Monitoring Report

OHIO STREET BOAT LAUNCH

Buffalo, NY

2018

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1 INTRODUCTION

1.1 Background

The Ohio Street Boat Launch project was designed to improve habitat at the New York State Department of Environmental Conservation (NYSDEC) Ohio Street Boat Launch site. Ecological enhancements at this site will contribute to the Buffalo River Area of Concern (AOC) objective to improve approximately 343 linear feet of shoreline habitat and 1.62 acres of Buffalo River shoreline and riparian habitat, roughly 1.7% of the shoreline restoration goal for the AOC.

1.2 The Project Area and Site Descriptions

The Ohio Street Boat Launch project site is located on Ohio Street and the Buffalo River in the City of Buffalo, Erie County, New York. The site is on the right descending side of the Buffalo River, 1.5 miles upstream of the river's mouth and between Michigan Street and South Street in Buffalo, NY. The site is bound to the north by a strip of park-like land and then Dead Man's Creek, to the south by a residential apartment building, to the east by Ohio Street, and to the west by the river. The City of Buffalo maintains this site for hand launching of canoes and kayaks along the Buffalo Urban Canoe Trail. It is also an important component of the Ohio Street revival, and is the site of a Complete Streets project carried out by the City of Buffalo.

1.3 Habitat Restoration

This project created and improved upland and riparian habitat with ecological function for native pollinators, birds, and small mammals. Prior to habitat enhancement, the target area consisted of mowed lawn, mature cottonwood trees, and paved walking paths. The pre-construction project site's shoreline was vegetated with native and non-native trees, shrubs, and herbs. Non-native, invasive species were affecting ecosystem functioning and were targeted for removal. Non-native, naturalized species were not targeted.

Restoration design plans called for the creation of topographic hills and swales, and added seven species of native trees, five species of native shrubs, and an herbaceous seed mix. Instructions were given for planting techniques. The seed mix in the plans issued for construction was substituted for a different seed mix. The substituted seed mix included thirteen native species and three non-native species. The full project plans are shown in Appendix A. Plate A.1 presents a photograph and table of the packing slip for the substituted meadow mix.

Construction and invasive species treatments took place in 2017 and 2018. Planting took place in spring 2018. The final effort, spreading of the meadow seed mix, took place on May 8, 2018. Restoration technical specifications included instructions for watering of turf and meadow spaces using temporary watering equipment for at least eight weeks after planting.

2 ECOLOGICAL AND GENERAL SITE CONDITION DATA COLLECTION METHODS

A complete description of the ecological sampling methods is given in the Quality Assurance Project Plan for the project (Gomez and Sullivan 2016). Gomez and Sullivan staff performed a qualitative assessment of riparian and emergent plant communities at the Ohio Street Boat Launch site. Cover was initially classified into two broad cover types, anthropogenic and natural. Field ecologists then further defined cover into categories, which are shown below in Tables 2.1-1 and 2.1-2.

Table 2-1. Anthropogenic Cover Categories

Categories	Description
Roads and Parking	Paved and gravel covered access roads and parking area.
Trails and Paths	Paved, gravel or woodchip covered trails, or mowed trails through grassy areas.
Shoreline Armoring and Boat Launch	Shoreline areas protected by rip-rap, sheet pile, concrete bulkheads or other hard cover, and areas created to launch canoes, kayaks, and small boats.
Structures	Buildings, kiosks, and other structures.

Table 2-2. Natural Cover Categories

Categories	Plant Communities	Description
Wooded Areas	Upland Woods	Areas where the dominant cover is comprised of upland tree species, more than 25 feet inland from the top of the stream bank (measured along a horizontal plane).
	Riparian Woods	Areas dominated by trees common to streambank areas, within 25 feet of the top of the bank (measured along a horizontal plane).
Shrub Areas	NA	Areas dominated by shrubs.
Herb Dominated Areas	Grasses and Lawns	Areas dominated by native or cultivated lawn grasses and herbaceous plants, often mowed.
	Upland Herbaceous Areas	Areas dominated by upland herbaceous plants.
	Wetland Herbaceous Areas	Areas dominated by wetland herbaceous species, both emergent and submerged listed plants.

Polygons were drawn to delimit the boundaries of each distinct cover category area and the boundaries of each plant community. Each polygon was given a unique number for identification.

Dominant plants were identified to species when possible in each plant community polygon. Some grasses and other species could not be identified due to the time of year. The abundance of each species was described using the following categories:

> **Dominant**: A species that is the most common plant by far (in terms of numbers of individuals), or which occupies by far the most space in the community. A dominant species would cover roughly three quarters of the community, and be represented by either very many or very large individuals. Dominant plants should be present throughout the community.
>
> **Abundant**: A species that is very common in the community. An abundant species would occupy roughly half of the community, and be represented by many or moderately large

individuals. Abundant plants would generally be present throughout the area (though in fewer numbers or smaller sizes than dominant species), or in large numbers in smaller, discrete patches.

Frequent: A species that is found in several places throughout the community, in fewer numbers than abundant species or at smaller sizes, and generally not distributed throughout the community. A species that would occupy roughly 25% of the space in the community.

Occasional: A species that is found in some places throughout the community, in fewer numbers than abundant or frequent species or at smaller sizes, and generally not distributed throughout the community. An occasional species would occupy roughly 10% of the space in the community.

Rare: A species that represented by very few individuals throughout the community. A rare species would occupy less than 5% of the space in the community.

While on site, the field ecologist evaluated the stability of the shoreline and recorded evidence of any erosion observed.

A Coefficient of Conservatism was assigned to each plant species. The coefficient is a weighting factor that expresses the degree of conservatism or fidelity to a particular native plant community evidenced by a particular species in relation to all other species of the region in which the study takes place (Wilhelm & Ladd, 1988; Andreas & Lichvar, 1995). A score of 0 to 10 is assigned to each plant. In general, plants that are not typical or native to a region, or are species with very broad ecological niches (generalist, often early successional species), receive low scores. A score of zero is assigned to any non-native species. Nativity was confirmed by the New York Flora Atlas (Weldy *et al.* 2018). The scoring ranges are defined as:

- 0 to 3: Plants with a very broad range of ecological tolerances and are generally found in a variety of plant communities.
- 4 to 6: Plants with an intermediate range of ecological tolerances and are generally associated with a specific plant community.
- 7 to 8: Plants with a relatively narrow range of ecological tolerances and are generally associated with more advanced successional conditions.
- 9 to 10: Plants with very narrow ranges of ecological tolerances and which generally exhibit a high degree of fidelity to specific habitats and communities.

The New England Interstate Water Pollution Control Commission (NEIWPCC) (2013) has published Coefficients of Conservatism for New York. These will be used for this project. When NEIWPCC gave different maximum and minimum Coefficients of Conservatism, the lower number was used. Coefficient of Conservatism was used. Some species we encountered were not listed in the New England Interstate Water Pollution Control Commission (2013) list. We supplemented the New York List with lists from neighboring Ohio (Andreas *et al* 2004) and Pennsylvania (Bowman's Hill 2006). A mean Coefficient of Conservatism was calculated for each plant community polygon, by totaling the Coefficients of Conservatism and dividing by the number of native and non-native species identified in the area.

3 SUMMARY OF FIELD FINDINGS

Monitoring took place on June 6 and June 14, 2018. All trees and shrubs were in place per the project plans and specifications, and were in good health. Figure 3-1 shows a typical shrub planting area.

At the time of monitoring, the meadow seed mix had been spread; however most of the meadow plants were not yet visible during the monitoring session, likely due to the short time period that had passed since the seeds were broadcast (37 days). Additionally, it was not clear that watering was taking place per the restoration plan technical specifications, and lack of water may have been contributing to slow establishment of the meadow plants. Rye, which was part of the seed mix, had sprouted and was a dominant plant in meadow areas. Three species of rye were included in the seed mix and the plants was not identified to species. Black mustard, which was not planted and is not native, also dominated portions of the meadow areas. Up to fifteen additional species may sprout in the meadows throughout the season (See meadow seed mix list in Appendix A, Plate A.1). The meadow and lawn areas included spotty bare soil, as shown in Figure 3-2; however, these bare spots are expected to fill with meadow vegetation throughout the growing season.

Prior to habitat enhancement, eleven cover type polygons were mapped at the Ohio Street Boat Launch site. These polygons were kept for post-construction monitoring with an expansion to Area 7 and reduction of Area 6 due to the removal of sidewalk between Area 7 and Area 3. (Figure 3-3). These polygons are summarized in Table 3-1.

Area 1 was a 0.45-acre natural herb dominated cover type and category, Grasses and Lawns. Prior to restoration, there were 14 plant taxa identified in this area, with unidentified lawn grasses being the dominant taxa. One non-native species, *Artemisia vulgaris* (mugwort) was listed as an occasional plant. This non-native plant was only growing near the landscape boulders. This area was re-graded, landscape trees were added, and lawn and meadow spaces were seeded.

Area 2 is a parking lot with no vegetation. This area covers 0.16 acres. No changes were made to this area.

Area 3 is a natural wooded cover type in the category Upland Wooded, encompassing 0.22 acres. The upland wooded area at the site was an area of mowed lawn with an overlapping canopy of cottonwood (*Populus deltoides*) trees. The dominant herbaceous species were unidentified lawn grasses, the understory was generally populated by species commonly found in lawns and abandoned areas. This area was not modified.

Area 4 was a natural herbaceous cover type in the category Grasses and Lawns, which covers 0.07 acres. It had been mowed lawn and was converted to meadow.

Area 5 was a natural herbaceous cover type in the category Grasses and Lawns, occupying 0.15 acres. Grasses were the dominant taxa, with common lawn weeds narrow leaved plantain (*Plantago lanceolata*) and common dandelion (*Taraxacum officinale*) occurring abundantly. This area was re-graded to include berms new trees and shrubs were planted, landscape boulders were placed to create features of interest, and a meadow seed mix was spread throughout the area (Figure 3-4).

Area 6 is the paved area comprised of paved paths, a sitting area and the boat launching ramp. The total area was 0.14 acres. One section of the pavement, between Areas 7 and 3, was removed, reducing the total acreage of Area 6 to 0.11 acres.

Area 7 was also a natural herbaceous cover type in the category Grasses and Lawns. The dominant plants in this 0.15-acre area were lawn grasses and lawn weeds. The area was expanded by the removal of

sidewalk and is now 0.17 acres. It includes meadow and planted trees as well as a "council ring" feature made from landscape stones that were relocated from previous locations at the site (Figure 3-5).

The only riparian wooded area on the site is Area 8, an area of 0.26 acres which borders the Buffalo River on the west side of the site. The riparian area includes cottonwood and willow trees, as well as shrubs and herbaceous plants. It was dominated by non-native European buckthorn (*Rhamnus cathartica*); which was targeted for removal. Japanese knotweed and European black alder were also treated, but are still present in the area (Figures 3-6 and 3-7). The iris in this area was not identified to species prior to restoration, as it was not flowering or fruiting. During post-construction monitoring, the iris was in flower and determined to be non-native yellow iris (*Iris pseudoacorus*) (Figure 3-8).

Area 9 is a small area of 0.02 acres that borders the parking lot. Most of this area was taken up by landscape boulders that prevent cars from driving on the lawns or walking paths. There was sparse grass growing around the boulders. This area was not modified by restoration.

