Disconnection to C/D Soils | 25 | | | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| (Spec #1) 2.c. To Soil Amended Filter Path as per | | | | | | | | | | | | | |
| pecifications (existing C/D soils) (Spec #4) | 50 | | | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2.d. To Dry Well or French Drain #1, Micro-Infilration #1 (Spec #8) | 50 | | | 0 | 0 | 0 | 0 | 25 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2.e. To Dry Well or French Drain #2, Micro-Infiltration #2 (Spec #8) | 90 | | | 0 | 0 | 0 | 0 | 25 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2.f. To Rain Garden #1, Micro-Bioretention #1 (Spec #9) | 40 | | | 0 | 0 | 0 | 0 | 25 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2.g. To Rain Garden #2, Micro-Bioretention #2 (Spec #9) | 80 | | 0.13 | 0 | 359 | 90 | 448 | 50 | 0.00 | 0.28 | 0.25 | 0.03 | 4.b. Grass Channel C/D Soi |
| 2.h. To Rainwater Harvesting (Spec #6) | 0 | | | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2.i. To Stormwater Planter, | 40 | | | 0 | 0 | 0 | 0 | 25 | 0.00 | 0.00 | 0.00 | 0.00 | None |
| rban Bioretention (Spec #9, Appendix A) | | | | | 8 | - W | . 3 | 3000 | | 70000 | | 750000 | |
| Permeable Pavement (RR) | | | | | | | | | | | | | |
| 3.a. Permeable Pavement #1 (Spec #7) | 45 | | | 0 | 0 | 0 | 0 | 25 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3.b. Permeable Pavement #2 (Spec #7) | 75 | | | | 0 | 0 | 0 | 25 | | 0.00 | 0.00 | 0.00 | |
| Grass Channel (RR) | - | - | - | - | - | - | - | | - | | - | | |
| 4.a. Grass Channel A/B Soils (Spec #3) | 20 | | | 0 | 0 | 0 | 0 | 15 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | | | | | | 2000 | 7,000 | 1000 | 0.000 | | | 535 C C C C C C C C C C C C C C C C C C | |
| 4.b. Grass Channel C/D Soils (Spec #3) c. Grass Channel with Compost Amended | 10 | - 0 | | 90 | 9 | 81 | 90 | 15 | 0.03 | 0.00 | 0.01 | 0.02 | |
| Soils as per specs (see Spec #4) | 20 | | | 0 | 0 | 0 | 0 | 15 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Dry Swale (RR) | | | | | | | | | | | | | |
| 5.a. Dry Swale #1 (Spec #10) | 40 | | | 0 | 0 | 0 | 0 | 20 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5.b. Dry Swale #2 (Spec #10) | 60 | | | 0 | 0 | 0 | 0 | 40 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Bioretention (RR) | | | | | | | | | | | | | |
| a. Bioretention #1 or Micro-Bioretention #1 | 40 | | | 0 | 0 | 0 | 0 | 25 | 0.00 | 0.00 | 0.00 | 0.00 | |
| or Urban Bioretention (Spec #9) i.b. Bioretention #2 or Micro-Bioretention #2 | 80 | | | 0 | 0 | 0 | 0 | 50 | 0.00 | 0.00 | 0.00 | 0.00 | |
| (Spec #9) | 80 | | | U | U | | 0 | 30 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Infiltration (RR) | | | | | | | | <i>(2)</i> | -15 | | | | |
| 7.a. Infiltration #1 (Spec #8) | 50 | | | 0 | 0 | 0 | 0 | 25 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7.b. Infiltration #2 (Spec #8) | 90 | | | 0 | 0 | 0 | 0 | 25 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Extended Detention Pond (RR) | | | | | | | | | | | | | |
| 8.a. ED #1 (Spec #15) | 0 | | | 0 | 0 | 0 | 0 | 15 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 8.b. ED #2 (Spec #15) | 15 | | | 0 | 0 | 0 | 0 | 15 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Sheetflow to Filter/Open Space (RR) | | | | | | | | | | | | | |
| a. Sheetflow to Conservation Area, A/B Soils | 75 | | | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| (Spec #2) b. Sheetflow to Conservation Area, C/D Soils | 50 | | | 0 | 0 | 0 | | | | | | 0.00 | |
| (Spec #2) c. Sheetflow to Vegetated Filter Strip, A Soils | 50 | | | U | U | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| or Compost Amended B/C/D Soils | 50 | | | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 | |

