MATTAWOMAN ENERGY CENTER

JOINT FEDERAL/STATE APPLICATION FOR THE ALTERATION OF ANY FLOODPLAIN, WATERWAY, TIDAL OR NONTIDAL WETLAND IN MARYLAND

Prepared for:

PandaPowerFunds

Mattawoman Energy, LLC
Dallas, Texas

Prepared by:

ECT Environmental Consulting & Technology, Inc.
6440 Southpoint Parkway, Suite 130
Jacksonville, Florida 32216

ECT No. 140867-0200

May 2015

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1.0 INTRODUCTION

Mattawoman Energy, LLC. (Mattawoman Energy) is proposing to construct and operate a 990 MW natural gas-fired combined-cycle generating facility, in Prince George's County, Maryland (MD) to meet the state's growing energy needs. Mattawoman Energy has invested a significant amount of time and money into designing this project in an environmentally responsible manner. Examples of that include using state of the art combustion turbines that will minimize air emissions, using a costly zero discharge cooling tower system to minimize wastewater streams, using reclaimed water to avoid the need for ground or surface water withdrawals, undergoing extensive alternatives sites analysis for the needed linear routes (i.e. natural gas, transmission, water), and minimizing impacts with the construction/operation footprint to the extent practicable. Where impacts could not be avoided, they will be compensated for through mitigation.

The project has been under review from the Maryland Public Service Commission (PSC) and the MD Department of Natural Resources (DNR) Power Plant Research Program (PPRP) since July 2013. Through this process, a number of adjustments have been made to accommodate concerns regarding potential impacts to natural and cultural resources. Mattawoman believes that the project as currently designed meets the criteria necessary to qualify for a wetland permit from the Maryland Department of the Environment (MDE) and the U.S. Army Corps of Engineers (USACE).

Information needed in support of obtaining these wetland permits is included herein. It includes the completed application forms (Section 2), a detailed project description (Section 3), impact analysis including reduction of impacts (Section 4), wetland mitigation plan (Section 5), listed species consultation (Section 6), cultural resources consultation (Section 7), and adjacent property owner names and addresses (Section 8). The required plans are included as figures as well as in detailed engineering plans in the appendices.

2.0 COMPLETED APPLICATION FORMS

JOINT FEDERAL/STATE APPLICATION FOR THE ALTERATION OF ANY FLOODPLAIN, WATERWAY, TIDAL OR NONTIDAL WETLAND IN MARYLAND

FOR AGENCY USE ONLY

Application Number		**Date Determined Complete**	
Date Received by State		**Date(s) Returned**	
Date Received by Corps			
Type of State permit needed		**Date of Field Review**	
Type of Corps permit needed		**Agency Performed Field Review**	

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- Please submit 1 original and 6 copies of this form, required maps and plans to the Wetlands and Waterways Program as noted on the last page of this form.
- Any application which is not completed in full or is accompanied by poor quality drawings may be considered incomplete and result in a time delay to the applicant.

Please check one of the following:

RESUBMITTAL: ____ **APPLICATION AMENDMENT:** ____ **MODIFICATION TO AN EXISTING PERMIT:** ____
JURISDICTIONAL DETERMINATION ONLY ____ **APPLYING FOR AUTHORIZATION** X
PREVIOUSLY ASSIGNED NUMBER (RESUBMITTALS AND AMENDMENTS) ____
DATE 05/8/2015

1. APPLICANT INFORMATION:

APPLICANT NAME:

A. Name: John Boswell B. Daytime Telephone: 972-361-2000
C. Company: Mattawoman Energy, LLC D. Email Address: JBoswell@pandafunds.com
E. Address: 4100 Spring Valley, Suite 1001
F. City: Dallas State: Texas Zip: 75244

ENGINEER INFORMATION:

A. Name: Jennifer Leonard B. Daytime Telephone: 410-645-1410
C. Company: Dewberry D. Email Address: JCLeonard@dewberry.com
E. Address: 3106 Lord Baltimore Drive, Suite 110
F. City: Baltimore State: Maryland Zip: 21244

ENVIRONMENTAL CONSULTANT:

A. Name: Lisa Walker B. Daytime Telephone: 904-861-0232
C. Company: Environmental Consulting & Tech., Inc. D. Email Address: LWalker@ectinc.com
E. Address: 6440 Southpoint Parkway, Suite 130
F. City: Jacksonville State: Florida Zip: 32216

CONTRACTOR (If known): Unknown at this time.

A. Name: B. Daytime Telephone:
C. Company: D. Email Address:
E. Address:
F. City: State: Zip:

PRINCIPAL CONTACT:

A. Name: Lisa Walker B. Daytime Telephone: 904-861-0232
C. Company: Environmental Consulting & Tech., Inc. D. Email Address: LWalker@ectinc.com
E. Address: 6440 Southpoint Parkway, Suite 130
F. City: Jacksonville State: Florida Zip: 32216

2. PROJECT DESCRIPTION

a. GIVE WRITTEN DESCRIPTION OF PROJECT:

Mattawoman Energy, LLC (Mattawoman Energy) is proposing to develop, construct, and operate a 990 megawatt natural gas-fired, combined-cycle power generating facility in southern Prince George's County, Maryland. The proposed Facility will generate power from combustion turbines (CTs) firing natural gas to meet the state's growing energy needs. The Facility will be developed on an 90-acre site in the vicinity of the small community of Brandywine. The selected site has advantages of proximity to a natural gas supply pipeline and electrical transmission lines. It also is proximate to the Piscataway wastewater treatment plant, the proposed source for cooling makeup water. The project will require construction of a 10-mile long reclaimed water pipeline, an approximately 7-mile long natural gas pipeline, a 2.4 mile long electrical interconnection line, and a substation. See Section 3.0, Project Description

Has any portion of the project been completed? ____ Yes **X** No If yes, explain ____

Is this a residential subdivision or commercial development? **X** Yes ____ No

If yes, total number of acres on property **97 acres (power plant & substation site) plus ~ 20 miles of linear facilities**

b. ACTIVITY: Check all activities that are proposed in the wetland, waterway, floodplain, and nontidal wetland buffer as appropriate. **See Section 3.0, Project Description**

A. **X** filling
B. ____ dredging
C. **X** excavating
D. ____ flooding or impounding water
E. ____ draining
F. **X** grading
G. **X** removing or destroying vegetation
H. **X** building structures

Area for item(s) checked: Wetland (Sq ft)

314,938.80 **Temporary Impact**
122,403.60 **Permanent POF Conversion to PEM**
891.37 **Permanent Fill**
438,233.77 **Total**

Buffer (Nontidal Wetland only) **167,706 sq ft.**

Expanded Buffer (Nontidal Wetland Only) **N/A** (sq. ft.)

Area of stream impact **1,724.30** (sq. ft.)

Length of stream affected **1,439** (linear feet)

c. TYPE OF PROJECTS: Project Dimensions **See Section 3.0, Project Description and 4.0 Proposed Impacts.**

For each activity, give overall length and width (in feet), in columns 1 and 2. For multiple activities, give total area of disturbance in square feet in column 3. For activities in tidal waters, give maximum distance channelward (in feet) in column 4. For dam or small ponds, give average depth (in feet) for the completed project in column 5. Give the volume of fill or dredged material in column 6.

			Length (Ft.) 1	Width (Ft.) 2	Area Sq. Ft. 3	Maximum/Average Channelward Encroachment 4		Pond Depth 5	Volume of fill/dredge material (cubic yards) below MHW or OHW 6
A.	____	Bulkhead							
B.	____	Revetment							
C.	____	Vegetative Stabilization							
D.	____	Gabions							
E.	____	Groins							
F.	____	Jetties							
G.	____	Boat Ramp							
H.	____	Pier							
I.	____	Breakwater							
J.	____	Repair & Maintenance							
K.	____	Road Crossing							
L.	**X**	Utility Line			**5,983,216**				
M.	____	Outfall Construction							
N.	____	Small Pond							
O.	____	Dam							
P.	____	Lot Fill							
Q.	**X**	Building Structures			**2,580,185**				**1,782.74**
R.	____	Culvert							
S.	____	Bridge							
T.	____	Stream Channelization							
U.	____	Parking Area							
V.	____	Dredging							

1. ____ New 2. ____ Maintenance 3. ____ Hydraulic 4. ____ Mechanical

W. ____ Other (explain) ____

d. PROJECT PURPOSE: Give brief written description of the project purpose:

The purpose of the project is to generate power from combustion turbines (CTs) firing natural gas to meet the state's growing energy needs.

3. PROJECT LOCATION:

a. LOCATION INFORMATION:

A. County: **Prince George's & Charles** B. City: **Brandywine** C. Name of waterway or closest waterway: **Mattawoman Creek, Mataponi Creek, Zekiah Swamp, Piscataway Creek**

D. State stream use class designation: **Use Class I: Water Contact Recreation, and Protection of Nontidal Warmwater Aquatic Life**

E. Site Address or Location: **Brandywine Road, Prince Georges County, Maryland.**

F. Directions from nearest intersection of two state roads:

From U.S. 301, head east on Brandywine Road, approximately 1.4 miles. The power plant site will be on the south side of the road, just past Air Force Drive and before you cross the CSX railroad track.

G. Is your project located in the Chesapeake Bay Critical Area (generally within 1,000 feet of tidal waters or tidal wetlands)?:
___ Yes **X** No

H. County Book Map Coordinates (Alexandria Drafting Co.); Excluding Garrett and Somerset Counties:
Map: **5883** Letter: **E & F** Number: **9.5** (to the nearest tenth)

I. FEMA Floodplain Map Panel Number (if known):

J. 1. **38° 41' 32.754" N** latitude 2. **76° 50'1.644" W** longitude

b. ACTIVITY LOCATION: Check one or more of the following as appropriate for the type of wetland/waterway where you are proposing an activity:

A. ___ Tidal Waters
B. ___ Tidal Wetlands
C. ___ Special Aquatic Site (e.g., mudflat, vegetated shallows)
D. **X** Nontidal Wetland
E. **X** 25-foot buffer (nontidal wetlands only.
F. ___ 100-foot buffer (nontidal wetland of special State concern)
G. **X** In stream channel
1. ___ Tidal 2. **X** Nontidal
H. **X** 100-year floodplain (outside stream channel)
I. ___ River, lake, pond
J. ___ Other (Explain)

c. LAND USE:

A. Current Use of Parcel Is: 1. ___ Agriculture: Has SCS designated project site as a prior converted cropland?
___ Yes ___ No 2. **X** Wooded 3. **X** Marsh/Swamp 4. **X** Developed
5. **X** Other **Existing linear corridor (e.g. power line or road right-of-way)**

B. Present Zoning Is: 1. ___ Residential 2. **X** Commercial/Industrial 3. ___ Agriculture 4. ___ Marina 5. ___ Other

C. Project complies with current zoning **X** Yes ___ No

THE FOLLOWING INFORMATION IS REQUIRED BY THE STATE (blocks 4-7):

4. REDUCTION OF IMPACTS: Explain measures taken or considered to avoid or minimize wetland losses in F. Also check Items A-E if any of these apply to your project.

A. **X** Reduced the area of disturbance
B. ___ Reduced size/scope of project
C. **X** Relocated structures
D. **X** Redesigned project
E. **X** Other
F. Explanation **See Sections 3.0 and 4.0 of text for explanation.**

Describe reasons why impacts were not avoided or reduced in Q. Also check Items G-P that apply to your project.

G. ____ Cost
H. X Extensive wetlands on site
I. X Engineering/design constraints
J. ____ Other natural features
K. ____ Parcel size
L. ____ Other regulatory requirement
M. X Failure to accomplish project purpose
N. ____ Safety/public welfare issue
O. ____ Inadequate zoning
P. ____ Other ____
Q. Description **See Sections 3.0 and 4.0 of text for explanation.**

5. LETTER OF EXEMPTION: If you are applying for a letter of exemption for activities in nontidal wetlands and/or their buffers, explain why the project qualifies:

A. ____ No significant plant or wildlife value and wetland impact
1. ____ Less than 5,000 square feet
2. ____ In an isolated nontidal wetland less than 1 acre in size
B. ____ Repair existing structure/fill
C. ____ Mitigation Project
D. ____ Utility Line
1. ____ Overhead
2. ____ Underground
E. Other (explain) ____
F. X Check here if you are **not** applying for a letter of exemption.

IF YOU ARE APPLYING FOR A LETTER OF EXEMPTION, PROCEED TO BLOCK 11

6. ALTERNATIVE SITE ANALYSIS: Explain why other sites that were considered for this project were rejected in M. Also check any items in D-L if they apply to your project. **(If you are applying for a letter of exemption, do not complete this block):**

A. ____ 1 site
B. ____ 2 - 4 sites
C. X 5 or more sites

Alternative sites were rejected/not considered for the following reason(s):

D. ____ Cost
E. X Lack of availability
F. X Failure to meet project purpose
G. X Located outside general/market area
H. X Greater wetlands impact
I. ____ Water dependency
J. X Inadequate zoning
K. X Engineering/design constraints
L. ____ Other ____
M. Explanation: **See Section 3.0 and 4.0 of text for greater detail.**

7. PUBLIC NEED: Describe the public need or benefits that the project will provide in F. Also check Items in A-E that apply to your project. **(If you are applying for a letter of exemption, do not complete this block):**

A. X Economic
B. X Safety
C. X Health/welfare
D. ____ Does not provide public benefits
E. X Other ____
F. Description

The need for this project is driven by the energy market. It is well documented by the Maryland PSC that the State is a net importer of electricity. In 2008, PJM produced an analysis that showed shortfalls of up to 1,500 MW depending on assumptions regarding load, generating portfolios and whether various transmission lines would be in service. Additionally, the PSC issued a request for proposals in December 2011 seeking up to an additional 1,500 MW to reduce the risk to the ratepayers of a shortage of electricity due to: (1) an increase in the load factor; (2) risk of retirement of coal plants due to age and U.S. Environmental Protection Agency (EPA) regulations (such as Dickerson and Chalk Point); and (3) risk that demand response will not be sufficient to meet the need of a growing economy.

8. OTHER APPROVALS NEEDED/GRANTED:

A. Agency	B. Date Sought	C. Decision 1. Granted	C. Decision 2. Denied	D. Decision Date	E. Other Status
Public Service Commission	**07/2013**			**10/2015**	
Dept. of Natural Resources	**07/2013**			**06/2015**	
MD Historic Trust	**07/2013**			**05/2015**	
U.S. Army Corps of Engineers	**05/2015**			**10/2015**	
MD Highway Administration	**01/2014**			**08/2015**	
PG County Planning	**01/2014**			**08/2015**	

9. MITIGATION PLAN: Please provide the following information: **See Section 5.0, Mitigation Plan**

a. Description of a monetary compensation proposal, if applicable (for **state requirements** only). Attach another sheet if necessary. **N/A**

b. Give a brief description of the proposed mitigation project.
Mattawoman Energy will compensate for wetland impacts by creating wetlands on the power plant site.

c. Describe why you selected your proposed mitigation site, including what other areas were considered and why they were rejected.
The selected site is owned by Mattawoman Energy. It is within the watershed where most of the wetland impacts are proposed. This is a Tier II watershed without assimilative capacity. Mitigation is proposed in disturbed upland nonforested areas that are adjacent to forested wetlands within an existing conservation easement. They are ranked as having good potential for wetland restoration on the EPA watershed registry website.

d. Describe how the mitigation site will be protected in the future.
Mattawoman Energy will place the created wetlands in a conservation easement that will limit future development.

10. HAVE ADJACENT PROPERTY OWNERS BEEN NOTIFIED?: A. ____ Yes B. **X** No
Provide names and mailing addresses below (Use separate sheet, if necessary): **See list in Section 8.0**
a. ____ b. ____ c. ____

11. HISTORIC PROPERTIES: Is your project located in the vicinity of historic properties? (For example: structures over 50 years old, archeological sites, shell mounds, Indian or Colonial artifacts). Provide any supplemental information in Section 13.
A. ____ Yes B. **X** No C. ____ Unknown
The Maryland Historic Trust is reviewing the substation site and has cleared the rest of the project. See section 7.0 for details.

12. ADDITIONAL INFORMATION: Use this space for detailed responses to any of the previous items. Attach another sheet if necessary:
Section 6.0 includes a summary of listed species surveys. Agency consultation performed to date is in Appendix H.

Check box if data is enclosed for any one or more of the following (see checklist for required information):

A. ____ Soil borings	D. **X** Field surveys	G. **X** Site plan
B. **X** Wetland data sheets	E. **X** Alternate site analysis	H. **X** Avoidance and minimization analysis
C. ____ Photographs	F. ____ Market analysis	
I. ____ Other (explain)		

CERTIFICATION:

I hereby designate and authorize the agent named above to act on my behalf in the processing of this application and to furnish any information that is requested. I certify that the information on this form and on the attached plans and specifications is true and accurate to the best of my knowledge and belief. I understand that any of the agencies involved in authorizing the proposed works may request information in addition to that set forth herein as may be deemed appropriate in considering this proposal. I certify that all Waters of the United States have been identified and delineated on site, and that all jurisdictional wetlands have been delineated in accordance with the Corps of Engineers Wetlands Delineation Manual (Wetlands Research Program Technical Report Y-87-1). I grant permission to the agencies responsible for authorization of this work, or their duly authorized representative, to enter the project site for inspection purposes during working hours. I will abide by the conditions of the permit or license if issued and will not begin work without the appropriate authorization. I also certify that the proposed works are consistent with Maryland's Coastal Zone Management Plan. I understand that none of the information contained in the application form is confidential and that I may request that additional required information be considered confidential under applicable laws. I further understand that failure of the landowner to sign the application will result in the application being deemed incomplete.

LANDOWNER MUST SIGN: Ralph Kiel SJE DATE: May 7, 2015

WHERE TO MAIL APPLICATION

Maryland Department of the Environment
Water Management Administration
Regulatory Services Coordination Office
1800 Washington Boulevard, Suite 430
Baltimore, Maryland 21230
Telephone: (410) 537-3762
1-800-876-0200

BEFORE YOU MAIL... DON'T FORGET...

- **SIGN AND DATE THE APPLICATION. THE LANDOWNER MUST SIGN.**
- **SEVEN (7) COPIES OF ALL DOCUMENTS (APPLICATION, PLANS, MAPS, REPORTS, ETC.) MUST BE RECEIVED TO BEGIN OUR REVIEW.**
- **INCLUDE FIVE COPIES OF A VICINITY MAP (LOCATION MAP) WITH THE PROJECT SITE PINPOINTED.**
- **SEND AN APPLICATION FEE OF $750 ALONG WITH A COPY OF THE FIRST PAGE OF THE APPLICATION TO MARYLAND DEPARTMENT OF THE ENVIRONMENT, P.O. BOX 2057, BALTIMORE, MD 21203-2057. PLEASE REFER TO OUR WEBSITE http://www.mde.state.md.us/wetlands FOR FURTHER INSTRUCTIONS.**

SAMPLE PLANS MAY BE OBTAINED BY PHONE (1-800-876-0200)
OR E-MAIL acunabaugh@mde.state.md.us.

3.0 PROJECT DESCRIPTION

Mattawoman Energy is proposing to construct and operate a 990 MW natural gas-fired combined-cycle generating facility, in southern Prince George's County, MD. The proposed facility will generate power from combustion turbines (CT's) firing natural gas to meet the state's growing energy needs. The energy generated will be offered for sale into the PJM Interconnection, LLC (PJM)-administered capacity and energy markets. The facility will be developed on an approximately 90-acre site in the vicinity of the small community of Brandywine. The selected site has advantages of proximity to a natural gas supply pipeline and electrical transmission lines. It also is proximate to the Piscataway wastewater treatment plant (WWTP), the proposed source for cooling makeup water. The project will require construction of a 10-mile long reclaimed water pipeline, an approximately 7.4-mile long natural gas pipeline, a 2.4-mile long electrical interconnection line, and a substation. A vicinity map of the project location is provided as Figure 1 and Figure 2 depicts the project on a USGS Quadrangle map.

The need for this project is driven by the energy market. It is well documented by the PSC that the state is a net importer of electricity. In 2008, PJM produced an analysis that showed shortfalls of up to 1,500 MW depending on assumptions regarding load, generating portfolios and whether various transmission lines would be in service. Additionally, the PSC issued a request for proposals in December 2011 seeking up to an additional 1,500 MW to reduce the risk to the ratepayers of a shortage of electricity due to: (1) an increase in the load factor; (2) risk of retirement of coal plants due to age and U.S. Environmental Protection Agency (EPA) regulations (such as Dickerson and Chalk Point); and (3) risk that demand response will not be sufficient to meet the need of a growing economy.

A description of each of the project components is provided in the following sections, including a discussion of alternative site evaluations and proposed construction techniques, where relevant.

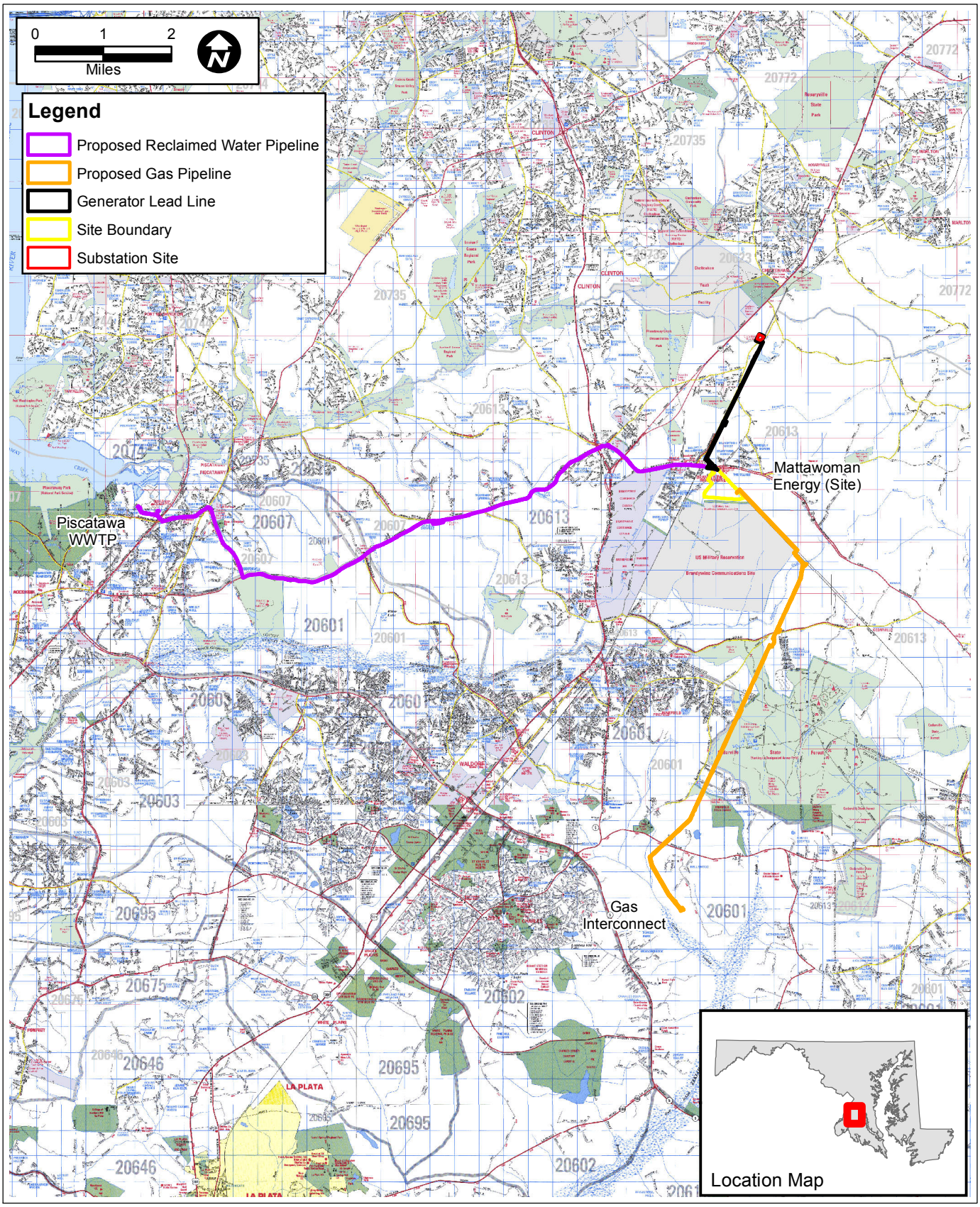


FIGURE 1.
MATTAWOMAN ENERGY PROJECT VICINTY MAP

Sources:ADC map, 2008;; ECT, 2015

ECT Environmental Consulting & Technology, Inc.

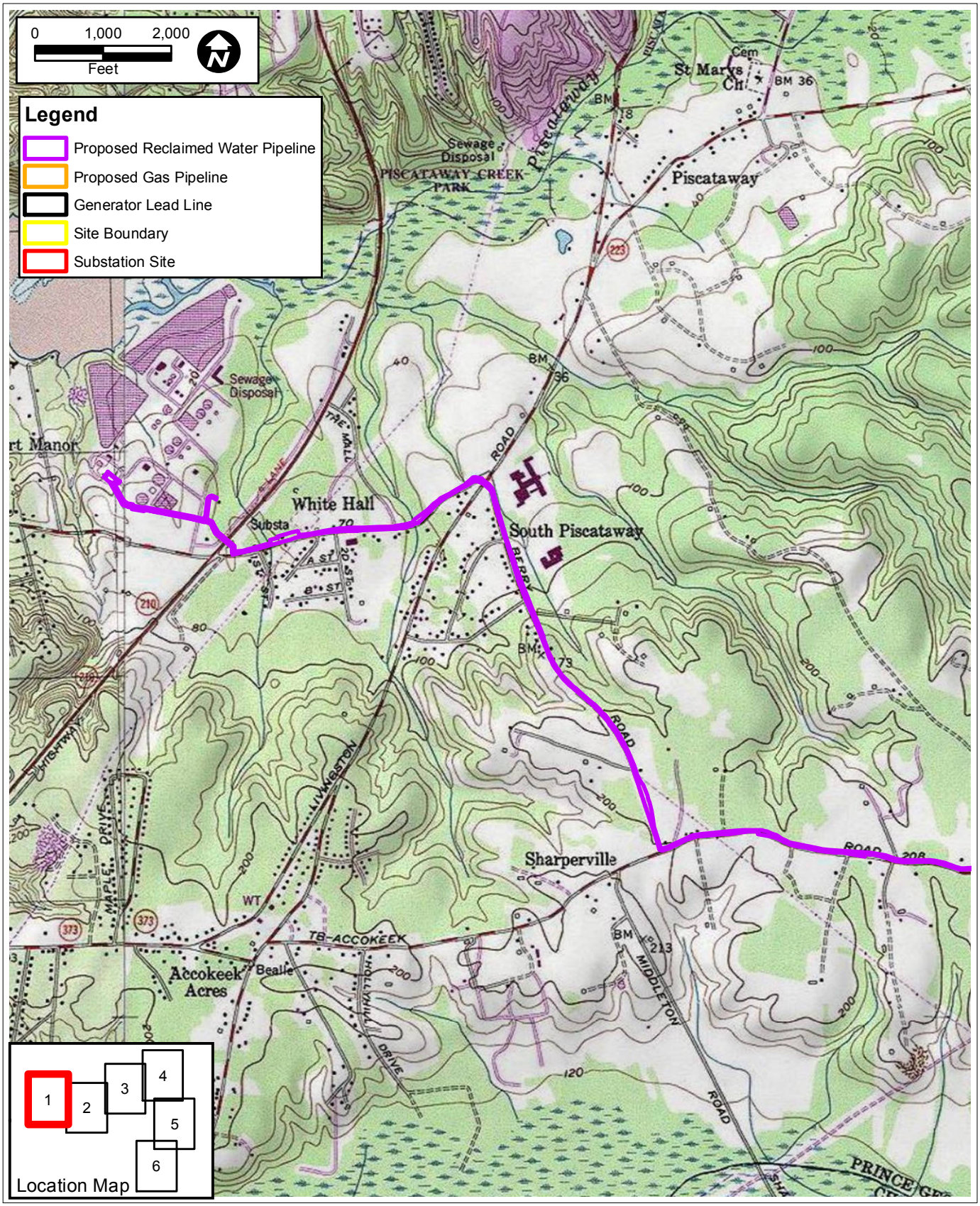


FIGURE 2. (SHEET 1 OF 6)
MATTAWOMAN ENERGY PROJECT LOCATION MAP

Sources:USGS Quad, Brandywine, 1985; ECT, 2015

ECT Environmental Consulting & Technology, Inc.

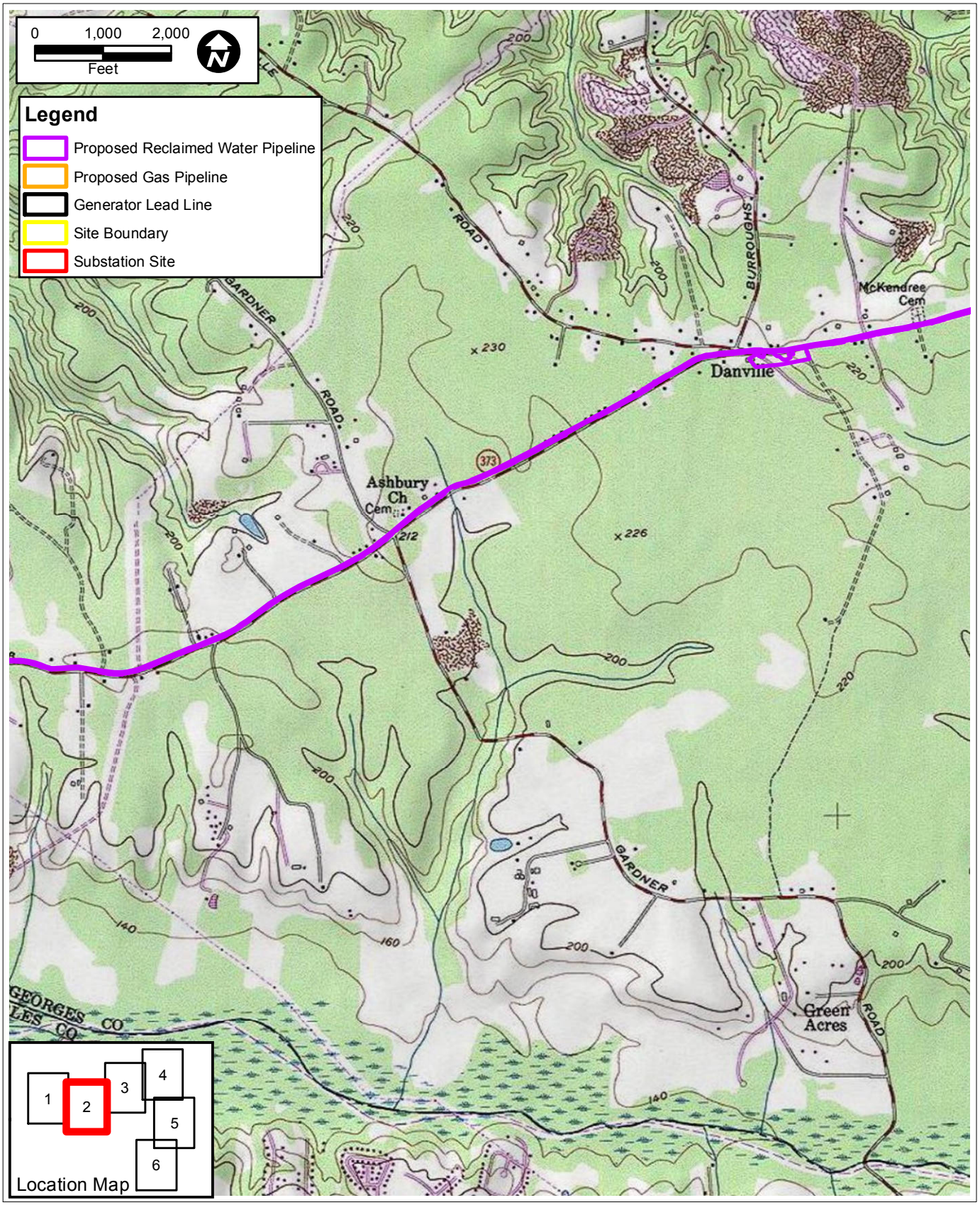


FIGURE 2. (SHEET 2 OF 6)
MATTAWOMAN ENERGY PROJECT LOCATION MAP

Sources:USGS Quad, Brandywine, 1985; ECT, 2015

ECT Environmental Consulting & Technology, Inc.

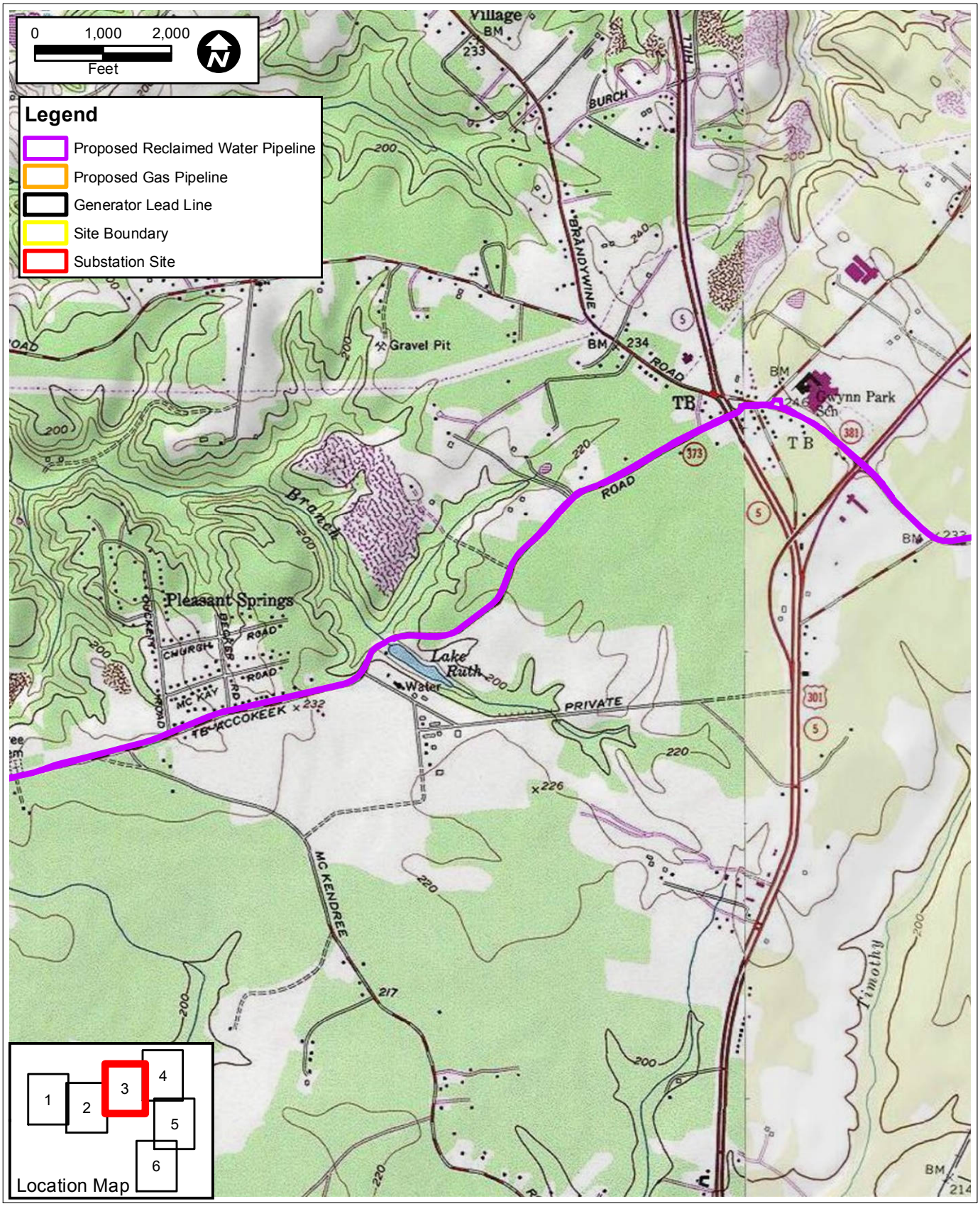


FIGURE 2. (SHEET 3 OF 6)
MATTAWOMAN ENERGY PROJECT LOCATION MAP

Sources:USGS Quad, Brandywine, 1985; ECT, 2015

ECT Environmental Consulting & Technology, Inc.

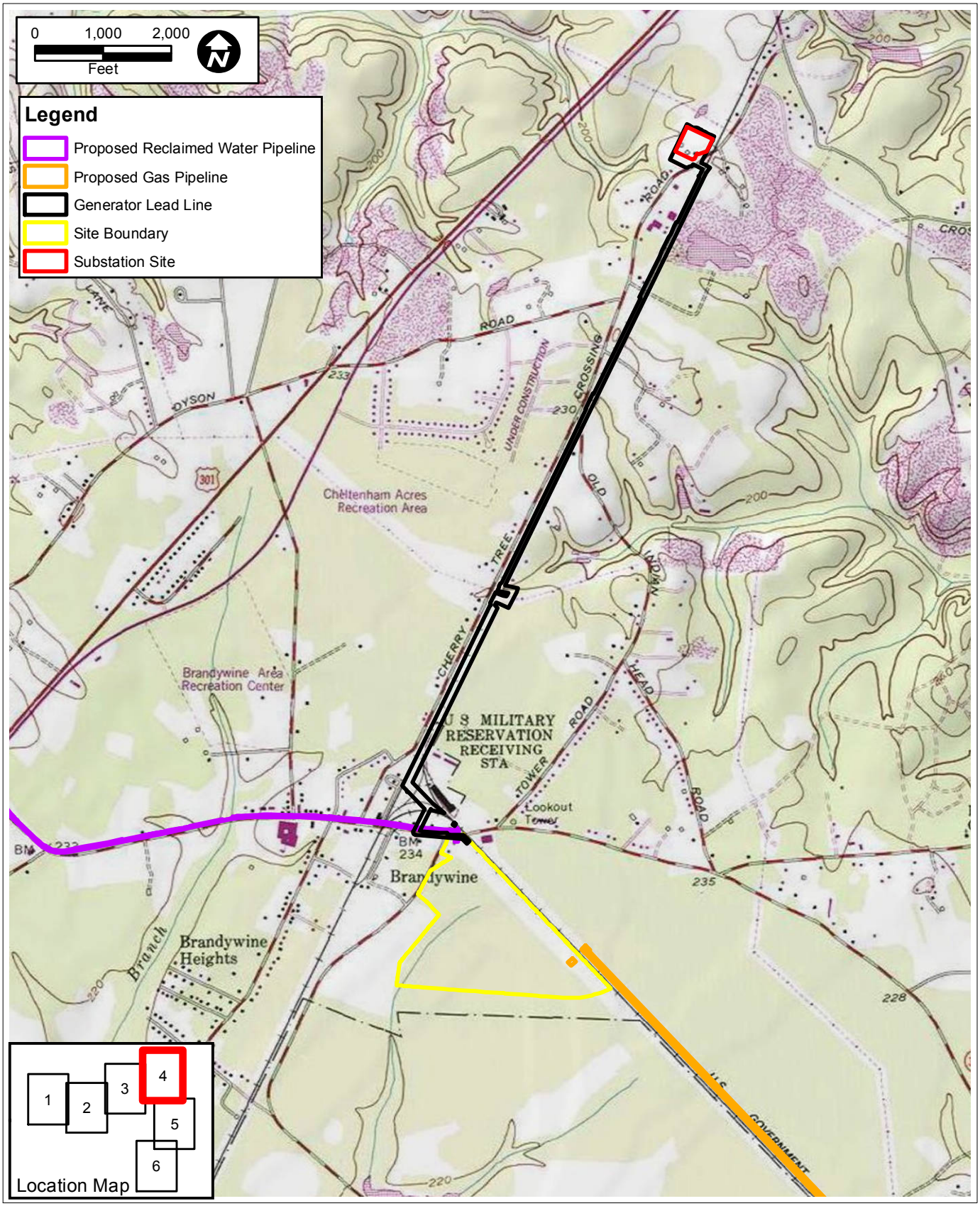


FIGURE 2. (SHEET 4 OF 6)
MATTAWOMAN ENERGY PROJECT LOCATION MAP

Sources:USGS Quad, Brandywine, 1985; ECT, 2015

ECT Environmental Consulting & Technology, Inc.

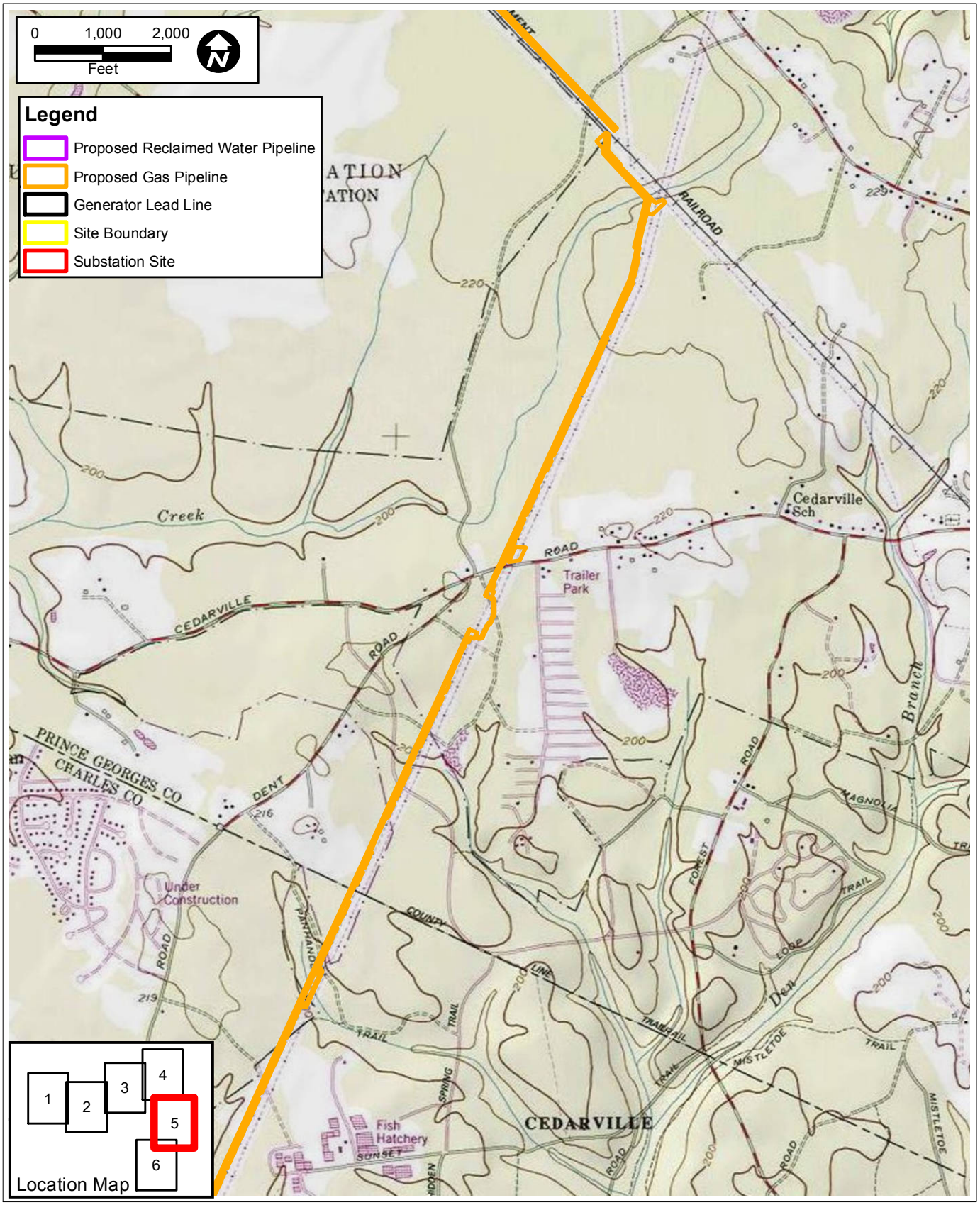


FIGURE 2. (SHEET 5 OF 6)
MATTAWOMAN ENERGY PROJECT LOCATION MAP

Sources:USGS Quad, Brandywine, 1985; ECT, 2015

ECT Environmental Consulting & Technology, Inc.

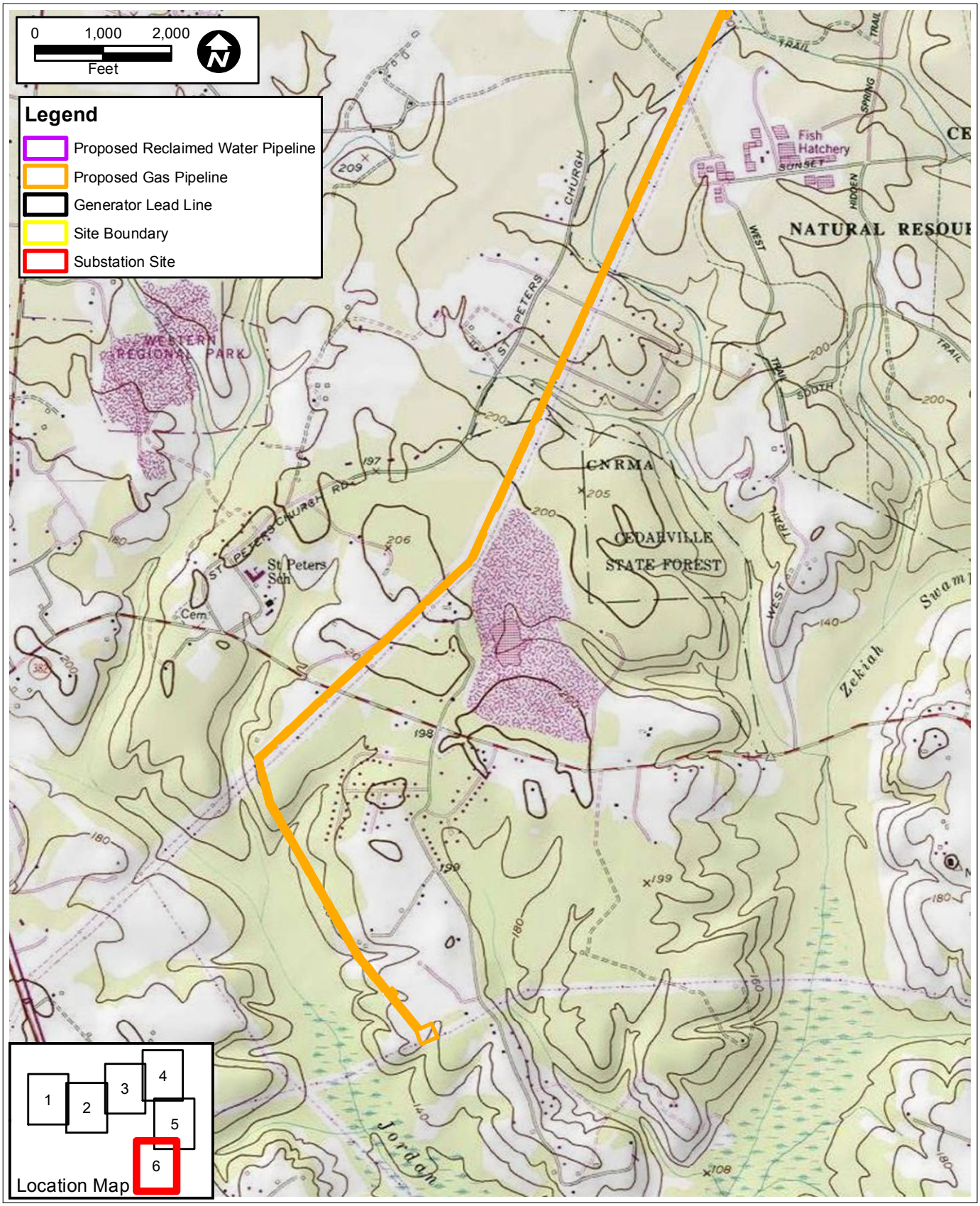


FIGURE 2. (SHEET 6 OF 6)
MATTAWOMAN ENERGY PROJECT LOCATION MAP

Sources:USGS Quad, Brandywine, 1985; ECT, 2015

ECT Environmental Consulting & Technology, Inc.

3.1 POWER PLANT FACILITY

The power plant site will be located at 4175 Brandywine Road, Brandywine, Prince George's County, MD, on an approximately 90-acre site owned by Mattawoman Energy. The site is bordered on the north by Brandywine Road; on the south by a heavily forested 1,635–acre tract of land owned by the United States Government housing the United States Air Force Brandywine Radio Receiver; on the east by a CSX Transportation, Inc. (CSX), rail line; and on the west by an automotive salvage yard. The site is located in an industrially zoned district within the Developing Tier land use designation, where an electrical power generating facility is an approved use. The surrounding land uses are heavy industrial, military, public institutional, commercial, undeveloped, and limited residential. Given the existing land uses in the area of the project and the permitted use of an electrical power generating facility, operation of the project facility will be consistent with surrounding land use designations and land uses.

The power plant facility will consist of a 990-MW, two-on-one, combined-cycle electric generating facility configured with two combustion turbines, two heat recovery steam generators (HRSGs) with supplemental duct firing, and one steam turbine generator in a multi-shaft arrangement. The proposed CTs (Siemens SGT6-8000H [optimized]), are state-of-the-art power generation equipment, capable of producing energy with industry-leading efficiency. The low heat rate associated with these CTs yields a positive result for the environment. Compared to less efficient natural gas-fired CTs and coal-based generation, relatively greater amounts of energy can be generated using the same amount of fuel, yielding emissions of air pollutants per kilowatt-hour that will be lower than they otherwise would be. Furthermore, the greater efficiency associated with the new Siemens model equipment will also drive down the marginal cost of energy, offering greater opportunities to displace coal-fired and less efficient gas-fired generation in the PJM-administered energy market.

The project will be an outdoor plant with no buildings around the CT, steam turbine, or HRSG. Manufacturer-supplied enclosures will be provided for the CT, steam turbine generator, and HRSG. The HRSG will include a selective catalytic reduction (SCR) system

and an oxidation catalyst system. The project will use a multicell wet cooling tower for heat rejection.

Facility construction will include site development, the generating unit, and the balance of plant. The proposed electric generating units and associated facilities will occupy an approximately 30-acre area of the site. The natural gas combined-cycle technology was selected for the Project largely because of the following significant advantages over all the other technology/fuel options:

- Ability to provide almost unlimited fast starts/stops with minimal penalty to engine maintenance.
- Ability to support the variable generation of renewable resources in the market.
- Ability to serve as an economically dispatched intermediate-service generating station for both short-term and longer periods of peak demand.
- Higher efficiency of electrical generation, as represented by heat rate in terms of British thermal units per kilowatt-hour.
- Lower cost to construct on a dollars-per-megawatt basis.
- Lower environmental impacts with regard to air emissions.
- Operational flexibility and ancillary services capability

The project will be fueled by natural gas supplied from the existing Dominion Cove Point gas pipeline, located approximately 7 miles south of the power plant site. Reclaimed water effluent from Piscataway WWTP located approximately 10 miles west of the power plant site will be used primarily as cooling water supply for the project.

Sanitary sewage will be discharged to an existing sewage line at the property boundary. There will be no discharge of industrial wastewater to surface or groundwater. The project will use a zero liquid discharge system.

During operation of the project, stormwater will be collected onsite and routed to the existing stormwater management pond for treatment prior to discharge to an unnamed tributary to Mattawoman Creek. No significant changes in water quantity or quality discharging to on- and offsite wetlands will occur as a result of facility construction/operation.

3.2 ELECTRICAL GENERATOR LEAD LINE & SUBSTATION

Electricity generated from the power plant will be interconnected into the grid by an electric generator lead line at a point of interconnection on the existing Potomac Electric Power Company (PEPCO) 230-kV transmission line located approximately 2.4 miles north of the power plant site. The PEPCO 230-kV line runs from the Burches Hill (located west of the point of interconnection) substation to the future Talbert substation (located east of the point of interconnection).

More specifically, Mattawoman Energy will build and own three sets of generator leads from the generator bushings to the low side bushings of the power plant step-up transformers, including associated breakers, and three 230-kV high side generator step-up transformers. In addition, Mattawoman Energy will design, construct, and own the generator lead line to the point of interconnection, where a new substation/switchyard will be located, and will design, build, and own a disconnect switch, breaker, and associated facilities within the substation/switchyard. Mattawoman Energy will be responsible for property acquisition for the substation/switchyard to the extent the site extends beyond the existing PEPCO right-of-way.

For its part, PEPCO will design and construct the 230-kV substation/switchyard in a three breaker ring bus configuration and a new single breaker at the switchyard that can be expanded to a three-breaker ring bus in the future if PEPCO determines it necessary. PEPCO will also rehabilitate a portion of an old 230-kV feeder that is currently not energized and extend the feeder for a short distance to the Burches Hill substation by installing new 230-kV poles and an underground conduit in the immediate vicinity of the substation. PEPCO will also perform breaker upgrades at the Burches Hill and Burtonsville substations, as well as remote end relays and telecommunications upgrades.

3.2.1 GENERATOR LEAD LINE ROUTE

The proposed generator lead line route was aligned to avoid and/or minimize impacts to natural and cultural resources. This was done by choosing a route along existing linear corridors so that the amount of new clearing would be minimized and includes a combina-

tion of overhead and underground segments. A variety of existing linear corridors are present within the site vicinity, including roads, railroads, and overhead transmission and distribution line corridors.

The route exits the southeast corner of the power plant site, where it then proceeds in a northwesterly direction adjacent to the right-of-way for Brandywine Road. The proposed route then makes a right turn and proceeds northeast for a short distance on a privately owned industrial site, until it turns northwest again for a short distance, within a pre-existing Southern Maryland Electric Cooperative (SMECO) corridor, until it reaches the corridor for the PEPCO 230-kV transmission line. The total length of the foregoing part of the, "as the crow flies," is approximately 0.5 mile. At the point it reaches the PEPCO corridor, the route makes a right angle and proceeds northeast for approximately 2.5 miles along the CSX railroad right-of-way, where it will be collocated with a SMECO 69-kV sub-transmission line as well as the PEPCO 230-kV line that all the way up to the point of interconnection. Approximately at the halfway point of the north/northeast segment, the route passes under the existing PEPCO 500-kV line, which traverses the route in an east/west direction.

Within the north/northwest portion of the route, the generator lead line will be located just to the west of the SMECO 12.4-kV distribution line. The same holds for the longer north/northeast portion of the route with respect to the SMECO 69-kV sub-transmission line. Both the planned generator lead line and the SMECO 69-kV line are located east of the CSX railroad tracks for the entire lead line route, with the exception of the area north/northeast of the PEPCO 500-kV line; the SMECO 69-kV line turns west at the intersection with the PEPCO 500-kV line. The PEPCO 230-kV line is located to the west of the CSX tracks within the roughly 2.3-mile north/northeast segment.

Mattawoman Energy is in the process of negotiating an agreement with SMECO under which SMECO will relocate the 69-kV sub-transmission line 39 feet (ft) east of its current location within the SMECO easement. The eastward shift will be made with respect to the

entire north/northeast segment of the lead line route, with the exception of the area northeast of the crossing of the PEPCO 500-kV line. Mattawoman Energy has agreed to pay for the construction costs associated with moving the SMECO 69-kV line.

The route was chosen to take advantage of existing rights-of-way to the maximum degree possible. Overall, nearly 100 percent of the generator lead line route is planned to be located within or adjacent to existing utility corridors. From an environmental perspective, this arrangement minimizes construction on previously undisturbed areas.

3.2.2 GENERATOR LEAD LINE POLES

Nineteen transmission poles are proposed to be located along the generator lead line route; turning poles will be 8 ft. in diameter; nonturning poles 4 ft. in diameter. With the exception of the poles in the area under the PEPCO 500-kV transmission line, the poles will be made of tubular steel with reinforced concrete shaft foundations. Three transmission line arms protruding westward from the nonturning pole towers will support three 230-kV lengths of conductor; the three conductors will be affixed to the turning poles with appropriate spacing at different heights. The poles will be 140 ft. high, and the spans between them will be between 700 and 900 ft. long. None of the poles will be located within wetlands, waterways, or nontidal wetland buffers.

3.2.3 GENERATOR LEAD LINE ROUTE ALTERNATIVES

Several route alternatives for the interconnection/generator lead line were considered. The first alternative was to interconnect with the existing 230-kV PEPCO transmission line, which interconnects the Brandywine project, at a point west of the middle of the power plant site. The second alternative was to collocate a 230-kV line on an open arm on the existing PEPCO 500-kV transmission line. The third and most recent option was to have PEPCO expand its existing transmission system from the present point of interconnection southward to the power plant site, along a route similar to the one Mattawoman Energy is currently proposing. The first two options were rejected by PEPCO, and PPRP had concerns with the third.

The current proposed route, which is the only one that has advanced to a detailed design stage, has the advantage of being located either within or adjacent to existing utility corridors along its entire length and is acceptable to both PEPCO and PJM. The Mattawoman Energy team has worked hard to minimize any adverse environmental impacts, including wetlands impacts, and eliminate any collateral effects on the DRMO Superfund site.

3.2.4 SUBSTATION

The substation will be built on part of a 7.3-acre parcel that is developed with an unoccupied single family residence and two outbuildings. A PEPCO transmission line corridor, CSX railroad track, and a company that manufactures concrete forming systems for construction projects (Symons) are located on surrounding properties. The proposed substation will be well buffered to the west and south by existing trees. The proposed use of the parcel for a substation is compatible with the existing industrial land use and the rail and transmission infrastructure and is buffered from other land uses in the vicinity of the new substation site.

The substation is proposed to be located in the northeastern portion of the site, containing the least number of trees, forest and other environmental features on the parcel. Approximately 6 acres of land will be used for the substation and the tie-in of the generator lead line, including area that will be needed for structure footprints, concrete pads, gravel areas, access roads, parking areas, and other physical improvements.

3.2.5 SUBSTATION SITE ALTERNATIVES

Mattawoman Energy originally proposed to locate the substation north of the PEPCO transmission line corridor and east of the Cherry Tree Crossing Road. However, it was determined that this is subject to an agricultural preservation easement that does not allow for the construction of a switchyard structure.

At the currently proposed substation site, Mattawoman considered utilizing PEPCO's 230kV ROW for a portion of the substation, but PEPCO was unwilling to provide Mattawoman Energy the property rights to do so. The area of clearing on the substation site

has been minimized to the extent practicable and is needed for grading, drive aisles, and to meet the required NERC clearance from the transmission lines as they exit the substation.

3.3 NATURAL GAS PIPELINE

The gas pipeline is designed and being permitted as an industrial lateral to serve only the Mattawoman Energy project. There will not be excess capacity to serve other end users. Therefore, cumulative impacts (i.e., additional development projects with wetland/water-body impacts) will not occur as a result of the proposed activity.

The proposed natural gas pipeline route is approximately 7.4 miles long and will connect to an existing 36-inch Dominion interstate gas transmission line south of the site. From the power plant site, the proposed gas pipeline route exits the eastern boundary of the plant site, crosses the CSX railroad track, turns southeast, and follows along the east side of the railroad track within a SMECO easement for approximately 1.2 miles, at which point it turns southwest and crosses back over the railroad track. From there, the gas route continues parallel to the railroad track toward the southeast, but it is located on private property approximately 250 ft south of the track. The proposed pipeline route then extends approximately 0.25 mile to the intersection with a PEPCO transmission line corridor. From there, the gas pipeline route turns south/southwest and follows the west side of the electric transmission line right-of-way for approximately 5 miles. At that point, the route turns southeast, leaves an existing corridor, and travels a greenfield route for approximately 0.9 mile to its intersection with the existing 36-inch natural gas transmission line, which is located in Charles County, Maryland. Overall, 85 percent of the route is located adjacent to an existing linear corridor. The 0.9-mile greenfield route was chosen to avoid crossing Jordan Swamp, a Tier II high quality tributary and it's surrounding wetland, which is classified as a wetland of special state concern (WSSC).

3.3.1 EASEMENTS

The width of the construction and permanent easements varies depending on the location. Along the PEPCO corridor, the temporary construction corridor will be limited to 65 ft. wide except through wetlands where the construction corridor will be minimized to 40 ft. wide. The permanent maintenance easement along the PEPCO right-of-way will be limited

to 10 ft. wide. Within the SMECO easement, the temporary construction corridor varies between 50 and 60 ft. wide. The width of the permanent gas pipeline corridor within the SMECO easement will be limited to 10 ft. wide. For the 0.9-mile-long greenfield segment between the Dominion interstate gas line and the PEPCO easement, the permanent easement is 50 ft., and the temporary construction easement is 75 ft. maximum (i.e., 12.5 ft. to each side of the 50-ft construction easement).

3.3.2 ALTERNATIVES CONSIDERED

Two alternatives were considered in addition to the route that was ultimately selected. A copy of the preliminary routing study for the gas pipeline route is provided as Appendix A. Each of the alternative routes' north/northeast segments would have been located within the PEPCO Morgantown corridor but would have deviated from the selected route only as to the northern and southern portions of the route, respectively. The first such alternative would have run north from the PEPCO corridor up until Brandywine Road, where it would have made a left turn to the power plant site. Mattawoman Energy rejected this alternative because it would have required crossing Mattawoman Creek and required significant tree clearing along Brandywine Road. Instead, Mattawoman Energy chose to route the north/northwest portion of the line within the SMECO easement to avoid any potential adverse impacts on the creek and limit the extent of forest clearing.

The second alternative would have continued to follow the path of the PEPCO Morgantown corridor south through Jordan Swamp, where it would then turn southwest along a SMECO easement, where it then would have interconnected with the Dominion Interstate Gas (DIG) pipeline. Mattawoman Energy rejected this alternative to avoid environmental impacts on the Jordan Swamp, which is a Tier II tributary and a WSSC.

3.4 RECLAIMED WATER LINE

The project will use reclaimed water from the Piscataway WWTP for service water needs. This will necessitate construction of a new, approximately 10-mile-long reclaimed water supply line from the WWTP to the power plant site. The reclaimed water pipeline route, which is approximately 10 miles long, is located predominantly within state and county road rights-of-way, with the exception of short segments on the Piscataway WWTP and

the power plant site itself. The route runs in a generally west-to-east direction from the WWTP to the power plant site.

Specifically, after exiting the WWTP site and crossing Indian Head Highway, the pipeline route proceeds eastward along Farmington Road until it reaches an intersection with Livingston Road, where it turns south along Berry Road. Both Farmington Road and Berry Road are county roads. The route then runs east along Accokeek Road (Maryland Route [MD] 373) for approximately 6 miles to the intersection of Accokeek Road, Branch Avenue (MD 5), and Brandywine Road. After crossing through this intersection, the route extends along Brandywine Road (MD 381) to the power plant site.

In general, the pipeline will be located in the middle of Farmington Road, the east lane of Berry Road, the south lane of Accokeek Road, and the north lane of Brandywine Road.

3.4.1 EASEMENTS

In general, the width of the construction and permanent corridors are to be 20 and 15 ft. extending outward to one side or the other of the center line. The exception is on Farmington Road, where construction will take place within the center of the road because of conflicts with utility lines located at the edges of the roadway.

3.4.2 ALTERNATIVES CONSIDERED

The initial route study did consider running portions of the route in private property—specifically along Farmington Road—and "cross country" through the future right-of-way of Accokeek Road. The environmental impacts would have been more extensive under either of these options; thus, the decision to move forward with a route located entirely within a developed corridor was made. Appendix B contains the preliminary routing study for the reclaimed water pipeline route.

3.5 PIPELINE CONSTRUCTION TECHNIQUES

Mattawoman Energy will use a mix of construction techniques to install the gas pipeline and reclaimed water pipeline. The mix includes open trench/trench box construction, jack-and-bore, and horizontal directional drill (HDD). The choice of the specific technique to

be employed at a given location depends on a number of factors including physical factors such as pipeline alignment/depth, practical infrastructure considerations such as maintenance of traffic flow, and avoidance of local utility crossings and clearances. Environmental factors such as the need to minimize or avoid temporary construction impacts on stream crossings and wetlands also play a role in the type of construction used.

The majority of the construction of the gas pipeline is expected to be completed using open-trench construction; however, the methodology employed at a given location is based on both the pipe alignment/depth and practical infrastructure considerations, namely local utility crossings and clearances and proximal regulated environmental features and land uses. The construction width through existing jurisdictional wetlands has been constrained to limit disturbances in those areas.

Along the reclaimed water line, jack-and-bore drilling will be used to cross culverted streams, and, where practical, either HDD or the trench box technique will be used to avoid or minimize impacts on other streams and wetlands. The details and parameters for construction are the subject of ongoing discussion with the permitting agencies including Maryland State Highway Administration, Prince George's County, and MDE, as well as the Washington Suburban Sanitary Commission, given the extents of their facilities along the route.

The construction of both pipelines is projected to take approximately one year and will likely involve multiple construction crews working at different locations, day and night work, and daily progress will have to include MOT, erosion and sediment controls, and some level of next day preparation. Timber mats and proper erosional control measures will be installed and maintained throughout the construction process to minimize impacts. Also, MDE's Best Management Practices for Working in Nontidal Wetlands, Wetland Buffers, Waterways, and 100-Year Floodplains will be implemented.

4.0 PROPOSED WETLAND & WATERBODY IMPACTS

4.1 WETLAND DELINEATION

Environmental Consulting & Technology, Inc. (ECT) conducted a wetland and waterbody delineation for all portions the Mattawoman Energy project. All of the wetland and water body boundaries have been reviewed and approved by the MDE and the USACE, except for those on the substation site, which were not delineated until March 2015, and a portion of wetland 19 along the gas pipeline route, where a temporary access road is proposed. A brief description of the wetlands by project location follows. Each wetland type is classified using the Cowardin classification system. Streams are classified as palustrine unconsolidated bottom (PUB), herbaceous wetlands are classified as palustrine emergent wetlands (PEM), and forested wetlands are classified as palustrine forested wetland (POF).

4.1.1 POWER PLANT FACILITY SITE

Prior to Mattawoman Energy purchasing the facility site, it had been approved for development into a recycling facility and industrial park. The previous owner cleared the majority of the property, developed a site access road, and constructed the stormwater management system. When Mattawoman Energy took ownership of the site, it was primarily vegetated in early successional species, with forested areas being limited to strips along the edges of the site boundaries.

ECT ecologists conducted a wetland delineation of the power plant site in March 2013. MDE and the USACE reviewed these lines on November 18, 2104. Forested wetlands comprise approximately 7 acres of the site and are located along the entire western property boundary, in the southeast corner of the site and along portions of an unnamed tributary to Mattawoman Creek that drains towards the southwest across the site. Dominant vegetation species in this community include red maple (*Acer rubrum*), pin oak (*Quercus palustris*), willow oak (*Quercus phellos*), sweetgum (*Liqudambar styraciflua*), loblolly pine (*Pinus taeda*), high bush blueberry (*Vaccinium corymbosum*), cat briar (*Smilax* spp.), and Japanese stilt grass (*Microstegium vimineum*).

A large stormwater management pond was created as part of previous landowners proposed development. This pond is located in the southwestern portion of the site and comprises almost 10 acres of land. The man-made pond connects to an unnamed tributary/wetland system that drains south offsite and ultimately to Mattawoman Creek. The pond is relatively shallow and largely vegetated with herbaceous wetland species including cattails (*Typha* spp.), soft rush (*Juncus effusus*), wool grass (*Scipus cyperinus*), and various other sedges and rushes. There is a much smaller man-made sediment trap on the eastern side of the site that was also constructed for the previous land owner's development purposes.

There are several areas of wetland onsite that are vegetated primarily by herbaceous species rather than trees. These herbaceous wetlands are associated with the natural wetlands onsite as well as two man-made drainages that were constructed as part of the stormwater management system. Combined these areas occupy approximately 2 acres. Dominant vegetation species include cattails, common reed (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), Japanese stilt grass, wood grass, soft rush, caric sedges, cat briar, and blackberry (*Rubus* spp.). There are no WSSC concern on the facility site.

4.1.2 SUBSTATION

ECT delineated the wetlands and waterways on the substation site in March 2015. The wetland and waterway lines have not yet been reviewed by MDE or USACE, but are planned to be reviewed by these agencies in the near future.

The substation site is within the Piscataway Creek watershed. ECT delineated a pond, an ephemeral stream, a perennial stream and forested wetland. The streams are unnamed tributaries to Piscataway Creek. Figure 4 depicts the wetland, streams and pond delineated on the substation site. The forested wetlands formed at the head of the unnamed perennial stream. Vegetation species observed within the wetland include red maple, sweetgum, American holly, high bush blueberry, sedges (*Carex* spp.), cinnamon fern (*Osmunda cinnamomea*), and sphagnum moss (*Sphanum* spp.). The wetland data sheet for this wetland is provided in Appendix C. There are no WSSC concern on the substation site.

4.1.3 ELECTRIC GENERATOR LEAD LINE

ECT performed a baseline ecological assessment of the generator lead line in November 2014. The assessment included vegetation community mapping, a general wildlife inventory, a wetland and water body delineation, and a survey for potential listed species habitat or presence. The wetland and waterway lines were reviewed by MDE and USACE on November 18, 2014. Three herbaceous wetlands, two forested wetlands, one stream, and one pond were delineated within the study corridor. The herbaceous wetlands were dominated woolgrass, soft rush, smartweed (*Polygonum* spp.), cattail, spike rush (*Eleocharis* spp.), wooly sedge (*Carex lanuginosa*), and reed canary grass. The forested wetland was vegetated by sweetgum, red maple, and willow oak. There are no wetlands of special state concern with the electric generator lead line corridor.

The stream is a tributary to Mataponi Creek, which ultimately drains into Patuxent River. The stream is not designated as a Tier II watershed. The channel is deeply incised and the jurisdictional limits are equal top of bank.

4.1.4 NATURAL GAS PIPELINE

ECT ecologists delineated the wetlands within the gas pipeline corridor in May and June 2014 and the MDE and the USACE reviewed these wetland lines on October 21-23, 2014. The proposed natural gas pipeline route traverses the headwaters of Mattawoman Creek and Zekiah Swamp. The gas pipeline route was aligned to avoid crossing the more sensitive portions of these watersheds, which have designations as WSSC. Wetlands are prevalent along the proposed route and are associated with stream systems, including Mattawoman Creek, Old Wolf's Den, and Jordan Swamp. Both Jordan Swamp and Old Wolf's Den ultimately drain into Zekiah Swamp.

The majority of the wetland crossings occur adjacent to or within existing disturbed corridors associated with the CSX railroad track/SMECO easement or PEPCO transmission line. The wetlands are herbaceous within the cleared corridor and are forested outside the maintained corridor. The forested portions of these wetlands are relatively high quality, while the herbaceous portions are routinely mowed and do not provide significant or unique ecological value.

There are three stream crossings, which are generally short and vary from incised channels to braided stream systems. They are typically clear water, headwater streams, with gravel/sandy bottoms.

The herbaceous wetland community includes wetlands within the previously cleared corridors. Typical plant species include soft rush, cinnamon fern, netted chain fern (*Woodwardia aerolata*), Virginia chain fern (*W. virginiana*), sensitive fern (*Onoclea sensibilis*), bulrush (*Scirpus* sp.), spikerushes, cattail, cat briar, blackberry, highbush blueberry, fleabane (*Pluchea odorata*), caric sedges, beak sedges (*Rynchospora* spp.), water hyssop (*Bacopa* sp.), alligator weed (*Alternanthera philoxeroides*), and scattered saplings of black willow (*Salix nigra*), red maple, and sweetgum. If not for the routine mowing activities already occurring, this community would develop into wetland forest similar to that described in the following paragraph.

The forested wetlands within the gas pipeline study area are typical of the mixed hardwood wetlands of the region. Canopy species include willow oak, laurel oak (*Quercus laurifolia*), red maple, sweet gum, silver maple (*Acer saccharinum*), and American elm (*Ulmus Americana*). Typical shrub species include wax myrtle (*Morella cerifera*), sweet pepperbush (*Clethra alnifolia*), highbush blueberry, spice bush (*Lindera benzoin*), and button bush (*Cephalanthus occidentilis*). Ground cover is comprised of sphagnum moss (*Sphagnum* spp.), cinnamon fern, netted and Virginia chain ferns, poison ivy (*Toxicodendron radicans*), cat briar, and blackberry.

4.1.5 RECLAMED WATER PIPELINE

The proposed reclaimed water pipeline route runs between the Mattawoman Creek and Piscataway Creek watersheds. It crosses two tributaries to Mattawoman Creek, including Timothy Branch, and four tributaries to Piscataway Creek, including Burch Branch. The route does not cross any wetlands or tributaries that have been designated as WSSC. Since the route is primarily within road rights-of-way, most of the streams and wetlands were previously disturbed at the time of road construction and have been piped beneath the roadbed. ECT delineated these wetlands in June 2014 and MDE and the USACE reviewed them during October 21-23, 2014.

4.2 PROPOSED IMPACTS

4.2.1 FACILITY SITE

No impacts to wetlands or regulated waterways are proposed on the power plant site. The generator lead line will span an herbaceous wetland on the northeast side of the wetland. Work will be performed from either side of the wetland in order to avoid any impacts. Figure 3 depicts the proposed layout of the power plant and associated facilities overlaid on the existing vegetation/wetland communities.

4.2.2 SUBSTATION

Construction or operation of the substation will not impact the streams or pond. Impacts to the forested wetland (Wetland 8) were not completely avoidable due the site layout requirements, including grading, equipment, entrance road, and security fencing. Approximately 0.02 acre of forested wetland within the substation site will need to be permanently filled. The stream channel will be protected during construction to minimize sediment erosion. The proposed impact is shown on Figure 4. Appendix D provides typical engineering detail sheets and Appendix E provides environmental impact/engineering plans prepared by Dewberry.

