Eagle Valley Mitigation Site
Mitigation and Monitoring Plan
For Vectren Mitigation

Date:
December 11, 2015
Revised:
February 19, 2016

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I. Introduction

The Vectren Eagle Valley Pipeline (VEVP) Mitigation Site is being developed to provide mitigation for the Vectren Eagle Valley 16 inch gas pipeline project. This mitigation site is located within Morgan County and is being developed to provide mitigation for palustrine forested wetland conversion to emergent wetlands and floodway wetland and forest conversion impacts caused by construction of the gas pipeline project.

II. Objectives

The objective of this mitigation plan is to replace unavoidable conversion impacts to wetlands and floodway forests through implementation of the following concepts:

- Preservation and natural succession of floodway forest resources.
- Restoration and enhancement of forested wetlands within an agricultural field setting.

The mitigation site is located west of SR37 along Bryants Creek Road in Morgan County. The site is bordered to the west and south by residential, to the north by forested land, and to the east by agricultural fields (Figures 1 and 2).

The mitigation plan will meet the needs of the Indiana Department of Environmental Management 401 Water Quality Certification and the Indiana Department of Natural Resources Construction in a Floodway permit requirements through implementation of the aforementioned wetland restoration and enhancement activities. This mitigation plan will also be used for 2 separate IDNR Construction in a Floodway (CIF) permits.

A. Functions and Values:

1. Impacted Water Resources

The wetland and floodway forest conversion impacts by the Vectren pipeline project are located within the Upper White River (USGS Cataloging Unit: 05120201) watersheds. The project consists of manually clearing the permanent gas pipeline easement along with boring and trenching of the 16 inch gas pipeline. All clearing will be completed manually and no fill will be placed within the easement. All contours will remain the same as pre-construction conditions. The project will cross 13 jurisdictional stream channels including 4 crossings of the White River, Mallow Run, White Lick Creek, unnamed tributary (UNT) to Bluff Creek, 5 UNT's to the White River, and UNT to Crooked Creek. However, the pipeline will bore under these stream channels and not result in any impacts below the ordinary high water mark or the banks of these streams. In addition, some of the forested wetlands will also be bored and no dredging or filling in these wetlands will occur. The 16 inch pipeline will result in temporary impacts during construction to excavate and back fill the pipeline trench in location that are not bored. In addition, the project may require temporary access for the construction of the pipeline. All temporary construction access disturbances within forested wetlands and non-wetland floodway forest habitat areas will be minimized to the maximum extent practicable and all of the temporary access areas disturbed within wetlands and floodway forest habitat areas will be restored upon completion of the project construction using the same trees, shrubs, herbaceous seed mix, and plant spacing as will be used in Zone A of this mitigation plan.

The project will result in 4.81 acres of permanent conversion of palustrine forested wetlands to palustrine emergent wetlands, of which 4.17 acres are located within the IDNR Construction in a Floodway permit areas.

The project will require 2 Construction In a Floodway (CIF) permits from the Indiana Department of Natural Resources. The 2 CIF permit areas will result in permanent conversion of 4.17 acres of palustrine forested wetlands to emergent wetlands and 0.26 acre of non-wetland floodway forest habitat to early successional habitat. All temporary wetland and non-wetland floodway habitat impacts for construction will be minimized to the maximum extent practicable during construction and all disturbed temporary access areas will be restored upon project completion.

2. Proposed Mitigation Site

The total size of the VEVP mitigation property is approximately 27.5 acres. Of this, 15.3 acres consist of converting active agricultural row crop fields into forest wetland habitat. Approximately 1.0 acre of the agricultural fields will be constructed into berms and slopes to enhance the hydrology of the forested wetland areas and 1.3 acres of existing agricultural row crop fields will be left to natural succession. The remaining 9.9 acres of the site consists of existing riparian and non-wetland forest habitat and will be preserved and protected in perpetuity. Bryant Creek traverses the property, but will not be utilized for stream mitigation. Figures 1 and 2 show the mitigation site on a USGS map and aerial photograph, respectively. Figure 3 shows an overview of the planned mitigation design on an aerial photograph. Exhibit 1 presents photos of existing site conditions with mapped photo locations. A detailed design plan can be found in Exhibit 2.

B. Functional Losses of Proposed Impact Site versus Functional Gains of Proposed Mitigation Site:

The functional losses that will be incurred through the placement of fill within the wetlands in the Vectren pipeline project area will in part be offset through the functional gains that will be realized through the construction of the proposed mitigation site. The anticipated functional gains of the proposed mitigation site, namely storm water retention, water filtration, groundwater recharge and improved wildlife habitat, will provide functional replacement for the wetland impacts in terms of quality of resource. Over time, the functional loss of wildlife habitat will be offset when the newly created mitigation site develops into more mature wetland and bottomland forests. Table 1 compares the functions of the wetlands being impacted by the Vectren pipeline compared to the functions that will be gained by the construction of the proposed mitigation sites.

Table 1. Comparison of Functions for Impact Sites and the Mitigation Site

Function	Vectren Pipeline Wetland and Stream Impact Sites	Mitigation Site	
		Existing*	Proposed*
Storm / Flood Water Retention	Moderate	Moderate	Moderate/High Expanded Capacity
Water Filtration	Moderate	Moderate	Moderate/High Expanded Capacity
Groundwater recharge	Moderate	Moderate	Moderate Expanded Capacity
Wildlife Food and Cover	Moderate	Moderate	Moderate/High Expanded Capacity

* This is based on analysis of the site through field reviews and aerial photograph review of site conditions.

C. Functional Replacement:

The Eagle Valley Mitigation Site plan offers in-kind replacement for the forest and wetland impacts resulting from the Vectren pipeline project. A ratio of 3:1 was used for all palustrine forested wetland permanent conversion impacts. The Eagle Valley Mitigation Site will compensate for a portion of the Vectren pipeline non-wetland forest impacts through reforestation of the agricultural fields to forested wetland habitats and natural succession of the active agricultural fields.

Functional replacement of impacted wetlands will involve in-kind replacement through the restoration and enhancement of former row-crop agricultural land to forested wetland habitat by means of shallow excavation necessary to retain runoff and flood water for a sufficient period to meet wetland hydrology criteria. Shallow berms will be constructed in order to retain water in the proposed wetland areas. Proposed wetland areas will be seeded and planted with native herbaceous and woody vegetation..

The Eagle Valley Mitigation Site will include approximately 14.4 acres of forested wetland habitat restoration, 9.9 acres of forested preservation, 2.3 acres of non-wetland forested natural succession, and .9 acre of contingency wetland. Of the 27.5 acres of to be developed at this site, only 14.4 acres of forested wetlands will be required to compensate for wetland impacts.

III. Site Selection

The Eagle Valley site is (See Figure 1) within the lower southwest portion of the Upper White River watershed (USGS Cataloging Unit: 05120201). All but the southeast corner of the mitigation site is within the Bryant Creek 100-year floodplain. Bryant Creek flows from southeast to northwest through the central portion of the mitigation site. Existing elevations on the property are generally 590-593 feet. An IDNR Construction in a Floodway permit may be required for the construction since earthwork activities would occur within the floodway of Bryant Creek. A Rule 5 permit from IDEM will be required prior to disturbance of soil within the wetland restoration and enhancement areas.

The majority of the current land use within the mitigation site boundary is active agricultural row crops. The central and far northern portion of the site is currently a forested riparian corridor (Figure 2). Surrounding land is primarily agricultural land, residential, and forest. No airports are located within 5 miles of the site. A review of the National Wetland Inventory (NWI) maps indicates that a small portion of the existing forest in the northern quarter of the site is classified as wetland. These wetlands are classified as freshwater forested/shrub wetlands and comprise approximately .72 acres of the site.

The mitigation site was selected primarily for its forested wetland enhancement opportunities. There is evidence that these fields have been drained via tiles (e.g. two tile outlets were observed on the bank of Bryant Creek and numerous tile blowouts were identified within the agricultural row crop fields). Justification for suitable hydrology at this site is based on inlets being constructed above the ordinary high water mark on Bryant Creek and the Unnamed Tributary of Bryant Creek, direct rainfall capture, soil sample profile, and annual flooding from Bryant Creek.

The proposed wetland areas would be excavated to elevations that show positive signs of hydric soil indicators. Water retention berms will be constructed to retain precipitation and floodwaters within the proposed wetland areas at a 6 inch level. There will be outlet structures installed within the berms to control the water levels within the mitigation area until the site becomes developed. At that point, the

control structures will be permanently set to retain sufficient hydrology to support the wetland community in perpetuity.

Existing field tiles will be disabled by locating, removing, and plugging the tiles. At least two (2) active tile outlets have been observed in the field, which will be disabled. Additional exploration will occur around the perimeter of the wetland areas to ensure any unknown tiles are located and disabled. The presence of hydric soil indicators at the proposed excavation depth and active field tiles (to be removed) suggest that multiple factors are present to support a wetland community. The proposed excavation, berm construction, and tile disabling will occur to ensure the proposed wetland mitigation areas are restored and enhanced to a sufficient hydrologic regime.

A detailed topographic survey and a detailed plan for excavation and grading can be found in Exhibit 2.

The climate data for the mitigation site is based on the climate history of Martinsville, Indiana. Average high temperatures range from 36° F in January to 84° F in July and August. Average low temperatures range from 18° F in January to 61° F in August. May is generally the wettest month, receiving an average of 5.35 inches of rainfall. Average yearly precipitation is approximately 44.8 inches (source: usclimatedata.com). The site is located within Plant Hardiness Zone 6, where minimum temperatures are mild at -10 to -0° F.

IV. Site Protection Instrument

The current land owner of the mitigation site is the William A. Chaplin Revocable Living Trust. Vectern will be purchasing this mitigation site with a fee simple purchase of the property and the property will transfer ownership from the William A. Chaplin Revocable Living Trust to Vectren. The property will be deed restricted in perpetuity. Vectren will be responsible for the construction and post construction monitoring of this mitigation site for success. Proof will be provided that a deed restriction for the entire 27.5 acres of the mitigation site has been recorded for the property following the approval of the IDEM and IDNR permits.