Table 3-2 lists the species found in each mapped cover type area prior to restoration. Table 3-3 lists the species found in each mapped cover type area following restoration. Taxonomy and nativity determinations follow the New York Flora Atlas (Weldy *et al* 2016). Status designation follow the New York Rare Plant Law (New York State Environmental Conservation, Title 15, § 9-1503). Taxa that could not be identified to species were assigned "not available" for nativity, coefficient of conservatism and status.

The shoreline at Ohio Street Boat Launch appeared stable and no erosion requiring attention was noted.

Photos were taken at each photo monitoring point and these are shown in Appendix B. Additional photos taken at the site are shown in Appendix C.

Table 3-1. 2015 Pre-construction Cover Types and Cover Categories at Ohio Street Boat Launch

Cover Category	Pre-construction Acreage	Post-construction Acreage	Area(s)
Natural Cover Types			
Wooded Areas			
Upland Woods	0.22	0.22	3
Riparian Wooded Areas	0.26	0.26	8
Herb Dominated Areas			
Grasses or Lawns	0.84	0.87	1, 4, 5, 7, 9
Anthropogenic Cover Types			
Trails and Paths	0.14	0.11	6
Roads or Parking	0.16	0.16	2
TOTAL	**1.62**	**1.62**	

Table 3-2. Pre-construction Plant Species at Ohio Street Boat Launch

Species	Common name	Nativity	DAFOR Rating	C of C	Status
Area 1, Grasses and Lawns, 0.45 acres					
Acer x. freemanii	Freeman maple	Native	Occasional	2[1]	Not applicable
Achillea millefolium	Yarrow	Native	Occasional	0[2]	Not listed
Amelanchier canadensis	Coastal shadbush	Native	Occasional	7[1]	Not listed
Artemisia vulgaris	Mugwort	Non-native	Occasional	0[2]	Not available
Betula nigra	River birch	Native	Rare	7[1]	Not listed
Cichorium intybus	Chicory	Non-native	Occasional	0[3]	Not applicable
Cirsium vulgare	Bull thistle	Non-native	Rare	0[2]	Not applicable
Daucus carota	Queen Anne's lace	Non-native	Frequent	0[2]	Not applicable
Gymnocladus dioicus	Kentucky coffee tree	Unknown	Occasional	8[1]	Listed, NY Endangered
Leucanthemum vulgare	Ox-eye daisy	Non-native	Occasional	Not available [1]	Not applicable
Lotus corniculatus	Birds-foot-trefoil	Non-native	Frequent	0[3]	Not applicable
Rhamnus cathartica	European buckthorn	Non-native	Rare	Not available [1]	Not applicable
Pinus nigra	Austrian pine	Non-native	Occasional	0[2]	Not applicable
Plantago lanceolata	Narrow-leaved plantain	Non-native	Abundant	0[2]	Not applicable
Poaceae	Grass	Not available	Dominant	Not available	Not available
Quercus rubra	Red oak	Native	Rare	4[1]	Not listed
Taraxacum officianale	Common dandelion	Non-native	Occasional	0[2]	Not applicable
Area 2, Roads or Parking, 0.16 acres					
No vegetation					
Area 3, 0.22 acres					
Achillea millefolium	Yarrow	Native	Occasional	0[2]	Not listed
Cirsium vulgare	Bull thistle	Non-native	Rare	0[2]	Not applicable
Daucus carota	Queen Anne's lace	Non-native	Frequent	0[2]	Not applicable
Plantago lanceolata	Narrow-leaved plantain	Non-native	Abundant	0[2]	Not applicable
Poaceae	Grass	Not available	Dominant	Not available	Not available
Populus deltoides	Cottonwood	Native	Frequent	4[1]	Not listed
Tilia americana	small leaf linden	Non-native	Rare	5[1]	Not applicable
Taraxacum officianale	Common dandelion	Non-native	Occasional	0[2]	Not applicable
Area 4, Grasses or Lawn, 0.07 acres					
Betula nigra	River birch	Native	Rare	7[1]	Not listed
Poaceae	Grass	Not available	Dominant	Not available	Not available
Area 5, Grasses or Lawn, 0.15 acres					
Plantago lanceolata	Narrow-leaved plantain	Non-native	Abundant	0[2]	Not listed
Poaceae	Grass	NA	Dominant	Not available	NA
Taraxacum officianale	Common dandelion	Non-native	Abundant	0[2]	Not listed
Area 6, Trails or Paths, 0.14 acres					
No vegetation					
Area 7, Grasses or Lawns, 0.15 acres					
Crataegus sp.	Crab apple	Native	Rare	Not available	Not listed
Poaceae	Grass	Not available	Dominant	Not available	Not available
Populus deltoides	Cottonwood	Native	Occasional	4[1]	Not listed
Tilia cordata	Small leaf linden	Non-native	Rare	Not available	Not applicable
Area 8, Riparian Wooded Area, 0.26 acres					
Ailanthus altissima	Tree of heaven	Non-native	Occasional	0[2]	Not applicable

Table 3-2. Pre-construction Plant Species at Ohio Street Boat Launch

Species	Common name	Nativity	DAFOR Rating	C of C	Status
Alnus glutinosa	Black alder	Non-native	Frequent	0[2]	Not applicable
Apocynum cannabinum	Indian hemp	Native	Occasional	2[1]	Not listed
Arctium lappa	Greater burdock	Non-native	Occasional	0[2]	Not applicable
Asclepias syriaca	Common milkweed	Native	Occasional	2[1]	Not listed
Cornus amomum	Silky dogwood	Native	Frequent	4[5]	Not listed
Cornus sericea	Red-osier dogwood	Native	Frequent	3[1]	Not listed
Elaeagnus umbellata	Autumn olive	Non-native	Rare	0[2]	Not available
Frangula alnus	Glossy buckthorn	Non-native	Rare	0[3]	Not available
Fraxinus pennsylvanica	Green ash	Native	Rare	5[1]	Not listed
Iris pseudoacorus	Yellow iris	Non-native	Occasional	Not available	Not available
Linaria vulgaris	Butter and eggs	Non-native	Rare	0[2]	Not applicable
Lonicera morrowii	Morrow's honeysuckle	Non-native	Occasional	0[2]	Not available
Oenothera biennis	Evening primrose	Native	Occasional	2[1]	Not listed
Populus deltoides	Cottonwood	Native	Frequent	4[1]	Not listed
Prunus virgniana	Choke cherry	Native	Occasional	3[1]	Not listed
Reynoutria japonica	Japanese knotweed	Non-native	Occasional	0[1]	Not available
Rhamnus cathartica	European buckthorn	Non-native	Dominant	0[2]	Not available
Rhus typhina	Staghorn sumac	Native	Abundant	1[2]	Not listed
Rosa multiflora	Multiflora rose	Non-native	Rare	0[2]	Not available
Salix x. fragilis	Crack willow	Non native	Abundant	0[3]	Not listed
Salix sp.	Willow	Not available	Occasional	Not available	Not available
Vitis riparia	Riverbank grape	Native	Dominant	3[1]	Not listed
Area 9, Grasses or Lawn, 0.02 acres					
Lotus corniculatus	Birds-foot-trefoil	Non-native	Frequent	0[3]	Not applicable
Plantago lanceolata	Narrow-leaved plantain	Non-native	Abundant	0[2]	Not listed
Poaceae	Grasses	Not available	Dominant	Not available	Not available

[1]New England Water Pollution Control Commission (2013); [2]Andreas et al (2004); [3]Bowman's Hill (2006)

Table 3-3. Post-construction Plant Species at Ohio Street Boat Launch

Species	Common name	Nativity	DAFOR Rating	C of C	Status
Area 1, Grasses and Lawns, 0.45 acres					
Acer x. freemanii	Freeman maple	Native	Occasional	None given	Not applicable
Achillea millefolium	Yarrow	Native	Occasional	0[2]	Not listed
Amelanchier canadensis	Coastal shadbush	Native	Occasional	7[1]	Not listed
Artemisia vulgaris	Mugwort	Non-native	Occasional	0[2]	Not applicable
Betula nigra	River birch	Native	Rare	7[1]	Not listed
Brasicca nigra	Black mustard	Non-native	Dominant	0[2]	Not listed
Diervilla lonicera	Bush honeysuckle	Native	Frequent	4[1]	Not listed
Elymus sp.	Rye	Native	Dominant	5[1]	Not listed
Gymnocladus dioicus	Kentucky coffee tree	Unknown	Occasional	8[1]	Listed, NY Endangered
Hamamelis virginiana	Witch hazel	Native	Occasional	5[1]	Not listed
Liriodendron tulipefera	Tulip poplar	Native	Rare	5[1]	Not listed
Poaceae	Grass	Not available	Occasional	Not available	Not available
Rubus odoratus	Purple-flowering raspberry	Native	Frequent	3[1]	Not listed
Quercus alba	White oak	Native	Rare	5[1]	Not listed
Quercus rubra	Red oak	Native	Rare	4[1]	Not listed
Area 2, Roads or Parking, 0.16 acres					
No vegetation					
Area 3, 0.22 acres					
Poaceae	Grass	Not available	Dominant	Not available	Not available
Populus deltoides	Cottonwood	Native	Frequent	4[1]	Not listed
Area 4, Grasses or Lawn, 0.07 acres					
Betula nigra	River birch	Native	Rare	7[1]	Not listed
Poaceae	Grass	Not available	Dominant	Not available	Not available
Area 5, Grasses or Lawn, 0.15 acres					
Achillea millefolium	Yarrow	Native	Frequent	0[2]	Not listed
Aronia melanocarpa	Black chokeberry	Native	Occasional	4[1]	Not listed
Artemisia vulgaris	Mugwort	Non-native	Abundant	0[2]	Not available
Brasicca nigra	Black mustard	Non-native	Dominant	0[2]	Not listed
Chenopodium album	Lamb's quarter	Non-native	Occasional	0[3]	Not listed
CIrsium arvense	Canada thistle	Non-native	Rare	0[3]	Not listed
Cornus sericea	Red osier dogwood	Native	Frequent	3[1]	Not listed
Diervilla lonicera	Bush honeysuckle	Native	Abundant	4[1]	Not listed
Elymus sp./	Rye	Native	Dominant	5[1]	Not listed
Hamamelis virginiana	Witch hazel	Native	Rare	5[1]	Not listed
Lindera benzoin	Spicebush	Native	Frequent	5[1]	Not listed
Rubus odoratus	Purple-flowering raspberry	Native	Abundant	3[1]	Not listed
Quercus alba	White oak	Native	Rare	5[1]	Not listed
Area 6, Trails or Paths, 0.12 acres					
No vegetation					
Area 7, Grasses or Lawns, 0.17 acres					
Amelanchier arborea	Downy serviceberry	Native	Rare	4[1]	Not listed
Acer x. freemanii	Freeman maple	Native	Occasional	None given	Not applicable
Carpinus caroliniana	Musclewood	Native	Occasional	5[1]	Not listed
Cornus sericea	Red osier dogwood	Native	Frequent	3[1]	Not listed
Crataegus sp.	Crab apple	Native	Rare	Not available	Not listed
Diervilla lonicera	Bush honeysuckle	Native	Occasional	4[1]	Not listed