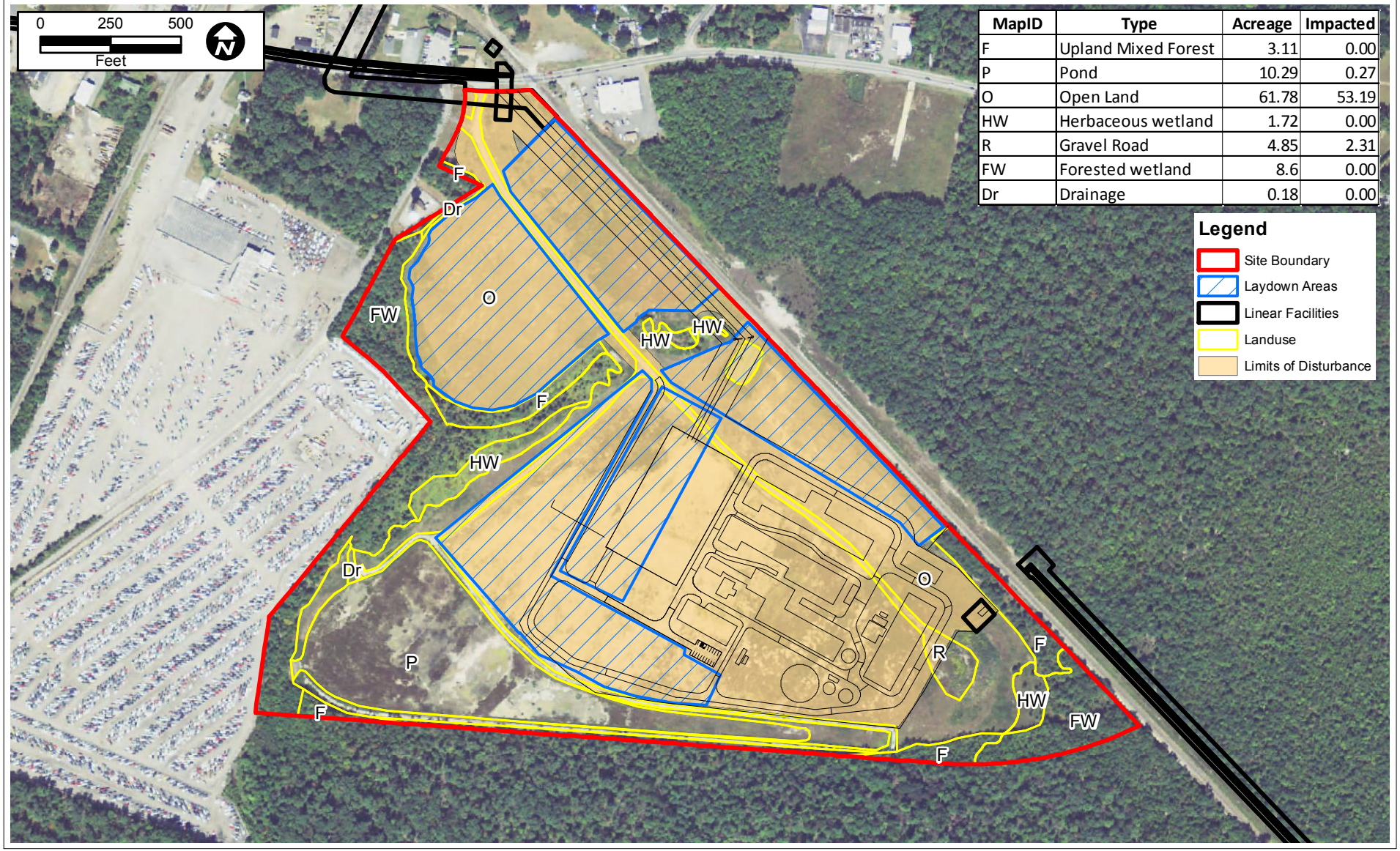
Table 1. Wetland and Water Body Impacts on the Substation Site

Wetland ID	Temporary Stream Impact (linear ft)	Temporary PEM Impact (acres)	Temporary POF Conversion (acres)	Permanent POF Conversion (acres)	Permanent POF Fill (acres)	Total Impact (acres)
Wetland 8					0.02	0.02

Source: ECT 2015

4.2.3 GENERATOR LEAD LINE

Impacts to the wetlands along the generator lead line have been avoided and minimized where possible. Three wetlands will be affected by construction activities. Two of these are small herbaceous wetlands, which combined are approximately 0.24 acre. Timber mats will be used during construction to minimize ground disturbance. Following construction both will be allowed to re-vegetate naturally so there will be no long-term impact. The only permanent wetland impact would be conversion of 0.02 acre of forested wetland to non-forested wetland. This impact is needed to meet the minimum permanent easement width



MapID	Type	Acreage	Impacted
F	Upland Mixed Forest	3.11	0.00
P	Pond	10.29	0.27
O	Open Land	61.78	53.19
HW	Herbaceous wetland	1.72	0.00
R	Gravel Road	4.85	2.31
FW	Forested wetland	8.6	0.00
Dr	Drainage	0.18	0.00

FIGURE 3.

MATTAWOMAN ENERGY PROJECT POWER PLANT SITE, PROPOSED IMPACTS

Sources: Worley Parsons, 2015; Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

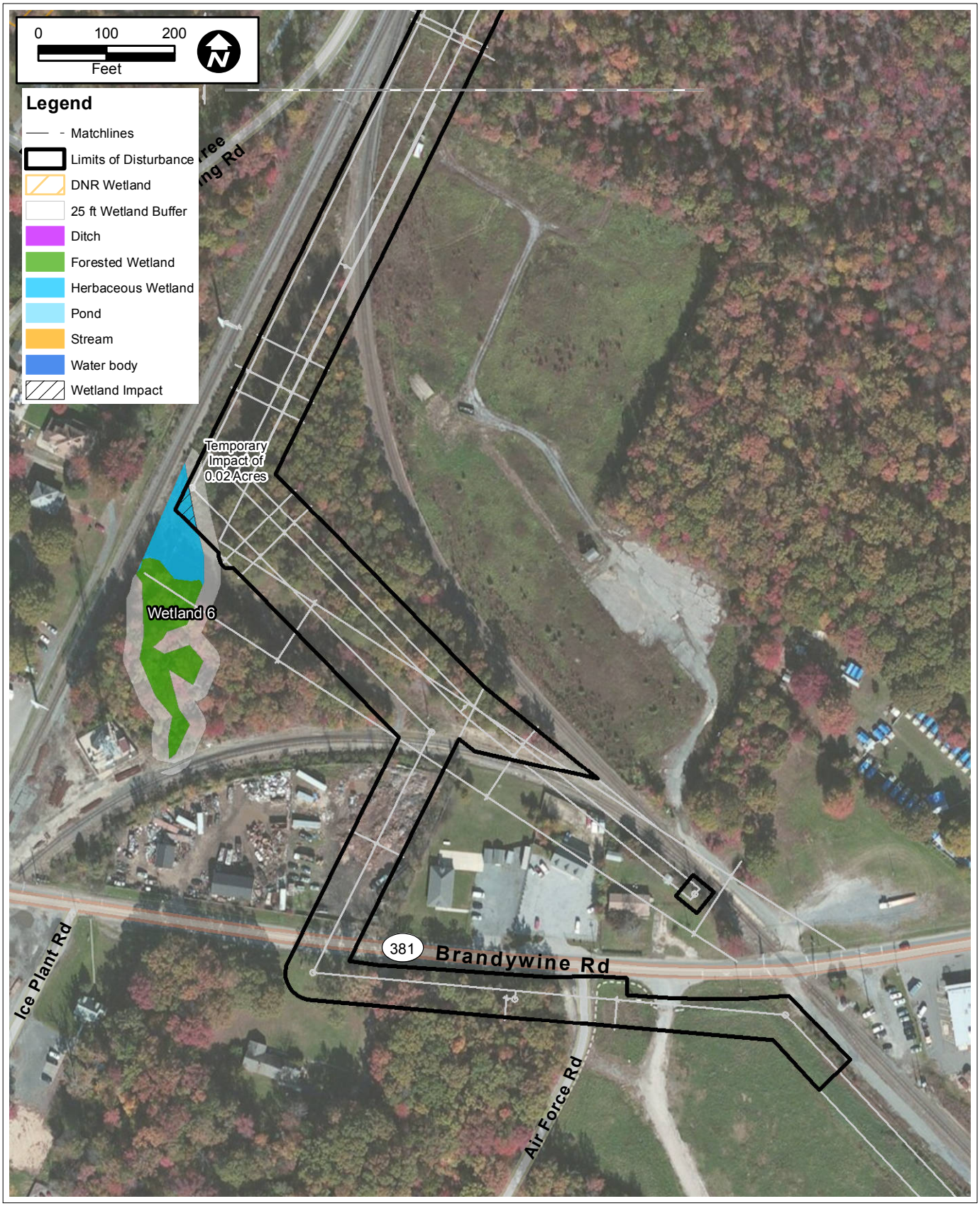
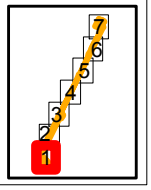


FIGURE 4.
WETLAND IMPACTS ALONG
ELECTRIC GENERATOR LEAD LINE 1 OF 7



Sources: Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

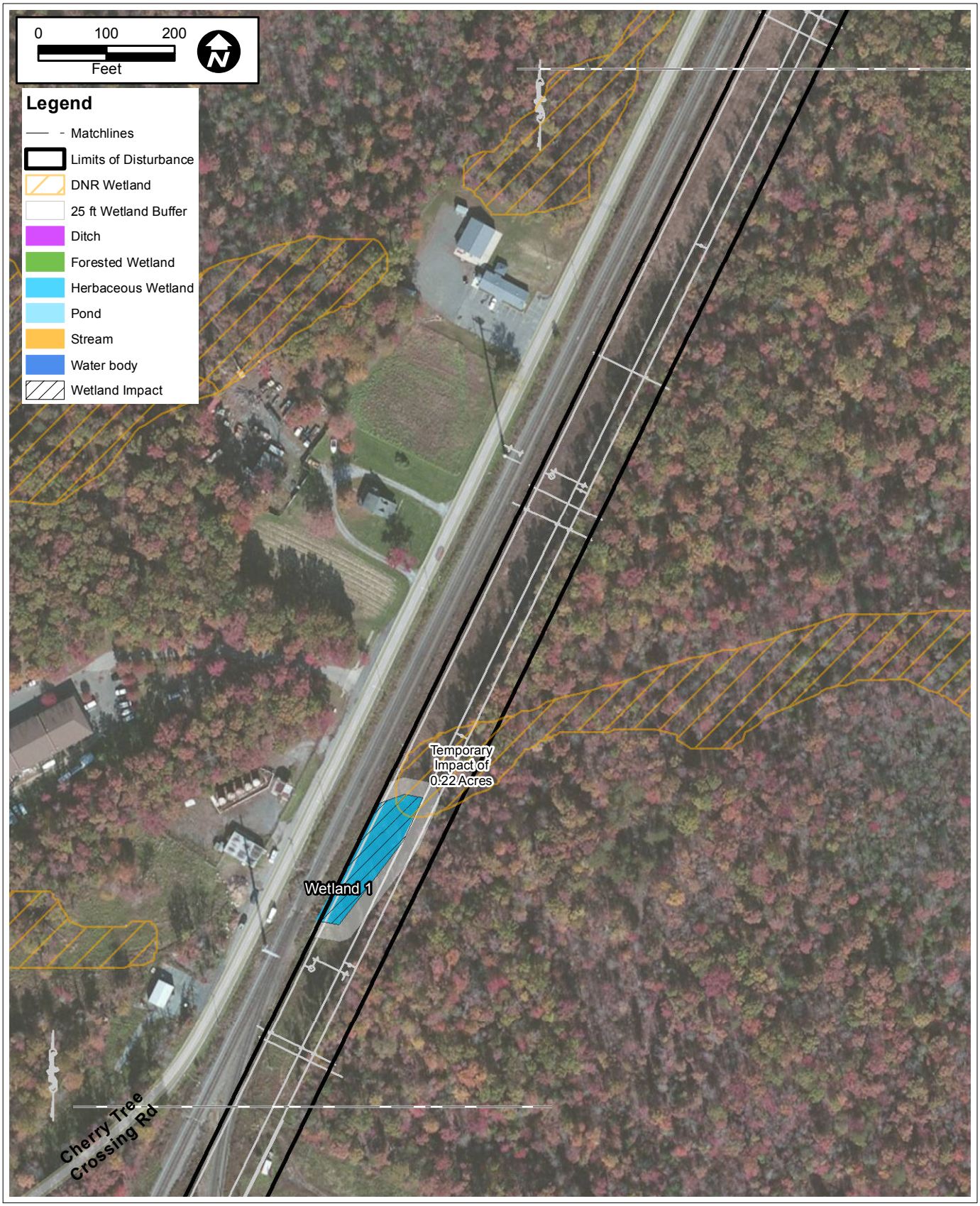
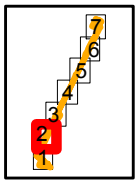


FIGURE 4.

WETLAND IMPACTS ALONG

ELECTRIC GENERATOR LEAD LINE 2 OF 7



Sources: Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

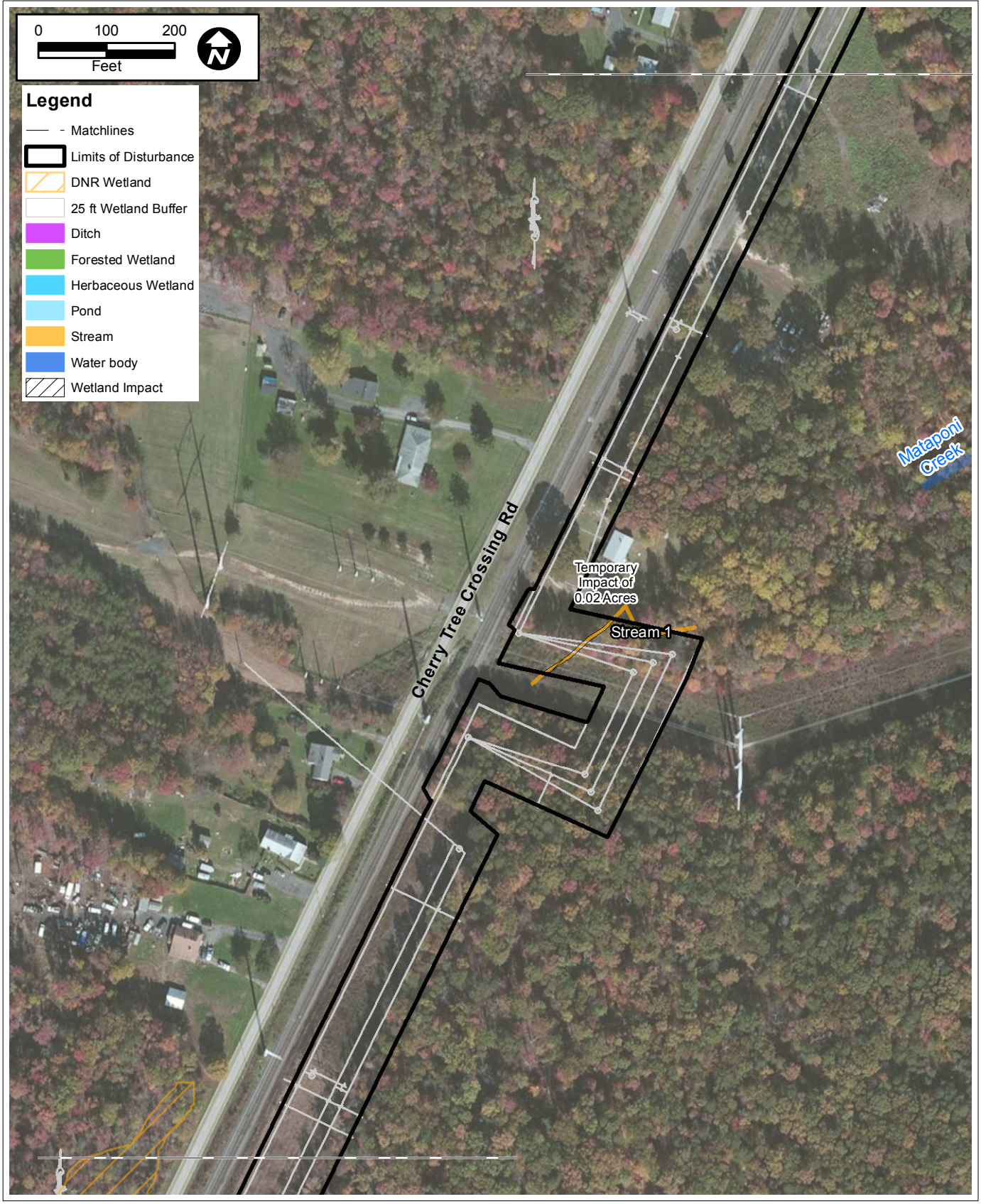
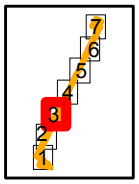


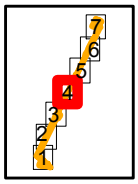
FIGURE 4.
WETLAND IMPACTS ALONG
ELECTRIC GENERATOR LEAD LINE 3 OF 7



Sources: Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

FIGURE 4.
WETLAND IMPACTS ALONG
ELECTRIC GENERATOR LEAD LINE 4 OF 7



Sources: Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

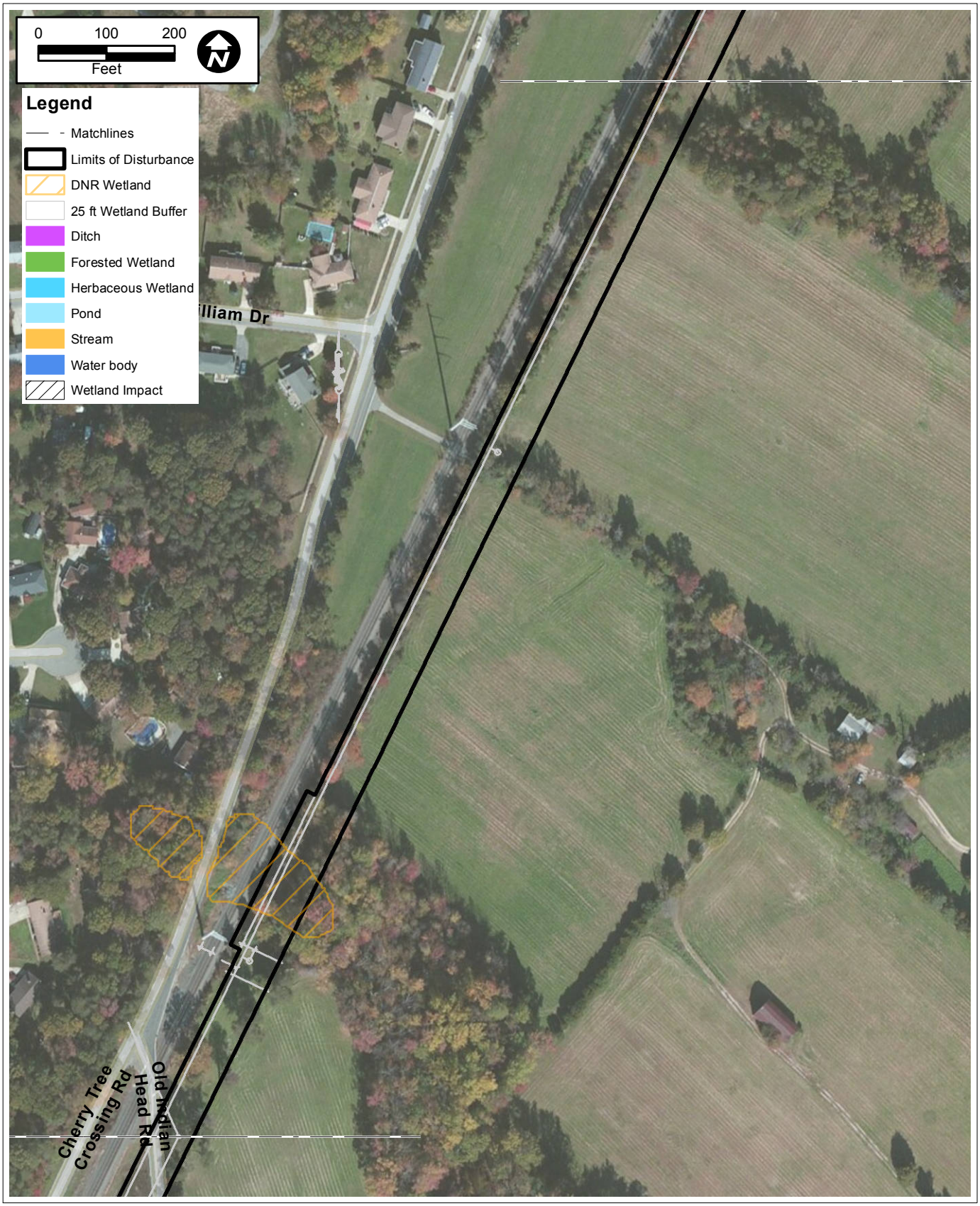
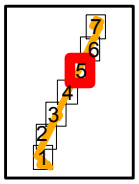


FIGURE 4.
WETLAND IMPACTS ALONG
ELECTRIC GENERATOR LEAD LINE 5 OF 7



Sources: Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

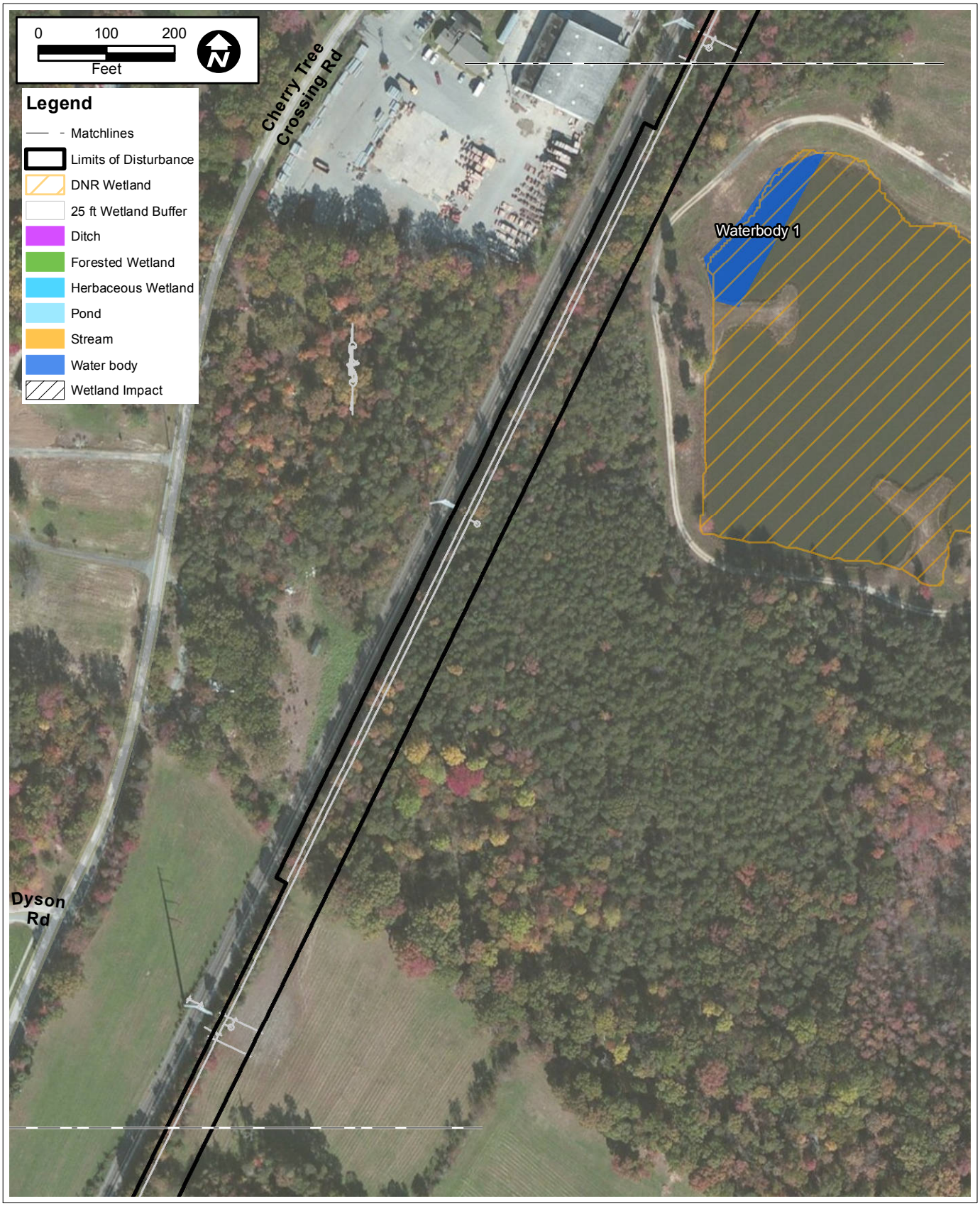
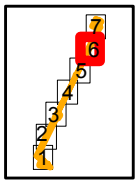


FIGURE 4.
WETLAND IMPACTS ALONG
ELECTRIC GENERATOR LEAD LINE 6 OF 7



Sources: Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

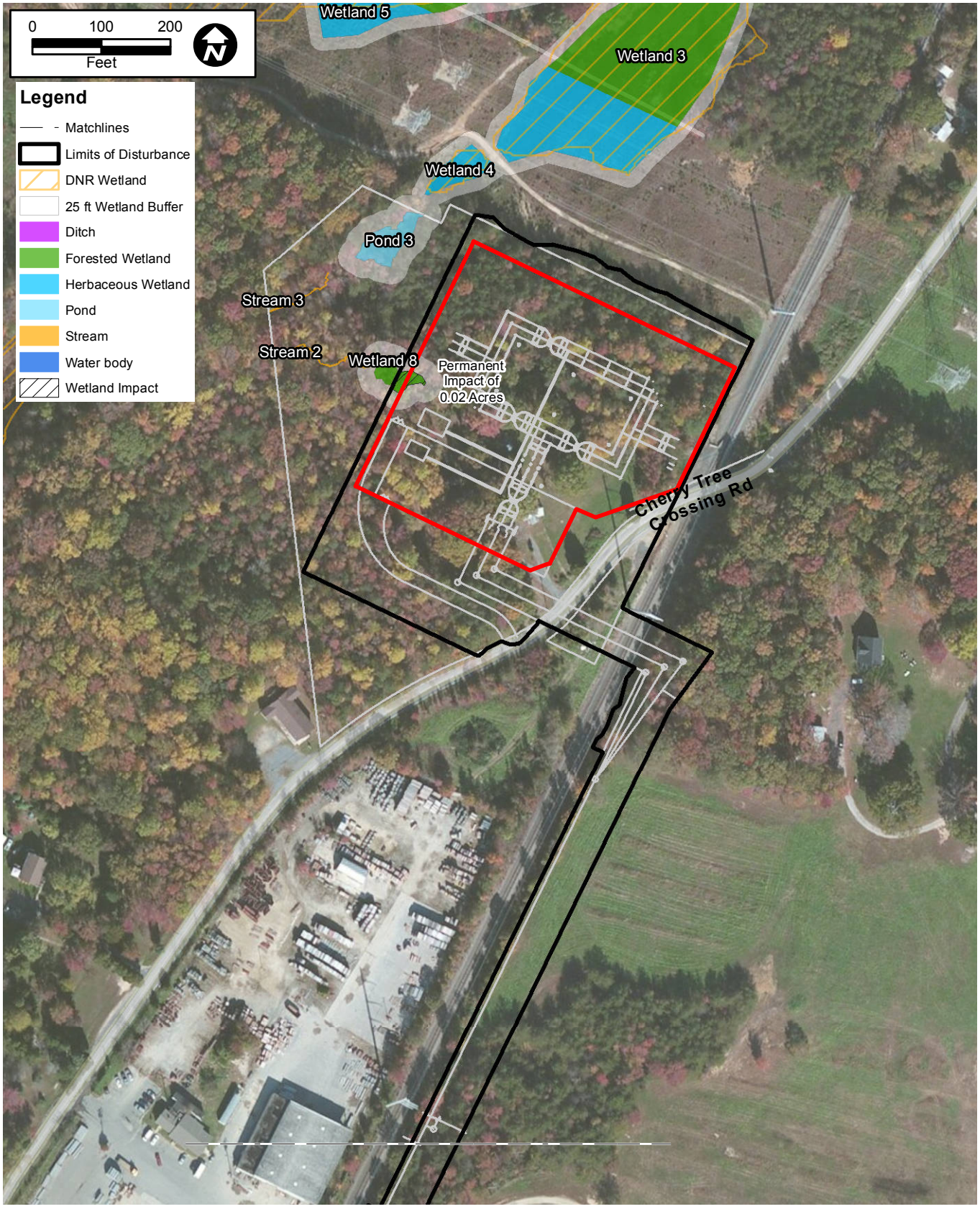
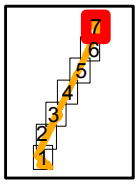


FIGURE 4.
WETLAND IMPACTS ALONG
ELECTRIC GENERATOR LEAD LINE 7 OF 7



Sources: Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

required by the North American Electric Reliability Corporation (NERC). No work is proposed within the stream channel, which will be protected during construction to minimize sediment erosion. However, since it is within the construction corridor, a temporary impact has been assumed. Table 2 provides a summary of the proposed wetland/water body impacts along the generator lead line, which are also depicted on Figure 4. Appendix D provides typical engineering details sheets and Appendix E provides environmental impact and engineering plans prepared by Dewberry.

Table 2. Wetland and Waterbody Impacts within the Generator Lead Line

Wetland ID	Temporary Stream Impact (linear ft)	Temporary PEM Impact (acres)	Temporary POF Conversion (acres)	Permanent POF Conversion (acres)	Permanent POF Fill (acres)	Total Impact (acres)
Wetland 6		0.02		0		0.02
Wetland 1		0.22		0		0.22
Stream 1	191					
Wetland 2				0.02		0.02
Total	191	0.24	0	0.02	0	0.26

Source: ECT 2015

4.2.4 GAS PIPELINE

No permanent fill or structures are proposed within wetlands or waterways along the gas pipeline corridor. Impacts to wetlands have been avoided and minimized by selecting a route primarily along existing linear corridors, minimizing the width of construction, and utilizing specialized construction techniques in especially sensitive locations. Cumulatively, construction of the gas pipeline will result in approximately 9.4 acres of wetland impact. Of these, approximately 6.8 acres are temporary and 2.7 are permanent. Impacts are summarized by type of impact and wetland ID in Table 3 and depicted on Figure 5. Appendix F provides environmental impact and engineering plans prepared by Dewberry.

Pipeline installation through wetlands 13 and 19 will be done using horizontal directional drill. Pipeline installation through the remaining wetlands will be done using open cut trench. Timber mats will be utilized to avoid rutting and further disturbance of the ground

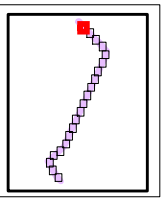
Table 3. Wetland and Water Body Impacts within the Natural Gas Pipeline Corridor

Wetland ID	Temporary Stream Impact (linear ft)	Temporary PEM Impact (acres)	Temporary POF Conversion (acres)	Permanent POF Conversion (acres)	Permanent POF Fill (acres)	Total Impact (acres)
Wetland 2		1.04	1.36	0.27		2.67
Wetland 3		0.20	0.13			0.33
Wetland 4		0.14	0.12	0.02		0.28
Wetland 5b		0.11	0.76	0.47		1.34
Stream 1b	80					
Wetland 6		0.15	0.28	0.09		0.52
Wetland 10		0.07		0.12		0.19
Wetland 12		0.12		0.11		0.23
Wetland 14		0.41		0.13		0.54
Wetland 16		0.08		0.01		0.09
Wetland 17		0.33		0.13		0.46
Wetland 18		0.08		0.14		0.22
Wetland 19		0.44		0.02		0.46
Ditch 1	10					
Wetland 23		0.12		0.05		0.17
Wetland 24		0.08		0.08		0.16
Stream 3	51					
Wetland 25		0.07		0.01		0.08
Wetland 26		0.14		0.07		0.21
Stream 5	134					
Wetland 31			0.46	0.96		1.42
Ditch 3	84					
Wetland 32		0.07				0.07
Total	359	3.65	3.11	2.68	0	9.44

Source: ECT 2015

surface. Following pipe installation, wetlands within the temporary construction corridor will be restored to their original grade and contour, stabilized and allowed to re-vegetate naturally. Trench plugs will be installed where needed to prevent any changes in hydrology. As such, no long term impact to wetlands within the temporary construction corridor should occur. The only permanent wetland impact would be conversion of approximately 2.7 acres of forested wetland to nonforested wetland within the permanent maintenance easement. As previously described, this is needed to maintain the integrity of the gas pipeline from interference with root growth.

FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 1 of 21



Sources: Dewberry, 2015; ECT,2015.

ECT Environmental Consulting & Technology, Inc.

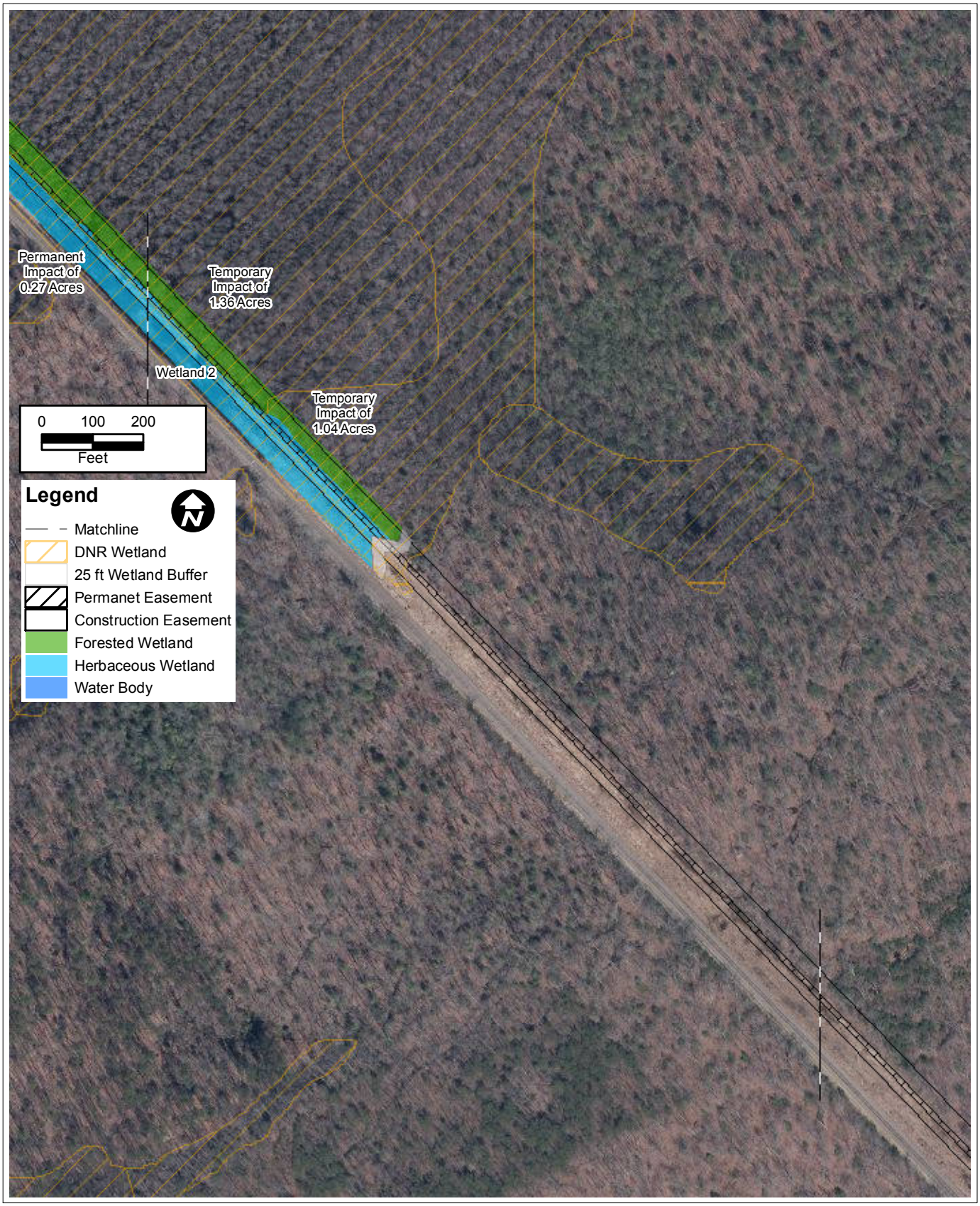
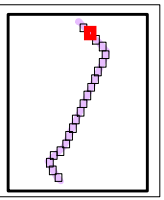


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 2 of 21



Sources: Dewberry, 2015; ECT,2015.

ECT Environmental Consulting & Technology, Inc.

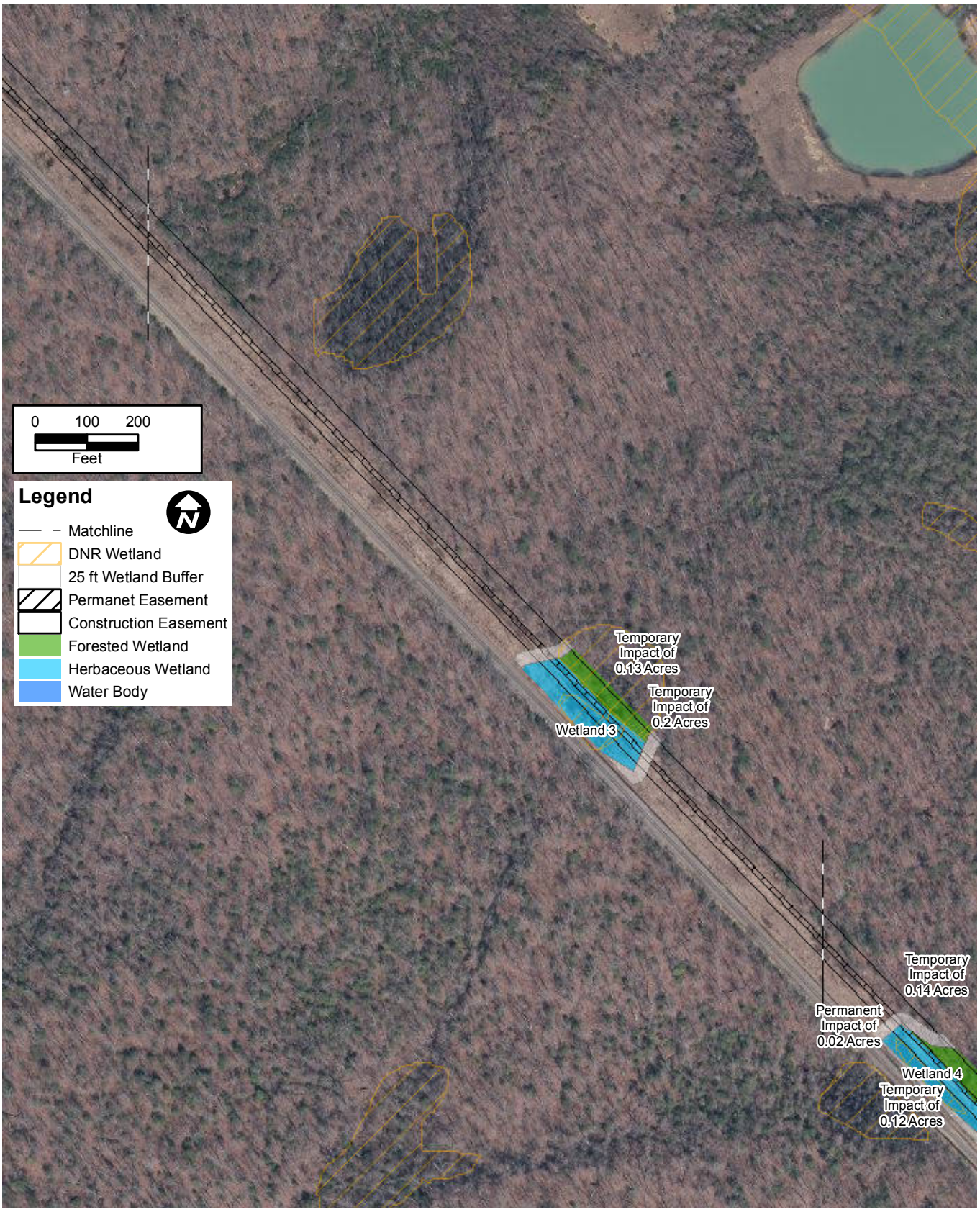
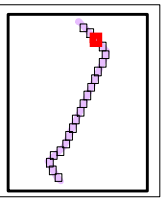


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 3 of 21



Sources: Dewberry, 2015; ECT,2015.

ECT Environmental Consulting & Technology, Inc.

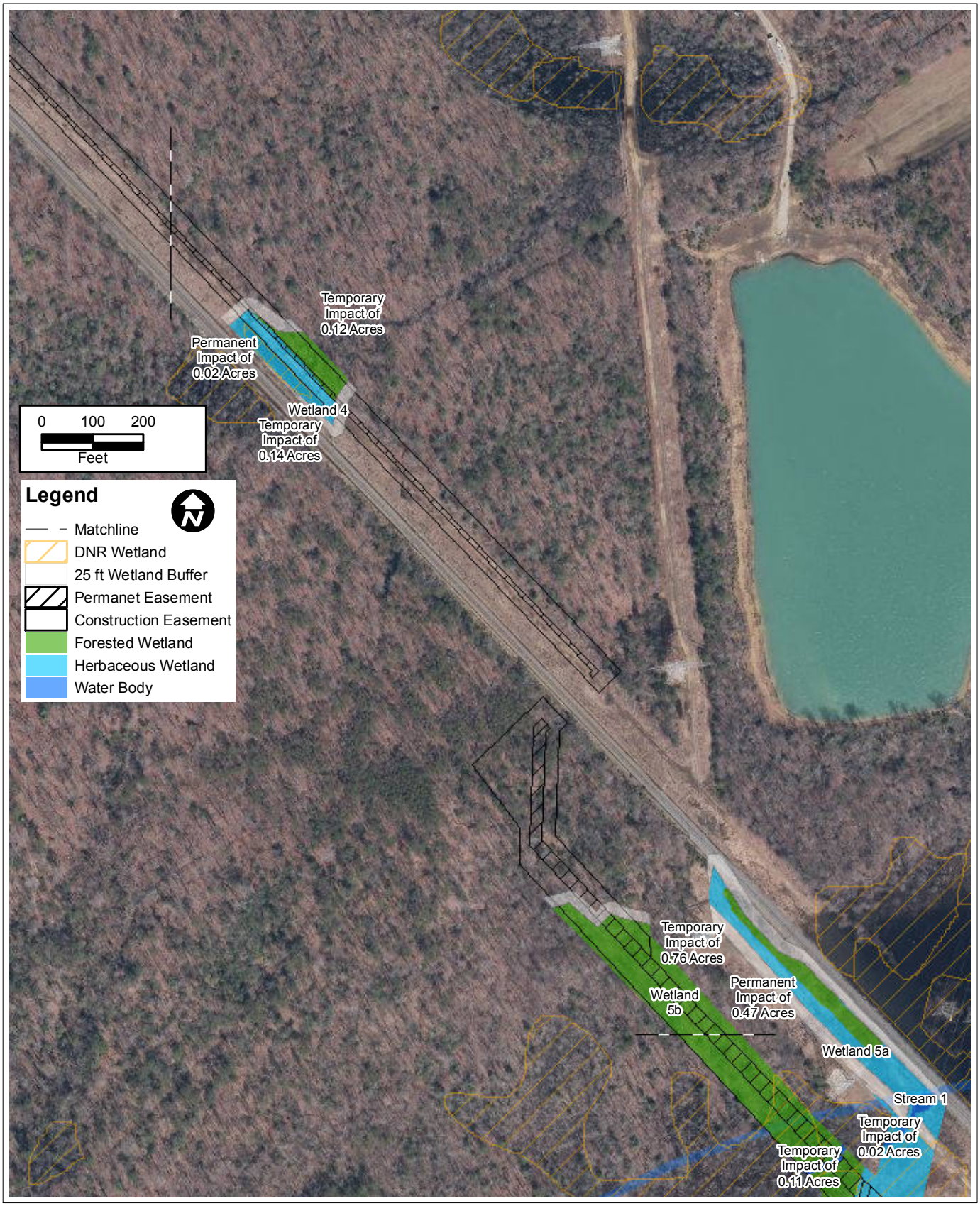
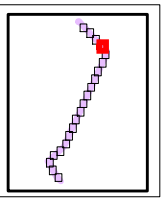


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 4 of 21



Sources: Dewberry, 2015; ECT,2015.

ECT Environmental Consulting & Technology, Inc.

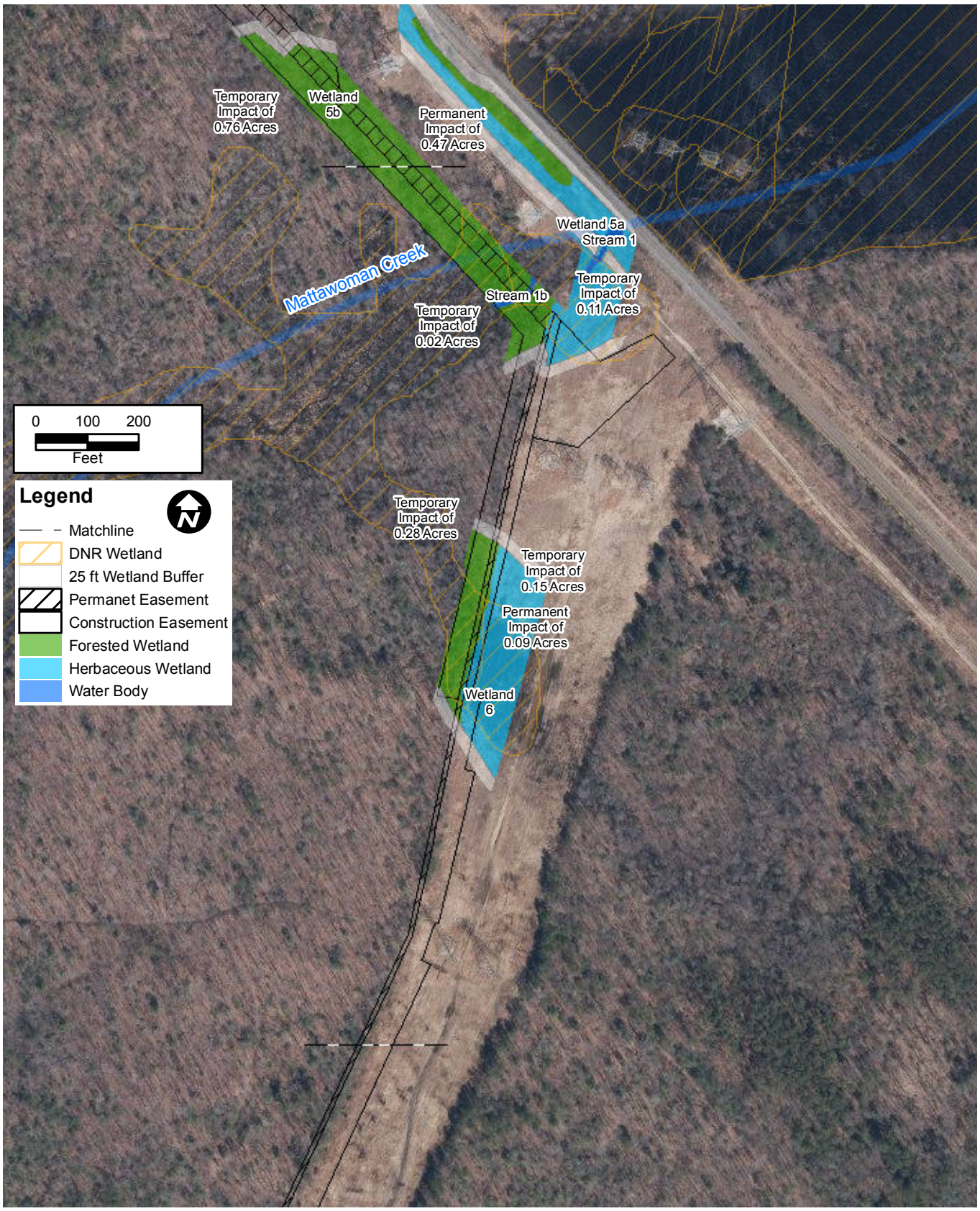
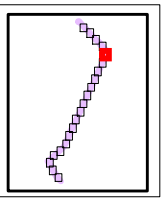


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 5 of 21



Sources: Dewberry, 2015; ECT,2015.

ECT Environmental Consulting & Technology, Inc.

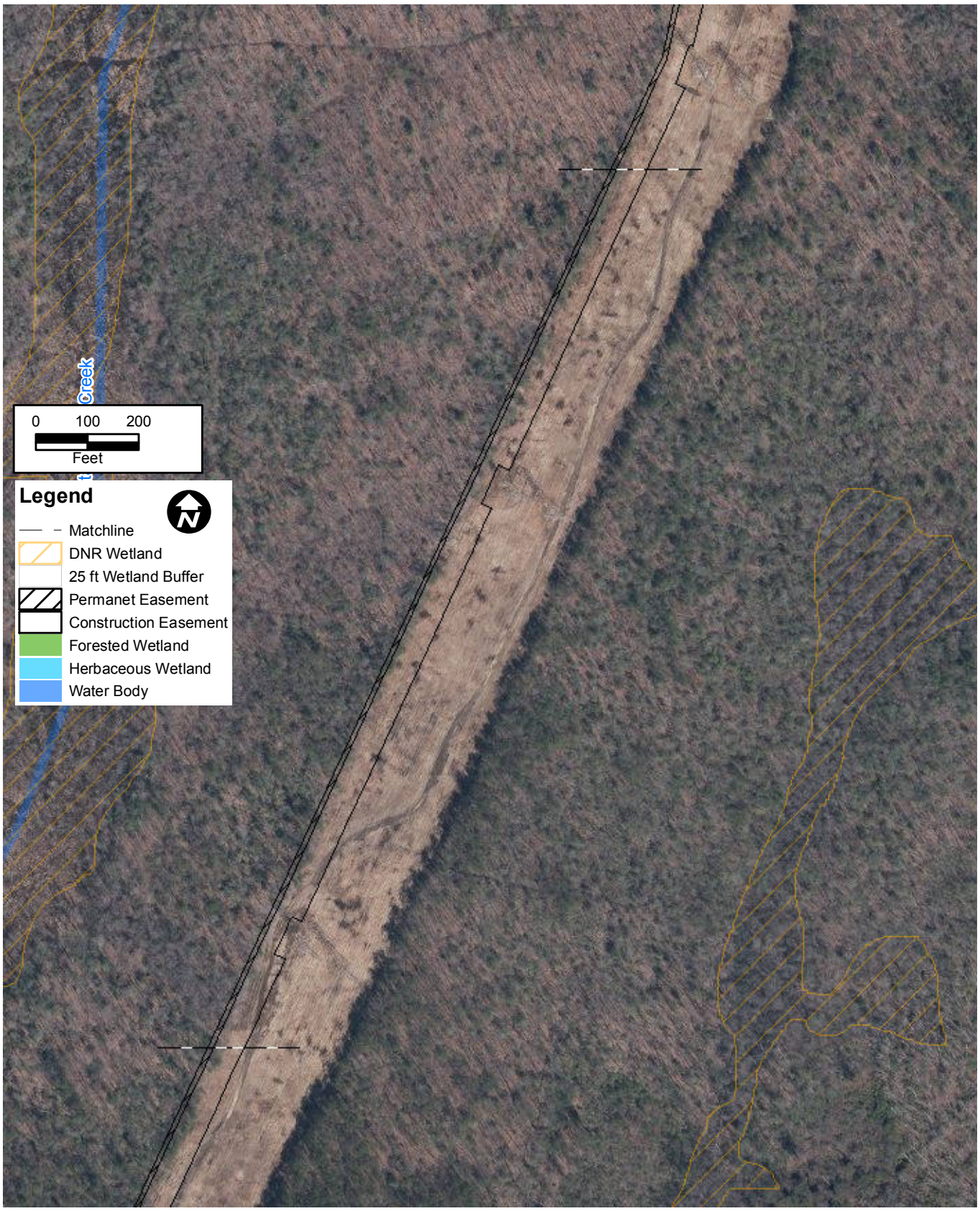
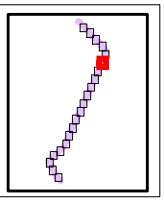


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 6 of 21

Sources: Dewberry, 2015; ECT,2015.



ECT Environmental Consulting & Technology, Inc.

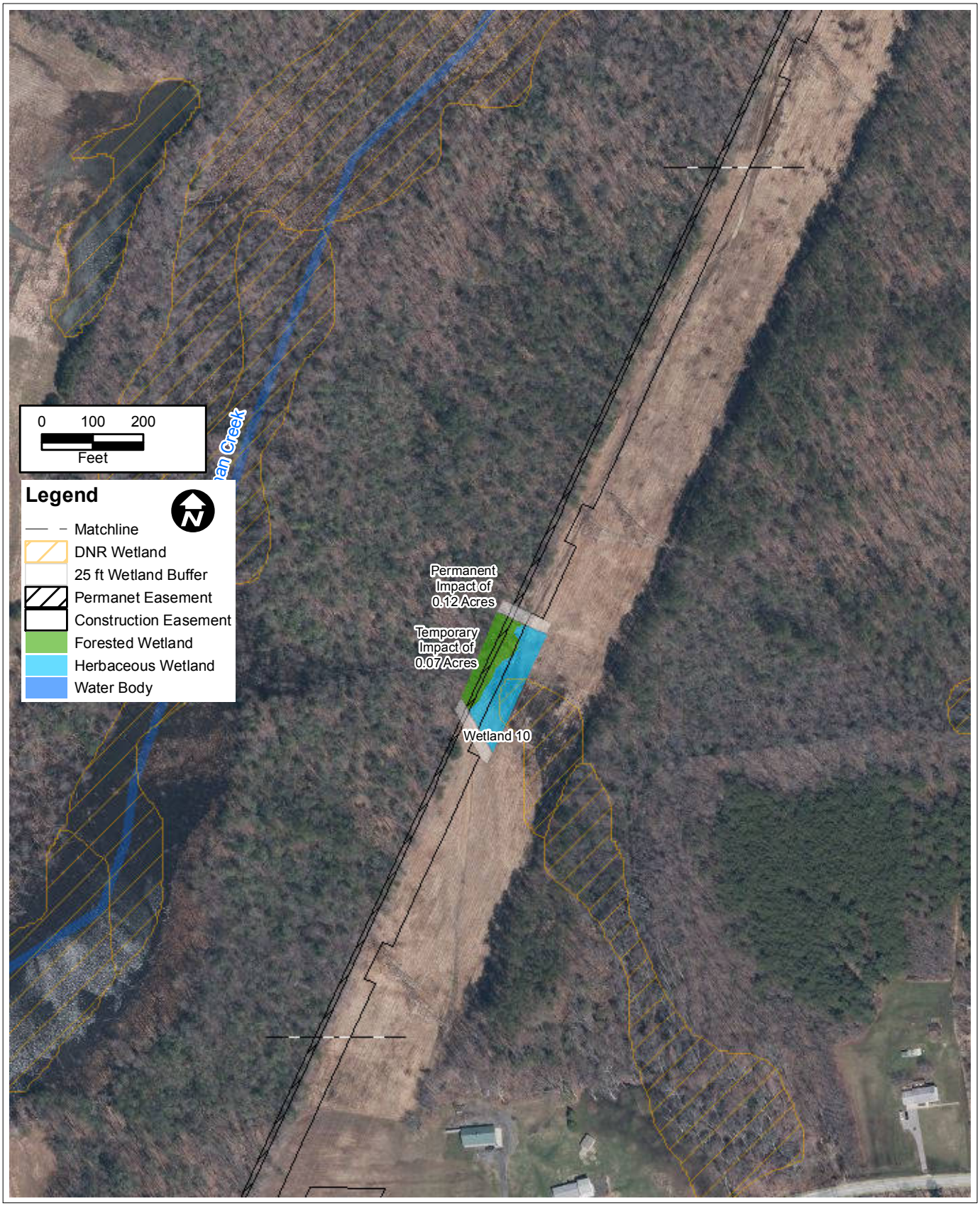
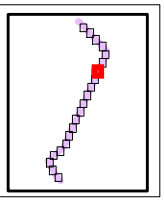


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 7 of 21



Sources: Dewberry, 2015; ECT,2015.

ECT Environmental Consulting & Technology, Inc.

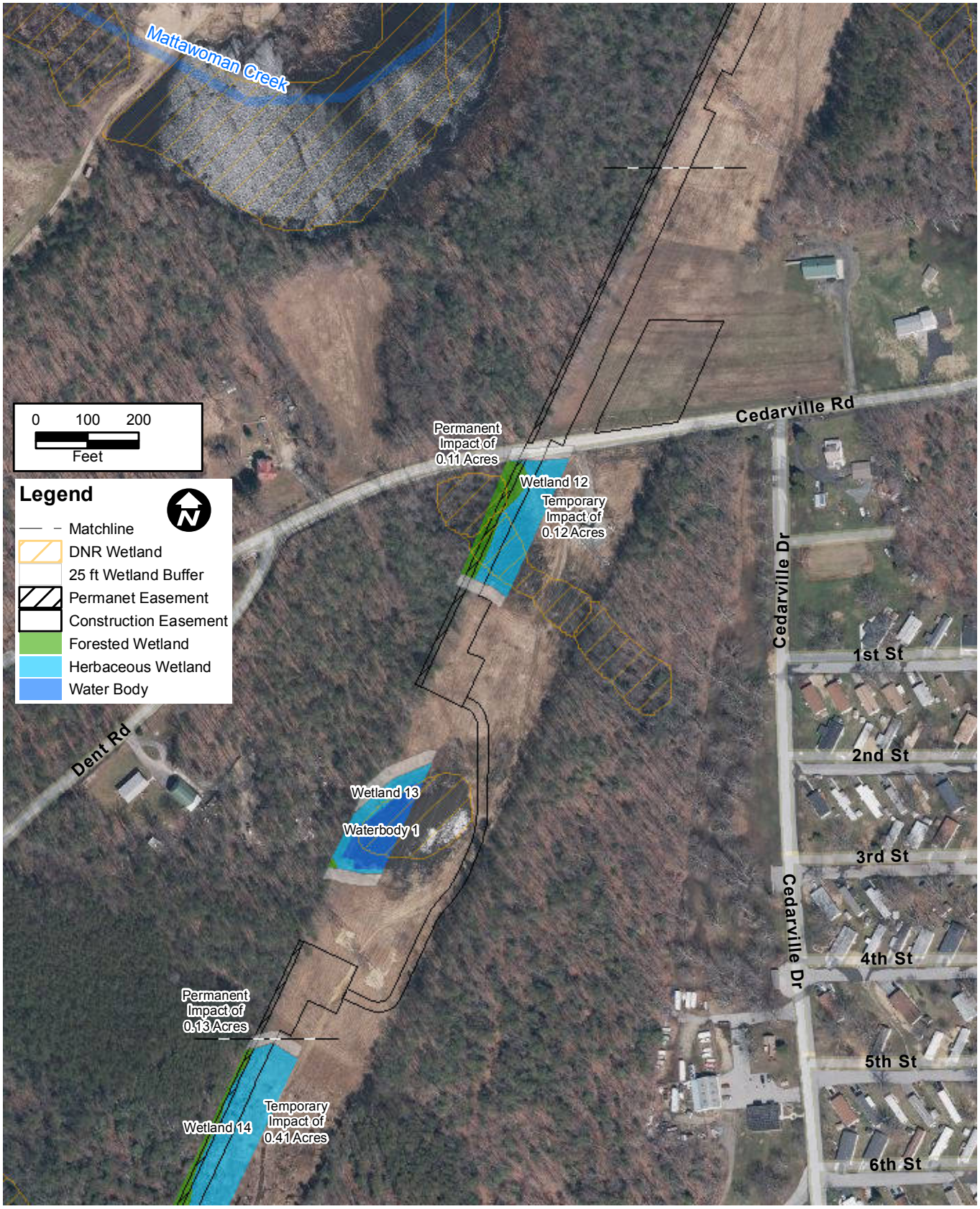
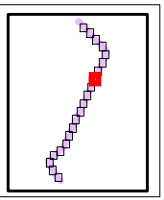


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 8 of 21



Sources: Dewberry, 2015; ECT,2015.

ECT Environmental Consulting & Technology, Inc.

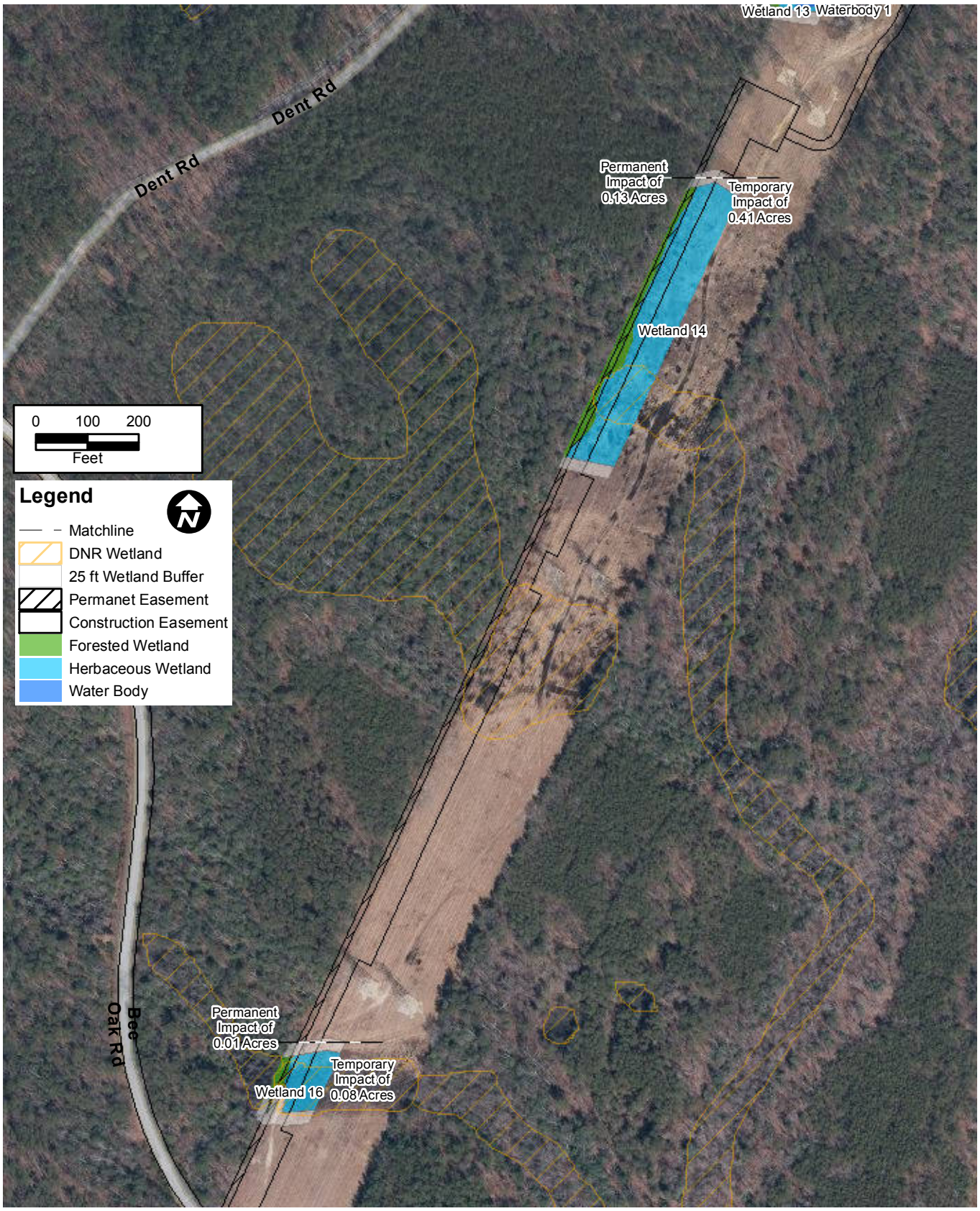
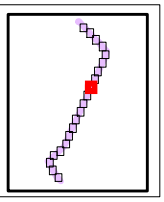


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 9 of 21



Sources: Dewberry, 2015; ECT,2015.

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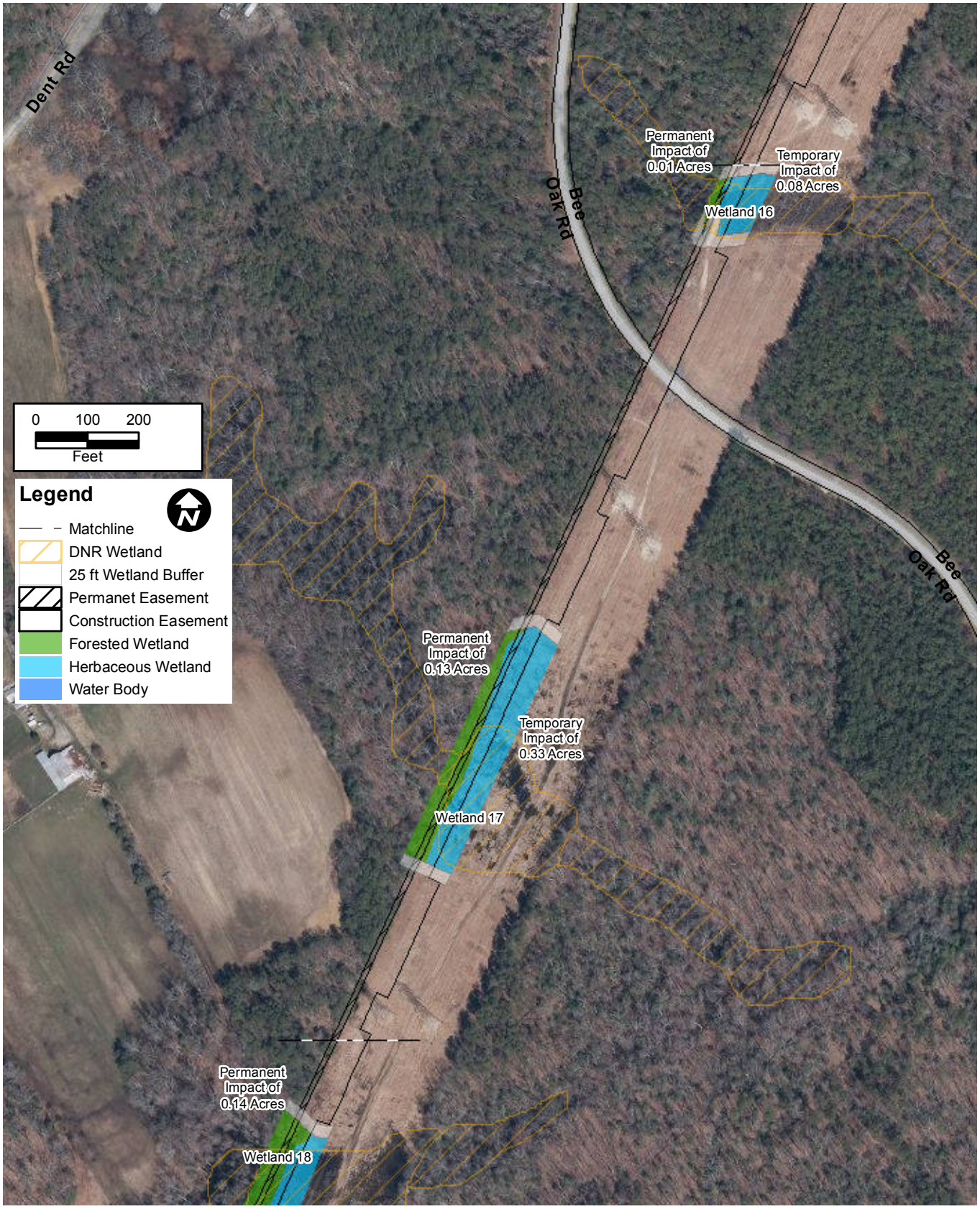
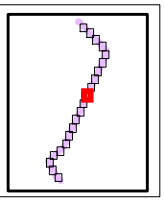


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 10 of 21



Sources: Dewberry, 2015; ECT,2015.

ECT Environmental Consulting & Technology, Inc.

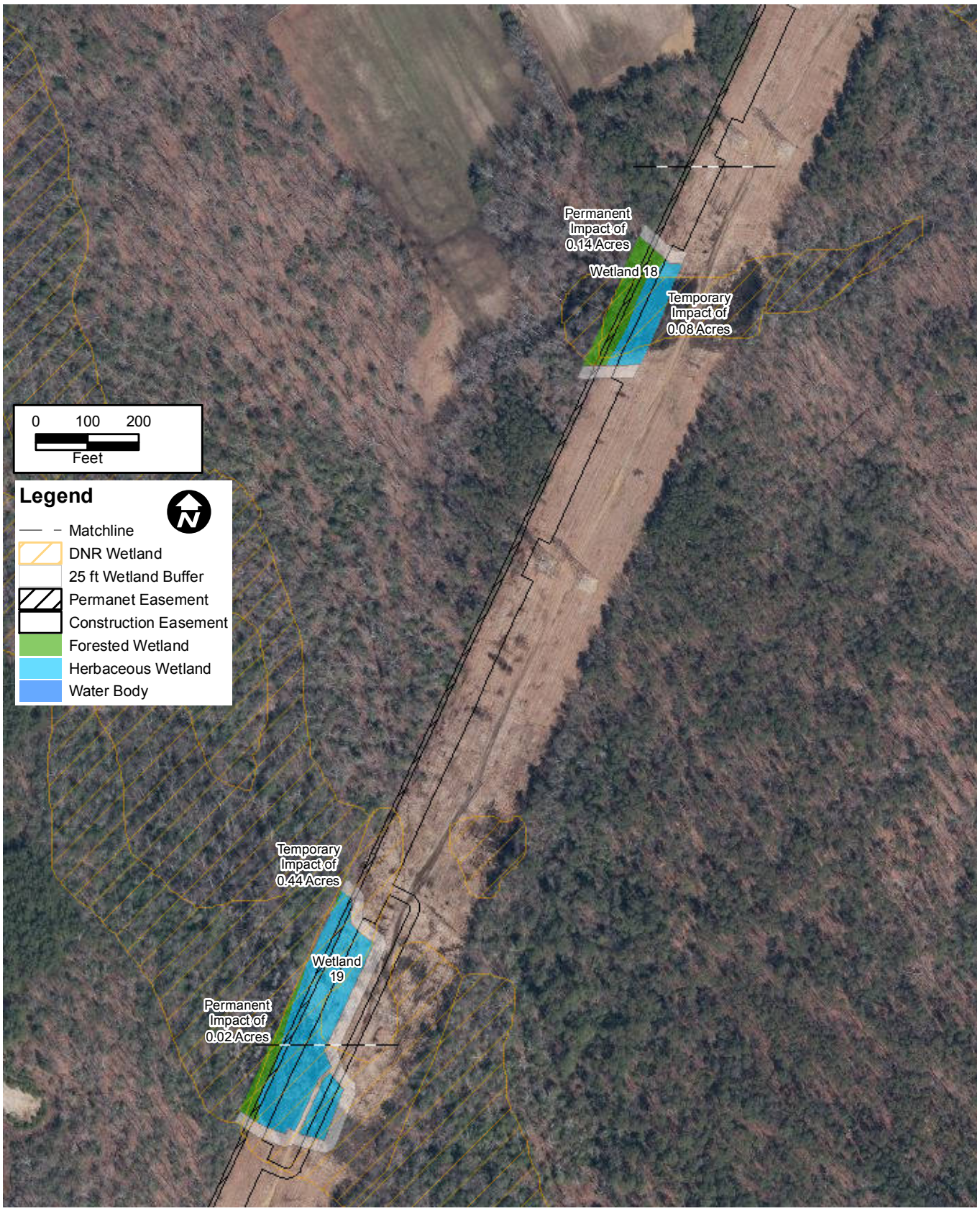
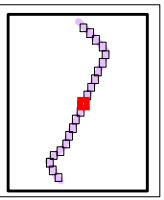


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 11 of 21



Sources: Dewberry, 2015; ECT,2015.

ECT Environmental Consulting & Technology, Inc.

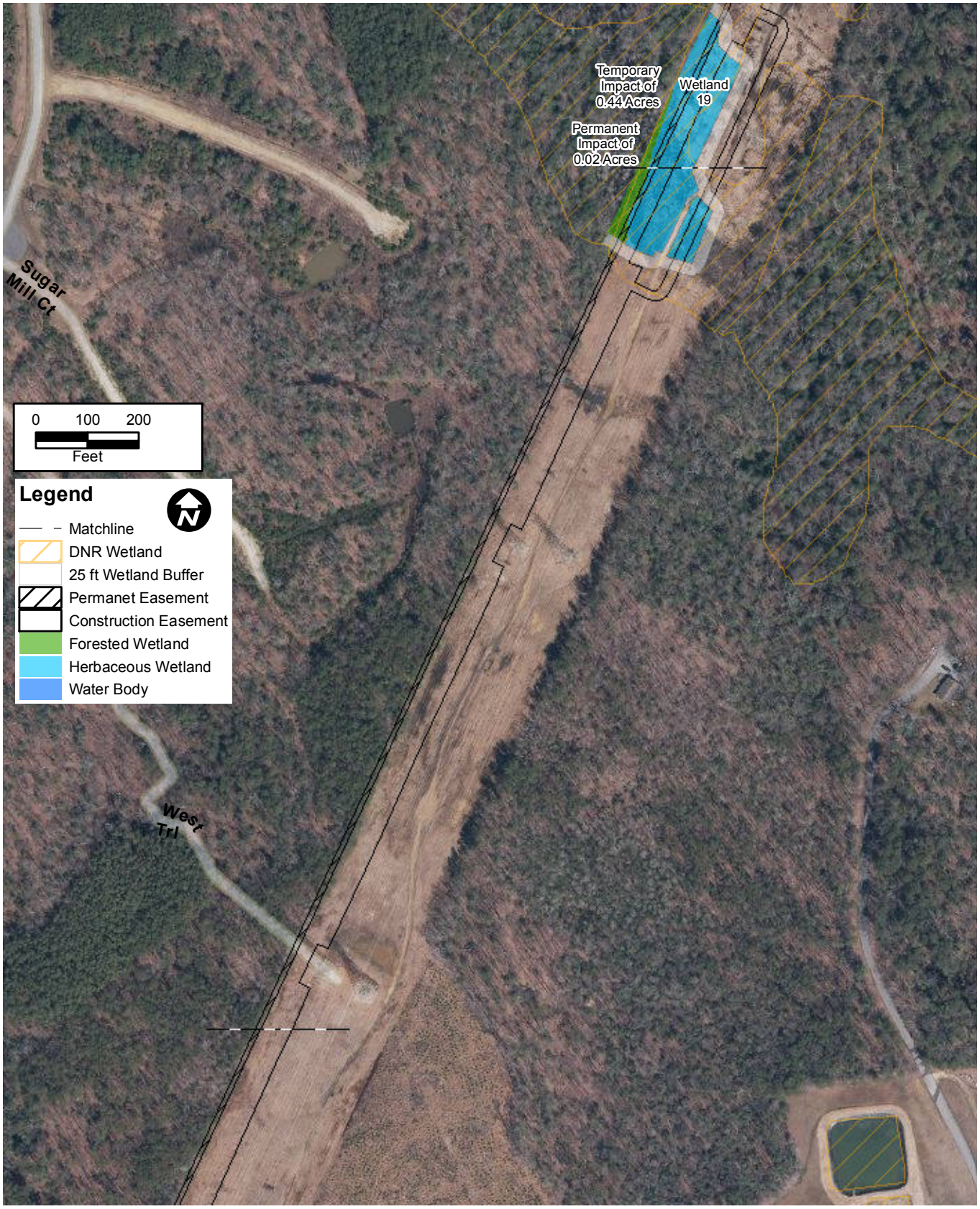
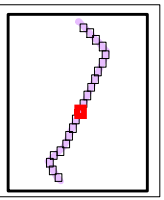


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 12 of 21



Sources: Dewberry, 2015; ECT,2015.