V. Baseline Information

The responsible parties for the Eagle Valley Mitigation Site are listed below:

Mitigation Site Developer/Owner:
Vectren Corporation
PO Box 209
Evansville, In. 47702-0209

Contact Person for Applicant:
Mark Wannemueller
Phone: (812) 491-4601

Consultant Preparing Permit Application:
Lochmueller Group, Inc.
6200 Vogel Road
Evansville, Indiana 47715

Contact Person for Consultant:
Jeremy Kieffner – (800) 423-7411

Current Property Owner(s):
William A. Champlin Revocable Living Trust
5230 Paragon Road
Martinsville, IN 46151

The William A. Champlin Revocable Living Trust property is approximately 27.5 acres. The entire 27.5 acres constitutes the mitigation site as described in this plan. The location of the site is as follows: Indiana: Morgan County, Baker Township, Modesto Quadrangle, Township 11 North, Range 1 West, Section 33 (Figures 1 and 2).

Soils/Substrate:
The soils within the mitigation site consist of Haymond silt loam (Ha), Banlic silt loam (Ba), and Wakeland silt loam (Wa). The Haymond silt loam is defined as well drained soil with moderalety low runoff potential and is not identified as a hydric according to the Soil Survey Geographic (SSURGO) Database. The main soil series within the site is Haymond silt loam. The Banlic silt loam is a somewhat poorly drained, non-hydric soil that comprises the majority of the western edge of the site. The Wakeland silt loam is a somewhat poorly drained, non-hydric soil and is located in the northwest corner of the site. These soils are identified as having fair to good potential for hardwood tree, grasses, legumes, and wild herbaceous plant habitat. This plan does not involve the importation of soils from off-site to function as a seed bank.

A soil sample was taken within the Haymond silt loam soil series area of the mitigation site to examine the soil profile within the proposed wetland restoration areas (Table 2). This information was used to help determine the depth of excavation and ponding needed to support a wetland community at this location. The table below includes the data from this soil profile. The location of soil sample plot is shown on Figure 2. The soil sample identified reducing conditions at a depth of 16 inches or approximately 589.5 foot elevation.

Table 2. Soil Profile

Data Point ID	Depth (inches)	Matrix Color	Matrix %	Redox Color	Redox %	Soil Texture
Soil Sample	0-16	10YR4/4	100	NA	NA	silt loam
	16-24	10YR5/2	95	7.5YR5/6	5	silt loam

This proposed wetland/floodway habitat mitigation site showed positive signs of wetland restoration. Per communication with the current landowner, the site has existing field tile that help to drain water from the site. This was confirmed during multiple field visits where numerous tile blowouts were identified. In addition, the soil sample plot showed reducing soil conditions below 16 inches. These two criteria combined with the location of the site within the Bryant Creek floodplain provide support for the expected success of the proposed mitigation site. The site will require excavation to a depth of 589.5 to provided sufficient hydrology and hydric soil indicators to establish the proposed wetland / floodway habitat mitigation site.

VI. Determination of Credits

The proposed mitigation will provide in-kind mitigation for all permanent conversion impacts of palustrine forested wetlands to palustrine emergent wetlands and for the conversion of non-wetland forested floodway habitat areas to early successional habitat areas. The VEVP Mitigation Site includes approximately 15.3 acres of forested wetland, 1.0 acre of herbaceous plantings on cut slope

and berms, and 1.3 acres of floodway habitat that will be left to natural succession and protected in perpetuity.

This plan will also preserve 9.9 acres of existing wetland/bottomland forest habitat. Table 3 shows the acreages of proposed mitigation and of impacted resources that will be mitigated at this mitigation site.

Table 3. Impact and Target Mitigation Summary

Resource Type	Permanent Forested Wetland Conversion Impacts	Mitigation Ratio	Mitigation Proposed at this Site
Forested Wetland Restoration*	4.81 acres	3:1	14.4 acres
Contingency Forested Wetland	0	---	0.9 acre
Forested Preservation	0	---	9.9 acres
Non-Wetland Natural Succession**	0	---	2.3 acres
Total	**4.81 acres**	**----**	**27.5 acres**

* This includes both forested wetlands and non-forested floodway habitat for the 2 CIF areas.
** This includes the herbaceous plantings on the slopes and berms.

VII. Mitigation Work Plan

The following implementation plan addresses the mitigation commitments to take place at the VEVP Mitigation Site.

A. Site Preparation:

1. Plans:

a. Grading:
Excavation will be required to construct the proposed wetland areas at an elevation that can provide retention of direct precipitation and floodwaters. Excavation will be to the 589.5 elevation, which is consistent with the elevation of the hydric soil indicators from the field review. Shallow water retention berms will also be constructed at this site. These berms will also act as vegetated buffers for the wetland areas.

Tile exploration will be completed be around the forested wetland mitigation areas to eliminate and plug all drainage tiles that currently drain the proposed wetland mitigation areas. Detailed design plans and final grading and tile exploration limits have been developed and can be found in Exhibit 2.

b. Hydrologic Changes:
The principal modification to hydrology in the area will be excavation within the two agricultural row crop fields to an elevation of 589.5 where hydric soil indicators are present. Shallow water retention berms will be constructed to retain precipitation and floodwaters for an extended period. Existing field tiles are known to exist on the site. These field tiles will be located and disabled to further enhance hydrology and retain water for an extended period. Exploration to identify and disable any additional tiles will also be completed.

c. Water Control Structures:
Stable inlet and outlet channels will be installed within the berms of each proposed wetland area to provide a stable inlet for floodwaters and a stable outlet for the release of floodwaters and rainwater. The inlet channel will be at an elevation approximately 0.5 feet above the 589.5 final grade contour. Inline water level control structures will be installed within each of the outlet channels to allow for adjustment of water levels during the establishment period of the wetland areas.

d. Erosion Control:
Silt fence, filter socks, filter berms, or other temporary erosion and sediment control measures will be incorporated into the erosion and sediment control plans and Rule 5 permit to minimize erosion of disturbed soil surfaces and runoff from the construction activities and prevent sediment from entering existing streams and wetland areas. All disturbed areas within the mitigation site will be seeded and/or mulched.

e. Equipment:
Excavation and final grading will be accomplished using mechanized equipment (e.g., bulldozer, backhoe, skid steer, dump truck, etc.). Seedbed preparation in the disturbed areas will utilize a tiller, harrow, cultivator or other suitable machinery. A roller or cultipacker will be used to lightly compact seeded areas following seed application. A seed drill will be used to install seed within the wetland habitat areas (Zone A) and on the slopes and berms (Zone B). If site conditions at the time of construction do not allow for the use of a seed drill, alternate seeding methods by be utilized. All bare root tree and shrub seedlings may be mechanically planted with a tree planting machine if conditions allow. All container grown tree seedlings will be manually planted. An ATV or tractor mounted auger might be used to create the planting hole for container trees. A tractor and mower will be needed for annual mowing between tree rows following construction. Boom sprayers and/or backpack sprayers will be needed for multiple herbicide treatments of invasive species.

f. Site Access Control:
Access to the mitigation site during and after construction will be via the existing field entrances off of Bryant Creek Road in the southeast corner of the property. Construction entrance will be placed to prevent equipment from tracking soil material onto the roadways. Because the property directly abuts Bryant Creek Road, a permanent easement will not be required.

g. Field Markings:
The constructed wetland area on the east side of the drainage channel on the eastern border along with the southern border of the mitigation site will have 4x4 treated posts placed no more than 150 feet apart along the outer borders to provide identification of these areas during future monitoring and compliance field inspections.

"Do Not Mow or Spray" signs and "Do Not Disturb" signs will be placed along the east and south sides of the mitigation site. These signs will face the adjacent properties or roadways to clearly define the edge of the mitigation site property and prevent encroachment from the public and neighboring property owners.

h. Monitoring Wells:
Monitoring wells with a protective steel risers will be installed for future water level data collection equipment within each of the wetland restoration and enhancement areas.

2. Planting Plan:

The planting plan has been developed in accordance with INDOT 2014 Standard Specifications Sections 621 and 622. The mitigation site includes two planting zones which collectively will consist of 8 canopy tree species, 4 woody shrub species, and two seed mixes. Zone A is an area targeted for forested wetland restoration and enhancement. Zone B is an area of herbaceous plantings on the berms and slopes. Zone C is an area targeted for natural succession. No plantings are proposed within the preservation areas or Zone C identified on the site. The locations of each zone and quantities of each type of planting by zone can be found in the design plans in Exhibit 2 and in the tables below.

Seedbed Preparation:
Seedbed preparation in accordance with 621.03 will occur within Zone A, and on the berms due to the proposed grading and disturbance in these areas. Seeding in these areas will occur following seedbed preparation in accordance with INDOT Standard Specifications.

Herbicide:
Herbicide treatments are anticipated within Zone A for potential occurrences of reed canary grass (*Phalaris arundinacea*), Canada thistle (*Cirsium arvense*), and multiflora rose (*Rosa multiflora*). Field reviews indicated that the presence of these species on the site is minimal at this time. If any additional invasive species are identified during construction, herbicide treatment may be necessary to reduce the potential spread of the species following construction.

Fertilizer:
Fertilizer will be spread uniformly over the areas of the site that receive grading (Zone A and B (berms) at the rate of 400 lb/acre (450 kg/ha) to ensure initial establishment of ground cover which will prevent erosion. Zone C (natural succession) will not require fertilizer.

Seeding and Planting:
All seeds, bare root, and container grown plants should be obtained from nurseries within American National Standards Institute (ANSI) Plant Hardiness Zones 4, 5 or 6. Potential vendors include, but are not limited to those listed on INDOT's approved list of Seedling Sources.

All seeding and planting is expected to be completed by the spring of 2015. If permanent seeding cannot occur within 7 days following final grading, a temporary cover will be established using Seed Mix T in accordance with INDOT Standard Specification 621.06(f) until the permanent seeding and planting can take place. Alternative planting times must be approved by the Manager of INDOT Environmental Services, Ecology and Waterway Permitting Office.

Herbaceous Cover:
All planting zones will be planted with herbaceous ground cover to reduce weed competition, provide soil stabilization, and establish a native cover conducive to tree growth. The herbaceous cover within Zone A will consist of a Forested Wetland Seed Mix as indicated in Table 5, or a comparable mix containing at least 11 native permanent grass and sedge species and 10 native forb species from this list. The herbaceous cover for Zone B (Berms) will consist of a Soil Stabilization Seed Mix as indicated in Table 6 or a comparable mix of at least 7 native grass and sedge species from this list.

Seeding shall occur within the specified zones with the seeding rates and quantities indicated in Table 4. Seeding rates are based on Pure Live Seed (PLS). Seeding should take place immediately following seedbed preparation.

