



Ben Brenman Pond Stormwater Retrofit Project

September 13, 2018



Chesapeake Bay Cleanup Mandates

- Chesapeake Bay Total Maximum Daily Load (TMDL)
- Municipal Separate Storm Sewer System (MS4) Permit mandate
- Bay Action Plan major strategy
- Stormwater Local Assistance Fund (SLAF) Grant



LEGEND

◉ EXISTING TREES TO REMAIN

○ PROPOSED TREES

NOTES:

- 1. NO ENDORSEMENT OF ANY PARTICULAR PRODUCT, MANUFACTURER OR PROVIDER IS IMPLIED OR INTENDED.
- 2. ALL IMAGES ARE FOR EDUCATIONAL AND ILLUSTRATIVE PURPOSES ONLY.

OVERLOOK

BOAT LAUNCH

FLOATING WETLAND

WILDLIFE OPPORTUNITIES ON WEIR

DESIRABLE WILDLIFE

PEDESTRIAN BRIDGE

EXAMPLES OF SHORELINE VEGETATION

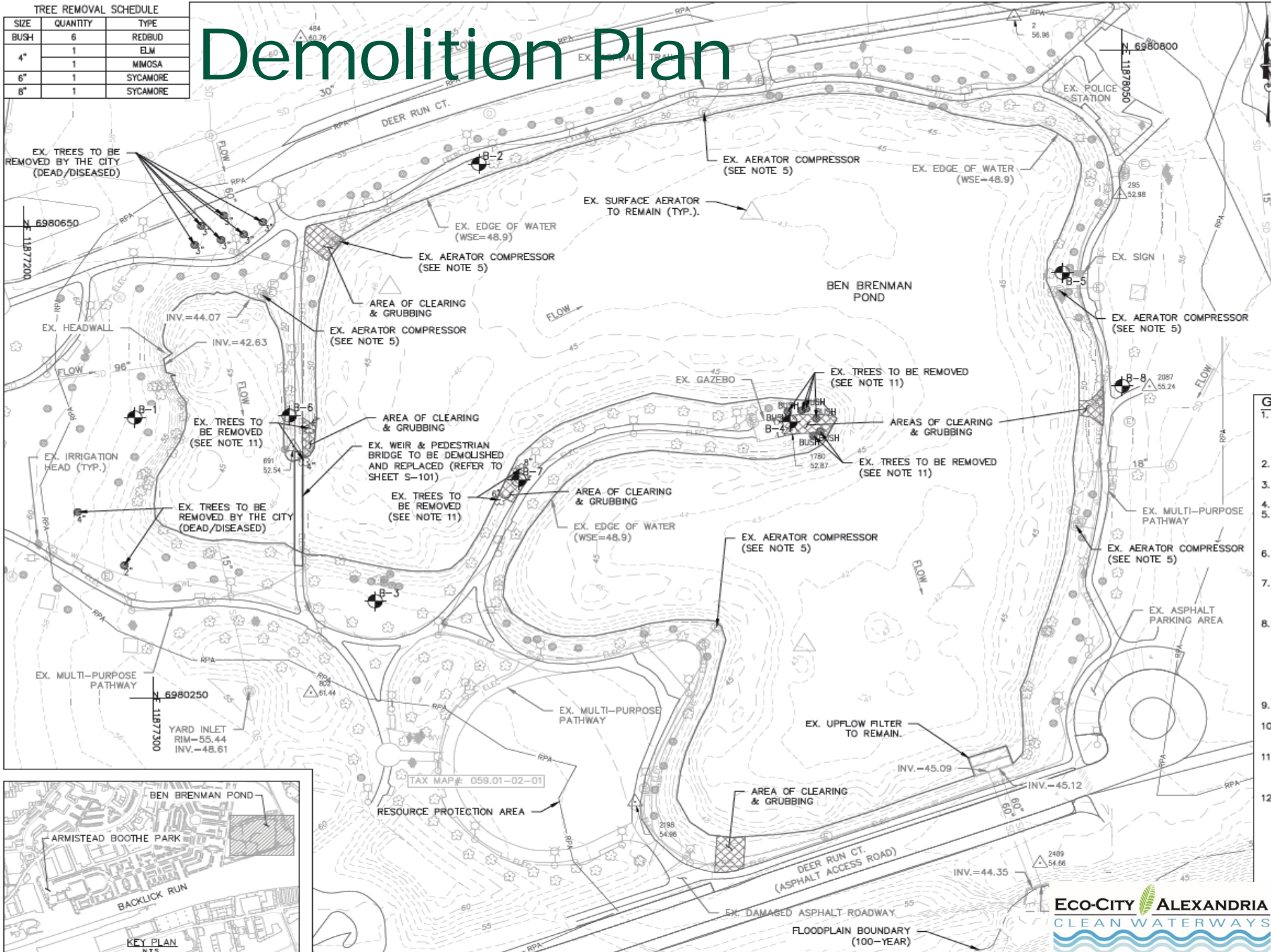


Artist's Rendering

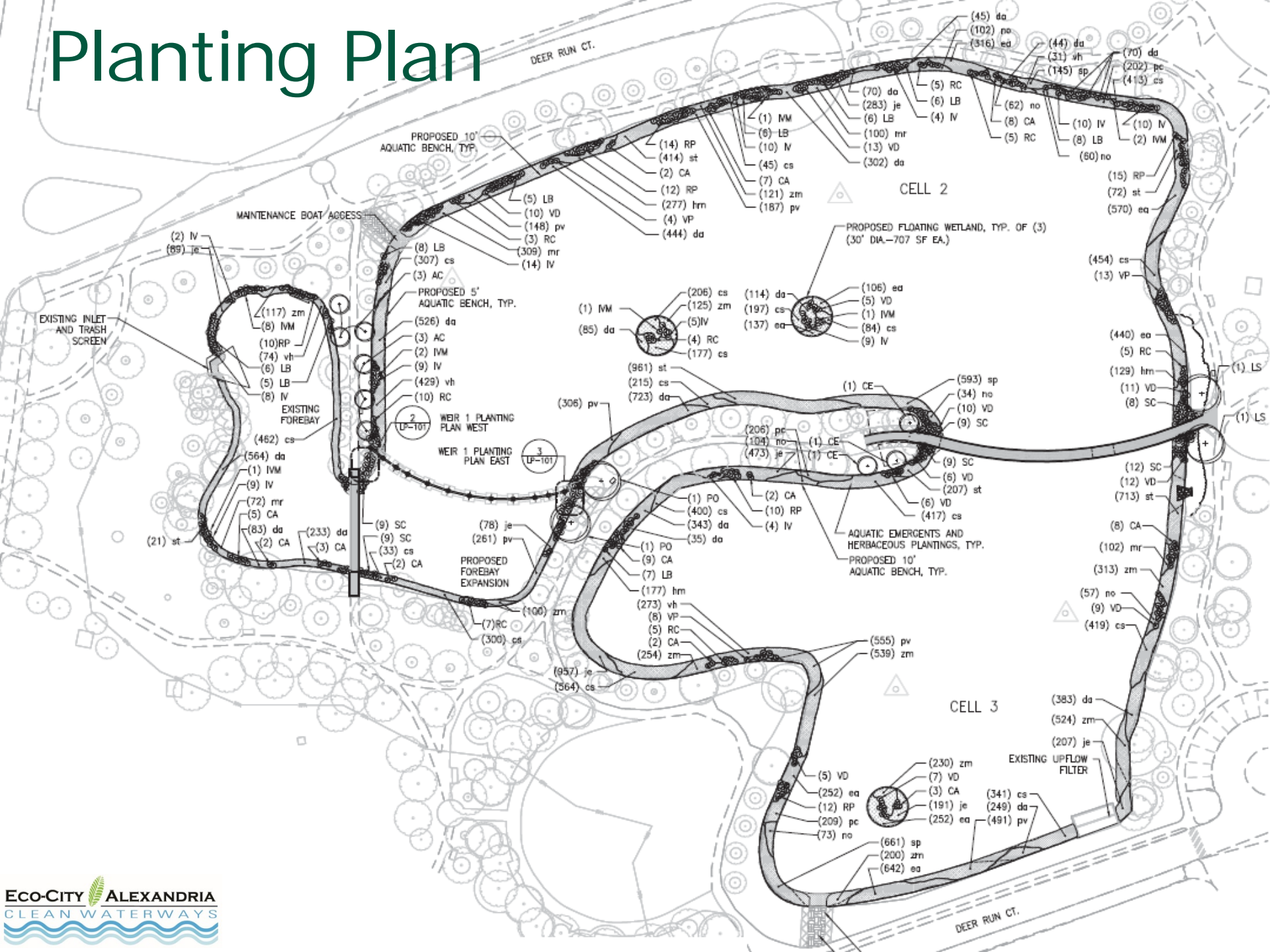


Demolition Plan

TREE REMOVAL SCHEDULE		
SIZE	QUANTITY	TYPE
BUSH	6	REDBUD
	1	ELM
4"	1	MIMOSA
6"	1	SYCAMORE
8"	1	SYCAMORE



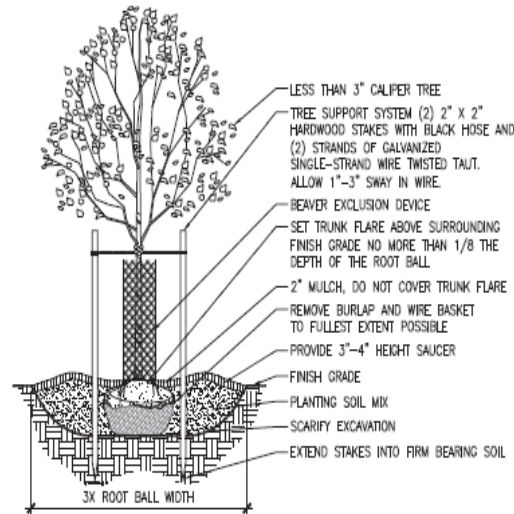
Planting Plan



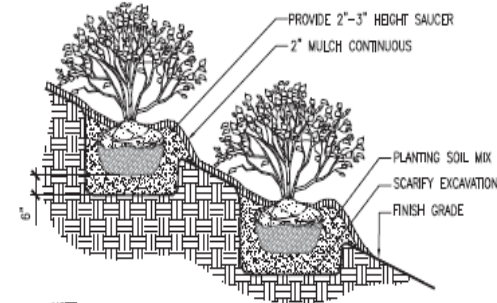
Planting Schedule

Ben Brenman Pond Plant Palette

KEY	QTY.	BOTANICAL NAME	COMMON NAME	MIN. SIZE	COHT.	SPACING	COMMENTS