Table 3-3. Post-construction Plant Species at Ohio Street Boat Launch

Species	Common name	Nativity	DAFOR Rating	C of C	Status
Platanus occidentalis	American sycamore	Native	Occasional	6[1]	Not listed
Poaceae	Grass	Not available	Dominant	Not available	Not available
Populus deltoides	Cottonwood	Native	Occasional	4[1]	Not listed
Rubus odorata	Purple-flowering raspberry	Native	Occasional	3[1]	Not listed
Tilia cordata	Small leaf linden	Non-native	Rare	Not Available	Not applicable
Area 8, Riparian Wooded Area, 0.26 acres					
Alnus glutinosa	Black alder	Non-native	Frequent	0[2]	Not applicable
Amelanchier arborea	Downy serviceberry	Native	Occasional	4[1]	Not listed
Apocynum cannabinum	Indian hemp	Native	Occasional	2[1]	Not listed
Arctium lappa	Greater burdock	Non-native	Occasional	0[2]	Not applicable
Aronia melanocarpa	Black chokeberry	Native	Rare	4[1]	Not listed
Asclepias syriaca	Common milkweed	Native	Occasional	2[1]	Not listed
Asclepias incarnata	Swamp milkweed	Native	Rare	4[1]	Not listed
Cornus amomum	Silky dogwood	Native	Frequent	4[5]	Not listed
Cornus sericea	Red-osier dogwood	Native	Frequent	3[1]	Not listed
Diervilla lonicera	Bush honeysuckle	Native	Occasional	4[1]	Not listed
Fraxinus pennsylvanica	Green ash	Native	Rare	5[1]	Not listed
Hypericum perforatum	St. John's wort	Non-native	Rare	0	Not applicable
Iris pseudoacorus	Yellow iris	Non-native	Occasional	0[2]	Not available
Lindera benzoin	Spicebush	Native	Occasional	5[1]	Not available
Lythrum salicaria	Purple loosestrife	Non-native	Rare	0[2]	Not available
Oenothera biennis	Evening primrose	Native	Occasional	2[1]	Not listed
Parthenocissus quinquefolia	Virginia creeper	Native	Frequent	2[1]	Not listed
Populus deltoides	Cottonwood	Native	Frequent	4[1]	Not listed
Prunus virgniana	Choke cherry	Native	Occasional	3[1]	Not listed
Reynoutria japonica	Japanese knotweed	Non-native	Frequent	0[1]	Not available
Rhamnus cathartica	European buckthorn	Non-native	Dominant	0[2]	Not available
Rhus typhina	Staghorn sumac	Native	Abundant	1[2]	Not listed
Rosa multiflora	Multiflora rose	Non-native	Rare	0[2]	Not available
Rubus odorata	Purple-flowering raspberry	Native	Occasional	3[1]	Not listed
Salix x. fragilis	Crack willow	Non native	Abundant	0[3]	Not listed.
Salix sp.	Willow	Not available	Occasional	Not available	Not available
Solidago sp.	Goldenrod	Native	Frequent	Not available	Not listed
Vitis riparia	Riverbank grape	Native	Dominant	3[1]	Not listed
Area 9, Grasses or Lawn, 0.02 acres					
Poaceae	Grasses	Not available	Dominant	Not available	Not available

[1]New England Water Pollution Control Commission (2013); [2]Andreas *et al* (2004); [3]Bowman's Hill (2006)

Table 3-4. Comparisons of Species Richness and Mean Coefficients of Conservatism in Plant Community Areas

Plant Community Area	Pre-const. Number of Species	Pre-const. Number of Native Species[1]	Pre-const. Mean C of C	Post-const. Number of Species	Post-const. Number of Native Species[1]	Post-const. Mean C of C
1	17	8	1.4	15	13	3.7
2	0	not applicable		0	not applicable	
3	8	2	1.3	2	1	4.0
4	2	1	3.5	2	1	7.0
5	3	0	0	13	9	3.0
6	0	not applicable		0	not applicable	
7	4	2	1.0	11	10	3.1
8	23	10	1.2	28	21	2.4
9	3	0	not available	1	not available	not available

[1]Plants that were not identified to species have not been included in the native count, except for the rye, which was one of three native species.

Figure 3-1. Shrub plantings in Area 5

Figure 3-2. Meadow area with rye, small herbs, and gaps of exposed soil

Figure 3-3:
NYSDEC Ohio Street Boat Launch Project Area

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Figure 3-4. Planted trees and shrubs in Area 5.

Figure 3-5. "Council ring" in Area 7.

Figure 3-6. Knotweed growing in Area 8

Figure 3-7. Black alder that has been cut and is resprouting along the project shoreline

Figure 3-8. Yellow Iris (*Iris pseudoacorus*) growing near the boat launch

4 CONCLUSION

Restoration efforts at Ohio Street Boat Launch have added native plant species to the site and simultaneously reduced the presence and dominance of non-native, invasive species. Mean Coefficients of Conservatism increased within each plant community area; however mean coefficients in most areas remain low for a valuable natural area. With time, proper meadow maintenance, and continuous invasive species management, the meadow seed mix may establish and further increase the site's Coefficient of Conservatism. Additionally, planted trees and shrubs are anticipated to flourish and spread, allowing for increased habitat value and ecological function throughout the shoreline and riparian habitat.

5 REFERENCES

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APPENDIX A. PROJECT PLANS

BUFFALO NIAGARA RIVERKEEPER
OHIO STREET BOAT LAUNCH

421 OHIO STREET

BUFFALO, NY

G-001

06/05/2017

15127

CONTEXT MAP

Drawing Index:

Prepared for:

BUFFALO NIAGARA RIVERKEEPER®

National Oceanic and Atmospheric Administration
U.S. Department of Commerce

Great Lakes RESTORATION

Prepared by:

GOMEZ AND SULLIVAN ENGINEERS

Williamsville, NY • Utica, NY • Albany, NY • Henniker, NH
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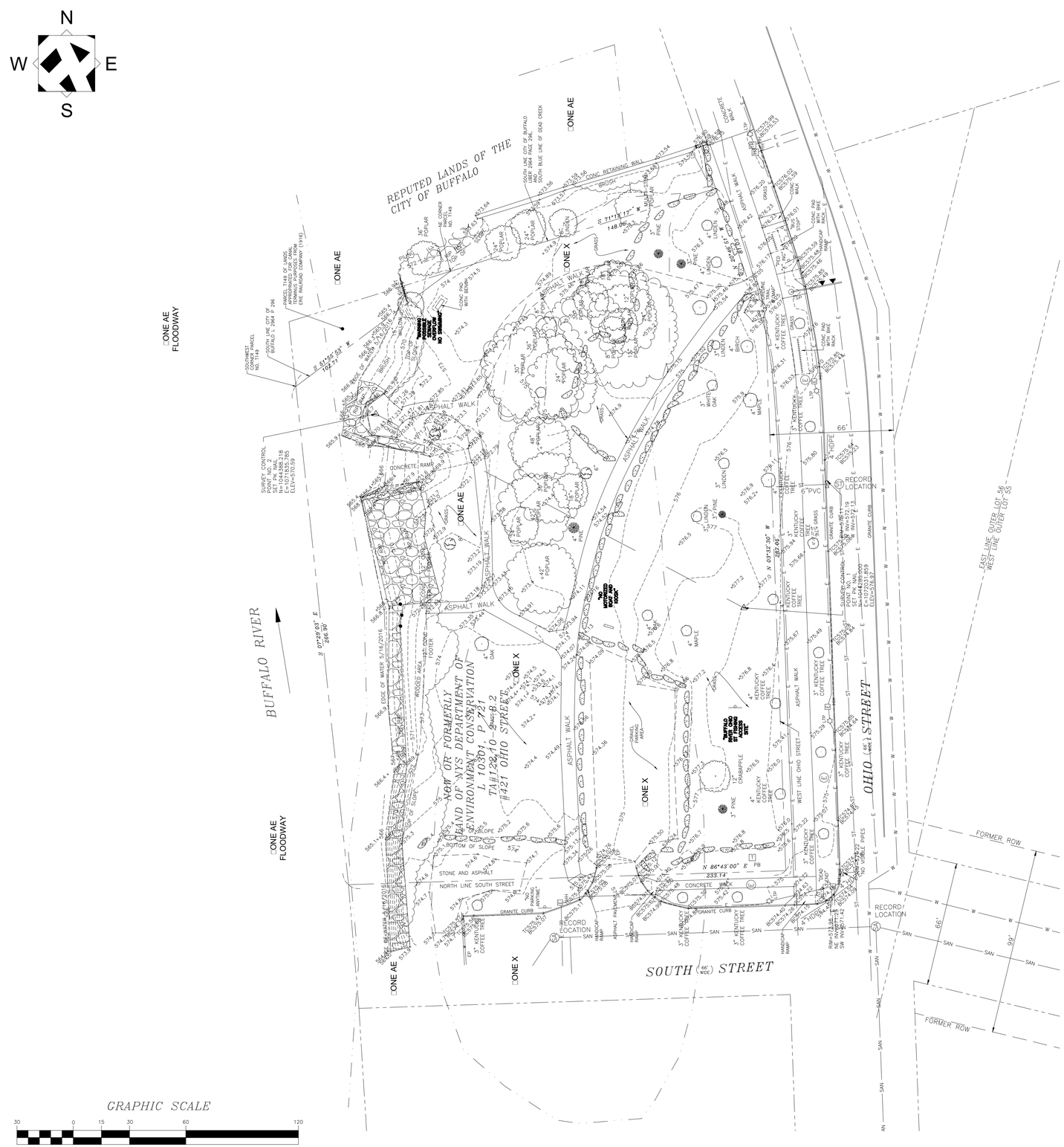

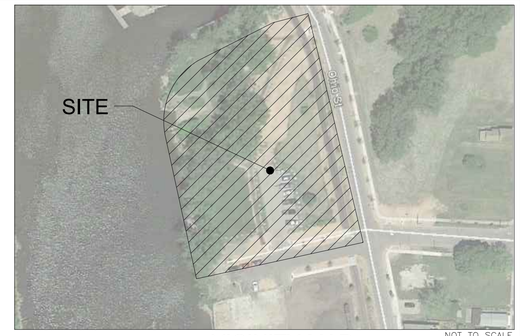

VICINITY MAP

NOT TO SCALE

NOTES:

THIS MAP IS BASED ON A FIELD SURVEY COMPLETED ON 5-16-2016.

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY AND RECORD INFORMATION PROVIDED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM RECORD INFORMATION AVAILABLE, THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. IT IS THE CLIENTS' RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES (WHETHER SHOWN OR NOT) AND TO PROTECT SAID UTILITIES FROM ANY DAMAGE.

COORDINATES ARE REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM WEST ZONE, NAD 83.

UNAUTHORIZED ALTERATION OR ADDITION TO ANY SURVEY, DRAWING, DESIGN, SPECIFICATION, PLAN OR REPORT IS A VIOLATION OF SECTION 7209, PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW. ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MAP MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S EMBOSSED SEAL AND SIGNATURE SHALL BE CONSIDERED TO BE VALID TRUE COPIES.

THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE AND IS SUBJECT TO ANY STATE OF FACTS THAT MAY BE REVEALED BY AN EXAMINATION OF SUCH.

BEARINGS ARE REFERENCED TO TRUE NORTH AT THE 78° 35' MERIDIAN OF WEST LONGITUDE.

DECIDUOUS AND CONIFEROUS TREE SYMBOL SIZE DEPICTS THE CROWN SIZE.

REFERENCE:
MAP 10800 ON FILE IN THE DEPARTMENT OFFICE AT ALBANY, NEW YORK ENTITLED "MAP OF LANDS TO BE ACQUIRED PURSUANT TO SECTION 3-0305 OF THE ENVIRONMENTAL CONSERVATION LAW, PROJECT E-IWA ERIE 22, DESIGNATED AS BUFFALO RIVER ACCESS SITE NO.5."