Table 4. Herbaceous Cover Seeding Plan				
Planting Zone	**Seed Mix**	**Seeding Rate**	**Area**	**Quantity**
Zone A	Forested Wetland Seed Mix	45.50 lbs/acre	15.3 acre	696.2 lbs
Zone B	Soil Stabilization Seed Mix	73.00 lbs/acre	1.0 acre	73.0 lbs

Table 5: Forested Wetland Seed Mix			
Scientific Name	**Common Name**	**Indicator**	**Ounces / Acre**
Permanent Grasses and Sedges			
Carex frankii	Frank's Sedge	OBL	2.00
Carex granularis	Meadow Sedge	FACW	1.00
Carex grayi	Burr Sedge	FACW	2.00
Carex lupulina	Common Hop Sedge	OBL	2.00
Carex muskingumensis	Palm Sedge	OBL	1.00
Carex normalis	Spreading Oval Sedge	FACW	1.00
Carex shortiana	Short’s Sedge	FACW	1.00
Carex tribuloides	Pointed Oval Sedge	OBL	1.00
Carex vulpinoidea	Fox Sedge	FACW	2.00
Cinna arundinacea	Wood Reed	FACW	1.00
Elymus riparius	Riverbank Wild Rye	FACW	16.00
Elymus virginicus	Virginia Wild Rye	FACW	64.00
Glyceria striata	Fowl Manna Grass	OBL	2.00
Temporary Cover			
Avena sativa	Seed Oats	UPL	512.00
Lolium multiflorum	Annual Rye	NL	96.00
Forbs			
Actinomeris alternifolia	Wingstem	FACW	3.00
Aster lateriflorus	Side-Flowering Aster	FACW	1.00
Aster simplex	Panicled Aster	FAC	2.00
Blephilia hirsuta	Hairy Wood Mint	FACU	0.50
Eupatorium coelestinum	Blue Mistflower	FACW	0.50
Eupatorium fistulosum	Hollow Joe-Pye Weed	OBL	1.50
Helenium autumnale	Autumn Sneezeweed	FACW	2.00
Lobelia siphilitica	Great Blue Lobelia	OBL	0.50
Lycopus americanus	Water Horehound	OBL	1.50
Mimulus ringens	Monkey Flower	OBL	0.50
Penstemon calysosus	Smooth Penstemon	FACU	2.00
Rudbeckia laciniata	Green-Headed Coneflower	FACW	2.00
Silphium perfoliatum	Cupplant	FACW	3.00
Solidago gigantea	Late Goldenrod	FACW	1.50
Zizia aurea	Golden Alexanders	FAC	2.50
Total			**728.00 oz/ac** **45.50 lbs/ac**

Table 6: Soil Stabilization Seed Mix			
Scientific Name	**Common Name**	**Indicator**	**Ounces / Acre**
Permanent Grasses and Sedges			
Andropogon gerardii	Big Bluestem	FAC	8.00
Bouteloua curtipendula	Side-Oats Grama	NL	16.00
Carex granularis	Meadow Sedge	FACW	2.00
Elymus canadensis	Canada Wild Rye	FACU	48.00
Elymus virginicus	Virginia wild rye	FACW	64.00
Panicum virgatum	Switchgrass	FAC	14.00
Schizachyrium scoparium	Little Bluestem	FACU	48.00
Sorghastrum nutans	Indian Grass	FACU	8.00
Temporary Cover			
Avena sativa	Seed Oats	UPL	800.00
Lolium multiflorum	Annual Rye	NL	160.00
	Total		**1168.00 oz/ac** **73.00 lbs/ac**

Trees and Shrubs:
Planting of bare root tree and shrub seedlings and container grown tree seedlings will be completed following seeding of the herbaceous cover. The seedlings will be transported, stored and handled in accordance with INDOT Specifications 914.08. All seedlings will be kept moist during transportation. Storage of bare root seedlings will be in a cool dark place until the date they will be installed. The roots will not be allowed to dry out before they are planted. Only the number of seedlings which can reasonably be planted during a single day may be removed from storage. Seedling trees and shrubs will be planted in accordance with sound horticultural practices with respect to moisture, root pruning, planting depth, planting hole size, soil compaction, etc. Bare root tree and shrub seedlings will be mechanically or manually planted, depending on site conditions at the time of construction. All container grown tree seedlings will be manually planted. Seedlings will be planted so the root collar is even with the ground surface. Bamboo or wood stakes a minimum of five feet long will be provided for installation adjacent to each container grown seedling to mark the rows for future monitoring and maintenance activities.

A total of 6,664 tree seedlings and 3,332 shrub seedlings will be planted within Zone A. Of the 6,664 tree seedlings, 5,000 will be bare root and 1,664 will be container grown tree seedlings. The approximate ratio of bare root to container grown seedlings will be 3:1. All shrub seedlings for these areas will be bare root seedlings. This will provide a ratio of tree to shrub seedlings in Zone A of approximately 2:1. A total of 3,332 bare root shrub seedlings will be planted within Zone A.

Planting of tree and shrub seedlings will be in a random manner with regard to species composition to avoid clustering. Trees and shrubs will be planted in rows with sufficient space between the rows to allow for future maintenance and mowing, if necessary.

Within Zone A, planting of the bare root trees will be performed at approximately 10-foot spacing between seedlings and between planting rows. A 20-foot gap will remain between every third and fourth planted bare root tree seedling to allow space for planting of a container grown seedling with 10-foot spacing between the adjacent seedlings. The tree seedling density following the planting of the bare root and container grown seedlings will be approximately 435 stems/acre.

Planting of the bare root shrub seedlings in Zone A will be at a density of approximately 218 stems/acre. Shrubs will be planted midway between every two tree seedlings within each planting row. This will provide a 2:1 tree to shrub ratio and prevent an overly dense understory layer.

Table 6 indicates the tree species, wetland status, quantities, planted form (e.g. container grown, bare root), on-center spacing and grouping arrangements for each planting zone.

Table 7 Mitigation Site Tree and Shrub Planting Plan

Species	Indicator Status	Count	Form	On-Center Spacing	Grouping
Zone A Forested Wetland Area: 15.3 acres					
Tree Species					
Betula nigra River Birch	FACW	625	BR	10' x 10'	Equal and random species distribution throughout the planting zone. A 20-foot gap shall remain between every 3rd and 4th bare root tree seedling to allow for planting of container grown seedlings.
		208	CG		
Carya laciniosa Shellbark Hickory	FACW	625	BR		
		208	CG		
Celtis laevigata Sugarberry	FACW	625	BR		
		208	CG		
Liquidambar styraciflua Sweetgum	FACW	625	BR		
		208	CG		
Quercus bicolor Swamp White Oak	FACW	625	BR		
		208	CG		
Quercus palustris Pin Oak	FACW	625	BR		
		208	CG		
Quercus shumardii Shumard Oak	FACW	625	BR		
		208	CG		
Platanus occidentalis Sycamore	FACW	625	BR		
		208	CG		
Shrub Species					
Amorpha fruticosa Indigobush	FACW	833	BR	10' x 40'	Equal and random species distribution throughout the planting zone. Shrubs shall be planted midway between every 4th and 5th tree seedling within each planting row.
Aronia melanocarpa Black chokeberry	FACW	833	BR		
Cephalanthus occidentalisButtonbush	FACW	833	BR		
Physocarpus opulifolius Common ninebark	FACW	833	BR		

*Note: BR = Bare Root; CG = Container Grown

Mulching:
Mulch material to be spread within all disturbed portions of the site will conform to INDOT 2014 Standard Specifications 914.05(a). Material will be applied so that it covers the disturbed areas at an average rate of 2 tons/acre. The mulch material will be secured by crimping as per Specification 621.05(c) to hold the mulch in place and prevent removal during periods of high water, winds, or runoff immediately upon placement. Existing vegetation will remain throughout portions of the site and only minimal mulching is anticipated where the grading is proposed (Zone A).

Non-native and Undesirable Species Control:
Non-native and/or native invasive species of concern to the Indiana Department of Natural Resources on the site includes reed canary grass (*Phalaris arundinacea*), cattail (*Typha spp.*) and Canada thistle (*Cirsium arvense*), although additional species of concern may exist within the

agricultural fields and the adjacent woodlands on the property. Within the designated planting zones, these species will be chemically controlled utilizing herbicide treatments during construction. If a threatening infestation is identified during monitoring, an appropriate control method will be recommended to remove the invading species and/or prevent further encroachment.

Given the presence of existing forests and vegetation within and adjacent to the planting zones at the mitigation site, it is reasonable to expect that volunteer herbaceous, shrub, and tree species may become established within the portions of the mitigation site that are planned for replanting. The establishment of native volunteer herbaceous and woody species will be allowed within the mitigation site, provided their presence does not adversely affect the viability of the planted species to the extent that success criteria cannot be met. If it is foreseen that such native establishment poses a threat to the planted woody species, corrective measures in the form of mechanical clearing or herbicide application may be necessary.

Schedule:
The mitigation site is proposed to begin construction in 2016 and complete construction in 2016.

Construction Monitoring:
Monitoring of the construction activities associated with the mitigation site (including grading, pre-seeding/planting site preparation, planting and post-planting treatments) will be conducted by Vectren or personnel contracted by Vectren. Construction monitoring will include on-site management of all activities associated with construction including maintenance of records (i.e., bill of lading for seed and planting materials, fertilizer, herbicides, etc.), documentation of dates of completed activities and documented approval of decisions concerning deviations from the proposed plan.

B. As-Built Conditions:

1. Post-construction Documentation:

Within six weeks of completion of site preparation and planting, a report documenting the as-built conditions of the site will be submitted to Vectren. The report should provide evidence through a bill of lading or invoice that the proper mitigation plant species were delivered in the correct numbers and were viable at the time of planting. If it was necessary to retain the delivered plants in storage for a period of time prior to planting, a sufficient description of the duration, conditions under which they were stored and nursery attention provided to ensure viability should be included. A brief description of the methods used to plant the tree and shrub plants including verification of grouping and spacing should be provided. The report will document any and all notable deviations from the plan and reasons for such deviations. The report will also include documentation that the required erosion and sediment control measures were implemented and maintained.

Photo documentation of the tree and shrub plantings and post planting mulch application should also be submitted. At this time, permanent photographic stations that document each of the planting zones should be established. The station locations should be identified on a set of plans, including the direction in which the photos were taken. These stations will become the reference sites for future monitoring report photographs.