SHADE TREES							
LS	2	<i>Liquidambar styraciflua</i>	Sweetgum	3' cal.	3&B	As Shown	
PO	2	<i>Platanus occidentalis</i>	American Sycamore	3' cal.	Cont.	As Shown	
QB	4	<i>Quercus bicolor</i>	Swamp White Oak	3' cal.	3&B	As Shown	
ORNAMENTAL / UNDERSTORY TREES							
AC	6	<i>Amelanchier canadensis</i>	Shadblow Serviceberry	2' cal.	3&B	As Shown	
AS	2	<i>Alnus serrulata</i>	Smooth Alder	2' cal.	Cont.	As shown	
CE	3	<i>Cercis canadensis</i>	Eastern Redbud	2' cal.	3&B	As Shown	
SHRUBS							
CA	53	<i>Cornus amomum</i>	Silky Dogwood	3' ht.	Cont.	10' o.c.	
IV	111	<i>Ilex verticillata</i>	Winterberry, female	3' ht.	Cont.	10' o.c.	wet
IVM	16	<i>Ilex verticillata</i>	Winterberry, male	3' ht.	Cont.	10' o.c.	wet
LB	73	<i>Lindera benzoin</i>	Spicebush	2' ht.	Cont.	10' o.c.	
RC	44	<i>Rhus Copallinum</i>	Winged Sumac	2' ht.	Cont.	10' o.c.	
RP	73	<i>Rosa pratincola</i>	Swamp Rose	2' ht.	Cont.	10' o.c.	wet
SC	56	<i>Sambucus canadensis</i>	American Elderberry	4' ht.	Cont.	6' o.c.	multi-stemmed
VD	104	<i>Vitumum centatum</i>	Arrowwood / Vitumum	3' ht.	Cont.	10' o.c.	
VP	25	<i>Vitumum prunifolium</i>	Blackhaw Viburnum	6' ht.	3&B	10' o.c.	multi-stemmed