| | 0.13 | AREA CHECK: OK. | | | | | |
|---|------|---------------------------------------|--|--|--|--|--|
| TOTAL MANAGED TURF AREA TREATED (ac) | 0.00 | AREA CHECK: OK. | | | | | |
| TOTAL RUNOFF REDUCTION IN D.A. A (ft ³) | 368 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | | | |
| TOTAL PHOSPHORUS AVAILABLE FOR REMOVAL IN D.A. A (lb/yr) TOTAL PHOSPHORUS REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr) | | | | | | | |
| TOTAL PHOSPHORUS REMAINING AFTER APPLYING RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr) | | | | | | | |

DEQ Virginia Runoff Reduction Method Re-Development Compliance Spreadsheet - Version 3.0

BMP Design Specifications List: 2013 Draft Stds & Specs

Site Summary

Project Title: Wellington Estates Lot 15A Date: 45028

| Total Rainfall (in): | 43 |
|--------------------------|------|
| Total Disturbed Acreage: | 0.42 |

Site Land Cover Summary

Pre-ReDevelopment Land Cover (acres)

| A soils | | | | | | | | |
|---------|----------|----------|---------------------------------|--|---------------------|-----------------------|-----------------------|--|
| | B Soils | C Soils | D Soils | Totals | % of Total | | | |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | | | |
| 0.00 | 0.00 | 0.00 | 0.63 | 0.63 | 91 | | | |
| 0.00 | 0.00 | 0.00 | 0.06 | 0.06 | 9 | | | |
| | | | | 0.60 | 100 | | | |
| | 22018080 | 20147447 | 20 (1964) 1 800 (1964) 1 (1964) | Stranger Supplies Stranger Sup | 0.00 0.00 0.06 0.06 | 0.00 0.00 0.06 0.06 9 | 0.00 0.00 0.06 0.06 9 | |

Update Summary Sheet

Print

Print Preview

Post-ReDevelopment Land Cover (acres)

| Tost Reperciopinent Land Core. | 40.007 | | | | | |
|--------------------------------|---------|---------|---------|---------|--------|------------|
| | A soils | B Soils | C Soils | D Soils | Totals | % of Total |
| Forest/Open (acres) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 |
| Managed Turf (acres) | 0.00 | 0.00 | 0.00 | 0.52 | 0.52 | 75 |
| Impervious Cover (acres) | 0.00 | 0.00 | 0.00 | 0.17 | 0.17 | 25 |
| | | | | | 0.69 | 100 |

Site Tv and Land Cover Nutrient Loads

| | Final Post-Development (Post-ReDevelopment & New Impervious) | Post- ReDevelopment | Post- Development (New Impervious) | Adjusted Pre- ReDevelopment |
|-------------------------------------|--|------------------------|--|--------------------------------|
| Site Rv | 0.42 | 0.32 | 0.95 | 0.32 |
| Treatment Volume (ft ³) | 1,058 | 679 | 379 | 679 |
| TP Load (lb/yr) | 0.66 | 0.43 | 0.24 | 0.43 |

| Total TP Load Reduction Required (lb/vr) | 0.24 | 0.04 | 0.19 |
|--|------|------|------|
| (/) - / | | | |

| | Final Post-Development Load (Post-ReDevelopment & New Impervious) | Pre- ReDevelopment |
|-----------------|---|-----------------------|
| TN Load (lb/yr) | 4.76 | 3.50 |

Site Compliance Summary

| Maximum % Reduction Required Below | 100/ |
|------------------------------------|------|
| Pre-ReDevelopment Load | 10% |

| Total Runoff Volume Reduction (ft ³) | 368 |
|--|---------|
| Total TP Load Reduction Achieved (lb/yr) | I 0.26 |
| Total TN Load Reduction Achieved (lb/yr) | I 1.90 |
| Remaining Post Development TP Load (lb/yr) | 1 () 41 |
| Remaining TP Load Reduction (lb/yr) Required | 1 0.00 |