2. As-built Plans:

A set of as-built plans will be submitted with the first annual post-construction monitoring documentation to either confirm that the site was graded and planted according to the plan, or to document any deviations that took place.

VIII. Maintenance Plan

Yearly maintenance is planned for the mitigation site. Zone A herbaceous vegetation may be mowed to a height of 6" to 8" between the tree and shrub planting rows once a year during the growing season. Mowing may be completed between June 1 and August 15. In addition, any invasive species identified during the mowing of this site shall be treated with herbicide. Vectren will be responsible for implementing maintenance or remedial activities.

IX. Performance Standards

A. Minimum Success Criteria:

1. Wetlands:

Wetland Delineation Report:
Prior to final approval of the mitigation site, a wetland delineation report must be completed on the mitigation wetland restoration and enhancement areas within the mitigation site and submitted to the IDEM and IDNR for approval. This report must include a survey of the wetland delineation boundaries. The final acres of the mitigation area will be adjusted based on the delineated boundary. The wetland delineation will follow the most recently adopted USACE Wetland Delineation Manual and approved regional supplement.

Vegetation:
Through monitoring report documentation, it should be demonstrated that at the end of the 5-year monitoring period, the following vegetative success criteria are met.

a. At least 200 stems/acre average density of live individuals of the planted tree species must be maintained within Zone A. Volunteer tree and shrub species may be counted if they appear to be generally similar in age and condition to the planted seedlings. Volunteer tree species must either be one of the planted species or be included in the following list: shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), red maple (*Acer rubrum*), sycamore (*Platanus occidentalis*), slippery elm (*Ulmus rubra*), or American elm (*Ulmus americana*). Volunteer species can account for no more than 10% of the total density count
b. No single tree or shrub species shall constitute more than 20% of the total vegetative cover.
c. Greater than 50% (percent of aerial cover) of the dominant vegetation species for Zone A are hydrophytic, thus meeting the current federal criteria for vegetation.
d. The combined surface areal coverage of reed canary grass (*Phalaris arundinacea*) and cattail (*Typha spp.*) will not cover more than 15% of the mitigation wetland area (Zone A). No more than 15% of the surface area coverage of the mitigation wetland area (Zone A) may be open water, bare ground, invasive species, or a combination of the two. Open water and bare ground are defined as areas with less than 10% areal vegetative.
e. The mitigation wetland area (Zone A) are free of the following invasive species: purple loosestrife (*Lythrum salicara*), common reed (*Phragmites australis*), and water milfoil (*Myriophyullum spicatum*).
f. Native vegetation excluding cattails (*Typha spp.*) must cover at least 70% of Zone A.

Hydrology:
Through monitoring report documentation, it should be demonstrated that at the end of the 5-year monitoring period, the following hydrology success criteria are met.

a. The hydrology of the wetland mitigation areas (Zone A) should meet or exceed the minimum hydrology requirements for wetland described in the most recently adopted USACE Wetland Delineation Manual and Regional Supplement.
b. The wetland mitigation area (Zone A) should be self-sustaining, meaning the site will no longer need to have yearly maintenance completed to maintain the success criteria. The long term hydrologic requirements of the site do not require seasonal or episodic manipulations of water levels to ensure success.

B. Project Specific Success Criteria:

1. Function and Value Measurements:

The targeted function of providing wetland habitat within the Bryant Creek watershed is directly associated with the continual growth and survival of the planted tree and shrub species. Monitoring of the survival and growth of the planted tree and shrub species on an annual basis will be the primary means of measuring the functional success of the mitigation site. The target wildlife habitat functions will be considered successful if the minimum success criteria outlined above have been met and show signs of sustainability at the end of the 5-year monitoring period.

2. Achievability:

The target functions of the mitigation site are considered to be achievable over time. The establishment of additional habitat within the Bryant Creek watershed will be realized in a short period of time once the restored and enhanced wetland areas and are exposed to a frequent and sufficiently long hydroperiod. Achieving the goal of a mature wetland forest capable of providing shelter and food for wildlife will not begin to be fully realized for 10 or more years until the planted trees have grown substantially. In the intervening time period, this site will provide successional habitat for a variety of species dependent upon such habitat.

X. Monitoring Requirements

A. Monitoring Reports:
Annual Monitoring Reports will be prepared for the mitigation site for 10 years following completion of construction or until the site has been approved by IDEM and IDNR.

1. Timing:

Annual inspections will be completed each year at any time during the 1st, 2nd, 3rd, 5th, 7th, and 10th growing seasons following planting. In any year planting was conducted, monitoring will take place no sooner than the end of the growing season following planting. The Monitoring Reports will be submitted to the IDEM and IDNR (as appropriate) by December 31 of each year in which monitoring was conducted for the 10 year monitoring period.

2. Methods:

a. Data collection points:

Each assessment period will include randomly established data collection points within the planted portions of the mitigation area designated as Zone A. Each data collection point should measure 0.25 acre in size and include a count of planted alive and dead tree species for the purposes of determining overall survival rates. The number of volunteer tree species should also be documented within each of the data collection points.

b. Photography:
A single photograph should be taken at each data collection point to visually record the conditions at the time of data collection. Photographs should also be taken from the permanent stations established as part of the post-construction documentation.

3. Documentation:

a. Each monitoring report should include a copy of the mitigation plan sheet with any annotations that spatially illustrate conditions observed (e.g. areas of high plant mortality, areas of volunteer dominance, exotic encroachment, unique wildlife habitat usage).
b. Each monitoring report should include a summary that numerically illustrates conditions observed (e.g. reforestation acreage and wetland acreage meeting success criteria).
c. Each monitoring report should determine and document whether the vegetation within the entire mitigation site meets both the minimum criteria and performance standards established in Section IX. Include survival rates of planted species, composition and extent of volunteer species, presence of any exotic/undesirable species, and overall percent cover based on information from the data collection points.
d. Each monitoring report should provide a brief description of any remedial measures taken to ensure the site meets the minimum criteria, performance standards, and overall goals and objectives of the mitigation project (i.e., invasive species removal, replanting, additional measures to protect against specific wildlife damage).
e. Each monitoring report should include recommendations for any necessary remediation needed to address success criteria not met.

4. Responsible Parties:

Vectren, or a designated agent, will be responsible for submitting the required annual Monitoring Reports.

B. Assessment of Function/Value Replacement:

Functional assessments should be documented based on qualitative observations related to the site's ability to store flood waters, minimize erosion, provide wetland habitat, and provide habitat for wildlife. The function and value assessments will be dependent on the survival of the planted tree and shrub species, and invasive species cover requirements as identified in the performance standard of this plan. The site will be considered meeting the function/value replacement as long as the site is meeting the performance standards and success criteria stated above.

C. Release From Monitoring:

1. The site will be monitored for a minimum of 5 years as outlined above. A final Monitoring Report should be submitted to IDEM and IDNR. If the agencies confirm that the success criteria for the forested wetland mitigation areas have been met, then the entire mitigation site may be released from future monitoring.

If the appropriate agencies determine that the success criteria for the forested wetland mitigation

areas have not been met at the end of this 5-year monitoring period, the mitigation site will be considered in non-compliance and remedial actions will need to be developed and implemented to correct the problems. A Monitoring Report will be required for each consecutive year until two sequential reports indicate that all success criteria have been met.

2. The proposed final Monitoring Report should include the required documentation from the previous year's monitoring effort. This report should also provide evidence that the goals of mitigation have been met and that the site generally represents a self-sustaining ecosystem. If requested, Vectren, or their designated agent, will meet with IDEM and IDNR to confirm the mitigation plan has been executed and is successful.

XI. Long-Term Management Plan

A short-term management and maintenance plan will be submitted to IDEM and IDNR following construction and planting of the site if it is deemed necessary to implement such measures to assure woody plant survival and control of exotics and invasive species. Long-term management and maintenance of the mitigation site will be completed by Vectren unless a third party is identified for long-term management in consultation with IDEM and IDNR. Long-term management would not involve specific monitoring or maintenance requirements following release from the permits. The long-term manager will only be responsible for compliance with the terms of the restrictive covenants.

XII. Adaptive Management Plan

The primary challenge anticipated with the mitigation site will be the control of invasive species, as well as volunteer grass and weed species, and the prevention of such species competing with the planted tree and shrub seedlings. Predation and browsing from deer and other wildlife will also be a potential challenge.

The contractor will conduct initial treatment of invasive species and perform stabilization of the stream mitigation areas during construction of the site. After completion of construction, the mitigation site will be monitored as identified above and if the results of the monitoring of this mitigation site show that conditions of the site are not meeting the performance standards and/or success criteria stated above, Vectren will be responsible for developing and implementing an adaptive management plan within 12 months of the identification of the site not meeting the performance and/or success criteria as stated above. The adaptive management plan will require coordination with IDEM and IDNR that have oversight of the area that is not meeting the performance standard and/or success criteria.

A. Reporting Protocol:

If a success criteria stated above is not met for all or any portion of the mitigation site in any year, Vectren, or their designated agent, will prepare an analysis of the cause(s) of failure. Should it be determined that remedial action is needed, Vectren will propose a plan for pre-approval.

B. Response to Unsuccessful Remediation:

In the event the IDEM and IDNR determine the mitigation cannot be successfully achieved at the intended site, Vectren will coordinate with these agencies to discuss an alternative mitigation strategy on-site, or investigate the need to propose suitable mitigation at other eligible sites.

