BIORETENTION PLANT SCHEDULE

PLANTS FOR SUNNY AREAS	PLANTS FOR SHADY AREAS	SHRUBS FOR SUNNY AREAS
SWEET FLAG - *ACORUS CALAMUS*	CATEPILLAR SEDGE - *CAREX CRINITA*	MEADOW SWEET - *SPIRAEA ALBA*
GIANT HISSOP - *AGASTACHE FOENICULUM*	CARDINAL FLOWER - *LOBELIA CARDINALIS*	STEEPLE BUSH - *SPIRAEA TOMENTOSA*
CANADA ANEMONE - *ANEMONE CANADENSIS*	OSTRICH FERN - *MATTEUCCIA STRUTHIOPTERIS*	HIGH BUSH CRANBERRY - *VIBURNUM TRILOBUM*
MARSH MILKWEED - *ASCLEPIAS INCARNATAS*	VIRGINIA BLUEBELLS - *MERTENSIA VIRGINICA*	
NEW ENGLAND ASTER - *ASTER NOVAE-ANGLIAE*	SENSITIVE FERN - *ONOCLEA SENSIBILIS*	
MARSH MARIGOLD - *CALTHA PALUSTIS*		
TUSSOCK SEDGE - *CAREX STRICTA*		
TURTLEHEAD - *CHELONE GLABRA*		
JOE PYE WEED - *EUPATORIUM MACULATUM*	TREES	SHRUBS FOR SUNNY OR SHADY AREAS
BONESET - *EUPATORIUM PERFOLIATUM*	RED MAPLE - *ACER RUBRUM*	BLACK CHOKEBERRY - *ARONIA MELANOCARPA*
QUEEN OF THE PRAIRIE - *FILIPENDULA RUBRA*	RIVER BIRCH - *BETULA NIGRA*	RED OSIER DOGWOOD - *CORNUS SERECIA*
SNEEZEWEED - *HELENIUM AUTUMNALE*	WHITE ASH - *FRAXINUS AMERICANA*	LOW BUSH HONEYSUCKLE - *DIERVILLA LONICERA*
BLUEFLAG IRIS - *IRIS VERSICOLOR*	GREEN ASH - *FRAXINUS PENNSYLVANICUM*	PUSSY WILLOW - *SALIX CAPREA*
SOFT RUSH - *JUNCUS EFFUSUS*	HONEY LOCUST - *GLEDITSIA TREACANTHAS*	BLUE ARCTIC WILLOW - *SALIX PURPUREA 'NANNA'*
GREAT BLUE LOBELIA - *LOBELIA SIPHILITICA*	EASTERN RED CEDAR - *JUNIPERUS VIRGINIANA*	
SWITCHGRASS - *PANICUM VIRGATUM*	SWEET GUM - *LIQUIDAMBAR STYRACFLUA*	
PRAIRIE PHLOX - *PHLOX PILOSA*	BLACK GUM - *NYSSA SYLVATICA*	
MOUNTAIN MINT - *PYCNANTHEMUM VIRGIANIANUM*	SYCAMORE - *PLATANUS OCCIDENTALIS*	
RIVER BULRUSH - *SCIRPUS FLUVIATILIS*	EASTERN COTTONWOOD - *POPULUS DELTOIDES*	
SOFTSTEM BULRUSH - *SCIRPUS VALIDUS*	SWAMP WHITE OAK - *QUERCUS BICOLOR*	
RIDDEL'S GOLDENROD - *SOLIDAGO RIDDELLI*	SCARLET OAK - *QUERCUS COCCINEA*	
TALL MEADOW RUE - *THALICTRUM DASYCARPUM*	PIN OAK - *QUERCUS PALUSTRIS*	
CULVERS ROOT - *VERONICASTRUM VIRGINICUM*		
GOLDEN ALEXANDER - *ZIZIA AUREA*		

NOTE: THE LANDSCAPE ARCHITECT SHALL USE THIS PLANT LIST AS A GUIDE WHEN LANDSCAPING THE BIORETENTION AREAS. ADDITIONAL REFERENCES INCLUDE "RAIN GARDEN MANUAL FOR HOMEOWNERS" PRINTED BY THE USEPA–GREAT LAKES NATIONAL PROGRAM OFFICE AND THE "BIORETENTION GUIDANCE MANUAL FOR LAKE COUNTY, OHIO" PREPARED BY BIOHABITATS, INC.