ECT Environmental Consulting & Technology, Inc.

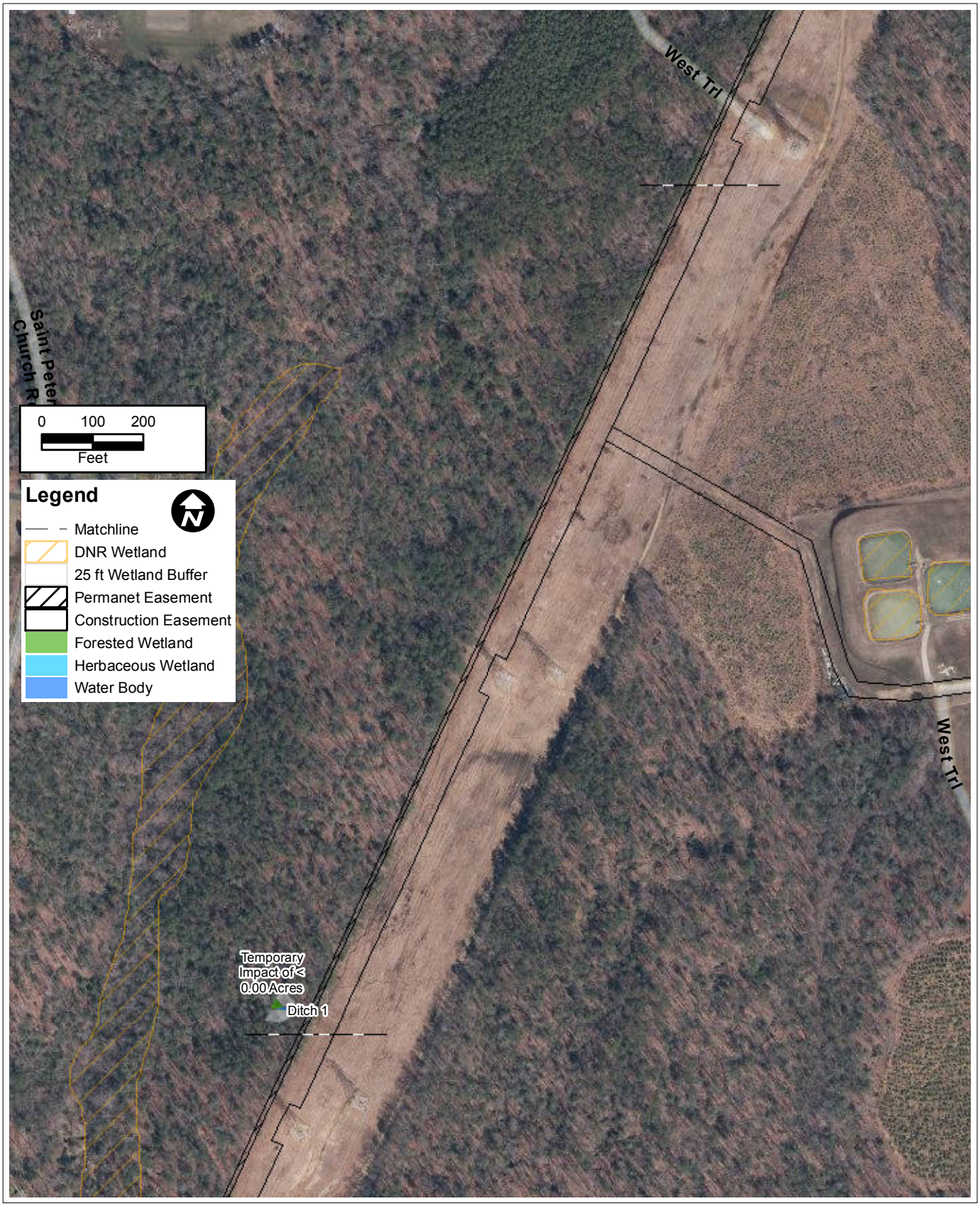
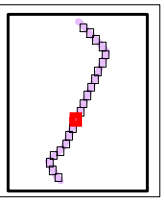


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 13 of 21



Sources: Dewberry, 2015; ECT,2015.

ECT Environmental Consulting & Technology, Inc.

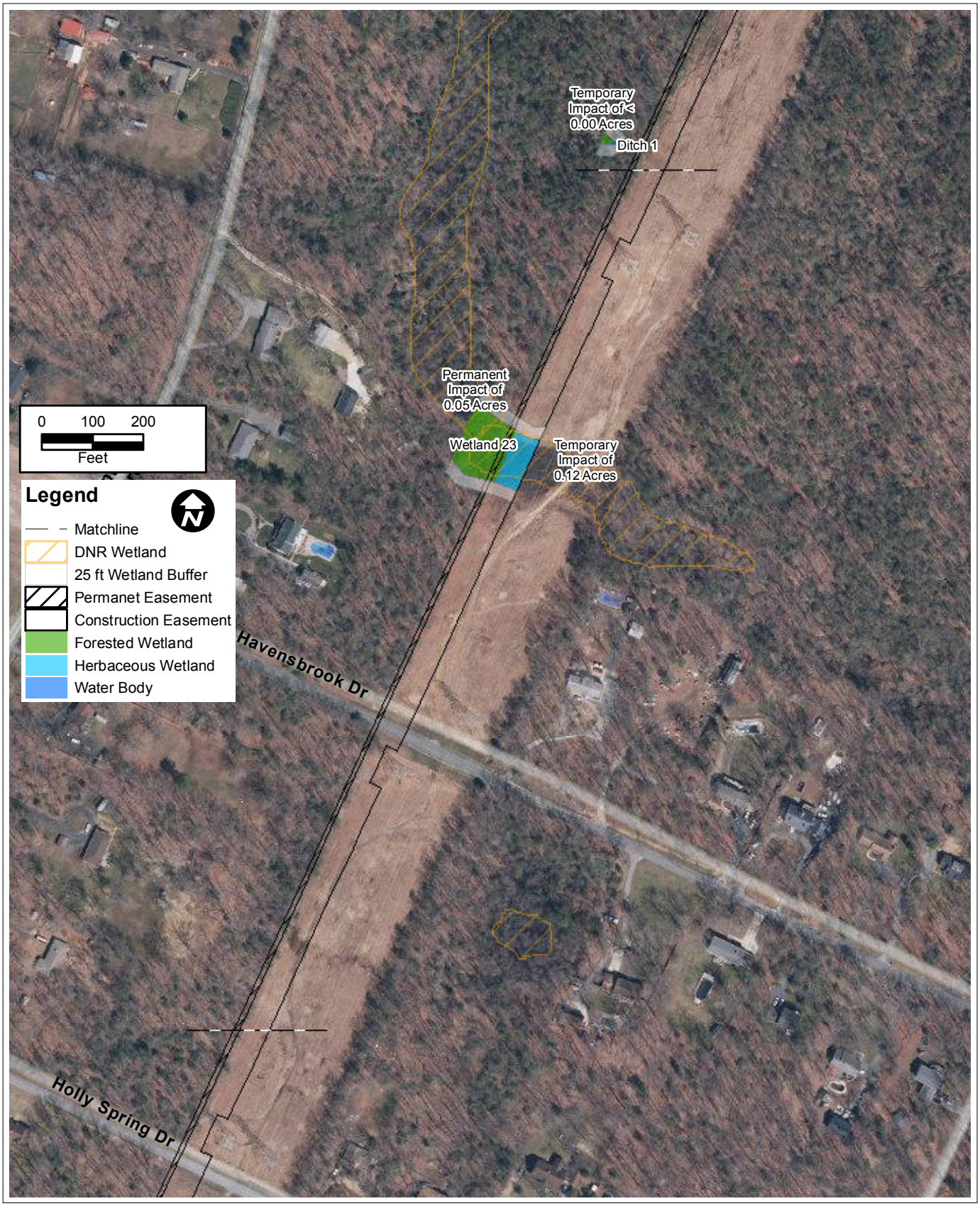
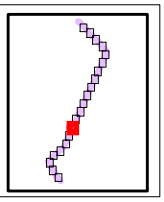


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 14 of 21



Sources: Dewberry, 2015; ECT,2015.

ECT Environmental Consulting & Technology, Inc.

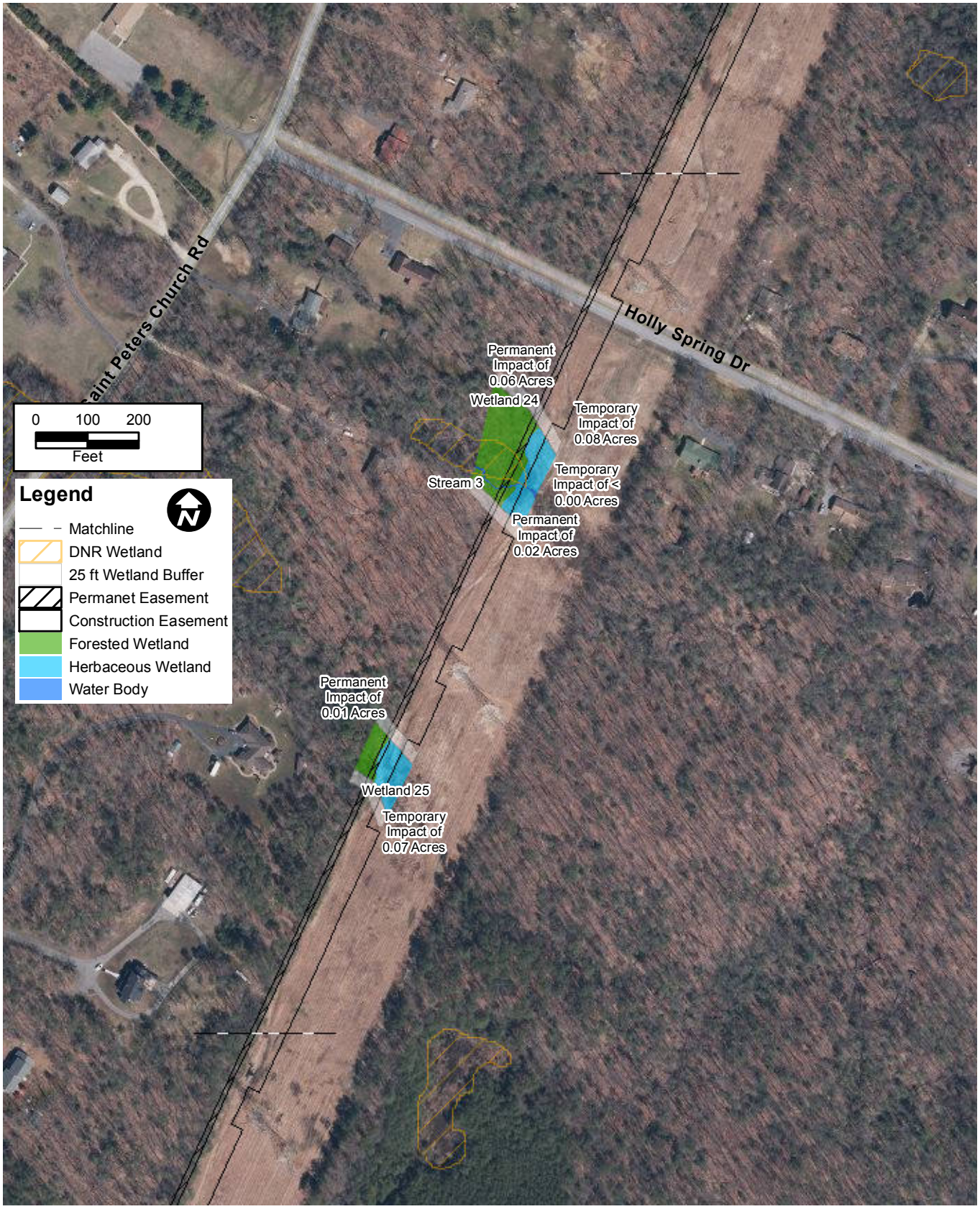
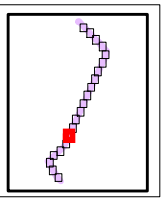


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 15 of 21



Sources: Dewberry, 2015; ECT,2015.

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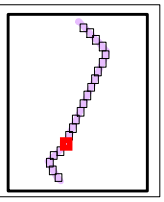
FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 16 of 21

Sources: Dewberry, 2015; ECT,2015.



ECT Environmental Consulting & Technology, Inc.

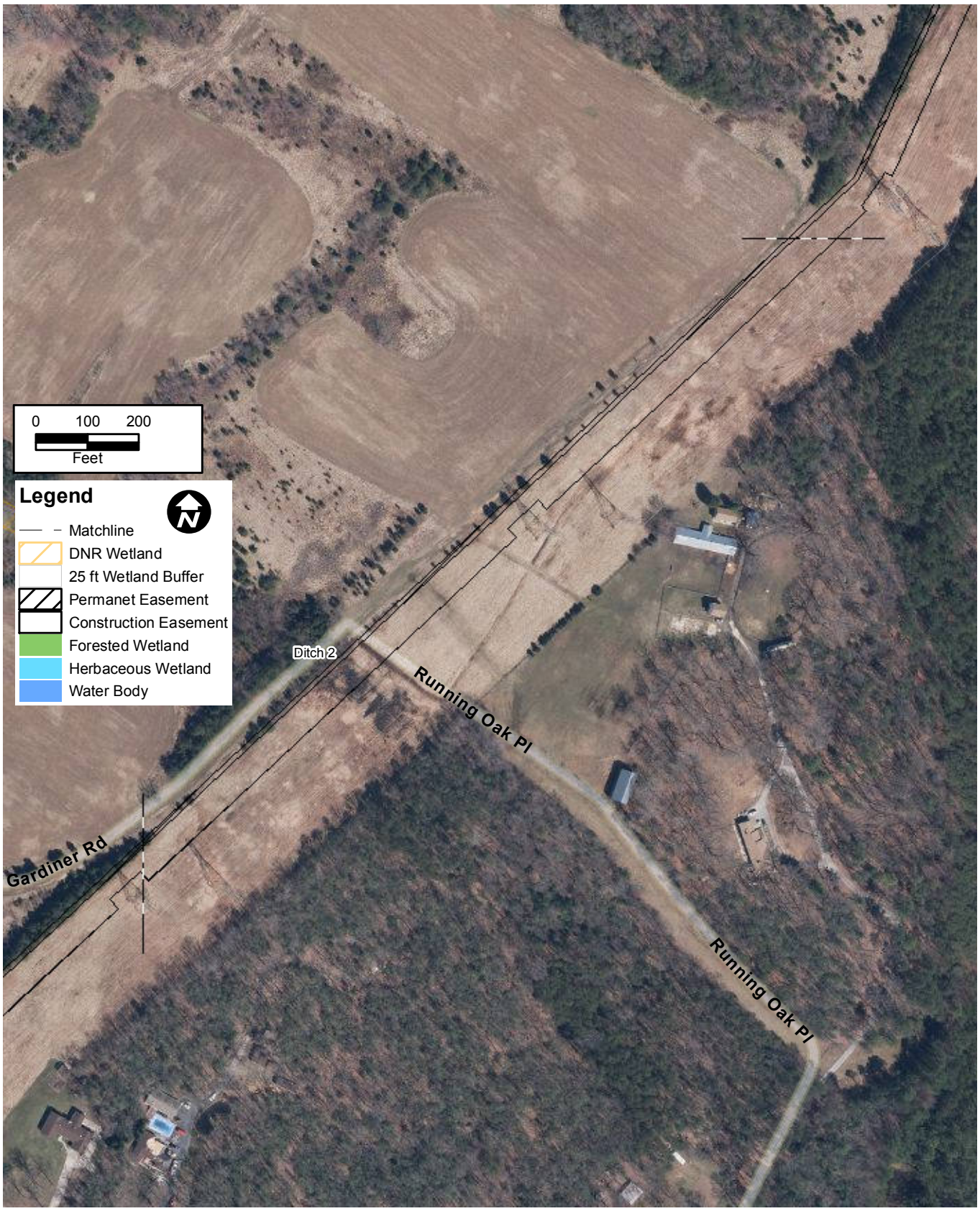
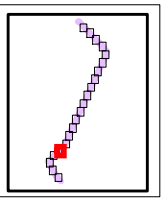


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 17 of 21

Sources: Dewberry, 2015; ECT,2015.



ECT Environmental Consulting & Technology, Inc.

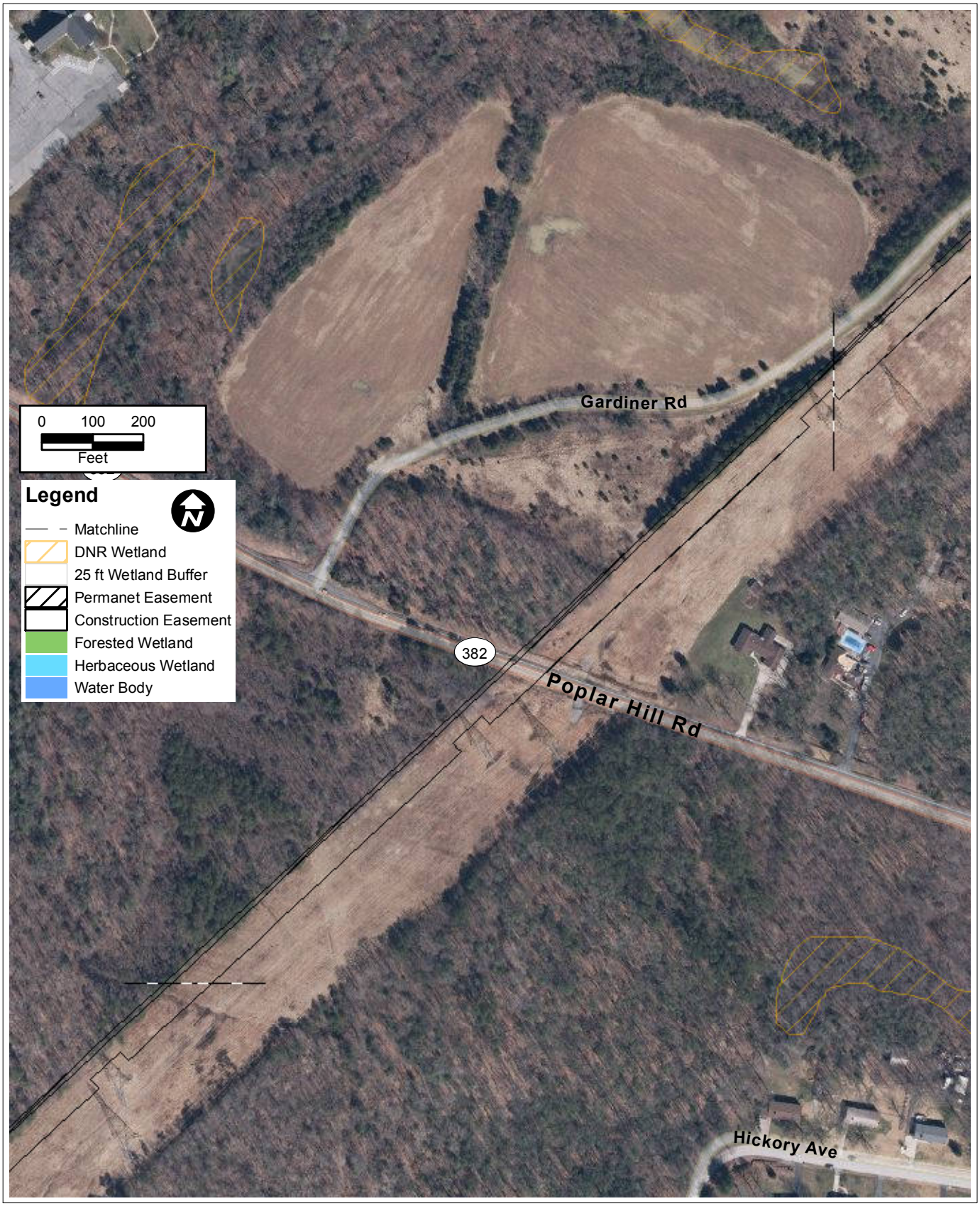
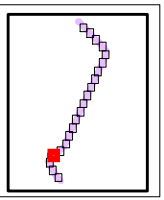


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 18 of 21



Sources: Dewberry, 2015; ECT,2015.

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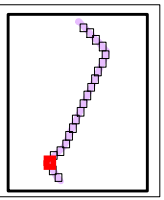
FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 19 of 21

Sources: Dewberry, 2015; ECT,2015.



ECT Environmental Consulting & Technology, Inc.

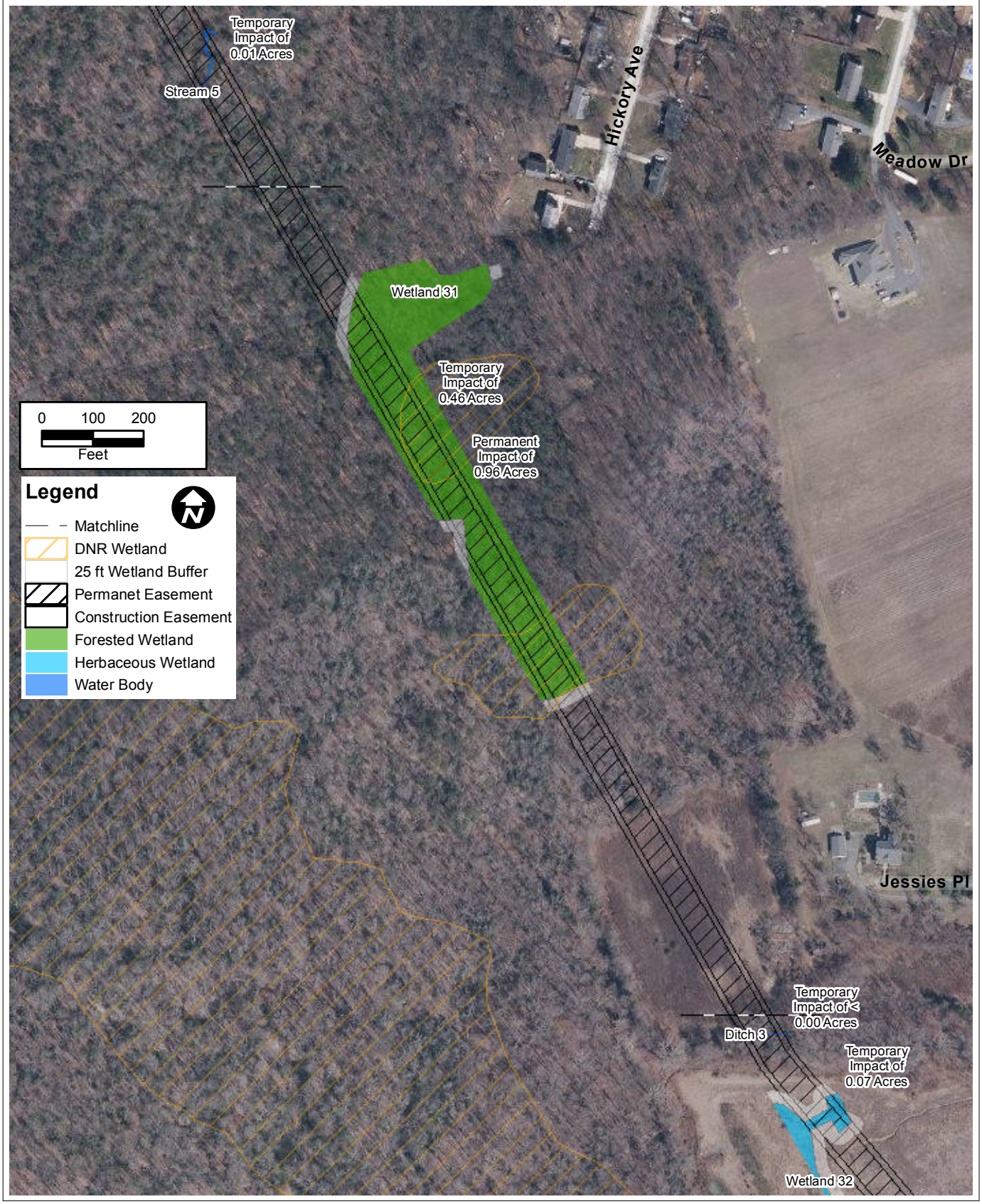
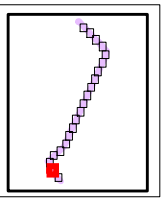


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 20 of 21

Sources: Dewberry, 2015; ECT,2015.



ECT Environmental Consulting & Technology, Inc.

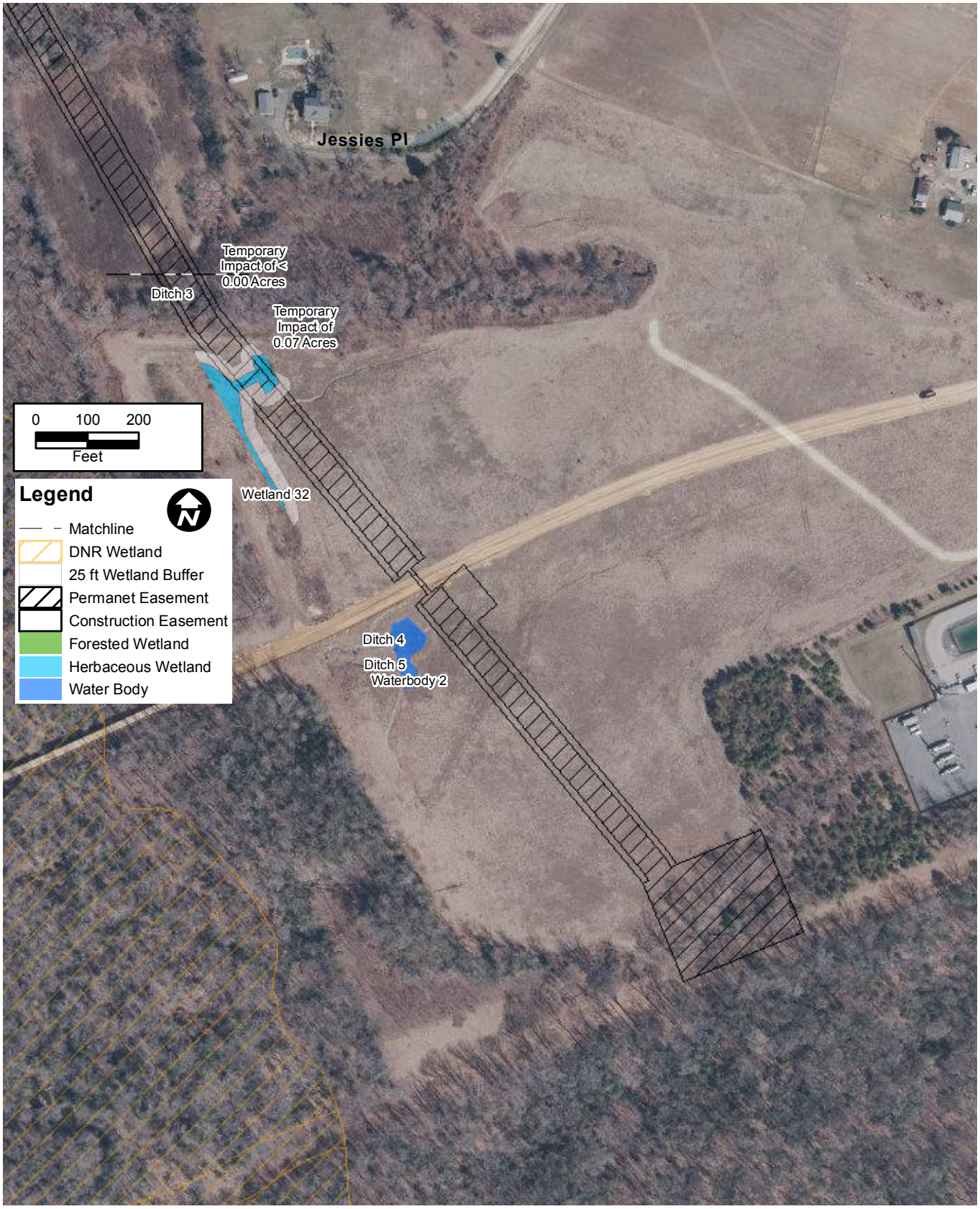
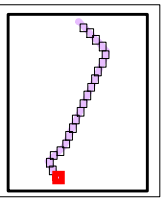


FIGURE 5. (REVISED 5/12/2015)
WETLAND IMPACTS ALONG
GAS PIPELINE 21 of 21

Sources: Dewberry, 2015; ECT,2015.



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Three stream crossings and two ditch crossings are proposed. All crossings will be constructed using open cut. Staging and storage areas including temporary construction easements to accommodate contractor operations are restricted at these locations and are not shown in the immediate vicinity of streams. Best management practices will be used to limit disturbance through streams. Timber mats and/or temporary bridge structure will be utilized to traverse streams and avoid any further disturbance. Silt fence or filter sock will be used to prevent any sediment from flowing into the stream. Trench plugs will be utilized to prevent any changes in hydrology, where needed. A pump bypass method will be used during construction through the flowing streams to allow existing flow to continue.

4.2.5 RECLAIMED WATER PIPELINE

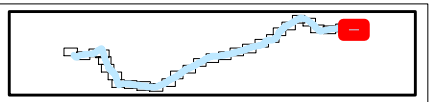
Because the majority of the pipeline will be installed beneath or just adjacent to a roadbed, impacts to the wetlands and waterbodies along the reclaimed water line route will be minimal. As summarized in Table 4 and depicted on Figure 6, less than a 0.35-acre impact will result. Each of the wetland impacts are extremely small and most are temporary. The only permanent impact is to approximately 0.11 acre of forested wetland that will be converted to nonforested wetland. Appendix G contains environmental impact and engineering plans prepared by Dewberry.

Table 4. Wetland and Waterway Impacts within the Reclaimed Water Pipeline Corridor

Wetland ID	Temporary Stream Impact (linear ft)	Temporary PEM Impact (acres)	Temporary POF Conversion (acres)	Permanent POF Conversion (acres)	Permanent POF Fill (acres)	Total Impact (acres)
Stream 9	10					0.00
Ditch 10b	235					0.00
Ditch 6	16					0.00
Wetland 5	102	0.02				0.02
Wetland 6	480	0.08				0.08
Wetland 12	46			0.06		0.06
Wetland 14		0.01				0.01
Wetland 16		0.05				0.05
Wetland 17		0.02				0.02
Wetland 19		0.03		0.02		0.05
Wetland 19a		0.02		0.03		0.05
Total	889	0.23	0	0.11	0	0.34

Source: ECT, 2015.

FIGURE 6. (REVISED 5/8/2015) SHEET 1 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



Matchline
DNR Wetland
25 ft Wetland Buffer
Permanent Easement
Road ROW
Construction Easement
Ditch
Forested Wetland
Herbaceous Wetland
Pond
Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

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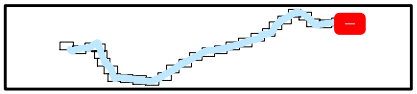
FIGURE 6. (REVISED 5/8/2015) SHEET 2 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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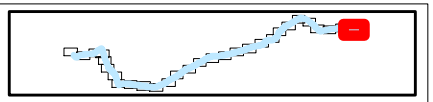
Water body

Sources: Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

FIGURE 6. (REVISED 5/8/2015) SHEET 3 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Sources: Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

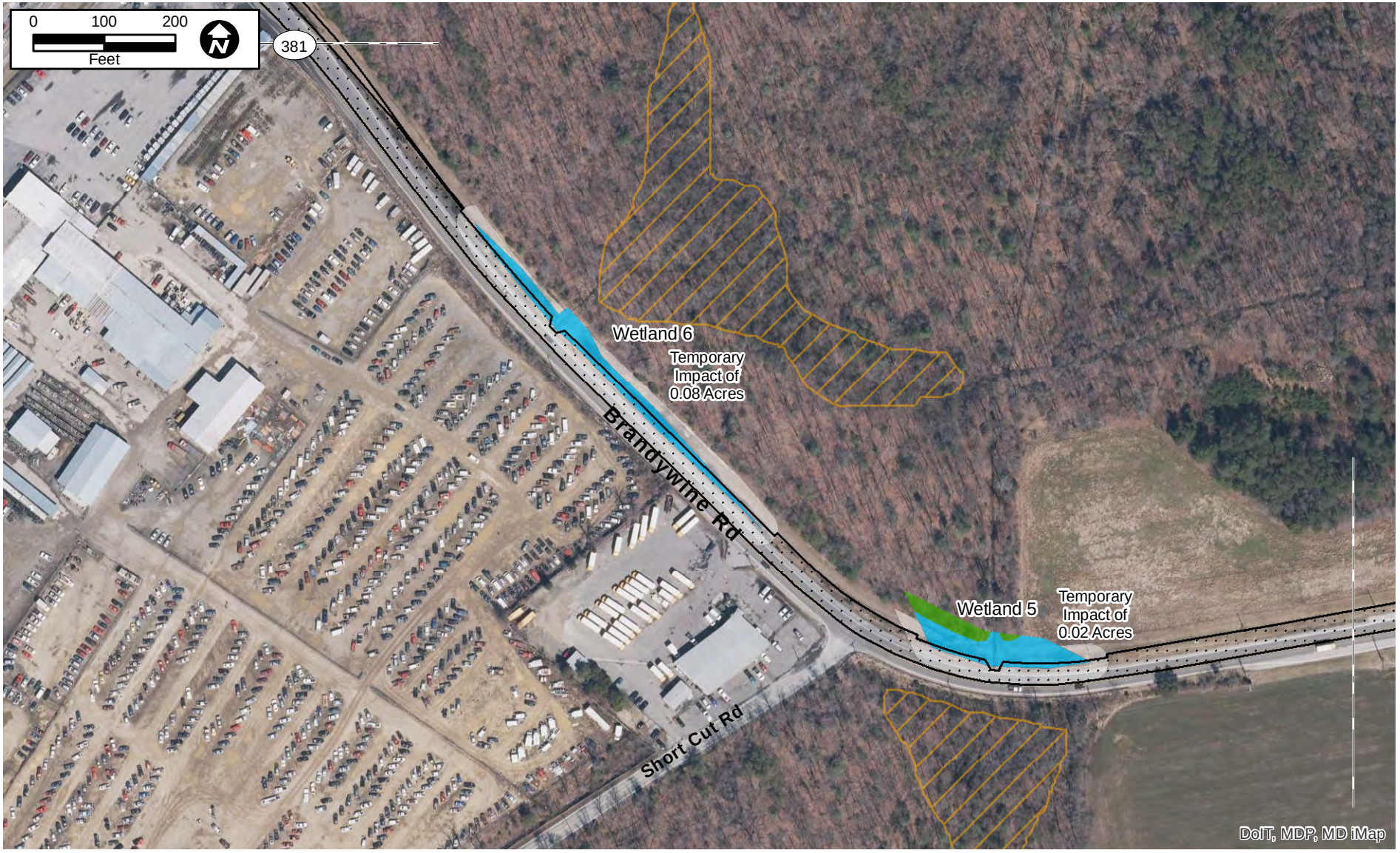
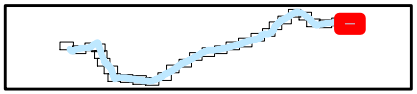


FIGURE 6. (REVISED 5/8/2015) SHEET 4 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Water body

Sources: Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

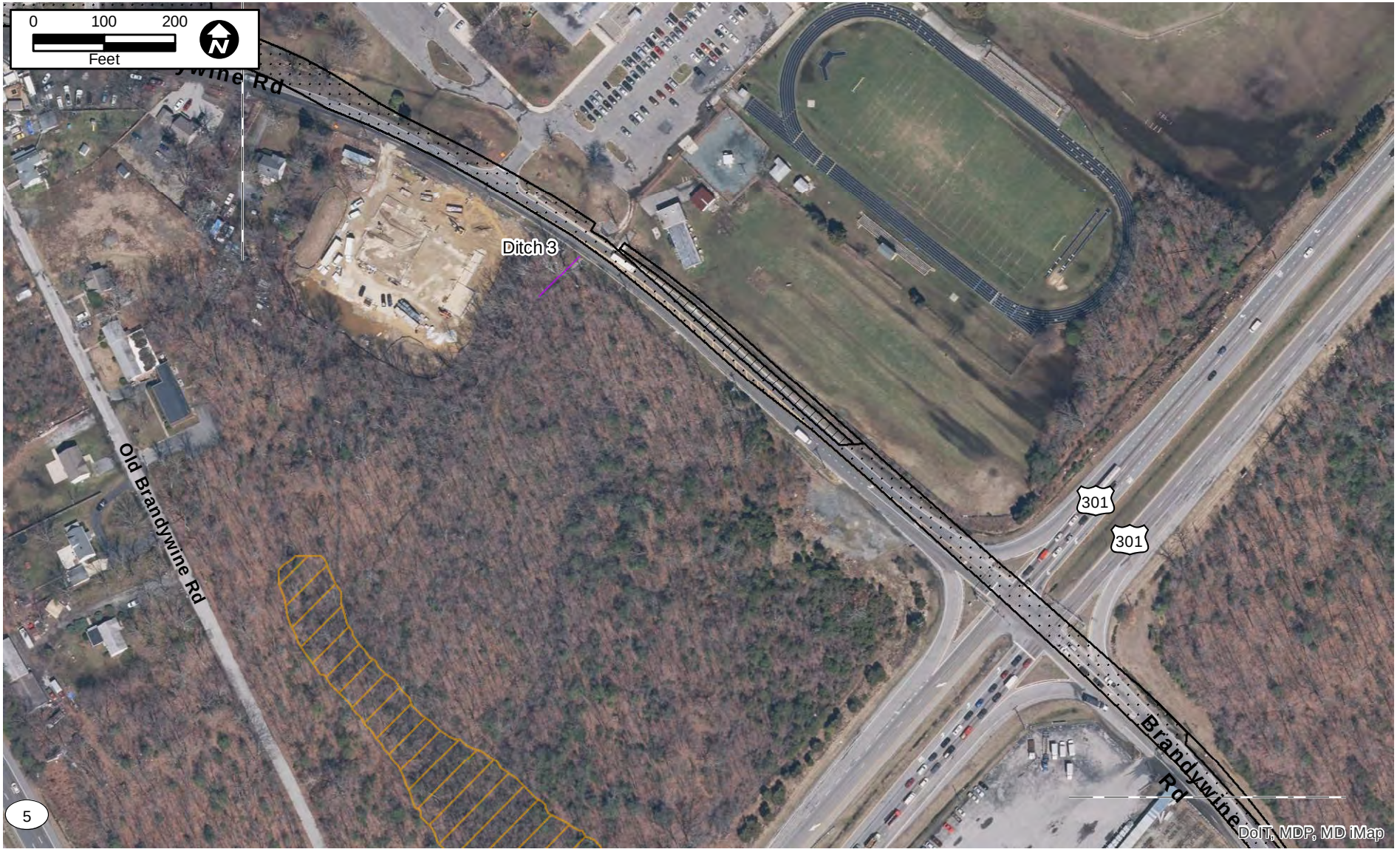
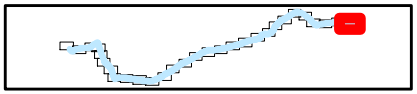


FIGURE 6. (REVISED 5/8/2015) SHEET 5 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Sources: Dewberry, 2015; ECT, 2015.

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FIGURE 6. (REVISED 5/8/2015) SHEET 6 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE

Matchline
DNR Wetland
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Forested Wetland
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Pond
Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

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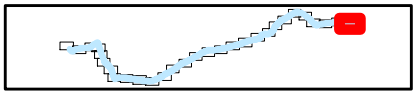
FIGURE 6. (REVISED 5/8/2015) SHEET 7 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Herbaceous Wetland
Pond
Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

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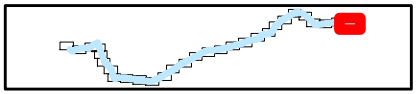
FIGURE 6. (REVISED 5/8/2015) SHEET 8 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Pond
Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

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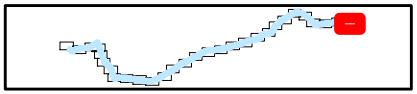
FIGURE 6. (REVISED 5/8/2015) SHEET 9 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Herbaceous Wetland
Pond
Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

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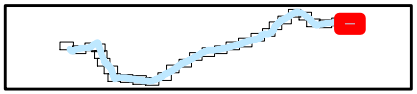
FIGURE 6. (REVISED 5/8/2015) SHEET 10 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Road ROW
Construction Easement
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Forested Wetland
Herbaceous Wetland
Pond
Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

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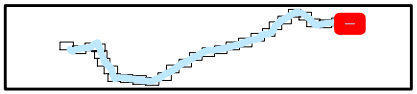
FIGURE 6. (REVISED 5/8/2015) SHEET 11 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Pond
Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

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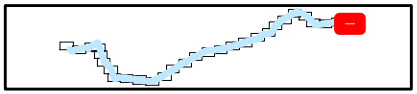
FIGURE 6. (REVISED 5/8/2015) SHEET 12 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Road ROW
Construction Easement
Ditch
Forested Wetland
Herbaceous Wetland
Pond
Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

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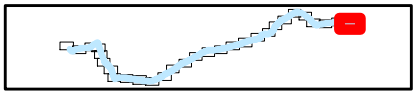
FIGURE 6. (REVISED 5/8/2015) SHEET 13 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Pond
Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

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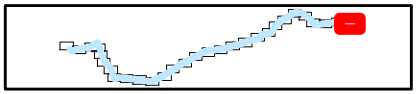
FIGURE 6. (REVISED 5/8/2015) SHEET 14 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Pond
Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

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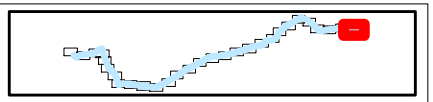
FIGURE 6. (REVISED 5/8/2015) SHEET 15 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



Matchline
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Forested Wetland
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Sources: Dewberry, 2015; ECT, 2015.

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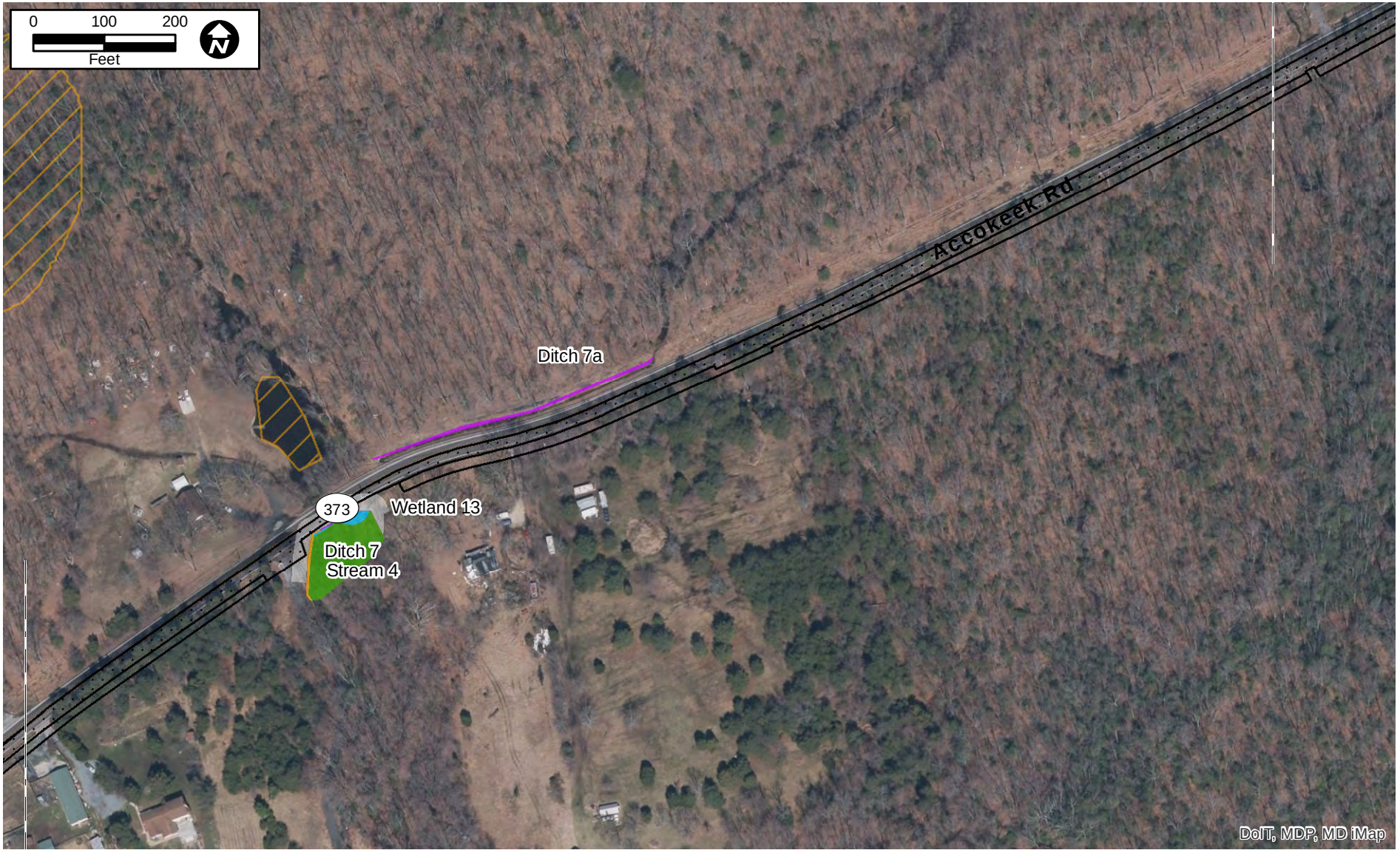
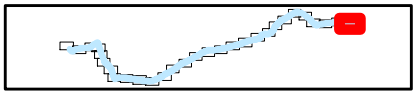


FIGURE 6. (REVISED 5/8/2015) SHEET 16 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



Matchline
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Construction Easement
Ditch
Forested Wetland
Herbaceous Wetland
Pond
Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

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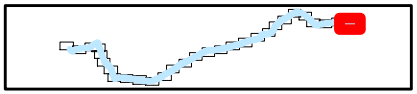
FIGURE 6. (REVISED 5/8/2015) SHEET 17 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

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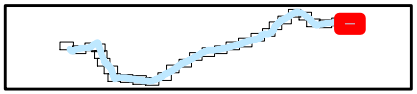
FIGURE 6. (REVISED 5/8/2015) SHEET 18 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Water body

Sources: Dewberry, 2015; ECT, 2015.

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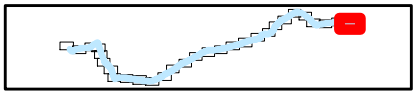
FIGURE 6. (REVISED 5/8/2015) SHEET 19 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Sources: Dewberry, 2015; ECT, 2015.

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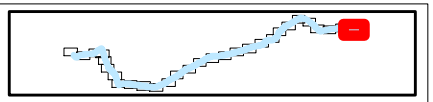
FIGURE 6. (REVISED 5/8/2015) SHEET 20 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Sources: Dewberry, 2015; ECT, 2015.

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FIGURE 6. (REVISED 5/8/2015) SHEET 21 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE

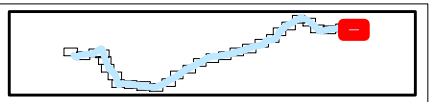

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FIGURE 6. (REVISED 5/8/2015) SHEET 22 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE

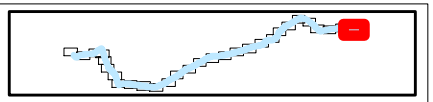

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FIGURE 6. (REVISED 5/8/2015) SHEET 23 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE

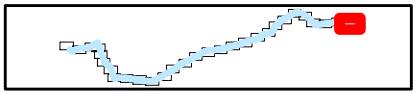

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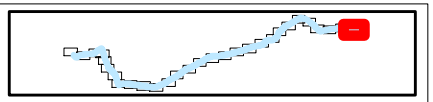
FIGURE 6. (REVISED 5/8/2015) SHEET 24 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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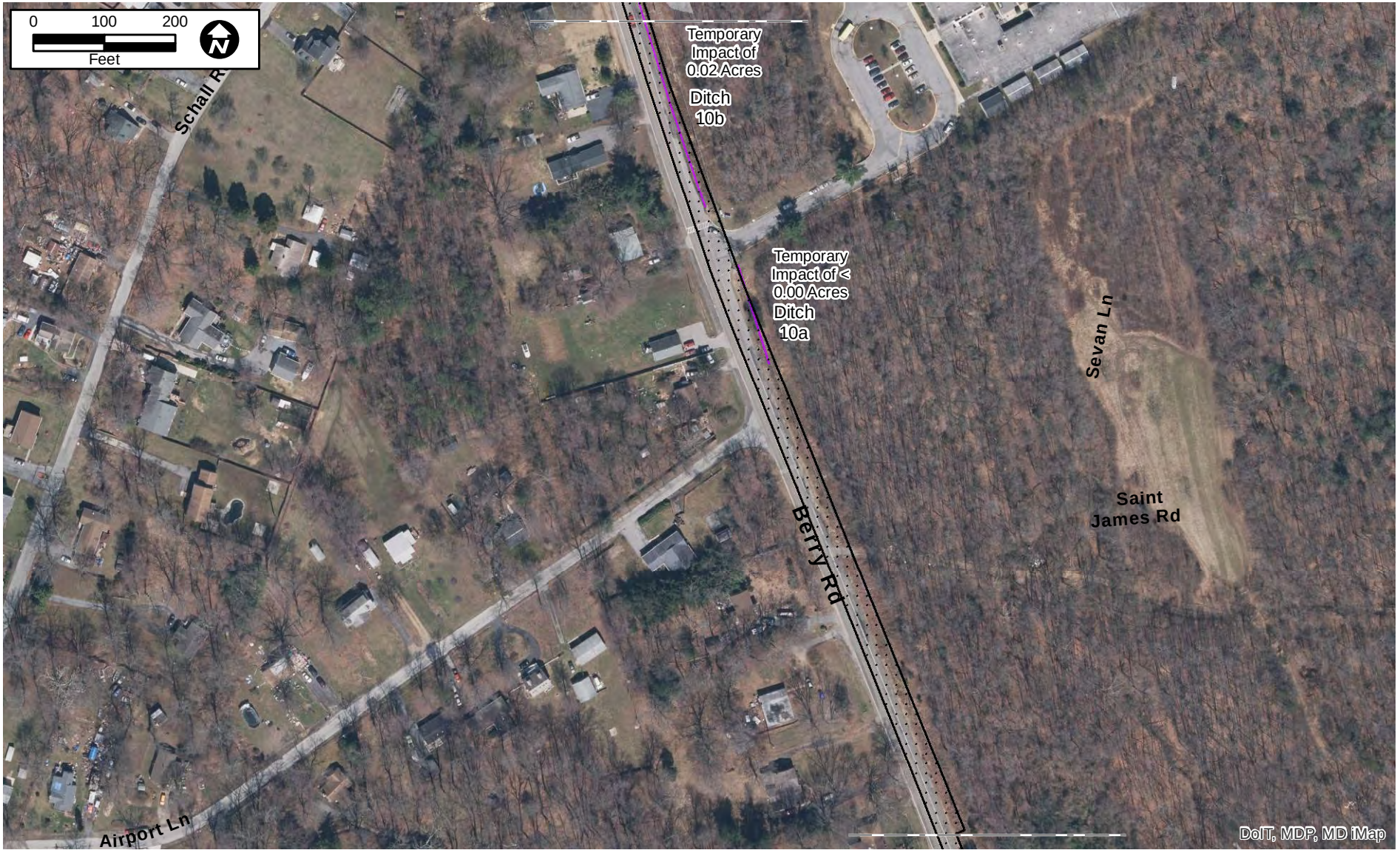
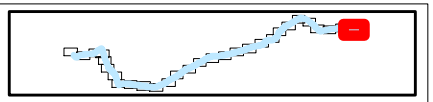


FIGURE 6. (REVISED 5/8/2015) SHEET 25 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Sources: Dewberry, 2015; ECT, 2015.

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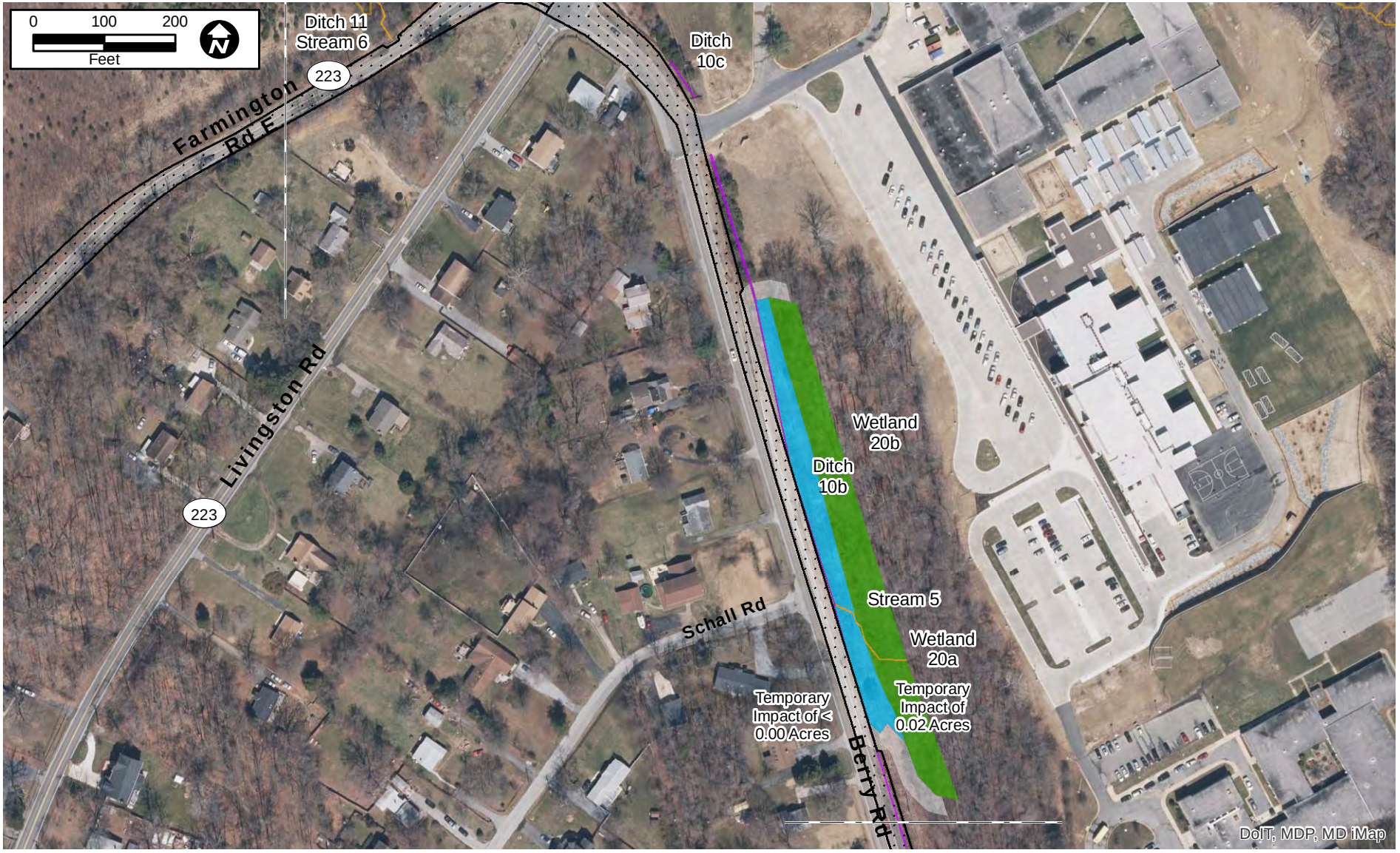
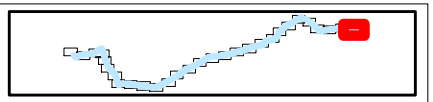


FIGURE 6. (REVISED 5/8/2015) SHEET 26 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Sources: Dewberry, 2015; ECT, 2015.

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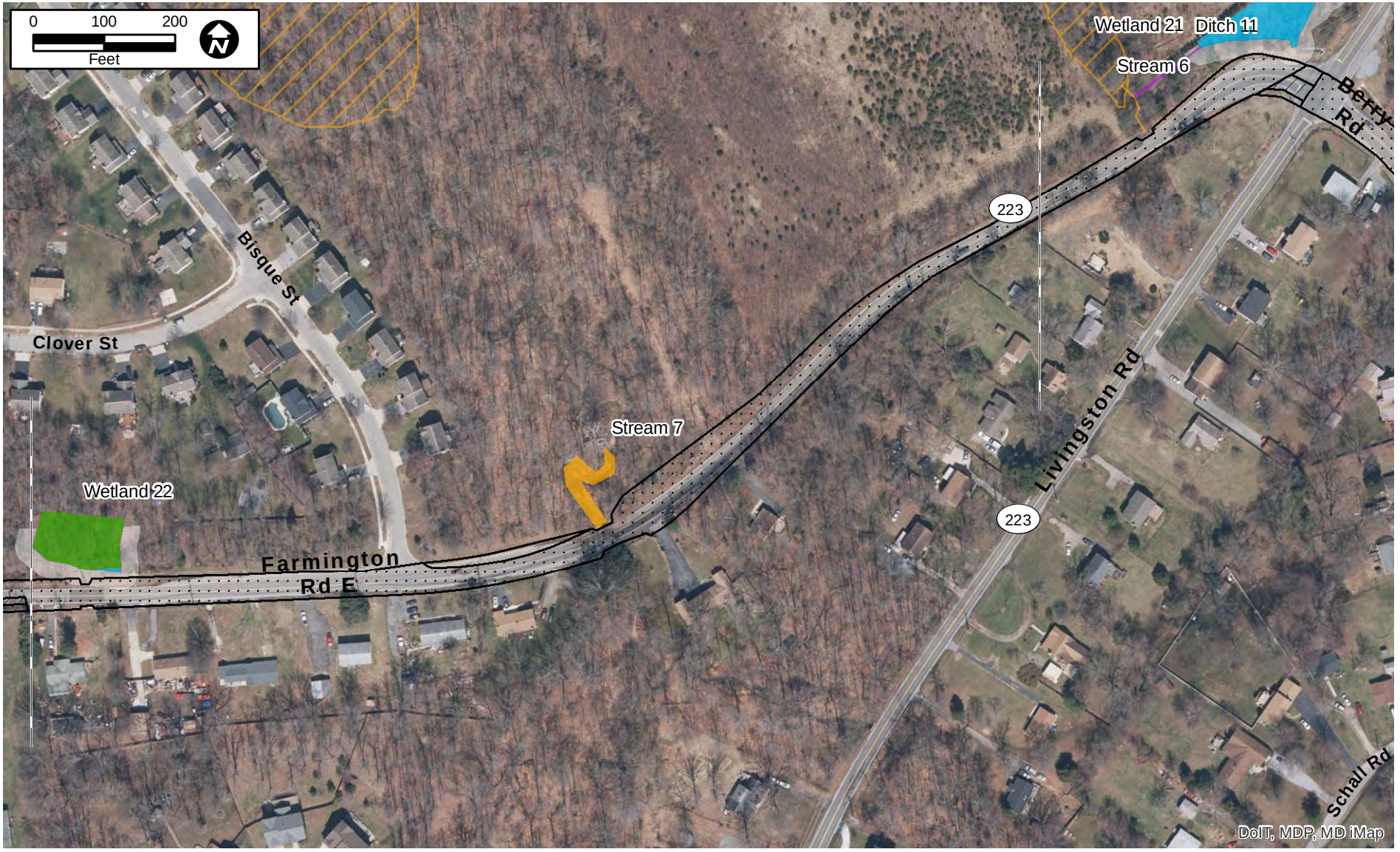

FIGURE 6. (REVISED 5/8/2015) SHEET 27 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE

Matchline
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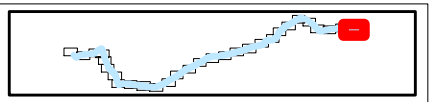
Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

FIGURE 6. (REVISED 5/8/2015) SHEET 28 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE

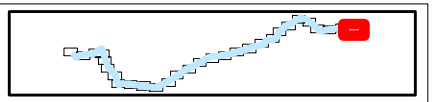


Matchline
DNR Wetland
25 ft Wetland Buffer
Permanent Easement
Road ROW
Construction Easement
Ditch
Forested Wetland
Herbaceous Wetland
Pond
Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

FIGURE 6. (REVISED 5/8/2015) SHEET 29 of 29
WETLAND IMPACTS ALONG RECLAIMED WATER PIPELINE



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Stream
Water body

Sources: Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

4.3 REDUCTION OF IMPACTS

Impacts to wetlands and waterbodies were avoided and minimized to the extent practicable by using the following standards:

- Conducting an alternatives analysis to identify routes that will meet the project objectives while avoiding and minimizing environmental impacts to the maximum extent practicable.
- Minimizing permanent loss of wetlands or waterbodies, by locating almost all permanent above ground facilities in uplands, except for 0.02 acre of fill for the substation.
- Limiting the corridor and construction right-of-way to previously disturbed areas (e.g., electric transmission line corridors, and road and railroad rights-of-way) as much as practicable.
- Minimizing the width of the construction right-of-way through wetlands and waterbodies to less than needed through uplands, as much as practicable.
- Avoiding impacts to Tier II tributaries and WSSC.
- Minimizing impacts to especially sensitive environmental wetlands by using HDD.
- Locating additional temporary work space within existing utility/transportation corridors to the maximum extent practicable or in other upland areas.
- Implementing MDE's Best Management Practices for Working in Nontidal Wetlands, Wetland Buffers, Waterways, and 100-Year Floodplains
- Implementing effective soil erosion control measures (i.e. silt fence, filter sock, etc).
- Using timber mats or similar stabilizing material to minimize rutting within wetlands, whenever possible.
- Where possible, using existing public and private roads for temporary access rather than creating new access roads.
- Using topsoil segregation during trenching activities in nonsaturated wetlands and returning it to the proper soil horizon during backfill operations to preserve the native seed bank in topsoil and promote reestablishment of wetland species.
- Returning wetlands to their preconstruction contours and using trench plugs where needed to maintain hydrologic characteristics.

5.0 MITIGATION PLAN

Mattawoman Energy will mitigate for the unavoidable wetland impacts in several ways, depending on the type of wetland affected and the type of impact (i.e. temporary vs. permanent, conversion vs. fill). Table 5 summarizes the project's impacts by location and type. The subsections below describe the proposed mitigation plan by type of impact.

Table 5. Summary of Wetland and Waterway Impacts by Type and Project Location

Project Location	Temporary Stream Impact (linear ft)	Temporary PEM Impact (acres)	Temporary POF Conversion (acres)	Permanent POF Conversion (acres)	Permanent POF Fill (acres)	Total Impact (acres)
Facility Site						0.00
Substation					0.02	0.02
Generator Lead Line	191	0.24		0.02		0.26
Gas Pipeline	359	3.65	3.11	2.68		9.44
Reclaimed Water Line	889	0.23		0.11		0.34
Total	1,439	4.12	3.11	2.81	0.02	10.06

Source: ECT 2015

5.1 TEMPORARY IMPACTS TO WATERWAYS AND HERBACEOUS WETLANDS

Temporary impacts to waterways and herbaceous wetlands during construction of the linear facilities will be mitigated for on a 1:1 basis, through onsite restoration. Following construction all stream channels and wetlands will be restored to their original grade and contour and stabilized. Topsoil will be segregated through nonsaturated wetlands during construction to preserve the seed bank and used to restore the wetland. The wetlands will be allowed to re-vegetate naturally and are expected to recover within one to two growing seasons. Trench plugs will be installed where needed to maintain wetland hydrology. No long term impacts to wetland functions or values should occur.

5.2 TEMPORARY IMPACTS TO FORESTED WETLANDS

Temporary impacts to approximately 3 acres of forested wetlands during construction of the gas pipeline will also be mitigated for on a 1:1 basis, through onsite restoration. Loss of topsoil through the wetland is not expected since the temporary forested wetland impacts

occur outside of the limits of trench excavation. Following construction, the ground surface will be restored to its original grade and contour to reestablish the preexisting hydrology. Trench plugs will be used where needed to maintain wetland hydrology. Wetland tree species will be planted in these locations to facilitate the rate of restoration. The tree species to be planted include a combination of red maple, sweetgum, blackgum (*Nyssa sylvatica*), buttonbush, and sycamore (*Platinus occidentalis*). Bare root seedlings (6" to 18" tall) are proposed to be planted at a rate of approximately 700 per acre.

5.3 PERMANENT CONVERSION OF FORESTED WETLAND TO HERBACEOUS WETLANDS

Permanent conversion of forested wetland to herbaceous wetland within the permanent maintenance corridor along the electric generator lead line, gas pipeline and reclaimed water pipeline routes will be mitigated for through a combination of onsite restoration and creation on a 1:1 basis. During construction, topsoil through nonsaturated wetlands will be side cast and segregated to preserve the native seed bank. Following construction, the ground surface will be restored to its original grade and contour to restore the preexisting hydrology and trench plugs will be installed to maintain the hydrology, where needed. The corridor will be allowed to re-vegetate naturally; however, over time, the tree species will be removed or maintained so as not to interfere with the underground or overhead utility. There should be no long term impact to hydrologic functions provided by these wetlands.

It is not feasible to mitigate for the tree loss in the vicinity where each impact occurs, as there is not sufficient room within the utility line easement. Since each impact is relatively small and they are spread out along miles of linear facilities, Mattawoman Energy is proposing to compensate for the loss of function and value provided by the trees, by creating approximately 2.81 acres of forested wetland on the power plant site. By combing the mitigation for all of these small impacts into one larger wetland, it is anticipated that a greater functional gain will be realized compared to creating a number of very small piecemeal wetlands spread over many miles. The majority of the impacts occur in Mattawoman Creek watershed, where the mitigation is proposed.

Figure 7 depicts two areas on the power plant site, where the mitigation is proposed. Two areas were selected to accommodate the acreage needed. Both are nonforested upland areas adjacent to existing forested wetlands that are already in a conservation area. As shown in Figure 8, the EPA watershed registry ranks several portions of the property as very good for wetland restoration, including areas very close to those planned for the mitigation.

The larger of the two areas was cleared by the previous landowner. It has a large stockpile of fill material in one spot and otherwise is vegetated by a variety of weedy herbaceous species. The plan consists of removing the stockpile, grading the creation area to match the adjacent forest wetland, and planting it with a combination of wetland tree and shrub species, similar to that proposed for the restoration of forested wetlands above. The proposed creation area will connect to a much larger forested wetland system that provides interior dwelling bird habitat. The smaller of the two creation areas is an upland buffer adjacent to an herbaceous and forested wetland complex at the head of the unnamed tributary to Mattawoman Creek. Mattawoman Energy proposes to put the wetland creation areas and adjacent 25' buffer in a conservation easement that will limit development. A draft copy of the easement will be submitted for review and approval once this conceptual plan is approved.

5.4 PERMANENT FILL OF FORESTED WETLANDS

The permanent loss of 0.02 acre of forested wetland on the substation site will be mitigated for at a 2:1 ratio. The initial thought to compensate for the loss of wetland was to create forested wetland adjacent the wetland and stream corridor slightly downslope of the proposed impact. However, all of this area is established upland forest and, therefore, would require some disturbance to grade the ground surface to an elevation suitable for the development of wetland hydrology. In fact, all of the nonforested portions of the substation site will be utilized for the substation infrastructure. As such, there are no feasible options for mitigation on the substation site. Given the small size of the mitigation needed (i.e. 0.04 acre), Mattawoman Energy is proposing to combine the mitigation for this impact with the wetland creation being done on the power plant site. This would bring the total wetland creation on the power plant site to 2.85 acres.

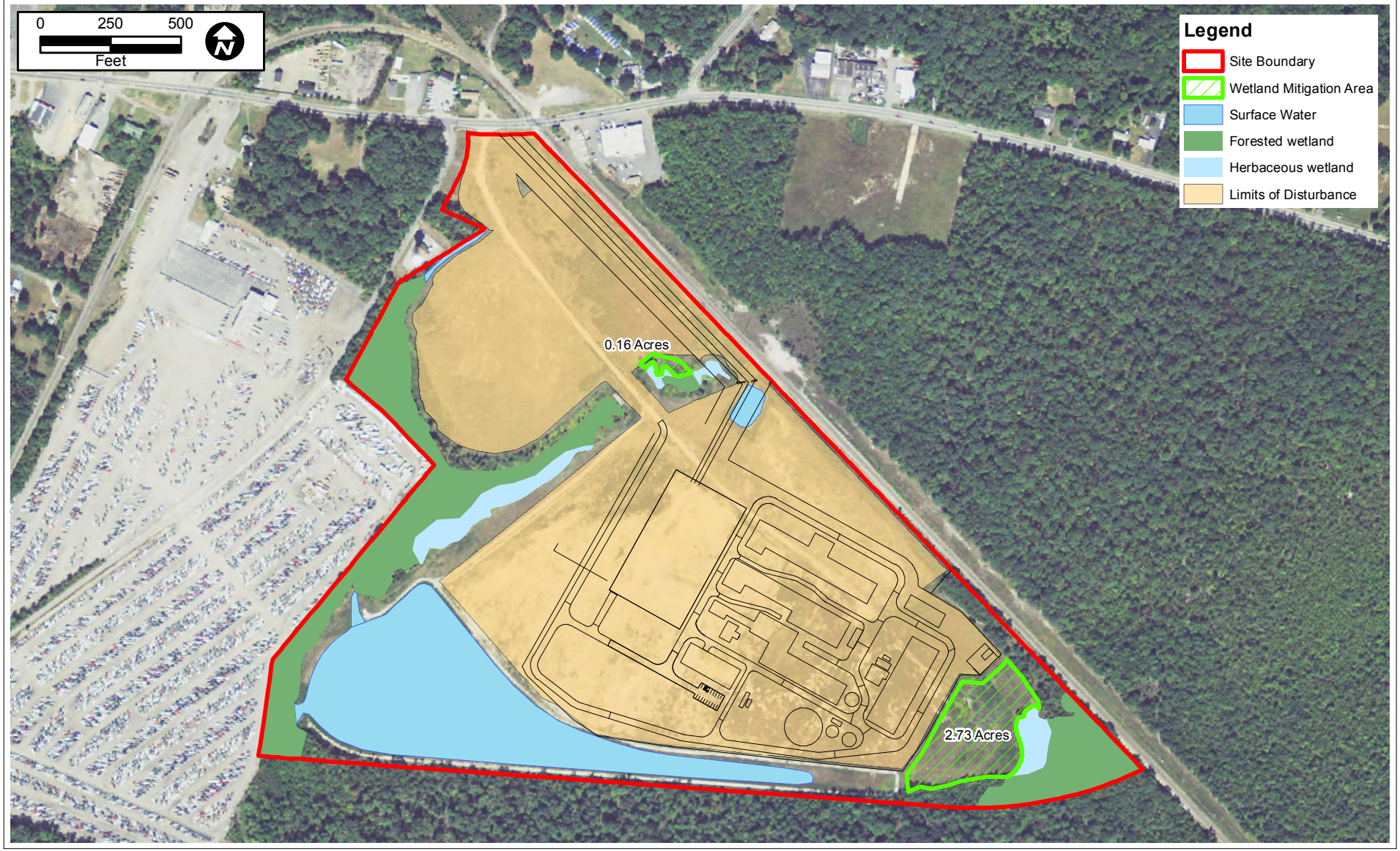


FIGURE 7.

MATTAWOMAN ENERGY PROJECT POWER PLANT SITE, PROPOSED WETLAND MITIGATION

Sources: Worley Parsons, 2015; Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

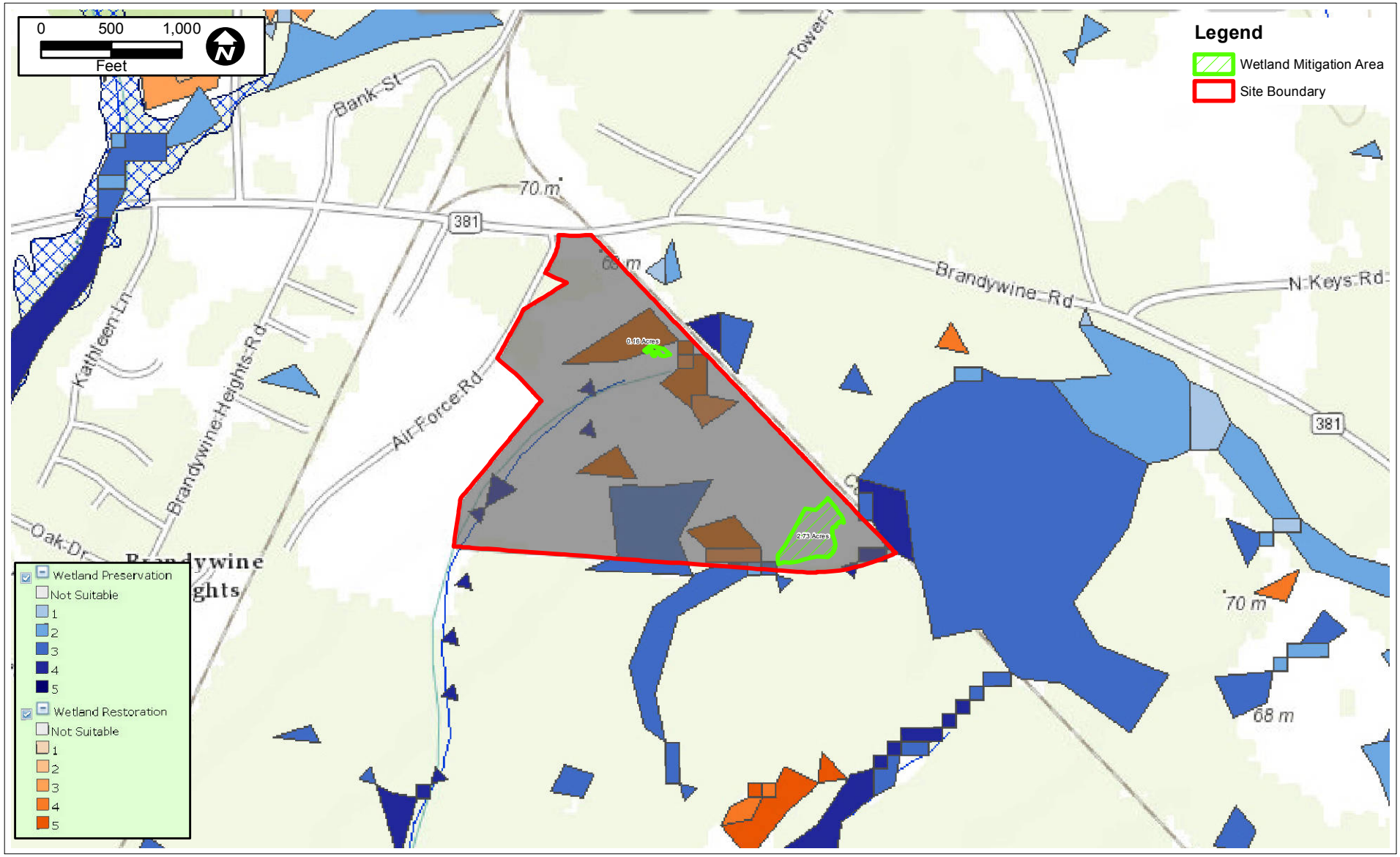


FIGURE 8.

