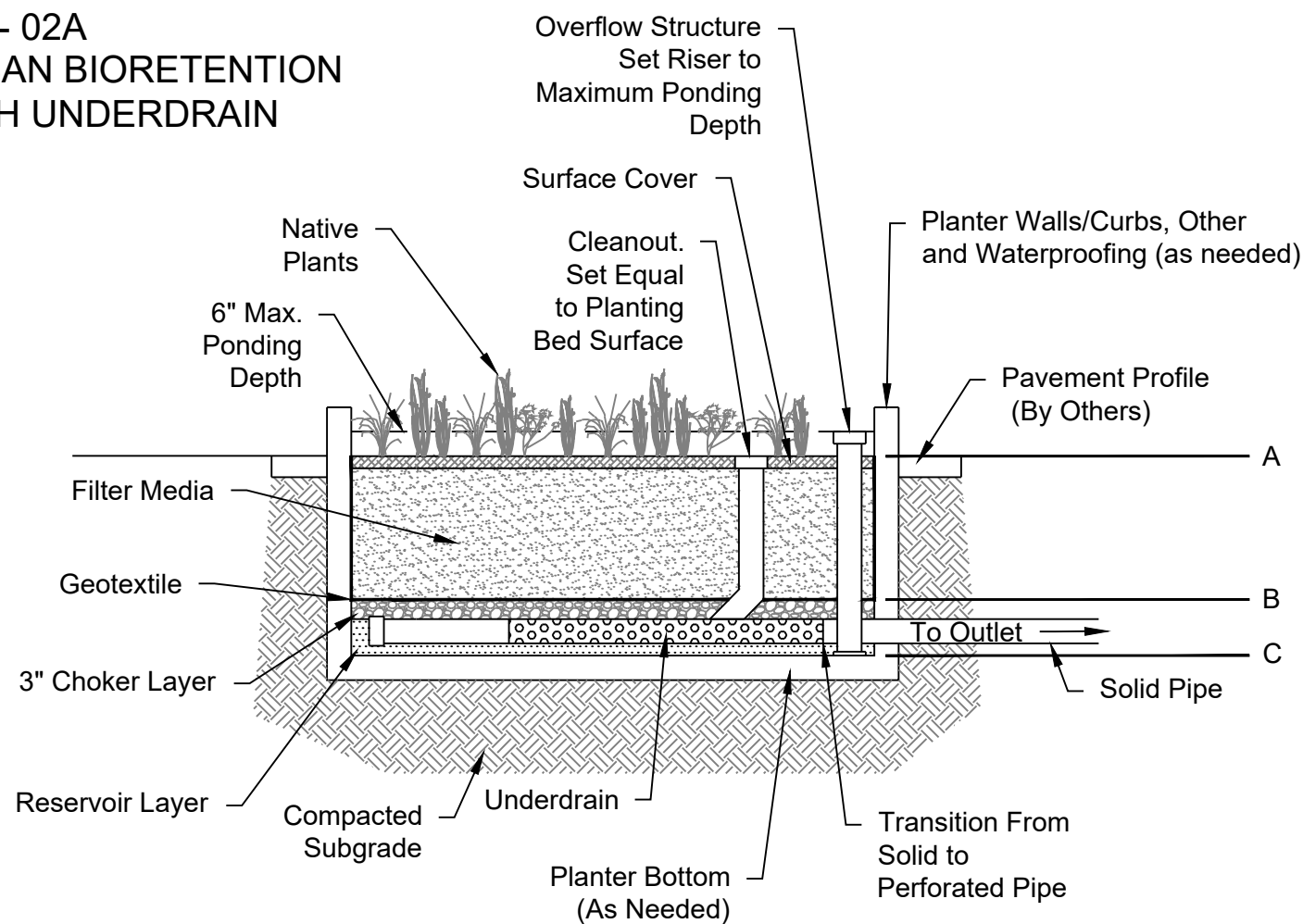


PLAN VIEW

LANDSCAPE PLAN

GIP - 02A
URBAN BIORETENTION
WITH UNDERDRAIN



LANDSCAPE CERTIFICATION:

- I hereby certify that this bioretention planting plan is in keeping with the requirements listed in GIP-01 Section 5.7. Only native species and/or non-invasive species of plants were used in the design of this bioretention planting plan. This plan will achieve at least 75% surface area coverage within the first two years, and has the minimum amount of required trees.

DETAIL NOTE:

- Contractor, Engineer, or Owners Representative shall notify MWS NPDES Staff at least 48 hours prior to the installation of the bioretention filter media. At the completion of installation, the above referenced person will collect one sample per bioretention area for analysis and confirmation of the filter media as defined by GIP-01. Media testing not required when using a certified media product.
- Vehicular and equipment traffic shall be prohibited in an infiltrating urban bioretention area to prevent compaction and sediment deposition.
- Minimum 2' separation between subgrade and water table / bedrock required.

Urban Bioretention Number :		
	Design	As-Built
Treatment Volume (Tv), CF		
Surface Area, SF		
Top of Bank Elevation		
Emergency Spillway Elevation*		
Overflow (TOC) Elevation*		
Max. Ponding Elevation		
(A) GIP Surface Elevation		
(B) Top of Stone Elevation		
Underdrain Invert*		
Outlet Elevation*		
(C) Subgrade Elevation		
* N/A if not required		
All elevations shall be NAVD88		

Urban Bioretention With Underdrain Material Specifications		
Material	Specifications	Notes
Surface Cover	<ul style="list-style-type: none"> Shredded hardwood Hardwood bark River stone Coir or jute matting Turf 	Lay a 3 inch layer on the surface of the filter bed in order to suppress weed growth & prevent erosion. Stone shall not comprise more than 50% of the surface area.
Filter Media * Composition	<ul style="list-style-type: none"> 70% - 85% sand; 10%-30% silt + clay, with clay \leq 10%; and 5% to 10% organic matter 	The volume of filter media based on 110% of the plan volume, to account for settling or compaction. Minimum media infiltration rate 1 in/hr. Contact staff for testing procedures.
Geotextile	Use a non-woven geotextile fabric with a flow rate of > 110 gal./min./ft ² (e.g., Geotex 351 or equivalent)	Apply only to the sides and above the underdrain (2'-4' wide strip). AASHTO M288-06, ASTM D4491 & D4751
Choker Layer *	#8 or #89 clean washed stone	Meet TDOT Construction Specifications.
Reservoir Layer *	#57 or #2 clean washed stone	Meet TDOT Construction Specifications.
Underdrain	6-inch dual wall HDPE or SDR 35 PVC pipe with 3/8-inch perforations at 6 inches on center	AASHTO M 252 Place perforated pipe at base of reservoir layer.
Cleanout	6-inch SDR 35 PVC pipe with vented cap	Provide cleanouts at the upper end of the underdrain.
Observation Well	6-inch SDR 35 PVC pipe with vented cap and anchor plate	Number of wells equals the number of test pits required for infiltration testing (see Appendix 2-A)

*Item receipts may be required to be included with as-built submittal.