BIORETENTION NOTES:

- INSTALLATION OF BIOSWALES MAY BE SUBJECT TO INSPECTION BY CITY OFFICIALS AND/OR REPRESENTATION FROM THE CUYAHOGA SOIL AND WATER CONSERVATION DISTRICT.
- BIORETENTION PLANTS SHALL BE NATIVE PLANTS WITHSTANDING WET CONDITIONS, SEE PLANT SCHEDULE THIS SHEET.
- CONSTRUCTION OF BIORETENTION FILTER MEDIA AREAS SHALL ONLY COMMENCE AFTER ROUGH GRADING IS COMPLETE AND ALL UPSLOPE CONTRIBUTING DRAINAGE AREAS ARE STABILIZED.
- BIORETENTION INSTALLATION SHALL NOT BE DONE DURING PERIODS OF PRECIPITATION.
- PEA GRAVEL SHALL BE CLEAN, DOUBLE WASHED, #78 STONE.
- STONE TRENCH BEHIND CURB SHALL NOT EXCEED 4" IN DIAMETER.
- UNDERDRAIN GRAVEL SHALL BE CLEAN, DOUBLE WASHED #57 STONE
- UNDERDRAINS SHALL BE 4" PERFORATED POLYETHYLENE PIPE WITH GEOTEXTILE FABRIC @ 1.0% SLOPE UNLESS OTHERWISE NOTED.
- GEOTEXTILE FABRIC SHALL BE PERMEABLE NON–WOVEN GEOTEXTILE WITH A FLOW RATE > 110 GPM, PUNCTURE STRENGTH–125 LB, MULLEN BURST STRENGTH–400PSI, AND TENSILE STRENGTH–300LB.
- WHEN EXCAVATING TO PLACE FILTER MEDIA, TAKE PRECAUTIONS TO AVOID COMPACTING THE AREA WITH CONSTRUCTION EQUIPMENT, FOOT TRAFFIC, DROPPED GRAVEL, ETC. ANY COMPACTED SOILS INCLUDING THE IN–SITU TO REMAIN SHALL BE REMEDIATED BY FRACUTRING WITH A TILLAGE DEVICE 12 INCHES DEEP. SMEARED SOILS MAY BE REMEDIATED WITH A HAND RAKE OR ROTO–TILLER.
- SOIL MIX SHALL BE "KURTZ BROS. INC." BIORETENTION SOIL MIX OR APPROVED EQUIVALENT. TESTING RESULTS SHOULD BE PROVIDED FOR COMPOSITION & INFILTRATION RATES OF SOIL MIX. MIX SHALL HAVE NO LESS THAN 72% SAND AND NO GREATER THAN 10% CLAY. ORGANIC MATTER SHALL NOT EXCEED 10%. INITIAL INFILTRATION RATE, SHALL BE NO LESS THAN 3.5 INCHES/HOUR AND NOT MORE THAN 4.5 INCHES/HOUR. PREDICTED INFILTRATION RATES OVER TIME DESIGNED TO BE 1.5 INCHES/HOUR. SOILS SHALL BE PLACED IN 12–18 INCH LIFTS AND ONLY LIGHTLY COMPACTED. GENTLE SOAKING WITH WATER MAY BE USED TO ENCOURAGE SETTLING.
- EACH BMP LOCATION SHALL HAVE UNDERDRAINS WITH CLEANOUTS/OBSERVATION WELLS. CLEANOUTS SHALL BE 6" IN DIAMETER WITH APPROPRIATE 45° CONNECTIONS. THEY SHALL EXTEND 6" ABOVE TOP OF GRADE AND HAVE A REMOVABLE WATERTIGHT CAP. THE ENDS OF THE UNDERDRAINS NOT TERMINATED IN A CLEANOUT SHALL BE CAPPED.
- INSTALL 3" OF COARSELY CHOPPED HARDWOOD MULCH AFTER PLANTING SOIL HAS SETTLED SUFFICIENTLY.
- FOR BIORETENTION SIDE SLOPES GREATER THAN 3:1 A DENSE TURF GRASS WITH AN EROSION CONTROL BLANKET SHALL BE USED.