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS IN ZONE X, ZONE AE AND ZONE AE FLOODWAY OF THE FLOOD INSURANCE RATE MAP, COMMUNITY NO. 360230, PANEL NO. 00200D, WHICH BEARS AN EFFECTIVE DATE OF SEPTEMBER 26, 2008. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE, AND AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

ZONE X: AREA OF 100 YEAR FLOOD WITH AVERAGE DEPTH OF LESS THAN 1 FOOT OR DRAINAGE AREA LESS THAN 1 SQUARE MILE OR AREAS PROTECTED BY LEVEES FROM 100 YEAR FLOOD

ZONE AE: SPECIAL FLOOD HAZARD AREA INUNDATED BY 100 YEAR FLOOD
(NOTE: UNABLE TO DETERMINE BASE FLOOD ELEVATION FROM FIRM)

ZONE AE FLOODWAY: SPECIAL FLOOD HAZARD AREA INUNDATED BY 100 YEAR FLOOD
(NOTE: UNABLE TO DETERMINE BASE FLOOD ELEVATION FROM FIRM)

ABBREVIATIONS:

CONC	CONCRETE
D	DEED
E	EAST
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
HH	HANDHOLE
HDPE	HIGH DENSITY POLYETHYLENE
L	LIBER
N	NORTH
P	PAGE
PVC	POLY-VINYL CHLORIDE
ROW	RIGHT OF WAY
S	SOUTH
ST	STORM
TA#	TAX ASSESSMENT NO.
TC	TOP OF CURB
TSP	TRAFFIC SIGNAL POLE
UTP	UTILITY POLE
W	WEST
WV	WATER VALVE

LEGEND:

- BASELINE POINT – (POINT OF INTERSECTION)
- BOULDER
- CONIFEROUS BUSH/SHRUB
- CONIFEROUS TREE
- DECIDUOUS BUSH/SHRUB
- DECIDUOUS TREE
- CATCH BASIN
- ELECTRIC HANDHOLE
- ELECTRIC MANHOLE
- SIGN
- 2 POSTS
- SPOT ELEVATION
- TELEPHONE PULL BOX
- TRAFFIC SIGNAL HANDHOLE
- TRAFFIC SIGNAL HEAD
- TRAFFIC SIGNAL POLE

SURVEY LINE TYPES:

- BASELINE
- CHANGE OF PAVEMENT
- CONTOUR (MAJOR) — 580 —
- CONTOUR (MINOR) — 581 —
- GUIDE RAIL (W-BEAM)
- PROPERTY BOUNDARY
- PROPERTY LOT LINE
- ROW — ROW —
- SHEET PILING
- FLOOD ZONE LIMITS
- SLOPE – TOP/BOTTOM — TOP OF SLOPE —
- WATER/STREAM
- WOODS/BRUSH

UTILITY LINE TYPES:

- ELECTRIC LINE — E — E —
- SANITARY SEWER LINE — SAN — SAN —
- STORM SEWER LINE — ST — ST — ST —
- WATER LINE — W — W —

THE FOLLOWING UTILITY COMPANIES WERE REQUESTED TO PROVIDE THE SURVEYOR THE LOCATION OF THEIR UNDERGROUND FACILITIES WITHIN THE LIMITS OF THIS SURVEY.

UTILITY COMPANY / AGENCY	FACILITY	CONTACT INFO	RESPONDED	AFFECTED
BUFFALO SEWER AUTHORITY	SEWER	716-851-4664 x4222	YES	YES
CITY OF BUFFALO	TRAFFIC SIGINAL AND PHONE	716-851-5647	NO	–
CITY OF BUFFALO	TELEPHONE FIRE	716-851-5647	NO	–
CITY OF BUFFALO WATER AUTHORITY	WATER	716-847-1065 x124	NO	–
NATIONAL FUEL GAS	GAS	716-857-7967	YES	NO
NATIONAL GRID	ELECTRIC	315-428-6319	NO	–
TIME WARNER	FIBER AND CABLE	800-262-8600 x2	NO	–
VERIZON	FIBER AND PHONE	716-840-6165	NO	–

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BOUNDARY AND TOPOGRAPHIC SURVEY

OHIO STREET BOAT LAUNCH
PART OF LOT 56 OF THE HOLLAND LAND COMPANY'S SURVEY
CITY OF BUFFALO, COUNTY OF ERIE, STATE OF NEW YORK

Consultant:
FoitAlbert ASSOCIATES
Architecture. Engineering. Surveying.
763 Main Street
Buffalo, New York 14203
T 716.856.3933 F 716.856.3961 W foit-albert.com

Seal:

Revision Number	Revision Date/Description
△	
△	
△	
△	

Scale: 1"=30'

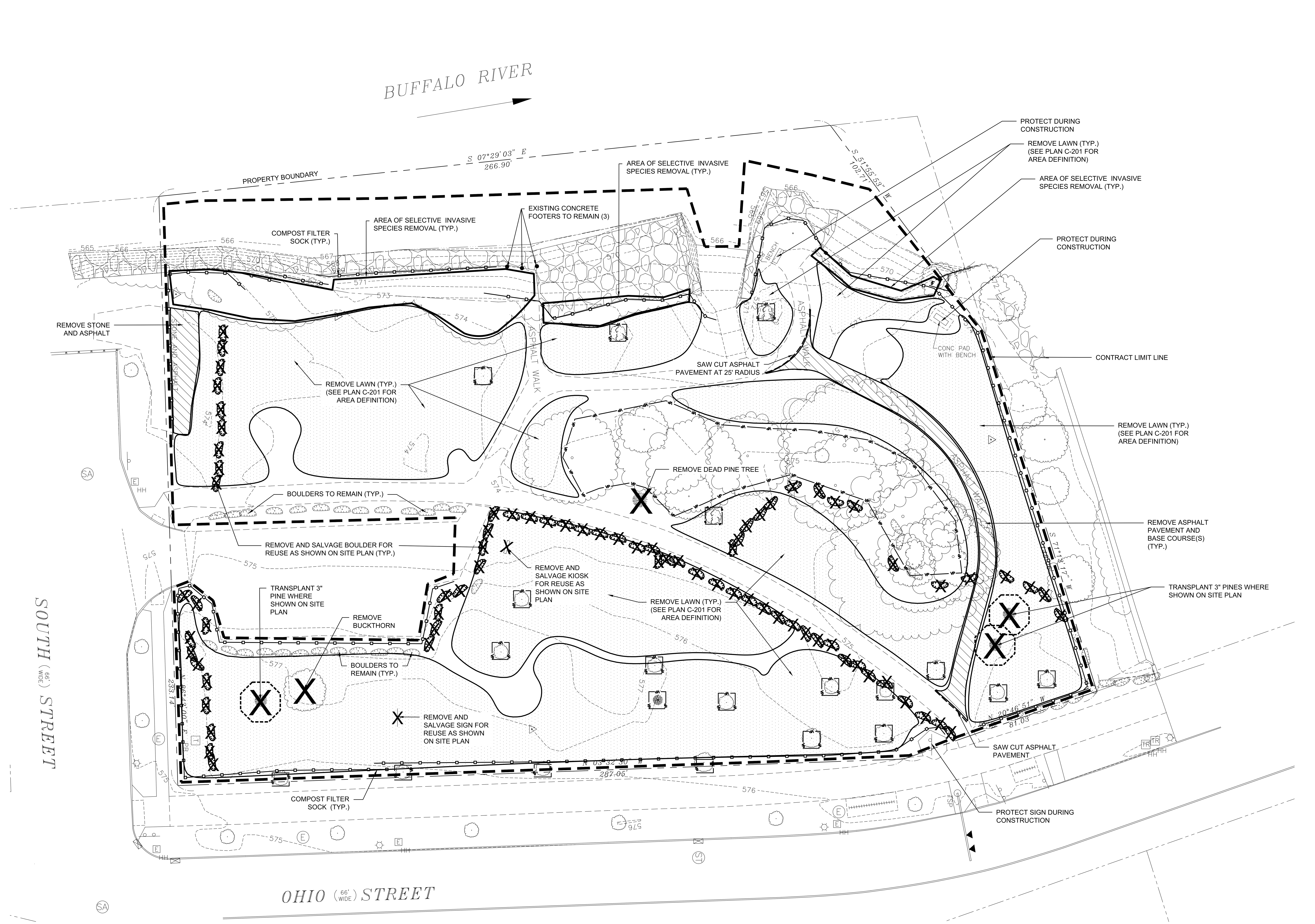
Date:	Project Manager:
JUNE 7, 2016	M. POHL
Drawn By:	Checked By:
D. ZENDANO	M. POHL

Project: 16001-11

File Name: 16001-11 OHIO.DWG

Sheet: 1 OF 2

V101


BUFFALO RIVER
PROPERTY BOUNDARY
S 07°29'03" E
266.90'
S 51°55'53" W
102.71'
AREA OF SELECTIVE INVASIVE SPECIES REMOVAL (TYP.)
COMPOST FILTER SOCK (TYP.)
AREA OF SELECTIVE INVASIVE SPECIES REMOVAL (TYP.)
EXISTING CONCRETE FOOTERS TO REMAIN (3)
PROTECT DURING CONSTRUCTION
REMOVE LAWN (TYP.) (SEE PLAN C-201 FOR AREA DEFINITION)
AREA OF SELECTIVE INVASIVE SPECIES REMOVAL (TYP.)
PROTECT DURING CONSTRUCTION
REMOVE STONE AND ASPHALT
SAW CUT ASPHALT PAVEMENT AT 25' RADIUS
CONC PAD WITH BENCH
CONTRACT LIMIT LINE
REMOVE LAWN (TYP.) (SEE PLAN C-201 FOR AREA DEFINITION)
ASPHALT WALK
REMOVE LAWN (TYP.) (SEE PLAN C-201 FOR AREA DEFINITION)
REMOVE DEAD PINE TREE
BOULDERS TO REMAIN (TYP.)
REMOVE ASPHALT PAVEMENT AND BASE COURSE(S) (TYP.)
REMOVE AND SALVAGE BOULDER FOR REUSE AS SHOWN ON SITE PLAN (TYP.)
REMOVE AND SALVAGE KIOSK FOR REUSE AS SHOWN ON SITE PLAN
REMOVE LAWN (TYP.) (SEE PLAN C-201 FOR AREA DEFINITION)
TRANSPLANT 3" PINES WHERE SHOWN ON SITE PLAN
TRANSPLANT 3" PINE WHERE SHOWN ON SITE PLAN
REMOVE BUCKTHORN
BOULDERS TO REMAIN (TYP.)
REMOVE AND SALVAGE SIGN FOR REUSE AS SHOWN ON SITE PLAN
SAW CUT ASPHALT PAVEMENT
N 20°46'51" W
81.03'
S 71°18'17" E
N 05°32'30"
287.05'
233.14'
COMPOST FILTER SOCK (TYP.)
PROTECT SIGN DURING CONSTRUCTION
SOUTH (66' WIDE) STREET
OHIO (66' WIDE) STREET
20 10 0 10 20 40
GRAPHIC SCALE (IN FEET)

