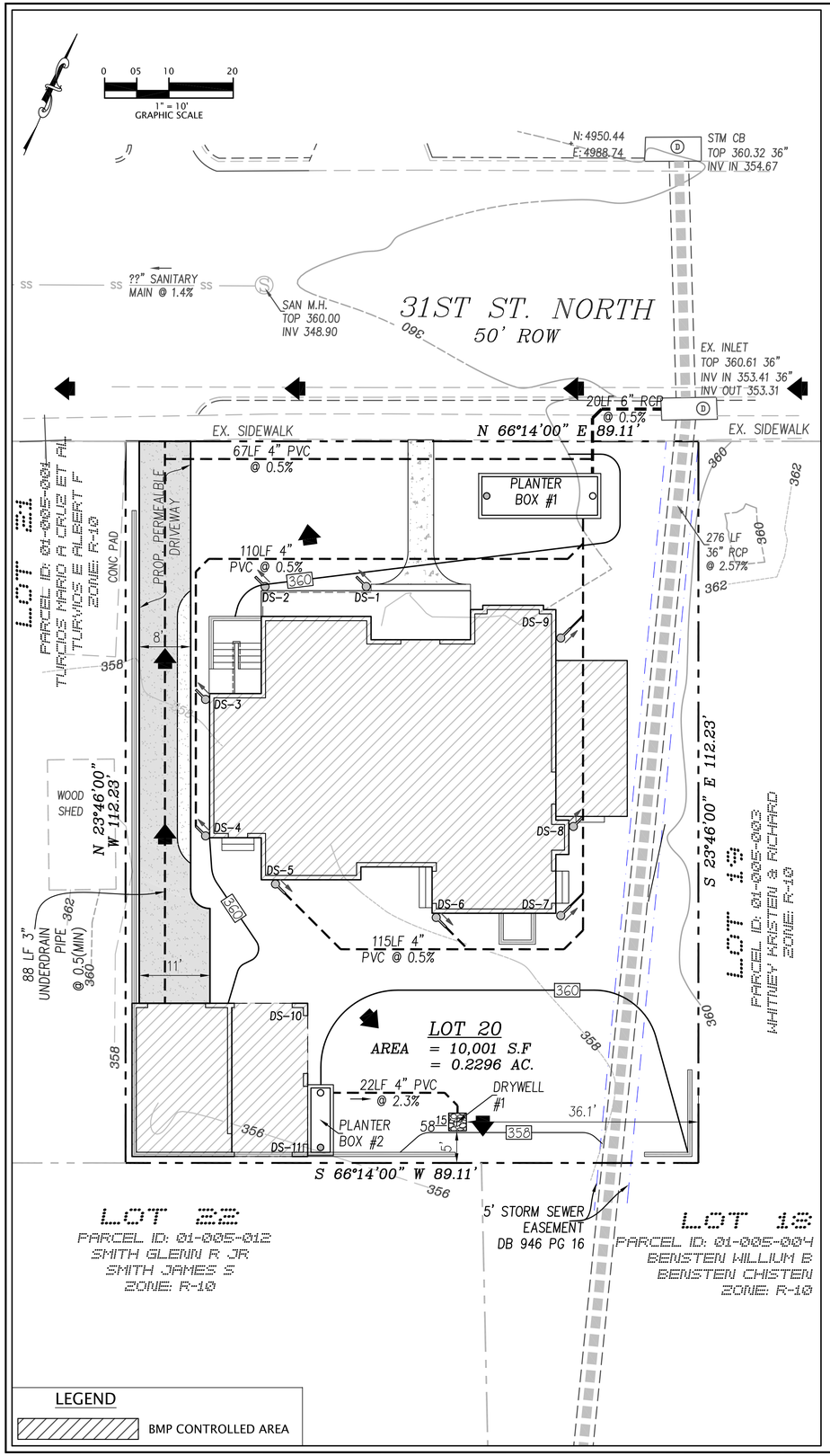


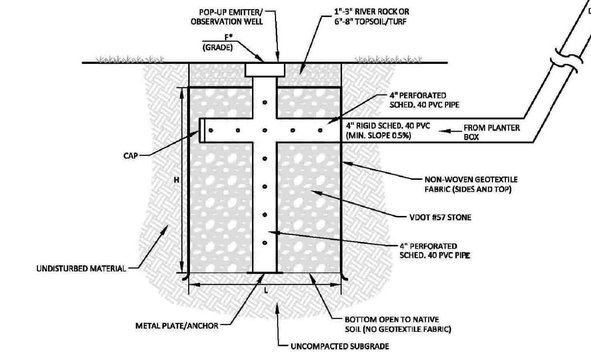

## SRORMWATER PLANTER BOX SIZING COMPUTAION :

| Facility name/type | Impervious Area to Facility | Pervious Area to Facility | Total Drainage Area | Total Drainage Area | Rainfall Depth (P) | Rv | Target storage (WQv) | Width | Length | Ponding depth | Filter depth | Gravel depth | Surface Area | Ponding Volume (1.00 void) | Soil Storage Volume (0.25 void) | Gravel Storage Volume (0.4 void) | Available Storage | % Water Quality Volume Captured |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (SF) | (SF) | (SF) | (acre) | (in) | | (CF) | (ft) | (ft) | (in) | (in) | (in) | (SF) | (CF) | (CF) | (CF) | (CF) | Must be ≥ 100% (Max. 200%) |
| Stormwater Planter Box #1 | 2380 | | 2380 | 0.0546 | 1.00 | 0.95 | 188.42 | 18.00 | 6.00 | 12 | 30 | 12 | 108.00 | 108.00 | 67.50 | 43.20 | **218.70** | **116.1%** |
| Stormwater Planter Box #2 | 652 | | 652 | 0.0150 | 1.00 | 0.95 | 51.62 | 10.00 | 3.00 | 12 | 30 | 12 | 30.00 | 30.00 | 18.75 | 12.00 | **60.75** | **117.7%** |