MATTAWOMAN ENERGY PROJECT POWER PLANT SITE, WATER RESOURCES REGISTRY

Sources: Worley Parsons, 2015; Dewberry, 2015; ECT, 2015.

ECT Environmental Consulting & Technology, Inc.

6.0 LISTED SPECIES

Mattawoman Energy has consulted with the U.S. Fish and Wildlife Service (USFWS) and the MDNR Wildlife and Heritage Service (WHS) regarding potential effects of the project on federal and state protected listed species. Consultation with the USFWS was done through their online certification system. The USFWS certified that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. A copy of the USFWS certification letter for the project is included in Appendix H, Agency Consultation.

The DNR WHS did not have records for any stated listed species along the reclaimed water pipeline route, electric generator lead line or substation site, but they noted that the American Lamprey is known to occur in tributaries to Piscataway creek and that special precautions should be taken during construction to minimize sedimentation to streams. The WHS had records for several state listed plant species in the vicinity of the power plant site and the natural gas pipeline route and requested that seasonally appropriate surveys be performed for these species within the project limits.

ECT, Inc. conducted a series of listed species survey for the gas pipeline route and power plant site in late summer and early fall 2014. No listed species were found during those surveys within the project limits. Results of the survey were submitted to WHS in October 2014 for review and comment. As indicated in an email from Mr. Fred Kelley, with the Power Plant Research Program, dated November 15, 2014, the WHS concurred with the results of the survey. A copy of this email is included in Appendix H. A survey for the state listed Buxbaum's sedge (*Carex buxbaum*) will be conducted the first week of June 2015, when it is most readily identified. The survey will be conducted within the portions of the natural gas pipeline route and power plant site where there are records of its occurrence nearby. Results of the survey will be provided to WHS shortly after the survey for their review and comment. Should the plant be found, Mattawoman Energy will work with WHS to develop acceptable protection and/or mitigation measures for the sedge.

7.0 CULTURAL RESOURCES

Mattawoman Energy is in consultation with the Maryland Historic Trust (MHT) regarding potential impacts of the project to significant cultural resources. Consultation was initialed in 2013 for the power plant site and subsequently in 2014 for the linear facility routes. The MHT did not require cultural resource assessments for the power plant site, electric generator lead line route, reclaimed water pipeline route, nor most of the natural gas pipeline route. The only portion of the project where MHT requested a Phase 1 cultural resources assessment to be done was for the 0.9 mile greenfield segment of the gas pipeline route (at the southern end near the tie in with the Dominion).

SEARCH, Inc. was retained to perform a cultural resources survey of the 0.9 mile greenfield segment of the gas pipeline route. Results of the survey were reported to MHT in November 2014. The MHT concurred with the report findings that no significant cultural resources would be affected by construction of the gas pipeline. A copy of this concurrence letter, dated February 6, 2015, is provided in Appendix H, Agency Correspondence.

The substation site was added to the project after MHT's review was complete. As a proactive measure, Mattawoman Energy elected to have SEARCH, Inc. perform a Phase 1 Cultural Resources assessment of the 7.3 acre substation site, in the event MHT would request one when consulted. SEARCH, Inc., performed the assessment in March 2015. The survey did not uncover any significant archaeological resources within the project's area of potential affect. The survey did identify, within this area, a building located at 12101 Cherry Tree Crossing Road that was previously recorded in 1998. The building was previously determined to be ineligible for listing in the NRHP. Two associated outbuildings, a shed and a barn, which were not previously recorded, were also noted during the SEARCH, Inc. survey. SEARCH, Inc. concluded that the building, when considered along with the two associated outbuildings, does not meet the established eligibility criteria for listing, either individually or as a contributing resource to a historic district. The survey was submitted to MHT for review and comment in late April 2015. MHT's response will be provided to MDE and the USACE upon receipt.

8.0 ADJACENT PROPERTY OWNERS

Property owner names and address for properties adjacent to the project are listed below.

Owner Name	Street	City	State	Zip Code
14000 Crain Llc	Po Box 68	Brandywine	MD	20613
A R C Realty Inc	Po Box 229	Brandywine	MD	20613
Adeboyejo Christina O Etal	9114 Asworth Ct	Waldorf	MD	20603
Anderson Gwendolyn O	7310 Checkerberry Way	Upper Marlboro	MD	20772
Apostolic Faith Ch Of J C Lord Inc	6203 Floral Park Rd	Brandywine	MD	20613
Apostolic Fth Ch Jesus Chr Ld Inc	Po Box 462	Prince Frederick	MD	20678
Asbury Methodist Church	4004 Accokeek Rd	Brandywine	MD	20613
Aurora Lands Llc	14603 Main St	Upper Marlboro	MD	20772
Austin Roy A	6204 Accokeek Rd	Brandywine	MD	20613
Baker Albert L & Danielle M	6008 Accokeek Rd	Brandywine	MD	20613
Bannister Jack G & Linda J	14340 Old Marlboro Pike	Upper Marlboro	MD	20772
Bardon Inc	6401 Golden Triangle Dr	Greenbelt	MD	20770
Bennett Anita L & Don A	1611 Airport Ln	Accokeek	MD	20607
Best John M & Claudette I	16300 Baden Springs Dr	Brandywine	MD	20613
Board Of Education	14201 School Ln	Upper Marlboro	MD	20772
Bond Charlotte M	5909 Accokeek Rd	Brandywine	MD	20613
Bonnie Breeze Farm Inc	Po Box 257	Brandywine	MD	20613-0257
Bowers Family Trust	5904 Accokeek Rd	Brandywine	MD	20613
Braemar Preserve Acquisition Llc	5454 Wisconsin Ave	Chevy Chase	MD	20815
Brandywine Baptist Church	Rt 381 Box #82	Brandywine	MD	20613
Brandywine Corprex Plz Ii Ltd Ptn	14145 Brandywine Rd	Brandywine	MD	20613
Brandywine Episcopal Church	14300 St Thomas Church Rd	Upper Marlboro	MD	20772
Brandywine Property Llc	13704 Brandywine Rd	Brandywine	MD	20613
Brandywine Village Hmeowrs Assoc Inc	15207a Marlboro Pike	Upper Marlboro	MD	20772
Braxton Ben J Jr & Gail S	14505 Livingston Rd	Accokeek	MD	20607
Brown Kelvin L & Tracy L	1211 Clover St	Accokeek	MD	20607
Bull Run Family Llc	12305 Hatton Point Rd	Fort Washington	MD	20744
Bunyon Lamont T & Mesheca C	14101 Kathleen Ln	Brandywine	MD	20613
Burnside Living Trust	6208 Accokeek Rd	Brandywine	MD	20613
Buster Cynthia	5912 Accokeek Rd	Brandywine	MD	20613
Butler Octavia P	14603 Berry Rd	Accokeek	MD	20607
Carpenter Hershel M	7300 Accokeek Rd	Brandywine	MD	20613
Carter William H Jr	8508 Oak Dr	Brandywine	MD	20613
Catholic Universty Of America	620 Michigan Ave Ne	Washington	DC	20064
Charter House Llc	8120 Woodmont Ave	Bethesda	MD	20814
Cheltenham Property, Llc	3355 Davidsonville Rd	Davidsonville	MD	21035-1947
Cherry Tree Llc	Po Box 10111	Silver Spring	MD	20914
Chopp Family Ltd Partnership Llc	11850 Pika Drive	Waldorf	MD	20602
Clark Chester A & Constance J	4100 Accokeek Rd	Brandywine	MD	20613

Owner Name	Street	City	State	Zip Code
Consolidated Rail Corp	Prop Tax Dept. Po Box 8499	Philadelphia	PA	19101-8499
Consolidated Rail Corp.	Csx Real Prop. 301 W Bay St. Ste 800 S/C J915	Jacksonville	FL	32202
Consolidated Rail Corporation	301 W Bay St	Jacksonville	FL	32202
Consolidated Rail Corporation	Po Box 8499	Philadelphia	PA	19101
Cook William J & Iris M	7110 Accokeek Rd	Brandywine	MD	20613
Cooper Bobby D	1213 Farmington Rd	Accokeek	MD	20607
Corp Pres Bishp Of Ch Jc Ld St	50 E North Temple	Salt Lake City	UT	84150
Croswell Tyrone & Lawan	14900 Taryn Lea Ct	Accokeek	MD	20607
Csmc Mtg Backed Pass Thr Cert	2815 South West Temple	Salt Lake City	UT	84115
Davison Christopher A Et	1301 Farmington Rd E	Accokeek	MD	20607
Denison John P	8911 Oxon Hill Rd	Fort Washington	MD	20744
Dept. Of Forests & Parks	Cederville State Forest, Tawes State Office Build-ing	Annapolis	MD	21401
Diggs Lee W & Carrol D Biggs	14813 Berry Rd	Accokeek	MD	20607
Dlj Mortgage Capital Inc	3815 South West Temple	Salt Lake City	UT	84115
Dove Rick L Sr & Brenda M	1200 Farmington Rd	Accokeek	MD	20607
Drakeford Robert J & Carolyn T	14509 Livingston Rd	Accokeek	MD	20607
Eckard Lester W & Cynthia A	6108 Accokeek Rd	Brandywine	MD	20613
Elliott Rolland V & Geraldine A	14621 Berry Rd	Accokeek	MD	20607
Ellis Steve M	10560 South Faulkner Rd	Faulkner	MD	20632
Ellis William H Iii	Po Box 1005	Bowie	MD	20718
Estrada Ernesto	14501 Berry Rd	Accokeek	MD	20607
Fleming Ernest F Jr	5908 Accokeek Rd	Brandywine	MD	20613
Forest Elliot & Nikitia	14413 Livingston Rd	Accokeek	MD	20607
Gardner Charles E & Barbara A	5311 Accokeek Rd	Brandywine	MD	20613
George R Dunn Sr Etal Ltd Ptnshp	4605 Derussey Pkwy	Chevy Chase	MD	20815
Ghrist Jeanne E	6004 Accokeek Rd	Brandywine	MD	20613
Gibson Keith N Jr	14502 Sareen Way	Accokeek	MD	20607
Glanz Michael B	1309 Farmington Rd E	Accokeek	MD	20607
Gmo Maryland Real Estate Llc	8926 Woodyard Rd	Clinton	MD	20735
Gonsalves-Heron Barbara A Etal	14508 Saint Gregory Way	Accokeek	MD	20607
Gooslin William A & Margy	14195 Robey Dr	Hughesville	MD	20637
Green Dorothy J	3806 Accokeek Rd	Waldorf	MD	20601
Green Irene	535 10th St Se	Washington	DC	20003
Greenawalt Gary L Etal	5913 Accokeek Rd	Brandywine	MD	20613
Guzman Alfredo A & Erica I	3203 Farmington Dr	Chevy Chase	MD	20815
Hardesty Ronald L & Sandra R	14170 Brandywine Rd	Brandywine	MD	20613
Hargrove Mark & Melba	4909 Accokeek Rd	Brandywine	MD	20613
Harris Robert S Sr & Nancy A	14701 Berry Rd	Accokeek	MD	20607
Haynes Brian R	14062 Brandywine Rd	Brandywine	MD	20613
Hickey Robert J & Barbara	Route 2 Box 161 H	Brandywine	MD	20613

Owner Name	Street	City	State	Zip Code
Hines David E Jr	14710 Mckendree Rd	Brandywine	MD	20613
Hofmann Mildred E & Ralph W	14509 Berry Rd	Accokeek	MD	20607
Holmes Jennifer	14066 Brandywine Rd	Brandywine	MD	20613
House Arthur E & Deborah J	9165 Preference Dr	La Plata	MD	20646
Hsf Hill Properties Llc	2045 Potts Point Rd	Huntingtown	MD	20639
Inm Specialists Services Inc	74 Eldridge Dr	Silver Spring	MD	20904
Interstate Farmington	Farmington Road West	Accokeek	MD	20607
Jennings Lawrence D & Betty J	15401 Gardner Rd	Waldorf	MD	20601
Jester Jeffrey M & Jacquelyn A	14404 Livingston Rd	Accokeek	MD	20607
Jmd Real Estate Llc	14125 Brandywine Rd	Brandywine	MD	20613
Jmm Grandchildren Llc	14145 Brandywine Rd	Brandywine	MD	20613
John H Mcallister Trust	126 W Streetsboro St	Hudson	OH	44236
Johnson Agnes R & Howard L Makle	10223 Charles St	La Plata	MD	20646
Johnson Earl R & Earl F Etal	2711 Accokeek Rd	Waldorf	MD	20601
Johnson Louise E	3900 Accokeek Rd	Waldorf	MD	20601
Jones Dorothy A	3906 Accokeek Rd	Waldorf	MD	20601
Jones Faith I & Jennifer	3301 Accokeek Rd	Waldorf	MD	20601
Jones Harry B Jr & Mary E Etal	3008 Accokeek Rd	Waldorf	MD	20601
Jones Jamil S & Terryha	6000 Accokeek Rd	Brandywine	MD	20613
Judge Mohinder S & Pal	908 Amer Dr	Fort Washington	MD	20744
Kahn Susan B	10250 Trinity Church Rd	Charlotte Hall	MD	20622
Kastronis John P & Louemma	4404 Accokeek Rd	Brandywine	MD	20613
Kb Brandywine Land Llc	2139 Blue Knob Ter	Silver Spring	MD	20906
Keith Donald R.	Po Box 067	Flintstone	MD	21530
Kim Hwa J	2112 Accokeek Rd	Waldorf	MD	20601
Kohn Gail	5901 Accokeek Rd	Brandywine	MD	20613
Lakeview Brdywne Hmownrs Assn Inc	3414 Morningwood Dr	Olney	MD	20832
Lbj Properties Inc	14416 Old Mill Rd	Upper Marlboro	MD	20772
Lee Aaron D Sr & Toniere L	14064 Brandywine Rd	Brandywine	MD	20613
Lewis Carl E	13615 Cherry Tree Crossing Rd	Brandywine	MD	20613
Lloyd Mary E	4700 Accokeek Rd	Brandywine	MD	20613
Low James K & Cindy S Etal	13200 Clifton Rd	Silver Spring	MD	20904
Macauley Edward D & Carol S	Po Box 734	Accokeek	MD	20607
Magruder Donald N & Dorothy C	5501 Accokeek Rd	Brandywine	MD	20613
Maguire David W & Gale L	Po Box 243	Accokeek	MD	20607
Martinson Barbara S	4001 Accokeek Rd	Brandywine	MD	20613
Maryland Natl Capt Pk & Plann Comm	6600 Kenilworth Ave	Riverdale	MD	20737
Mattawoman Energy Llc	4100 Spring Valley	Dallas	TX	75244
Mcclure Damon Q & Karen L	14 Farmington Rd	Accokeek	MD	20607
Mcghie Clayton Y Etal	8313 Flower Ave	Silver Spring	MD	20912
Mckendree Church Cemetery	7178 Columbia Gateway Dr Ste D	Columbia	MD	21046

Owner Name	Street	City	State	Zip Code
Mcmillan Antoine L Estate Of	14901 Taryn Lea Ct	Accokeek	MD	20607
Meinhardt Walter M Sr & Henry A Jr	14145 Brandywine Rd	Brandywine	MD	20613
Mendoza Clorinda	6100 Accokeek Rd	Brandywine	MD	20613
Mid-Atlantic Bldrs Lakeview Ii Inc	11611 Old Georgetown Rd	Rockville	MD	20852
Middleton Edward D	Po Box 228	Brandywine	MD	20613
Middleton Edward D	Po Box 229	Brandywine	MD	20613
Miller Charles H & Pamela J Hickey	4412 Accokeek Rd	Brandywine	MD	20613
Miller Patricia D & David A	14901 Berry Rd	Accokeek	MD	20607
Miller Valgene	4016 7th St Ne	Washington	DC	20017
Millville Quarry Inc	6401 Golden Triangle Dr	Greenbelt	MD	20770
MNCPPC	Land Acquisition Supervisor 6600 Kenilworth Ave	Rvierdale	MD	20737
Moore Dennis H & Gloria J	3810 Accokeek Rd	Waldorf	MD	20601
Moore, Milton G & Virginia L	13300 Cherry Tree Crossing Rd	Brandywine	MD	20613
Morgan Parris M	14505 Berry Rd	Accokeek	MD	20607
My Janki Properties Llc	8135 Plowden Dr	La Plata	MD	20646
Myers James F (Le) & Miriam	5921 Accokeek Rd	Brandywine	MD	20613
Nabavi Sohrab	309 Yolkum Pkwy	Alexandria	VA	22304
Neal Morris R & Ophelia D	14500 Neale Dr	Brandywine	MD	20613
Neale Margaret D	14606 Neale Dr	Brandywine	MD	20613
Nelson Wayne & Doris Rhames Etl	4307 Travancore Rd	Randallstown	MD	21133
New Nations Worship Ministries Inc	7611 Accokeek Rd	Brandywine	MD	20613
O'boyle Archbishop Patrick A. C/O St. Peters Church	3220 Saint Peters Drive	Waldorf	MD	20601
Oconnell Michael T	14605 Berry Rd	Accokeek	MD	20607
Olson Richard F	3407 Sw Bessy Creek Trl	Palm City	FL	34990
Parker Robert W	4201 Accokeek Rd	Brandywine	MD	20613
Parrish Clarence E & Kathleen M	911 Farmington Rd	Accokeek	MD	20607
Peggy Beatrice Dobson, Trustee, Richard H. Dobson Rev. Liv Trust U/A Sept. 9 2009	8735 Mitchel Rd	La Plata	MD	20646
Pepco	Corporate Tax Dept 5th Floor, 701 Ninth St Nw	Washington	DC	20068-0001
Pettis Andrew & Angela P	18 Farmington Rd W	Accokeek	MD	20607
Pitsoulakis Despina S	12 Palfrey St	Watertown	MA	02472
Plight George & Verlean	3904 Accokeek Rd	Waldorf	MD	20601
Porter Gregory B	1204 Farmington Ave	Accokeek	MD	20607
Portillo Jose L	14068 Brandywine Rd	Brandywine	MD	20613
Potomac Electric Power Company	701 Ninth St Nw	Washington	DC	20068
Pratt Carl F & Carl	5925 Accokeek Rd	Brandywine	MD	20613
Price Georges County	1400 Mccormick Dr	Largo	MD	20774
Prince Georges County	14741 Governor Oden Bowie Dr	Upper Marlboro	MD	20772
Prince Georges County	2512 Drexel St	Vienna	VA	22180

Owner Name	Street	City	State	Zip Code
Prince Georges County	Rm 3020 C A B	Upper Marlboro	MD	20772
Prince George's County	1400 Mccormick Dr	Largo	MD	20774-5313
Prince Georges Federal Savings Bnk	Po Box 70	Upper Marlboro	MD	20773
Proctor William R & Mae R	9711 Temple Hill Rd	Clinton	MD	20735
R & R Laf Trust	2246 Arundo Ct	Waldorf	MD	20603
Ramirez, Fulmencio Baranquel	13201 Old Indian Head Rd	Brandywine	MD	20613-8946
Regional Electricl Properties Inc	14160 Brandywine Rd	Brandywine	MD	20613
Renke Patricia G	5020 Accokeek Rd	Brandywine	MD	20613
Rhodes Laddie T Jr & Suzanne	3700 Accokeek Rd	Waldorf	MD	20601
Richmond Kevin	1207 Clover St	Accokeek	MD	20607
Rinehart Pearl D	1209 Farmington Rd E	Accokeek	MD	20607
Robinson Maurice & Maggie	835 W Brookshire Ave	Orange	CA	92865
Route 301 Ind Cpi Ltd Partnership	Po Box 740	Warrenton	VA	20188
Roye Grace P & Shauna M	5917 Accokeek Rd	Brandywine	MD	20613
Russell Dennis A	13805 Brandywine Rd	Brandywine	MD	20613
Russo John A Etal	29 Eldwick Ct	Potomac	MD	20854
Rynn Thomas E Jr & Ruth B	6104 Accokeek Rd	Brandywine	MD	20613
Sadri Soorena & Arshan	10320 Glen Rd	Potomac	MD	20854
Saint James Hvrfrd Const Prtners Inc	6110 Executive Blvd	Rockville	MD	20852
Sanford Edward B & Brenda L	6112 Accokeek Rd	Brandywine	MD	20613
Santi Elie & Rosita	6200 Accokeek Rd	Brandywine	MD	20613
Sasscer F Wallis	301 Dawnwood Dr	Edgewater	MD	21037
Savoy Treasa M	1305 Farmington Rd	Accokeek	MD	20607
Schroth Linda I	1401 Farmington Rd E	Accokeek	MD	20607
Schwartz Barry L	2512 Drexel St	Vienna	VA	22180
Seaton Jamie L & Pamela M	1101 Farmington Rd E	Accokeek	MD	20607
Shelton Denise M	2123 Vittoria Ct	Bowie	MD	20721
Shifflett Joseph D	3713 Great Neck Ct	Alexandria	VA	22309
Shipp Dwight & Donna	1209 Clover St	Accokeek	MD	20607
Simons Shawn & Melissa Gonzalez	14617 Berry Rd	Accokeek	MD	20607
Slade Marquita C	14417 Livingston Rd	Accokeek	MD	20607
Smith Mark S & Alice E Etal	22820 Christ Church Rd	Aquasco	MD	20608
Smith Willie G & Leroy & Eugene	2410 Pinefield Rd	Waldorf	MD	20601
Southern Maryland Elect Coop Inc	Po Box 1937	Hughesville	MD	20637
Southstar Limited Partnership	Po Box 2000	Gambrills	MD	21054
Spetter Geoffry W	6901 Accokeek Rd	Brandywine	MD	20613
Spirit Of Faith Chrstn Cntr Inc	2261 Oxon Run Dr	Temple Hills	MD	20748
St James At Piscataway H O A Inc	6110 Executive Blvd	Rockville	MD	20852
Stephen Anne M	5505 Accokeek Rd	Brandywine	MD	20613
Stephens Cindi & Quinnie Iii	6300 Accokeek Rd	Brandywine	MD	20613
Stewart David D	14601 Schall Rd	Accokeek	MD	20607
Taybron Herman Jr & Agnes	1201 Clover St	Accokeek	MD	20607

Owner Name	Street	City	State	Zip Code
Timothy Brandywine Invsts One Llc	3235 Priest Bridge Dr	Crofton	MD	21114
Tolson, Selma P. (Le) Etal	Vera I Street 13304 Cherry Tree Crossing Rd	Brandywine	MD	20613
Tommy's Truck Service Ii Inc.	2665 Old Washington Road	Waldorf	MD	20601
Top Banana Home Delvrd Grocrs In	14100 Brandywine Rd	Brandywine	MD	20613
Tower Terra Llc	Po Box 10111	Silver Spring	MD	20914-0111
Trahan George M & Marsha E	13704 Old Brandywine Rd	Brandywine	MD	20613
Tsitsiwn Senanu K	14907 Berry Rd	Accokeek	MD	20607
Tucker Shakisha M	14411 Berry Rd	Accokeek	MD	20607
United States Of America	18th & F Sts Nw	Washington	DC	20405
United States Of America	G S A Office Comm Pub Bldg Se 18th & F Sts Nw	Washington	DC	20405-0001
United States Postal Service	Po Box 701	Columbia	MD	21045
V F D Of Brandywine	Po Box 26	Brandywine	MD	20613
Verge Laura E	11801 Crestwood Ave	Brandywine	MD	20613
Via Terrence D & Tanya A	16 Farmington Rd	Accokeek	MD	20607
Vincent Edwin C & Dolores A	8435 Blossom Point Rd	Welcome	MD	20693
Volunteer Fire Dpt Of Brandywine Inc	14201 Brandywine Rd	Brandywine	MD	20613
Wagner David E	4502 Accokeek Rd	Brandywine	MD	20613
Walls-Booth Brenda M	4901 Accokeek Rd	Brandywine	MD	20613
Walton Maryland Llc	4800 North Scottsdale Rd #400	Scottsdale	AZ	85251
Ward Randolph Q	4425 Danville Rd	Brandywine	MD	20613
Washington Brck & Tr Cot Co Lp Llp	3168 Braverton St	Edgewater	MD	21037
Washington Gas Light Company	6801 Industrial Rd	Springfield	VA	22151
Washington Sub Sanitary Comm	14501 Sweitzer Ln	Laurel	MD	20707
Wat Tummaprateip Washington D C	36 Farmington Rd West	Accokeek	MD	20607
Wells Robert E & Madge S	4510 Accokeek Rd	Brandywine	MD	20613
White Hall Baptist Ch Of Accokeek	1205 Farmington Rd E	Accokeek	MD	20607
White Hall Forest Homeownrs Assn Inc	11832 Dinwiddie Dr	Rockville	MD	20852
White Robert L Jr & Chong S	1205 Clover St	Accokeek	MD	20607
Williams Charles M & Patricia A	1221 Farmington Rd E	Accokeek	MD	20607
Williams Earl F &	14705 Berry Rd	Accokeek	MD	20607
Williams June K & Greg M	11713 Whittier Rd	Bowie	MD	20721
Wilson Alfred L (Re)	14809 Berry Rd	Accokeek	MD	20607
Woodard James D & Ronette J	1613 Braemar Ct	Accokeek	MD	20607
Worthy Delante L	3408 Accokeek Rd	Waldorf	MD	20601
Worthy Dennis E & Brenda P	3408 Accokeek Rd	Waldorf	MD	20601
Worthy Dennis E Jr	3404 Accokeek Rd	Waldorf	MD	20601
Worthy Marvin & Mazie L	3804 Accokeek Rd	Waldorf	MD	20601
Worthy Walter L	3410 Accokeek Rd	Waldorf	MD	20601
Yerkie Jacob L & John W Jr Etal, Yerkie Dorothy B	2305 Floral Park Rd	Clinton	MD	20735-9657

Owner Name	Street	City	State	Zip Code
Zarate Lorenzo	9201 Goodluck Rd	Lanham	MD	20706

APPENDIX A

GAS PIPELINE ROUTING STUDY

Dewberry

ARCHITECTS ENGINEERS CONSULTANTS

MATTAWOMAN POWER – GAS LINE

PRELIMINARY ROUTE STUDY

Mattawoman Energy, LLC

January 31, 2014

PREPARED BY:

Dewberry

3106 Lord Baltimore Dr., Ste. 110
Baltimore, MD 20706
410.645.1820

PREPARED FOR:

Mattawoman Energy, LLC

4100 Spring Valley, Ste. 1001
Dallas, TX 75244
972.361.2000

MATTAWOMAN POWER- 24” DIAM. GAS PIPELINE

Preliminary Route Study

EXECUTIVE SUMMARY

Mattawoman Energy, LLC plans to construct approximately 8 miles of gas pipeline between the existing Dominion Interstate Gas (DIG) line in Charles County and the proposed Mattawoman Power Plant in Prince George’s County. This report details the findings of the preliminary route study including the outcome of data collection from readily available sources combined with a windshield survey and further outlines possible routes. There are two (2) alternatives at the connection to the DIG line (labeled 1 and 2) and three (3) at the connection to the proposed Mattawoman Power Plant (labeled option A, B & C). Majority of the route in all options is within an existing PEPCO 230 kV right-of-way (ROW). This analysis is premised on the data available and collected, feedback from public agencies who will engage in the review and approval process, and engineering judgment. In all options there are elements of the route in existing PEPCO ROW, Charles County ROW, Prince George’s County property, Prince George’s County ROW, State of Maryland property, and private property necessitating acquisition of either rights or land. In addition some options go through other properties as listed in the Route Components. Further, all options contain multiple stream/ wetland crossings that will warrant state and/or federal permits and may require SWM permits from the local jurisdictions.

The connection to the DIG line has two alternatives - identified as 1 and 2 on the plans. Route 1 uses an existing easement for Southern Maryland Electric Cooperative (SMECO) that is cleared of trees but still will require the crossing of the Jordan Swamp River/wetland which is a tributary to the Zekiah Swamp Run, each of which is a Wetland of Special State Concern. Route 2 connects to DIG line on the east side of the Jordan Swamp river/wetland. This option avoids the disturbance in the Jordan Swamp-though will require acquisition of three (3) private properties land rights.

The connection to the proposed Mattawoman Power Plant gas line has three alternatives - identified as A, B and C on the plans. Route A follows the CSX railroad ROW on the northeast side. Route B follows the Northwest Branch of the PEPCO 500 kV ROW and finally crossing The Maryland-National Capital Park & Planning Commission (MNCPPC) parcel. Route C follows the Northwest Branch of the PEPCO 500 kV ROW then Brandywine Road (MD 381).

ROUTE COMPONENTS

- Start: Dominion Interstate Gas Line
- SMECO Easement
- PEPCO ROW
- State Roads:
    - Brandywine Road (MD 381)
- Road Crossings:
    - Poplar Hill Road – Charles County
    - Holly Spring Drive – Charles County
    - Havensbrook Drive – Charles County
    - Cedarville Road – Prince George’s County
- Bee Oak Road (private road)– Prince George’s County
- Two (2) railroad crossing- CSX
- Cedarville State Forest crossing
- Approximately 10 wetland crossings
- Eight (8) Stream crossings
- End: Proposed Mattawoman Power Plant

DATA SOURCES

- Aerial imagery from Google Earth dated 10.12.2012.
- GIS data from Prince George’s County M-NCPPC.
- GIS data from Charles County Maryland Department of Natural Resources MERLIN (http://www.mdmerlin.net/)
- Property ownership information determined from Maryland Department of Assessments & Taxation (http://www.dat.state.md.us/)
- Windshield Survey performed by Dewberry staff Monday, January 24, 2014. Base mapping augmented to include findings.
- State road data obtained from Maryland State Highway Administration (MDSHA) as-built drawings.
- County road data obtained from Windshield Survey.
- Water and sewer data for Prince George’s County was obtained from Washington Suburban Sanitary Commission (WSSC) as-built drawings and 200’ sheets. Charles County confirmed no public water or sewer

facilities are located in any of the proposed route areas. This was confirmed during the windshield survey.

- Gas line data obtained from Washington Gas grid maps.
- Electric utility data obtained from windshield survey- facilities owned PEPCO.
- SMECO provided utility drawings for of their facilities in the route areas.
- Cable and telephone data obtained from windshield survey.
- Meetings and correspondence with agency staff at Maryland State Highway Administration (MD SHA), Prince George's Department of Permitting, Inspections and Enforcement (PG DPIE), Maryland Department of General Services (MD DGS), and Maryland Department of the Environment (MDE) - see Attachment D.
- Meeting to be held with Charles County staff February 5, 2014. Report will be updated with findings form that meeting.

GAS PIPE LINE ROUTE 1A

- 42,462 LF of gas pipeline
    - 22,438 LF in PEPCO 230 kV ROW in all options
    - 1 State property impacted
        - 6,526 LF PEPCO 230kV through park
    - 846 LF NW Branch of PEPCO 500 kV ROW
    - 3,891 LF in SMECO Easement
        - 3 private properties impacted
    - 4 Prince George's County properties impacted (6,570 LF)
    - 3 private properties impacted (2,191 LF)
    - 4 county road crossings
    - 2 private road crossings
    - 2 railroad crossings
    - 8 stream crossings
    - 9 wetland crossings

SMECO Easement

- Two (2) private properties Parcels 233, 11 and 13 impacted
- Permit: Charles County Utility Permit; Charles County Development Services Permit outside the ROW.

PEPCO 230 kV ROW- Main

- Crosses Jordan Swamp-Wetlands of Special State Concern
- There are two (2) crossings of the western tributaries of Zekiah Swamp Run and associated wetlands
- Permit: PG County Site Development Permit; PG County Special Utility Permit within ROW; MDE.

Cedarville State Forest PEPCO 230 kV Line (Right of Easement/Access)

- There is one crossing of a tributary of Wolf Den Branch and associated wetlands.
- Bee Oak Road (Private) all dry utilities are overhead, no wet utilities were identified.
- Permit: MDE; MD DGS

Charles County Road Crossings (All in PEPCO ROW)

- Poplar Hill Road all dry utilities are overhead, no wet utilities were identified.
- Holly Spring Drive all dry utilities are overhead, no wet utilities were identified.
- Havensbrook Drive all dry utilities are overhead, no wet utilities were identified.
- Permit: Charles County Utility Permit; Charles County Development Services Permit outside the ROW.

Prince George's Road Crossings (All in PEPCO ROW)

- Cedarville Road all dry utilities are overhead, no wet utilities were identified.
- Permits: PG County Site Development Permit outside the ROW; PG County Special Utility Permit for local street crossings.

CSX Parallel Route

- PEPCO Parcel 138 & 139
- County Properties
    - MNCPPC Parcels 93, 7, & 105
    - PG County Parcel 111
- Private Parcel 21, 132,82
- Permit: PG County Site Development Permit; PG County Special Utility Permit within ROW; MDE; and CSX

Mattawoman Energy Plant Location

- Anticipated site entry at north/northwest point.

GAS PIPE LINE ROUTE 1B

- 43,526 LF of gas pipeline
    - 22,438 LF in PEPCO 230 kV ROW in all options
    - 1 State property impacted
        - 6,526 LF PEPCO 230kV through park
    - 6,638 LF NW Branch of PEPCO 500 kV ROW
    - 3,891 LF in SMECO Easement
        - 3 private properties impacted
    - 1 Prince George's County properties impacted (2,863 LF)
    - 3 private properties impacted (1,170 LF)
    - 4 county road crossings
    - 2 private road crossings
    - 2 railroad crossings
    - 8 stream crossings
    - 10 wetland crossings

SMECO Easement

- Two (2) private properties Parcels 233,11 and 13 impacted
- Permit: Charles County Utility Permit; Charles County Development Services Permit outside the ROW.

PEPCO 230 kV ROW- Main

- Crosses Jordan Swamp-Wetlands of Special State Concern.
- There are two (2) crossings of the western tributaries of Zekiah Swamp Run and associated wetlands.
- Permits Required: PG County Site Development Permit; PG County Special Utility Permit within ROW and MDE permits.

Cedarville State Forest PEPCO 230 kV Line (Right of Easement/Access)

- There is one crossing of a tributary of Wolf Den Branch and associated wetlands.
- Bee Oak Road (Private) all dry utilities are overhead, no wet utilities were identified.
- Permit: MDE; MD DGS

Charles County Road Crossings
(All in PEPCO ROW)

- Poplar Hill Road all dry utilities are overhead, no wet utilities were identified.
- Holly Spring Drive all dry utilities are overhead, no wet utilities were identified.
- Havensbrook Drive all dry utilities are overhead, no wet utilities were identified.
- Permit: Charles County Utility Permit; Charles County Development Services Permit outside the ROW.

Prince George's Road Crossings
(All in PEPCO ROW)

- Cedarville Road all dry utilities are overhead, no wet utilities were identified.
- Permits: PG County Site Development Permit outside the ROW; PG County Special Utility Permit for local street crossings

PEPCO 500 kV ROW-Northwest branch

- There are three (3) isolated wetland crossings
- Permit: PG County Site Development Permit outside the ROW; PG County Special Utility Permit within ROW and MDE permits.

Public/ Private Property Route

- 1 Prince Georges County property Parcel 105 impacted
- 3 private property Parcels 82, 100 & 132 impacted
- Two (2) wetland crossings
- Permit: PG County Site Development Permit outside the ROW; PG County Special Utility Permit within ROW; and MDE.

Mattawoman Energy Plant Location

- Anticipated site entry at north/northwest point.

GAS PIPE LINE ROUTE 1C

- 44,602 LF of gas pipeline
    - 22,438 LF in PEPCO 230 kV ROW in all options
    - 1 State property impacted
        - 6,526 LF PEPCO 230kV through park
    - 7,220 LF NW Branch of PEPCO 500 kV ROW
    - 3,891 LF in SMECO Easement
        - 3 private properties impacted
    - 2 private properties impacted (565 LF)
    - 3,962 LF in Brandywine Road MD 381 ROW
    - 4 county road crossings
    - 2 private road crossings
    - 2 railroad crossings
    - 8 stream crossings
    - 10 wetland crossings

SMECO Easement

- Two (2) private properties impacted Parcels 11 and 13
- Permit: Charles County Utility Permit; Charles County Development Services Permit outside the ROW.

PEPCO 230 kV ROW- Main

- Crosses Jordan Swamp
- There are two (2) crossings of the western tributaries of Zekiah Swamp Run and associated wetlands
- Permit: PG County Site Development Permit outside the ROW; PG County Special Utility Permit within ROW and MDE permits.

Cedarville State Forest PEPCO 230 kV Line (Right of Easement/Access)

- There is one crossing of a tributary of Wolf Den Branch and associated wetlands.
- Bee Oak Road (Private) all dry utilities are overhead, no wet utilities were identified.
- Permit: MDE; MD DGS

Charles County Road Crossings
(All in PEPCO ROW)

- Poplar Hill Road all dry utilities are overhead, no wet utilities were identified.
- Holly Spring Drive all dry utilities are overhead, no wet utilities were identified.
- Havensbrook Drive all dry utilities are overhead, no wet utilities were identified.
- Permit: Charles County Utility Permit; Charles County Development Services Permit outside the ROW.

Prince George's Road Crossings
(All in PEPCO ROW)

- Cedarville Road all dry utilities are overhead, no wet utilities were identified.
- Permits: PG County Site Development Permit outside the ROW; PG County Special Utility Permit for local street crossings.

PEPCO 500 kV ROW-Northwest branch

- There are three (3) isolated wetland crossings
- Permit: PG County Site Development Permit outside the ROW; PG County Special Utility Permit within ROW and MDE permits.

Brandywine Road (MD 381)

- Existing utilities along and in Brandywine Road- water, sewer, gas and overhead electric/telecomm- paired with a narrow ROW in places make a ROW alignment along Brandywine unlikely.
- There is one (1) railroad crossing along this segment.
- Permit: PG County Site Development Permit; MDSHA District 3 Utility permit; and CSX

Private Property Route

- 2 private properties Parcels 82, & 132 impacted
- Permit: PG County Site Development Permit outside the ROW; PG County Special Utility Permit within ROW

Mattawoman Energy Plant Location

- Anticipated site entry at north/northwest point.

GAS PIPE LINE ROUTE 2A

- 40,936 LF of gas pipeline
    - 20,077 LF in PEPCO 230 kV ROW in all options
    - 1 State property impacted
        - 6,526 LF PEPCO 230kV through park
    - 846 LF NW Branch of PEPCO 500 kV ROW
    - 1 Charles County Property (65 LF)
    - 4 Prince George's County properties impacted (6,570 LF)
    - 6 private properties impacted (6,852 LF)
    - 4 county road crossings
    - 1 private road crossings
    - 2 railroad crossings
    - 7 stream crossings
    - 8 wetland crossings

Private/Public Property Route

- Three (3) private properties Parcels 114, 216 & 117 impacted.
- 1 Charles County property Parcel 98 impacted
- Permit: Charles County Utility Permit; Charles County Development Services Permit outside the ROW.

PEPCO 230 kV ROW- Main

- Crosses Jordan Swamp-Wetlands of Special State Concern
- There are two (2) crossings of the western tributaries of Zekiah Swamp Run and associated wetlands
- Permit: PG County Site Development Permit outside the ROW; PG County Special Utility Permit within ROW and MDE permits.
-

Cedarville State Forest PEPCO 230 kV Line (Right of Easement/Access)

- There is one crossing of a tributary of Wolf Den Branch and associated wetlands.
- Bee Oak Road (Private) all dry utilities are overhead, no wet utilities were identified.
- Permit: MDE; MD DGS

Charles County Road Crossings

(All in PEPCO ROW)

- Poplar Hill Road all dry utilities are overhead, no wet utilities were identified.
- Holly Spring Drive all dry utilities are overhead, no wet utilities were identified.
- Havensbrook Drive all dry utilities are overhead, no wet utilities were identified.
- Permit: Charles County Utility Permit; Charles County Development Services Permit outside the ROW.

Prince George's Road Crossings

(All in PEPCO ROW)

- Cedarville Road all dry utilities are overhead, no wet utilities were identified.
- Permits: PG County Site Development Permit outside the ROW; PG County Special Utility Permit for local street crossings

CSX Parallel Route

- PEPCO Parcel 138 & 139
- County Properties
    - MNCPPC Parcels 93, 7, & 105
    - PG County Parcel 111
- Private Parcel 82, 21, & 132
- Permit: PG County Site Development Permit outside the ROW; PG County Special Utility Permit within ROW; MDE; and CSX.

Mattawoman Energy Plant Location

- Anticipated site entry at north/northwest point.

GAS PIPE LINE ROUTE 2B

- 42,000 LF of gas pipeline
    - 20,077 LF in PEPCO 230 kV ROW in all options
    - 1 State property impacted
        - 6,526 LF PEPCO 230kV through park
    - 6,638 LF NW Branch of PEPCO 500 kV ROW
    - 1 Charles County Property (65 LF)
    - 1 Prince George's County properties impacted (2,863LF)
    - 6 private properties impacted (5,831 LF)
    - 4 county road crossings
    - 1 private road crossings
    - 2 railroad crossings
    - 7 stream crossings
    - 9 wetland crossings

Private/Public Property Route

- Three (3) private properties Parcels 114, 216 & 117 impacted.
- 1 Charles County property Parcel 98 impacted
- Permit: Charles County Utility Permit; Charles County Development Services Permit outside the ROW.

PEPCO 230 kV ROW- Main

- Crosses Jordan Swamp-Wetlands of Special State Concern
- There are two (2) crossings of the western tributaries of Zekiah Swamp Run and associated wetlands
- Permit: PG County Site Development Permit outside the ROW; PG County Special Utility Permit within ROW and MDE permits.

Cedarville State Forest PEPCO 230 kV Line (Right of Easement/Access)

- There is one crossing of a tributary of Wolf Den Branch and associated wetlands.
- Bee Oak Road (Private) all dry utilities are overhead, no wet utilities were identified.
- Permit: MDE; MD DGS

Charles County Road Crossings
(all in PEPCO ROW)

- Poplar Hill Road all dry utilities are overhead, no wet utilities were identified.
- Holly Spring Drive all dry utilities are overhead, no wet utilities were identified.
- Havensbrook Drive all dry utilities are overhead, no wet utilities were identified.
- Permit: Charles County Utility Permit; Charles County Development Services Permit outside the ROW.

Prince George's Road Crossings
(All in PEPCO ROW)

- Cedarville Road all dry utilities are overhead, no wet utilities were identified.
- Permits: PG County Site Development Permit outside the ROW; PG County Special Utility Permit for local street crossings

PEPCO 500 kV ROW-Northwest branch

- There are three (3) isolated wetland crossings
- Permit: PG County Site Development Permit outside the ROW; PG County Special Utility Permit within ROW and MDE permits.

Public/ Private Property Route

- 1 Prince Georges County property Parcel 105 impacted
- 2 private properties Parcels 82, 100 & 132 impacted
- Two (2) wetland crossings
- Permit: PG County Site Development Permit outside the ROW; PG County Special Utility Permit within ROW; and MDE.

Mattawoman Energy Plant Location

- Anticipated site entry at north/northwest point.

GAS PIPE LINE ROUTE 2C

- 43,076 LF of gas pipeline
    - 20,077 LF in PEPCO 230 kV ROW in all options
    - 1 State property impacted
        - 6,526 LF PEPCO 230kV through park
    - 7,220 LF NW Branch of PEPCO 500 kV ROW
    - 1 Charles County Property (65 LF)
    - 3,962 LF in Brandywine Road MD 381 ROW
    - 5 private properties impacted (5,226 LF)
    - 4 county road crossings
    - 1 private road crossings
    - 2 railroad crossings
    - 7 stream crossings
    - 9 wetland crossings

Private/Public Property Route

- Three (3) private properties Parcels 114, 216 & 117 impacted.
- 1 Charles County property Parcel 98 impacted
- Permit: Charles County Utility Permit; Charles County Development Services Permit outside the ROW.

PEPCO 230 kV ROW- Main

- Crosses Jordan Swamp
- There are two (2) crossings of the western tributaries of Zekiah Swamp Run and associated wetlands
- Permit: PG County Site Development Permit outside the ROW; PG County Special Utility Permit within ROW and MDE permits.

Cedarville State Forest PEPCO 230 kV Line (Right of Easement/Access)

- There is one crossing of a tributary of Wolf Den Branch and associated wetlands.
- Bee Oak Road (Private) all dry utilities are overhead, no wet utilities were identified.
- Permit: MDE; MD DGS

Charles County Road Crossings
(All in PEPCO ROW)

- Poplar Hill Road all dry utilities are overhead, no wet utilities were identified.
- Holly Spring Drive all dry utilities are overhead, no wet utilities were identified.
- Havensbrook Drive all dry utilities are overhead, no wet utilities were identified.
- Permit: Charles County Utility Permit; Charles County Development Services Permit outside the ROW.

Prince George's Road Crossings
(All in PEPCO ROW)

- Cedarville Road all dry utilities are overhead, no wet utilities were identified.
- Permits: PG County Site Development Permit outside the ROW; PG County Special Utility Permit for local street crossings.

PEPCO 500 kV ROW-Northwest branch

- There are three (3) isolated wetland crossings
- Permit: PG County Site Development Permit outside the ROW; PG County Special Utility Permit within ROW and MDE permits.

Brandywine Road (MD 381)

- Existing utilities along and in Brandywine Road- water, sewer, gas and overhead electric/telecomm- paired with a narrow ROW in places make a ROW alignment along Brandywine unlikely.
- There is one (1) railroad crossing along this segment.
- Permit: PG County Site Development Permit; MDSHA District 3 Utility permit

Private Property Route

- 2 private properties Parcels 82, & 132 impacted
- Permit: PG County Site Development Permit outside the ROW; PG County Special Utility Permit within ROW

Mattawoman Energy Plant Location

- Anticipated site entry at north/northwest point.

GENERAL NOTES ALL ROUTES

1. Additional permits required include:
    a. MDE NOI (Construction NPDES) for earth disturbance greater than 1 acre.
    b. MDE/ACOE 404 permit for all stream/wetland crossings.
2. Storm water Management maybe required by Charles County, Prince George's County and by the State of Maryland.
3. CSX review process
4. For construction cost estimating, anticipate full mill and overlay for longitudinal runs.
5. Utility Considerations
    a. Maintain 10' minimum clearance except crossings.

ATTACHMENTS

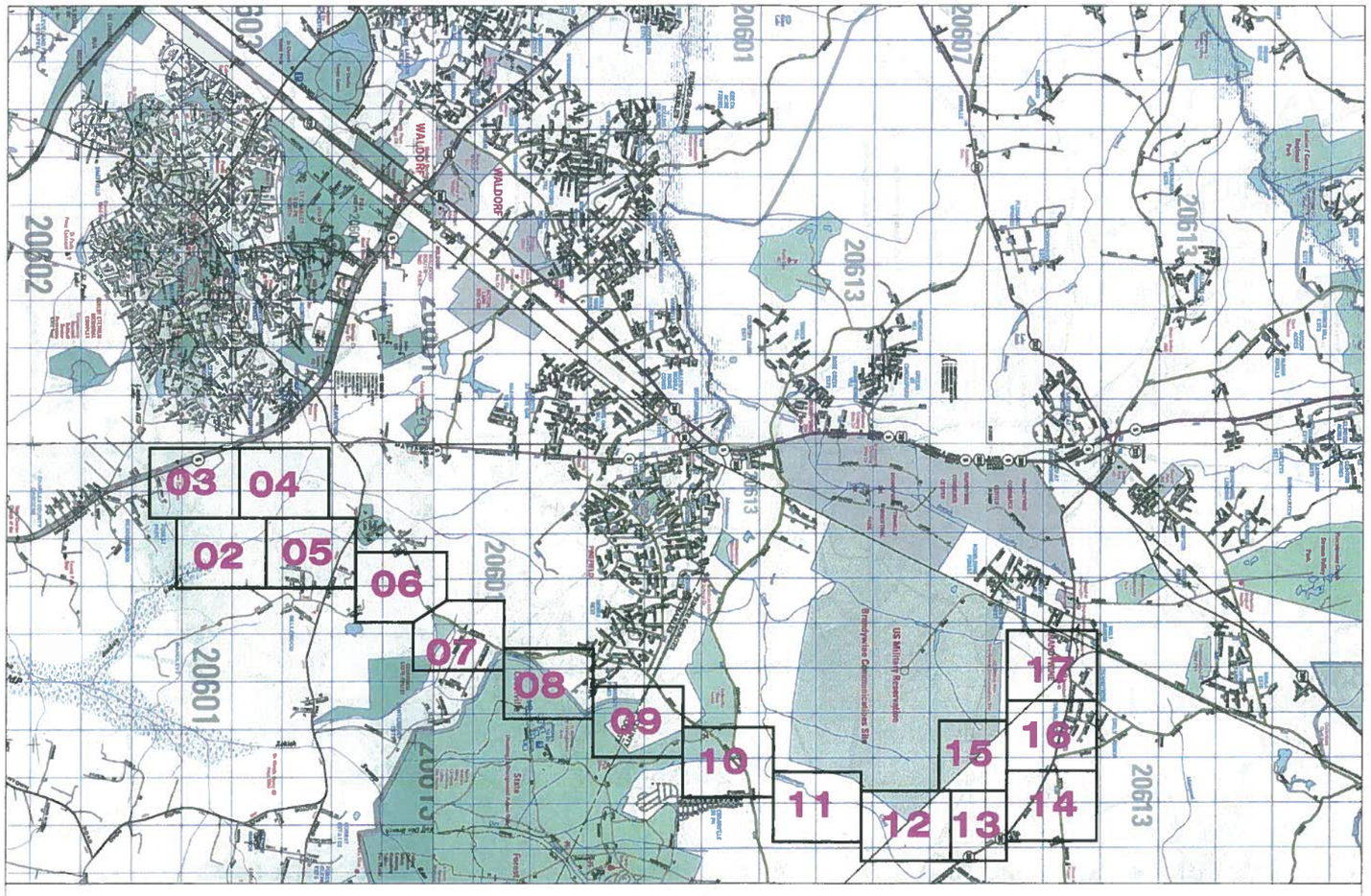
A. Preliminary Pipeline Route Study 24-Inch Diameter Gas Pipeline
B. Option Comparison Chart
C. Property Owner Information
D. Meeting Minutes

PRELIMINARY PIPELINE ROUTING STUDY
NATURAL GAS PIPELINE

NOTES

1. HORIZONTAL DATUM: NAD83
   VERTICAL DATUM: NAVD88
2. GIS DATA OBTAINED FROM PRINCE GEORGE'S COUNTY M-NCPPC, CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT, AND MARYLAND DEPARTMENT OF NATURAL RESOURCES.
3. ELECTRIC UTILITY DATA OBTAINED FROM WINDSHIELD STUDY.
4. TELEPHONE UTILITY DATA OBTAINED FROM WINDSHIELD STUDY.
5. CABLE UTILITY DATA OBTAINED FROM WINDSHIELD STUDY AND COMCAST AS-BUILT DRAWINGS.
6. GAS UTILITY DATA OBTAINED FROM WASHINGTON GAS AS-BUILT DRAWINGS.
7. WATER AND SEWER UTILITY DATA OBTAINED FROM WSSC AS-BUILT DRAWINGS AND WINDSHIELD STUDY.
8. STORMDRAIN UTILITY DATA OBTAINED FROM SHA AS-BUILT DRAWINGS AND WINDSHIELD STUDY.
9. STATE ROAD DATA OBTAINED FROM STATE HIGHWAY ADMINISTRATION AS-BUILT DRAWINGS.

SHEET INDEX



VICINITY MAP
SCALE: 1" = 2000'

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 115
BALTIMORE, MARYLAND 21244
PHONE: 410.265.8602
FAX: 410.265.8676

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 381-2000

MATTAWOMAN ENERGY, LLC
8 MILE NATURAL GAS PIPELINE
CHARLES COUNTY & PRINCE GEORGE'S COUNTY, MD

SEAL

KEY PLAN

SCALE
0' 100' 200'
1"=100'

No.	DATE	BY	Description

REVISIONS

DRAWN BY EDL/CAP
APPROVED BY JCL
CHECKED BY GSG
DATE JANUARY 31, 2014

TITLE
PRELIMINARY GAS PIPELINE BASE MAP COVER SHEET

PROJECT NO. 50063738

1

SHEET NO. 1 OF 17

MCS/NAD83

MATCHLINE - SEE SHEET 15

MATCHLINE - SEE SHEET 12

MATCHLINE - SEE SHEET 14

LEGEND

- PROPERTY RIGHTS CONSIDERATION
- ENVIRONMENTAL CONSIDERATION
- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMDRAIN
- EXISTING GAS
- EXISTING WETLAND
- EXISTING RAIL ROAD
- EXISTING STREAM
- EXISTING FLOODPLAIN
- EXISTING UTILITY POLE
- EXISTING UTILITY POLE
- PROPOSED GAS LINE

Dewberry

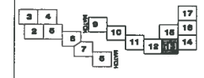
Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 113
BALTIMORE, MARYLAND 21244
PHONE: 410.265.8900
FAX: 410.265.8976

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC
8 MILE NATURAL GAS PIPELINE
CHARLES COUNTY & PRINCE GEORGE'S COUNTY, MD

SEAL

KEY PLAN



SCALE

0' 100' 200'
1"=100'

No.	DATE	BY	Description

REVISIONS

DRAWN BY	EDL/CAP
APPROVED BY	JCL
CHECKED BY	GSG
DATE	JANUARY 31, 2014

TITLE
PRELIMINARY
PIPELINE
BASE MAP

PROJECT NO. 50083736

13

SHEET NO. 13 OF 17

MCS/NAD83

MATCHLINE - SEE SHEET 16

MATCHLINE - SEE SHEET 15

MATCHLINE - SEE SHEET 13

TRIBUTARY

TRIBUTARY

N KEYS ROAD

BRANDYWINE ROAD

LEGEND

- PROPERTY RIGHTS CONSIDERATION
- ENVIRONMENTAL CONSIDERATION
- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMDRAIN
- EXISTING GAS
- EXISTING WETLAND
- EXISTING RAIL ROAD
- EXISTING STREAM
- EXISTING FLOODPLAIN
- EXISTING UTILITY POLE
- EXISTING UTILITY POLE
- PROPOSED GAS LINE

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 11E
BALTIMORE, MARYLAND 21244
PHONE: 410.265.8505
FAX: 410.265.8575

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 381-2000

MATTAWOMAN ENERGY, LLC
8 MILE NATURAL GAS PIPELINE
CHARLES COUNTY & PRINCE GEORGE'S COUNTY, MD

SEAL

KEY PLAN

SCALE
0' 100' 200'
1"=100'

No.	DATE	BY	Description

REVISIONS

DRAWN BY EDL/CAP
APPROVED BY JCL
CHECKED BY GSG
DATE JANUARY 31, 2014

TITLE
PRELIMINARY PIPELINE BASE MAP

PROJECT NO. 50063736

14

SHEET NO. 14 OF 17

LEGEND

- PROPERTY RIGHTS CONSIDERATION
- ENVIRONMENTAL CONSIDERATION
- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMDRAIN
- EXISTING GAS
- EXISTING WETLAND
- EXISTING RAIL ROAD
- EXISTING STREAM
- EXISTING FLOODPLAIN
- EXISTING UTILITY POLE
- EXISTING UTILITY POLE
- PROPOSED GAS LINE

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MARYLAND 21244
PHONE: 410.356.9000
FAX: 410.356.9975

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC
8 MILE NATURAL GAS PIPELINE
CHARLES COUNTY & PRINCE GEORGE'S COUNTY, MD

SEAL

KEY PLAN

SCALE
0' 100' 200'
1"=100'

No.	DATE	BY	Description

REVISIONS

DRAWN BY EDL/CAP
APPROVED BY JCL
CHECKED BY DSG
DATE JANUARY 31, 2014

TITLE
PRELIMINARY
PIPELINE
BASE MAP

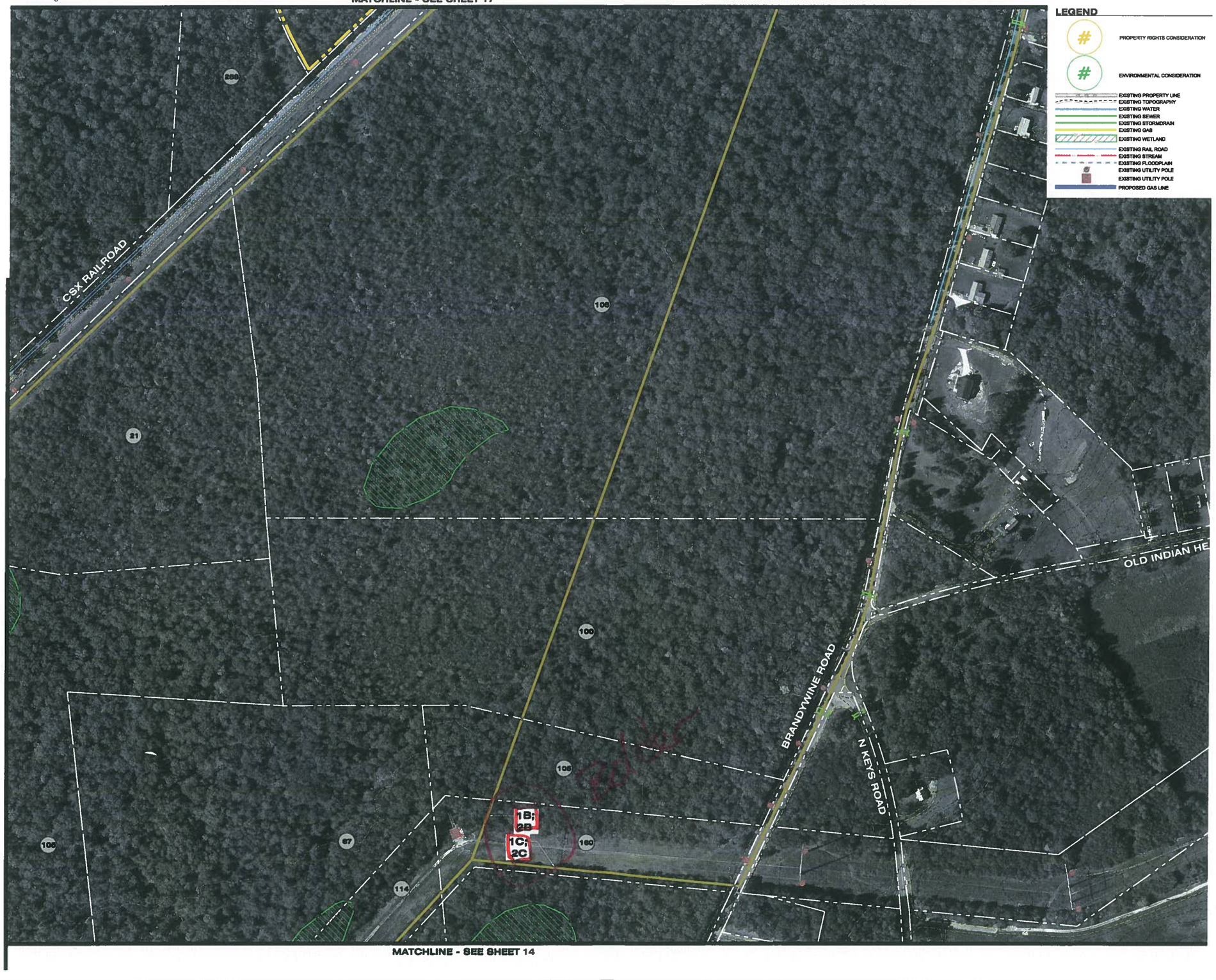
PROJECT NO. 50063736

15

SHEET NO. 15 OF 17

MCS/NAVD88

MATCHLINE - SEE SHEET 17



LEGEND

- PROPERTY RIGHTS CONSIDERATION
- ENVIRONMENTAL CONSIDERATION
- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMDRAIN
- EXISTING GAS
- EXISTING WETLAND
- EXISTING RAIL ROAD
- EXISTING STREAM
- EXISTING FLOODPLAIN
- EXISTING UTILITY POLE
- EXISTING UTILITY POLE
- PROPOSED GAS LINE

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.8900
FAX: 410.265.8975

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC
8 MILE NATURAL GAS PIPELINE
CHARLES COUNTY & PRINCE GEORGE'S COUNTY, MD

SEAL

KEY PLAN

SCALE
0' 100' 200'
1"=100'

No.	DATE	BY	Description

REVISIONS

DRAWN BY EDL/CAP
APPROVED BY JCL
CHECKED BY GSG
DATE JANUARY 31, 2014

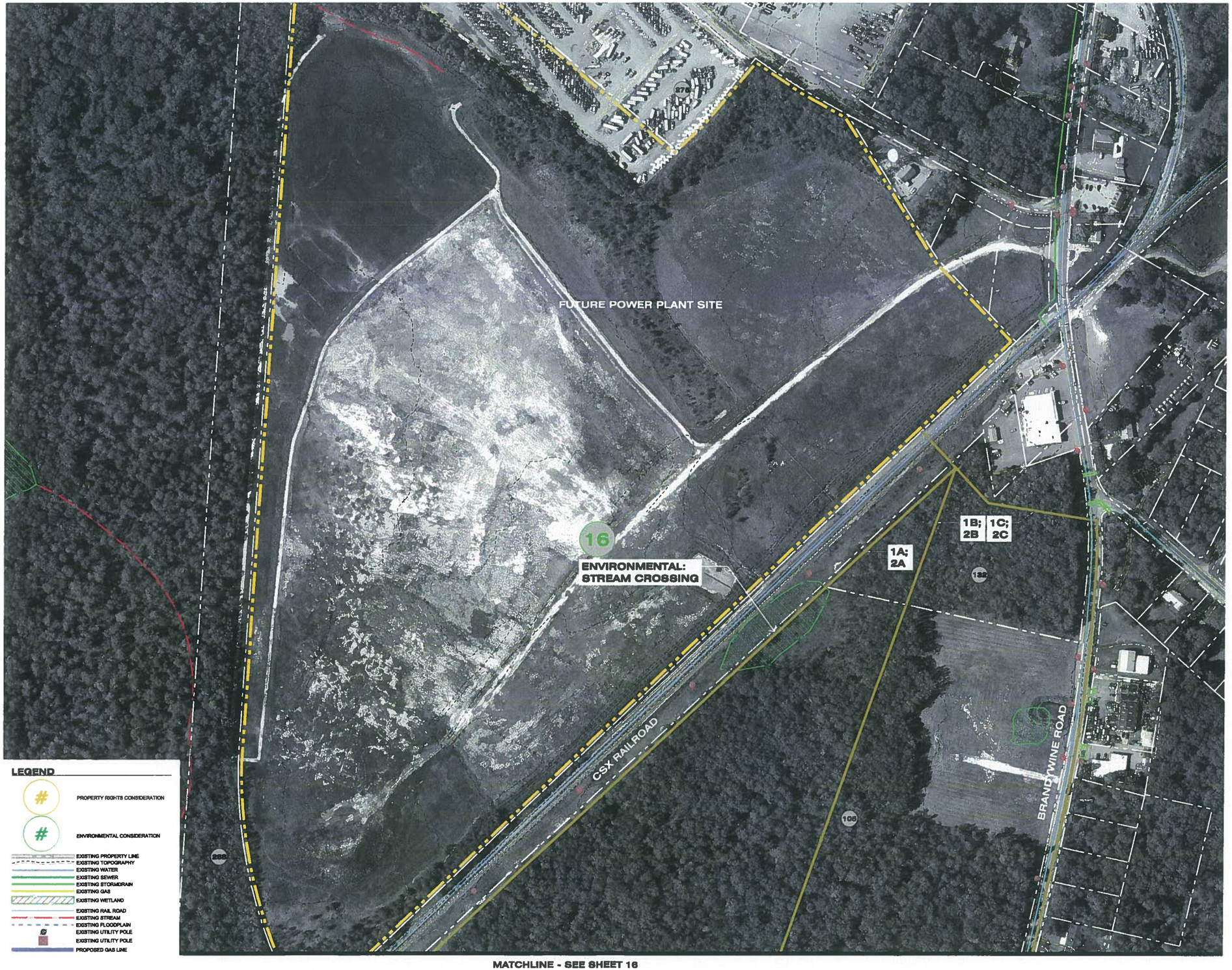
TITLE
PRELIMINARY PIPELINE BASE MAP

PROJECT NO. 60083738

16

SHEET NO. 16 OF 17

MCB/NAVD88



MATCHLINE - SEE SHEET 16

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.8002
FAX: 410.265.8975

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC
8 MILE NATURAL GAS PIPELINE
CHARLES COUNTY & PRINCE GEORGE'S COUNTY, MD

SEAL

KEY PLAN

SCALE
0' 100' 200'
1"=100'

No.	DATE	BY	Description

REVISIONS

DRAWN BY EDL/CAP
APPROVED BY JCL
CHECKED BY GSG
DATE JANUARY 31, 2014

TITLE
PRELIMINARY
PIPELINE
BASE MAP

PROJECT NO. 50083738

17

SHEET NO. 17 OF 17

PROPERTY INDICATOR	ACCOUNT	PARCEL ADDRESS	Map	LOT	PARCEL	OWNER NAME	MAIL STREET	MAIL CITY	MAIL STATE	MAIL ZIP	NOTES
		Known properties affected by streams and wetlands.					Known properties affected by wetlands.				
PEPCO 230 kV ROW											
PEPCO 230kV ROW	49419	PEPCO easement Charles County	7		0	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	32831	10201 Bee Oak Road	9		0	Dept. Of Forests & Parks	Cederville State Forest, Tawes State Office Building	Annapolis	MD	21401	PEPCO right of easement/access South of Cederville State Park
PEPCO 230kV ROW	1176007	Dent Road	165		31	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1146976	Dent Road	165		26	Department of General Services	301 West Preston Street	Baltimore	MD	21201	
PEPCO 230kV ROW	1184894	Dent Road	165		34	State of Maryland	Rowe Blvd	Annapolis	MD	21400	PEPCO right of easement/access North of Cederville State Park
PEPCO 230kV ROW	1176098	10401 Cederville Road	166		116	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175959	Cedarville Road	166		117	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175934	Cederville Road	166		115	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175975	Cedarville Road	166		114	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175967	Cederville Road	166		113	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1176015	Cederville Road	156		130	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1176247	Brandywine Road	156		103	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175918	Brandywine Road	156		127	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500 kV ROW											
PEPCO 500kV ROW	1175793	Brandywine Road	156		138	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1175785	Brandywine Road	156		136	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1175819	Brandywine Road	156		137	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1170935	Brandywine Road	156		141	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1183912	Brandywine Road	146		114	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1187731	Brandywine Road	146		160	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	

PROPERTY INDICATOR	ACCOUNT	PARCEL ADDRESS	Map	LOT	PARCEL	OWNER NAME	MAIL STREET	MAIL CITY	MAIL STATE	MAIL ZIP	NOTES
		Known properties affected by streams and wetlands.					Known properties affected by wetlands.				
SMECO Easement											
SMECO	14485		16		11	Southstar LTD Partnership	PO Box 2000	Gambrills	MD	21054	
SMECO	16895		16		13	Southstar LTD Partnership	PO Box 2000	Gambrills	MD	21054	
SMECO	48517	12950 Leman Lane	16		233	Svane Hans G & Linda C	12950 Leman Lane	Walforf	MD	20601	
Public Property											
Public	13128	Gardiner Road	16		98	County Commissioners of Charles County	PO Box 2150	La Plata	MD	20646	
Public	1156223	Brandywine Road	156		93	MNCPPC	Land Acquisistion Supervisor	Riverdale	MD	20737	
Public	1159896	Brandywine Road	156		111	Prince Georges County	Prop. Acq. Real Estate 1400	Largo	MD	20774	
Public	1179092	Brandywine Road	156		7	MNCPPC	Land Acquisistion Supervisor	Riverdale	MD	20737	
Public	1151190	Brandywine Road	145		105	MNCPPC	Land Acquisistion Supervisor	Riverdale	MD	20737	
Private											
Private	13179	3855 Gardeiner Road	16		117	Southstar Limited Partnership	PO Box 2000	Gambrills	MD	21054	
Private	15589	2660 Old Washington Rd	16		216	Tommy's Truck Service II Inc.	2665 Old Washington Road	Waldorf	MD	20601	
Private	25096	3220 Saint Peters Drive	16		114	O'Boyle Archbishop Patrick A. C/o St.	3220 Saint Peters Drive	Waldorf	MD	20601	
Private	1146471	Brandywine Road	145		82	Consolidated Rail Corp.	CSX Real Prop. 301 W Bay St.	Jacksonville	FL	32202	
Private	1157908	Brandywine Road	145		21	Keith Donald & Franklin Style	PO Box 67	Flintstone	MD	21530	
Private	1160514	Brandywine Road	145		132	Catholic University of America	620 Michigan Ave. NE	Washington	DC	20064	
Private	1138437	Brandywine Road	146		100	Smith Chung JK Trustee	4505 Boxwood Road	Bethesda	MD	20816	

PROPERTY INDICATOR	ACCOUNT	PARCEL ADDRESS	Map	LOT	PARCEL	OWNER NAME	MAIL STREET	MAIL CITY	MAIL STATE	MAIL ZIP	NOTES
		Known properties affected by streams and wetlands.					Known properties affected by wetlands.				
In route direction.											
Route 1A											
SMECO Easement											
SMECO	48517	12950 Leman Lane	16		233	Svane Hans G & Linda C	12950 Leman Lane	Walforf	MD	20601	
SMECO	16895		16		13	Southstar LTD Partnership	PO Box 2000	Gambrills	MD	21054	
SMECO	14485		16		11	Southstar LTD Partnership	PO Box 2000	Gambrills	MD	21054	
PEPCO 230 kV ROW											
PEPCO 230kV ROW	49419	PEPCO easement Charles County	7		0	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	32831	10201 Bee Oak Road	9		0	Dept. Of Forests & Parks	Cederville State Forest, Tawes State Office Building	Annapolis	MD	21401	PEPCO right of easement/access South of Cederville State Park
PEPCO 230kV ROW	1176007	Dent Road	165		31	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1146976	Dent Road	165		26	Department of General Services	301 West Preston Street	Baltimore	MD	21201	
PEPCO 230kV ROW	1176098	10401 Cederville Road	166		116	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175959	Cedarville Road	166		117	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175934	Cederville Road	166		115	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175975	Cedarville Road	166		114	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175967	Cederville Road	166		113	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1176015	Cederville Road	156		130	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1176247	Brandywine Road	156		103	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175918	Brandywine Road	156		127	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500 kV ROW											
PEPCO 500kV ROW	1175793	Brandywine Road	156		138	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
Private Property											
Private	1146471	Brandywine Road	145		82	Consolidated Rail Corp.	CSX Real Prop. 301 W Bay St. Ste	Jacksonville	FL	32202	
Public Property											
Public	1156223	Brandywine Road	156		93	MNCPPC	Land Acquisistion Supervisor	Riverdale	MD	20737	
Public	1159896	Brandywine Road	156		111	Prince Georges County	Prop. Acq. Real Estate 1400	Largo	MD	20774	
Public	1179092	Brandywine Road	156		7	MNCPPC	Land Acquisistion Supervisor	Riverdale	MD	20737	
Public	1151190	Brandywine Road	145		105	MNCPPC	Land Acquisistion Supervisor	Riverdale	MD	20737	

PROPERTY INDICATOR	ACCOUNT	PARCEL ADDRESS	Map	LOT	PARCEL	OWNER NAME	MAIL STREET	MAIL CITY	MAIL STATE	MAIL ZIP	NOTES
		Known properties affected by streams and wetlands.					Known properties affected by wetlands.				
In route direction.											