DEMOLITION LEGEND

ITEM	SYMBOL
REMOVE EXISTING ASPHALT PAVEMENT	
REMOVE EXISTING LAWN AREA	
EXISTING TREE	
REMOVE AND SALVAGE EXISTING TREE	
REMOVE EXISTING TREE	
REMOVE & SALVAGE KIOSK FOR REUSE ON SITE AS SHOWN ON SITE PLAN	
REMOVE & SALVAGE SIGN FOR REUSE ON SITE AS SHOWN ON SITE PLAN	
REMOVE AND SALVAGE BOULDER FOR REUSE AS SHOWN ON SITE PLAN	
BOULDER TO REMAIN	
COMPOST FILTER SOCK	
VEGETATION PROTECTION	
CONTRACT LIMIT LINE	
SELECTIVE INVASIVE SPECIES REMOVAL AREA	
REMOVE LAWN	
EXISTING UTILITIES	E ST LTP SA E TR T HH HH PB TSP
EXISTING RIP RAP	
EXISTING SIGN	

NOTES:

1. ALL EXISTING VEGETATION TO REMAIN UNLESS NOTED OTHERWISE HEREON. CLEARING & GRUBBING OF INVASIVE, UNHEALTHY OR DAMAGED VEGETATION ALONG SHORE LINE MAY BE NEEDED. THIS WOULD BE DETERMINED BY RIVERKEEPER'S AUTHORIZED REPRESENTATIVE OF CHOICE.
2. IN SELECTIVE INVASIVE SPECIES REMOVAL AREAS, CONTRACTOR AND RIVERKEEPER'S AUTHORIZED REPRESENTATIVE TO REVIEW IN FIELD PRIOR TO COMMENCEMENT OF WORK TO DETERMINE MATERIAL TO BE REMOVED.
3. REMOVAL OF INVASIVE SPECIES IN THE RIPARIAN ZONE WILL BE REQUIRED. INVASIVE SPECIES INCLUDE BUT ARE NOT LIMITED TO AILANTHUS ALTISSIMA, ELAEAGNUS UMBELLATA, FRANGULA ALNUS, IRIS SP., LONICERA MORROWII, REYNOUTRIA JAPONICA, RHAMNUS CATHARTICA AND ROSA MULTIFLORA. INVASIVE SPECIES WITHIN THE INTERIOR OF THE SITE WILL BE REMOVED ON A CASE BY CASE BASIS PER THE DIRECTION OF BUFFALO NIAGARA RIVERKEEPER.
4. ALL WORK WITHIN DRIP LINES OF TREES TO BE PERFORMED IN A MANNER THAT MINIMIZES DISTURBANCE TO ROOT SYSTEMS OR OTHERWISE DAMAGE TREES. LAWN REMOVAL IN SUCH AREAS TO BE PERFORMED USING EQUIPMENT NO LARGER THAN A SKID STEER.

REV NO	DATE	DESCRIPTION	DWN / CHK	PROJ APP.
3	6/5/17	CONSTRUCTION DOCUMENTS	MH / AB	
2	3/8/17	REVISED 60% SUBMISSION	MH / AB	
1	7/28/16	60% SUBMISSION	ZR / AB	

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OHIO STREET BOAT LAUNCH

DEMOLITION PLAN

PREPARED BY: MH, ZR, DP

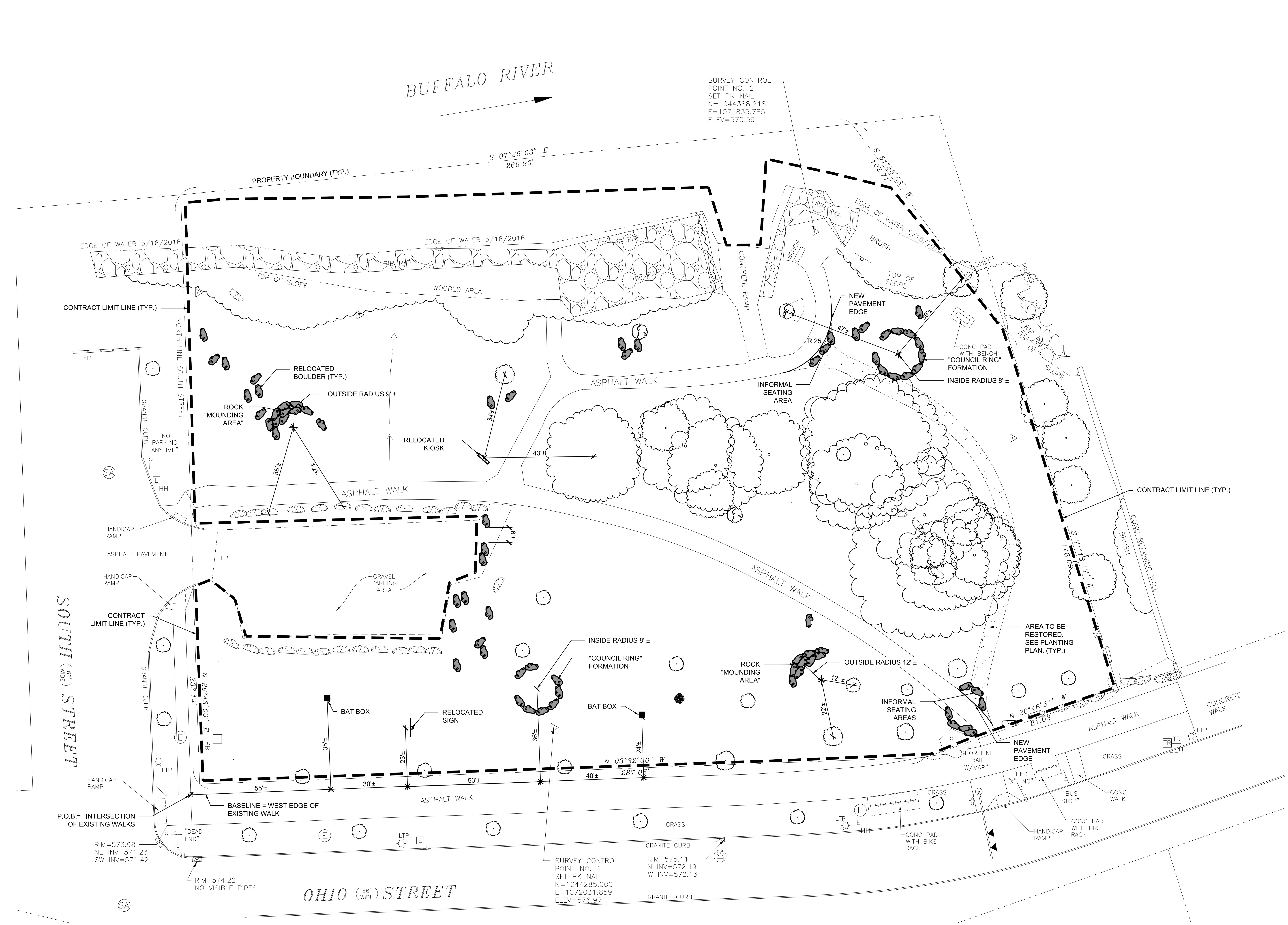
DWG.NO: C-001

SCALE: 1"=20'

CONTRACT NO.

IMAGE_FILENAME

AUTOCAD_DWG_PATHNAME



LEGEND

ITEM	SYMBOL
CONTRACT LIMIT LINE	
EXISTING BOULDER TO REMAIN	
RELOCATED BOULDER	
BAT BOX	
RELOCATED SIGN	
RELOCATED KIOSK	
EXISTING UTILITIES	E ST LTP SA E HH TR HH T PB TSP
EXISTING TREE	
EXISTING RIP RAP	
EXISTING SIGN	

NOTES:

1. BAT BOX SHALL BE "BAT BUNKER PLUS" AS MANUFACTURED BY BAT CONSERVATION AND MANAGEMENT, CARLISLE, PA. (717) 241-ABAT, WWW.BATMANAGEMENT.COM, OR APPROVED EQUAL; INSTALL PER MANUFACTURER'S RECOMMENDATION.
2. ALL NEW BOULDER LOCATIONS TO BE FIELD ADJUSTED UNDER THE DIRECT SUPERVISION OF THE RIVERKEEPER'S AUTHORIZED REPRESENTATIVE. CONTRACTOR SHALL INFORM OWNER 10 DAYS PRIOR TO INSTALLATION & CONFIRM SCHEDULE WITH RIVERKEEPER'S AUTHORIZED REPRESENTATIVE. THE INTENT IS THAT NO BOULDERS WILL BE REMOVED FROM THE SITE.
3. FIELD LOCATION STAKE ALL ELEMENTS FOR OWNER & RIVERKEEPER'S AUTHORIZED REPRESENTATIVE'S APPROVAL PRIOR TO INSTALLATION.

REV NO	DATE	DESCRIPTION	DWN / CHK	PROJ APP.
3	6/5/17	CONSTRUCTION DOCUMENTS	MH / AB	
2	3/8/17	REVISED 60% SUBMISSION	MH / AB	
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OHIO STREET BOAT LAUNCH

SITE PLAN

PREPARED BY: MH

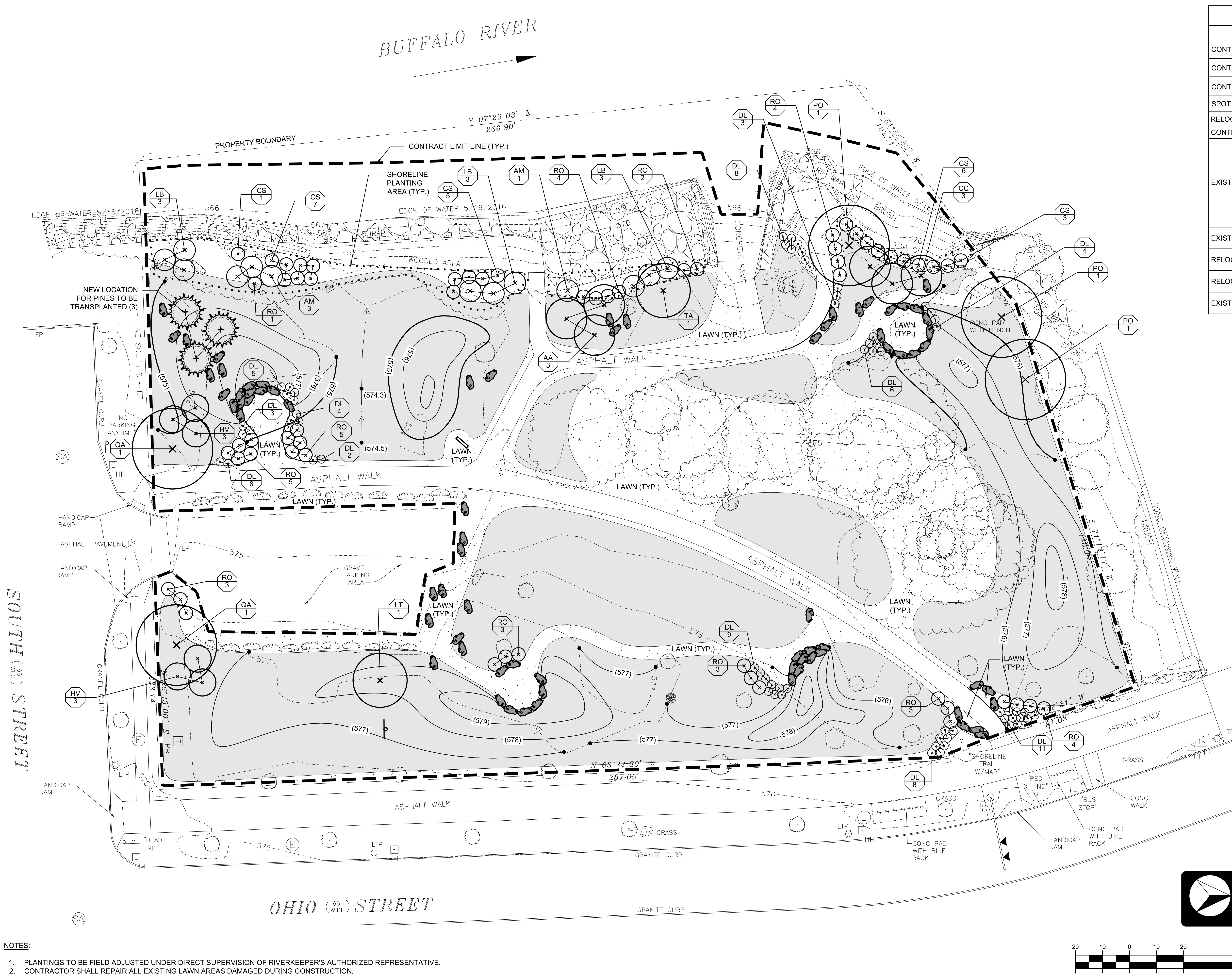
DWG.NO: C-101

SCALE: 1" = 20'

CONTRACT NO.

