

URBAN BIORETENTION PLANTER BOX (UPB1) – GENERAL NOTES:

- 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 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.
- 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 BMP'S 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 PLANTER BOX.
- 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 7 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 DOWNGRADED 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 DOWNGRADED 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 PROPOSED 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 PLAN. 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.
- 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 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 YARDS).
- UNLESS OUTLET AND/OR INFLOW PIPES ARE CAST-IN-PLACE WITH PLANTER BOX SHELL, ENSURE ANNUAL SPACE BETWEEN A PIPE AND WALL CUT-OUT PERIMETER IS PROPERLY SEALED WITH FLEXIBLE, WATER-TIGHT SEAL SUCH AS KORAN-ANOR OR APPROVED EQUAL.
- 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 TABLE (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 CAPACITY.
- INFLOW ROCK MUST BE INSTALLED WHERE A DOWNSPOUT OR INFLOW PIPE ENTERS A UPB1 IN ORDER TO HELP PREVENT THE EROSION OF MULCH & SOIL MEDIA.

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 RESIDENTIAL 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 | 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 EXTRANEIOUS 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 #89 WASHED GRAVEL), ABOVE THE 9-INCH LAYER OF UNDERDRAIN STONE. | |
| 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 SHRUBS. -SHRUBS A MINIMUM OF 30 INCHES HIGH SHOULD BE PLANTED A MINIMUM OF 10 FEET ON-CENTER. -PLANT 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 GROW. -TREES, LARGE SHRUBS, TURF, THE USE OF SEEDS, AND PLANTING ANNUALS OR VEGETABLES, IS NOT PERMITTED. | -PLANT MATERIALS MUST BE SELECTED PER THE RECOMMENDED PLANT LIST AND INCLUDED IN THE LANDSCAPING PLAN. SEE THE LANDSCAPING PLAN FOR DETAILS. -PLANT SPACING MUST BE SUFFICIENT TO ENSURE A MINIMUM OF 75% COVERAGE WITHIN 2 YEARS. -PLANTS SHOULD COME FROM QUALIFIED SUPPLIERS, BE APPROPRIATE FOR STORMWATER APPLICATIONS, AND CONSIST OF NATIVE SPECIES. |

MAINTENANCE NOTES FOR UPB1(S):

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

| MAINTENANCE TASKS | FREQUENCY |
|--|------------------------|
| <ul style="list-style-type: none"> SPOT WEEDING, EROSION REPAIR, TRASH & SEDIMENT REMOVAL, DEBRIS REMOVAL FROM GRAVEL CHIMNEY PIPE, AND MULCH RAKING | TWICE DURING APR.-OCT. |
| <ul style="list-style-type: none"> 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 |
| <ul style="list-style-type: none"> SPRING INSPECTION AND CLEANUP SUPPLEMENT MULCH TO MAINTAIN A 2-INCH LAYER PRUNE SHRUBS REPAIR PHYSICAL DETERIORATION OF PLANTER BOX | ANNUALLY |
| <ul style="list-style-type: none"> 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 | |
| <ul style="list-style-type: none"> REPLACE THE MULCH OR SURFACE COVER LAYER | EVERY 3 YEARS |

CONSTRUCTION NOTES FOR UPB1(S):