Private Property											
Private	1157908	Brandywine Road	145		21	Keith Donald & Franklin Style	PO Box 67	Flintstone	MD	21530	
Private	1160514	Brandywine Road	145		132	Catholic University of America	620 Michigan Ave. NE	Washington	DC	20064	

PROPERTY INDICATOR	ACCOUNT	PARCEL ADDRESS	Map	LOT	PARCEL	OWNER NAME	MAIL STREET	MAIL CITY	MAIL STATE	MAIL ZIP	NOTES
		Known properties affected by streams and wetlands.					Known properties affected by wetlands.				
In route direction.											
Route 1B											
SMECO Easement											
SMECO	48517	12950 Leman Lane	16		233	Svane Hans G & Linda C	12950 Leman Lane	Walforf	MD	20601	
SMECO	16895		16		13	Southstar LTD Partnership	PO Box 2000	Gambrills	MD	21054	
SMECO	14485		16		11	Southstar LTD Partnership	PO Box 2000	Gambrills	MD	21054	
PEPCO 230 kV ROW											
PEPCO 230kV ROW	49419	PEPCO easement Charles County	7		0	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	32831	10201 Bee Oak Road	9		0	Dept. Of Forests & Parks	Cederville State Forest, Tawes State Office Building	Annapolis	MD	21401	PEPCO right of easement/access South of Cederville State Park
PEPCO 230kV ROW	1176007	Dent Road	165		31	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1146976	Dent Road	165		26	Department of General Services	301 West Preston Street	Baltimore	MD	21201	
PEPCO 230kV ROW	1176098	10401 Cederville Road	166		116	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175959	Cedarville Road	166		117	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175934	Cederville Road	166		115	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175975	Cedarville Road	166		114	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175967	Cederville Road	166		113	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1176015	Cederville Road	156		130	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1176247	Brandywine Road	156		103	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175918	Brandywine Road	156		127	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500 kV ROW											
PEPCO 500kV ROW	1175793	Brandywine Road	156		138	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
Private Property											
Private	1146471	Brandywine Road	145		82	Consolidated Rail Corp.	CSX Real Prop. 301 W Bay St.	Jacksonville	FL	32202	
PEPCO 500 kV ROW											
PEPCO 500kV ROW	1175785	Brandywine Road	156		136	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1175819	Brandywine Road	156		137	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	

PROPERTY INDICATOR	ACCOUNT	PARCEL ADDRESS	Map	LOT	PARCEL	OWNER NAME	MAIL STREET	MAIL CITY	MAIL STATE	MAIL ZIP	NOTES
		Known properties affected by streams and wetlands.					Known properties affected by wetlands.				
In route direction.											
PEPCO 500kV ROW	1170935	Brandywine Road	156		141	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1183912	Brandywine Road	146		114	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1187731	Brandywine Road	146		160	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
Public Property											
Public	1151190	Brandywine Road	145		105	MNCPPC	Land Acquisistion Supervisor	Riverdale	MD	20737	
Private											
Private	1138437	Brandywine Road	146		100	Smith Chung JK Trustee	4505 Boxwood Road	Bethesda	MD	20816	
Private	1160514	Brandywine Road	145		132	Catholic University of America	620 Michigan Ave. NE	Washington	DC	20064	

PROPERTY INDICATOR	ACCOUNT	PARCEL ADDRESS	Map	LOT	PARCEL	OWNER NAME	MAIL STREET	MAIL CITY	MAIL STATE	MAIL ZIP	NOTES
		Known properties affected by streams and wetlands.					Known properties affected by wetlands.				
In route direction.											
Route 1C											
SMECO Easement											
SMECO	48517	12950 Leman Lane	16		233	Svane Hans G & Linda C	12950 Leman Lane	Walforf	MD	20601	
SMECO	16895		16		13	Southstar LTD Partnership	PO Box 2000	Gambrills	MD	21054	
SMECO	14485		16		11	Southstar LTD Partnership	PO Box 2000	Gambrills	MD	21054	
PEPCO 230 kV ROW											
PEPCO 230kV ROW	49419	PEPCO easement Charles County	7		0	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	32831	10201 Bee Oak Road	9		0	Dept. Of Forests & Parks	Cederville State Forest, Tawes State Office Building	Annapolis	MD	21401	PEPCO right of easement/access South of Cederville State Park
PEPCO 230kV ROW	1176007	Dent Road	165		31	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1146976	Dent Road	165		26	Department of General Services	301 West Preston Street	Baltimore	MD	21201	
PEPCO 230kV ROW	1176098	10401 Cederville Road	166		116	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175959	Cedarville Road	166		117	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175934	Cederville Road	166		115	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175975	Cedarville Road	166		114	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175967	Cederville Road	166		113	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1176015	Cederville Road	156		130	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1176247	Brandywine Road	156		103	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175918	Brandywine Road	156		127	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500 kV ROW											
PEPCO 500kV ROW	1175793	Brandywine Road	156		138	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
Private Property											
Private	1146471	Brandywine Road	145		82	Consolidated Rail Corp.	Ste 800 S/C J915	Jacksonville	FL	32202	
PEPCO 500 kV ROW											
PEPCO 500kV ROW	1175785	Brandywine Road	156		136	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	

PROPERTY INDICATOR	ACCOUNT	PARCEL ADDRESS	Map	LOT	PARCEL	OWNER NAME	MAIL STREET	MAIL CITY	MAIL STATE	MAIL ZIP	NOTES
		Known properties affected by streams and wetlands.					Known properties affected by wetlands.				
In route direction.											
PEPCO 500kV ROW	1175819	Brandywine Road	156		137	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1170935	Brandywine Road	156		141	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1183912	Brandywine Road	146		114	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1187731	Brandywine Road	146		160	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
Private											
Private	1160514	Brandywine Road	145		132	Catholic University of America	620 Michigan Ave. NE	Washington	DC	20064	

PROPERTY INDICATOR	ACCOUNT	PARCEL ADDRESS	Map	LOT	PARCEL	OWNER NAME	MAIL STREET	MAIL CITY	MAIL STATE	MAIL ZIP	NOTES
		Known properties affected by streams and wetlands.					Known properties affected by wetlands.				
In route direction.											
Route 2A											
Public Property											
Public	13128	Gardiner Road	16		98	County Commissioners of Charles County	PO Box 2150	La Plata	MD	20646	
Private Property											
Private	13179	3855 Gardeiner Road	16		117	Southstar Limited Partnership	PO Box 2000	Gambrills	MD	21054	
Private	15589	2660 Old Washington Rd	16		216	Tommy's Truck Service II Inc.	2665 Old Washington Road	Waldorf	MD	20601	
Private	25096	3220 Saint Peters Drive	16		114	O'Boyle Archbishop Patrick A. C/o St.	3220 Saint Peters Drive	Waldorf	MD	20601	
PEPCO 230 kV ROW											
PEPCO 230kV ROW	49419	PEPCO easement Charles County	7		0	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	32831	10201 Bee Oak Road	9		0	Dept. Of Forests & Parks	Cederville State Forest, Tawes State Office Building	Annapolis	MD	21401	PEPCO right of easement/access South of Cederville State Park
PEPCO 230kV ROW	1176007	Dent Road	165		31	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1146976	Dent Road	165		26	Department of General Services	301 West Preston Street	Baltimore	MD	21201	
PEPCO 230kV ROW	1176098	10401 Cederville Road	166		116	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175959	Cedarville Road	166		117	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175934	Cederville Road	166		115	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175975	Cedarville Road	166		114	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175967	Cederville Road	166		113	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1176015	Cederville Road	156		130	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1176247	Brandywine Road	156		103	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175918	Brandywine Road	156		127	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500 kV ROW											
PEPCO 500kV ROW	1175793	Brandywine Road	156		138	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
Private Property											
Private	1146471	Brandywine Road	145		82	Consolidated Rail Corp.	CSX Real Prop. 301 W Bay St.	Jacksonville	FL	32202	
Public Property											
Public	1156223	Brandywine Road	156		93	MNCPPC	Land Acquisistion Supervisor	Riverdale	MD	20737	

PROPERTY INDICATOR	ACCOUNT	PARCEL ADDRESS	Map	LOT	PARCEL	OWNER NAME	MAIL STREET	MAIL CITY	MAIL STATE	MAIL ZIP	NOTES
		Known properties affected by streams and wetlands.					Known properties affected by wetlands.				
In route direction.											
Public	1159896	Brandywine Road	156		111	Prince Georges County	Prop. Acq. Real Estate 1400	Largo	MD	20774	
Public	1179092	Brandywine Road	156		7	MNCPPC	Land Acquisistion Supervisor	Riverdale	MD	20737	
Public	1151190	Brandywine Road	145		105	MNCPPC	Land Acquisistion Supervisor	Riverdale	MD	20737	
Private Property											
Private	1157908	Brandywine Road	145		21	Keith Donald & Franklin Style	PO Box 67	Flintstone	MD	21530	
Private	1160514	Brandywine Road	145		132	Catholic University of America	620 Michigan Ave. NE	Washington	DC	20064	

PROPERTY INDICATOR	ACCOUNT	PARCEL ADDRESS	Map	LOT	PARCEL	OWNER NAME	MAIL STREET	MAIL CITY	MAIL STATE	MAIL ZIP	NOTES
		Known properties affected by streams and wetlands.					Known properties affected by wetlands.				
In route direction.											
Route 2B											
Public Property											
Public	13128	Gardiner Road	16		98	County Commissioners of Charles County	PO Box 2150	La Plata	MD	20646	
Private Property											
Private	13179	3855 Gardeiner Road	16		117	Southstar Limited Partnership	PO Box 2000	Gambrills	MD	21054	
Private	15589	2660 Old Washington Rd	16		216	Tommy's Truck Service II Inc.	2665 Old Washington Road	Waldorf	MD	20601	
Private	25096	3220 Saint Peters Drive	16		114	O'Boyle Archbishop Patrick A. C/o St.	3220 Saint Peters Drive	Waldorf	MD	20601	
PEPCO 230 kV ROW											
PEPCO 230kV ROW	49419	PEPCO easement Charles County	7		0	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	32831	10201 Bee Oak Road	9		0	Dept. Of Forests & Parks	Cederville State Forest, Tawes State Office Building	Annapolis	MD	21401	PEPCO right of easement/access South of Cederville State Park
PEPCO 230kV ROW	1176007	Dent Road	165		31	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1146976	Dent Road	165		26	Department of General Services	301 West Preston Street	Baltimore	MD	21201	
PEPCO 230kV ROW	1176098	10401 Cederville Road	166		116	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175959	Cedarville Road	166		117	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175934	Cederville Road	166		115	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175975	Cedarville Road	166		114	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175967	Cederville Road	166		113	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1176015	Cederville Road	156		130	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1176247	Brandywine Road	156		103	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175918	Brandywine Road	156		127	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500 kV ROW											
PEPCO 500kV ROW	1175793	Brandywine Road	156		138	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
Private Property											
Private	1146471	Brandywine Road	145		82	Consolidated Rail Corp.	CSX Real Prop. 301 W Bay St.	Jacksonville	FL	32202	

PROPERTY INDICATOR	ACCOUNT	PARCEL ADDRESS	Map	LOT	PARCEL	OWNER NAME	MAIL STREET	MAIL CITY	MAIL STATE	MAIL ZIP	NOTES
		Known properties affected by streams and wetlands.					Known properties affected by wetlands.				
In route direction.											
PEPCO 500 kV ROW											
PEPCO 500kV ROW	1175785	Brandywine Road	156		136	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1175819	Brandywine Road	156		137	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1170935	Brandywine Road	156		141	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1183912	Brandywine Road	146		114	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1187731	Brandywine Road	146		160	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
Public Property											
Public	1151190	Brandywine Road	145		105	MNCPPC	Land Acquisistion Supervisor	Riverdale	MD	20737	
Private											
Private	1138437	Brandywine Road	146		100	Smith Chung JK Trustee	4505 Boxwood Road	Bethesda	MD	20816	
Private	1160514	Brandywine Road	145		132	Catholic University of America	620 Michigan Ave. NE	Washington	DC	20064	

PROPERTY INDICATOR	ACCOUNT	PARCEL ADDRESS	Map	LOT	PARCEL	OWNER NAME	MAIL STREET	MAIL CITY	MAIL STATE	MAIL ZIP	NOTES
		Known properties affected by streams and wetlands.					Known properties affected by wetlands.				
In route direction.											
Route 2C											
Public Property											
Public	13128	Gardiner Road	16		98	County Commissioners of Charles County	PO Box 2150	La Plata	MD	20646	
Private Property											
Private	13179	3855 Gardeiner Road	16		117	Southstar Limited Partnership	PO Box 2000	Gambrills	MD	21054	
Private	15589	2660 Old Washington Rd	16		216	Tommy's Truck Service II Inc.	2665 Old Washington Road	Waldorf	MD	20601	
Private	25096	3220 Saint Peters Drive	16		114	O'Boyle Archbishop Patrick A. C/o St.	3220 Saint Peters Drive	Waldorf	MD	20601	
PEPCO 230 kV ROW											
PEPCO 230kV ROW	49419	PEPCO easement Charles County	7		0	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	32831	10201 Bee Oak Road	9		0	Dept. Of Forests & Parks	Cederville State Forest, Tawes State Office Building	Annapolis	MD	21401	PEPCO right of easement/access South of Cederville State Park
PEPCO 230kV ROW	1176007	Dent Road	165		31	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1146976	Dent Road	165		26	Department of General Services	301 West Preston Street	Baltimore	MD	21201	
PEPCO 230kV ROW	1176098	10401 Cederville Road	166		116	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175959	Cedarville Road	166		117	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175934	Cederville Road	166		115	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175975	Cedarville Road	166		114	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175967	Cederville Road	166		113	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1176015	Cederville Road	156		130	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1176247	Brandywine Road	156		103	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 230kV ROW	1175918	Brandywine Road	156		127	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500 kV ROW											
PEPCO 500kV ROW	1175793	Brandywine Road	156		138	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
Private Property											
Private	1146471	Brandywine Road	145		82	Consolidated Rail Corp.	CSX Real Prop. 301 W Bay St.	Jacksonville	FL	32202	

PROPERTY INDICATOR	ACCOUNT	PARCEL ADDRESS	Map	LOT	PARCEL	OWNER NAME	MAIL STREET	MAIL CITY	MAIL STATE	MAIL ZIP	NOTES
		Known properties affected by streams and wetlands.					Known properties affected by wetlands.				
In route direction.											
PEPCO 500 kV ROW											
PEPCO 500kV ROW	1175785	Brandywine Road	156		136	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1175819	Brandywine Road	156		137	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1170935	Brandywine Road	156		141	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1183912	Brandywine Road	146		114	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
PEPCO 500kV ROW	1187731	Brandywine Road	146		160	PEPCO	Corporate Tax Dept. Rm 5617 701 Ninth Street NW	Washington	DC	20068	
Private											
Private	1160514	Brandywine Road	145		132	Catholic University of America	620 Michigan Ave. NE	Washington	DC	20064	

OPTION COMPARISON CHART - MATTAWOMAN POWER GAS LINE

OPTION COMPARISON

GAS LINE ROUTE STUDY

GAS LINE ROUTE OPTIONS

	1A	1B	1C	2A	2B	2C
	SMECO/PEPCO/N. CSX RTE.	SMECO/PEPCO/MNCPPC	SMECO/PEPCO/Brandywine Rd. (MD 381)	Parcels 114, 117, 216/PEPCO/N. CSX RTE.	Parcels 114, 117, 216/PEPCO/MNCPPC	Parcels 114, 117, 216/PEPCO/Brandywine Rd. (MD 381)
TOTAL PROJECT FACTORS [1]						
PROPERTY RIGHTS/ACQUISITION SCENARIO		BETTER	BEST			GOOD
ENVIRONMENTAL IMPACTS & PERMITTING				GOOD	BETTER	BETTER
PERMIT PROCESSING	GOOD	BETTER		GOOD	BETTER	
ANTICIPATED CONSTRUCTION COSTS				GOOD	BETTER	
OTHER FACTORS [2]						
ROUTE LENGTH	**42,462 LF / 8.04 MI**	**43,526 LF / 8.24 MI**	**44,602 LF / 8.44 MI**	**40,936 LF / 7.75 MI**	**42,000 LF / 7.95 MI**	**43,076 LF / 8.15 MI**
PEPCO 230 kV ROW LENGTH (LF)	22,438	22,438	22,438	20,077	20,077	20,077
PEPCO 230kV RIGHT OF EASEMENT/ACCESS LENGTH (LF)	6,526	6,526	6,526	6,526	6,526	6,526
PEPCO 500 kV ROW LENGTH (LF)	846	6,638	7,220	846	6,638	7,220
SMECO EASEMENT (LF)	3,891	3,891	3,891	0	0	0
PUBLIC ROAD ROW LENGTH (LF)	0	0	3,962	0	0	3,962
PUBLIC PROPERTY LENGTH (LF)	6,570	2,863	0	6,635	2,928	65
PRIVATE PROPERTY LENGTH (LF)	2,191	1,170	565	6,852	5,831	5,226
CROSSINGS	**16**	**16**	**17**	**14**	**14**	**15**
STATE ROADS	0	0	1	0	0	1
COUNTY ROADS	4	4	4	4	4	4
PRIVATE ROADS	2	2	2	1	1	1
RAILROAD	2	2	2	2	2	2
STREAM	8	8	8	7	7	7
WETLAND	9	10	10	8	9	9
PUBLIC PROPERTIES IMPACTED	4	1	0	5	2	1
PRIVATE PROPERTIES IMPACTED[3]	3	3	2	6	6	5

NOTES:

1. Measured as GOOD, BETTER and BEST when comparing listed options
2. Measured by various methods depending on the nature of the factor.
3. Private Properties do not include PEPCO ROW.
4. Meeting with Charles County scheduled for February 5, 2014.

Dewberry

APPENDIX B

RECLAIMED WATER LINE ROUTING STUDY

Dewberry

ARCHITECTS ENGINEERS CONSULTANTS

MATTAWOMAN POWER – PURPLE PIPE

PRELIMINARY ROUTE STUDY

Mattawoman Energy, LLC

December 13, 2013

PREPARED BY:

Dewberry
3106 Lord Baltimore Dr., Ste. 110
Baltimore, MD 20706
410.645.1820

PREPARED FOR:

Mattawoman Energy, LLC
4100 Spring Valley, Ste. 1001
Dallas, TX 75244
972.361.2000

MATTAWOMAN POWER- 20” DIAM. PURPLE PIPE

Preliminary Route Study

EXECUTIVE SUMMARY

Mattawoman Energy, LLC plans to construct approximately 10 miles of “purple pipe”- pipe for treated effluent water- between the existing WSSC owned Piscataway Wastewater Treatment Plant and the proposed Mattawoman Power Plant. This report details the findings of the preliminary route study including the outcome of data collection from readily available sources combined with a windshield survey and further outlines two possible routes and an alternative “cross country” segment for each route. This analysis is premised on the data available and collected, feedback from public agencies who will engage in the review and approval process, and engineering judgment. In all options there are elements of the route in existing public right-of-way (ROW) and in private property necessitating acquisition of either rights or land. Further, all options contain multiple stream crossings that will warrant state and/or federal permits.

The “Right-of-Way Route”- identified as 1 and 1A on the plans-is, to the extent possible, located within existing public ROW. This route is premised on the determination that Mattawoman Energy- the entity installing and maintaining the pipe- is a public utility. Since the power plant and its associated infrastructure are being constructed under the purview of the Maryland Public Service Commission, it is reasonable to assume its designation as a public utility.

The “Private Route”- identified as 2 and 2A- is located outside the existing public ROW in private property with the exception of road crossings. This route assumes the pipe is privately owned and therefore not permitted to run longitudinally in state right-of-way. This route attempts to limit the properties impacted and number of road crossings.

The “A” designation on the route number indicates a “cross-country” alternate for a portion of the alignment along the future/master planned ROW and is the same for both routes.

ROUTE COMPONENTS

- Start: Piscataway Wastewater Treatment Plant
- County Roads:
  - Farmington Road East- Historic
  - Berry Road
  - Brandywine Road
- State Roads:
  - Accokeek Road (MD 373)- Historic
  - Brandywine Road (MD 381)
- Major Road Crossings:
  - Indian Head Highway (MD 210)
  - Branch Avenue (MD 5)
  - Crain Highway (US 301)
- One (1) Railroad Crossing- CSX
- Approximately eight (8) stream/culvert crossings
- Two (2) Historic Sites along route on Accokeek Road
- End: Proposed Mattawoman Power Plant

DATA SOURCES

- Aerial imagery from Google Earth dated 10.12.2012.
- GIS data from Prince George’s County M-NCPPC.
- Property ownership information determined from PG Atlas (www.pgatlas.com)
- Windshield Survey performed by Dewberry staff Monday, November 25, 2013. Base mapping augmented to include findings.
- State road data obtained from Maryland State Highway Administration (MDSHA) as-built drawings.
- County road data received from Prince George’s County Department of Permitting, Inspections, and Enforcement (DPIE) Site/Road Plan Review Division and confirmed during windshield survey.
- Water and sewer data obtained from Washington Suburban Sanitary Commission (WSSC) as-built drawings and 200’ sheets.
- Gas line data obtained from Washington Gas grid maps.
- Electric utility data obtained from windshield survey- facilities owned by SMECO and PEPCO; BGE confirmed no facilities in this area.
- Cable and telephone data obtained from windshield survey.
- Meetings and correspondence with agency staff at MD SHA, PG DPIE, WSSC, and MDE- see Attachment E.

RIGHT-OF-WAY ROUTE (1)

Public Right-of-Way Route Summary

- 52,025 lf of purple pipe
    - 42,425 lf in ROW
    - 9,600 lf in private property
        - 49 private properties impacted
    - 7 county road crossings
    - 3 state road crossings
    - 1 railroad crossing
    - 8 stream/wetland crossings

Piscataway Wastewater Treatment Plant

- Onsite metering and pump station to be installed here, the exact location is to be determined but is assumed in the southeast corner of the plant near the Farmington/ Indian Head intersection. WSSC will provide pipe to the pump station. The pump station and exit pipeline will be owned/maintained by Mattawoman Energy under a lease agreement with WSSC.

Indian Head Highway (MD 210) Crossing

- Permit: MDSHA District 3 Utility Permit
- SHA will require jack and bore with tunnel liner

Farmington Road East (PG County)

- Existing utilities along and in Farmington Road East- water, gas, and overhead electric- paired with a narrow, irregular ROW make a ROW route unlikely.
- There are three (3) stream crossings along this segment.
- Where pipe leaves Farmington and crosses Livingston Road, Livingston is considered Historic and is heavily congested with existing utilities.
- Permits: PG County Site Development Permit outside the ROW; PG County Special Utility Permit for local street crossings; SHA District 3 Utility Permit for Livingston crossing.

Berry Road (PG County)

- Existing utilities along and in Berry Road- water, sewer, and overhead electric- make a ROW route for the northern portion unlikely however at approximately the mid-point of Berry Rd, the pipe can move into the ROW.
- Permit: PG County Site Development Permit outside the ROW; PG County Special Utility Permit within ROW.

Accokeek Road (MD 373)

- Limited existing utilities present other than overhead electric/telecomm so a ROW route is proposed.
- There are three (3) stream crossings along this segment.
- There are two (2) historic sites along this segment- route should avoid these properties under all options.
- Permit: MDSHA District 3 Utility Permit

NOTES:

1. Although SHA has indicated a "public utility" may run longitudinally in the ROW, they have also expressed that they would prefer not to see it run in Accokeek because of the narrowness of the ROW and pavement. They are concerned about maintenance of traffic (MOT) during construction.
2. While work in Accokeek will largely be permitted through MDSHA, it should be noted the County considers it a Historic Road, thus locating in the pavement is preferable as it will help to maintain the surrounding landscape and historic context.

Branch Avenue (MD 5) Crossing

- Permit: MDSHA District 3 Utility Permit
- SHA will require jack and bore with tunnel liner

Brandywine Road (MD 381)

- Existing utilities along and in Brandywine Road- water, sewer, gas and overhead electric/telecomm- paired with a narrow ROW in places make a ROW alignment along Brandywine unlikely.
- There are two (2) stream crossings along this segment.
- There is one (1) railroad crossing along this segment.
- Permit: PG County Site Development Permit; CSX

Crain Highway (US 301) Crossing

- Permit: MDSHA District 3 Utility Permit
- SHA will require jack and bore with tunnel liner

Mattawoman Energy Plant Location

- Anticipated site entry at north/northwest point.

Lastly, it should be noted under this option where the pipe is considered a "public utility", no stormwater management is required. For construction cost estimating, owner should anticipate full mill and overlay for longitudinal runs.

PRIVATE ROUTE (2)

Private Property Route Summary

- 52,153 lf of purple pipe
    - 7,600 lf in ROW
    - 44,553 lf in private property
        - 119 private properties impacted
    - 14 county road crossings
    - 7 state road crossings
    - 1 railroad crossing
    - 8 stream/wetland crossings

Piscataway Wastewater Treatment Plant

- Onsite metering and pump station to be installed here, the exact location is to be determined but is assumed in the southeast corner of the plant near the Farmington/ Indian Head intersection. WSSC will provide pipe to the pump station. The pump station and exit pipeline will be owned/maintained by Mattawoman Energy under a lease agreement with WSSC.

Indian Head Highway (MD 210) Crossing

- Permit: MDSHA District 3 Utility Permit
- SHA will require jack and bore with tunnel liner

Farmington Road East (PG County)

- Existing utilities along and in Farmington Road East- water, gas, and overhead electric- paired with a narrow, irregular ROW make a ROW route unlikely.
- There are three (3) stream crossings along this segment.
- Where pipe leaves Farmington and crosses Livingston Road, Livingston is considered Historic and is heavily congested with existing utilities.
- Permits: PG County Site Development Permit outside the ROW; PG County Special Utility Permit for local street crossings; SHA District 3 Utility Permit for Livingston crossing.

Berry Road (PG County)

- Existing utilities along and in Berry Road- water, sewer, and overhead electric- make a ROW route for the northern portion unlikely. The southern portion is routed in the ROW in accordance with County criteria to minimize impacted properties.
- Permits: PG County Site Development Permit outside the ROW; PG County Special Utility Permit for crossings

Accokeek Road (MD 373)

- Route determined based on avoidance of historic sites and visible natural resources (i.e. tree stands) and minimization of properties impacted.
- There are three (3) stream crossings along this segment.
- There are two (2) historic sites along this segment- route should avoid these properties under all scenarios.
- Permits: PG County Site Development Permit outside the ROW; PG County Special Utility Permit for local street crossings; SHA District 3 Utility Permit for Accokeek crossings.

NOTES:

1. Under this option- private pipe and private property route- stormwater management (swm) is required for portions of the route located in impervious area i.e. road crossings and driveway crossings. For cost estimating and acquisition purposes, additional rights and/or land outside the ROW will be required for swm facilities.
2. It should be noted that the County considers Accokeek a Historic Road, thus locating outside the pavement and the requirement to provide swm will detract from the historic context and could pose processing challenges.

Branch Avenue (MD 5) Crossing

- Permit: MDSHA District 3 Utility Permit
- SHA will require jack and bore with tunnel liner

Brandywine Road (MD 381)

- Existing utilities along and in Brandywine Road- water, sewer, gas and overhead electric/telecomm- paired with a narrow ROW in places make a ROW alignment along Brandywine unlikely.
- There are two (2) stream crossings along this segment.
- There is one (1) railroad crossing along this segment.
- Permit: PG County Site Development Permit; CSX

Crain Highway (US 301) Crossing

- Permit: MDSHA District 3 Utility Permit
- SHA will require jack and bore with tunnel liner

Mattawoman Energy Plant Location

- Anticipated site entry at north/northwest point.

CROSS COUNTRY ROUTE 1A/2A MASTER PLAN ALIGNMENT FOR ACCOKEEK ROAD

Cross Country Route Summary (1A)

- 51,989 lf of purple pipe
    - 38,789 lf in ROW
    - 13,200 lf in private property
        - 45 private properties impacted
    - 7 county road crossings
    - 2 state road crossings
    - 1 railroad crossing
    - 7 stream/wetland crossings

Cross Country Route Summary (2A)

- 52,003 lf of purple pipe
    - 16,200 lf in ROW
    - 35,803 lf in private property
        - 87 private properties impacted
    - 10 county road crossings
    - 5 state road crossings
    - 1 railroad crossing
    - 7 stream/wetland crossings

The cross country route is shown as an alternate for both the ROW and Private Property route options as it has several notable positives:

1. The number of property owners for routes 1 and 2 is reduced from 49 and 119 respectively to only 45 and 87 respectively as much of the cross country route is located in the future Accokeek Road alignment.
    a. For this study, the length of pipe located in the future alignment is counted as length within the ROW and not a private property impact; however, if it is determined that the ROW reservation has lapsed, an additional 13 property owners along the ROW alignment may be impacted for a total of 58 or 100 respectively should the cross country alternate be utilized.
2. The number of major state street crossings is reduced from 2 to 1 as Branch Avenue (MD 5) and Crain Highway (US 301) are merged at the cross country crossing.
3. The permitted environmental impacts are expected to be less along this stretch- reduced from eight (8) to seven (7) in both options; however, it is anticipated that some additional processing and mitigation for forested areas may be triggered at the county level with this route.
4. Processing along this stretch is anticipated to be more streamlined given the reduced number of entities involved and the minimal developed areas impacted.
5. Construction costs are anticipated to decrease as it is largely undeveloped through this corridor and as such standard construction practices can be implemented, MOT is largely not required, other utility constraints are largely eliminated, and staging and storage is easily accommodated.
6. Should the pipe be considered private and swm required, this stretch is largely pervious with significantly fewer driveway and road crossings thus the swm requirement and associated land/rights acquisition would be minimized.

GENERAL NOTES ALL ROUTES

1. Additional permits required include:
    a. MDE Water and Sewer Construction Permit for pipes greater than 15".
    b. MDE NOI (Construction NPDES) for earth disturbance greater than 1 acre.
    c. MDE/ACOE permit for all stream/wetland crossings.
2. Utility Considerations
    a. Maintain 10' minimum clearance except crossings.
    b. Valves every 2,500 lf +/-.
    c. Air Release Valves (ARVs) at high points.
    d. May need chlorine injection point at approximately the half way point to maintain residual- odor and algae control.
    e. Consider fusible PVC.

ATTACHMENTS

A. Preliminary Pipeline Route Study 20-Inch Diameter Treated Effluent Pipeline Option 1
B. Preliminary Pipeline Route Study 20-Inch Diameter Treated Effluent Pipeline Option 2
C. Option Comparison Chart
D. Property Owner Information
E. Meeting Minutes
F. MD SHA Utility Policy
G. Prince George's County- Policy and Specification for Utility Installation and Maintenance
H. Prince George's County- Guidelines for the Design of Scenic and Historic Roadways

OPTION COMPARISON CHART - MATTAWOMAN POWER PURPLE PIPE				
				
OPTION COMPARISON **PURPLE PIPE ROUTE STUDY**	**PURPLE PIPE ROUTE OPTIONS**			
	1	**1A**	**2**	**2A**
	RIGHT-OF-WAY ROUTE	RIGHT-OF-WAY ROUTE (1) W/ CROSS COUNTRY ALTERNATE	PRIVATE PROPERTY ROUTE	PRIVATE PROPERTY ROUTE (2) WITH CROSS COUNTRY ALTERNATE
TOTAL PROJECT FACTORS [1]				
PROPERTY RIGHTS/ACQUISITION SCENARIO	BETTER	BEST		GOOD
ENVIRONMENTAL IMPACTS & PERMITTING	BEST	BETTER		GOOD
PERMIT PROCESSING	BEST	BETTER		GOOD
ANTICIPATED CONSTRUCTION COSTS		GOOD	BETTER	BEST
OTHER FACTORS [2]				
ROUTE LENGTH	**52,025 lf / 9.85 mi**	**51,989 lf / 9.85 mi**	**52,153 lf / 9.88 mi**	**52,003 lf / 9.85 mi**
PUBLIC ROW LENGTH (LF)	42,425	38,789	7,600	16,200
PRIVATE PROPERTY LENGTH (LF)	9,600	13,200	44,553	35,803
CROSSINGS	**19**	**17**	**30**	**23**
STATE ROADS	3	2	7	5
COUNTY ROADS	7	7	14	10
RAILROAD	1	1	1	1
STREAM/WETLAND	8	7	8	7
PRIVATE PROPERTIES IMPACTED	49	45	119	87
SWM REQUIRED	NO	NO	YES	YES

NOTES:

1. Measured as GOOD, BETTER and BEST when comparing listed options
2. Measured by various methods depending on the nature of the factor.

ECT
Environmental Consulting & Technology, Inc.

March 5, 2013
ECT No. 110869-3000

Lorie Byrne
Maryland Department of Natural Resources
Wildlife and Heritage Program
580 Taylor Avenue
Tawes Office Bldg E-1
Annapolis, MD 21401

Re: Proposed Linear Facilities for the Mattawoman Energy Power Plant Project

Dear Ms. Byrne:

This letter is to request any information regarding Maryland listed species in or within a mile of the proposed linear facilities that would be constructed in association with the Mattawoman Energy Power Project in Prince George's County, Maryland.

Mattawoman Energy, LLC is proposing to construct a 700 Megawatt natural gas-fueled combined-cycle power plant in Brandywine, Maryland. We sent your office a letter dated November 15, 2011, inquiring about listed species on the plant site. We appreciate your response to that letter dated December 21, 2011. Since then, Mattawoman has identified several proposed linear facility corridors for their natural gas pipeline, reclaimed water pipeline, and electric transmission line. The proposed gas pipeline would be ~ 6.7 miles, parallel to an existing PEPCO transmission line, and receive natural gas from the existing Dominion pipeline in Charles County, Maryland. The proposed water pipeline would be ~10.2 miles, following Accokeek Road, and supply the proposed power plant with treated effluent water from the Piscataway Wastewater Treatment Plant. The proposed transmission line would connect to the existing PEPCO 230kV transmission line, west of the power plant facility. These proposed routes are shown on 7.5-minute U.S. Geological Survey (USGS) quad maps and aerial maps. We would appreciate any information you can provide us with regarding listed species near these linear facilities.

Please contact me at 904/296-0544 if you need any further information. We look forward to your rapid response.

Sincerely,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

Vilma Brueggemeyer

Vilma Brueggemeyer, VP
Vice President

6440 Southpoint Pkwy
Suite 130
Jacksonville, FL
32216

(904)
296-0544

FAX (904)
296-2473

Dewberry Consultants LLC
3106 Lord Baltimore Drive, Suite 110
Baltimore, MD 21244-5800
410.265.9500
410.265.8875 fax
www.dewberry.com

MEETING MINUTES

Project:	Panda Power Purple Pipe	**Project No:**	**50062705**
Re:	Preliminary Route Considerations	**Date:**	November 25, 2013
No.:	001	**Location:**	SHA District 3

Attendees:	Representing:	Phone No.:	E-mail:
Victor Grafton (*)	SHA- District 3 Utility Engineer		
Randy Evans(*)	SHA- District 3 Utility Section		
Gurmeet Gahunia (*)	Dewberry (DEW)		ggahunia@dewberry.com
Lisa Betz (*)	Dewberry	410.645.1402	lbetz@dewberry.com
Distribution: E-Copy: marked (*) attendees; John Boswell (Panda), Alex Villegas (Dew), David Taylor (Dew), Chris Petrocelli (Dew) Hard Copy: File			

No.	Responsibility	Action, Note/ Question	Target Date:	Notes:
DISCUSSION POINTS: ***(BOLDED ITALICS INDICATES MOST CURRENT DISCUSSION)***				
The purpose of the meeting was to review the proposed alignment of the purple pipe between Piscataway WWTP and the proposed Panda Power Plant- approximately 9 miles largely along Accokeek Road (MD Rte. 373) with crossings at state routes 210, 5, and 301.				
1.	Lisa Betz	Note	NA	***Ms. Betz reviewed the project explaining the desired connection between the WWTP and the Power Plant specifically the recommended alignment which is to be determined in the near term (i.e. next 2-3 weeks). Of importance, at this time, the pipe is to be a PRIVATE pipe.***
2.	DEW	Question	NA	***Inquired as to any design requirements or restrictions for the pipe alignment in, adjacent to, or crossing SHA ROW?***
3.	Victor Grafton	Note	NA	***SHA does not want the pipe in the pavement. Specifically along Accokeek where the road is only two lanes, the disruption to traffic would be too severe. Outside of the pavement, SHA does not have that much ROW, most of which is occupied by either ditches or overhead utilities.***

No.	Responsibility	Action, Note/ Question	Target Date:	Notes:
4.	Randy Evans	Note	NA	***If private pipe, allow crossings of SHA roads but generally do not permit long parallel stretches.***
5.	Victor Grafton	Question	N/A	***If private, how will Miss Utility or other marking service be able to delineate? Typically, the utility marking entities pull plans from the utility owners… in this case, where would plans be logged? Further, if a maintenance issue were to arise, how would private owner notification, responsiveness, etc. be accomplished/assured? Dewberry noted questions; to review/debrief with team and continue to drill down on these items, report back to SHA.***
6.	Gurmeet Gahunia	Question	NA	***How would required permits be procured? SHA responded that crossings would be a standard utility permit through District 3. At major crossings (i.e. 5 and 301), require jack and bore with tunnel liner. At minor crossings (i.e. 373) could do open trench with encasement or "thicker" walled pipe. Could be processed as a single permit for all crossings and would be the preferred method however, could phase and issue multiple permits (i.e. one per crossing) if desired.***
7.	Gurmeet Gahunia	Question	NA	***If we were to recommend an alignment in private property that is later absorbed into ROW b/c of widening or realignment, how would this impact the utility? SHA responded that this would need to be reviewed with the State Utility Engineer (Nelson Smith)… typically SHA would notify the owner and give them opportunity to relocate or pending situation, they would procure additional ROW and relocate the utility as needed to keep the private pipe outside the ROW as desired.***
8.	Gurmeet Gahunia	Question	NA	***Do you know of any plans for the realignment of Accokeek Road and/or construction plans/schedule? SHA is not aware of any plans, funding, etc.***
9.	Lisa Betz	Question	NA	***Is there a "length" of parallel run that is considered acceptable pending circumstances to be permitted similarly? SHA responded- no specific length, the general consensus is no private, parallel pipe, crossings only.***
10.	Lisa Betz	Question	NA	***If outside of ROW, is there a minimum offset from***

No.	Responsibility	Action, Note/ Question	Target Date:	Notes:
				ROW? SHA/DEW discussed an offset sufficient to prevent construction/maintenance activities from encroaching in the ROW. By eliminating (reducing) the possible encroachments, it will further negate the need to pull a permit every time any level of maintenance is required.
11.	Victor Grafton	Action	12/6/2013	***Review project with state utility engineer (Nelson Smith) to verify private pipes must be located outside of ROW. Review policy on "ROW through highway" meaning large arterials where access is prohibited also means utilities prohibited whereas roads where access is granted, longitudinal pipe runs could occur if they were publicly owned (i.e. WSSC).***
12.	Victor Grafton	Action	12/6/2013	***Send Dewberry SHA utility policy, highway inventory reference to confirm all state roads along alignment, feedback from State Utility Engineer.***

Any revisions or corrections to the above should be sent to the attention of Lisa Betz at lbetz@dewberry.com within 24 hours of receipt.

Dewberry Consultants LLC
3106 Lord Baltimore Drive, Suite 110
Baltimore, MD 21244-5800
410.265.9500
410.265.8875 fax
www.dewberry.com

MEETING MINUTES

Project:	Panda Power Purple Pipe	**Project No:**	**50062705**
Re:	Preliminary Route Considerations	**Date:**	December 3, 2013
No.:	002	**Location:**	PG County DPIE

Attendees:	Representing:	Phone No.:	E-mail:
Dawit Abraham (*)	DPIE- Associate Director		
Erv Beckert (*)	DPIE- Utility Tech Support		
Rey DeGuzman (*)	DPIE- Chief Engineer		
Manny Senjalia	DPIE- District Engineer		
Gurmeet Gahunia (*)	Dewberry (DEW)	301.364.1798	ggahunia@dewberry.com
Lisa Betz (*)	Dewberry	410.645.1402	lbetz@dewberry.com
Distribution: E-Copy: marked (*) attendees; John Boswell (Panda), Alex Villegas (Dew), David Taylor (Dew), Chris Petrocelli (Dew) Hard Copy: File			

No.	Responsibility	Action, Note/ Question	Target Date:	Notes:
DISCUSSION POINTS: ***(BOLDED ITALICS INDICATES MOST CURRENT DISCUSSION)***				
The purpose of the meeting was to review the proposed alignment of the purple pipe between Piscataway WWTP and the proposed Panda Power Plant- approximately 9 miles with portions along Farmington Road and Berry Road- both county roads- and a larger stretch along Accokeek Road (MD Rte. 373) with crossings at state routes 210, 5, and 301.				
1.	Gurmeet Gahunia	Note	NA	***Mr.Gahunia reviewed the project explaining the desired connection between the WWTP and the Power Plant; specifically the recommended alignment which is to be determined in the near term (i.e. next 2-3 weeks). Of importance, at this time, the pipe is to be a PRIVATE pipe.***
2.	DEW	Question	NA	***Dewberry inquired as to the county's receptiveness to locating the pipe in county ROW- specifically along Farmington and Berry Roads? Mr. Beckert explained that within the ROW the pipe is allowed as long as the entity is a "member" of Miss Utility. In terms of permitting the pipe construction and perpetual existence, two (2) permits are required: 1. Special Utility Permit to allow construction and 2. Maintenance Utility Permit which is renewed annually. Additionally, a Maintenance of Traffic Plan will be***

No.	Responsibility	Action, Note/ Question	Target Date:	Notes:
				warranted for the extents of ROW work. http://www.princegeorgescountymd.gov/sites/PublicWorks/Services/RoadwayImprovements/PermittingServices/Documents/Prince-Georges-County-Utility-Policy.pdf
3.	Erv Beckert	Note	NA	***The Special Utility Permit is an online application process. There is a $300 administrative fee and then the remaining fee is based on linear footage of pipe installed. A bond is required- it will be based on the cost of full mill/overlay at $12/sy. In this case, open section road, the milling would not be required just overlay. A CAD file for integration into county GIS will be required.***
4.	Erv Beckert	Note	NA	***The Maintenance Utility Permit is renewed annually at a cost of $5,000 per year.***
5.	DEW	Question	NA	***For areas where the pipeline must be placed outside of the street ROW for various reasons, what will DPIE require in terms of plans and permits? Mr. Senjalia responded that a grading permit (Site Development Permit) and sediment control plan approved by Prince George's Soil Conservation District are required.***
6.	DEW	Question	NA	***How will SWM be reviewed for this project? Mr. DeGuzman explained that a swm concept plan is required and a second combined site/final plan will be required. To determine swm requirements, the project should be looked at as "redevelopment" wherein the LOD for swm purposes will be determined as the aggregate of impervious areas impacted. Once the requirement is determined- 50% treatment in the form of ESD to the MEP for the impervious area impacted- a centralized mitigation/facility can be provided where there is adequate space to treat the required area. For areas outside the pavement where the extents of the work are to trench and replace in kind (i.e. pervious to pervious) no swm is required.***
7.	DEW	Question	NA	***Can you confirm that PGCounty DPIE will review swm on behalf of the state for those portions of the project located in or adjacent to the state roads as well? Yes, PG County is the primary review authority for all swm associated with the pipeline as long as it is a private pipeline although SHA will likely review internally as well, there review is effectively a referral. Should the pipeline become WSSC or "state", then the swm review would defer to MDE.***
8.	DEW	Question	NA	***If the pipe were to become a "state" or WSSC pipe, wouldn't it be exempt from swm requirements as a linear utility developed by a public entity under a***

No.	Responsibility	Action, Note/ Question	Target Date:	Notes:
				waiver per section 3.3.A of the SWM Guidelines for State and Federal Projects? DPIE responded, yes, it may. DPIE strenuously noted that if it is a developer driven installation, the county is obligated to implement swm requirements for anything over 5,000 sf of disturbance.

Any revisions or corrections to the above should be sent to the attention of Lisa Betz at lbetz@dewberry.com within 24 hours of receipt.

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January 13, 2014

Mr. Frederick S. Kelley
Power Plant Research Program
Department of Natural Resources
Tawes Building B-3
Annapolis, MD 21401

Re: Mattawoman Linear Utility Comments – Purple Pipe ("Treated Effluent") & Gas Line

Dear Mr. Kelley:

We are in receipt of your comments (dated December 13, 2013) for the above referenced linear utilities. Please find below our responses to these comments:

Note: Items 1-9 apply solely to the purple pipe while item 10 is related to the actual power plant site, item 11 is related to the proposed gas line, and item 12 again applies only to the purple pipe.

1. Feature maps for all linear facilities (preferred and alternative routes) will need to include the centerline, ROW widths, and any temporary construction easements. Maps should also include the DNR wetlands layers both on and adjacent to the ROWs.

   The route maps have been updated to include the desired information along the preferred route. Please note, a preferred route has been selected and refined information and more detailed design information as requested in this series of comments is premised on only this route. The new documents provided as part of this comment response show only one preferred route.

2. Please provide a description of construction techniques that would be used to cross streams, wetlands, and other drainages on the project site and along proposed linear facility ROWs (e.g., horizontal directional drilling, trenching).

   It is anticipated that a combination of construction techniques will be used depending on the location (proximity to ROW and property rights achieved) and resource type. Practices will include standard open trenching to the extent possible and where location or resource constraints dictate a more reserved approach, directional drilling will be employed. Per item 8 below, permissions are still being procured to access private properties for the purposes of field reconnaissance specifically natural resource assessment and surveys. Pending the outcome of the field work, more specific information regarding construction techniques in certain areas and/or for specific resource avoidance scenarios will be provided.

3. Please provide a complete assessment of impacts resulting from the construction and maintenance of the ROWs that includes the direct and indirect effects on wetland buffers, RTE species, Forest Interior Dwelling Species (FIDs) habitat, hydrology, streams and soils resulting from vegetation removal, grubbing, grading, trenching, etc.

   Per item 8 below, permissions are still being procured to access private properties for the purposes of field reconnaissance specifically natural resource assessment and surveys. Pending the outcome of the field work, more specific information regarding impacts in certain areas and/or to specific resources will be provided.

4. Please provide a description of proposed improvements to the Piscataway WWTP required for the project and assessment of any impacts to sensitive resources the Chesapeake Bay Critical Area in the vicinity of the WTTP.

   Proposed improvements to the Piscataway WWTP are anticipated to include the addition of a small pump station and some onsite piping. Given that the proposed route runs east of the facility, it is believed that these improvements will be largely isolated to the southern and eastern sides of the WWTP property and should largely not be within the Critical Area. Onsite improvements will be orchestrated by the property owner, WSSC.

5. Has Mattawoman Energy consulted with DNR Wildlife and Heritage regarding the proposed linear facility ROWs? If so, please provide the outcome of those consultations.

   Environmental Consulting & Technology, Inc. (ECT) sent an information request letter to the MDNR Wildlife & Heritage division on March 5, 2013, requesting information regarding listed species near the proposed linear routes. MDNR has not yet provided a response to this information request. A copy of this letter is attached for reference.

6. The preliminary maps indicate construction of the water pipeline within State and county road ROWs, assuming there is sufficient space. Has Mattawoman Energy consulted with the State and county regarding the potential issues and feasibility of placing the water pipeline route in the ROW? If so, please provide documentation that includes details on the questions posed, the maps provided, restrictions noted by county, any negotiations that may have taken place, as well as the current state of the consultation, if applicable.

   Mattawoman Energy via their consultant Dewberry has consulted with the State and County regarding use of their right-of-way (see meeting minutes from both agencies attached). At the County level, the pipe may be in the right-of-way subject to a PG County Special Utility Permit and subsequent annual renewal of a Maintenance Utility Permit. At the State level, the pipe may be in the right-of-way as long as it is deemed a "public" entity. Subsequent to meeting with the state, and pending the outcomes of various power plant approvals with state agencies, it has been determined and the plans for this pipeline advanced based on the assumption that all the criteria for the "public" designation will be achieved. Thus, it is our opinion at this time that the pipe is allowed in the State's ROW subject to a District Utility Permit.

7. The preliminary maps show one alternative alignment crossing MD 5 (Branch Avenue) at the existing MD 373 (Accokeek Road)/MD 5 intersection. MDOT's Draft Consolidated Transportation Program for FY 2014-19 contains a project (Line 15) to construct a new interchange at MD 5, MD 373 and Brandywine Road (relocated). This project has not yet been funded, although engineering and ROW acquisition is underway. Has Mattawoman Energy had discussions with the SHA regarding the water pipeline crossing MD 5 at this point? If so, please provide documentation that includes details on the questions posed, the maps provided, restrictions noted by the State, any negotiations that may have taken place, as well as the current state of the consultation, if applicable.

   Refer to MDSHA meeting minutes referenced in item 6 above and attached. Yes, the state has been consulted on this proposed road improvement. At this time, we understand the design of the interchange to be at approximately 65% complete with an anticipated design completion date in 2016. At this time, the schedule for the Mattawoman pipeline is moving in advance of SHA's interchange design and construction. The consulting team has requested the SHA design drawings and will to the extent possible coordinate the pipeline location in this area with the interchange design in an effort to limit potential relocation requirements moving forward.

8. Where the pipeline crosses private properties, what is the status of negotiations or discussions with land owners?

   Currently Mattawoman Energy is pursuing right-of-entry permissions to perform the required field surveys and environmental assessments. Subsequent to the field work and additional survey to confirm property boundaries, formal easements and/or acquisitions as necessary will be pursued. Property rights negotiations are always an evolving process and as such the exact pipeline route and engineering will be somewhat fluid to accommodate the outcomes of the rights procurement.

9. One alternative alignment would follow the ROW of the proposed realignment of Accokeek Road between Duckett Road and US 301. Has Prince George's County acquired this ROW? In the Subregion 5 Master Plan, this road improvement is recommended to support projected growth envisioned in the master plan to the year 2030. Please provide details on discussion with Prince George's County regarding the use of this ROW for the water pipeline.

   Refer to Prince George's County meeting minutes referenced in item 6 above and attached. Yes, the county has been consulted on use of this right-of-way, the status of which is somewhat unclear in terms of whether it is a lapsed reservation or an actual platted ROW that is sitting in the county's possession. Regardless, this section of the route is an alternate version that has been removed from consideration. This is no longer relevant to the proposed, preferred route that is being further designed/processed for approval.

10. Please provide any updates to the MEC site layout including proposed gas and water pipeline and interconnection terminal points.

    The previously submitted site plan is the most current version- it shows the waterline terminating at the property line and the proposed gas meter extension.

11. Has Mattawoman Energy consulted with PEPCO regarding the potential issues and feasibility of collocating proposed gas pipeline route in the transmission line ROW? If so, please provide the outcome of these consultations.

    Mattawoman Energy via their consultant Dewberry has consulted with PEPCO regarding use of their right-of-way. The early discussions indicate that co-location is feasible pending confirmation that no other gas lines are already located within the ROW and review of PEPCO's ultimate buildout scenario and construction schedule. PEPCO has indicated they will conclude their preliminary review and issue an opinion as to their willingness to move forward with field survey access, design coordination/review, and licensing agreements in early January.

12. Please provide data for any spatial features in GIS format for the items listed above to assist in our reviews.

    Features have been provided in GIS format as requested- see accompanying CD.

Should you have questions or require additional information, please do not hesitate to contact me. Thank you in advance for your attention to this item.

Sincerely,

Lisa Betz, P.E. LEED AP BD+C
Project Manager
Dewberry
410.645.1402

Attachments:
A - Preliminary Route Study (revised January 6, 2014)
B – MD DNR Wildlife and Heritage Information Request
C - Meeting Minutes for SHA and Prince George's County
D - CD with shx files for existing conditions/proposed utility

Cc:
John Boswell – Panda Power Funds / Mattawoman Energy, LLC
Michael Snyder, David Taylor- Dewberry

APPENDIX C

SUBSTATION SITE - WETLAND 8 DATA SHEET

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Mattawoman Energy Substation Site City/County: Prince George's Sampling Date: 3/12/15

Applicant/Owner: Mattawoman Energy State: MD Sampling Point: LW1-8

Investigator(s): L.Walker, M.Scohier Section, Township, Range: _____

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR or MLRA): LRRS Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Beltsville Silt Loam NWI classification: POF

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 1-4

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Delineation occurred during a very wet time of the year. Standing water was also present in areas that were clearly not wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: _____

Tree Stratum (Plot size: 10x10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	25	Y	FAC
2. Liquidambar styraciflua	25	Y	FAC
3. Platinus occidentalis	15		FACW
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover: _____	20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: _____)			
1. Vaccinium corymbosum	10		FACW
2. Ilex opaca	15		FAC
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover: _____	20% of total cover: _____		

Herb Stratum (Plot size: _____)			
1. Osmunda cinnamomea	10		FACW
2. Sphagnum spp.	5		OBL
3. Carex spp.	10		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		
50% of total cover: _____	20% of total cover: _____		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover: _____	20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks: (If observed, list morphological adaptations below).

Sample taken in winter. Growing season has not started so relying on remanents of vegetation from last year. All present vegetation was FAC or wetter.

SOIL

Sampling Point: LW1-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR4/1	100					silt loam	
3-12+	10YR 4/1	80	10YR 5/8	20	1	M	silt loam	prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Signficant redox concentrations in low chroma soil matrix.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Mattawoman Energy Substation Site City/County: Prince George's Sampling Date: 3/12/15

Applicant/Owner: Mattawoman Energy State: MD Sampling Point: LW1-8

Investigator(s): L.Walker, M.Scohier Section, Township, Range: _____

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR or MLRA): LRRS Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: Beltsville Silt Loam NWI classification: POF

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☑ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 1-4

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Delineation occurred during a very wet time of the year. Standing water was also present in areas that were clearly not wetland.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: _____

Tree Stratum (Plot size: 10x10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	25	Y	FAC
2. Liquidambar styraciflua	25	Y	FAC
3. Platinus occidentalis	15		FACW
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover: _____	20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: _____)			
1. Vaccinium corymbosum	10		FACW
2. Ilex opaca	15		FAC
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover: _____	20% of total cover: _____		

Herb Stratum (Plot size: _____)			
1. Osmunda cinnamomea	10		FACW
2. Sphagnum spp.	5		OBL
3. Carex spp.	10		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		
50% of total cover: _____	20% of total cover: _____		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover: _____	20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks: (If observed, list morphological adaptations below).

Sample taken in winter. Growing season has not started so relying on remanents of vegetation from last year. All present vegetation was FAC or wetter.

SOIL

Sampling Point: LW1-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR4/1	100					silt loam	
3-12+	10YR 4/1	80	10YR 5/8	20	1	M	silt loam	prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

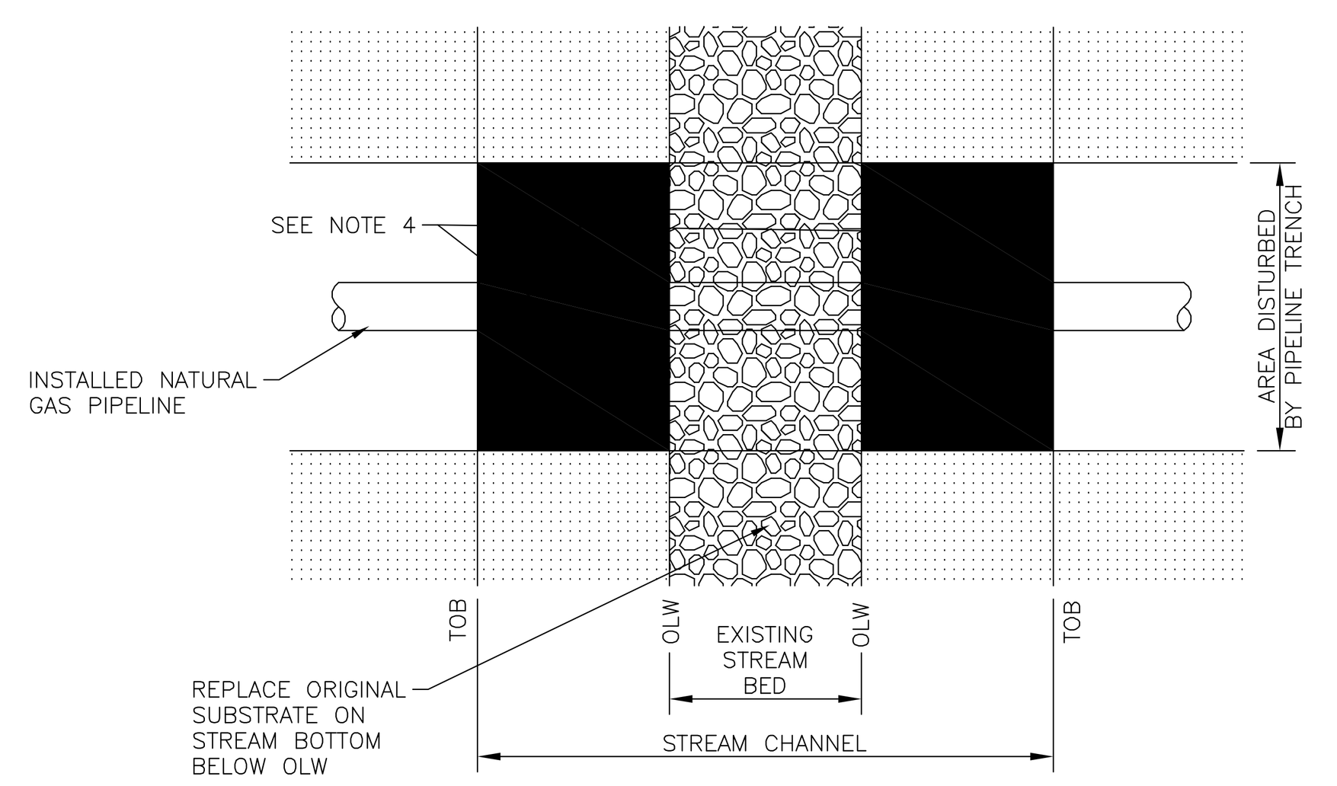
Hydric Soil Present? **Yes** X **No** _____

Remarks:

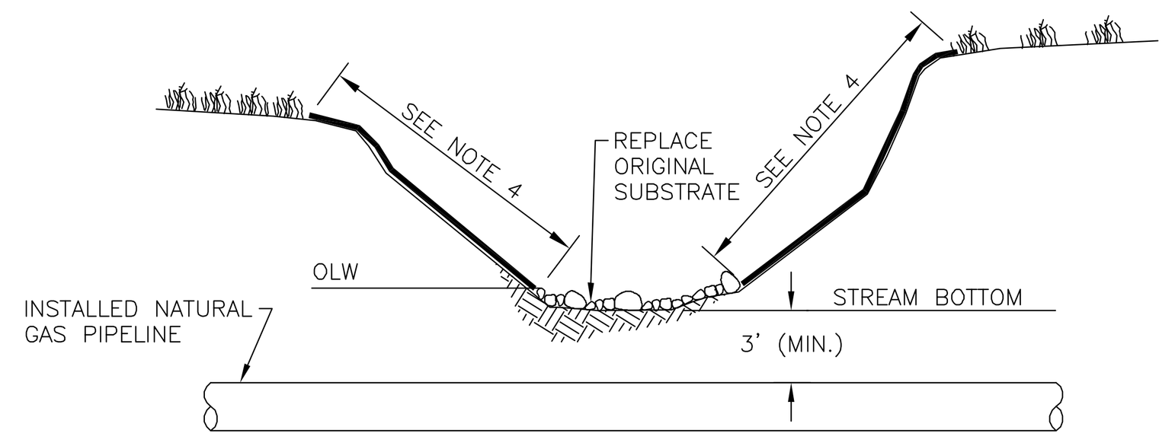
Signficant redox concentrations in low chroma soil matrix.

APPENDIX D

TYPICAL ENGINEERING DETAILS



PLAN VIEW



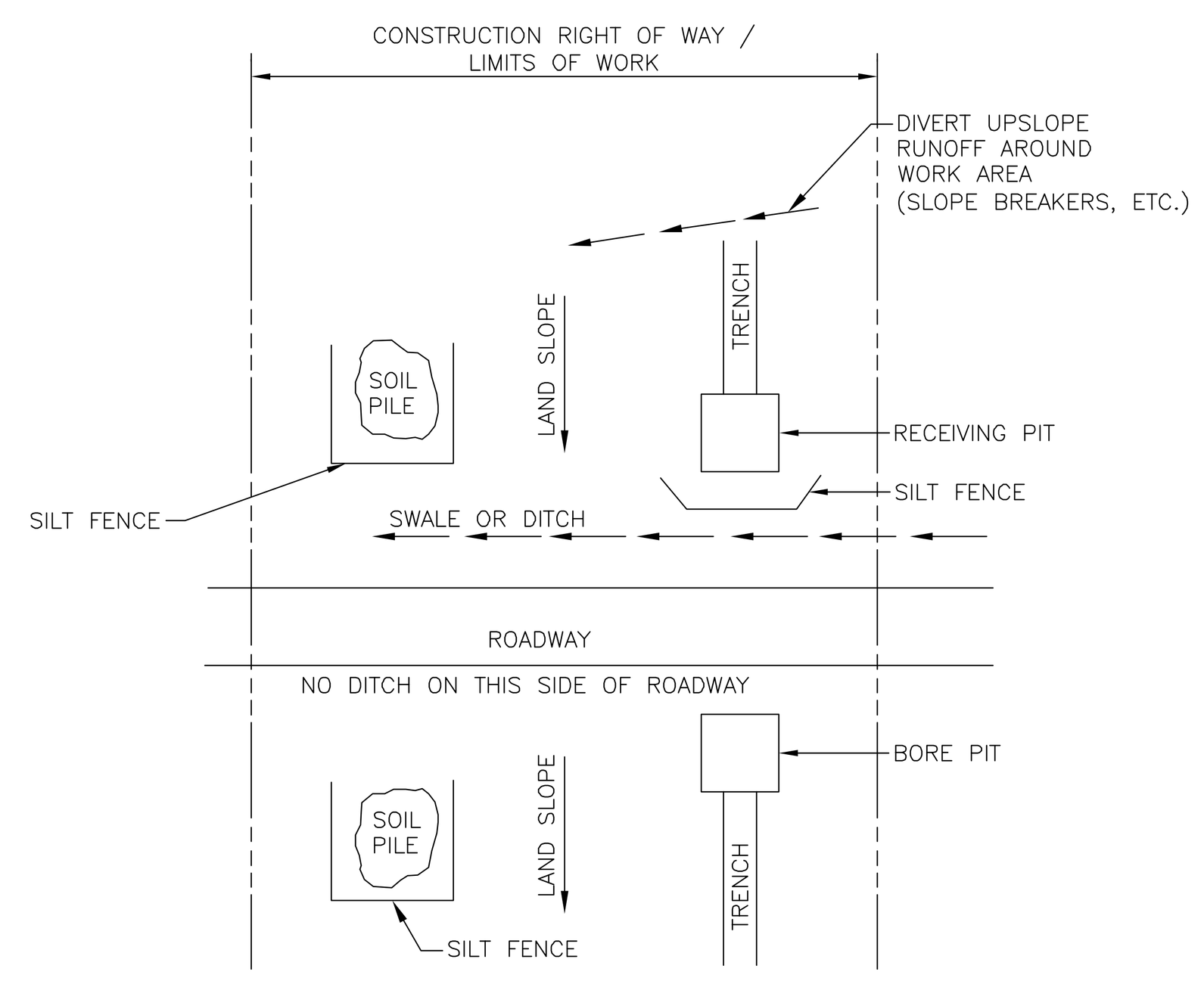
CROSS SECTION

NOTES:

1. PRIOR TO WORKING IN STREAM CHANNEL, INSTALL ALL EROSION AND SEDIMENTATION CONTROL BEST MANAGEMENT PRACTICES SPECIFIED IN EROSION AND SEDIMENTATION PLAN, AND DIVERT STREAM FLOW AROUND WORK AREA.
2. WHEN EXCAVATING PIPELINE TRENCH ACROSS STREAM, SEGREGATE AND SEPARATELY STOCKPILE STREAM SUBSTRATE.
3. AFTER INSTALLING PIPELINE IN TRENCH, REPLACE STOCKPILED SUBSTRATE ON SURFACE OF BOTTOM OF STREAM CHANNEL BELOW THE ORDINARY LOW WATER (OLW) LEVEL.
4. INSTALL NORTH AMERICAN GREEN C125 BLANKET ON STREAM BANKS BETWEEN ORDINARY LOW WATER (OLW) LEVEL TO TOP OF THE BANK (TOB), COVERING DISTURBED PORTIONS OF THE STREAM BANK. INSTALL PER MANUFACTURER'S SPECIFICATIONS.

STREAM CHANNEL RESTORATION

NOT TO SCALE



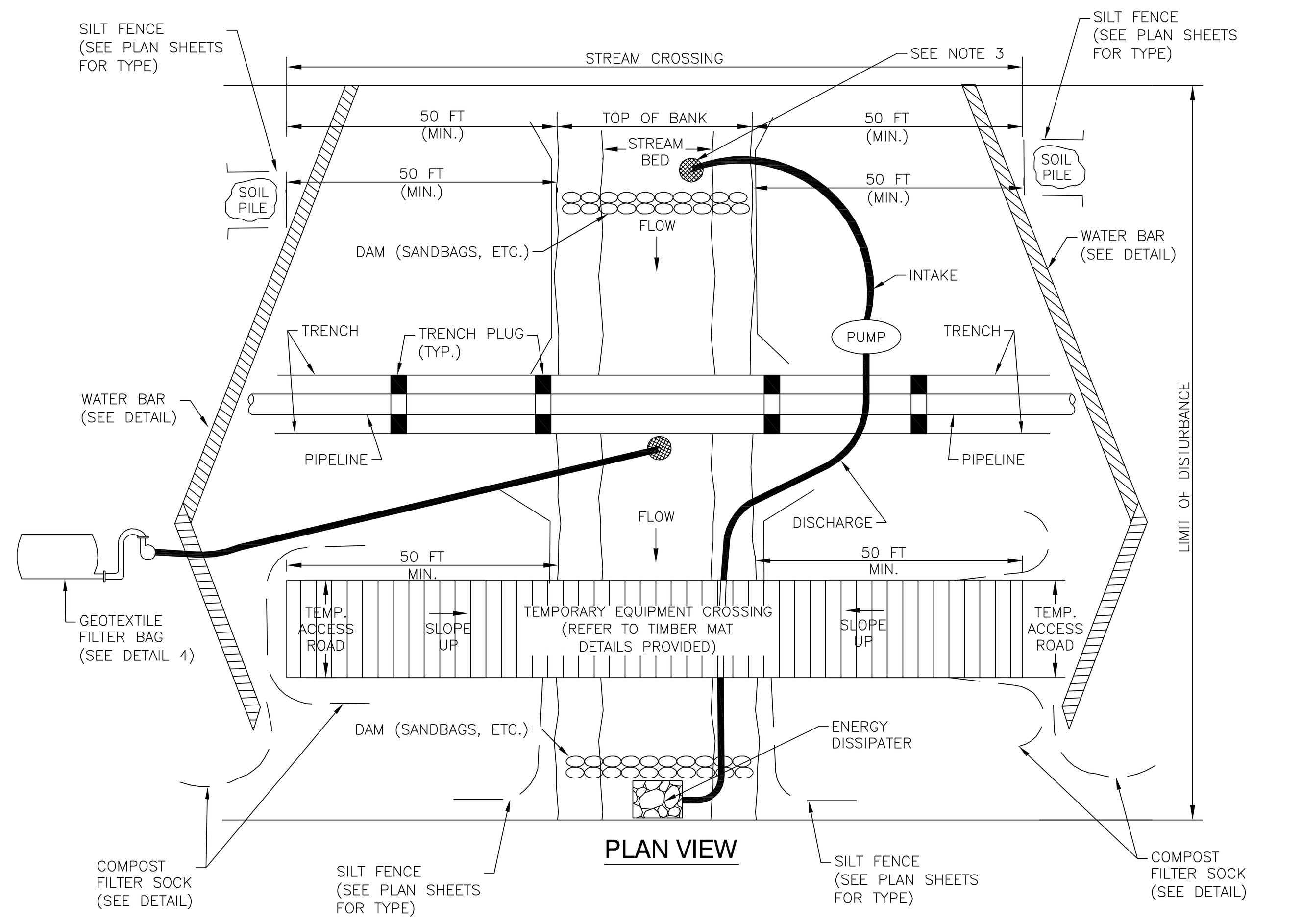
PLAN VIEW

NOTES:

1. INSTALL SILT FENCE BEFORE TRENCHING ACROSS ROAD.
2. ROADWAY CROSSINGS MAY BE SUBJECT TO THE CONDITIONS OF CROSSING OR HIGHWAY OCCUPANCY PERMITS. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ANY APPLICABLE ROAD CROSSING PERMITS. THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO THE CONDITIONS OF THE PERMITS.

PIPELINE CROSSING OF ROAD - BORING METHOD

NOT TO SCALE



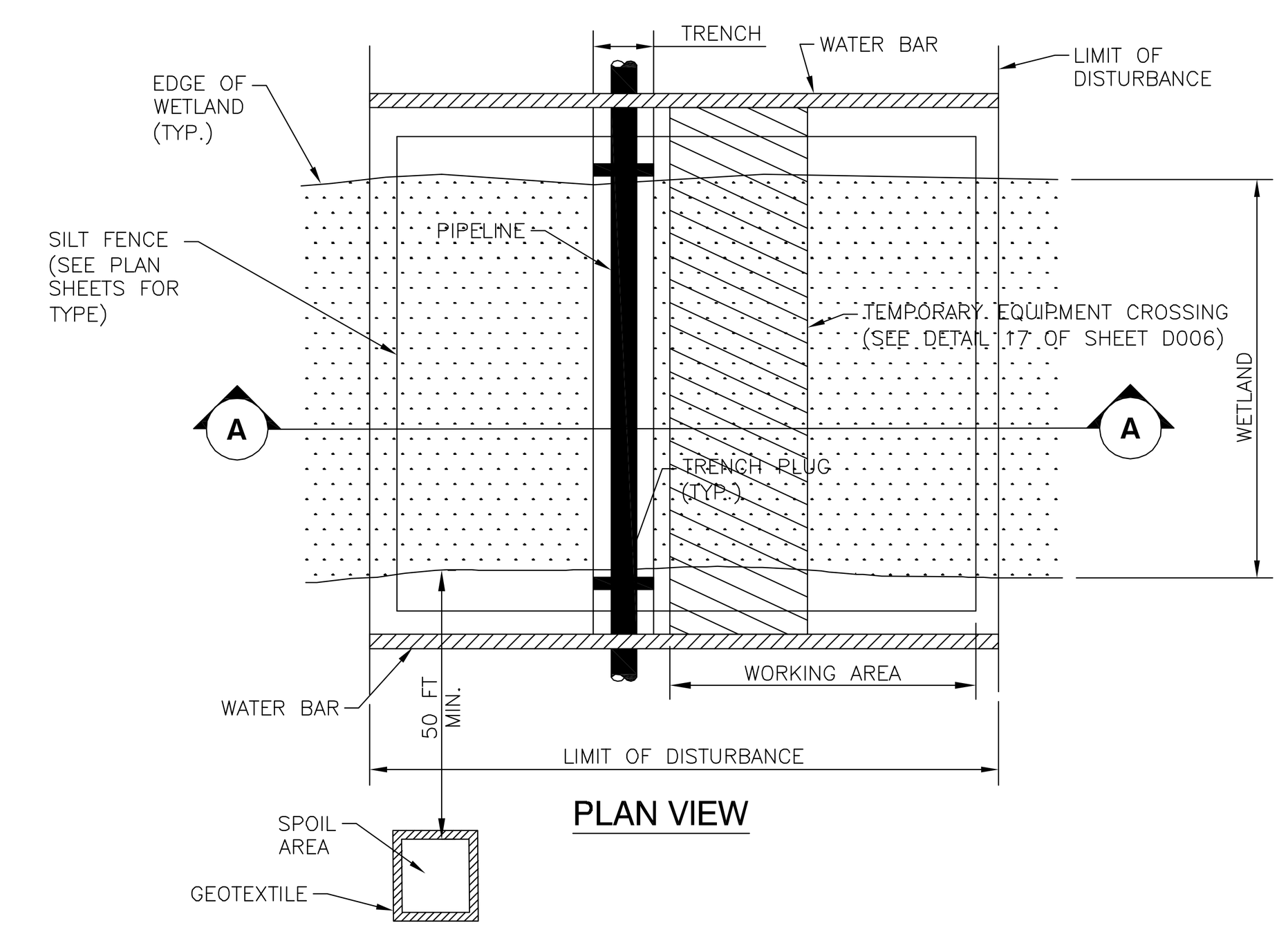
PLAN VIEW

NOTES:

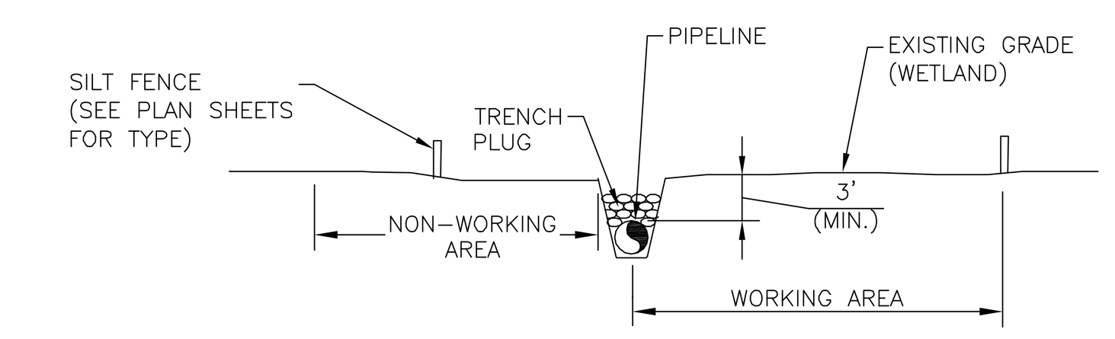
1. ALL RUNOFF FROM DISTURBED UP SLOPE AREAS WITHIN LIMIT OF DISTURBANCE MUST BE TREATED FOR SEDIMENT BEFORE IT REACHES STREAM.
2. INSTALL SILT FENCE, COMPOST FILTER SOCK, WATERBARS, TRENCH PLUGS, PUMP, ENERGY DISSIPATER, AND DAMS BEFORE TRENCHING WITHIN STREAM BED.
3. PUMP MUST BE OF SUFFICIENT CAPACITY TO CONVEY NORMAL AND/OR EXISTING STREAM FLOW OVER TRENCH. A BACK-UP PUMP OF EQUAL CAPACITY MUST BE AVAILABLE ON-SITE DURING EXCAVATION AND THE 6 MONTH MAINTENANCE PERIOD.
4. PLACE SPOIL PILES A MINIMUM OF 50 FEET FROM TOP OF BANK.
5. INSTALL WATERBARS AT APPROACHES TO STREAM CROSSING AND COMPOST FILTER SOCK AT OUTLETS OF WATERBARS.
6. INSTALL SILT FENCE ALONG STREAM BANKS.
7. MAINTAIN SURFACE OF TEMPORARY EQUIPMENT CROSSING TO PREVENT SOIL DISCHARGES TO STREAM.
8. EXTEND TIMBER MAT 50 FEET, FROM TOP OF BANK, ON BOTH SIDES OF STREAM CROSSING IN ORDER TO MINIMIZE DISTURBANCE OF STREAM BANKS AND RIPARIAN AREAS.
9. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6 INCHES ABOVE ORIGINAL GRADE.
10. PUMP INTAKE SHALL HAVE AN ANTI-AQUATIC IMPEDIMENT SCREEN.
11. STREAM CHANNELS 10 FEET IN BOTTOM WIDTH OR LESS SHALL BE COMPLETED WITHIN 24 HOURS FROM START TO FINISH, INCLUDING TRENCH BACKFILL, STABILIZATION OF STREAM BANKS AND STABILIZATION OF THE AREA 50 FEET BACK FROM THE TOP OF EACH STREAM BANK. STREAM CHANNELS BETWEEN 10 FEET AND 100 FEET IN BOTTOM WIDTH SHALL BE COMPLETED WITHIN 48 HOURS OR AS APPROVED IN WRITING FROM WVDNR.