IMAGE_FILENAME

AUTOCAD_DWG_PATHNAME



GRADING LEGEND	
ITEM	SYMBOL
CONTOUR - EXISTING	497
CONTOUR - FINISHED	(497)
CONTOUR - FINISHED - INDEX	(490)
SPOT ELEVATION - FINISHED	(490)
RELOCATED BOULDER	
CONTRACT LIMIT LINE	
EXISTING UTILITIES	E ST LTP SA E HH TR HH T PB TSP
EXISTING RIP RAP	
RELOCATED SIGN	
RELOCATED KIOSK	
EXISTING SIGN	

PLANTING LEGEND	
ITEM	SYMBOL
TREE, EVERGREEN	
TREE, DECIDUOUS	
SHRUB, DECIDUOUS	
MEADOW SEED MIX	
EXISTING / REPAIRED LAWN	
PLANTING KEY	ID #
SHORELINE PLANTING AREA	
CONTRACT LIMIT LINE	
EXISTING TREE	

PLANT LIST - TREES

KEY	BOTANICAL NAME	COMMON NAME	ROOT / SIZE
AA	AMELANCHIER ARBOREA	DOWNY SERVICEBERRY	# 15 CONT.
CC	CARPINUS CAROLINIANA	MUSCLEWOOD	#15 CONT.
HV	HAMAMELIS VIRGINIANA	COMMON WITCH HAZEL	#15 CONT.
LT	LIRIODENDRON TULIPIFERA	TULIP TREE	# 20 CONT.
PO	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	# 20 CONT.
QA	QUERCUS ALBA	WHITE OAK	# 20 CONT.
TA	TILIA AMERICANA	BASSWOOD	# 20 CONT.

PLANT LIST - SHRUBS

KEY	BOTANICAL NAME	COMMON NAME	ROOT / SIZE
AM	ARONIA MELANOCARPA	BLACK CHOKE-BERRY	#5 CONT.
CS	CORNUS SERICEA	RED OSIER DOGWOOD	#5 CONT.
DL	DIERVILLA LONICERA	BUSH-HONEYSUCKLE	#5 CONT.
LB	LINDERA BENZOIN	SPICEBUSH	#5 CONT.
RO	RUBUS ODORATUS	PURPLE-FLOWERING RASPBERRY	# 5 CONT.

PLANT LIST - MEADOW SEED MIX

BOTANICAL NAME	COMMON NAME	% BY WT.
ACHILLEA MILLEFOLIUM	COMMON YARROW	5.0
ASCLEPIAS SYRIACA	COMMON MILKWEED	1.0
ASCLEPIAS TUBEROSA	BUTTERFLYWEED	2.0
ASCLEPIAS VERTICILLATA	WHORLED MILKWEED	0.5
CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	5.0
ELYMUS CANDENSIS	CANADA WILD RYE	8.0
ELYMUS RIPARIUS	RIVERBANK WILD RYE	10.0
ELYMUS VIRGINICUS	VIRGINIA WILD RYE	20.0
EUPATORIUM ALTISSIMUM	TALL BONESET	0.5
MONARDA FISTULOSA	BEEBALM	1.0
PANICUM VIRGATUM	SWITCHGRASS	3.0
PENSTEMON DIGITALIS	FOXGLOVE BEARDTONGUE	2.0
PYCNANTHEMUM VIRGINIANUM	MOUNTAIN MINT	0.5
RUDBECKIA TRILOBA	BROWN-EYED SUSAN	3.0
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	20.0
SCROPHULARIA LANCEOLATA	EARLY FIGWORT	0.5
SCROPHULARIA MARILANDICA	LATE FIGWORT	0.5
SOLIDAGO ALTISSIMA	TALL GOLDENROD	0.5
SOLIDAGO JUNCEA	EARLY GOLDENROD	0.5
SOLIDAGO SPECIOSA	SHOWY GOLDENROD	1.0
SORGHASTRUM NUTANS	INDIAN GRASS	10.0
SYMPHYOTRICHUM LAEVE	SMOOTH BLUE ASTER	0.5
SYMPHYOTRICHUM LATERIFLORUM	CALICO ASTER	1.0
SYMPHYOTRICHUM OOLENTANGIENSIS	SKY BLUE ASTER	0.5
SYMPHYOTRICHUM NOVAE-ANGLIAE	NEW ENGLAND ASTER	1.0
VERBENA HASTATA	BLUE VERVAIN	2.0
ZIZEA AUREA	GOLDEN ALEXANDERS	0.5

NOTES:

1. PLANTINGS TO BE FIELD ADJUSTED UNDER DIRECT SUPERVISION OF RIVERKEEPER'S AUTHORIZED REPRESENTATIVE.
2. CONTRACTOR SHALL REPAIR ALL EXISTING LAWN AREAS DAMAGED DURING CONSTRUCTION.

REV NO	DATE	DESCRIPTION	DWN / CHK	PROJ APP.
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OHIO STREET BOAT LAUNCH

GRADING & PLANTING PLAN

PREPARED BY: MH, ZR, DP

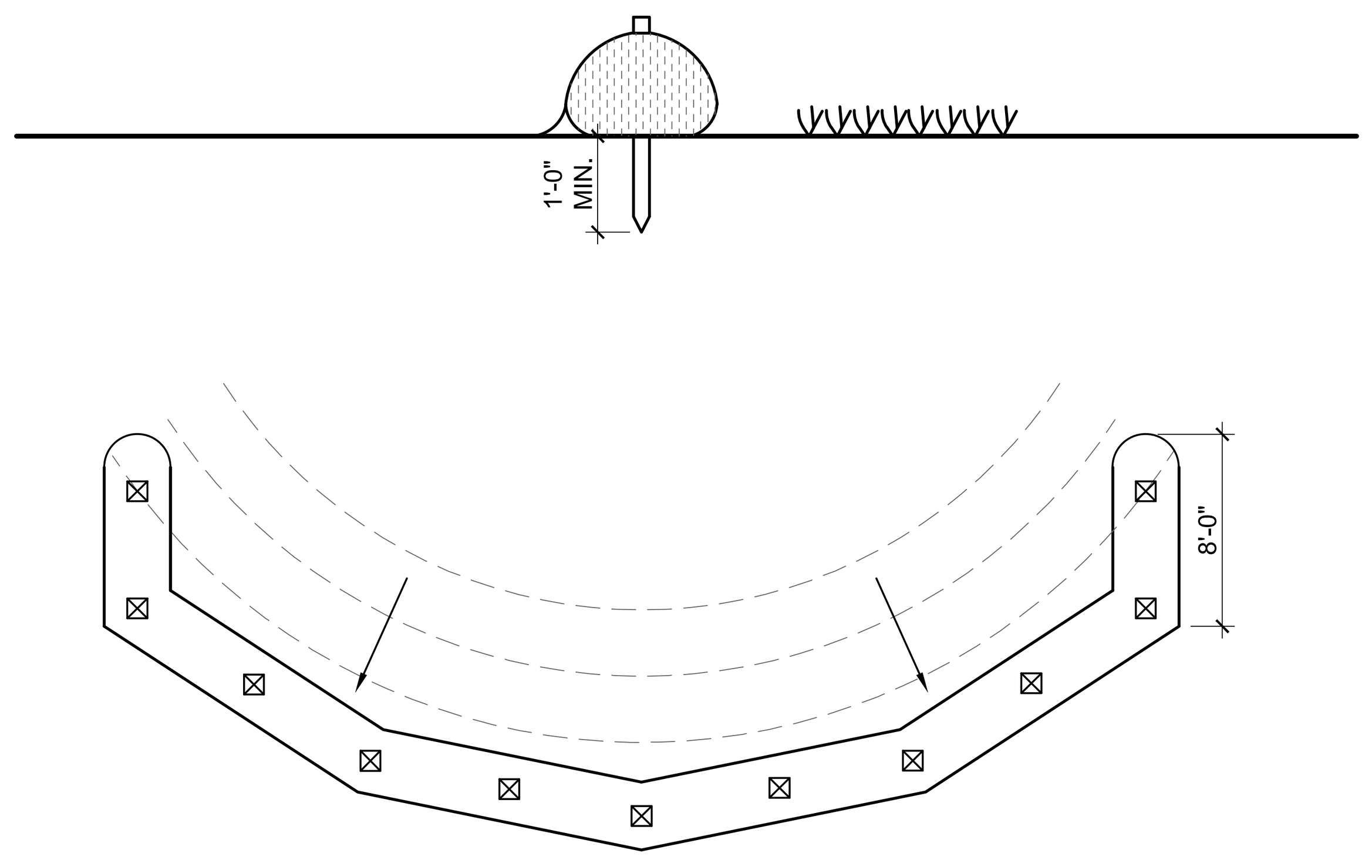
DWG.NO: C-201

SCALE: 1"=20'

CONTRACT NO.