## DRYWELL SIZING COMPUTAION :

| DOWNSTREAM SRTUCTURE NAME | UPSREAM STRUCTURE NAME | UPSREAM STRUCTURE VOLUME | VOLUME RATIO | REMAINING RUN-OFF VOLUME (from VRRM) | TREATMENT VOLUME REQUIRED | LENGTH | WIDTH | HEIGHT | VOID RATIO | TRATMENT VOLUME PROVIDED |
|---|---|---|---|---|---|---|---|---|---|---|
| | | (CF) | | (CF) | (CF) | (FT) | (FT) | (FT) | | (CF) |
| EX. INLET | PLANTER BOX #1 | 218.70 | 0.78 | 152.91 | --- | --- | --- | --- | --- | --- |
| DRYWELL #1 | PLANTER BOX #2 | 60.75 | 0.22 | | 8.41 | 2.75 | 2.75 | 3.00 | 0.4 | 9.08 |

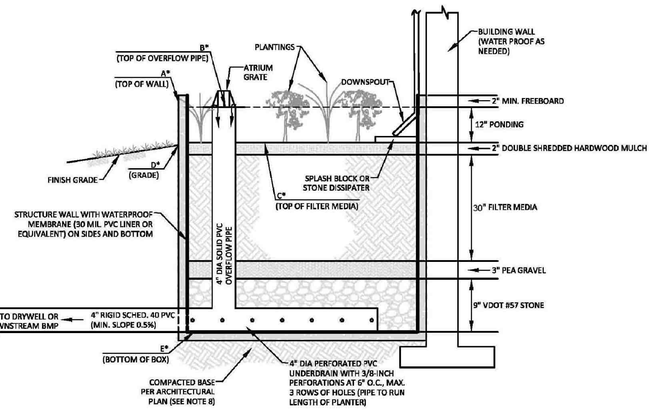
| URBAN BMP DESIGN DATA | | | | | | | PIPE TYPE | LENGTH OF PIPE (LF) | SLOPE (%) | OUTFALL EVEVATION |
|---|---|---|---|---|---|---|---|---|---|---|
| PLANTER BOX ID | ELEVATION | | | | | | | | | |
| | A | B | C | D | E | F | | | | |
| Stormwater Planter Box #1 | 360.00 | 359.83 | 358.83 | 359.50 | 355.16 | | 6" RCP | 20 | 0.50% | 355.06 |
| Stormwater Planter Box #2 | 363.49 | 363.32 | 362.32 | 360.00 | 358.65 | 358.15 | | | | |