PIPELINE AND/OR EQUIPMENT CROSSING OF STREAM TRENCHING

NOT TO SCALE



PLAN VIEW



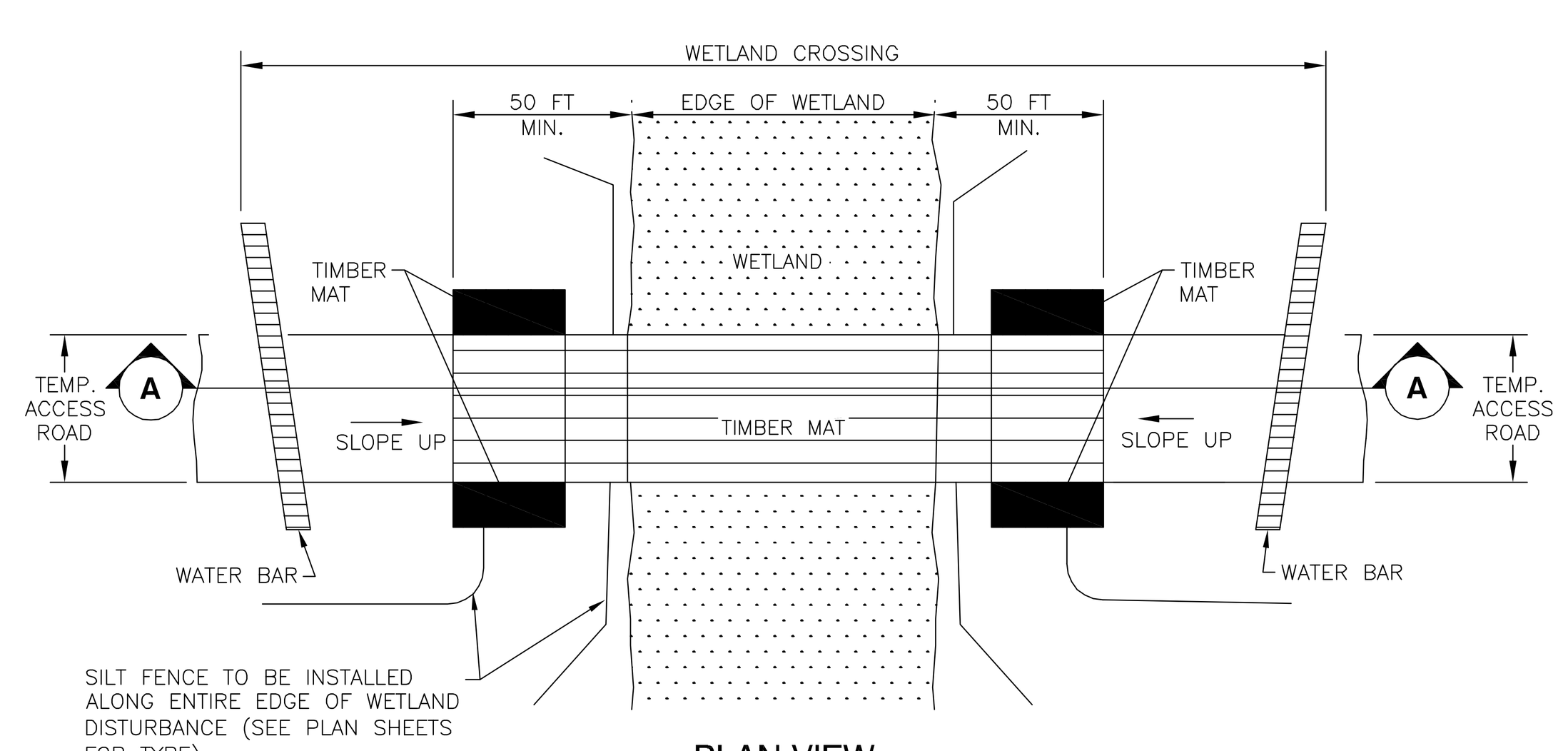
CROSS SECTION A-A

NOTES:

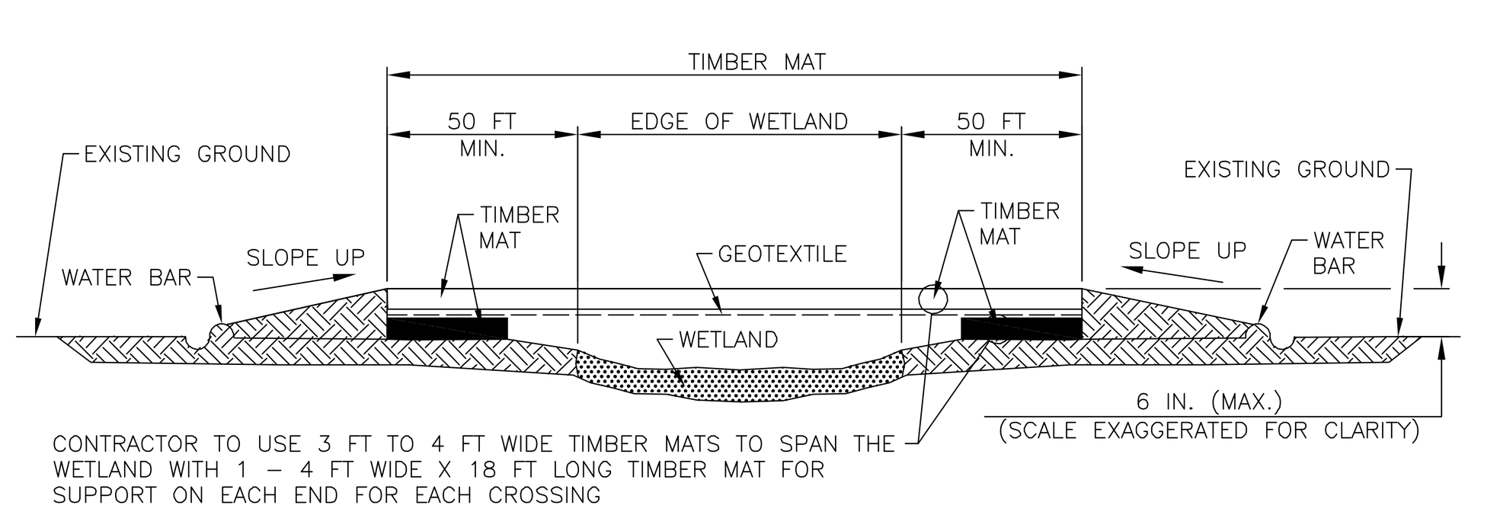
1. INSTALL SILT FENCE ACROSS THE RIGHT-OF-WAY, IMMEDIATELY UP-SLOPE OF THE WETLAND BOUNDARY, AT THE EDGE OF THE LIMIT OF DISTURBANCE, AND AS NECESSARY, AROUND SOIL STOCKPILES.
2. EQUIPMENT STAGING AREA MUST BE LOCATED A MINIMUM OF 50 FEET FROM THE EDGE OF THE WETLAND.
3. USE TIMBER MATS FOR VEHICULAR CROSSING OF THE WETLAND. VEHICLES ARE NOT ALLOWED ACCESS TO THE WETLAND CROSSING UNLESS THE WETLAND IS BEING PROTECTED BY TIMBER MATS.
4. INSTALL TRENCH PLUGS ON EACH SIDE OF THE WETLAND TO PREVENT THE TRENCH FROM DRAINING WETLAND OR CHANGING HYDROLOGY.
5. WHEN EXCAVATING TRENCH IN WETLAND, EXCAVATE WETLAND TOPSOIL (TOP 12 INCHES) AND STOCKPILE SEPARATELY FROM SUBSOIL. DURING BACKFILLING OF TRENCH, REPLACE TOPSOIL IN TOP OF TRENCH TO RESTORE WETLAND.
6. TIMBER MATS WILL BE UTILIZED IN WORKING AREA TO MINIMIZE DISTURBANCE/COMPACTION OF WETLANDS.
7. UPON RESTORATION, REMOVE GEOTEXTILE, TIMBER MATS, INSTALL WATERBARS, AND RESTORE WETLAND TO EXISTING GRADE.

PIPELINE AND EQUIPMENT CROSSING OF WETLAND AND RESTORATION

NOT TO SCALE



PLAN VIEW



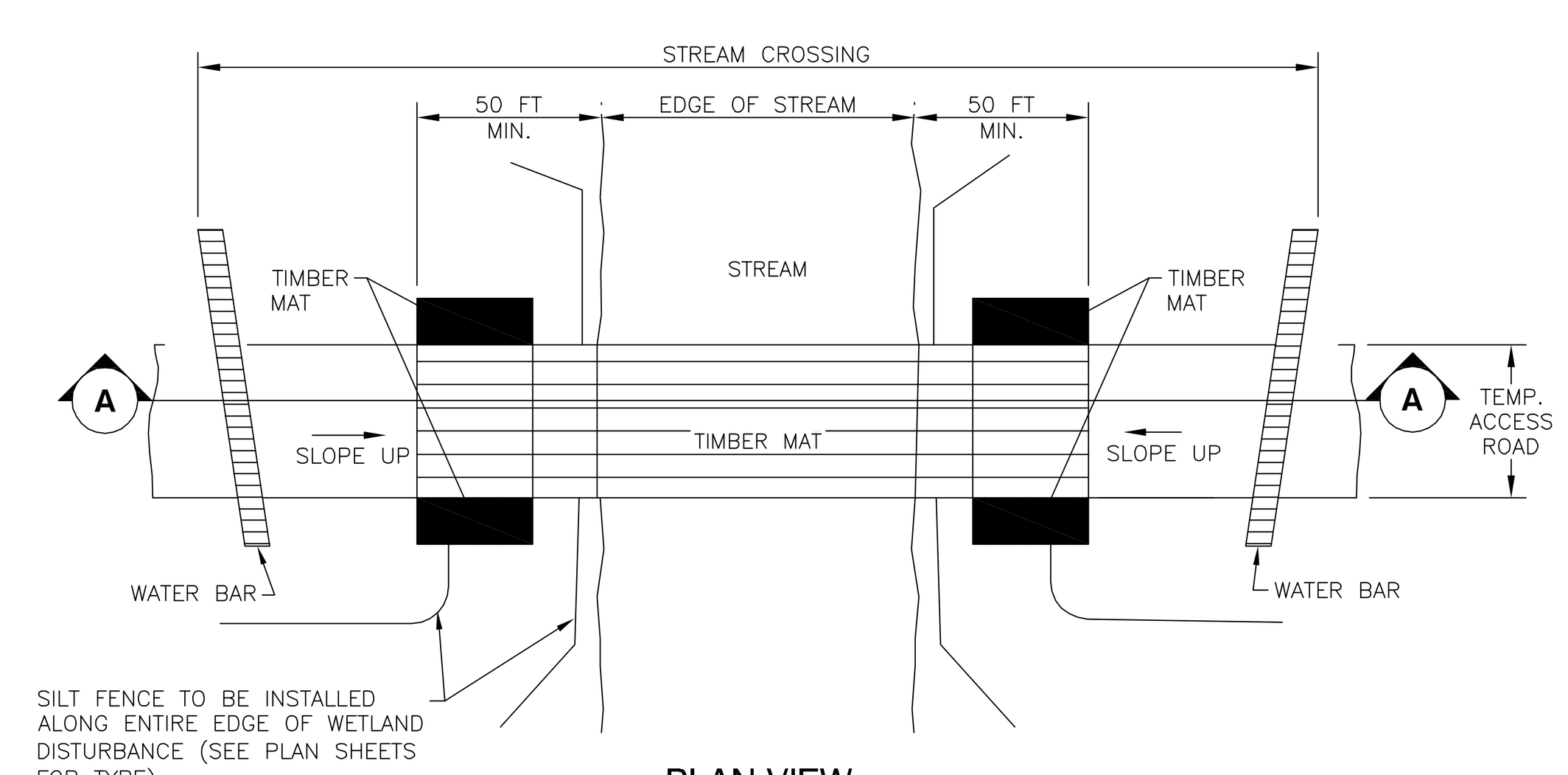
CROSS SECTION A-A

NOTES:

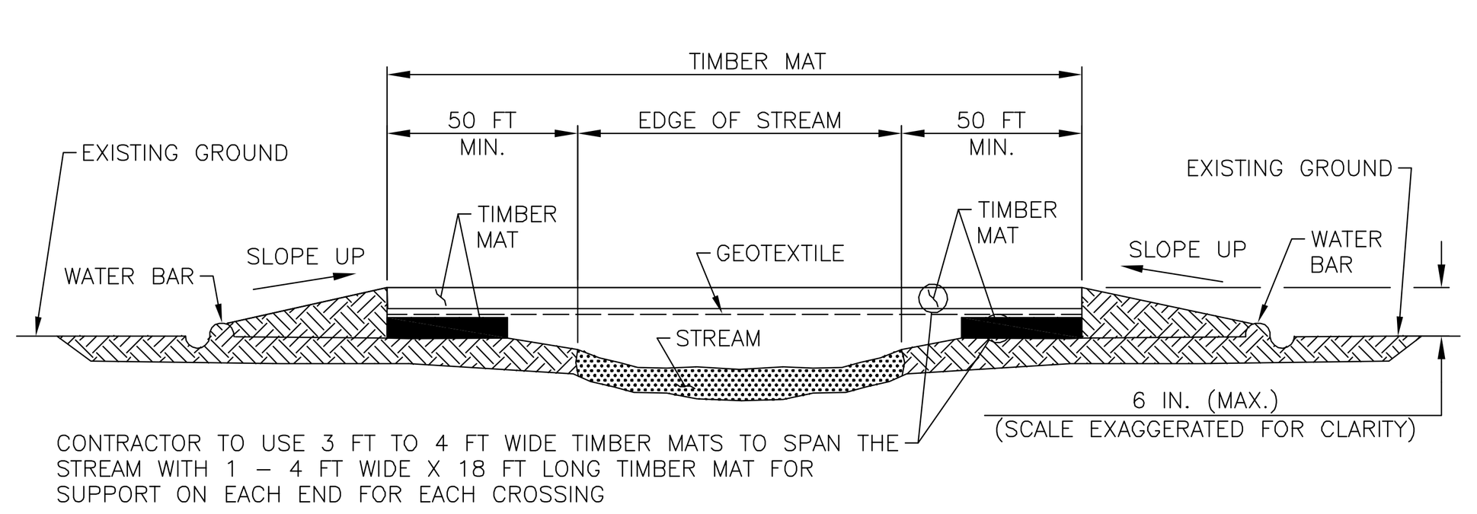
1. INSTALL WATER BARS AT APPROACHES TO WETLAND CROSSING AND SILT FENCE ALONG EDGE OF WETLAND. INSTALL SILT FENCE AT OUTLET OF WATER BARS.
2. A SKIRT FORMED OF SILT FENCE, GEOTEXTILE FABRIC OR EQUIVALENT SHALL BE PLACED ON THE BOTTOM OF THE BRIDGE TO TRAP SEDIMENT AS NECESSARY.
3. MAINTAIN SURFACE OF TEMPORARY BRIDGE TO PREVENT SOIL DISCHARGES TO WETLAND.
4. EXTEND TIMBER MAT 50 FEET ON BOTH SIDES OF WETLAND CROSSING IN ORDER TO MINIMIZE DISTURBANCE.
5. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6-INCHES ABOVE ORIGINAL GRADE.

TEMPORARY EQUIPMENT CROSSING OF WETLAND

NOT TO SCALE



PLAN VIEW



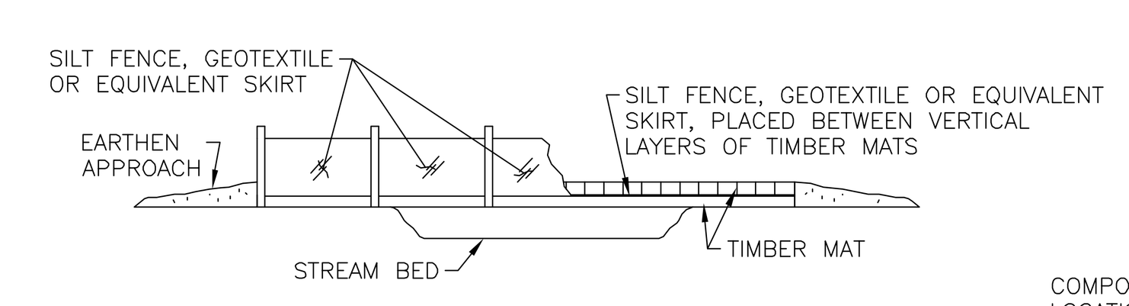
CROSS SECTION A-A

NOTES:

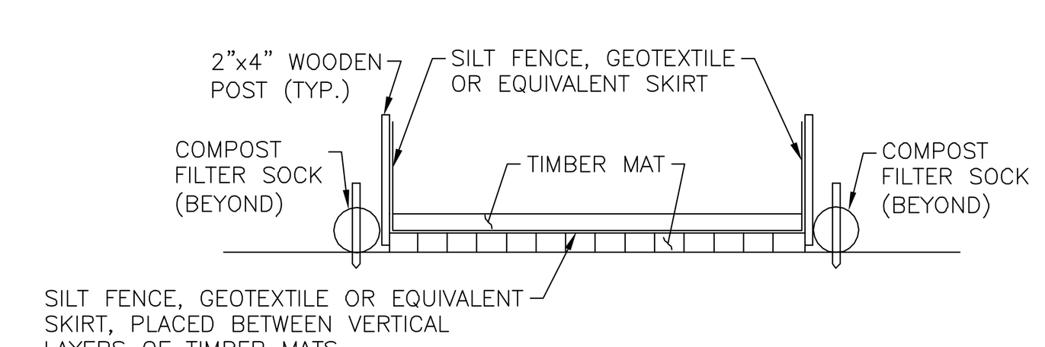
1. ALL RUNOFF FROM DISTURBED UP SLOPE AREAS WITHIN LIMIT OF DISTURBANCE MUST BE TREATED FOR SEDIMENT BEFORE IT REACHES STREAM.
2. PLACE SPOIL PILES A MINIMUM OF 50 FEET FROM TOP OF BANK.
3. INSTALL WATERBARS AT APPROACHES TO STREAM CROSSING AND COMPOST FILTER SOCK AT OUTLETS OF WATERBARS AND INSTALL SILT FENCE ALONG STREAM BANKS.
4. A SKIRT FORMED OF SILT FENCE, GEOTEXTILE FABRIC OR EQUIVALENT SHALL BE PLACED ON THE BOTTOM OF THE BRIDGE TO TRAP SEDIMENT AS NECESSARY.
5. MAINTAIN SURFACE OF TEMPORARY EQUIPMENT CROSSING TO PREVENT SOIL DISCHARGES TO STREAM.
6. EXTEND TIMBER MAT 50 FEET, FROM TOP OF BANK, ON BOTH SIDES OF STREAM CROSSING IN ORDER TO MINIMIZE DISTURBANCE OF STREAM BANKS AND RIPARIAN AREAS.
7. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6 INCHES ABOVE ORIGINAL GRADE.

TEMPORARY EQUIPMENT CROSSING OF STREAM

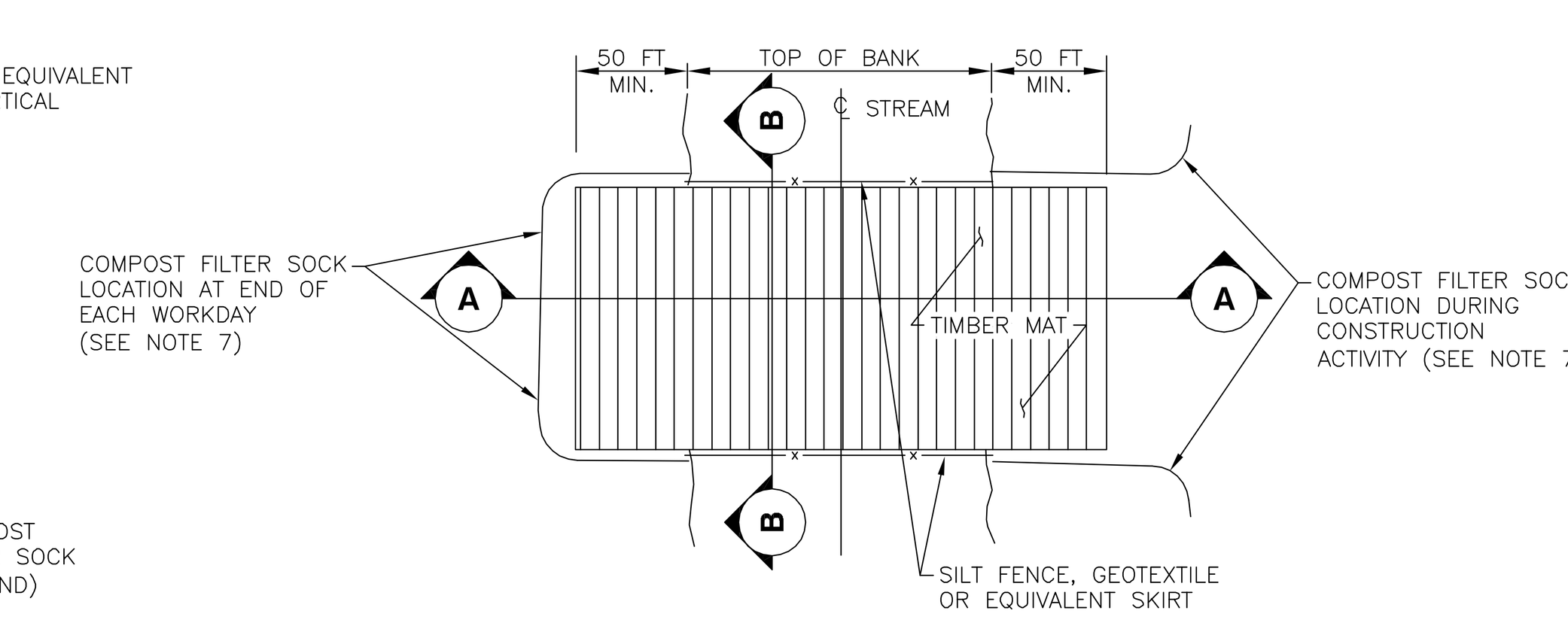
NOT TO SCALE



CROSS SECTION A-A



CROSS SECTION B-B



PLAN VIEW

NOTES:

1. THIS TYPE OF BRIDGE IS GENERALLY USED FOR SMALL STREAM CROSSINGS LESS THAN 25 FEET IN WIDTH AND A PROPER STREAM BANK CONFIGURATION.
2. EXTEND TIMBER MAT 50 FEET, FROM TOP OF BANK, ON BOTH SIDES OF STREAM CROSSING IN ORDER TO MINIMIZE DISTURBANCE OF STREAM BANKS AND RIPARIAN AREAS.
3. BRIDGE WILL BE TEMPORARILY REMOVED IF HIGH WATER RENDERS IT UNSAFE FOR CROSSING.
4. BRIDGE TO REMAIN IN PLACE UNTIL COMPLETION OF FINAL RESTORATION.
5. A SKIRT FORMED OF SILT FENCE, GEOTEXTILE FABRIC, OR EQUIVALENT SHALL BE PLACED ON THE SIDES AND BOTTOM OF THE BRIDGE TO TRAP SEDIMENT AS NECESSARY.
6. INDIVIDUAL MATS SHALL BE ANCHORED AND BUTTED TIGHTLY TO MINIMIZE THE INTRODUCTION OF SEDIMENT TO THE WATERBODY.
7. COMPOST FILTER SOCK WILL BE PLACED AT THE EDGE OF THE EQUIPMENT BRIDGE AT THE END OF EACH WORK DAY TO PREVENT EROSION, BUT WILL BE REMOVED DURING CONSTRUCTION ACTIVITY.
8. TEMPORARY STREAM CROSSINGS SHALL BE INSPECTED ON A DAILY BASIS.
9. DAMAGED CROSSINGS SHALL BE REPAIRED WITHIN 24 HOURS OF THE INSPECTION, AND BEFORE ANY SUBSEQUENT USE.
10. SEDIMENT DEPOSITS ON THE CROSSING OR ITS APPROACHES SHALL BE REMOVED WITHIN 24 HOURS OF THE INSPECTION.

TIMBER MAT BRIDGE EQUIPMENT CROSSING OVER STREAM

NOT TO SCALE

Dewberry®

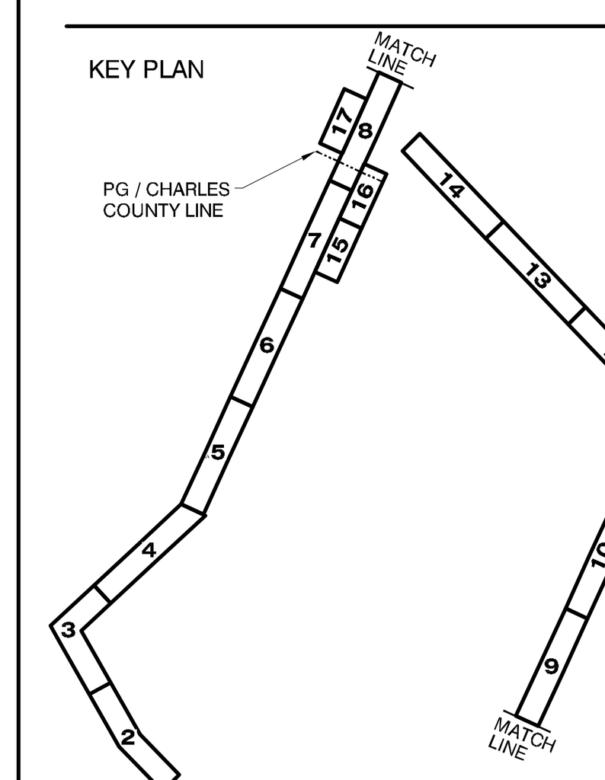
Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.9500
FAX: 410.265.8875

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
CONTACT: JOHN BOSWELL
(972) 361-2000

MATTAWOMAN ENERGY, LLC
20 INCH DIAMETER GAS PIPELINE
CHARLES AND PRINCE GEORGE'S COUNTIES, MD

SEAL

KEY PLAN



SCALE

AS SHOWN

No.	DATE	BY	Description
4	04/28/2015	KOS	UPDATED PROPERTY OWNERSHIP
3	04/10/2015	JM	REVISED 20% ENGINEERING PER CPCN COMMENTS
2	03/10/2015	KOS	Updated w/ PEPCO Pole #'s
1	01/15/2015	EDL	CPCN Revisions

REVISIONS

DRAWN BY: LM
APPROVED BY: GSG
CHECKED BY: JCL
DATE: SEPTEMBER 5, 2014

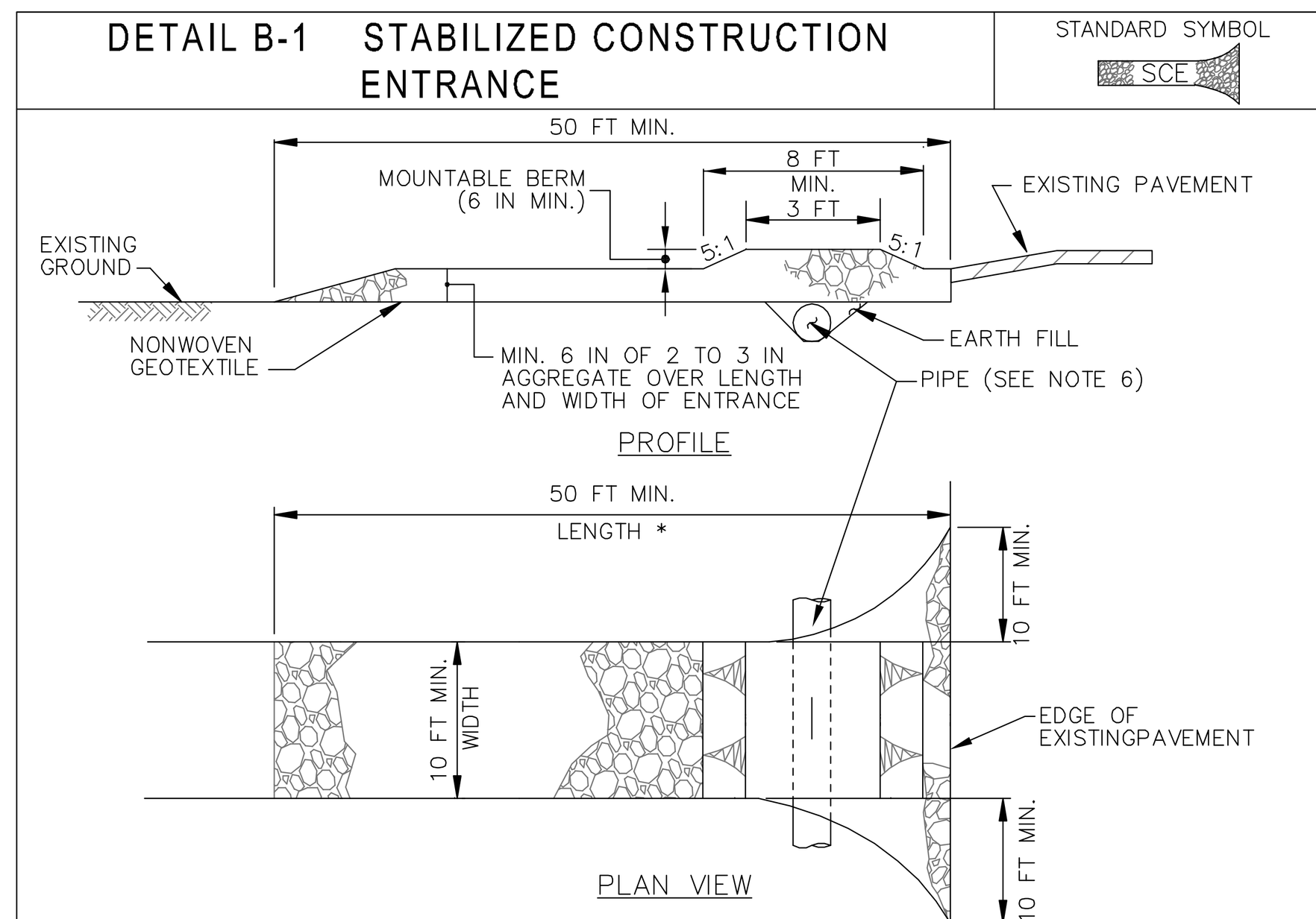
PROPOSED
20" GAS LINE
20% ENGINEERING
DETAILS

PROJECT NO. 50064932

SHEET NO. 18

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

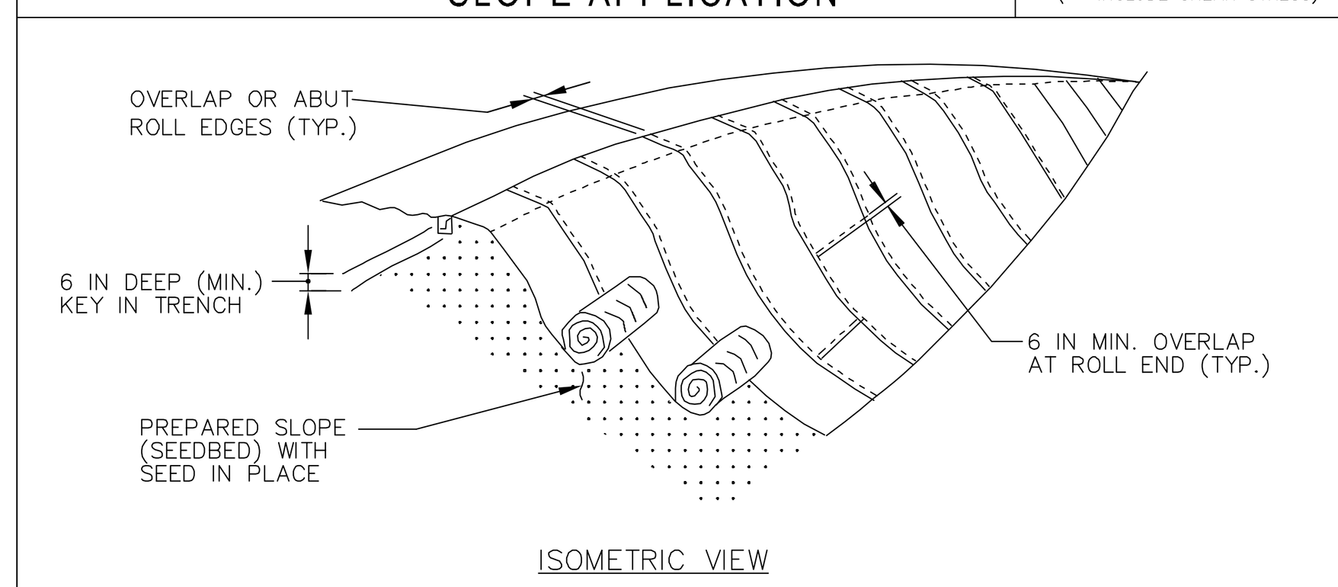
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: TSSMS – * lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

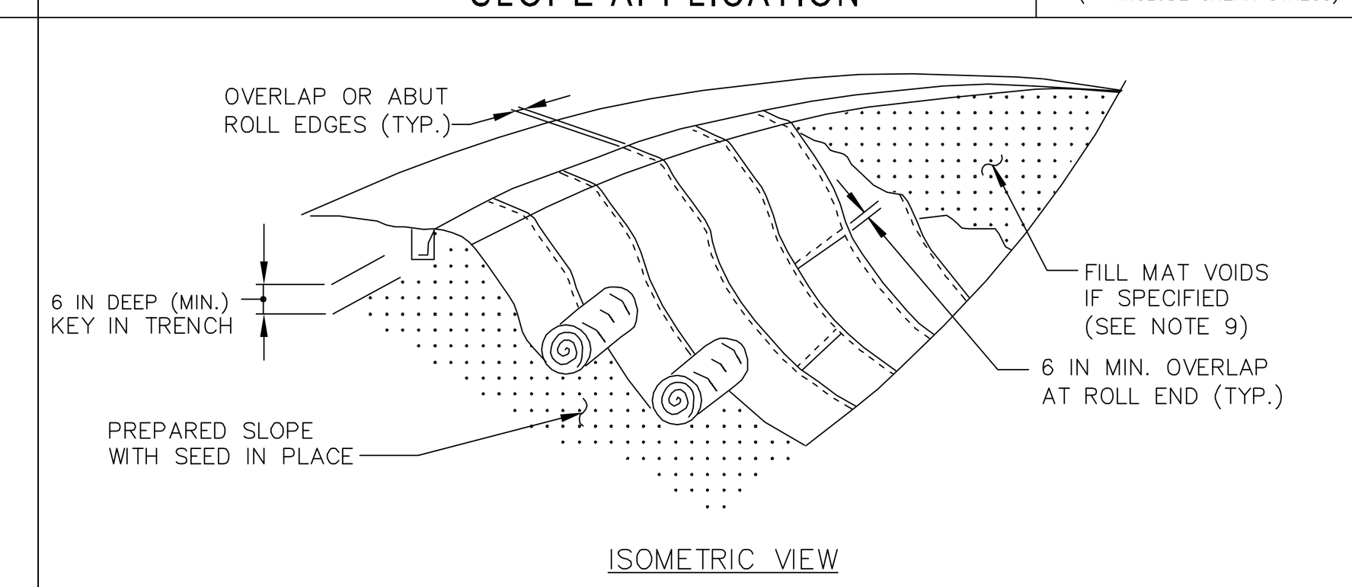
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-4-6-D PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: PSSMS – * lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

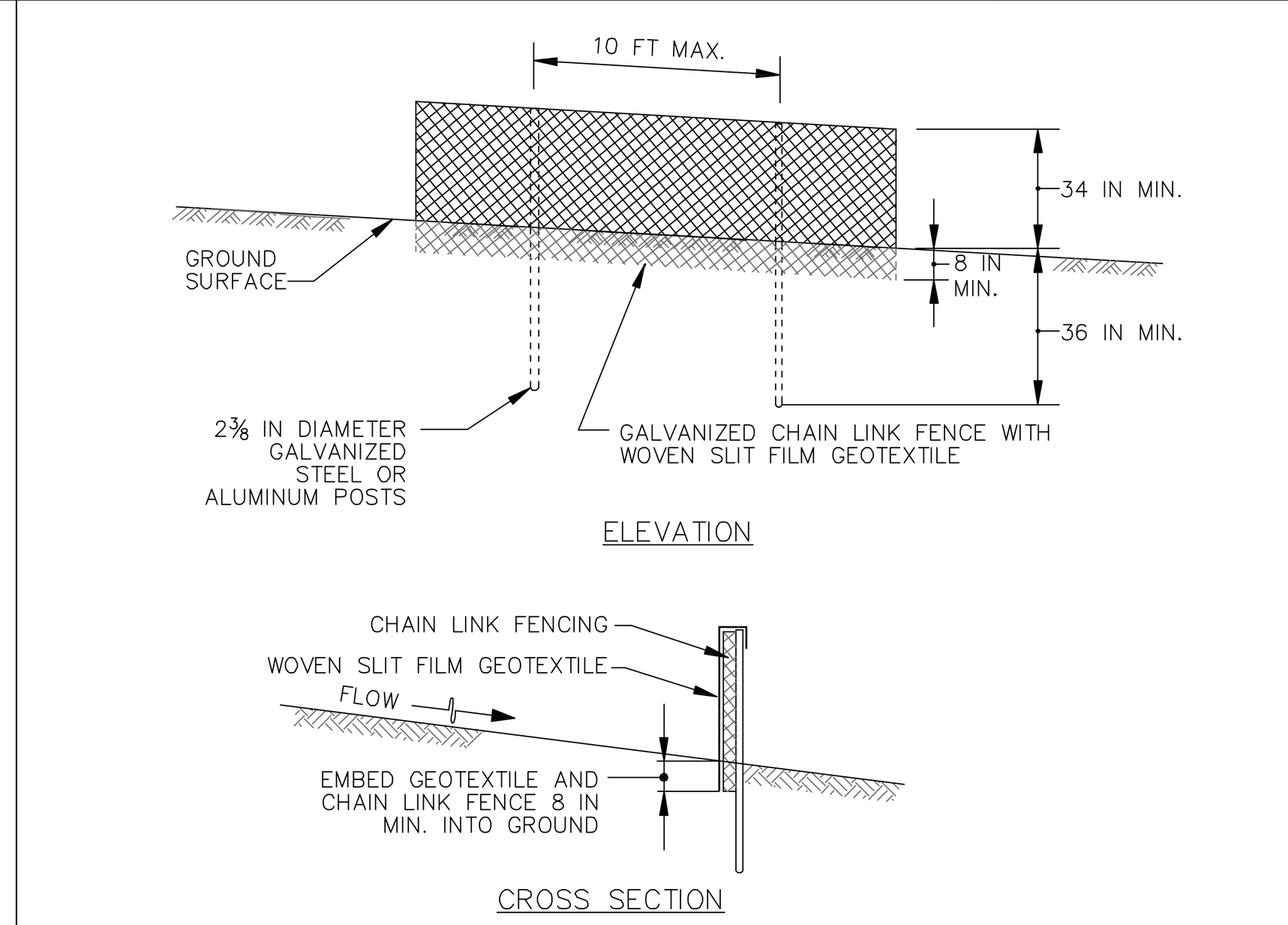
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWN SLOPE. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



CONSTRUCTION SPECIFICATIONS

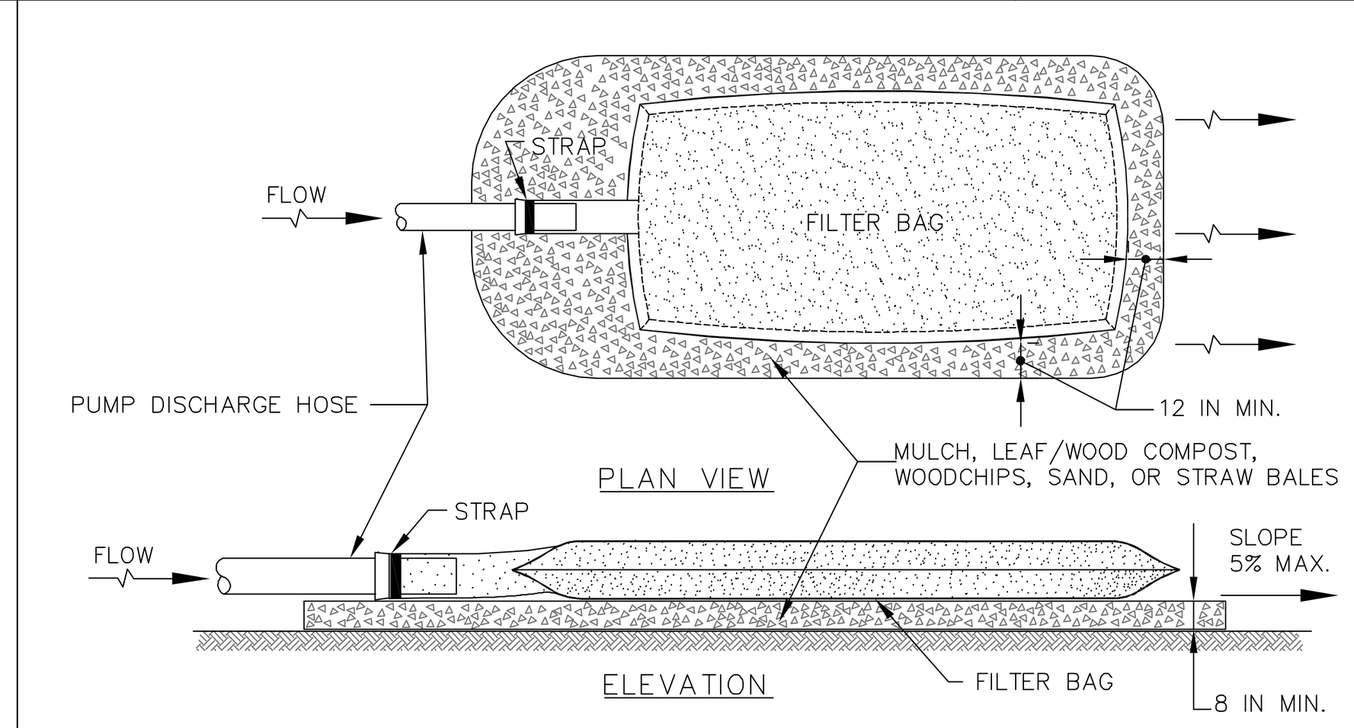
1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅝ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL F-4 FILTER BAG

STANDARD SYMBOL: FB



CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT²	ASTM D-4491
PERMITTIVITY (SEC⁻¹)	1.2 SEC⁻¹	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15–0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632

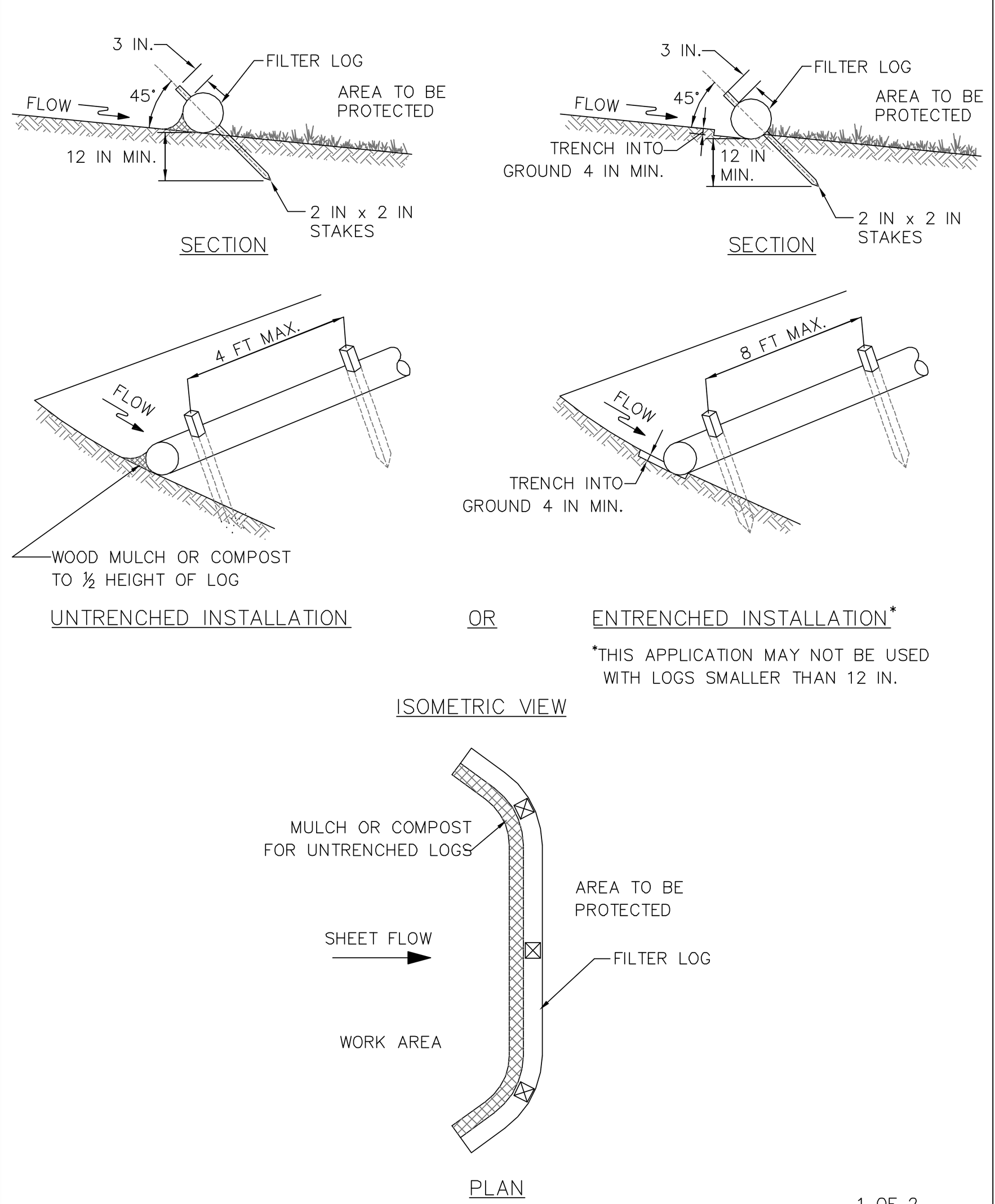
6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-6 FILTER LOG

STANDARD SYMBOL: FL-18 (DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG.)



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-6 FILTER LOG

STANDARD SYMBOL: FL-18 (DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG.)

CONSTRUCTION SPECIFICATIONS

1. PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF FILTER LOG.
2. FILL LOG NETTING UNIFORMLY WITH COMPOST (IN ACCORDANCE WITH SECTION H-1 MATERIALS), OR OTHER APPROVED BIODEGRADABLE MATERIAL TO DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
3. INSTALL FILTER LOGS PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE WITH THE BEGINNING AND END OF THE INSTALLATION POINTING SLIGHTLY UP THE SLOPE CREATING A "J" SHAPE AT EACH END TO PREVENT BYPASS.
4. FOR UNTRENCHED INSTALLATION BLOW OR HAND PLACE MULCH OR COMPOST ON UPHILL SIDE OF THE SLOPE ALONG LOG.
5. STAKE FILTER LOG EVERY 4 FEET OR CLOSER ALONG ENTIRE LENGTH OF LOG OR TRENCH LOG INTO GROUND A MINIMUM OF 4 INCHES AND STAKE LOG EVERY 8 FEET OR CLOSER.
6. USE STAKES WITH A MINIMUM NOMINAL CROSS SECTION OF 2X2 INCH AND OF SUFFICIENT LENGTH TO ATTAIN A MINIMUM OF 12 INCHES INTO THE GROUND AND 3 INCHES PROTRUDING ABOVE LOG.
7. WHEN MORE THAN ONE LOG IS NEEDED, OVERLAP ENDS 12 INCHES MINIMUM AND STAKE.
8. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF ½ THE EXPOSED HEIGHT OF LOG AND REPLACE MULCH. REPLACE FILTER LOG IF TORN. REINSTALL FILTER LOG IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER LOGS. FOR PERMANENT APPLICATIONS, ESTABLISH AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

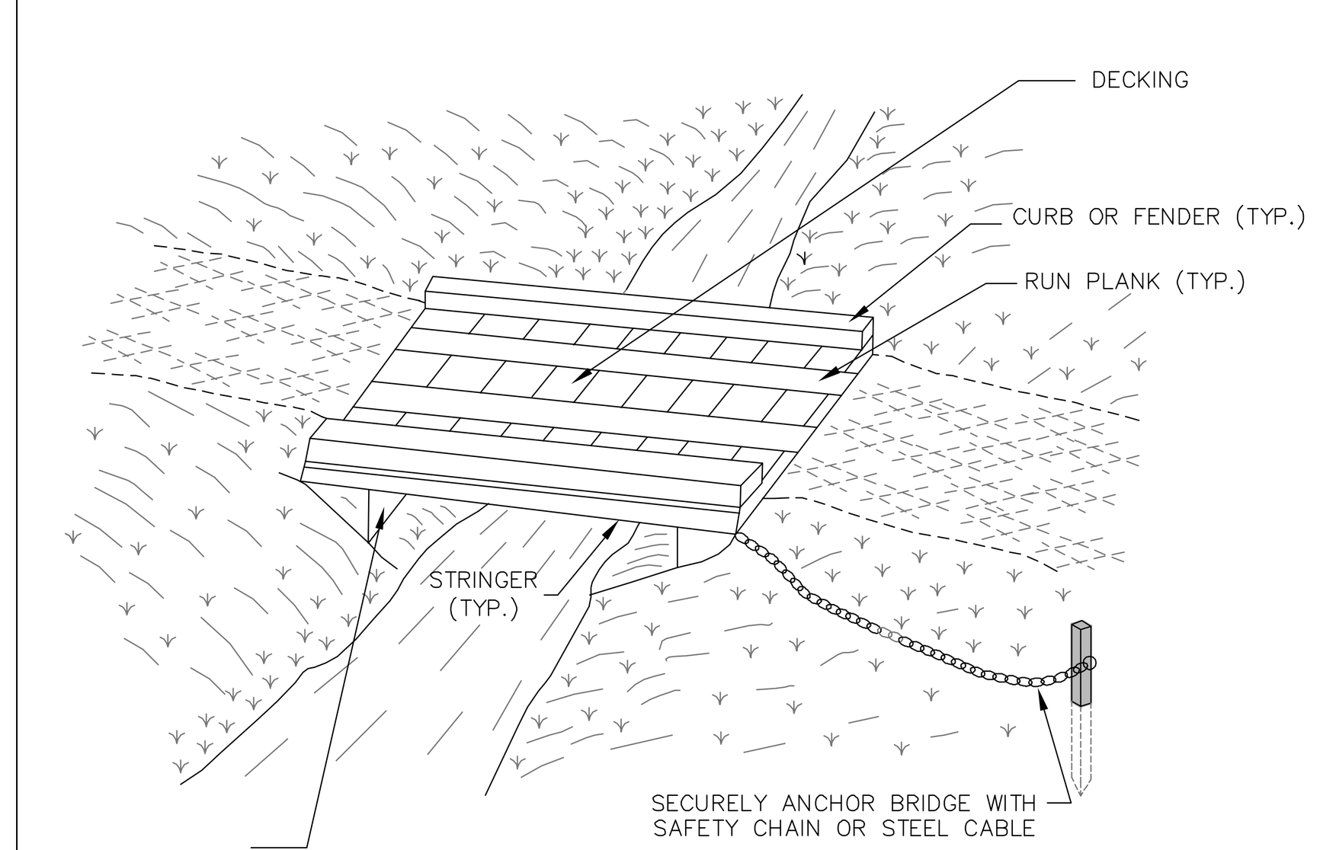
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL H-4-1 TEMPORARY ACCESS BRIDGE

STANDARD SYMBOL: TB



NOTE:
TIME OF YEAR RESTRICTIONS DO NOT APPLY TO THE CONSTRUCTION OR REMOVAL OF A TEMPORARY ACESS BRIDGE UNLESS THERE IS DISTURBANCE TO THE STREAM CHANNEL.

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL H-4-1 TEMPORARY ACCESS BRIDGE

STANDARD SYMBOL: TB

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT TEMPORARY BRIDGE STRUCTURE AT OR ABOVE THE BANK ELEVATION TO PREVENT IMPACTS FROM FLOATING MATERIALS AND DEBRIS.
2. PLACE ABUTMENTS PARALLEL TO, AND ON, STABLE BANKS.
3. CONSTRUCT BRIDGE TO SPAN ENTIRE CHANNEL UNLESS OTHERWISE INDICATED ON APPROVED PLAN.
4. USE STRINGERS CONSISTING OF LOGS, SAWN TIMBER, PRESTRESSED CONCRETE BEAMS, METAL BEAMS, OR OTHER APPROVED MATERIALS.
5. SELECT DECKING MATERIALS TO PROVIDE SUFFICIENT STRENGTH TO SUPPORT THE ANTICIPATED LOAD. PLACE ALL DECKING MEMBERS PERPENDICULAR TO THE STRINGERS, BUTT TIGHTLY, AND SECURELY FASTEN. DECKING MATERIALS MUST BE BUTTED TIGHTLY TO PREVENT ANY SOIL MATERIAL TRACKED ONTO THE BRIDGE FROM FALLING INTO THE WATERWAY BELOW.
6. SECURELY FASTEN OPTIONAL RUN PLANKING FOR THE LENGTH OF THE SPAN. PROVIDE A RUN PLANK FOR EACH TRACK OF THE EQUIPMENT WHEELS. ALTHOUGH RUN PLANKS ARE OPTIONAL, THEY MAY BE NECESSARY TO PROPERLY DISTRIBUTE LOADS.
7. INSTALL CURBS THE ENTIRE LENGTH OF THE OUTER SIDES OF THE DECK TO PREVENT SEDIMENT FROM ENTERING THE STREAM CHANNEL.
8. ANCHOR BRIDGE SECURELY AT ONLY ONE END USING STEEL CABLE OR CHAIN. ANCHORING AT ONLY ONE END WILL PREVENT CHANNEL OBSTRUCTION IN THE EVENT THAT FLOODWATERS FLOAT THE BRIDGE. ACCEPTABLE ANCHORS ARE LARGE TREES, LARGE BOULDERS, OR DRIVEN STEEL POSTS. ANCHOR MUST BE SUFFICIENT TO PREVENT THE BRIDGE FROM FLOATING DOWNSTREAM.
9. AREAS DISTURBED DURING BRIDGE INSTALLATION AND\OR REMOVAL MUST NOT BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.
10. STABILIZE APPROACH TO BRIDGE AND KEEP FREE OF EROSION. CLEAN SEDIMENT FROM DECKING AND CURBS DAILY BY SCRAPING, SWEEPING, AND/OR VACUUMING. ENSURE THAT DECKING AND CURBS REMAIN TIGHTLY BUTTED WITHOUT GAPS. REMOVE DEBRIS TRAPPED BY BRIDGE. MAINTAIN AREAS ADJACENT TO CROSSING TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
11. AFTER THE TEMPORARY CROSSING IS NO LONGER NEEDED, REMOVE IT WITHIN 14 CALENDAR DAYS. IF SUBJECT TO THE USE DESIGNATION CLOSURE, REMOVE AT THE END OF CLOSURE PERIOD. PROTECT STREAM BANKS DURING BRIDGE REMOVAL AND STABILIZE ALL DISTURBED AREAS WITH EROSION CONTROL MATTING. ACCOMPLISH REMOVAL OF THE BRIDGE AND CLEAN UP OF THE AREA WITHOUT CONSTRUCTION EQUIPMENT WORKING IN THE WATERWAY CHANNEL. STORE ALL REMOVED MATERIALS IN AN APPROVED STAGING AREA.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.9500
FAX: 410.265.8875

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
CONTACT: JOHN BOSWELL
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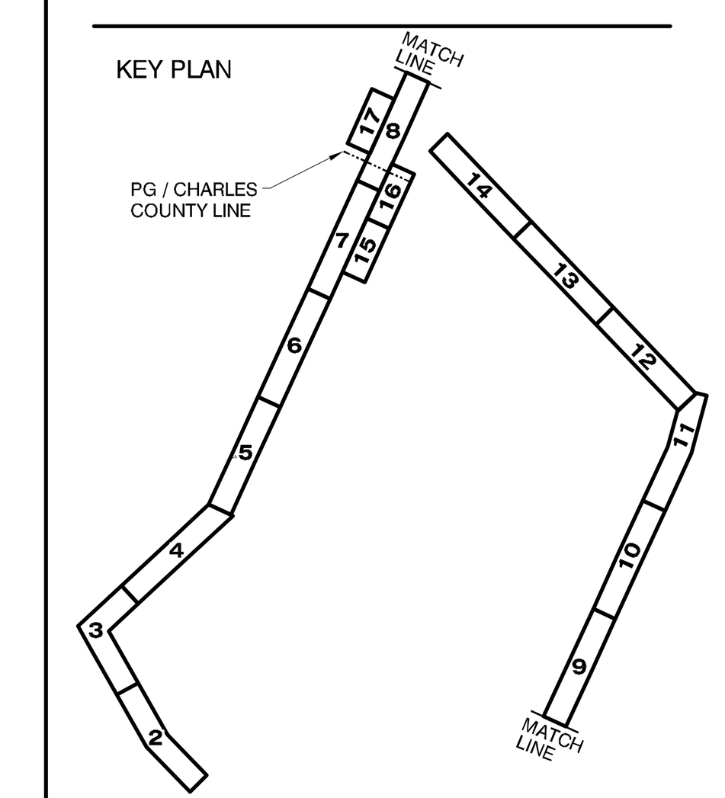

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APPROVED BY: GSG
CHECKED BY: JCL
DATE: SEPTEMBER 5, 2014

PROPOSED
20" GAS LINE
20% ENGINEERING
DETAILS

PROJECT NO. 50064932

19

SHEET NO. 19 OF 19

APPENDIX E

GENERATOR LEAD LINE
ENVIRONMENTAL IMPACT PLANS

PROPOSED 230 kV GENERATOR LEAD LINE
ENVIRONMENTAL IMPACT ANALYSIS

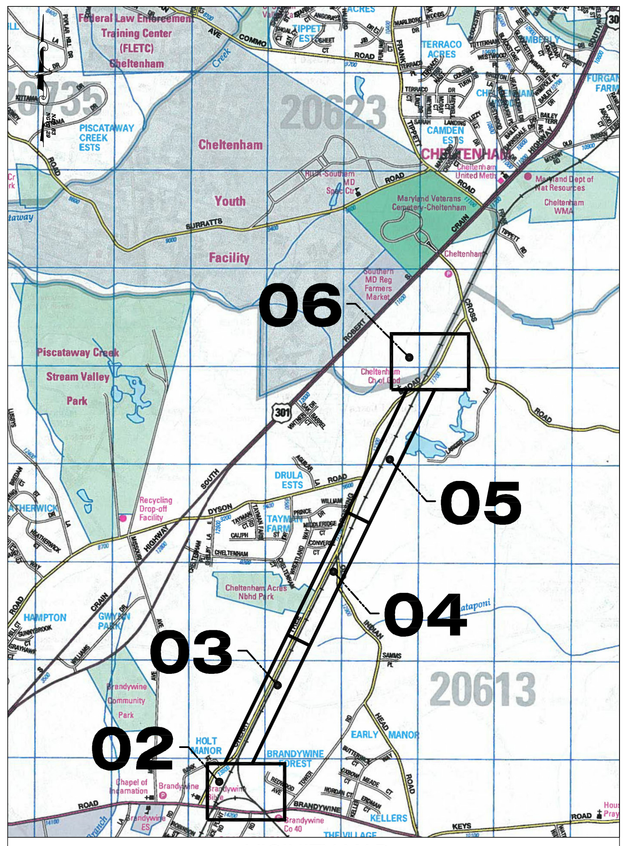
IMPACT TABULATION

	SQUARE FEET	ACRE
1. AREA OF TEMPORARY IMPACT:		
a. TOTAL TEMPORARY IMPACT THROUGH EMERGENT WETLAND:	10,662.28 sf	0.24 ac
b. TOTAL TEMPORARY IMPACT THROUGH FORESTED WETLAND:	0.0 sf	0.00 ac
c. TOTAL TEMPORARY IMPACT THROUGH FOREST:	0.0 sf	0.00 ac
d. TOTAL TEMPORARY IMPACT THROUGH STREAM CHANNELS & PONDS:	800.82 sf	0.02 ac
2. AREA OF PERMANENT IMPACT OR CONVERSION:		
a. TOTAL CONVERSION THROUGH FORESTED WETLAND: (TO EMERGENT WETLAND)	965.87 sf	0.02 ac
b. TOTAL PERMANENT IMPACT THROUGH FORESTED WETLAND:	891.37 sf	0.02 ac
c. TOTAL PERMANENT IMPACT THROUGH FOREST:	576,508 sf	13.23 ac

SITE DATA

1.	TOTAL TRACT AREA:	27.48 ACRES
2.	NET TRACT AREA:	27.48 ACRES
3.	LAND USE CATEGORY:	LINEAR - INDUSTRIAL

SHEET INDEX



VICINITY MAP
SCALE: 1"=2000'

Dewberry

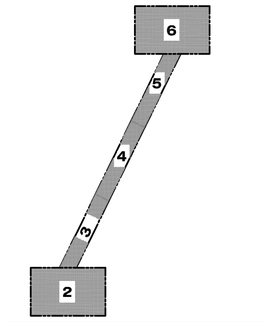
Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.9500
FAX: 410.260.8875

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 100
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC
230 kV GENERATOR LEAD LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY PLAN



SCALE

AS SHOWN

No.	DATE	BY	Description
2	04/14/2015	EDL	Revised 3 Bus Location
1	03/24/2015	JM	Revised 3 Bus Location

REVISIONS

DRAWN BY	EDL / JM
APPROVED BY	DLT
CHECKED BY	JCL
DATE	JANUARY 15, 2015

GENERATOR LEAD LINE
ENVIROMENTAL
IMPACT ANALYSIS
COVER SHEET

PROJECT NO. 50064932

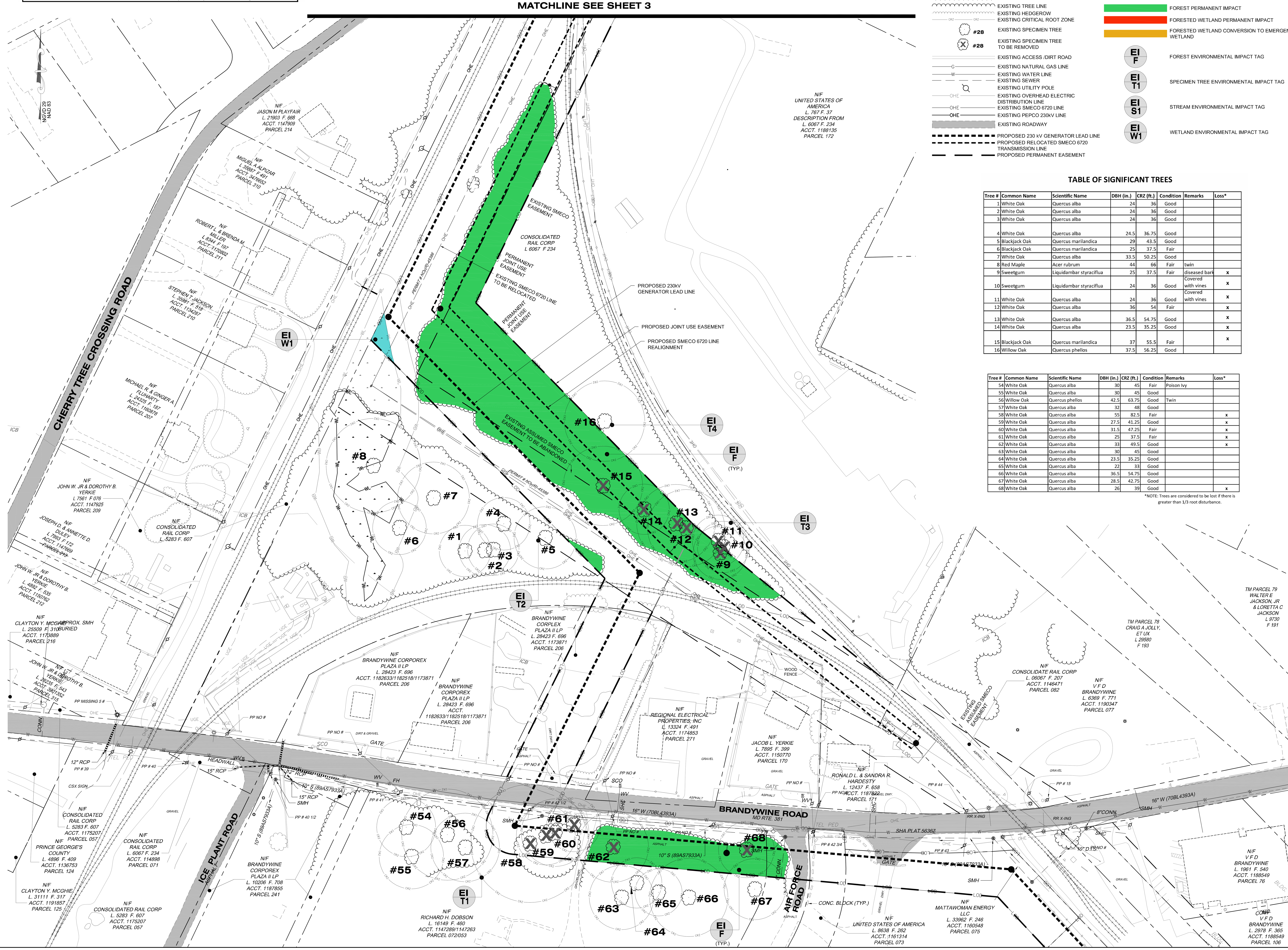
1

SHEET NO. 1 OF 6

Owner	EI F Perm. (SF)	EI F Temp. (SF)	EI S# Perm. (SF)	EI S# Temp. (SF)	EI W# Perm. Conversion* (SF)	EI W# Temp. Emergent (SF)
Richard Dobson Acct. 1147289/1147263	11,686.23					
Air Force Road Right-of-Way	1,328.20					
CSX L.6067 F.234	69,900.12					892.02
TOTAL	1.90 AC		- AC		0.02 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

MATCHLINE SEE SHEET 3



LEGEND

- EXISTING PROPERTY LINE
- EXISTING SMECO EASEMENT LINE
- EXISTING TOPOGRAPHY
- EXISTING FORESTED WETLAND
- EXISTING EMERGENT WETLAND
- EXISTING WETLAND BUFFER
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING RAIL ROAD
- EXISTING TREE LINE
- EXISTING HEDGEROW
- EXISTING CRITICAL ROOT ZONE
- #28 EXISTING SPECIMEN TREE
- #28 EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING ACCESS /DIRT ROAD
- EXISTING NATURAL GAS LINE
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- EXISTING SEWER
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- EXISTING OVERHEAD ELECTRIC DISTRIBUTION LINE
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- EXISTING PEPCO 230kV LINE
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- EI T1 SPECIMEN TREE ENVIRONMENTAL IMPACT TAG
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- EI W1 WETLAND ENVIRONMENTAL IMPACT TAG

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
1	White Oak	Quercus alba	24	36	Good		
2	White Oak	Quercus alba	24	36	Good		
3	White Oak	Quercus alba	24	36	Good		
4	White Oak	Quercus alba	24.5	36.75	Good		
5	Blackjack Oak	Quercus marilandica	29	43.5	Good		
6	Blackjack Oak	Quercus marilandica	25	37.5	Fair		
7	White Oak	Quercus alba	33.5	50.25	Good		
8	Red Maple	Acer rubrum	44	66	Fair	twin	
9	Sweetgum	Liquidambar styraciflua	25	37.5	Fair	diseased bark	x
10	Sweetgum	Liquidambar styraciflua	24	36	Good	Covered with vines	x
11	White Oak	Quercus alba	24	36	Good	Covered with vines	x
12	White Oak	Quercus alba	36	54	Fair		x
13	White Oak	Quercus alba	36.5	54.75	Good		x
14	White Oak	Quercus alba	23.5	35.25	Good		x
15	Blackjack Oak	Quercus marilandica	37	55.5	Fair		x
16	Willow Oak	Quercus phellos	37.5	56.25	Good		

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
54	White Oak	Quercus alba	30	45	Fair	Poison Ivy	
55	White Oak	Quercus alba	30	45	Good		
56	Willow Oak	Quercus phellos	42.5	63.75	Good	Twin	
57	White Oak	Quercus alba	32	48	Good		
58	White Oak	Quercus alba	55	82.5	Fair		x
59	White Oak	Quercus alba	27.5	41.25	Good		x
60	White Oak	Quercus alba	31.5	47.25	Fair		x
61	White Oak	Quercus alba	25	37.5	Fair		x
62	White Oak	Quercus alba	33	49.5	Good		x
63	White Oak	Quercus alba	30	45	Good		
64	White Oak	Quercus alba	23.5	35.25	Good		
65	White Oak	Quercus alba	22	33	Good		
66	White Oak	Quercus alba	36.5	54.75	Good		
67	White Oak	Quercus alba	28.5	42.75	Good		
68	White Oak	Quercus alba	26	39	Good		x

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

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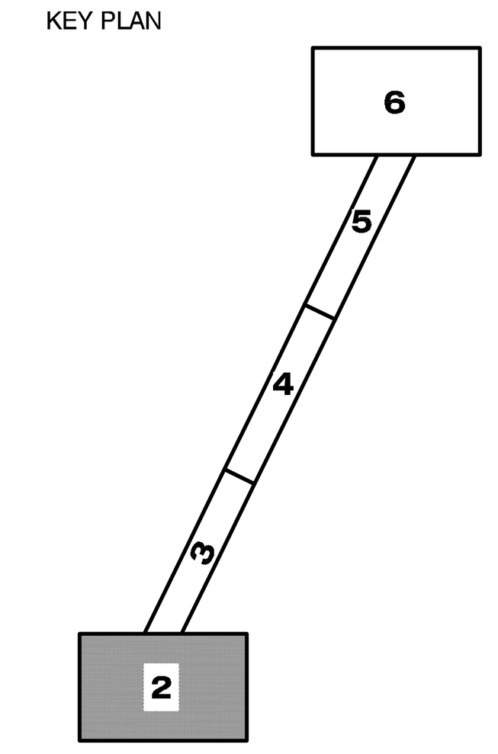
230 kV GENERATOR LEAD LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY PLAN



SCALE

0' 50' 100'

1"=50'

No.	DATE	BY	Description
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REVISIONS

DRAWN BY EDL / JM
APPROVED BY DLT
CHECKED BY JCL
DATE JANUARY 15, 2015

GENERATOR LEAD LINE ENVIROMENTAL IMPACT ANALYSIS PLAN SHEET

PROJECT NO. 50064932

SHEET NO. 2

2 OF 6

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
17	White Oak	Quercus alba	31.5	47.25	Good		
18	White Oak	Quercus alba	24	36	Good		
19	White Oak	Quercus alba	28	42	Good		X
20	Tulip Poplar	Liriodendron tulipifera	28	42	Good		X
21	Blackjack Oak	Quercus marilandica	44	66	Good		x

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Emergent (SF)
CSX	3,338.86					
Prince George's County Acct. 1147917	11,772.24					1,867.88
Tower Terra, LLC Acct. 1133628	18,699.04					7,902.37
Tower Terra, LLC Acct. 1177757	74,369.53					
PEPCO Acct. 1137876	998.99					
PEPCO Acct. 1187707	496.41					
PEPCO Acct. 1183581	19,587.19			221.71		
PEPCO Acct. 1137884	4,674.11			3.85		
PEPCO Acct. 1183599	700.56			575.26		
Alice G. Pearmon Acct. 1187699	8,669.78					
Milton Moore Acct. 1171035	8,477.15					
TOTAL	3.48 AC		0.018 AC		0.22 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

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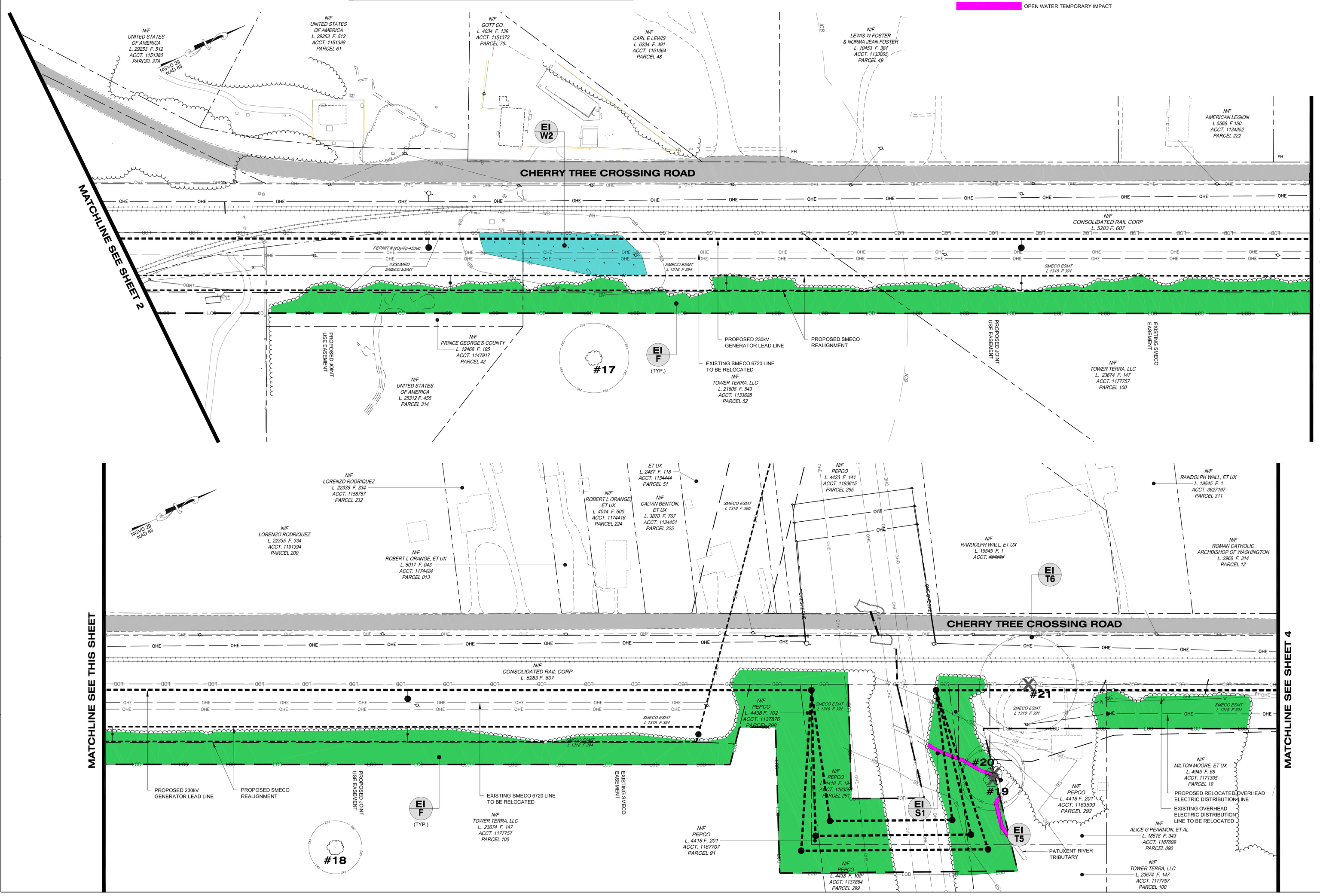

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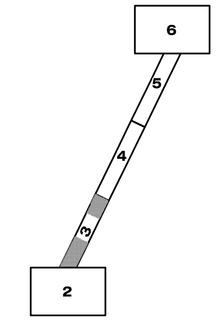
230 kV GENERATOR LEAD LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY PLAN



SCALE

0' 50' 100'

1"=50'

No.	DATE	BY	Description
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REVISIONS

DRAWN BY	EDL / JM
APPROVED BY	DLT
CHECKED BY	JCL
DATE	JANUARY 15, 2015

GENERATOR LEAD LINE
ENVIROMENTAL
IMPACT ANALYSIS
PLAN SHEET

PROJECT NO. 50064932

3

SHEET NO. 3 OF 6

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Emergent (SF)
CSX	3,720.44					
Freelove Jeffreis Acct. 2832087	41,978.12				956.73	
Bonnie Breeze Farm, Inc. Acct. 1158591	14,915.09					
TOTAL	1.39 AC		- AC		0.02 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
22	Blackjack Oak	Quercus marilandica	27.5	41.25	Fair		
23	Blackjack Oak	Quercus marilandica	80.5	120.75	Good	Multi	
24	Southern Red Oak	Quercus falcata	28.5	42.75	Good		x