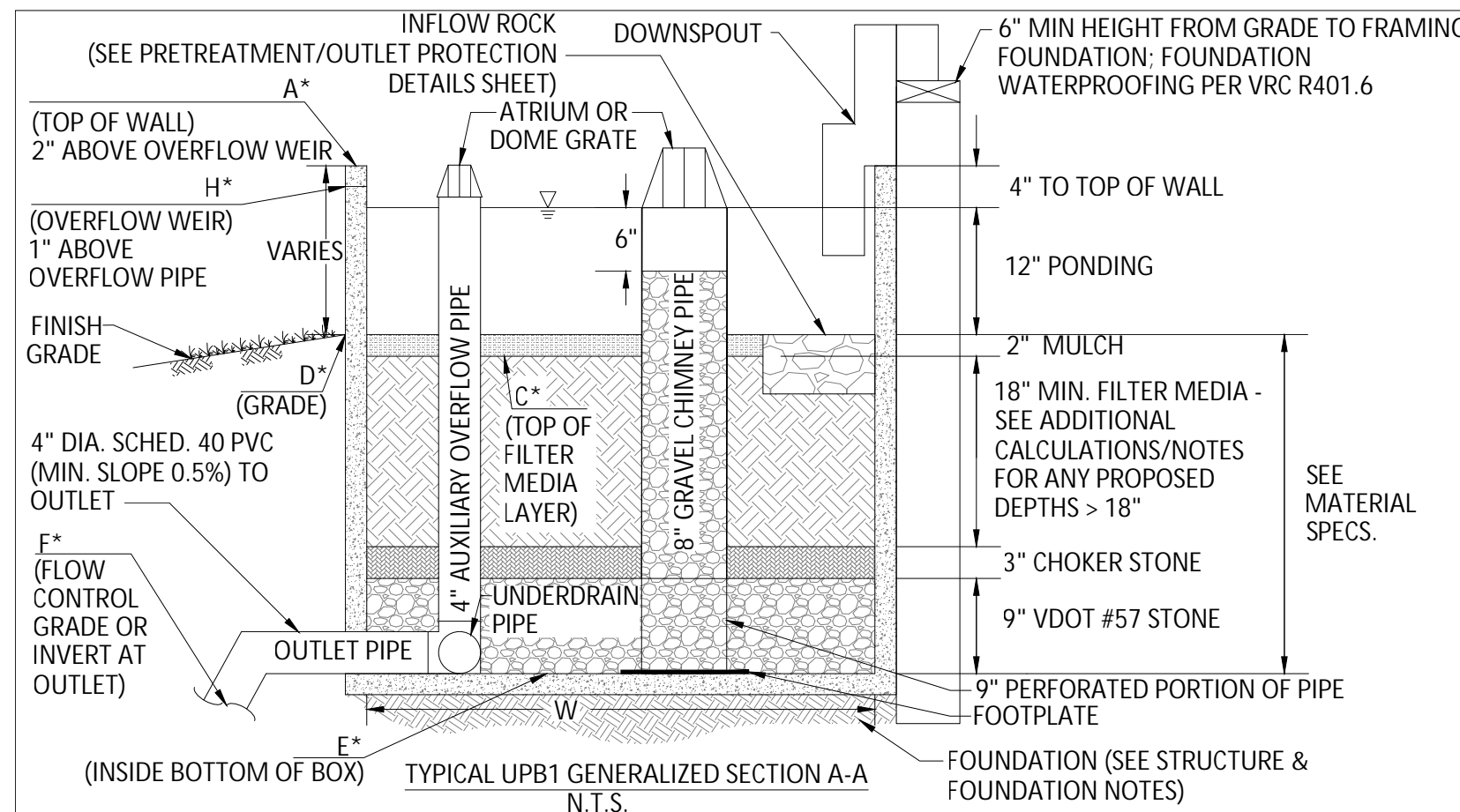
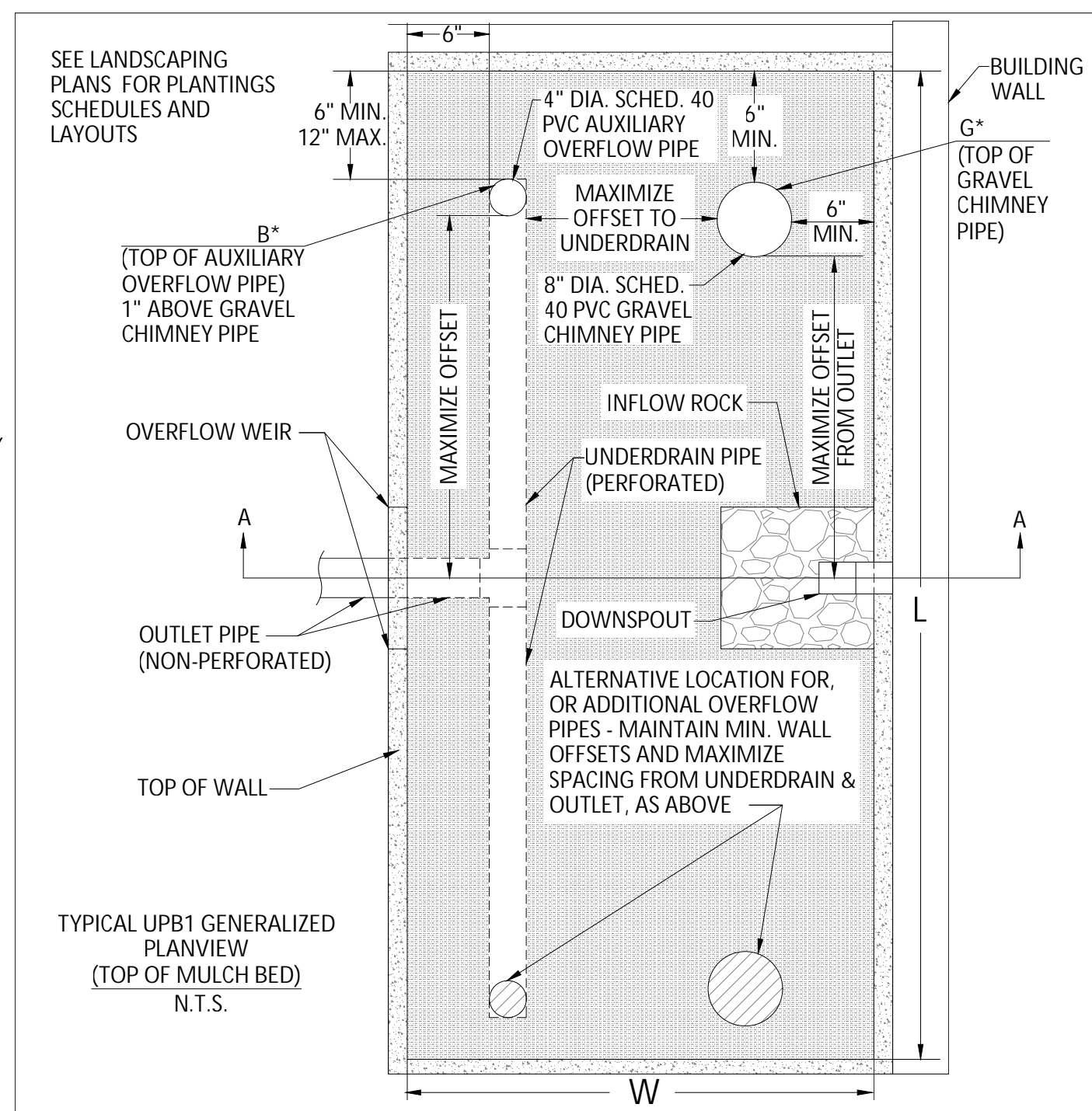
- CONSTRUCTION OF A UPB1'S OUTER SHELL OR CONTAINER AND ANY REQUIRED FOUNDATION MUST BE APPROPRIATELY SEQUENCED WITH THE CONSTRUCTION OF THE RESIDENTIAL STRUCTURE, AS AN ACCESSORY STRUCTURE. THE SITE PREPARATION AND PROTECTION PRACTICES NORMALLY APPLIED FOR SUCH A STRUCTURE ARE ACCEPTABLE. ALSO, ENSURE 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 WATERPROOFING, AS REQUIRED.
 - INSTALL THE UNDERDRAIN 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 CHIMNEY 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 SPECIFICS COIR OR JUTE MATTINGS 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 IN 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 OF THE CONSERVATION ESCROW.
- 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.