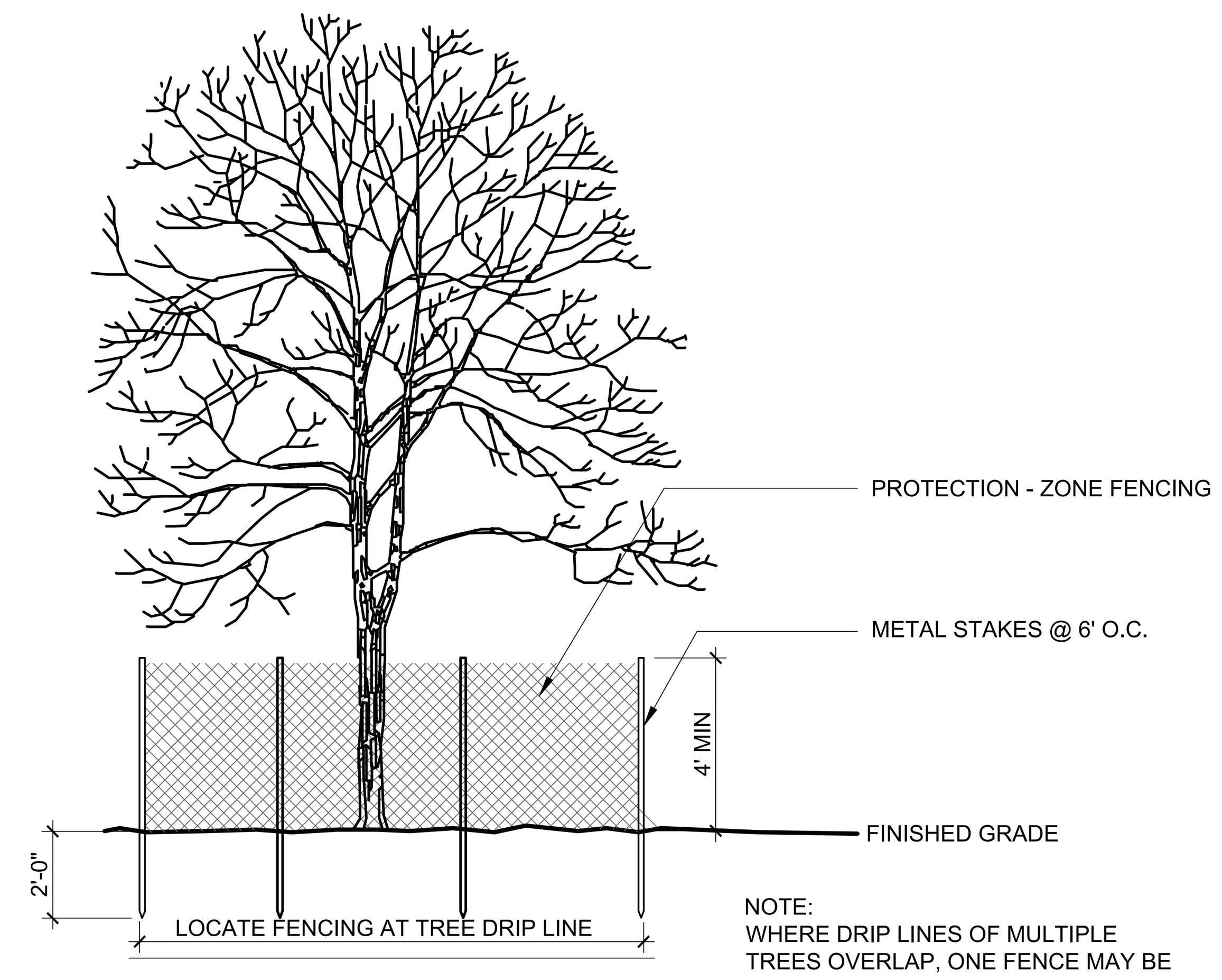
IMAGE_FILENAME

AUTOCAD_DWG_PATHNAME



1 / 601 COMPOST FILTER SOCK

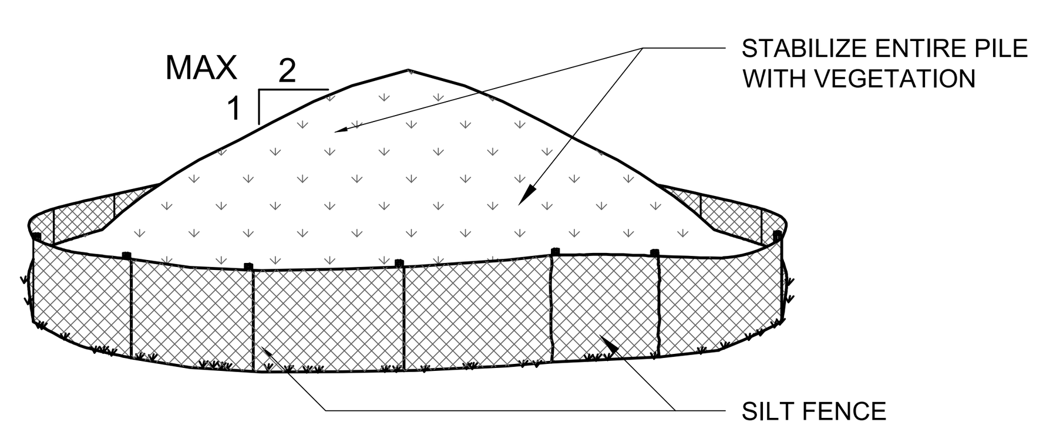
Scale: NTS — TEMPORARY



NOTE:
WHERE DRIP LINES OF MULTIPLE TREES OVERLAP, ONE FENCE MAY BE USED TO ENCLOSE MULTIPLE TREES.

2 / 601 VEGETATION PROTECTION

Scale: 1/4" = 1'-0"

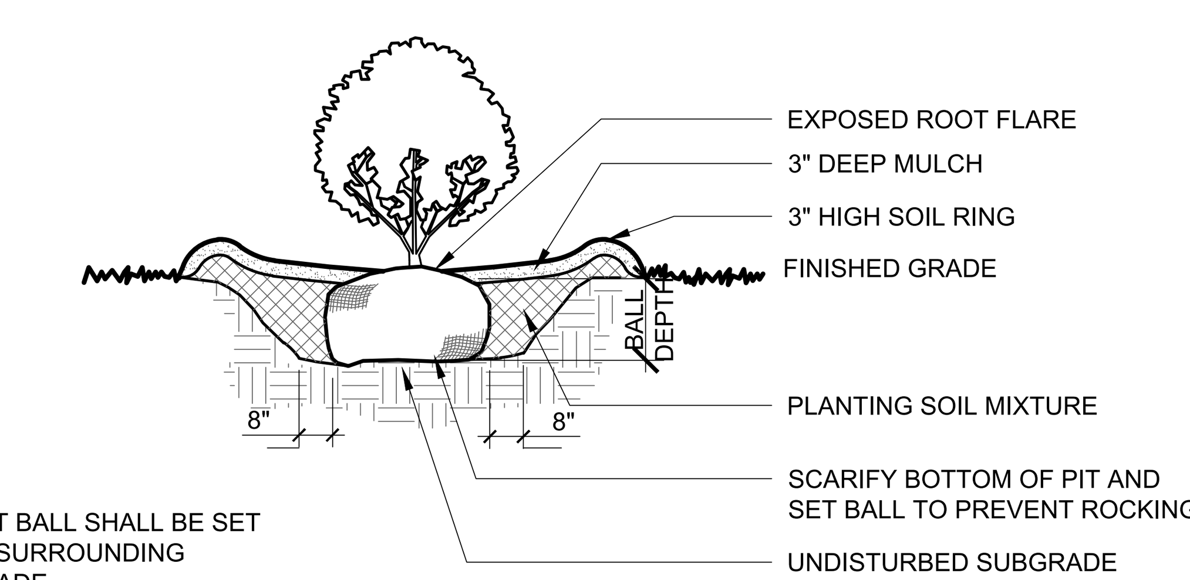


INSTALLATION NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2:1. MAXIMUM HEIGHT SHALL BE 12 FEET.
3. EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, INSTALLED PER CORRESPONDING DETAIL, THEN STABILIZED WITH ANNUAL GRAIN WITHIN 3 DAYS.
4. A PERIMETER DIKE/SWALE SHALL BE LOCATED UP-SLOPE OF THE TOPSOIL STOCKPILE TO DIVERT STORMWATER AROUND THE STOCKPILE.

3 / 601 STABILIZED SOIL STOCKPILE

Scale: NTS — TEMPORARY



NOTES:

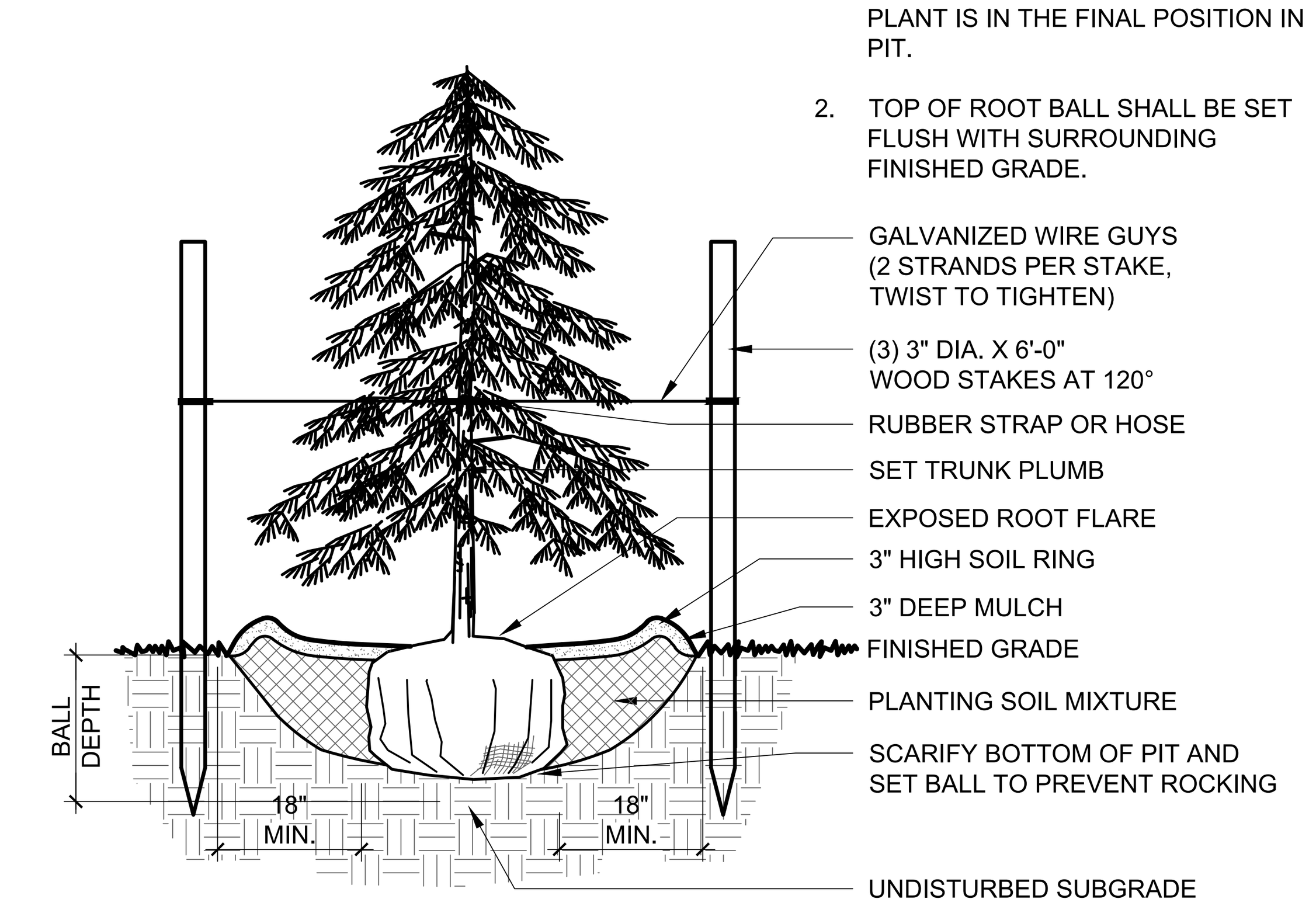
1. TOP OF ROOT BALL SHALL BE SET FLUSH WITH SURROUNDING FINISHED GRADE.
2. SET PLANTS PLUMB

4 / 601 SHRUB PLANTING

Scale: 1/2" = 1'-0"

NOTES:

1. REMOVE BURLAP, ROPE, OR WIRE BASKET FROM TOP 1/2 OF BALL MINIMUM, CUT REMAINING PORTIONS OF ROPE OR WIRE BASKET ONCE PLANT IS IN THE FINAL POSITION IN PIT.
2. TOP OF ROOT BALL SHALL BE SET FLUSH WITH SURROUNDING FINISHED GRADE.