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

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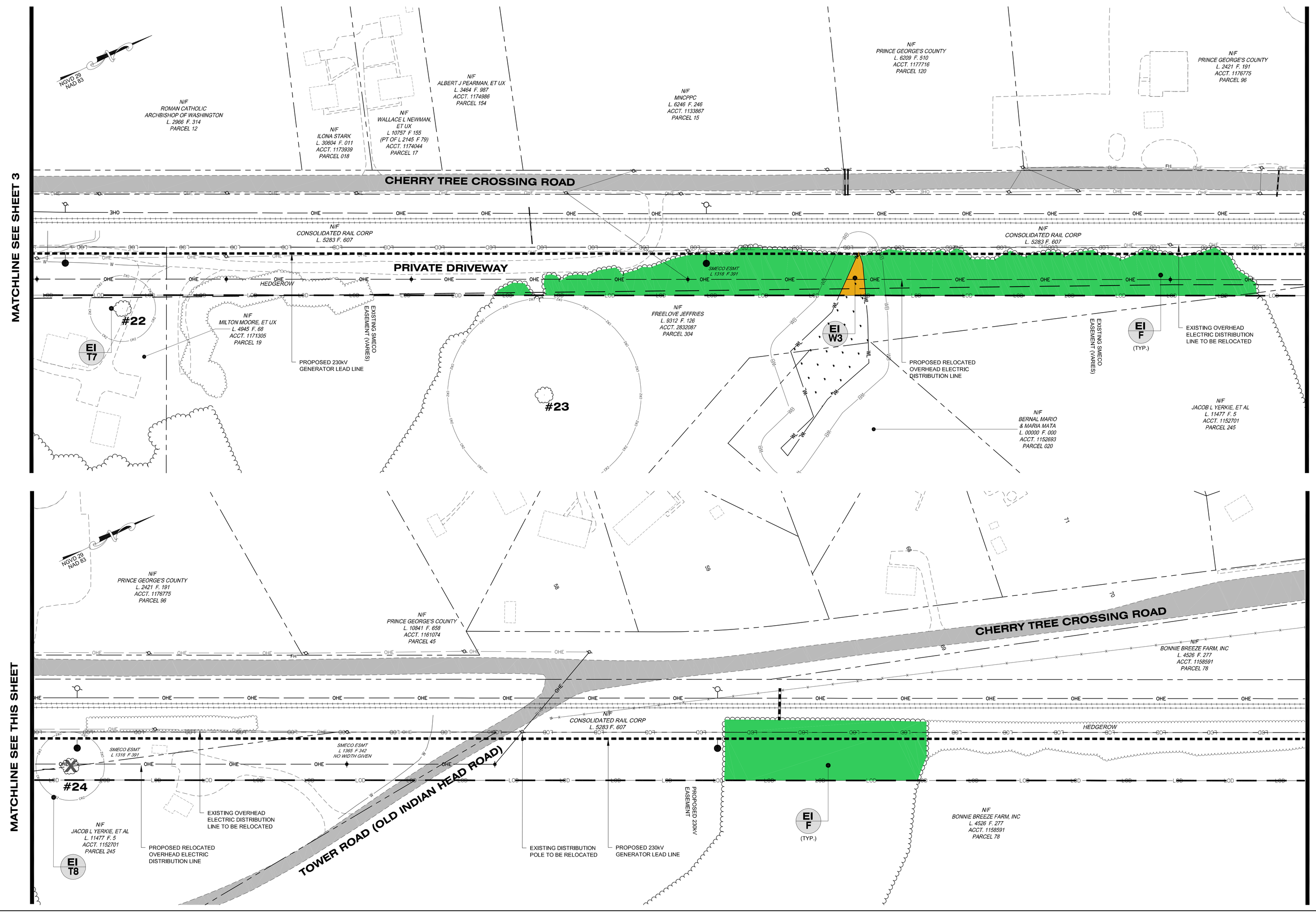

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230 kV GENERATOR LEAD LINE
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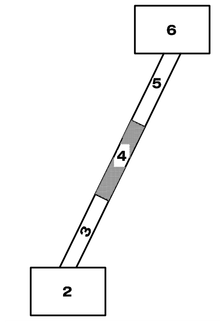
SEAL

KEY PLAN



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REVISIONS

DRAWN BY	EDL / JM
APPROVED BY	DLT
CHECKED BY	JCL
DATE	JANUARY 15, 2015

GENERATOR LEAD LINE
ENVIROMENTAL
IMPACT ANALYSIS
PLAN SHEET

PROJECT NO. 50064932

4

SHEET NO. 4 OF 6

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
25	Red Maple	Acer rubrum	56	84	Good	Multi	x
26	White Oak	Quercus alba	28	42	Good		x
27	White Oak	Quercus alba	36	54	Good		x
28	Tulip Poplar	Liriodendron tulipifera	30	45	Good		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Forested (SF)	Temp. Emergent (SF)
Cheltanham Property, LLC Acct. 1161256	12,740.47					
CSX	2,600.20					
PEPCO Acct. 1176056	5,803.29					
Walter M Meinhardt, Jr, Et Al Acct. 1161371	154,072.40				891.37	
TOTAL	**4.02 AC**		**- AC**		**0.02 AC**	

LEGEND

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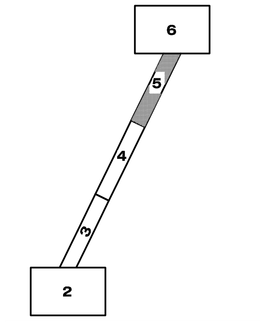

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GENERATOR LEAD LINE ENVIROMENTAL IMPACT ANALYSIS PLAN SHEET

PROJECT NO. 50064932

5

SHEET NO. 5 OF 6

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Forested (SF)	Temp. Emergent (SF)
Cheltanham Property, LLC Acct. 1161256	12,740.47					
CSX	2,600.20					
PEPCO Acct. 1176056	5,803.29					
Walter M Meinhardt, Jr, Et Al Acct. 1161371	154,072.40				891.37	
TOTAL	4.02 AC		- AC		0.02 AC	

LEGEND

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TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
29	Willow Oak	Quercus phellos	35	52.5	Good		
30	White Oak	Quercus alba	35	52.5	Good		
31	White Oak	Quercus alba	27	40.5	Good		
32	Willow Oak	Quercus phellos	45.5	68.25	Good		x
33	Willow Oak	Quercus phellos	28.5	42.75	Good		x
34	White Oak	Quercus alba	32	48	Good		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
35	Red Maple	Acer rubrum	61	91.5	Good/Fair	Multi	X
36	Red Maple	Acer rubrum	27	40.5	Good	Multi	X
37	Southern Red Oak	Quercus falcata	33	49.5	Good		
38	White Oak	Quercus alba	26	39	Good		
39	White Oak	Quercus alba	27	40.5	Good		
40	White Oak	Quercus alba	28	42	Good		
41	White Oak	Quercus alba	30	45	Fair		
42	Blackgum	Nyssa sylvatica	35.5	53.25	Good		
43	Southern Red Oak	Quercus falcata	28.5	42.75	Poor		
44	White Oak	Quercus alba	26	39	Fair		
45	Southern Red Oak	Quercus falcata	33	49.5	Poor		
46	Southern Red Oak	Quercus falcata	29	43.5	Poor		
47	Southern Red Oak	Quercus falcata	27	40.5	Fair		
48	Southern Red Oak	Quercus falcata	26.5	39.75	Fair		
49	Red Oak	Quercus rubra	28.5	42.75	Good		
50	White Oak	Quercus alba	24	36	Good		
51	White Oak	Quercus alba	28.5	42.75	Good		
52	Southern Red Oak	Quercus falcata	29	43.5	Good		
53	Southern Red Oak	Quercus falcata	26	39	Good		X

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

TABLE OF SIGNIFICANT TREES

69	White Oak	Quercus alba	28	42	Good		X
70	Southern Red Oak	Quercus falcata	24	36	Good		X
71	Southern Red Oak	Quercus falcata	24	36	Good		X
72	Southern Red Oak	Quercus falcata	24	36	Good		X
73	Southern Red Oak	Quercus falcata	24	36	Good		X
74	Southern Red Oak	Quercus falcata	26	39	Good		X
75	Southern Red Oak	Quercus falcata	24	36	Good		X
76	Southern Red Oak	Quercus falcata	30	45	Good		X

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

Dewberry

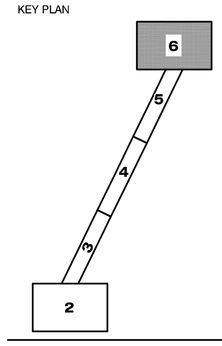
Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.9500
FAX: 410.265.8875

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC
230 kV GENERATOR LEAD LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY PLAN



SCALE

0' 50' 100'

1"=50'

No.	DATE	BY	Description
2	04/14/2015	EDL	Revised 3 Bus Location
1	03/24/2015	JM	Revised 3 Bus Location

REVISIONS

DRAWN BY EDL / JM
APPROVED BY DLT
CHECKED BY JCL
DATE JANUARY 15, 2015

GENERATOR LEAD LINE ENVIROMENTAL IMPACT ANALYSIS PLAN SHEET

PROJECT NO. 50064932

6

SHEET NO. 6 OF 6

APPENDIX F

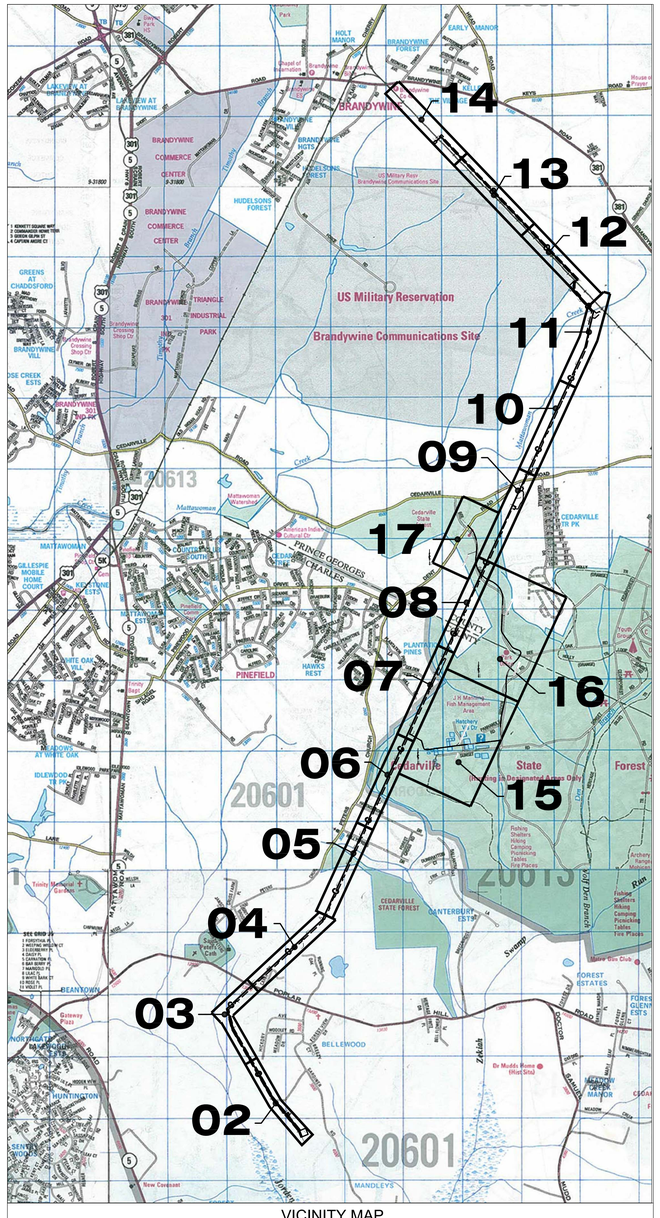
GAS PIPELINE ENVIRONMENTAL IMPACT PLANS

NATURAL GAS PIPELINE
ENVIRONMENTAL IMPACT ANALYSIS

IMPACT TABULATION

	SF	AC
1. TOTAL AREA OF TEMPORARY IMPACTS:		
a. TOTAL TEMPORARY IMPACT THROUGH EMERGENT WETLAND:	152,297.68 sf	3.50 ac
b. TOTAL TEMPORARY IMPACT THROUGH FORESTED WETLAND:	136,226.08 sf	3.13 ac
c. TOTAL TEMPORARY IMPACT THROUGH FOREST:	206,438.54 sf	4.74 ac
d. TOTAL TEMPORARY IMPACT THROUGH STREAM CHANNELS & PONDS:	1,724.30 sf	0.04 ac
2. TOTAL AREA OF PERMANENT IMPACTS OR CONVERSION:		
a. TOTAL CONVERSION THROUGH FORESTED WETLAND: (TO EMERGENT WETLAND)	116,962.63 sf	2.69 ac
b. TOTAL PERMANENT IMPACT THROUGH FOREST:	500,971.64 sf	11.50 ac
3. AREA OF TEMPORARY IMPACTS THROUGH MNCPPC PROPERTY*:		
a. TEMPORARY IMPACT THROUGH EMERGENT WETLAND:	29,478.74 sf	0.68 ac
b. TEMPORARY IMPACT THROUGH FORESTED WETLAND:	86,481.07 sf	1.99 ac
c. TEMPORARY IMPACT THROUGH FOREST:	123,280.25 sf	2.83 ac
d. TEMPORARY IMPACT THROUGH STREAM CHANNELS & PONDS:	1,041.55 sf	0.02 ac
4. AREA OF PERMANENT IMPACTS OR CONVERSION THROUGH MNCPPC PROPERTY*:		
a. CONVERSION THROUGH FORESTED WETLAND: (TO EMERGENT WETLAND)	30,359.02 sf	0.70 ac
b. PERMANENT IMPACT THROUGH FOREST:	13,530.72 sf	0.31 ac
5. AREA OF TEMPORARY IMPACT ON PEPCO EASEMENT THROUGH CEDARVILLE STATE FOREST PROPERTY*:		
a. TEMPORARY IMPACT THROUGH EMERGENT WETLAND:	13,454.54 sf	0.31 ac
b. TEMPORARY IMPACT THROUGH FORESTED WETLAND:	0.00 sf	0.00 ac
c. TEMPORARY IMPACT THROUGH FOREST:	0.00 sf	0.00 ac
d. TEMPORARY IMPACT THROUGH STREAM CHANNELS & PONDS:	0.00 sf	0.00 ac
6. AREA OF PERMANENT IMPACTS OR CONVERSION ON PEPCO ESMT THROUGH CEDARVILLE STATE FOREST PROPERTY*:		
a. CONVERSION THROUGH FORESTED WETLAND: (TO EMERGENT WETLAND)	1,302.61 sf	0.03 ac
b. PERMANENT IMPACT THROUGH FOREST:	63,813.69 sf	1.46 ac
7. AREA OF TEMPORARY IMPACT ON PEPCO ESMT THROUGH MARYLAND STATE PROPERTY*:		
a. TEMPORARY IMPACT THROUGH EMERGENT WETLAND:	0.00 sf	0.00 ac
b. TEMPORARY IMPACT THROUGH FORESTED WETLAND:	0.00 sf	0.00 ac
c. TEMPORARY IMPACT THROUGH FOREST:	0.00 sf	0.00 ac
d. TEMPORARY IMPACT THROUGH STREAM CHANNELS & PONDS:	0.00 sf	0.00 ac
8. AREA OF PERMANENT IMPACTS OR CONVERSION ON PEPCO ESMT THROUGH MARYLAND STATE PROPERTY*:		
a. CONVERSION THROUGH FORESTED WETLAND: (TO EMERGENT WETLAND)	0.00 sf	0.00 ac
b. PERMANENT IMPACT THROUGH FOREST:	3,036.71 sf	0.07 ac

NOTE: FLOODPLAIN INFORMATION HAS BEEN OBTAINED FROM PRINCE GEORGE'S COUNTY GIS.
*IMPACT AREAS ARE INCLUDED IN TOTAL AREAS OF TEMPORARY AND PERMANENT IMPACTS



VICINITY MAP
SCALE: 1"=2000'

ADC MAP CHARLES COUNTY 4, 5, 10, 11; PRINCE GEORGE'S COUNTY 5883, 5884, 5998, 5999
COPYRIGHT ADC THE MAP PEOPLE
PERMITTED USE NUMBER 20711182

SHEET INDEX

SITE DATA

1. TOTAL TRACT AREA: 64.73 ACRES
2. NET TRACT AREA: 64.73 ACRES
3. LAND USE CATEGORY: LINEAR - INDUSTRIAL

*THERE IS NO FLOODPLAIN ON SITE.

NOTE: REVISIONS TO THE ENVIRONMENTAL IMPACT ANAYLYSIS ARE DUE TO ENGINEERING REFINEMENT AND INPUT RECEIVED FROM REVIEW AGENCIES. SUCH REVISIONS ARE SUBSTANTIAL AND OCCURRING ON EVERY SHEET.

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.8500
FAX: 410.265.8875

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC
20 INCH DIAMETER GAS PIPELINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY PLAN

SCALE

AS SHOWN

No.	DATE	BY	Description
2	04/10/15	JM	REVISED 20% ENGINEERING PER CPCN COMMENTS
1	01/15/15	JM	PER ENGINEERING REFINEMENT & COMMENTS RECV FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	DLT
CHECKED BY	JCL
DATE	AUGUST 28, 2014

GAS LINE
ENVIRONMENTAL
IMPACT ANALYSIS

PROJECT NO. 50064932

1

SHEET NO. 1 OF 17

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TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
1	Tulip Poplar	Liriodendron tulipfera	43.5	65.25	Fair		
2	Tulip Poplar	Liriodendron tulipfera	39	58.5	Poor		
3	White Oak	Quercus alba	32	48	Good		
4	Tulip Poplar	Liriodendron tulipfera	56	84	Fair-Poor	Twin; Hollow hole	
5	Tulip Poplar	Liriodendron tulipfera	29.5	44.25	Good		
6	Tulip Poplar	Liriodendron tulipfera	37	55.5	Good		X
7	Sweetgum	Liquidambar styraciflua	40	60	Good	Twin	X
8	Willow Oak	Quercus phellos	35	52.5	Good		X
9	American Sycamore	Platanus occidentalis	51	76.5	Good		X
10	American Sycamore	Platanus occidentalis	27	40.5	Fair	Vines on trunk and in canopy	X
11	Red Maple	Acer rubrum	50	75	Fair-Poor	Triplet	X
12	American Sycamore	Platanus occidentalis	92	138	Multi		
13	Northern Red Oak	Quercus rubra	30	45	Good		X
14	Tulip Poplar	Liriodendron tulipfera	38.5	57.75	Good		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

Owner	EI F		EI S#		EI W#		
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Forested (SF)	Temp. Emergent (SF)
Southstar Limited Partnerhip Acct. 0013179	38,477.60	3,907.16			1,787.52		1,146.88
Tommy's Truck Service II, Inc. Acct. 0015589	14,096.66	7,755.96			26,767.78	12,676.23	
TOTAL	1.47 AC		- AC		0.97 AC		

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING PEPCO ROW LINE
- EXISTING PEPCO EASEMENT LINE
- EXISTING SMECO EASEMENT LINE
- EXISTING TOPOGRAPHY
- EXISTING FORESTED WETLAND
- EXISTING EMERGENT WETLAND
- EXISTING WETLAND BUFFER
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING RAIL ROAD
- EXISTING TREE LINE
- EXISTING HEDGEROW
- EXISTING CRITICAL ROOT ZONE
- EXISTING SPECIMEN TREE
- EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING SMECO 6720 OVERHEAD ELECTRIC
- EXISTING OVERHEAD ELECTRIC
- EXISTING UTILITY TOWER
- EXISTING ACCESS ROAD
- PROPOSED RECEIVING AND BORE PITS
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- PERMANENT PIPE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- TEMPORARY CONSTRUCTION ACCESS EASEMENT
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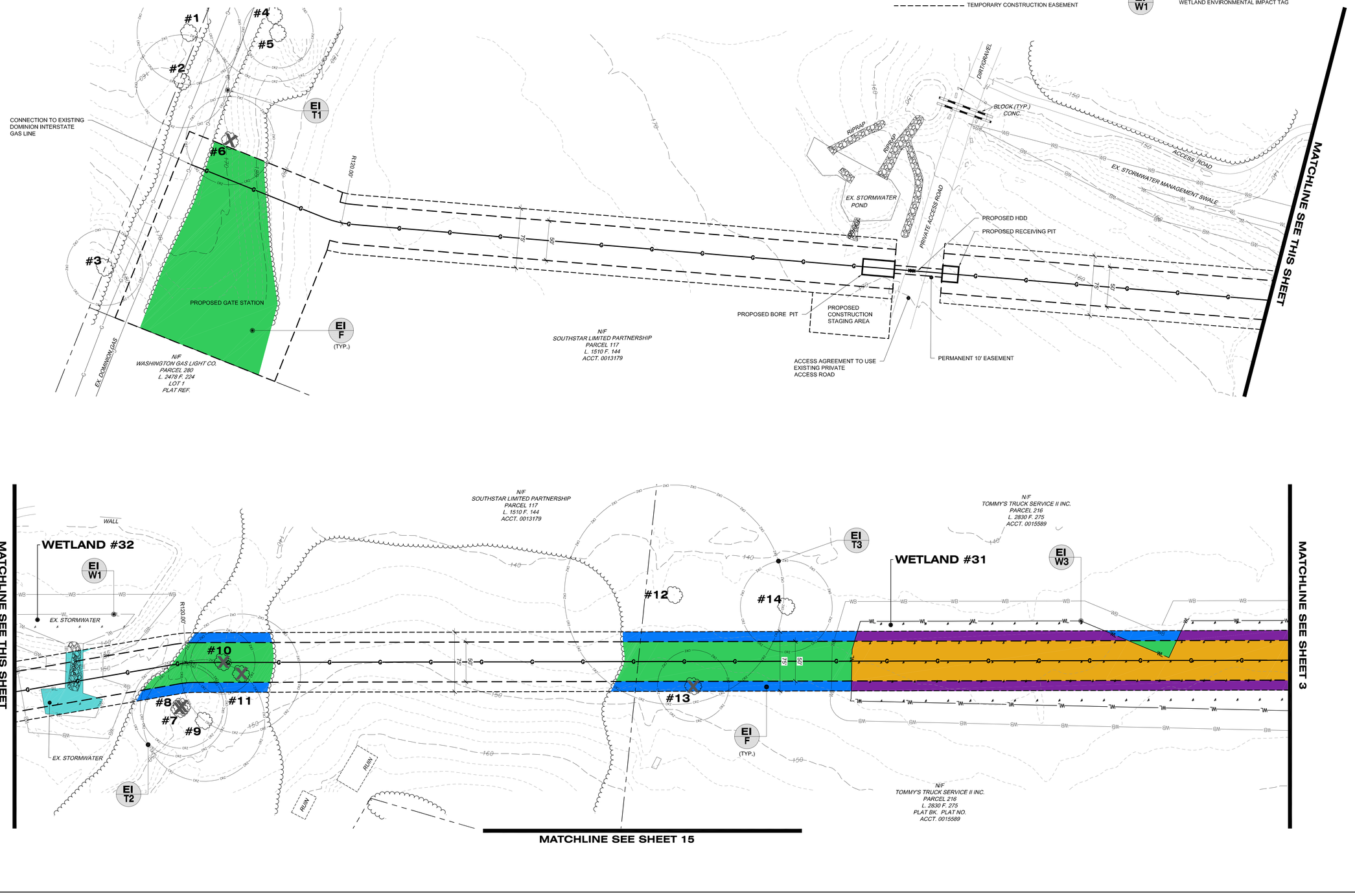

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MARYLAND 21244
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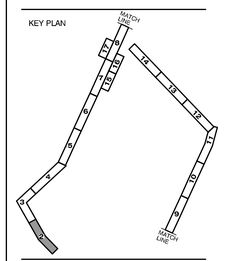

SCALE

0' 50' 100'

1"=50'

No.	DATE	BY	Description
2	04/10/15	JM	REVISED 20% ENGINEERING PER CPCN COMMENTS
1	01/15/15	JM	PER ENGINEERING REPRIMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	DLT
CHECKED BY	JCL
DATE	AUGUST 28, 2014

GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

PROJECT NO. 50064932

2

SHEET NO. 2 OF 17

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TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
15	White Oak	Quercus alba	26	39	Poor	Holes at base	X
16	White Oak	Quercus alba	26	39	Good		X
17	Tulip Poplar	Liriodendron tulipfera	44	66	Good	Triplet	
18	Tulip Poplar	Liriodendron tulipfera	32	48	Fair	Bark damage	

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

Owner	EI F		EI S#		EI W#		
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Forested (SF)	Temp. Emergent (SF)
Tommy's Truck Service II, Inc. Acct. 0015589	16,174.47	1,112.30			14,982.54	7,187.70	
Archbishop Patrick A. O'Boyle Acct. 0025096	64,488.79	32,098.01		547.87		127.46	
PEPCO L. 175 F. 182	20,067.54						
TOTAL	3.07 AC		0.01 AC			0.51 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING PEPCO ROW LINE
- EXISTING PEPCO EASEMENT LINE
- EXISTING SMECO EASEMENT LINE
- EXISTING TOPOGRAPHY
- EXISTING FORESTED WETLAND
- EXISTING EMERGENT WETLAND
- EXISTING WETLAND BUFFER
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING RAIL ROAD
- EXISTING TREE LINE
- EXISTING HEDGEROW
- EXISTING CRITICAL ROOT ZONE
- EXISTING SPECIMEN TREE
- EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING SMECO 6720 OVERHEAD ELECTRIC
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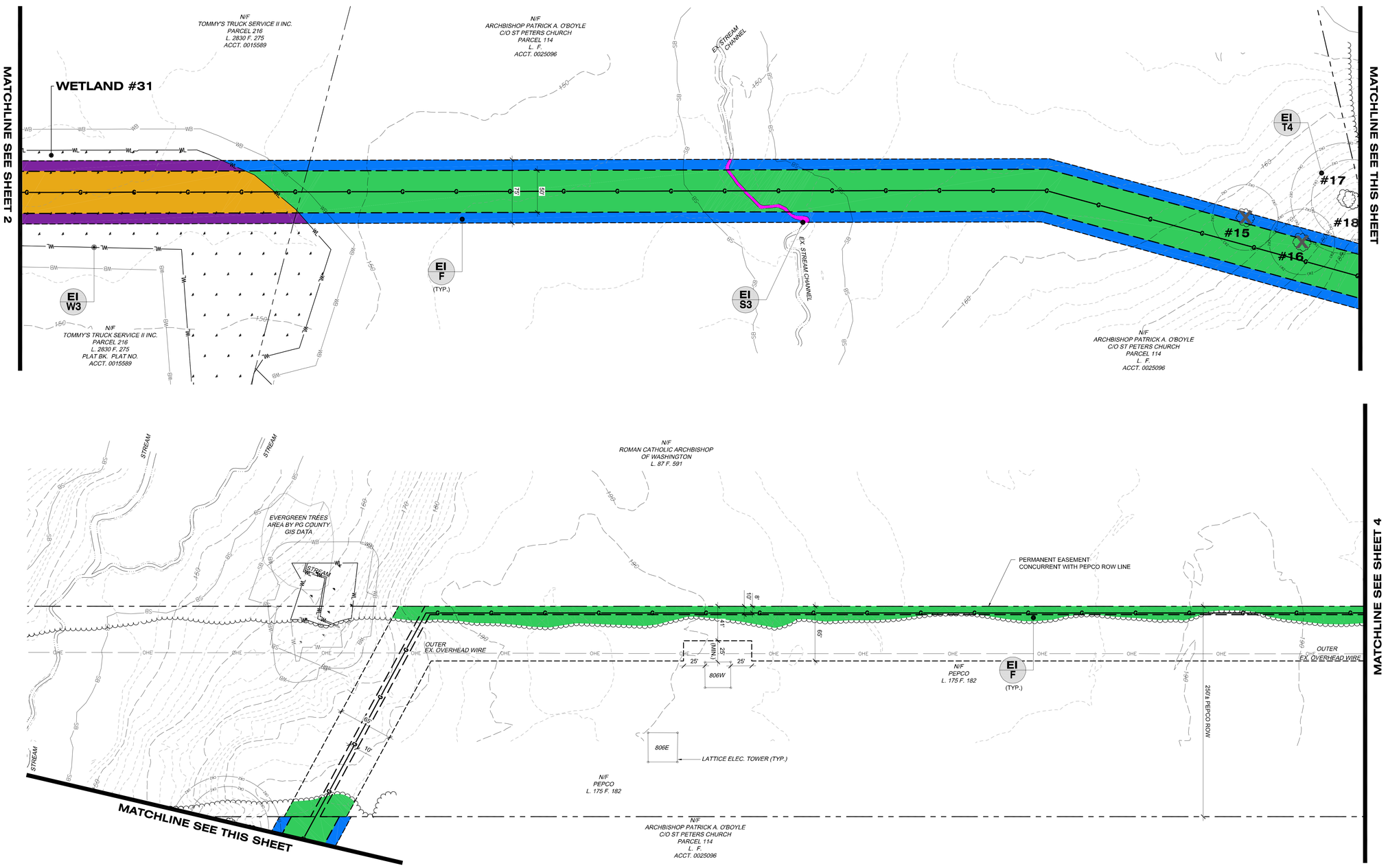

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.9500
FAX: 410.265.8875

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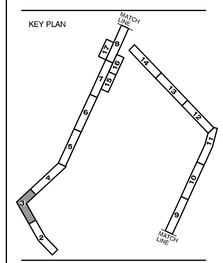
SEAL

KEY PLAN



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
2	04/10/15	JM	REVISED 20% ENGINEERING PER CPCN COMMENTS
1	01/15/15	JM	PER ENGINEERING REINSTATEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	DLT
CHECKED BY	JCL
DATE	AUGUST 28, 2014

GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

PROJECT NO. 50064932

3

SHEET NO. 3 OF 17

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Owner	EI F		EI S#		EI W#		
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Forested (SF)	Temp. Emergent (SF)
PEPCO L. 175 F. 182	6,809.74						
TOTAL	**0.16 AC**		**- AC**			**-**	**AC**

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING PEPCO ROW LINE
- EXISTING PEPCO EASEMENT LINE
- EXISTING SMECO EASEMENT LINE
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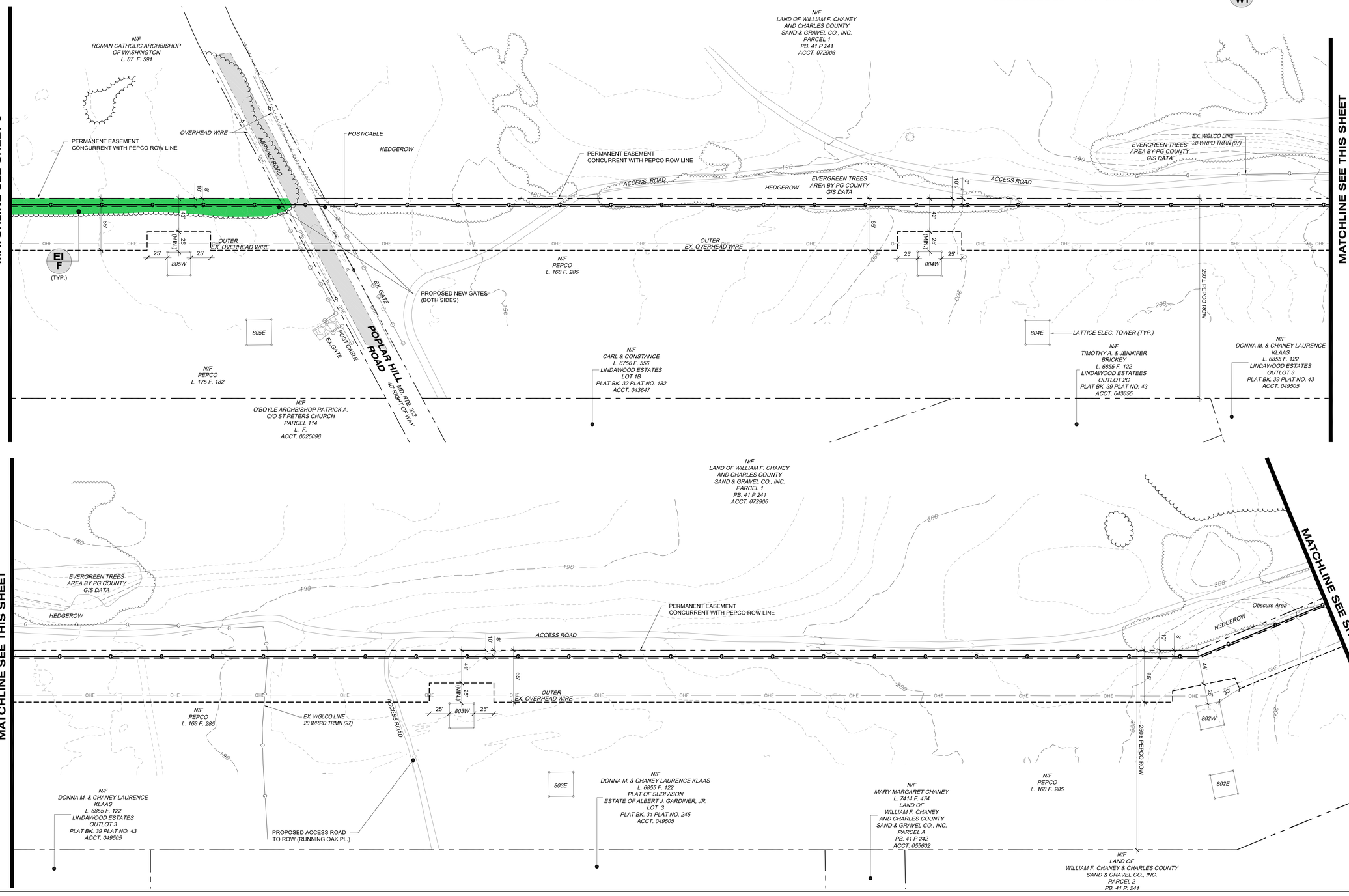

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.9500
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DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
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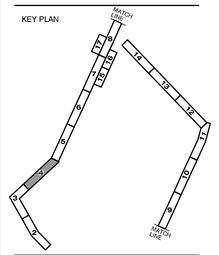
SEAL

KEY PLAN



SCALE

0' 50' 100'

1"=50'

No.	DATE	BY	Description
2	04/10/15	JM	REVISED 20% ENGINEERING PER OPCN COMMENTS
1	01/15/15	JM	PER ENGINEERING REPINMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	DLT
CHECKED BY	JCL
DATE	AUGUST 28, 2014

GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

PROJECT NO. 50064932

4

SHEET NO. 4 OF 17

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Owner	EI F		EI S#		EI W#		
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Forested (SF)	Temp. Emergent (SF)
PEPCO L. 168 F. 285	6,342.83				2,953.78		6,282.08
PEPCO L. 163 F. 183	23,116.26				588.92		2,968.27
PEPCO* L. 166 F. 243 *Easement throught State of Maryland L. 70 F. 258	3,036.71						
PEPCO L. 167 F. 207	8,331.52			132.29	3,520.25		3,308.94
TOTAL	0.94 AC		0.00 AC			0.45 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING PEPCO ROW LINE
- EXISTING PEPCO EASEMENT LINE
- EXISTING SMECO EASEMENT LINE
- EXISTING TOPOGRAPHY
- EXISTING FORESTED WETLAND
- EXISTING EMERGENT WETLAND
- EXISTING WETLAND BUFFER
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING RAIL ROAD
- EXISTING TREE LINE
- EXISTING HEDGEROW
- EXISTING CRITICAL ROOT ZONE
- EXISTING SPECIMEN TREE
- EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING SMECO 6720 OVERHEAD ELECTRIC
- EXISTING OVERHEAD ELECTRIC
- EXISTING UTILITY TOWER
- EXISTING ACCESS ROAD
- PROPOSED RECEIVING AND BORE PITS
- PROPOSED GAS PIPELINE
- PERMANENT PIPE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
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- PROPOSED GAS PIPELINE UTILIZING HORIZONTAL DIRECTIONAL DRILLING (HDD)
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- FOREST PERMANENT IMPACT
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- EI T1 — SPECIMEN TREE ENVIRONMENTAL IMPACT TAG
- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
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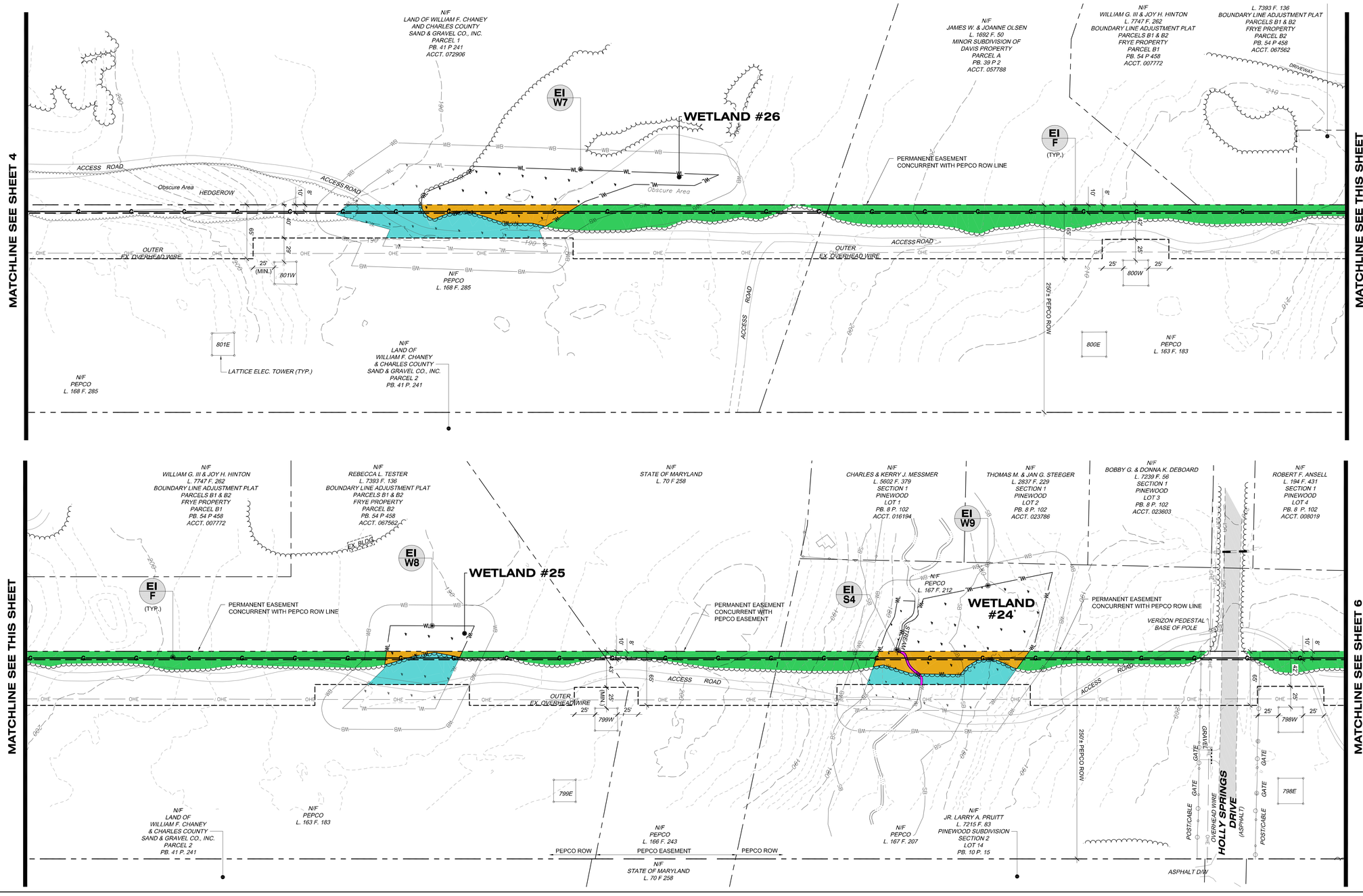


Dewberry

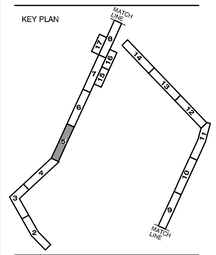
Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.9500
FAX: 410.265.8875

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC
20 INCH DIAMETER GAS PIPELINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY PLAN



SCALE
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1"=50'

No.	DATE	BY	Description
2	04/10/15	JM	REVISED 20% ENGINEERING PER CPCN COMMENTS
1	01/15/15	JM	PER ENGINEERING REINVEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	DLT
CHECKED BY	JCL
DATE	AUGUST 28, 2014

GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

PROJECT NO. 50064932

5

SHEET NO. 5 OF 17

Owner	EI F		EI S#		EI W#		
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Forested (SF)	Temp. Emergent (SF)
PEPCO L. 167 F. 207	30,166.45				737.79		598.25
PEPCO* L. 166 F. 243 *Easement throught State of Maryland L. 70 F. 258	32,895.91				1,302.60		1,950.96
TOTAL	1.45 AC		- AC			0.11 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING PEPCO ROW LINE
- EXISTING PEPCO EASEMENT LINE
- EXISTING SMECO EASEMENT LINE
- EXISTING TOPOGRAPHY
- EXISTING FORESTED WETLAND
- EXISTING EMERGENT WETLAND
- EXISTING WETLAND BUFFER
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING RAIL ROAD
- EXISTING TREE LINE
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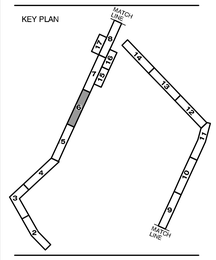

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REVISIONS

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CHECKED BY	JCL
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GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

PROJECT NO. 50064932

6

SHEET NO. 6 OF 17

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Owner	EI F		EI S#		EI W#		
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Forested (SF)	Temp. Emergent (SF)
PEPCO L. 2891 F. 628	10,665.86				721.22		5,594.74
PEPCO* L. 166 F. 243 *Easement throught State of Maryland L. 70 F. 258	29,432.03						11,229.90
TOTAL	**0.92 AC**		**- AC**			**0.40 AC**	
*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.							

LEGEND

- EXISTING PROPERTY LINE
- EXISTING PEPCO ROW LINE
- EXISTING PEPCO EASEMENT LINE
- EXISTING SMECO EASEMENT LINE
- EXISTING TOPOGRAPHY
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- EXISTING EMERGENT WETLAND
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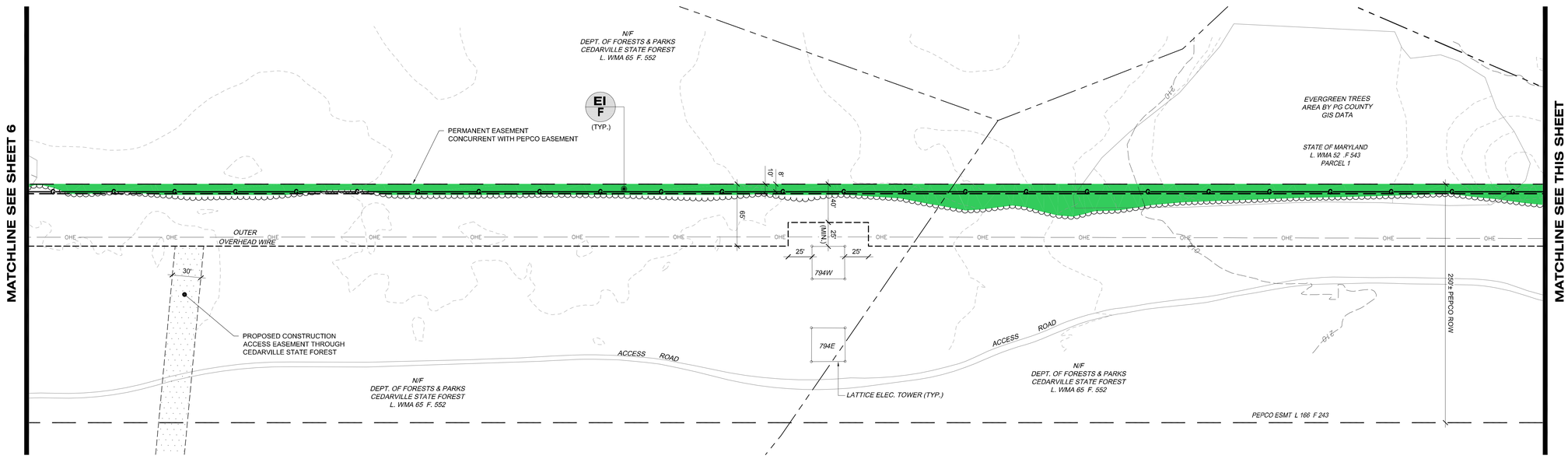

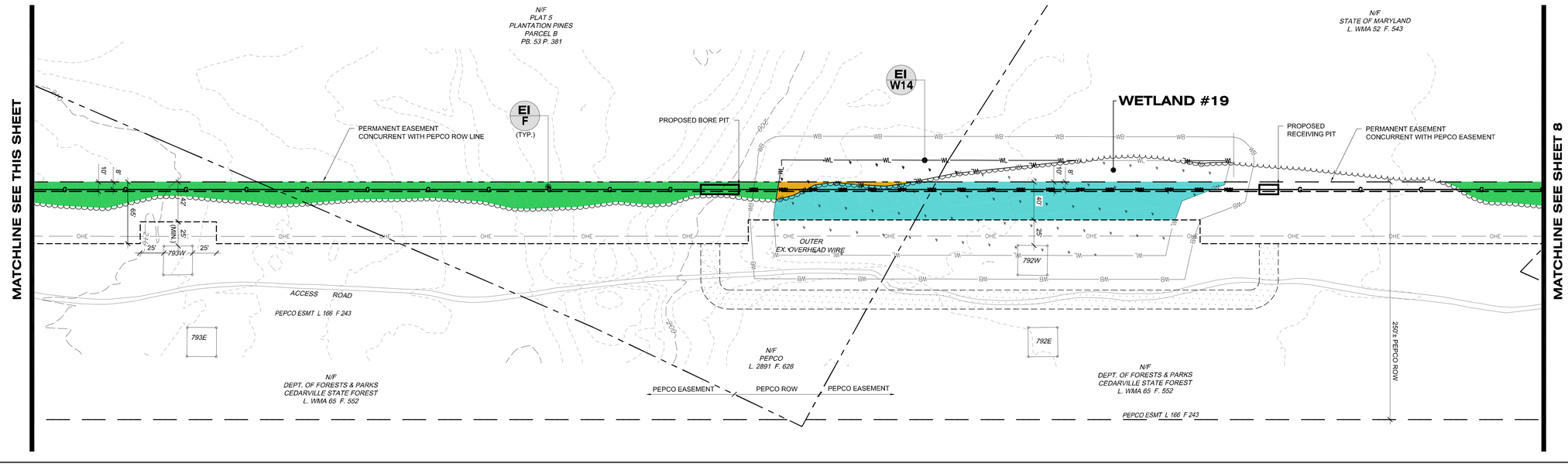

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BALTIMORE, MARYLAND 21244
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SEAL

KEY PLAN

SCALE
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REVISIONS

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APPROVED BY	DLT
CHECKED BY	JCL
DATE	AUGUST 28, 2014

GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

PROJECT NO. 50064932

7

SHEET NO. 7 OF 17

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TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
19	Willow Oak	Quercus phellos	26.5	39.75	Good		
20	White Oak	Quercus alba	25	37.5	Good		X
21	White Oak	Quercus alba	27.5	41.25	Good		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

Owner	EI F		EI S#		EI W#		
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Forested (SF)	Temp. Emergent (SF)
PEPCO L. 2891 F. 628	48,087.95				12,199.40		21,138.91
PEPCO* L. 166 F. 243 *Easement throught State of Maryland L. 70 F. 258	1,486.75						
TOTAL	1.14 AC		- AC		0.77 AC		

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING PEPCO ROW LINE
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- EXISTING SMECO EASEMENT LINE
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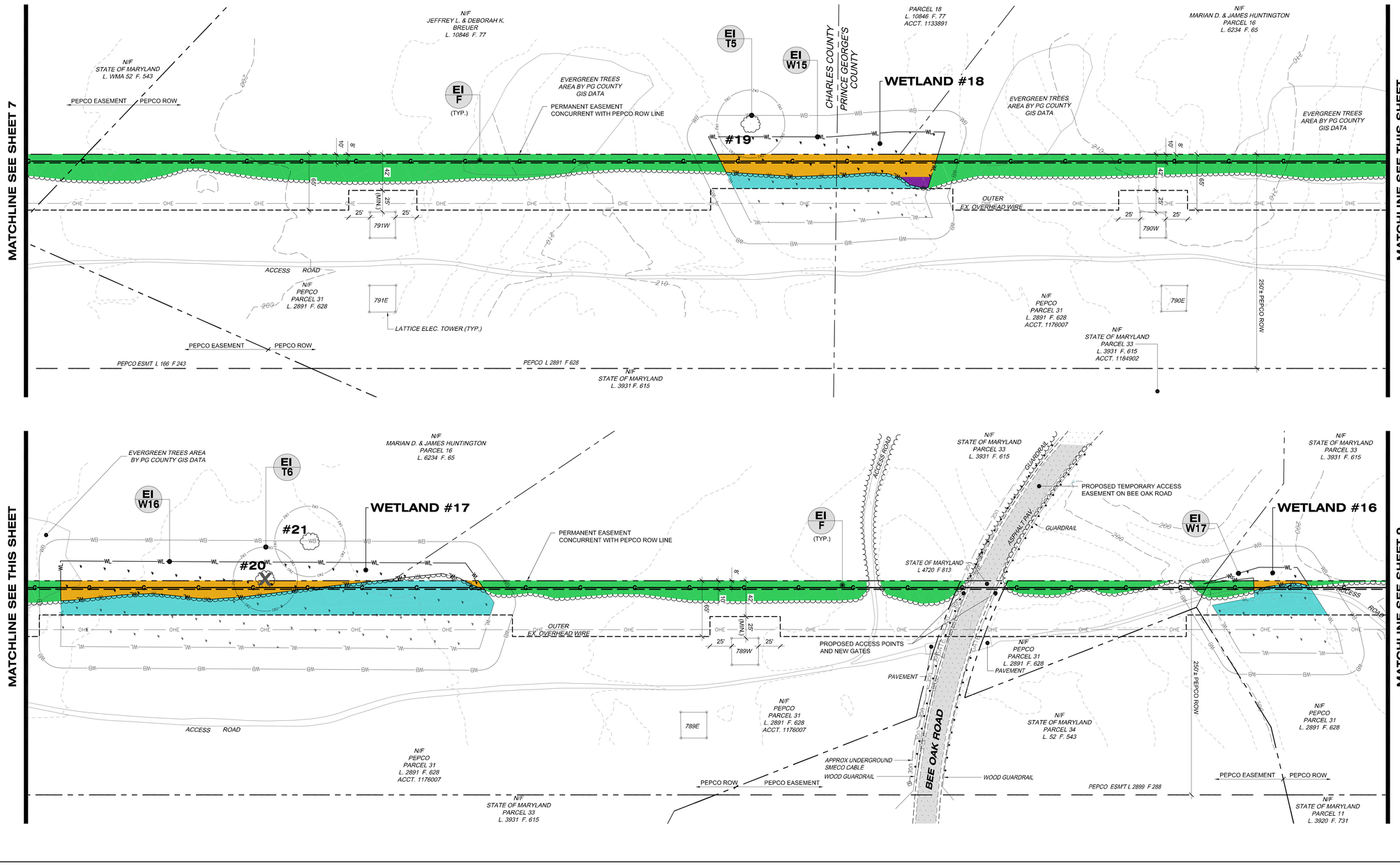

Dewberry

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3106 LORD BALTIMORE DRIVE
SUITE 110
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SEAL

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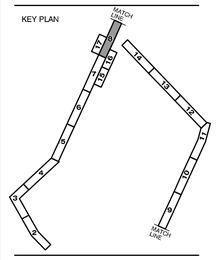

SCALE
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REVISIONS

DRAWN BY	JM
APPROVED BY	DLT
CHECKED BY	JCL
DATE	AUGUST 28, 2014

GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

PROJECT NO. 50064932

8

SHEET NO. 8 OF 17

Owner	EI F		EI S#		EI W#		
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Forested (SF)	Temp. Emergent (SF)
PEPCO L. 3167 F. 367	23,095.41				10,601.22		22,994.01
PEPCO L. 2823 F. 576 Acct. 1175959	707.64						
PEPCO L. 2815 F. 107 Acct. 1175934	1,074.38						
TOTAL	**0.57 AC**		**- AC**			**0.77 AC**	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

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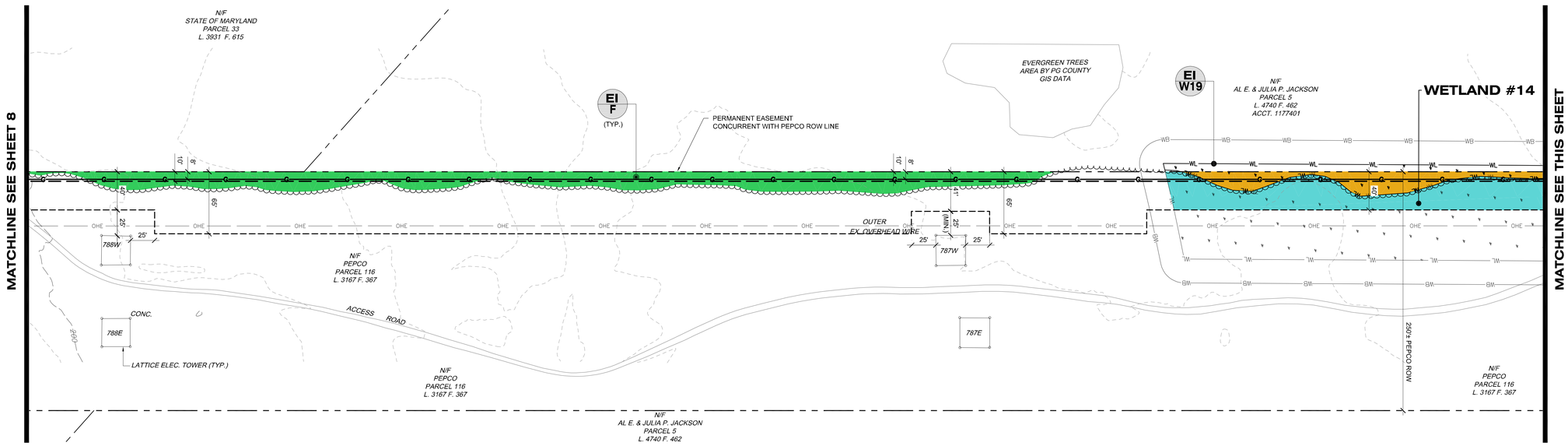

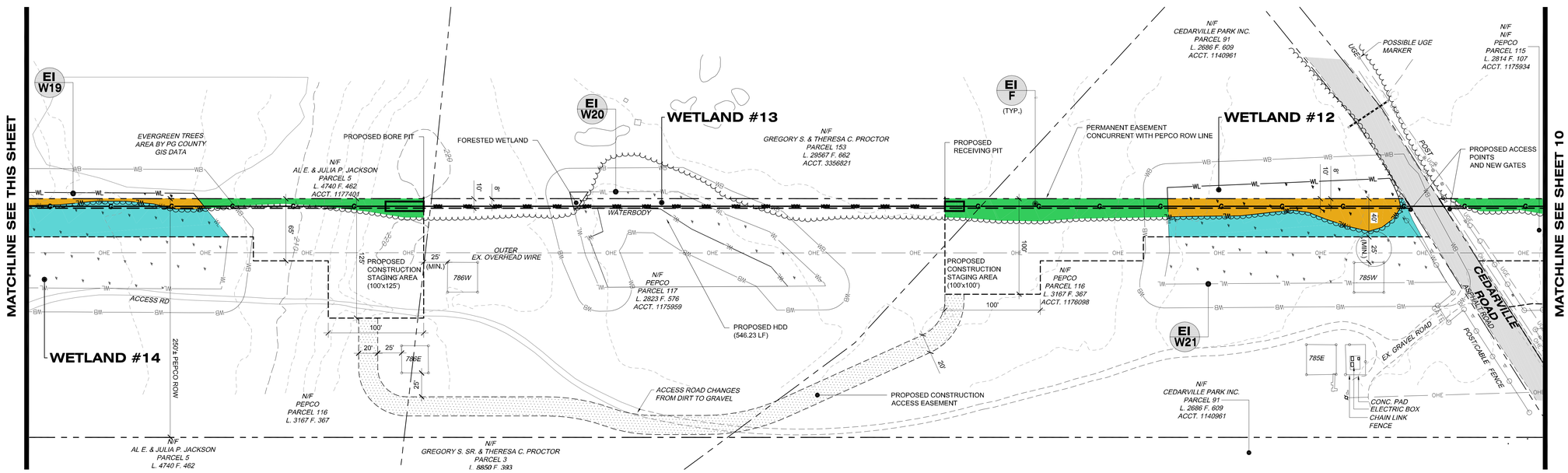

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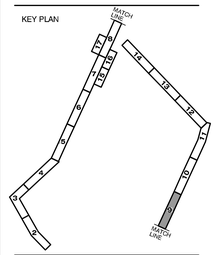

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DATE	AUGUST 28, 2014

GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

PROJECT NO. 50064932

9

SHEET NO. 9 OF 17

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
22	White Oak	Quercus alba	24	36	Good		
23	White Oak	Quercus alba	30	45	Good		
24	White Oak	Quercus alba	25	37.5	Good		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

Owner	EI F		EI S#		EI W#		
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Forested (SF)	Temp. Emergent (SF)
PEPCO L. 2814 F. 107 Acct. 1175934	9,585.97						
PEPCO L. 2836 F. 006 Acct. 11759575	7,719.08						
PEPCO L. 2823 F. 580 Acct. 1175967	10,875.41				5,272.84		3,188.68
PEPCO L. 3088 F. 290 Acct. 1176015	43,809.63						
TOTAL	1.65 AC		- AC			0.19 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

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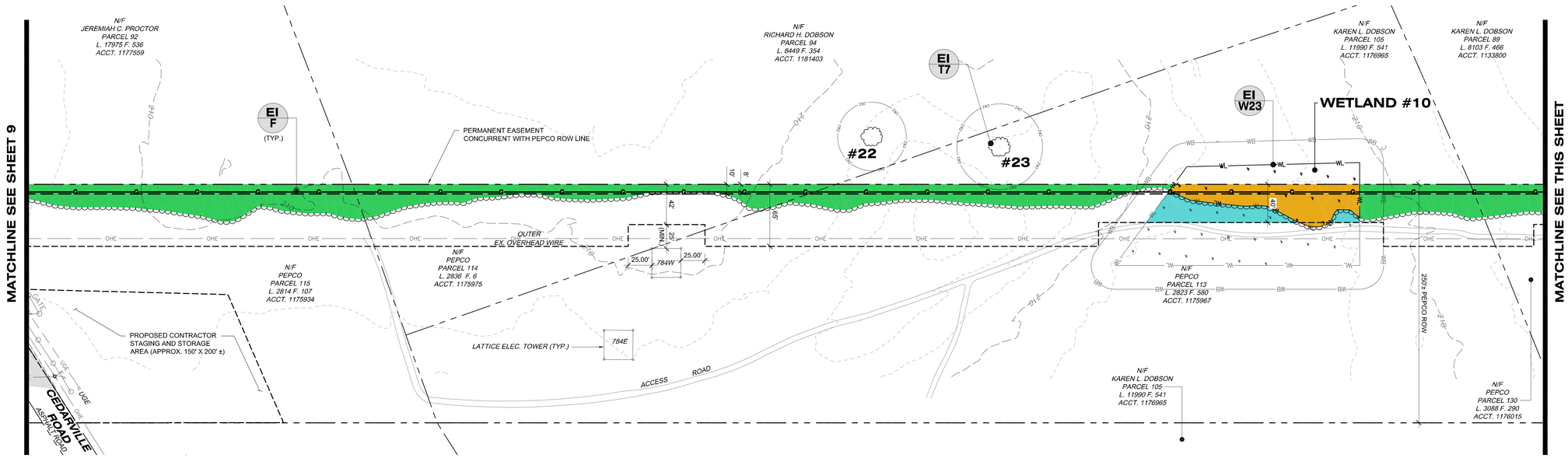

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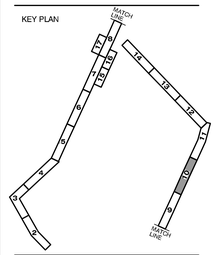

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CHECKED BY	JCL
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GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

PROJECT NO. 50064932

10

SHEET NO. 10 OF 17

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Gas Line\EI-GL-07-11.dwg, 4/9/2015 8:54:22 PM

Owner	EI F		EI S#		EI W#		
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Forested (SF)	Temp. Emergent (SF)
PEPCO L. 3088 F. 290 Acct. 1176015	3,167.56						
PEPCO L. 3434 F. 125 Acct. 1176247	35,705.08						
PEPCO L. 4565 F. 288 Acct. 1183904	4,313.89				415.92		594.03
PEPCO L. 4559 F. 681 Acct. 1183904	4,627.79						8,068.05
MNCPPC Acct. 1156233		12,917.37		1,041.55	6,201.99	21,033.29	
TOTAL	1.39 AC		0.02 AC			0.83 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING PEPCO ROW LINE
- EXISTING PEPCO EASEMENT LINE
- EXISTING SMECO EASEMENT LINE
- EXISTING TOPOGRAPHY
- EXISTING FORESTED WETLAND
- EXISTING EMERGENT WETLAND
- EXISTING WETLAND BUFFER
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING RAIL ROAD
- EXISTING TREE LINE
- EXISTING HEDGEROW
- EXISTING CRITICAL ROOT ZONE
- EXISTING SPECIMEN TREE
- EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING SMECO 6720 OVERHEAD ELECTRIC
- EXISTING OVERHEAD ELECTRIC
- EXISTING UTILITY TOWER
- EXISTING ACCESS ROAD
- PROPOSED RECEIVING AND BORE PITS
- PROPOSED GAS PIPELINE
- PERMANENT PIPE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- TEMPORARY CONSTRUCTION ACCESS EASEMENT
- PROPOSED GAS PIPELINE UTILIZING HORIZONTAL DIRECTIONAL DRILLING (HDD)
- PROPOSED GAS PIPELINE UTILIZING JACK AND BORE
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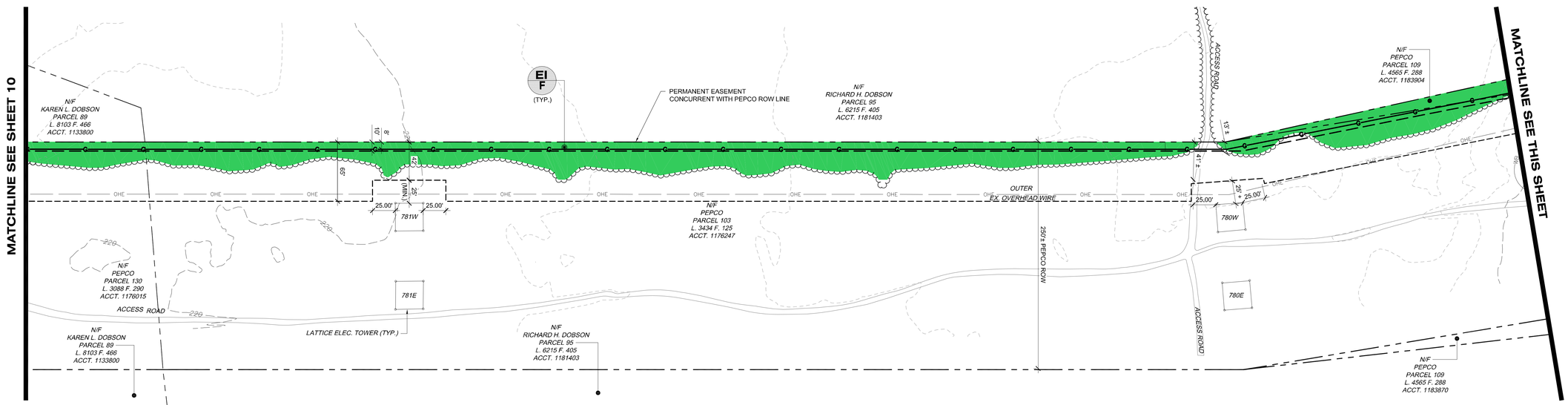
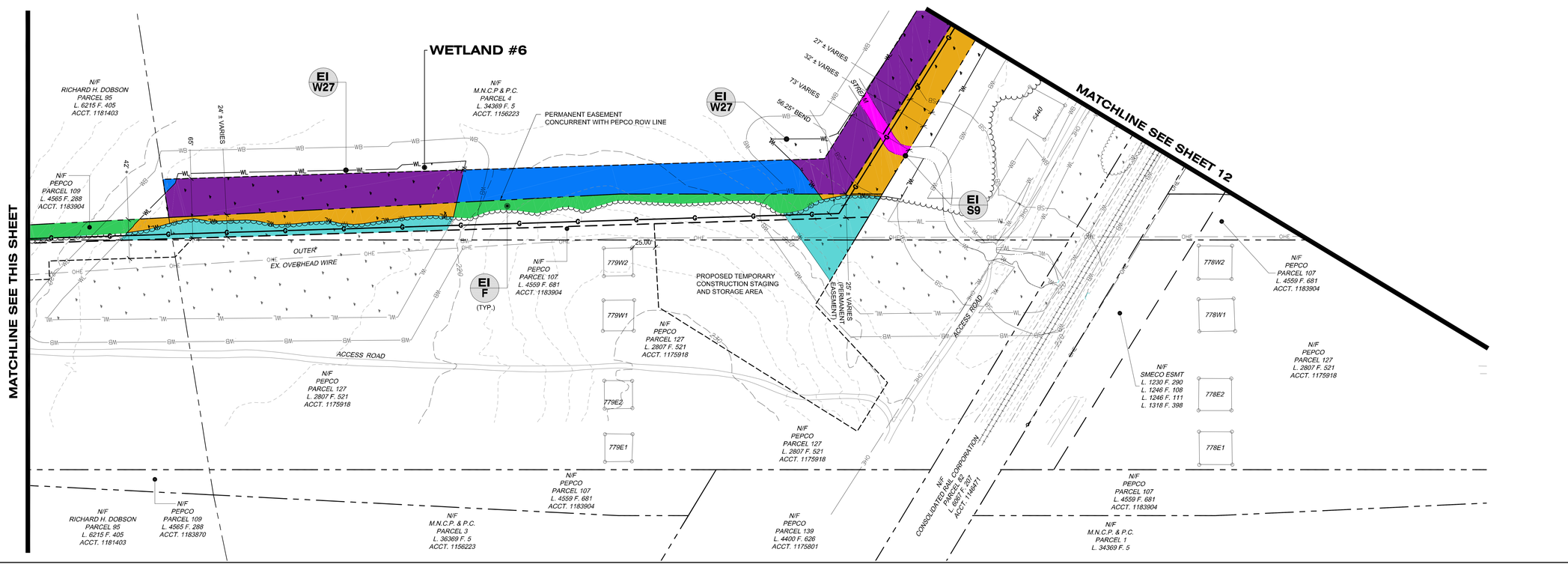
- EMERGENT WETLAND TEMPORARY IMPACT
- FORESTED WETLAND AREA TEMPORARY IMPACT
- OPEN WATER TEMPORARY IMPACT
- FOREST PERMANENT IMPACT
- FORESTED WETLAND CONVERSION TO EMERGENT WETLAND
- EI F — FOREST ENVIRONMENTAL IMPACT TAG
- EI T1 — SPECIMEN TREE ENVIRONMENTAL IMPACT TAG
- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
- EI W1 — WETLAND ENVIRONMENTAL IMPACT TAG





Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE, MARYLAND 21244
PHONE: 410.265.3500
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DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
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SEAL

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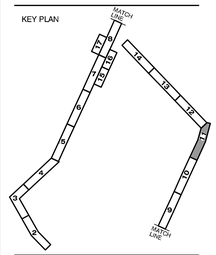

SCALE

0' 50' 100'

1"=50'

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REVISIONS

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APPROVED BY	DLT
CHECKED BY	JCL
DATE	AUGUST 28, 2014

GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

PROJECT NO. 50064932

11

SHEET NO. 11 OF 17

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TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
25	White Oak	Quercus alba	25	37.5	Fair	Bark Damage	
26	White Oak	Quercus alba	28	42	Good		
27	Red Maple	Acer rubrum	24	36	Good		X
28	White Oak	Quercus alba	31	46.5	Good	Twin	X
29	White Oak	Quercus alba	35	52.5	Good		X
30	Northern Red Oak	Quercus rubra	24	36	Good		X
31	White Oak	Quercus alba	24	36	Good		X
32	Northern Red Oak	Quercus rubra	25	37.5	Good		X

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

Owner	EI F			EI S#		EI W#		
	Perm. (SF)	Temp. (SF)	Prop. Afforestation (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Forested (SF)	Temp. Emergent (SF)
MNCPPC Acct. 1156233	11,437.91	39,655.79	1,589.98			14,138.19	24,444.86	
Prince George's County Acct. 1159896	1,655.29	15,783.10	565.48					
MNCPPC Acct. 1179092	1,409.90	21,236.06				929.04	5,168.52	6,077.91
Consolidated Rail Corp. Acct. 1146471	91.73	444.28						
TOTAL	2.11 AC		0.05 AC	- AC		1.17 AC		

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

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- EXISTING EMERGENT WETLAND
- EXISTING WETLAND BUFFER
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING RAIL ROAD
- EXISTING TREE LINE
- EXISTING HEDGEROW
- EXISTING CRITICAL ROOT ZONE
- EXISTING SPECIMEN TREE #28
- EXISTING SPECIMEN TREE TO BE REMOVED #28
- EXISTING SMECO 6720 OVERHEAD ELECTRIC
- EXISTING OVERHEAD ELECTRIC
- EXISTING UTILITY TOWER
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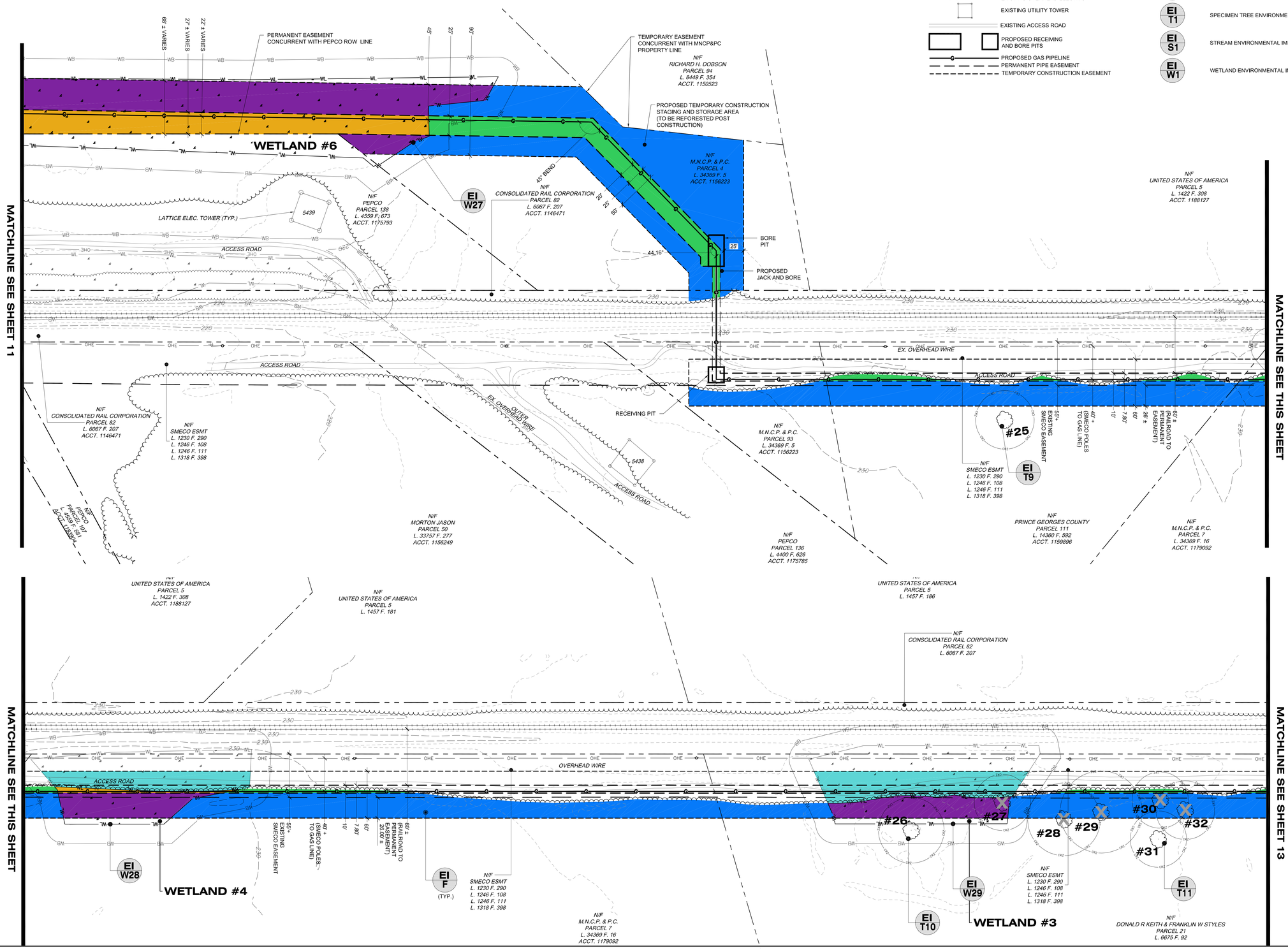

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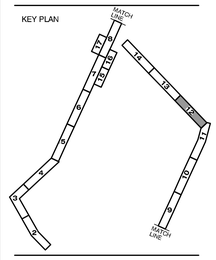

SCALE

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1"=50'

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1	01/15/15	JM	PER ENGINEERING REPRIMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	DLT
CHECKED BY	JCL
DATE	AUGUST 28, 2014

GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

PROJECT NO. 50064932

12

SHEET NO. 12 OF 17

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TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
33	White Oak	Quercus alba	26	39	Good		
34	White Oak	Quercus alba	32	48	Good		X
35	Pin Oak	Quercus palustris	23.5	35.25	Good-Fair		X
36	White Oak	Quercus alba	25	37.5	Good		X
37	White Oak	Quercus alba	24	36	Good		X

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

Owner	EI F			EI S#		EI W#		
	Perm. (SF)	Temp. (SF)	Prop. Afforestation (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Forested (SF)	Temp. Emergent (SF)
Donald R. Keith & Franklin W. Styles L. 6675 F.92	30,120.00	5,492.79	2,102.00					
MNCPPC L.34369 F.25 (TCP2-68-94 Mitigation Bank)		40,378.48	12,418.52					5,763.36
Brandywine Associates Limited Partnerships L.14111 F.299		3,734.72	3,877.52			2,744.21	23,456.47	21,894.01
MNCPPC L.34369 F.25 (TCP2-45-99 Mitigation Bank)						2,521.29	10,086.38	
TOTAL	1.83 AC		0.42 AC	- AC			1.53 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

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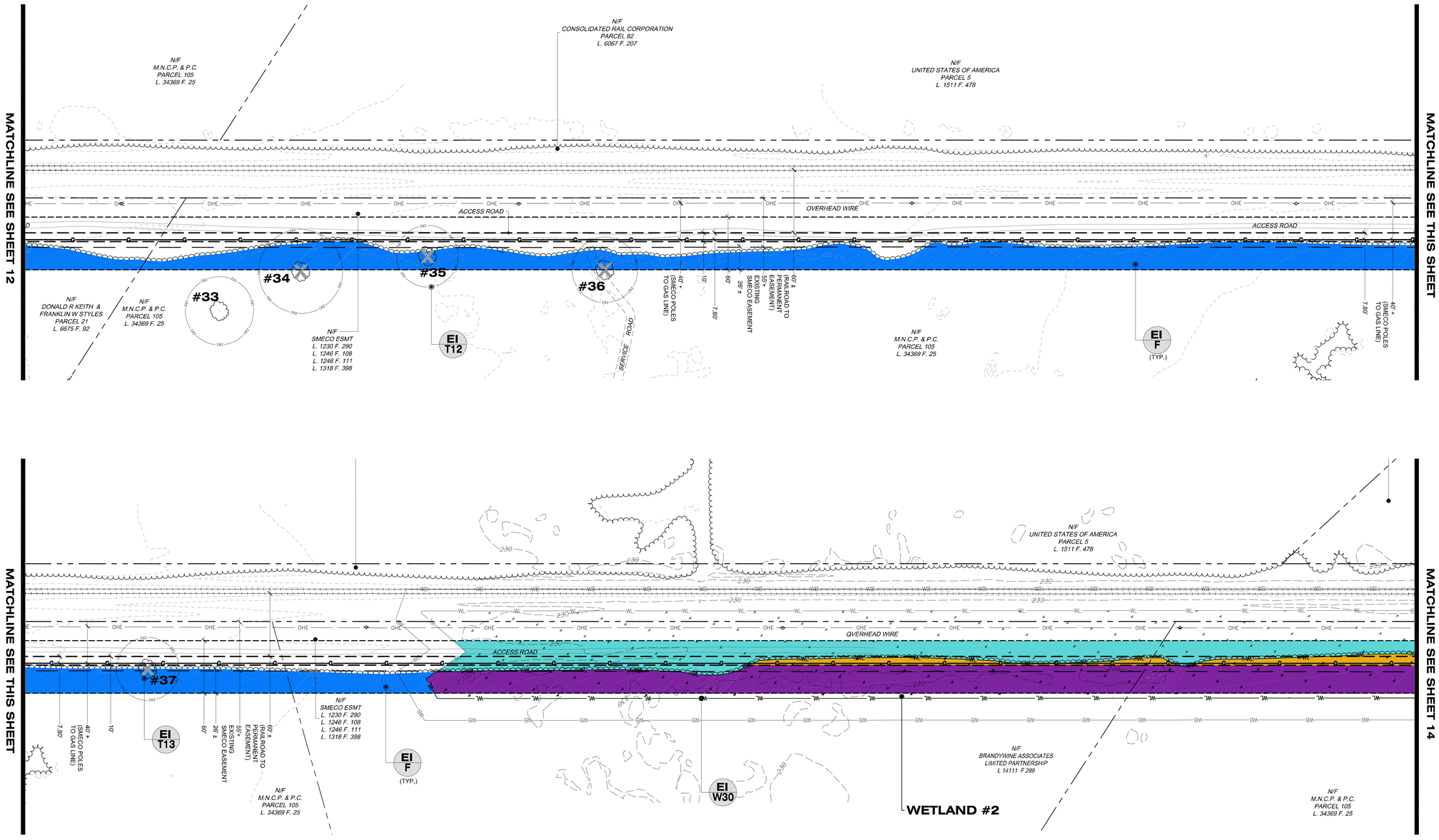

Dewberry

Dewberry Consultants LLC
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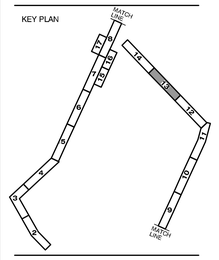

SCALE

0' 50' 100'

1"=50'

No.	DATE	BY	Description
2	04/10/15	JM	REVISED 20% ENGINEERING PER OPEN COMMENTS
1	01/15/15	JM	PER ENGINEERING REPRINDENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	DLT
CHECKED BY	JCL
DATE	AUGUST 28, 2014

GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

PROJECT NO. 50064932

13

SHEET NO. 13 OF 17

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Owner	EI F		EI S#		EI W#		
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Perm. Conversion* (SF)	Temp. Forested (SF)	Temp. Emergent (SF)
MNCPPC L.34369 F.25 (TCP2-45-99 Mitigation Bank)	682.90	9,098.89			6,568.52	25,748.02	17,637.46
TOTAL	0.22 AC		#REF! AC		1.15 AC		

*Note: Conversion indicated the SF of forested wetland that has been permanently convorted to emergent wetland.