SIGNATURE _____

DESIGNER _____ NAME _____ DATE _____



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

| Planter Box ID | Elevations (ft) | | | | | | | | Weir Len. (ft) | Overflow Pipes | Chimney Pipes |
|----------------|-----------------|--------|--------|--------|--------|--------|--------|--------|----------------|----------------|---------------|
| | A | B | C | D | E | F | G | H | | | |
| UPB1-100 | 254.00 | 253.75 | 252.50 | 252.00 | 250.00 | 249.00 | 253.67 | 253.83 | 3.3 | 1 | 1 |
| UPB1-200 | 254.00 | 253.75 | 252.50 | 252.00 | 250.00 | 249.00 | 253.67 | 253.83 | 2.0 | 1 | 1 |
| UPB1-300 | 254.00 | 253.75 | 252.50 | 252.00 | 250.00 | 249.00 | 253.67 | 253.83 | 2.0 | 1 | 1 |
| UPB1-400 | 254.00 | 253.75 | 252.50 | 252.00 | 250.00 | 249.00 | 253.67 | 253.83 | 2.0 | 1 | 1 |
| UPB1-500 | 254.00 | 253.75 | 252.50 | 252.00 | 250.00 | 249.00 | 253.67 | 253.83 | 2.0 | 1 | 1 |

PRETREATMENT PRACTICES

| Planter Box ID | PRETREATMENT PRACTICES | | | OUTLET PROTECTION |
|----------------|------------------------|-------------|---------------------------------|----------------------------|
| | for Roof Gutter | for Inflow | for Downspout | |
| UPB1-100 | Gutter Screen | Inflow Rock | In-line leaf strainer/separator | Drywell |
| UPB1-200 | Gutter Screen | Inflow Rock | In-line leaf strainer/separator | Exist. Imperv. Surface |
| UPB1-300 | Gutter Screen | Inflow Rock | In-line leaf strainer/separator | Grass |
| UPB1-400 | Gutter Screen | Inflow Rock | In-line leaf strainer/separator | Small Rock Riprap |
| UPB1-500 | Gutter Screen | Inflow Rock | In-line leaf strainer/separator | Exist. Adequate Conveyance |

DRAINAGE MAP(S) AND ADDITIONAL CALCULATIONS/NOTES

SCALE: 1" = XX'
(MAX. SCALE 1"=30')

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.