TYPICAL DRYWELL

NOTES:

1. MINIMUM SIZE IS 2 FEET LONG BY 2 FEET WIDE BY 2 FEET HIGH.
2. MAXIMUM HEIGHT IS 3 FEET.
3. THE UNDERDRAIN MUST DISCHARGE TO A DRY WELL AND MULTIPLE UNDERDRAINS MUST NOT DISCHARGE TO THE SAME LOCATION UNLESS IT IS DESIGNED FOR 25% OF THE REMAINING RUNOFF FROM THE BMP.
4. FACILITIES SHALL BE SET BACK A MINIMUM OF 10 FEET FROM THE PROPERTY LINE FOR A DOWN-GRADIENT PROPERTY, AND A MINIMUM OF 5 FEET FROM THE PROPERTY LINE FOR AN UP-GRADIENT PROPERTY.




TYPICAL PLANTER BOX

NOTES:

1. LENGTH (L) AND WIDTH (W) DIMENSIONS MUST BE A MINIMUM OF 2 FEET EACH.
2. NO STORAGE VOLUME CREDIT IS GIVEN FOR THE MULCH LAYER.
3. SEE VIRGINIA DEQ STORMWATER DESIGN SPECIFICATION NO. 9 FOR ADDITIONAL DESIGN AND CONSTRUCTION INFORMATION.
4. THE PLANTER BOX MAY BE CONTAINED IN A PRECAST CONCRETE, CAST-IN-PLACE CONCRETE OR 6"X6" PRESSURE TREATED WOOD VAULT. OTHER MATERIALS MAY INCLUDE MOLDED POLYPROPYLENE CELLS AND PRECAST MODULAR BLOCK SYSTEMS (VIRGINIA DEQ DESIGN SPECIFICATION NO. 9, SECTION 9-A-1).
5. SINCE PLANTER BOXES ARE LOCATED NEAR THE BUILDING FOUNDATION, WATERPROOFING BY USING A WATERTIGHT CONCRETE SHELL OR AN IMPERMEABLE LINER IS REQUIRED TO PREVENT SEEPAGE.
6. AN ATRIUM GRATE OR EQUIVALENT MAY BE USED FOR THE OVERFLOW ON TOP OF THE PVC STANDPIPE.
7. CONTRACTOR TO ENSURE THAT THE PROPER DOWNSPOUTS DISCHARGE INTO THE PLANTER BOX. RIVER ROCK OR OTHER ENERGY DISSIPATION SHALL BE USED WHERE DOWNSPOUTS TIE INTO THE PLANTER BOX.
8. FOR PLANTER BOXES ATTACHED TO THE FOUNDATION AND/OR A RETAINING WALL, SEE ARCHITECTURAL PLANS FOR STRUCTURAL DETAILS/REQUIREMENTS.

## TYPICAL URBAN BIORETENTION BASIN

N.T.S.

| NO. | DATE | REVISION |
|---|---|---|
| | | |


CIVILAND,LLC
P.O. BOX 650206 STERLING, VIRGINIA 20165
(703) 404-0363 ● Fax (703) 404-0443
farhang@civilandva.com


DATE SEP '18
CHKD BY: FM
DESIGN BY: FM

COMMONWEALTH OF VIRGINIA
FARHANG MOJGANI
Lic. No. 16844
PROFESSIONAL ENGINEER

SCALE : AS SHOWN

BMP DESIGN AND DETAILS - I
LT 20 SEC 5, OAKWOOD
6606 31ST STREET NROTH
ARLINGTON COUNTY
VIRGINIA

SHEET NO. 7 OF X

FILE. NO. XX-XX