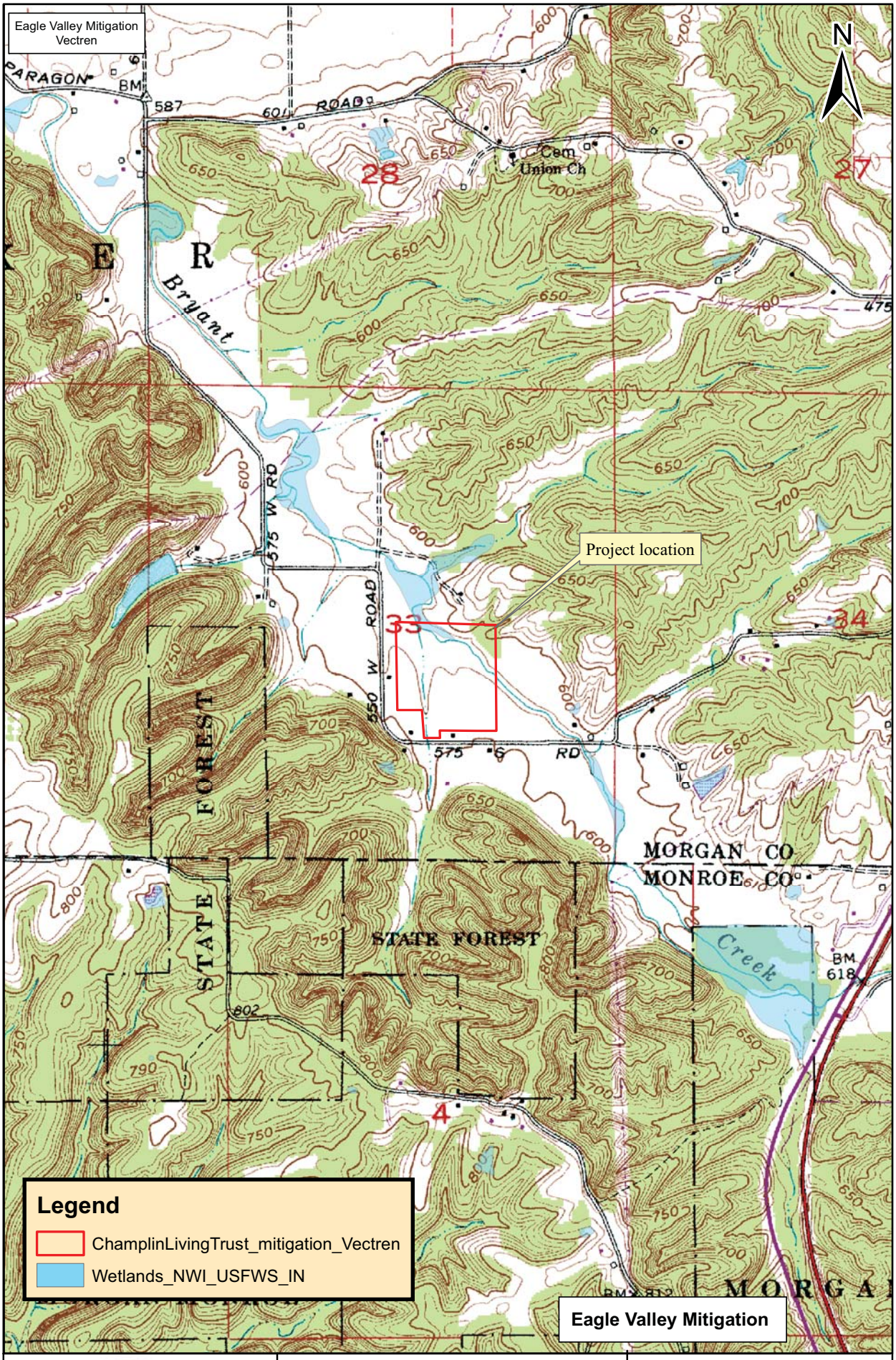
XIII. Financial Assurances

A. Construction:

Vectren will be responsible for securing the necessary funding to purchase the property and construct the mitigation site according to plan.

B. Monitoring:

Vectren will be responsible for securing the necessary funding to conduct post-construction monitoring activities including preparation and filing of the required annual monitoring report.



LOCHMUELLER GROUP
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Evansville, Indiana 47715
PHONE: 812.479.6200
TOLL FREE: 800.423.7411

Location Map Topo - Figure 1

0 500 1,000 2,000 Feet

Location: Martinsville

County: Morgan

State: IN

Date: 12/11/2015

LOCHMUELLER GROUP
6200 Vogel Road
Evansville, Indiana 47715
PHONE: 812.479.6200
TOLL FREE: 800.423.7411

Location Map Aerial - Figure 2

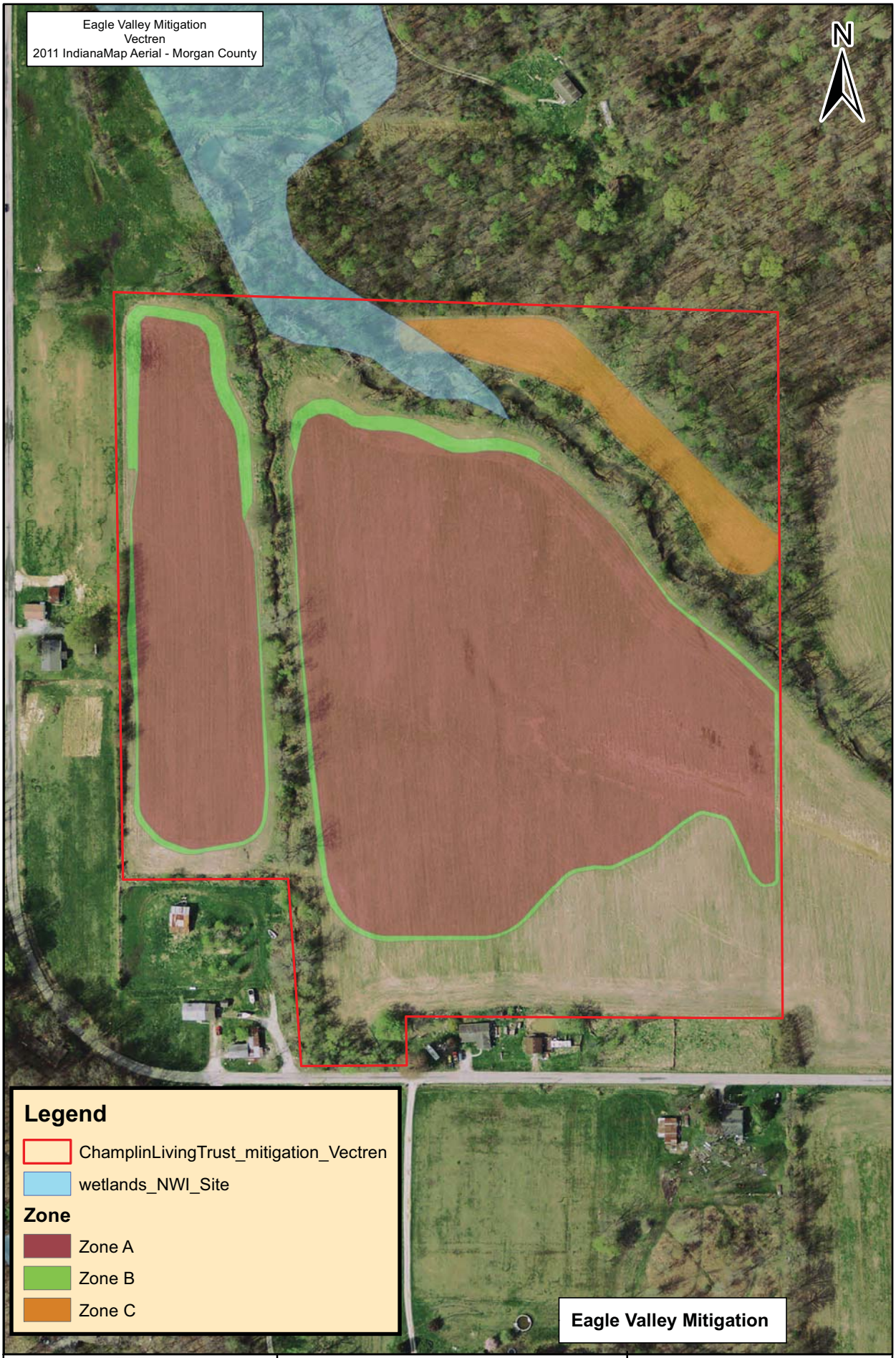
Feet
0 100 200 400

Location: Martinsville

County: Morgan

State: IN

Date: 12/11/2015



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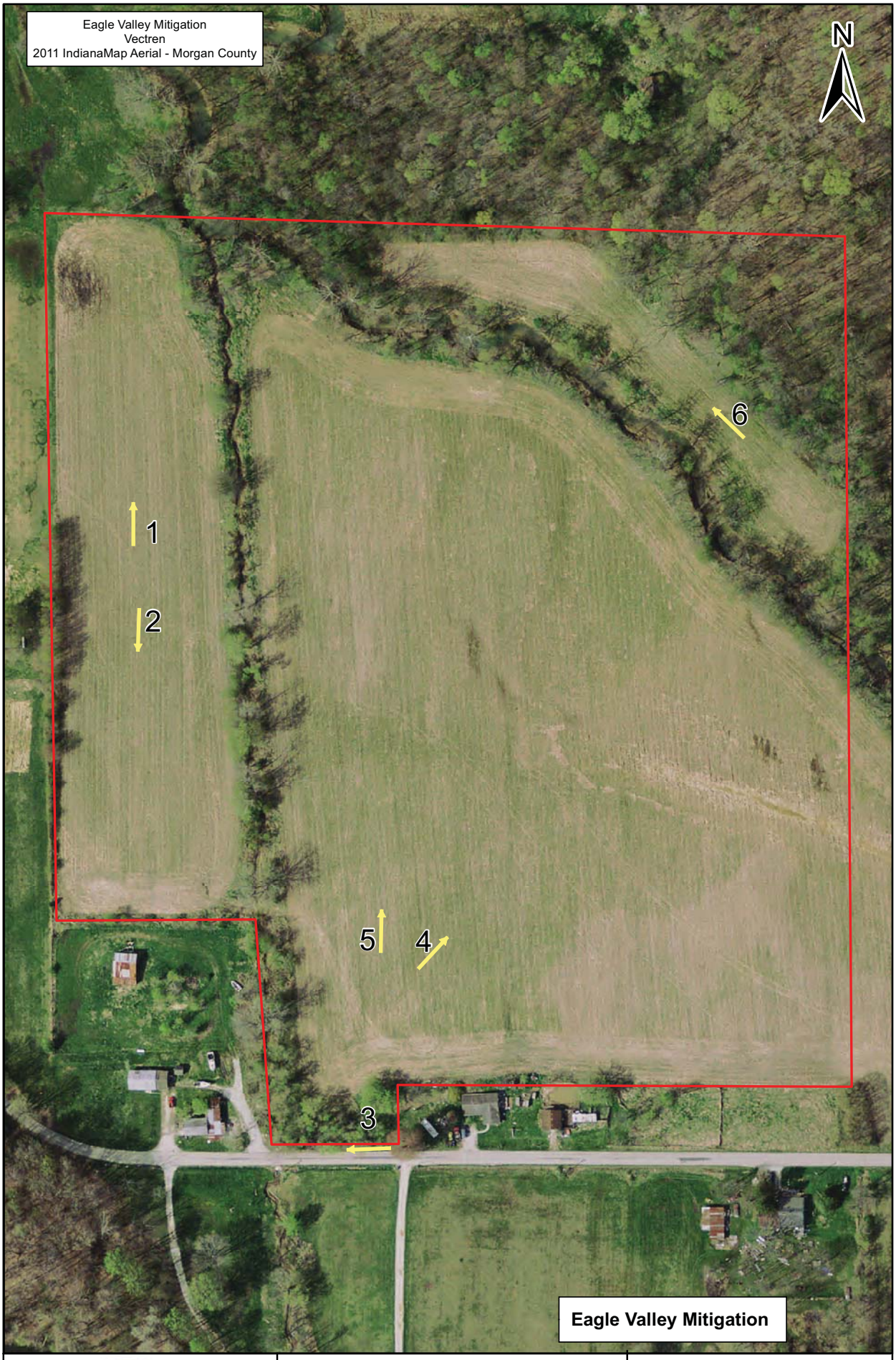
Mitigation Site Design Plan
Figure 3