AQUATICS							
cs	5034	<i>Carex scoparia</i>	Broom Sedge	LP-50	Cont.	12" o.c.	inundation 6" or less
da	4463	<i>Dulichium arundinaceum</i>	Three way sedge	LP-50	Cont.	12" o.c.	nundation 12" or less
ea	27-5	<i>Eleocharis acicularis</i>	Needle Spike-rush	LP-50	Cont.	12" o.c.	6"-9" below water
hm	583	<i>Hibiscus moscheutos</i>	Swamp Rose Mallow	LP-50	Cont.	12" o.c.	nundation 12" or less
je	2278	<i>Juncus effusus</i>	Soft Rush	LP-50	Cont.	12" o.c.	nundation 12" or less
mr	583	<i>Mimulus ringens</i>	Square-stemmed Monkeyflower	1 gal.	Cont.	12" o.c.	inundation 1" or less
no	492	<i>Nymphaea odorata</i>	White Waterlily	1 quart.	Cont.	18" o.c.	roots underwater 30"
pv	1948	<i>Peltandra virginica</i>	Arrow Arum	LP-50	Cont.	12" o.c.	inundation 1" or less
pc	617	<i>Potentilla cordata</i>	Pickersweed	LP-50	Cont.	12" o.c.	inundation 1" or less
sp	1399	<i>Scirpus americanus</i>	Three-Square	LP-50	Cont.	12" o.c.	inundation 6" or less
st	2388	<i>Scirpus americanus</i>	Softrush Bulrush	LP-50	Cont.	12" o.c.	nundation 12" or less
vh	807	<i>Verbena hastata</i>	Blue Vervain	LP-50	Cont.	12" o.c.	inundation 1" or less