POST CONSTRUCTION WATER QUALITY REQUIREMENTS:

BIORETENTION INSPECTION AND MAINTENANCE SCHEDULE

MAINTENANCE OF BIORETENTION AREAS:

THE OWNER'S ASSOCIATION WILL MAINTAIN OWNERSHIP OVER THESE COMMON AREAS OF THE DEVELOPMENT AND SHALL THEREFORE BE THE RESPONSIBLE PARTY TO MAINTAIN THESE FEATURES. THE RECOMMENDED MAINTENANCE SCHEDULE IS LISTED BELOW. IT IS RECOMMENDED THAT A QUALIFIED LANDSCAPER BE CONTRACTED TO PERFORM THE MAINTAINANCE FOR THESE AREAS.

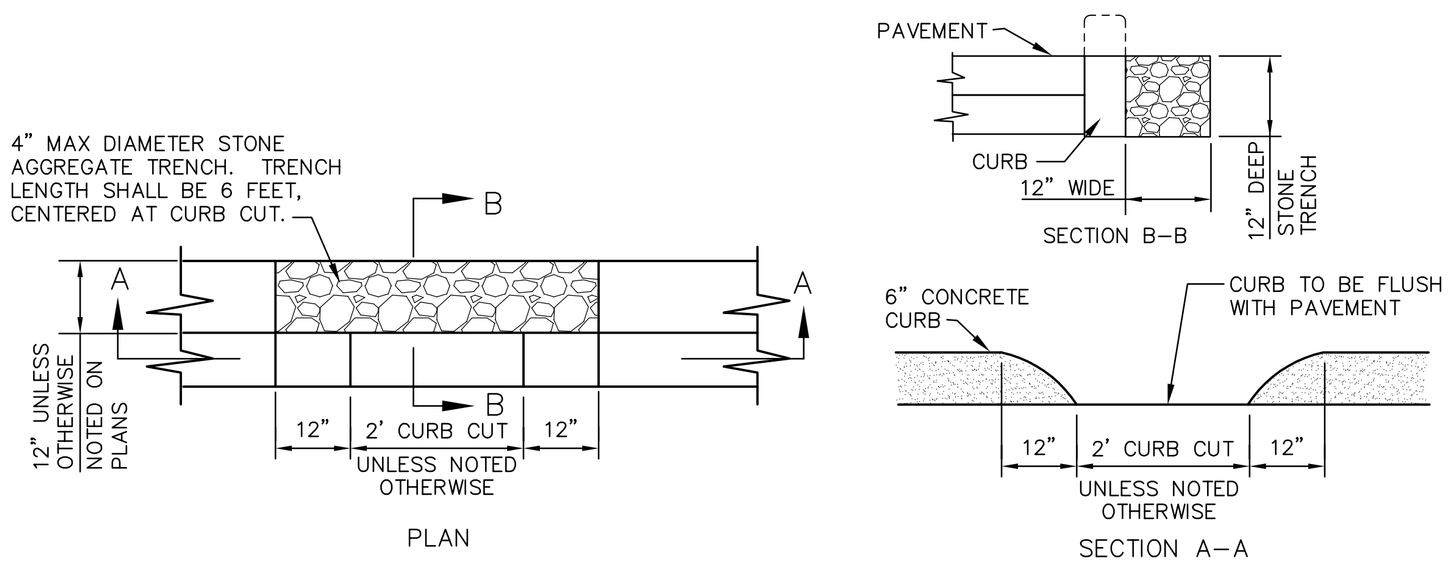
THE OWNER'S ASSOCIATION SHALL BE RESPONSIBLE FOR PROVIDING INSPECTION RECORDS BY A QUALIFIED PERSON(S) TO THE CITY EVERY MAY 1ST FOR THE PREVIOUS YEAR'S ROUTINE MAINTENANCE, ONCE CONSTRUCTION IS COMPLETE. THE CITY MAY REQUEST INSPECTION AND MAINTENANCE RECORDS AT ANY TIME DURING THE YEAR.