** TARGET TP REDUCTION EXCEEDED BY 0.02 LB/YEAR **

Drainage Area Summary

| | 70 | -03 | | | | |
|--------------------------|--------|--------|--------|--------|--------|-------|
| | D.A. A | D.A. B | D.A. C | D.A. D | D.A. E | Total |
| Forest/Open (acres) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Managed Turf (acres) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Impervious Cover (acres) | 0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.13 |
| Total Area (acres) | 0.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.13 |

Drainage Area Compliance Summary

| | D.A. A | D.A. B | D.A. C | D.A. D | D.A. E | Total |
|-------------------------|--------|--------|--------|--------|--------|-------|
| TP Load Reduced (lb/yr) | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.26 |
| TN Load Reduced (lb/yr) | 1.90 | 0.00 | 0.00 | 0.00 | 0.00 | 1.90 |

DESIGN BY: DRAWN BY: PJT CHECKED BY: HM DATE: JAN 2023 SCALE: -JOB NO.: **00518** DRAWING NO.: 518-WQIA-SHEET 4 OF 4

WELLINGTON, SDB: N-7 PG: 12

N

GROUP,

DESIGN

PROFESSIONAL

Site Photos:



Existing property access and parking on Southdown Road on adjacent property South Side



View along the frontage of property looking toward North.

Page 4 of 7 7819 Southdown Road, Alexandria, Va. 22308



Existing House



Existing Front Yard

Page 5 of 7 7819 Southdown Road, Alexandria, Va. 22308



Side and rear yard looking toward Northeast.



South side yard showing the adjacent house on the south.

Page 6 of 7 7819 Southdown Road, Alexandria, Va. 22308



View of Bulkhead wall looking North



View of Bulkhead wall looking south. Pier on adjacent property

Page 7 of 7 7819 Southdown Road, Alexandria, Va. 22308

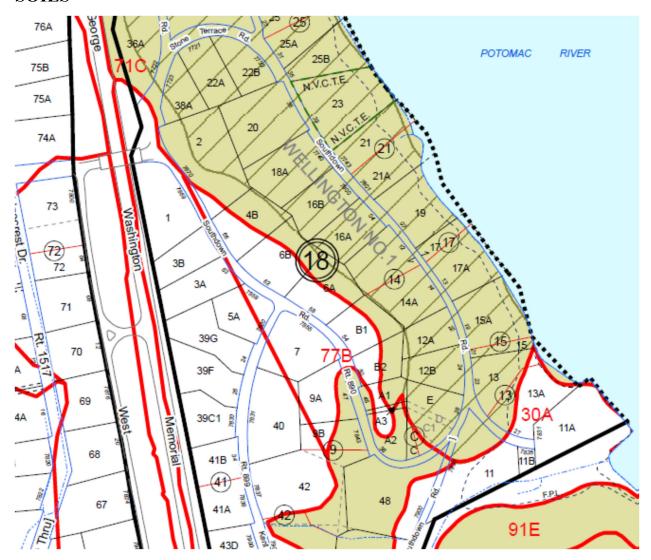


Rear of existing house



Existing deck and steps to remain.

SOILS



According to Fairfax County GIS Maps the soils on this property is mapped as soil number 71C

The soil name is Kingstowne - Sassafras - Marumsco complex - This complex is a mixture of the development-disturbed Kingstowne soil and the natural Sassafras and Marumsco soils. The complex occurs along the slopes between high and low elevation areas of the Coastal Plain that have been developed, but retain a good portion of undisturbed soil. Kingstowne soil will be clustered around foundations, streets, sidewalks, playing fields and other graded areas. Sassafras and Marumsco soils will be found on un-graded, sloping back and front yards and common areas. Sassafras-Marumsco complex contains Marine Clay and is highly problematic. For a description of the soils that make up this map unit, please see (66) Kingstowne and (91) Sassafras-Marumsco Complex.