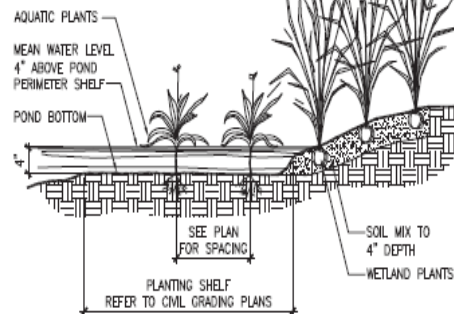
1 TREE PLANTING DETAIL - STAKING
SCALE: 1/8" = 1'-0"



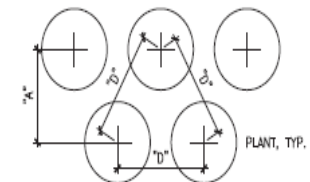
NOTE: POCKET PLANT ON SLOPES STEEPER THAN 3:1. PLANTING SOIL MIX AND PLANTING BED CONTINUOUS BETWEEN PLANTS ON SLOPES AT 3:1 OR LESS.

2 SHRUB PLANTING DETAIL - ON SLOPE
SCALE: 1/8" = 1'-0"

NOTE: LANDSCAPE CONTRACTOR TO ADJUST THE GRADES ON PLANTING SHELF TO MEET DEPTH REQUIREMENTS OF AQUATIC PLANTS AS DOCUMENTED ON PLANT LIST.