IT IS RECOMMENDED THAT THE FOLLOWING ITEMS BE INCLUDED ON THE STORMWATER SITE INSPECTION FORM:

1.) INSPECTION FORM SHALL NOTE THAT THE REVIEW IS FOR THE BIORETENTION SWALES
2.) PROJECT NAME AND LOCATION
3.) DATE OF INSPECTION, INSPECTOR'S NAME, AFFILIATION, CONTACT INFORMATION AND QUALIFICATIONS
4.) WEATHER INFORMATION AT TIME OF INSPECTION INCLUDING PRECIPITAION, TEMPERATURE, ETC.
5.) IS THERE DEBRIS IN THIS AREA
6.) ARE THE INLETS FREE OF DEBRIS
7.) HAS THE SWALE MAINTAINED IT'S CONCAVE SHAPE, HAS ANY OF THE EMBANKMENT AREAS BEEN BREACHED (YARD INLET SHOULD BE ACTING AS OVERFLOW DISCHARGE POINT FOR THE SWALE).
8.) DO THE PLANTS APPEAR HEALTHY
9.) IS MULCH IN GOOD STANDING, DOES IT NEED REDRESSED
10.) ARE UPSTREAM DRAINAGE WAYS IN GOOD STANDING AND FREE OF DEBRIS
11.) IS MAINTENANCE REQUIRED
12.) DATE AND DETAILS OF MAINTENANCE PERFORMED

OVER TIME (2–10 YEARS); CLOGGING OF THE PLANTING SOIL OR FILTER LAYER WITH FINE PARTICLES MAY OCCUR. THIS IS EXPECTED AND CAN BE CORRECTED BY REPLACING A PORTION OF THE PLANTING SOIL OR REPLACING ALL THE PLANTING SOIL AND THE FILTER LAYER UNTIL BETTER PERMEABILITY IS ACHIEVED. TO AID IN PREVENTING CLOGGING DO NOT PILE SNOW IN THE BIORETENTION AREAS. THE FOLLOWING TABLE IS THE SUGGESTED MAINTENANCE SCHEDULE:

ACTIVITY	SCHEDULE
WATER PLANTS	AS NECESSARY DURING FIRST GROWING SEASON
PRUNE AND WEED PLANTS FOR APPEARANCE	AS NEEDED
INSPECT AND REPLACE POORLY SUITED OR DISEASED PLANTS	AS NEEDED
CHECK FOR EROSION OR DEPOSITION IN PRETREATMENT AREAS; CLEAN OUT AND REPAIR DAMAGED AREAS	SEMI–ANNUALLY
INSPECT FACILITY FOR SALT DAMAGES	MONTHLY
REMOVE LITTER AND DEBRIS	MONTHLY
ADD ADDITIONAL MULCH	ANNUALLY
TEST SOIL AND ADJUST AS NECESSARY TO MAINTAIN IN 5.2–7.0 pH RANGE	BIANNUALLY
CHECK PLANTING SOIL AND FILTER LAYER FOR CLOGGING, REPLACING PORTIONS NECESSARY	2 – 10 YEARS



CURB CUT FOR DRAINAGE TO BIOSWALE
(NOT TO SCALE)

REVISIONS			
DESCRIPTION	DATE	BY	
REISSUED FOR OWNER	12–19–08	CFE	
ORIGINAL ISSUE	7–07–08	CFE	

DATE: 7–07–08
DRAWN BY: CCC
CHD BY:
DWG. NAME: Q:PH1–N–SWPPN04
PATH: 08211\DOT\CONTROL\DWG
F.B.:

KS Associates, Inc.
260 Burns Road, Suite 100
Elyria, OH 44035
P 440 365 4730
F 440 365 4790
www.ksassociates.com
KS ASSOCIATES

STORM WATER SITE DEV PLAN NOTES & DETAILS

HUNTINGTON BANK AT CITY CENTRE No 1

CITY OF AVON
COUNTY OF LORAIN, STATE OF OHIO

SHEET SWN–4 OF 19

JOB NO. 08211

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