Net additional impervious area created by proposed project: **4000** sq. ft.

MUST match net additional impervious area value identified on Cover Sheet

For UPB1(s) proposed on this sheet:

Total impervious roof area to be drained to UPB1(s): **3000** sq. ft.

only roof area MUST drain into UPB1(s)

% of equivalent net impervious area to be drained to UPB1(s): **75** %

Total required stormwater volume to be detained by UPB1(s): **640** cu. ft.

Total required surface area of UPB1(s): **361** sq. ft.

Number of individual UPB1(s) proposed: **5**

Is Water Quality credit to be claimed for proposed UPB1(s)? **NO**

Approx. total TP removed by proposed UPB1(s) - Level 1 Design: **0.00** lb./yr.

Provide the contributing impervious roof 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 2nd, etc. Not following this order may lead to erroneous "remaining" quantities.

#1 UPB1-100 (enter plan number for UPB1)

Contributing impervious roof area = **1000** sq. ft.

area must not be greater than 2500 sq. ft.: **ok**

Inside width (W) of UPB1 = **6.0** ft.

W must be 2.0 ft. or greater: **ok**

Required inside length (L) of UPB1 = **20.0** ft.

L must be 2.0 ft. or greater: **ok**

Remaining imperv. roof area to be captured by UPB1(s) = **2000** sq. ft.

Remaining surface area to be provided by UPB1(s) = **240** sq. ft.

#2 UPB1-200 (enter plan number for UPB1)

Contributing impervious roof area = **500** sq. ft.

area must not be greater than 2500 sq. ft.: **ok**

Inside width (W) of UPB1 = **5.0** ft.

W must be 2.0 ft. or greater: **ok**

Required inside length (L) of UPB1 = **12.0** ft.

L must be 2.0 ft. or greater: **ok**

Remaining imperv. roof area to be captured by UPB1(s) = **1500** sq. ft.

Remaining surface area to be provided by UPB1(s) = **180** sq. ft.

#3 UPB1-300 (enter plan number for UPB1)

Contributing impervious roof area = **500** sq. ft.

area must not be greater than 2500 sq. ft.: **ok**

Inside width (W) of UPB1 = **4.5** ft.

W must be 2.0 ft. or greater: **ok**

Required inside length (L) of UPB1 = **13.4** ft.

L must be 2.0 ft. or greater: **ok**

Remaining imperv. roof area to be captured by UPB1(s) = **1000** sq. ft.

Remaining surface area to be provided by UPB1(s) = **120** sq. ft.

#4 UPB1-400 (enter plan number for UPB1)

Contributing impervious roof area = **500** sq. ft.

area must not be greater than 2500 sq. ft.: **ok**

Inside width (W) of UPB1 = **4.0** ft.

W must be 2.0 ft. or greater: **ok**

Required inside length (L) of UPB1 = **15.0** ft.

L must be 2.0 ft. or greater: **ok**

Remaining imperv. roof area to be captured by UPB1(s) = **500** sq. ft.

Remaining surface area to be provided by UPB1(s) = **60** sq. ft.

#5 UPB1-500 (enter plan number for UPB1)

Contributing impervious roof area = **500** sq. ft.

area must not be greater than 2500 sq. ft.: **ok**

Inside width (W) of UPB1 = **3.0** ft.

W must be 2.0 ft. or greater: **ok**

Required inside length (L) of UPB1 = **20.0** ft.

L must be 2.0 ft. or greater: **ok**

Remaining imperv. roof area to be captured by UPB1(s) = **0** sq. ft.

Remaining surface area to be provided by UPB1(s) = **0** sq. ft.

DESIGN ENGINEER / SURVEYOR _____

FIRM NAME: _____ ADDRESS: _____ PHONE NO: _____ FAX NO: _____ EMAIL: _____ PROJ. MANAGER: _____

PROFESSIONAL SEAL _____

PROFESSIONAL SEAL _____

DATE _____

DATE _____

PROJECT NAME _____

DISTRICT: VIRGINIA FAIRFAX COUNTY

URBAN BIORETENTION PLANTER BOX 1 (UPB1)

FAIRFAX COUNTY STANDARD DESIGN SHEETS FOR INFILL LOTS

SHEET ___ OF ___