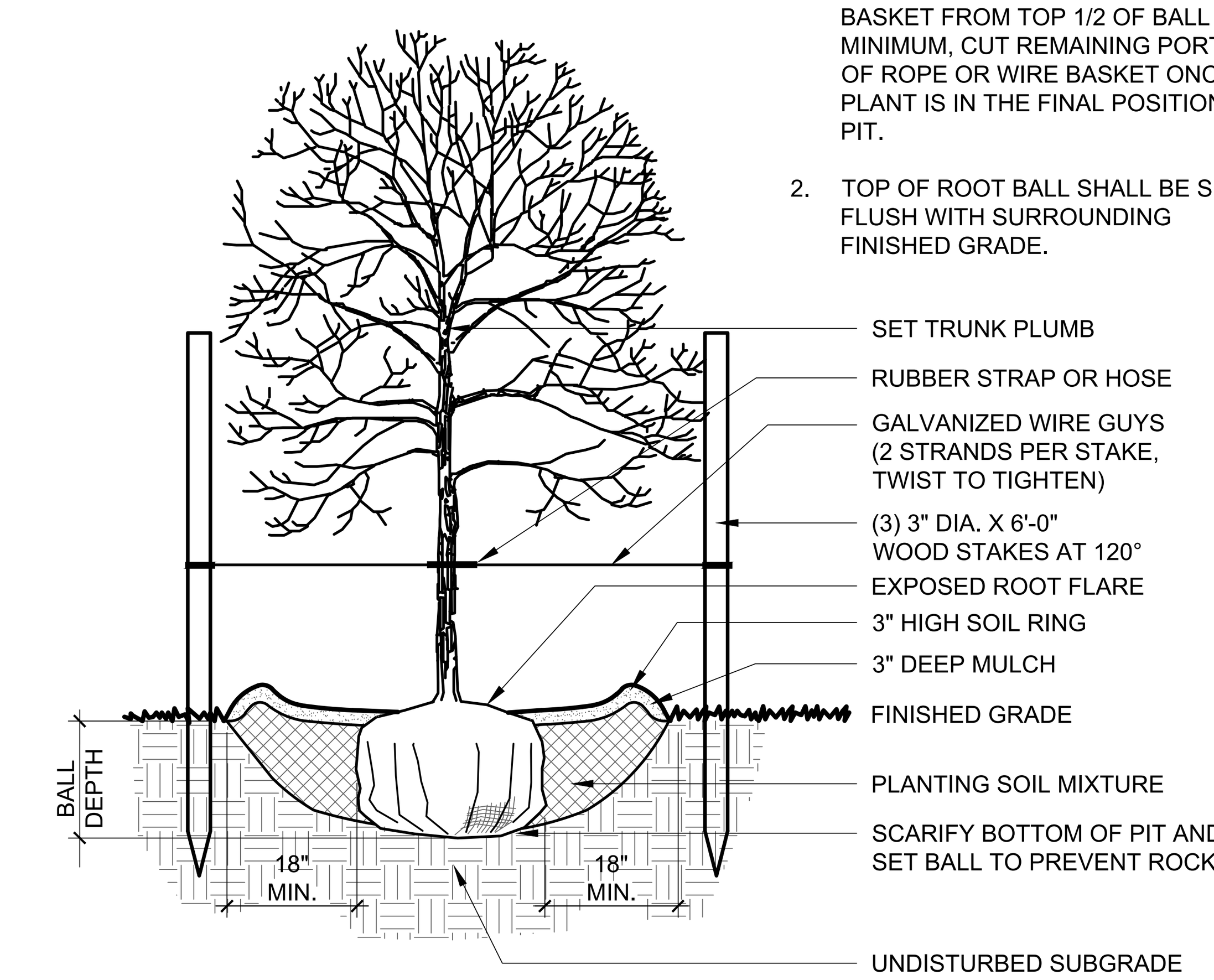


5 / 601 EVERGREEN TREE PLANTING

Scale: 1/2" = 1'-0" — WITH VERTICAL STAKES

NOTES:

1. REMOVE BURLAP, ROPE, OR WIRE BASKET FROM TOP 1/2 OF BALL MINIMUM, CUT REMAINING PORTIONS OF ROPE OR WIRE BASKET ONCE PLANT IS IN THE FINAL POSITION IN PIT.
2. TOP OF ROOT BALL SHALL BE SET FLUSH WITH SURROUNDING FINISHED GRADE.



6 / 601 DECIDUOUS TREE PLANTING

Scale: 1/2" = 1'-0" — WITH VERTICAL STAKES

REV NO	DATE	DESCRIPTION	DWN / CHK	PROJ APP.
3	6/5/17	CONSTRUCTION DOCUMENTS	MH / AB	
2	3/8/17	REVISED 60% SUBMISSION	MH / AB	
1	7/28/16	60% SUBMISSION	ZR / AB	

REVISIONS

CONSTRUCTION DOCUMENTS

REGISTERED LANDSCAPE ARCHITECT — STATE OF NEW YORK — 000546

edr — Environmental Design & Research, Landscape Architecture, Planning, Environmental Services, Engineering and Surveying, P.C.
274 North Goodman Street
Rochester, NY 14607
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www.gomezandsullivan.com

OHIO STREET BOAT LAUNCH

DETAILS

PREPARED BY: MH, ZR

DWG.NO: **C-601**

SCALE: AS NOTED

CONTRACT NO.

IMAGE_FILENAME

AUTOCAD_DWG_PATHNAME

Plate A.1: Ohio Street Boat Launch Substituted Seed Mix

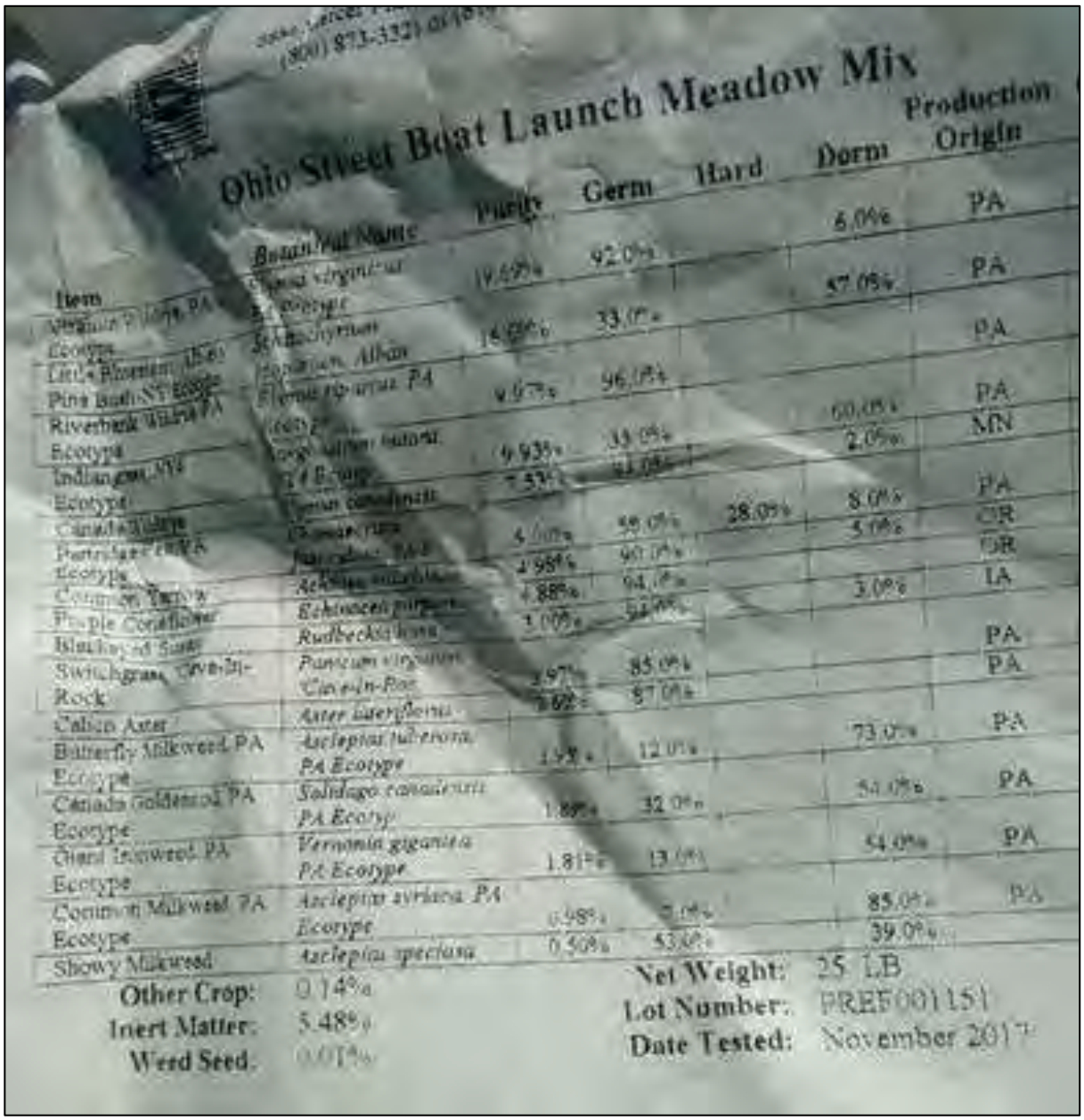

Figure A.1. Ohio Street Boat Launch Substituted Seed Mix Packing Slip

Table A.1. Ohio Street Boat Launch Substituted Seed Mix (copied from Figure A.1 photograph)

Species	Common Name	Nativity	Status
Elymus virginicus	Virginia wildrye	native	not listed
Schizachyrium scoparium	Little bluestem	native	not listed
Elymus riparius	Riverbank wildrye	native	not listed
Sorghastrum nutans	Indian grass	native	not listed
Elymus canadensis	Canada wild rye	native	not listed
Chamaecrista fasciculata	Partridge pea	native	not listed
Achillea millefolium	Common yarrow	native	not listed
Echinacea purpurea	Purple coneflower	non-native	not listed
Rudbeckia hirta	Blackeyed susan	non-native	not listed
Panicum virgatum	Switchgrass	native	not listed
Symphyotrichum lateriflorum (Aster lateriflorum)	Calico aster	native	not listed
Asclepias tuberosa	Butterfly milkweed	native	not listed
Solidago canadensis	Canada goldenrod	native	not listed
Vernonia gigantea	Giant ironweed	Listed, NY Endangered	Endangered in NY
Asclepias syriaca	Common milkweed	native	not listed
Asclepias speciosa	Showy milkweed	non-native	not available

APPENDIX B. PHOTO MONITORING PHOTOGRAPHS

Photo monitoring point 1

Photo monitoring point 2. Bat boxes are visible in the center of the photo.

Photo monitoring point 3

Photo monitoring point 4

Photo monitoring point 5

Photo monitoring point 6

Photo monitoring point 7

Photo monitoring point 8

Photo monitoring point 9

Photo monitoring point 10

APPENDIX C. ADDITIONAL SITE PHOTOS

Meadow and Shrub Planting Spaces

Meadow and Shrub Planting Spaces

Meadow and Shrub Planting Spaces

Wooded Riparian Area 8

Wooded Riparian Area 8