3 WETLAND PLANTING DETAIL
SCALE: 1/8" = 1'-0"

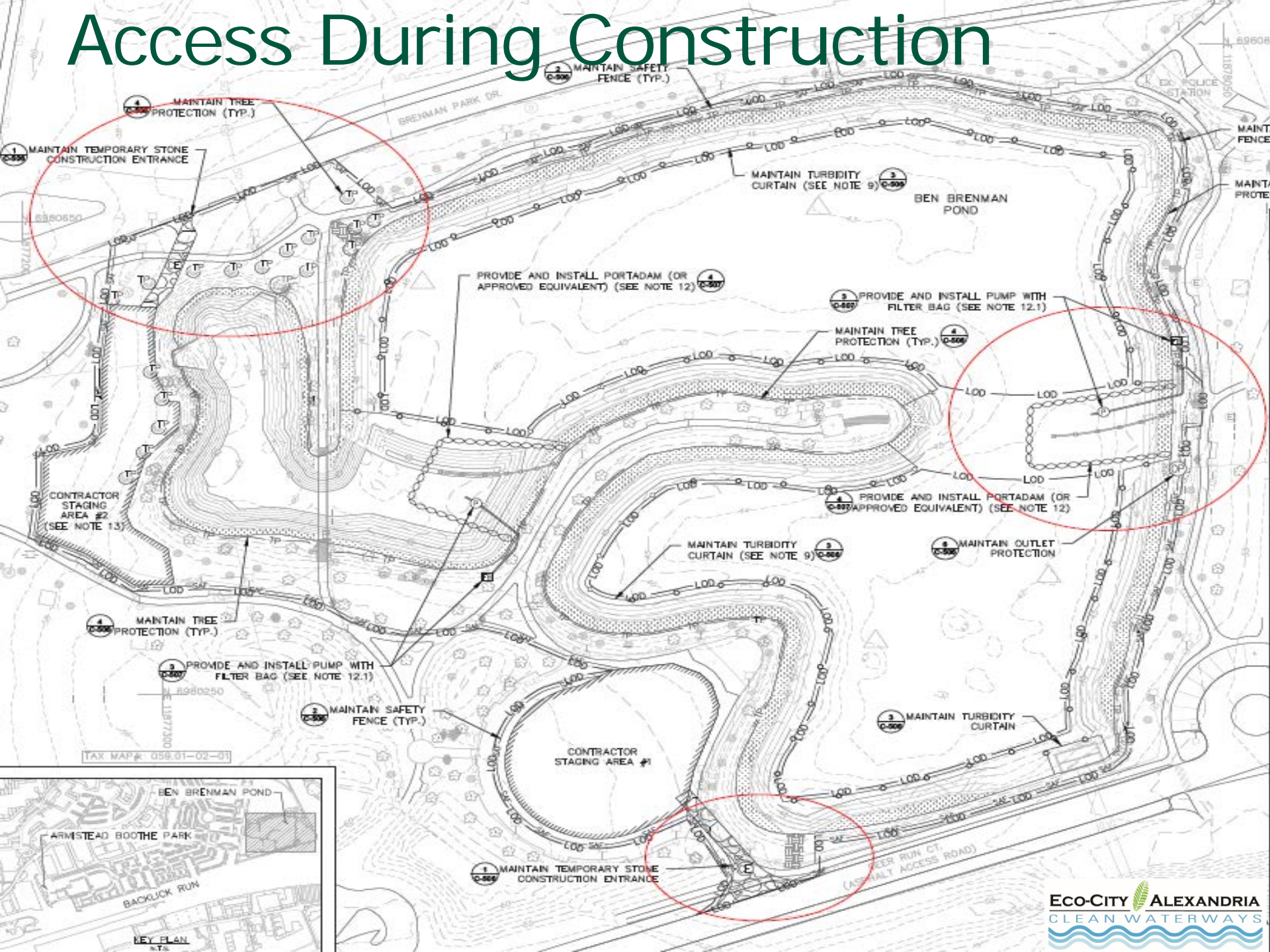


PLANT SPACING "D"	ROW "A"
6" o.c.	5" o.c.
8" o.c.	7" o.c.
10" o.c.	9" o.c.
12" o.c.	10" o.c.
15" o.c.	13" o.c.
18" o.c.	16" o.c.
24" o.c.	20" o.c.
36" o.c.	26" o.c.

NOTE: INSTALL PLANTS WITH TRIANGULAR SPACING UNLESS OTHERWISE INDICATED ON DRAWINGS.

4 PLANT SPACING DETAIL
SCALE: 1/8" = 1'-0"

Access During Construction



Project Schedule

- Summer bid response exceeded budget: 2 option moving forward
- Contract Rider
 - October Purchase Order
 - November Notice to Proceed
 - June/July 2019 completion
- Re-Bid
 - January Purchase Order
 - February Notice to Proceed
 - September/October 2019 completion



Stakeholder Input and Project Information

Community Meetings

- October 2014
- July 2016
- October 2016
- November 2016
- June 2017
- eNews and social media
- Website
- Stormwater Utility meetings



Thank You

Jesse Maines, MPA

Stormwater Management Division Chief

T&ES

703.746.4643

jesse.maines@alexandriava.gov

Sara DeGroot, P.E., CFM

Civil Engineer III/Senior Environmental Specialist

Sara.DeGroot@alexandriava.gov

703.746.4127