Feet
0 100 200 400

Location: Martinsville
County: Morgan
State: IN
Date: 12/11/2015

Exhibit 1

Photo Location Map and
Site Photographs of Existing Conditions



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Photos Map - Exhibit 1

Feet
0 100 200 400

Location: Martinsville

County: Morgan

State: IN

Date: 12/11/2015

Exhibit 1 – Photos Existing Site Conditions

Photo 1 – Small west field looking north.

Photo 2 – Small west field looking south.

Photo 3 – N. Bryant Creek Rd, south of project.

Photo 4 – Large field looking northeast.

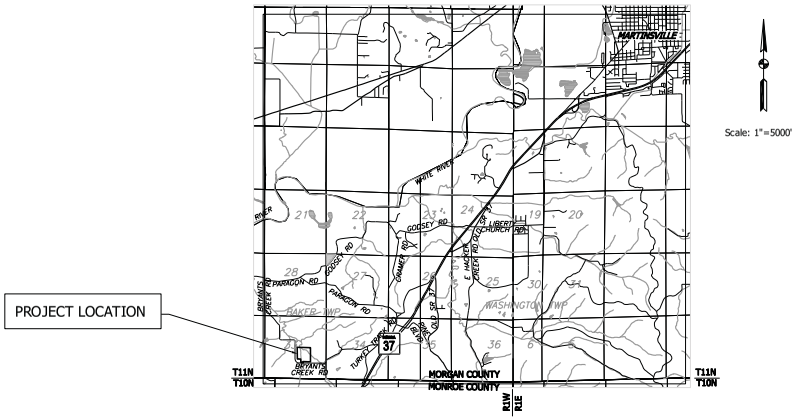
Photo 5 – Large field looking north.

Photo 6 – Small north field looking northwest.

Exhibit 2
Mitigation Design Plans

VECTREN IPL EAGLE VALLEY
16" PIPELINE PERMITTING PLANS

MORGAN COUNTY, INDIANA



OVERALL SITE LOCATION MAP

PLAN INDEX

SHEET NO.	DESIGNATION
EC-1	TITLE SHEET
EC-2	INFORMATION SHEET
EC-3	SOILS, WETLANDS & FLOODPLAINS
EC-4 to EC-6	EROSION & SEDIMENT CONTROL PLAN
EC-7	EROSION & SEDIMENT CONTROL MEASURES DETAILS

EROSION CONTROL INDEX

ITEM NO.	DESIGNATION	SHEET NO.
A1	PLAN INDEX	EC-1
A2	PLAT	EC-2
A3	PROJECT NARRATIVE	EC-2
A4	VICINITY MAP	EC-1
A5	PROJECT SITE LEGAL DESCRIPTION	EC-2
A6	LOT LOCATIONS & SITE IMPROVEMENTS	EC-3 to EC-6
A7	HYDROLOGIC UNIT CODE	EC-2
A8	WATER QUALITY PERMITS	EC-2
A9	STORM WATER DISCHARGE POINTS	EC-4 to EC-6
A10	ADJACENT WETLANDS, LAKES AND WATER COURSES	EC-2
A11	RECEIVING WATERS	EC-2
A12	GROUNDWATER DISCHARGES	EC-2
A13	FLOODPLAIN, FLOODWAYS, AND FLOODWAY FRINGES	EC-2
A14	PEAK DISCHARGE	EC-2
A15	ADJACENT LANDUSE	EC-2
A16	LOCATIONS OF DISTURBED AREAS	EC-4 to EC-6
A17	EXISTING VEGETATIVE COVER	EC-2 to EC-6
A18	SOIL MAPS	EC-3
A19	PROPOSED STORM WATER SYSTEM	EC-2
A20	OFF-SITE CONSTRUCTION ACTIVITIES	EC-2
A21	SOIL STOCKPILES, BORROW AND/OR DISPOSAL AREAS	EC-2
A22	EXISTING SITE TOPOGRAPHY	EC-2
A23	PROPOSED FINAL TOPOGRAPHY	EC-2
B1-B15	CONSTRUCTION COMPONENT	EC-2
C1-C5	POST-CONSTRUCTION COMPONENT	EC-2

PLANS PREPARED BY:

LOCHMUELLER GROUP

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Phone: 812.479.6200
Toll Free: 800.423.7411
Loch. Group Proj. No. 115-0058
Date: 11/__/15

Date: Nov 18, 2015, 4:03pm User Name: rsp
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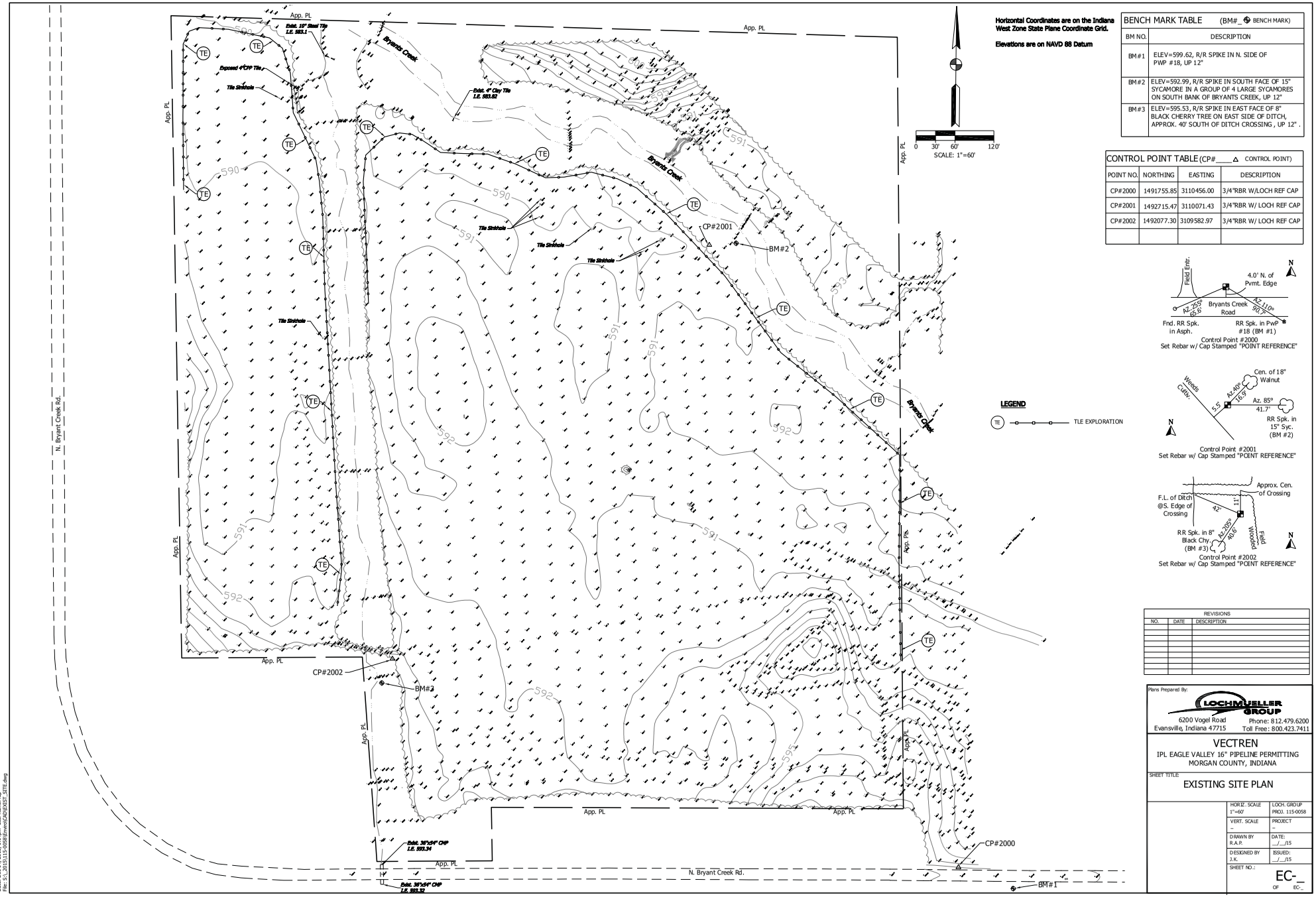

Horizontal Coordinates are on the Indiana West Zone State Plane Coordinate Grid.

Elevations are on NAVD 88 Datum

BENCH MARK TABLE (BM#_ ⊕ BENCH MARK)

BM NO.	DESCRIPTION
BM#1	ELEV=599.62, R/R SPIKE IN N. SIDE OF PWP #18, UP 12"
BM#2	ELEV=592.99, R/R SPIKE IN SOUTH FACE OF 15" SYCAMORE IN A GROUP OF 4 LARGE SYCAMORES ON SOUTH BANK OF BRYANTS CREEK, UP 12"
BM#3	ELEV=595.53, R/R SPIKE IN EAST FACE OF 8" BLACK CHERRY TREE ON EAST SIDE OF DITCH, APPROX. 40' SOUTH OF DITCH CROSSING , UP 12" .

CONTROL POINT TABLE (CP#____ △ CONTROL POINT)

POINT NO.	NORTHING	EASTING	DESCRIPTION
CP#2000	1491755.85	3110456.00	3/4"RBR W/LOCH REF CAP
CP#2001	1492715.47	3110071.43	3/4"RBR W/ LOCH REF CAP
CP#2002	1492077.30	3109582.97	3/4"RBR W/ LOCH REF CAP

Control Point #2000
Set Rebar w/ Cap Stamped "POINT REFERENCE"

Control Point #2001
Set Rebar w/ Cap Stamped "POINT REFERENCE"

Control Point #2002
Set Rebar w/ Cap Stamped "POINT REFERENCE"

LEGEND

TE — TLE EXPLORATION

REVISIONS		
NO.	DATE	DESCRIPTION

Plans Prepared By:
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VECTREN

IPL EAGLE VALLEY 16" PIPELINE PERMITTING
MORGAN COUNTY, INDIANA

SHEET TITLE

EXISTING SITE PLAN

HORIZ. SCALE 1"=60'	LOCH. GROUP PROJ. 115-0058
VERT. SCALE _	PROJECT _
DRAWN BY R.A.P.	DATE: __/__/15
DESIGNED BY J.K.	ISSUED: __/__/15
SHEET NO.:	EC-_ OF EC-_

Date: Dec 04, 2015, 1:14pm User Name: rap
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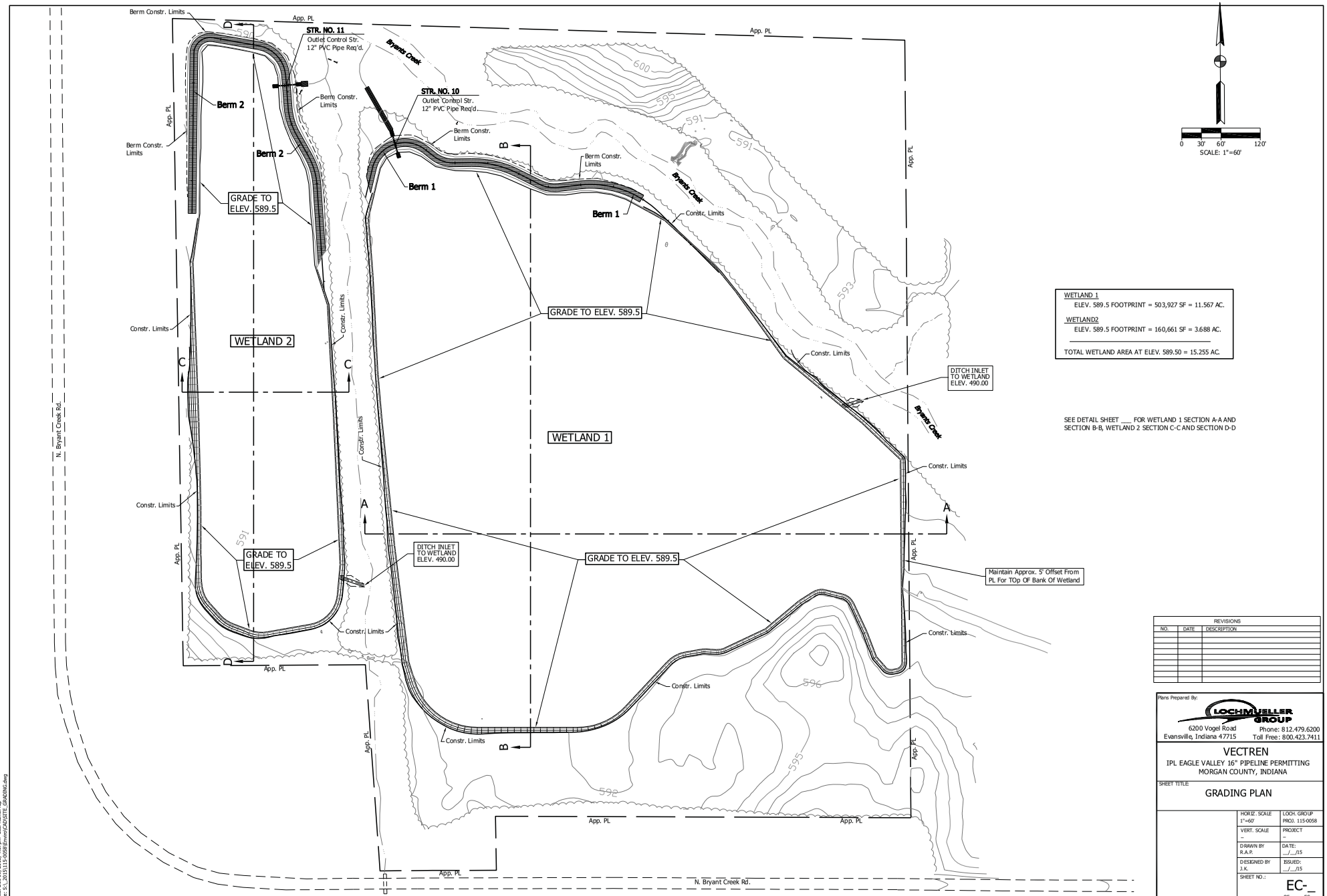

WETLAND 1
ELEV. 589.5 FOOTPRINT = 503,927 SF = 11.567 AC.

WETLAND2
ELEV. 589.5 FOOTPRINT = 160,661 SF = 3.688 AC.

TOTAL WETLAND AREA AT ELEV. 589.50 = 15.255 AC.

SEE DETAIL SHEET ___ FOR WETLAND 1 SECTION A-A AND SECTION B-B, WETLAND 2 SECTION C-C AND SECTION D-D

REVISIONS		
NO.	DATE	DESCRIPTION

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VECTREN
IPL EAGLE VALLEY 16" PIPELINE PERMITTING
MORGAN COUNTY, INDIANA

SHEET TITLE
GRADING PLAN

HORIZ. SCALE 1"=60'	LOCH. GROUP PROJ. 115-0058
VERT. SCALE -	PROJECT -
DRAWN BY R.A.P.	DATE: __/__/15
DESIGNED BY J.K.	ISSUED: __/__/15
SHEET NO.:	EC-_ OF EC-_

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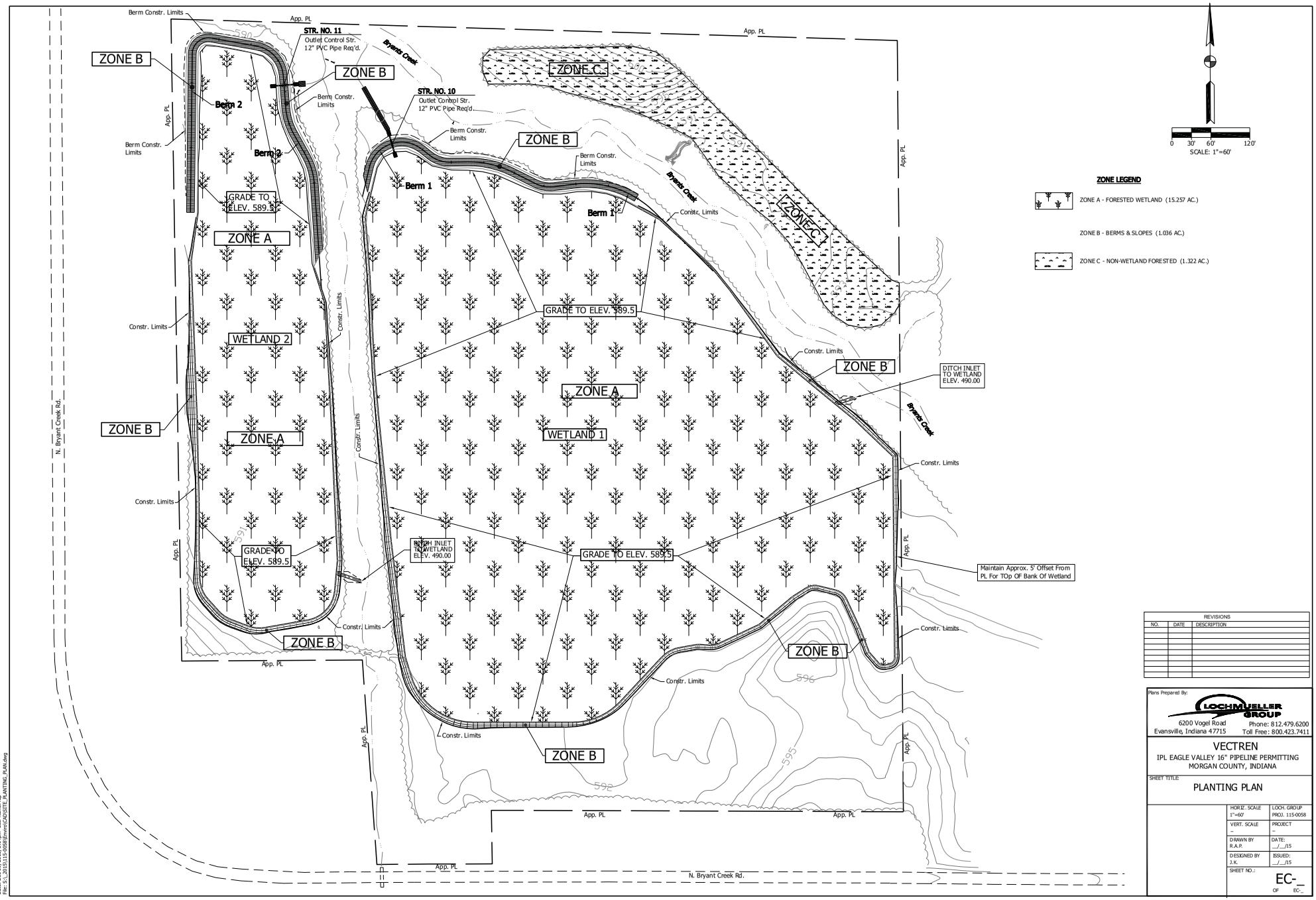

REVISIONS		
NO.	DATE	DESCRIPTION

Plans Prepared By:

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VECTREN

IPL EAGLE VALLEY 16" PIPELINE PERMITTING
MORGAN COUNTY, INDIANA

SHEET TITLE

PLANTING PLAN

HORIZ. SCALE 1"=60'	LOCH. GROUP PROJ. 115-0058
VERT. SCALE _	PROJECT _
DRAWN BY R.A.P.	DATE: __/__/15
DESIGNED BY J.K.	ISSUED: __/__/15
SHEET NO.: EC-_ OF EC-_	

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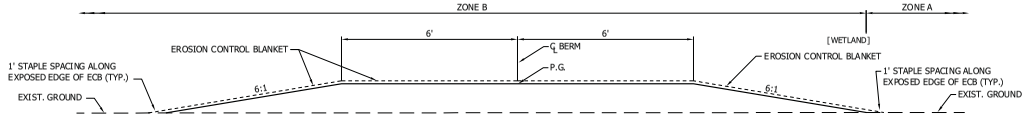
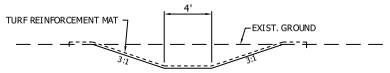


BERM TYPICAL SECTION
NOT TO SCALE



DITCH INLET TYPICAL SECTION
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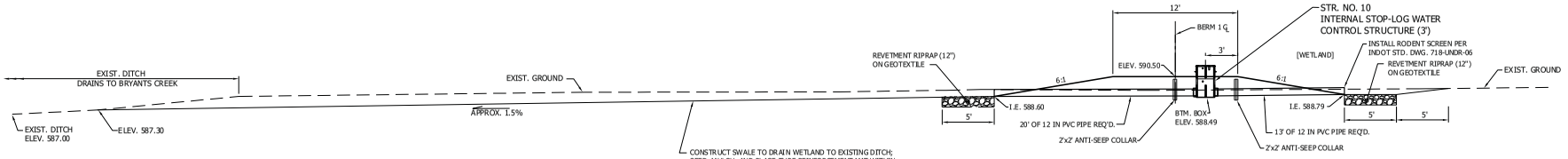
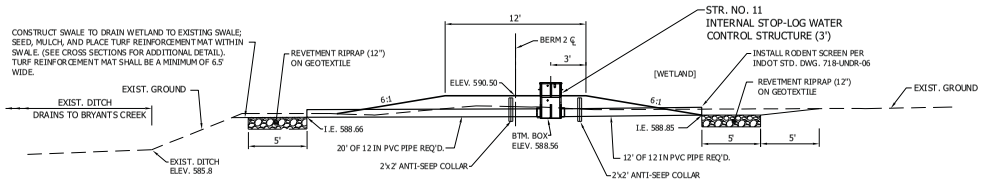
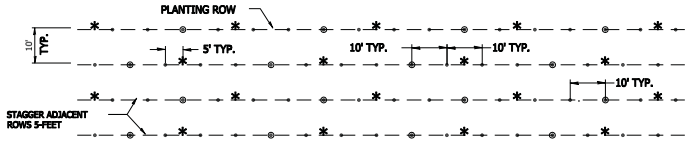


BERM 1
OUTLET CONTROL STRUCTURE NO. 10 DETAIL STA. 6+00
NOT TO SCALE

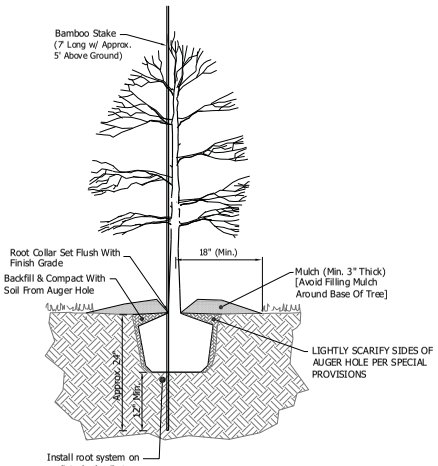


BERM 2
OUTLET CONTROL STRUCTURE NO. 11 DETAIL STA. 9+40
NOT TO SCALE



PLANTING LAYOUT ZONE A
NOT TO SCALE

LEGEND
+ BARE ROOT CANOPY SEEDLING
* BARE ROOT UNDERSTORY SEEDLING
⊛ 3-GALLON CONTAINER GROWN CANOPY SEEDLING



CONTAINER GROWN SEEDLING PLANTING DETAIL
NOT TO SCALE

EARTHWORK SUMMARY (CUBIC YARDS)				
LOCATION	EXCAVATION AVAILABLE	FILL AVAILABLE	FILL	FILL +15%
WETLAND 1	31860	31860		
WETLAND 2	7659	7659		
BERM 1			290	334
BERM 2			384	442
TOTALS	39519	39519	674	776

FILL REQ'D.
Fill +15% 776 CYS

WASTE
Fill Available 39,519 CYS
Unsuitable Mat. Ex. ----
Fill Req'd. -776 CYS
38,743 CYS

COMMON EXCAVATION 39,519 CYS

B-BORROW -0- CYS

NOTE:
MATERIAL EXCAVATED FROM WETLAND 1 SHALL BE UTILIZED AS FILL FOR CONSTRUCTION OF BERM 1. MATERIAL EXCAVATED FROM WETLAND 2 SHALL BE UTILIZED AS FILL FOR CONSTRUCTION OF BERM 2.

WASTE MATERIAL: THE REMAINING EXCAVATED MATERIAL FROM WETLAND 1 & 2 CONSTRUCTION IS LISTED AS WASTE MATERIAL.

MISC. ITEMS SUMMARY		
DESCRIPTION	QUANTITY	UNIT
GEOTEXTILES	___	SYS
RIPRAP, REVETMENT	___	TON
EROSION CONTROL BLANKET	___	SYS
FERTILIZER	___	TON
PERMANENT TURF REINFORCEMENT MAT	___	SYS
SIGN, "DO NOT DISTURB"	___	EACH
MULCHING MATERIAL	___	TON
HERBICIDE TREATMENT	___	ACRE
DELINEATOR POST, WOOD	___	EACH

REVISIONS		
NO.	DATE	DESCRIPTION

Plans Prepared By:
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Phone: 812.479.6200
Toll Free: 800.423.7411

VECTREN
IPL EAGLE VALLEY 16" PIPELINE PERMITTING
MORGAN COUNTY, INDIANA

SHEET TITLE
DETAILS & TABLES

HORIZ. SCALE AS SHOWN	LOCH. GROUP PROJ. 115-0058
VERT. SCALE AS SHOWN	PROJECT -
DRAWN BY R.A.P.	DATE: __/__/15
DESIGNED BY J.K.	ISSUED: __/__/15
SHEET NO.:	EC-_ OF EC-_

Date: Dec 09, 2015, 4:57pm User Name: rap
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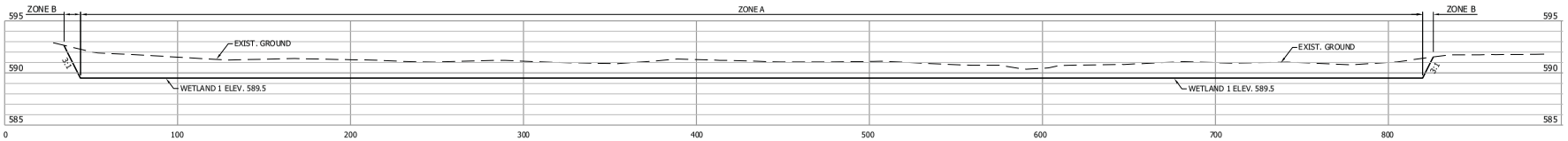
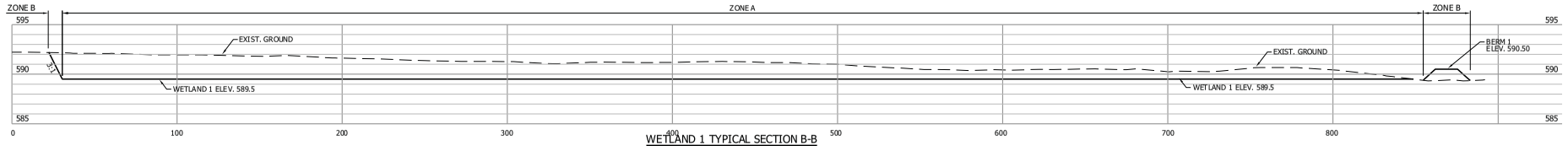
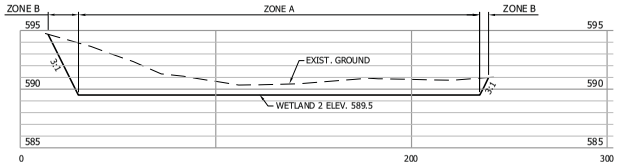


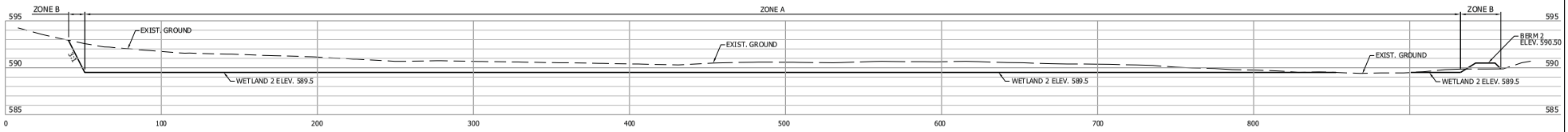
WETLAND 1 TYPICAL SECTION A-A
SCALE: HORIZ. 1"=30'
VERT. 1"=5'



WETLAND 1 TYPICAL SECTION B-B
SCALE: HORIZ. 1"=30'
VERT. 1"=5'



WETLAND 2 TYPICAL SECTION C-C
SCALE: HORIZ. 1"=30'
VERT. 1"=5'



WETLAND 2 TYPICAL SECTION D-D
SCALE: HORIZ. 1"=30'
VERT. 1"=5'

REVISIONS		
NO.	DATE	DESCRIPTION

Plans Prepared By:
LOCHMUELLER GROUP
6200 Vogel Road
Evansville, Indiana 47715
Phone: 812.479.6200
Toll Free: 800.423.7411

VECTREN
IPL EAGLE VALLEY 16" PIPELINE PERMITTING
MORGAN COUNTY, INDIANA

SHEET TITLE
WETLAND TYPICAL SECTIONS

HORIZ. SCALE AS SHOWN	LOCH. GROUP PROJ. 115-0058
VERT. SCALE AS SHOWN	PROJECT -
DRAWN BY R.A.P.	DATE: __/__/15
DESIGNED BY J.K.	ISSUED: __/__/15
SHEET NO.:	EC-_ OF EC-_

Date: Dec 09, 2015, 5:23pm User Name: rap
File: S:_2015\115-0058\Enviro\CAD\SITE_DETAILS.dwg