LEGEND

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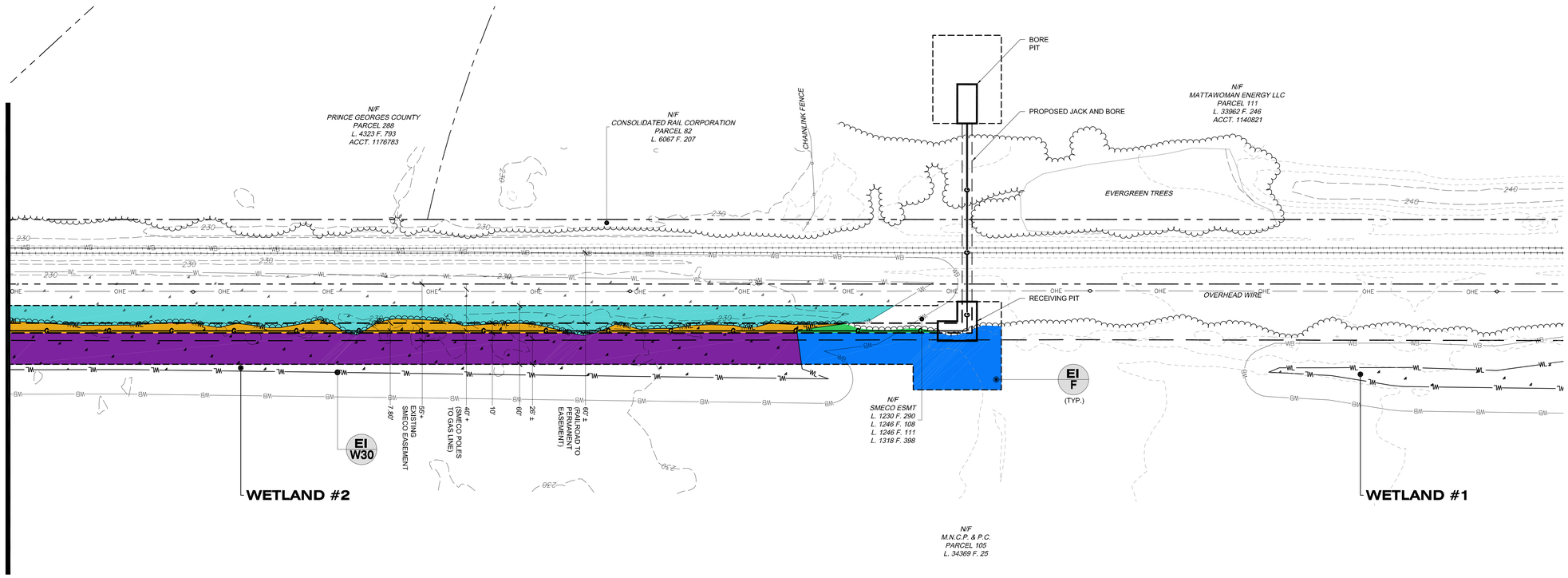

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Dewberry Consultants LLC

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DEVELOPER/APPLICANT
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SEAL

KEY PLAN

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GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

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14

SHEET NO. 14 OF 17

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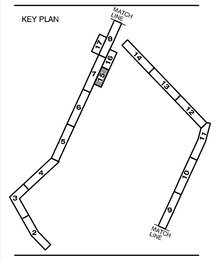

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SHEET NO. 15 OF 17

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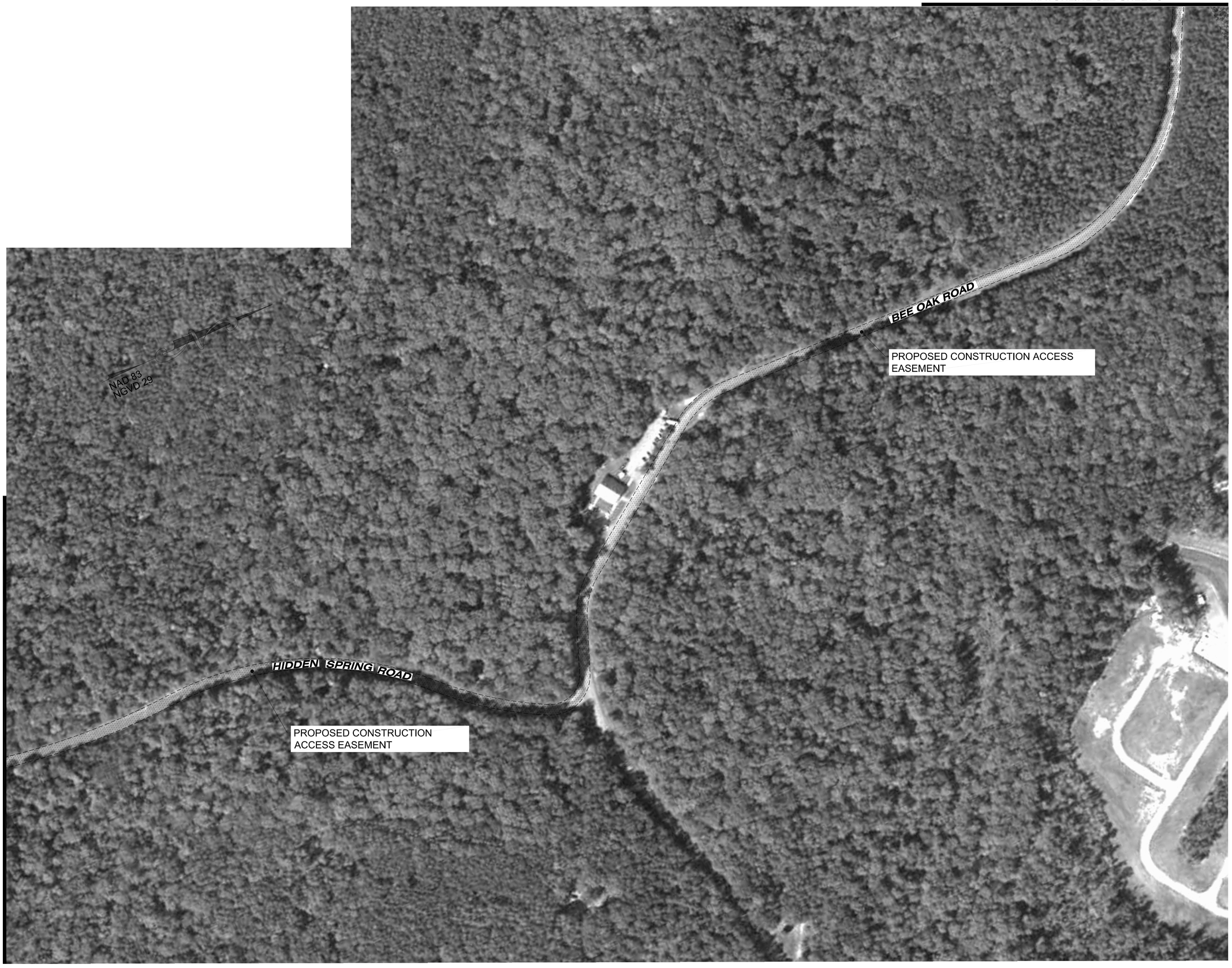

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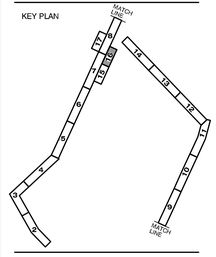

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GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

PROJECT NO. 50064932

16

SHEET NO. 16 OF 17

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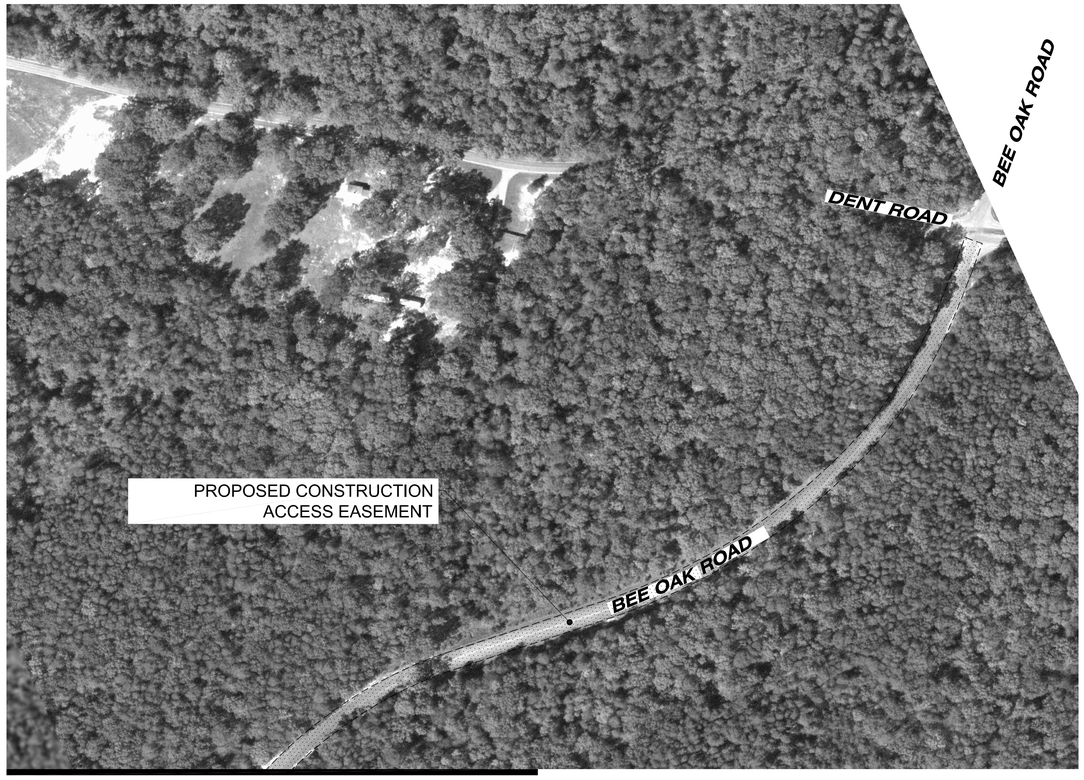

MATCHLINE SEE SHEET 8

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Dewberry Consultants LLC

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BALTIMORE, MARYLAND 21244
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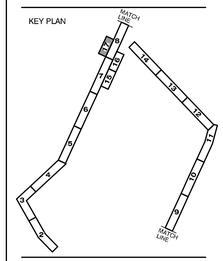

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CHECKED BY JCL
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GAS LINE ENVIRONMENTAL IMPACT ANALYSIS

PROJECT NO. 50064932

17

SHEET NO. 17 OF 17

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APPENDIX G

RECLAIMED WATER PIPELINE ENVIRONMENTAL IMPACT PLANS

24-INCH DIAMETER RECLAIMED WATER LINE ENVIRONMENTAL IMPACT ANALYSIS

DATUM: MCS/NAD83(1991); NAVD88

IMPACT TABULATION

	SQUARE FEET	ACRES
1. AREA OF TEMPORARY IMPACTS:		
a. TOTAL TEMPORARY IMPACT THROUGH FOREST:	11,692.56 sf	0.27 ac
b. TOTAL TEMPORARY IMPACT THROUGH EMERGENT WETLAND:	9,975.79 sf	0.23 ac
c. TOTAL TEMPORARY IMPACT THROUGH FORESTED WETLAND:	0.00 sf	0.00 ac
d. TOTAL TEMPORARY IMPACT THROUGH STREAM CHANNELS & PONDS:	0.00 sf	0.00 ac
2. AREA OF PERMANENT IMPACTS:		
a. TOTAL PERMANENT IMPACT THROUGH FOREST:	267,113.70 sf	6.13 ac
b. TOTAL CONVERSION THROUGH FORESTED WETLAND: (TO EMERGENT WETLAND)	4,778.90 sf	0.11 ac

NOTE: FLOODPLAIN INFORMATION HAS BEEN OBTAINED FROM PRINCE GEORGE'S COUNTY GIS.

SHEET INDEX

1. COVER SHEET
2. - 45. PLAN SHEETS

SITE DATA

1.	TOTAL TRACT AREA:	43.91 ACRES
2.	NET TRACT AREA:	43.91 ACRES
3.	LAND USE CATEGORY:	LINEAR - INDUSTRIAL

NOTE: REVISIONS TO THE ENVIRONMENTAL IMPACT ANAYLYSIS ARE DUE TO ENGINEERING REFINEMENT AND INPUT RECEIVED FROM REVIEW AGENCIES. SUCH REVISIONS ARE SUBSTANTIAL AND OCCURRING ON EVERY SHEET.

VICINITY MAP

SCALE: 1" = 2000'

ADC MAP 5880, 5881, 5882, 5883, 5996, 5997, 5998, 5999

Dewberry®

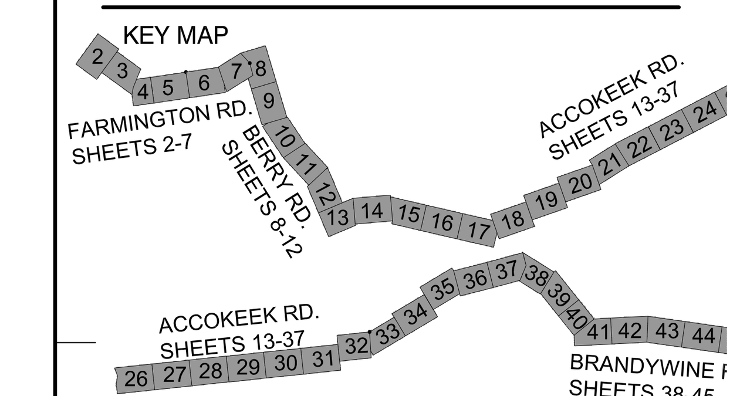
Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE MD, 21244
PHONE: 410.645.1402
FAX: 410.265.8875

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC
10 MILE, 24" DIAMETER
RECLAIMED WATER LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE: AS SHOWN

REVISIONS

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS REC'D FROM AGENCIES

DRAWN BY: JM
APPROVED BY: JCL
CHECKED BY: JCL
DATE: AUGUST 28, 2014

TITLE: RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

SHEET NO. 1 — 1 OF 45

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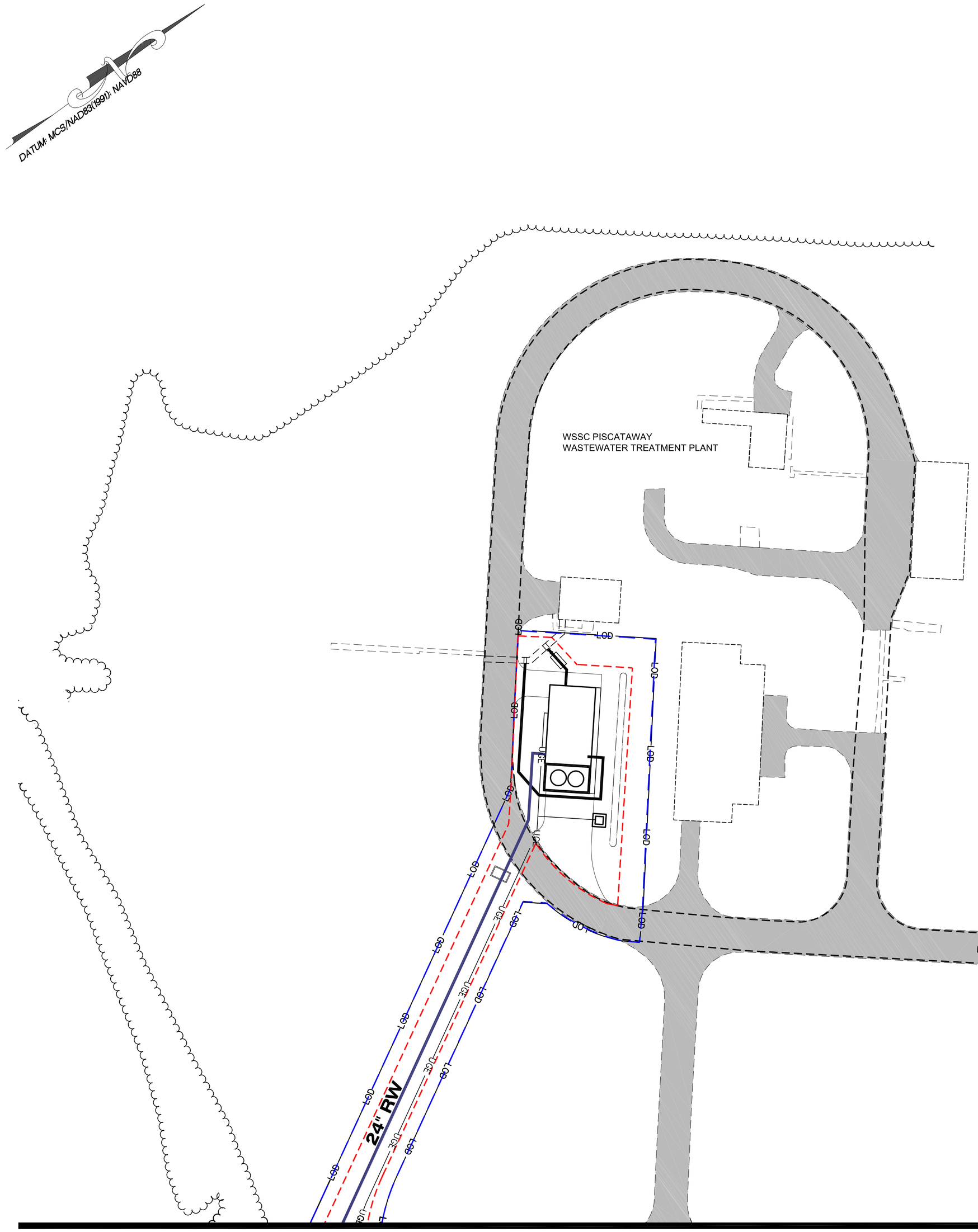

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- OHE — EXISTING OVERHEAD ELECTRIC
- W — EXISTING WATER
- S — EXISTING SEWER
- G — EXISTING GAS
- OHT — EXISTING OVERHEAD TELEPHONE
- SD — EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- SB — EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- WL / W — EXISTING FORESTED WETLAND
- WL / W — EXISTING EMERGENT WETLAND
- WB — EXISTING WETLAND BUFFER
- CRZ — CRITICAL ROOT ZONE
- ## — EXISTING SPECIMEN TREE
- ## — EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING TREE LINE
- EXISTING HEDGEROW
- PROPOSED 24" RECLAIMED WATER LINE
- PROPOSED VALVE VAULT
- PERMANENT PIPE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED RECEIVING AND BORE PITS
- LOD — PROPOSED LIMITS OF DISTURBANCE
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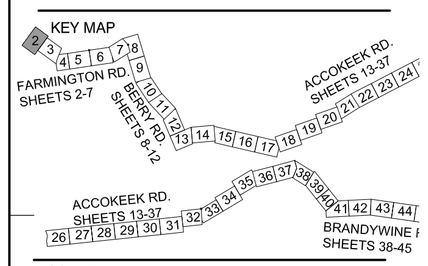
SEAL



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

2

SHEET NO. 2 OF 45

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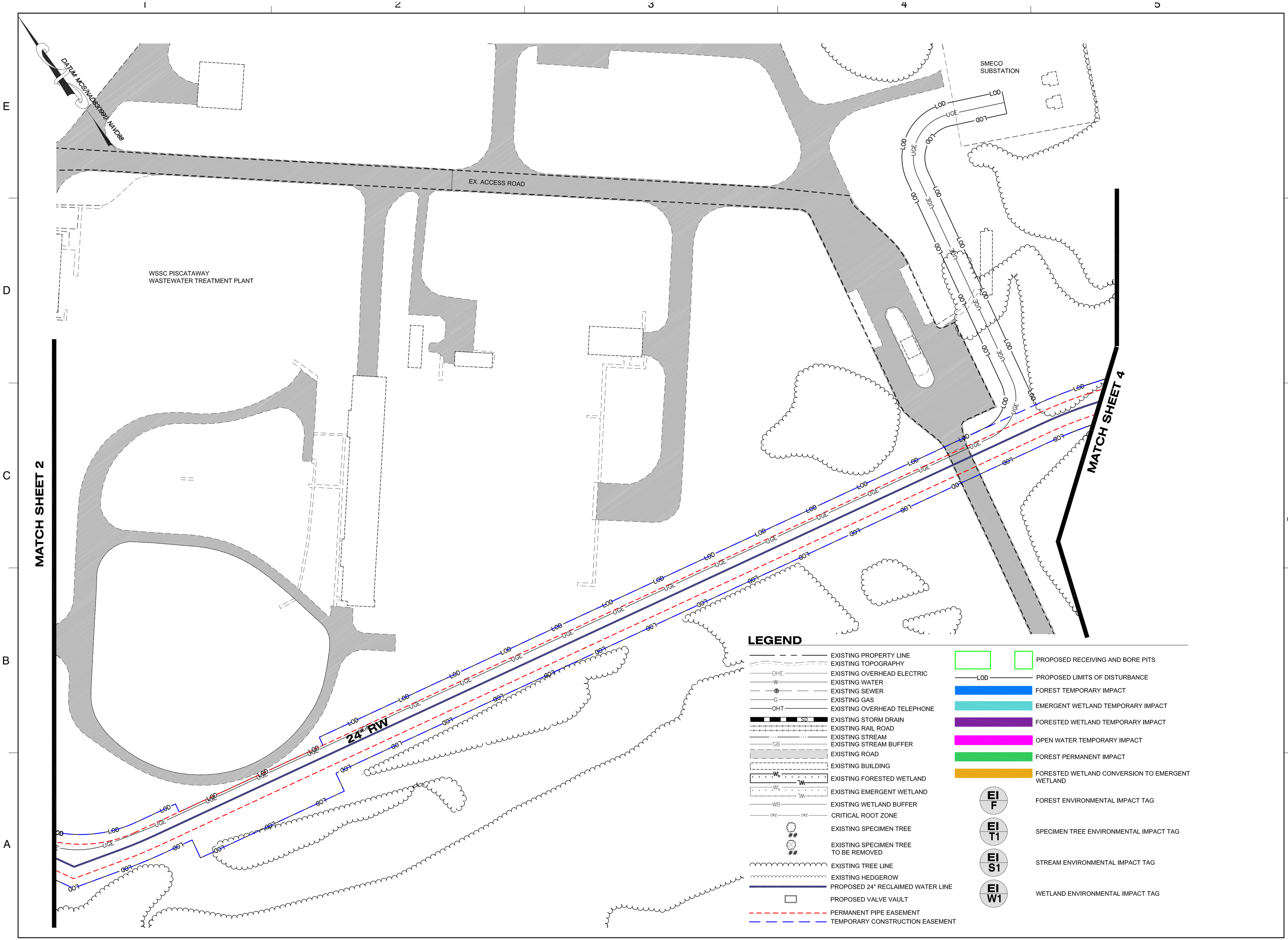

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MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP
FARMINGTON RD. SHEETS 2-7
BERRY RD. SHEETS 8-12
ACCOKEEK RD. SHEETS 13-37
ACCOKEEK RD. SHEETS 13-37
BRANDYWINE SHEETS 38-45

SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

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CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

3

SHEET NO. 3 OF 45

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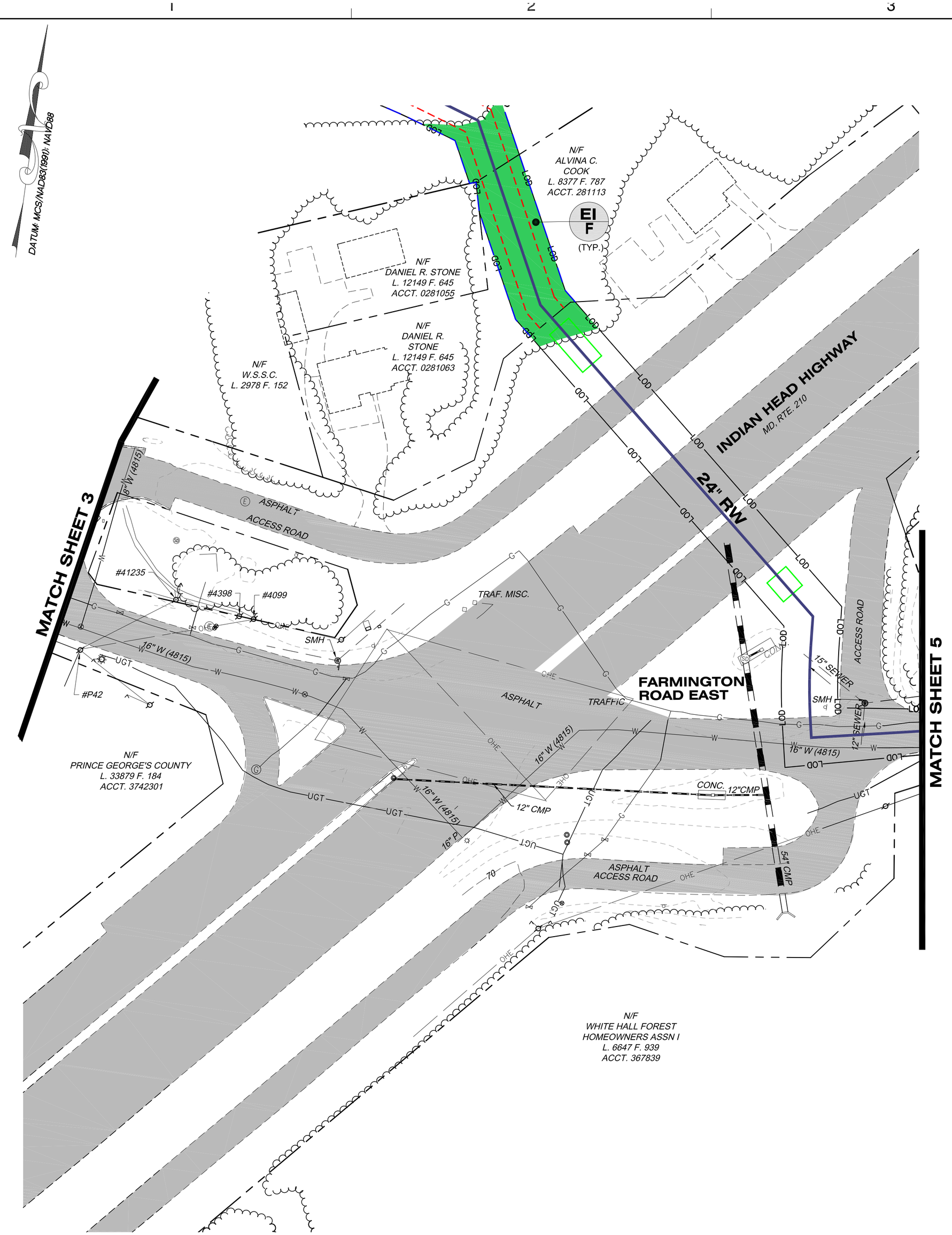

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER
- EXISTING SEWER
- EXISTING GAS
- EXISTING OVERHEAD TELEPHONE
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- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
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- EXISTING WETLAND BUFFER
- CRITICAL ROOT ZONE
- EXISTING SPECIMEN TREE
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- PROPOSED LIMITS OF DISTURBANCE
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- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
- EI W1 — WETLAND ENVIRONMENTAL IMPACT TAG

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way	912.40					
Alvina C. Cook (Acct. 281113)	5,683.59					
W.S.S.C (L. 2978 F. 152)	2,120.00					
TOTAL	**0.20 AC**		**- AC**		**- AC**	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

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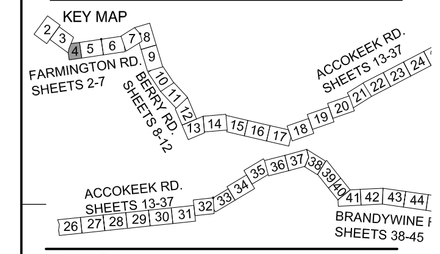
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
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REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

4

SHEET NO. 4 OF 45

DATUM: MCS/NAD83(1997)/ NAVD88

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
County Right-of-Way	23,777.64					
TOTAL	0.55 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
1	Red Maple	Acer rubrum	40.5	60.75	Good	Twin	

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

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- EXISTING TOPOGRAPHY
- OHE — EXISTING OVERHEAD ELECTRIC
- W — EXISTING WATER
- S — EXISTING SEWER
- G — EXISTING GAS
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- EXISTING RAIL ROAD
- EXISTING STREAM
- SB — EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- WL / WL / WL — EXISTING FORESTED WETLAND
- EXISTING EMERGENT WETLAND
- WB — EXISTING WETLAND BUFFER
- CRZ — CRITICAL ROOT ZONE
- ## — EXISTING SPECIMEN TREE
- ## — EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING TREE LINE
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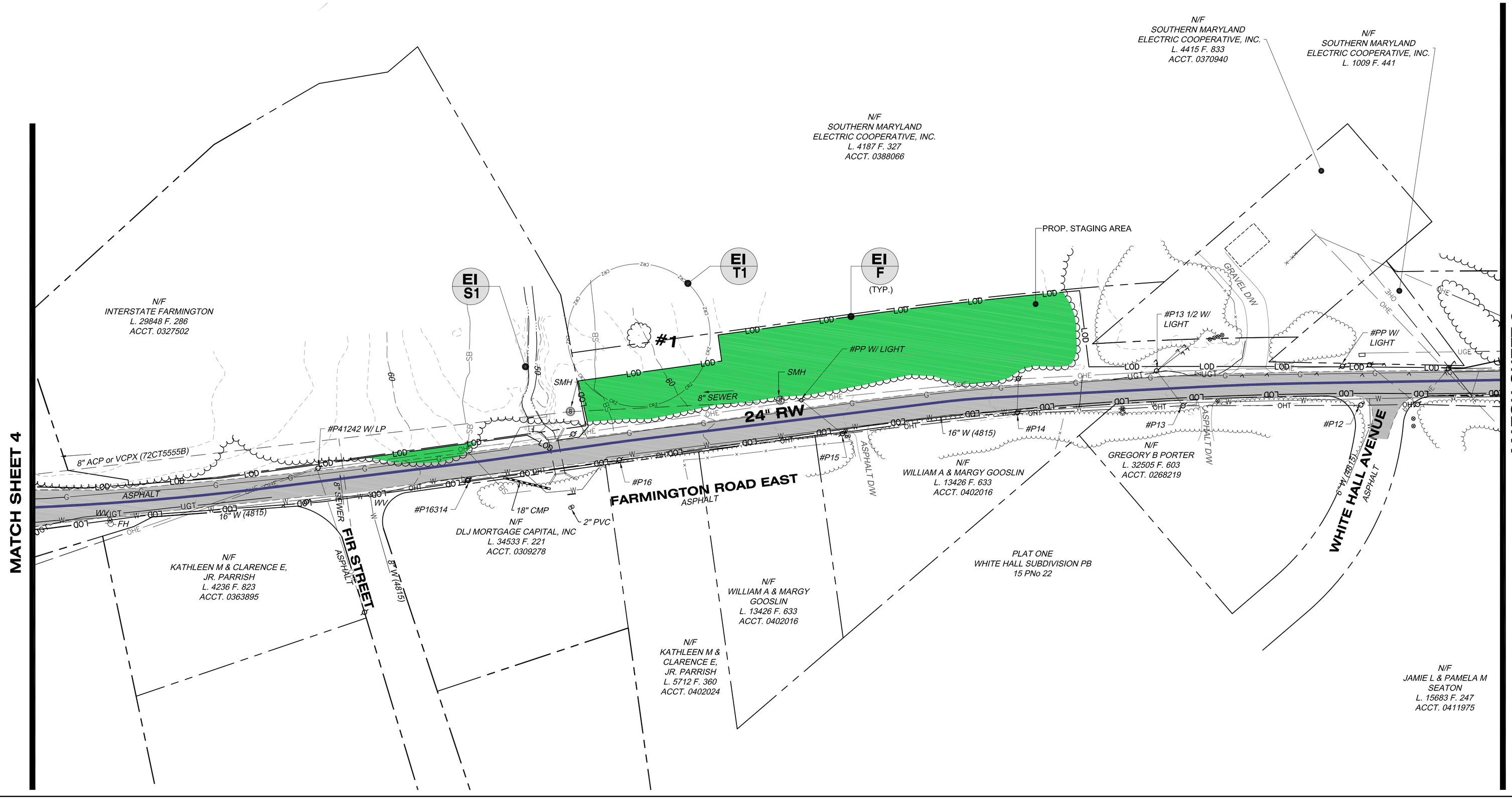

Dewberry

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3106 LORD BALTIMORE DRIVE
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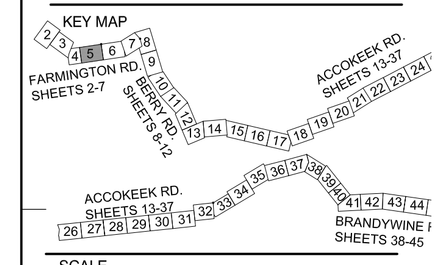
10 MILE, 24" DIAMETER RECLAIMED WATER LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
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REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

5

SHEET NO. 5 OF 45

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DATUM: MCS/NAD83(1997) NAVD88

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
County Right-of-Way	2,183.61					
MNCPPC (Acct. 0354746) (TCP2-018-92)	18.88					
TOTAL	0.05 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
2	Eastern Red Cedar	Juniperus virginiana	25	37.5	Fair		X
3	Red Maple	Acer rubrum	29.5	44.25	Good		
4	Pin Oak	Quercus palustris	27.5	41.25	Good		
5	Black Cherry	Prunus serotina	28.5	42.75	Good	Twin	

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

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- EXISTING TOPOGRAPHY
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- EXISTING BUILDING
- WL — EXISTING FORESTED WETLAND
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- WB — EXISTING WETLAND BUFFER
- CRZ — CRZ — CRITICAL ROOT ZONE
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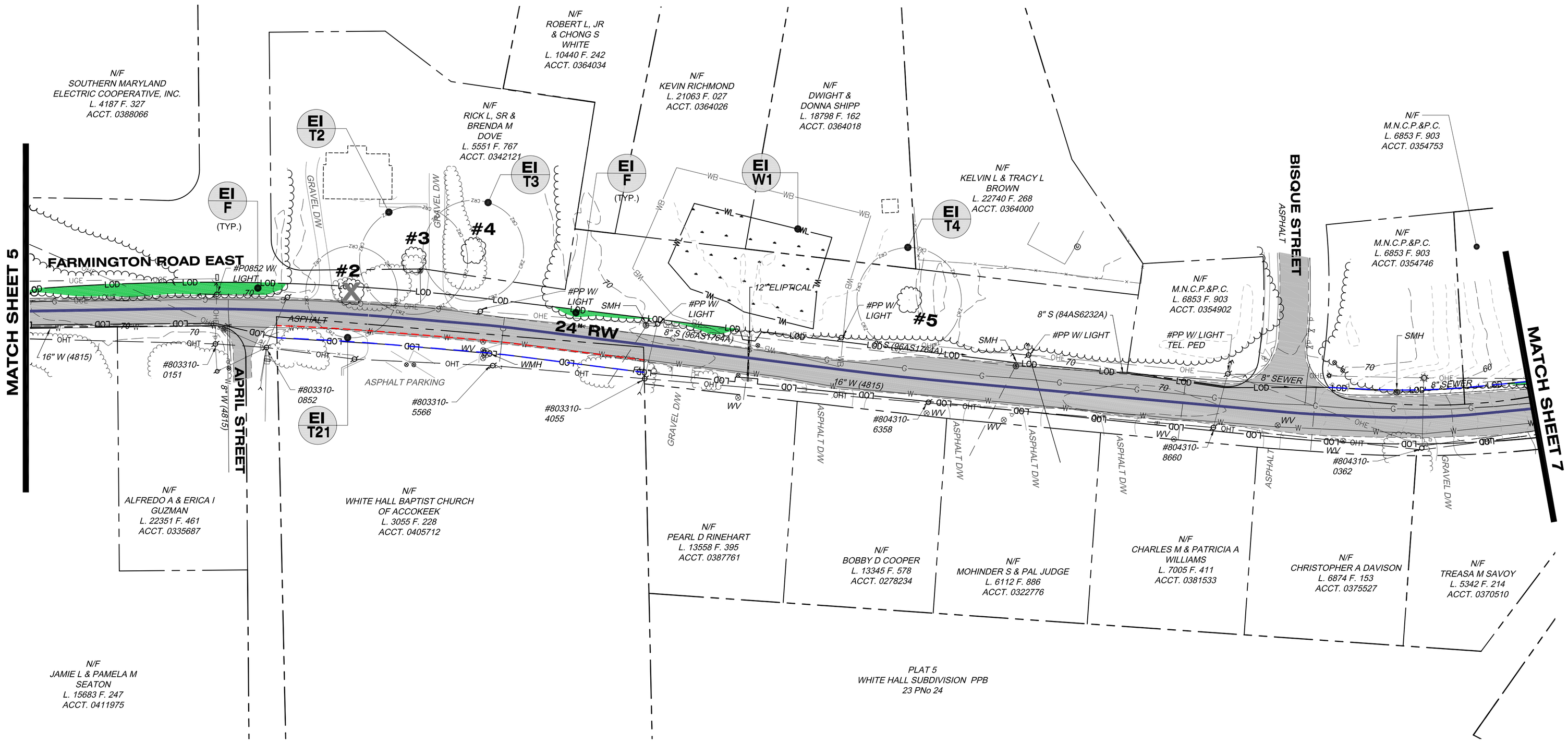

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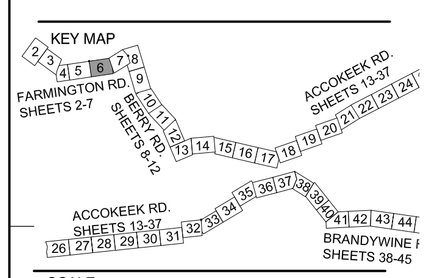
SEAL

KEY MAP



SCALE
0' 50' 100'
1"=50'

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REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

6

SHEET NO. 6 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-06-09.dwg, 1/25/2015 12:25:43 PM

DATUM: MCS/NAD83(1991); NAVD88

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
County Right-of-Way	10,406.49					
MNCPPC (Acct. 0354746) (TCP2-018-92)	366.57					
TOTAL	**0.25 AC**		**- AC**		**- AC**	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
6	Black Jack Oak	Quercus marilandica	28	42	Fair	Vines surrounding trunk and in canopy; branch dieback	X

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

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- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER
- EXISTING SEWER
- EXISTING GAS
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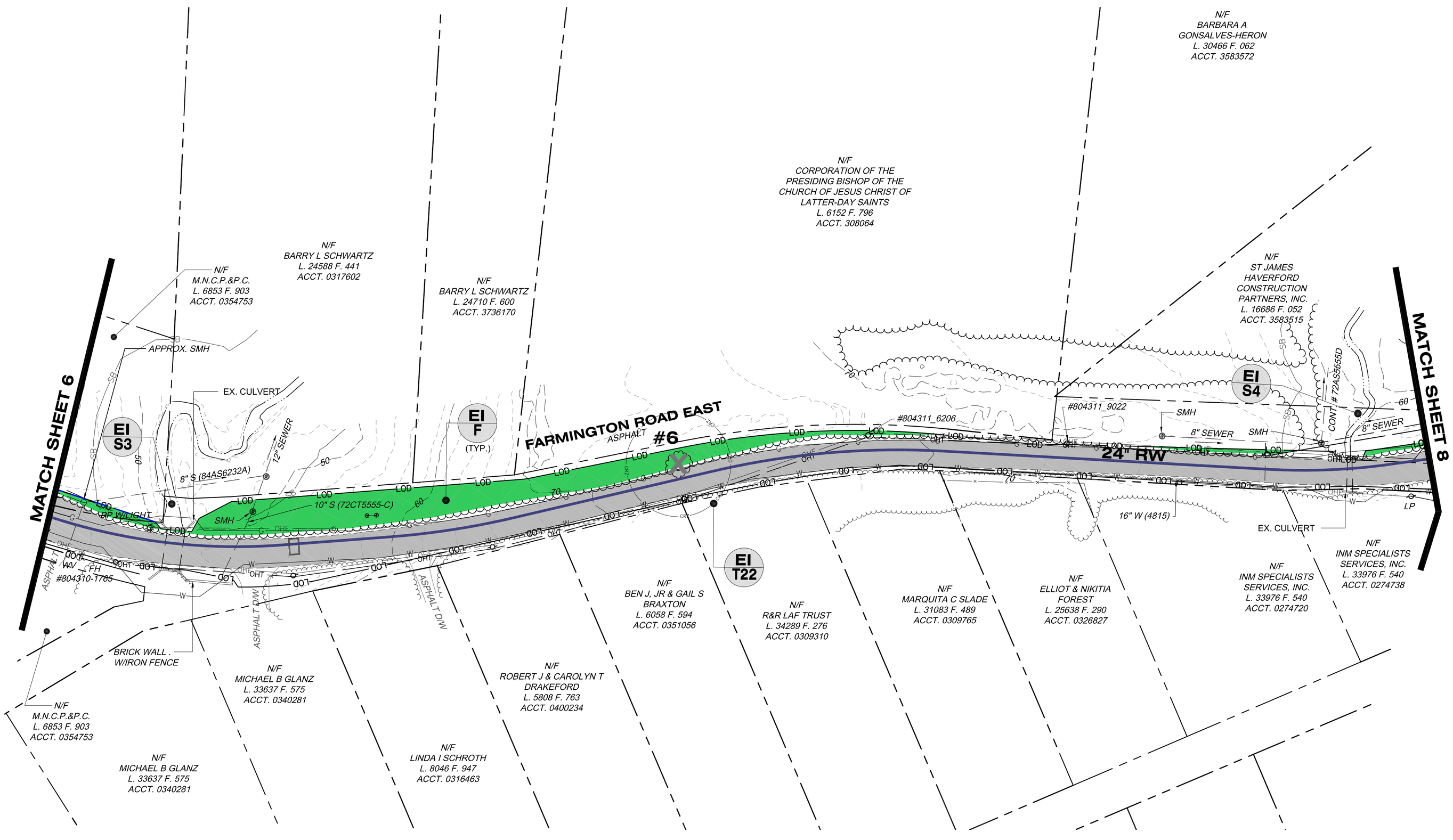

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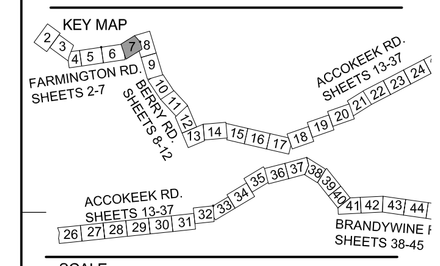

SCALE
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REVISIONS

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DATE	AUGUST 28, 2014

TITLE

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PROJECT NO. 50064932

7

SHEET NO. 7 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-06-09.dwg, 1/25/2015 12:25:50 PM

DATUM: MCS/NAD83(1991); NAVD88

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
County Right-of-Way	404.51					
TOTAL	**0.01 AC**		**- AC**		**- AC**	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
7	American Sycamore	Planatus occidentalis	40	60	Fair	Vines surrounding trunk and in canopy	
8	Pin Oak	Quercus palustris	35	52.5	Good		
9	Red Maple	Acer rubrum	61	91.5	Good	Triplet	

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

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- EXISTING OVERHEAD ELECTRIC
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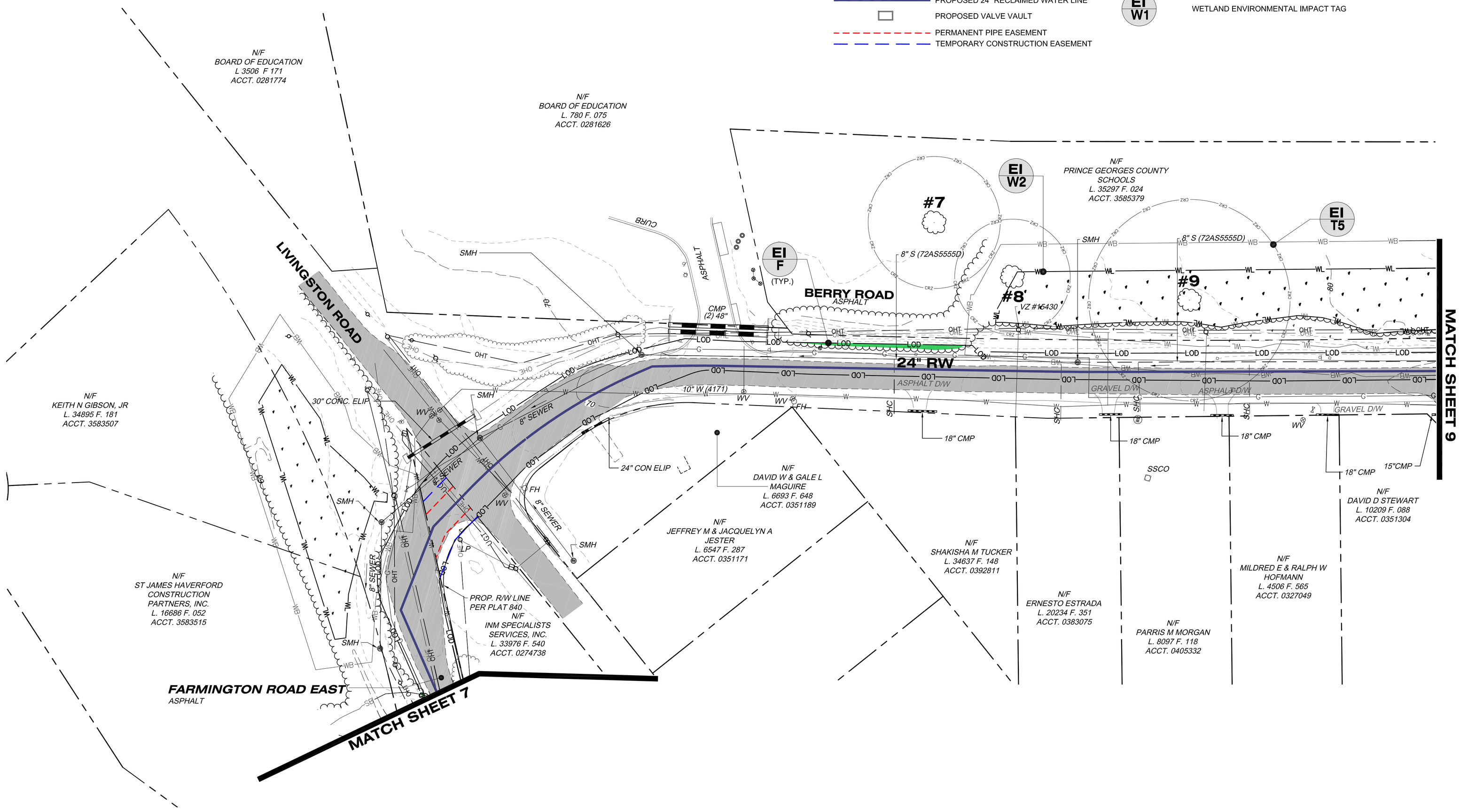
- FOREST PERMANENT IMPACT
- FORESTED WETLAND CONVERSION TO EMERGENT WETLAND
- EI F — FOREST ENVIRONMENTAL IMPACT TAG
- EI T1 — SPECIMEN TREE ENVIRONMENTAL IMPACT TAG
- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
- EI W1 — WETLAND ENVIRONMENTAL IMPACT TAG



Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE MD, 21244
PHONE: 410.645.1402
FAX: 410.265.8875

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC
10 MILE, 24" DIAMETER
RECLAIMED WATER LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP
FARMINGTON RD. SHEETS 2-7
BERRY RD. SHEETS 8-12
ACCOKEEK RD. SHEETS 13-37
ACCOKEEK RD. SHEETS 13-37
BRANDYWINE RD. SHEETS 38-45

SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE
RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

8

SHEET NO. 8 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-06-09.dwg, 1/25/2015 12:25:55 PM

DATUM: MCS/NAD83(1991); NAVD88

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
County Right-of-Way	352.46					
TOTAL	**0.01 AC**		**- AC**		**- AC**	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
10	Tulip Poplar	Liriodendron tulipifera	29	43.5	Poor		
11	Red Maple	Acer rubrum	25	37.5	Fair		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- OHE — EXISTING OVERHEAD ELECTRIC
- W — EXISTING WATER
- S — EXISTING SEWER
- G — EXISTING GAS
- OHT — EXISTING OVERHEAD TELEPHONE
- SD — EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- SB — EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- WL / W — EXISTING FORESTED WETLAND
- WL / W — EXISTING EMERGENT WETLAND
- WB — EXISTING WETLAND BUFFER
- CRZ — CRZ — CRITICAL ROOT ZONE
- ## — EXISTING SPECIMEN TREE
- ## — EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING TREE LINE
- EXISTING HEDGEROW
- PROPOSED 24" RECLAIMED WATER LINE
- PROPOSED VALVE VAULT
- PERMANENT PIPE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED RECEIVING AND BORE PITS
- LOD — PROPOSED LIMITS OF DISTURBANCE
- FOREST TEMPORARY IMPACT
- EMERGENT WETLAND TEMPORARY IMPACT
- FORESTED WETLAND TEMPORARY IMPACT
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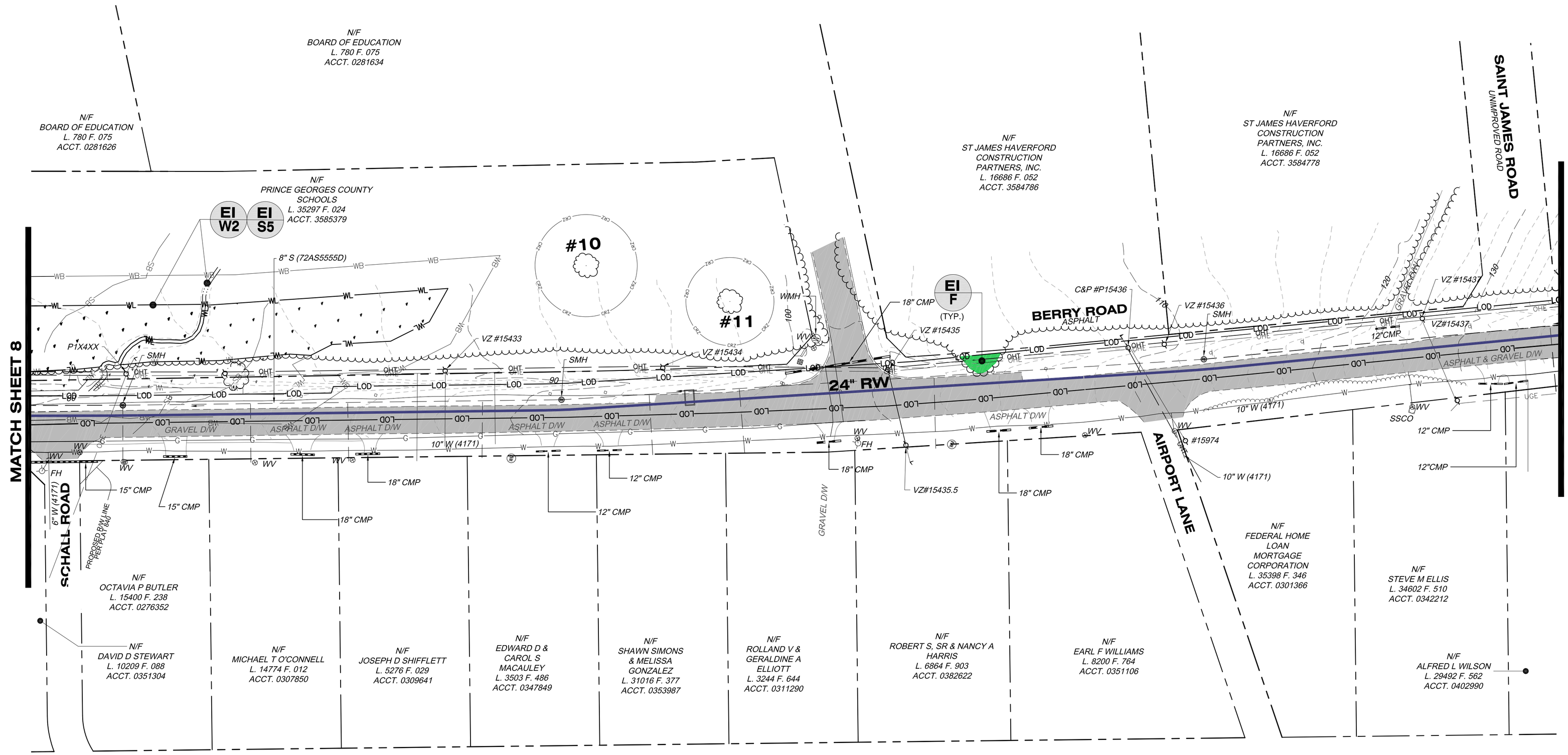

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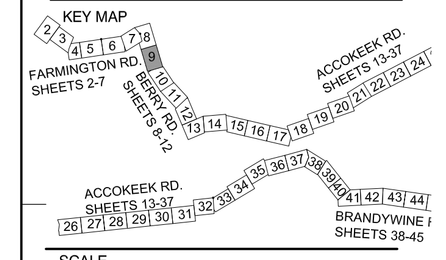
MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

9

SHEET NO. 9 OF 45

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DATUM: MCS/NAD83(1991); NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
County Right-of-Way	3,476.94					
TOTAL	**0.08 AC**		**- AC**		**- AC**	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
12	UKNOWN		30	45	Good	Dense vines surrounding trunk and in canopy	
13	Tulip Poplar	Liriodendron tulipifera	35.5	53.25	Fair		
14	Pin Oak	Quercus palustris	30	45	Fair		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER
- EXISTING SEWER
- EXISTING GAS
- EXISTING OVERHEAD TELEPHONE
- EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- EXISTING FORESTED WETLAND
- EXISTING EMERGENT WETLAND
- EXISTING WETLAND BUFFER
- CRITICAL ROOT ZONE
- EXISTING SPECIMEN TREE
- EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING TREE LINE
- EXISTING HEDGEROW
- PROPOSED 24" RECLAIMED WATER LINE
- PROPOSED VALVE VAULT
- PERMANENT PIPE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED RECEIVING AND BORE PITS
- PROPOSED LIMITS OF DISTURBANCE
- FOREST TEMPORARY IMPACT
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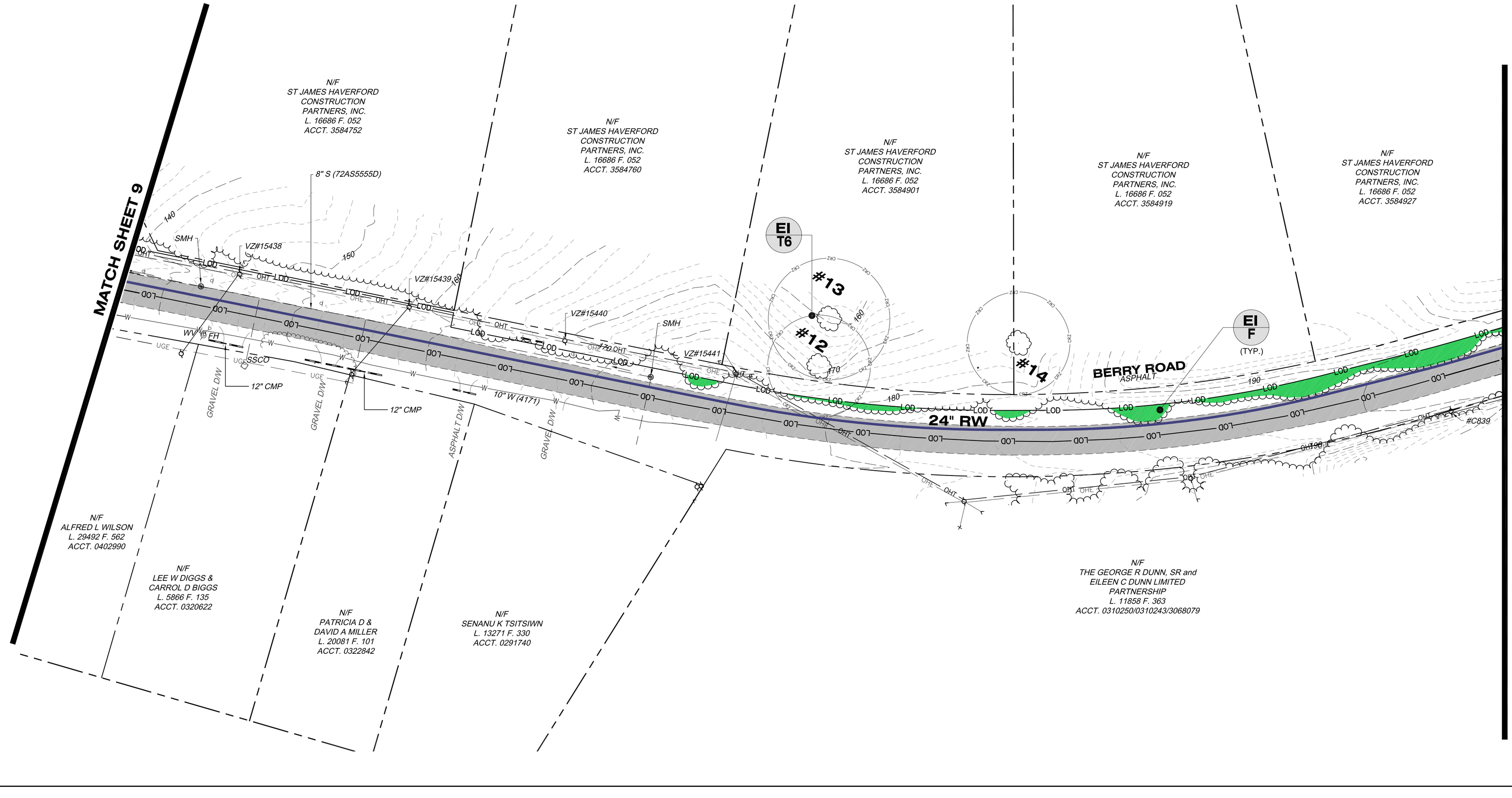

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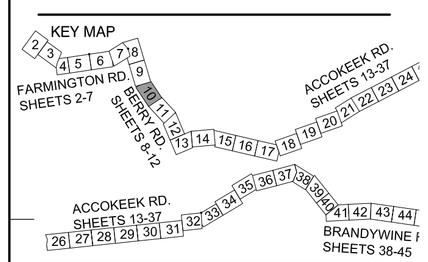
MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP


SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

10

SHEET NO. 10 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-10-13.dwg, 1/25/2015 12:26:13 PM

DATUM: MCS/NAD83(1997)/ NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
County Right-of-Way	7,429.67					
TOTAL	**0.17 AC**		**- AC**		**- AC**	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

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- OHE — EXISTING OVERHEAD ELECTRIC
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- EI W1 — WETLAND ENVIRONMENTAL IMPACT TAG

N/F
ST JAMES HAVERFORD CONSTRUCTION PARTNERS, INC.
L. 16686 F. 052
ACCT. 3584927

N/F
ST JAMES HAVERFORD CONSTRUCTION PARTNERS, INC.
L. 16686 F. 052
ACCT. 3584935

N/F
ST JAMES HAVERFORD CONSTRUCTION PARTNERS, INC.
L. 16686 F. 052
ACCT. 3584943

N/F
ST JAMES HAVERFORD CONSTRUCTION PARTNERS, INC.
L. 16686 F. 052
ACCT. 3585148

N/F
SPIRIT OF FAITH CHRISTIAN CENTER, INC.
L. 32567 F. 397
ACCT. 0340331

N/F
THE GEORGE R DUNN, SR and EILEEN C DUNN LIMITED PARTNERSHIP
L. 11858 F. 363
ACCT. 0310250/0310243/3068079

EI F (TYP.)

24" RW

BERRY ROAD
ASPHALT

MATCH SHEET 10

MATCH SHEET 12

ANCHOR

190 200 210

LOD

OHT OHE

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE MD, 21244
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10 MILE, 24" DIAMETER RECLAIMED WATER LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP
FARMINGTON RD. SHEETS 2-7
BERRY RD. SHEETS 8-12
ACCOKEEK RD. SHEETS 13-37
ACCOKEEK RD. SHEETS 13-37
BRANDYWINE RD. SHEETS 38-45

SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

11

SHEET NO. 11 OF 45

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DATUM: MCS/NAD83(1991): NAVD29

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- OHE — EXISTING OVERHEAD ELECTRIC
- W — EXISTING WATER
- S — EXISTING SEWER
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- SB — EXISTING STREAM BUFFER
- EXISTING ROAD
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- WL / W — EXISTING FORESTED WETLAND
- WL / W — EXISTING EMERGENT WETLAND
- WB — EXISTING WETLAND BUFFER
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- EI W1 — WETLAND ENVIRONMENTAL IMPACT TAG

N/F
SPIRIT OF FAITH CHRISTIAN CENTER, INC.
L. 32567 F. 397
ACCT. 0340331

N/F
CHRISTINA O ADEBOYJO
L. 26576 F. 663
ACCT. 0340414

N/F
SPIRIT OF FAITH CHRISTIAN CENTER, INC.
L. 32567 F. 397
ACCT. 0340331

UNIMPROVED ROAD

C&P 3
MD #5.5

TB MYER 29467B

MATCH SHEET 11

BERRY ROAD
ASPHALT

24" RW

P420375 #4

41009 #3

#2

#5

#6

#DSTH170

PP W/LIGHT #10

GRAVEL DW

12" CAP

UNDERGROUND COMM. - FIBR.

UNDERGROUND ELECTRIC

BRAEMAR COURT
ASPHALT

MATCH SHEET 13

N/F
THE GEORGE R DUNN, SR and EILEEN C DUNN LIMITED PARTNERSHIP
L. 11858 F. 363
ACCT. 0310250/0310243/3068079

N/F
BRAEMAR PRESERVE ACQUISITION, LLC
L. 16945 F. 001
ACCT. 3499803

N/F
JAMES D & RONETTE J WOODARD
L. 32520 F. 406
ACCT. 3499944

N/F
JOSEPH W CURTAIN
L. 35400 F. 297
ACCT. 3499936

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
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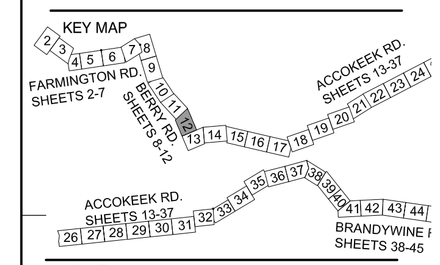
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
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REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

12

SHEET NO. 12 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-10-13.dwg, 1/25/2015 12:26:25 PM

DATUM: MCS(NAD83(1997)) NAD29

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
15	Red Maple	Acer rubrum	40	60	Good	Multi	X
16	Red Maple	Acer rubrum	46	69	Fair	Multi; branch dieback	X
17	Red Maple	Acer rubrum	60	90	Fair	Multi; branch dieback	X

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER
- EXISTING SEWER
- EXISTING GAS
- EXISTING OVERHEAD TELEPHONE
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- EXISTING WETLAND BUFFER
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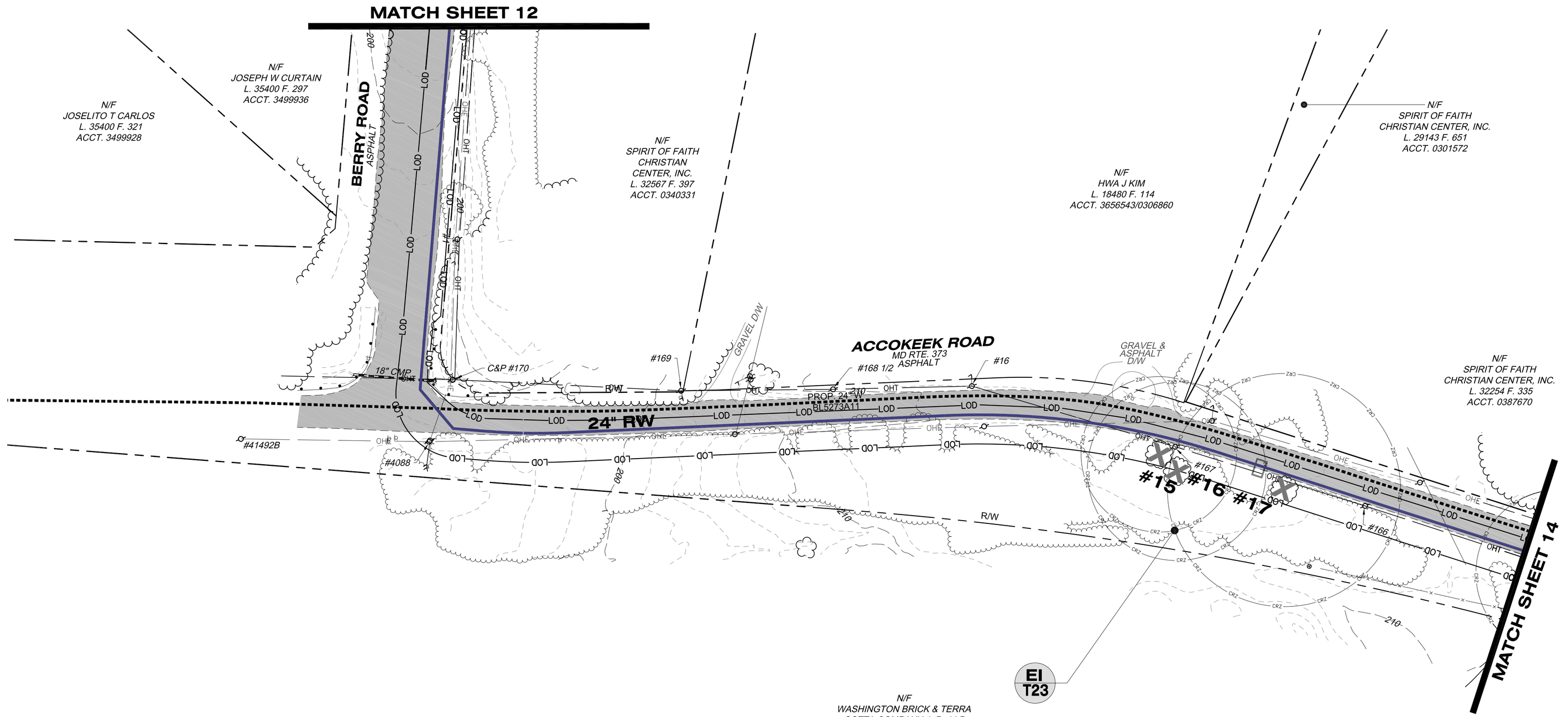

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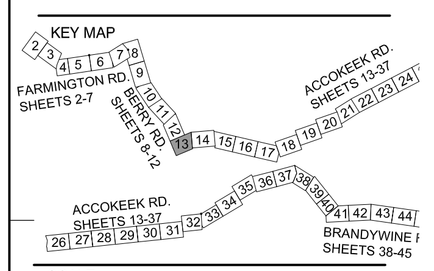

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1"=50'

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CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

13

SHEET NO. 13 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-10-13.dwg, 1/25/2015 12:26:30 PM

DATUM: MCS/NAD83(1991), NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way	988.66					
Washington Brick (Acct. 2798361/2837532) (TCP2-090-92)	2,970.91					
TOTAL	0.09 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
18	Red Maple	Acer rubrum	43	64.5	Fair	Multi; branch dieback	X
19	Red Maple	Acer rubrum	50	75	Good	Multi	
20	White Oak	Quercus alba	30	45	Fair	Few major lateral branches	
21	White Oak	Quercus alba	27.5	41.25	Good		
22	American Beech	Fagus grandifolia	31.5	47.25	Good	Broken lower lateral branch	
23	White Oak	Quercus alba	27	40.5	Good		
24	White Oak	Quercus alba	28.5	42.75	Good		
25	White Oak	Quercus alba	33	49.5	Good		
26	White Oak	Quercus alba	30	45	Good		
27	White Oak	Quercus alba	44	66	Poor	Broken branches in canopy; vines surrounding trunk and in canopy	

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER
- EXISTING SEWER
- EXISTING GAS
- EXISTING OVERHEAD TELEPHONE
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- PROPOSED VALVE VAULT
- PERMANENT PIPE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED RECEIVING AND BORE PITS
- PROPOSED LIMITS OF DISTURBANCE
- FOREST TEMPORARY IMPACT
- EMERGENT WETLAND TEMPORARY IMPACT
- FORESTED WETLAND TEMPORARY IMPACT
- OPEN WATER TEMPORARY IMPACT
- FOREST PERMANENT IMPACT
- FORESTED WETLAND CONVERSION TO EMERGENT WETLAND
- EI F — FOREST ENVIRONMENTAL IMPACT TAG
- EI T1 — SPECIMEN TREE ENVIRONMENTAL IMPACT TAG
- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
- EI W1 — WETLAND ENVIRONMENTAL IMPACT TAG

N/F
SPIRIT OF FAITH
CHRISTIAN CENTER, INC.
L. 32254 F. 335
ACCT. 0387670

N/F
SPIRIT OF FAITH
CHRISTIAN CENTER, INC.
L. 29143 F. 651
ACCT. 0301572

N/F
WASHINGTON BRICK &
TERRA COTTA COMPANY,
L.P., LLP
L. 12890 F. 023
ACCT. 2798361/2837532

MATCH SHEET 13

MATCH SHEET 15

ACCOKEEK ROAD
MD RTE. 373
ASPHALT

24" RW

PROP. 24" W
BL 5273A11

#18 #19 #20 #21 #22 #23 #24 #25 #26 #27

#162 ANCHOR

#163 ANCHOR

SAND TRAP (TYP.)

PROP. STAGING AREA

FENCE

GATE

EI T24

EI T7

EI F (TYP.)

Dewberry

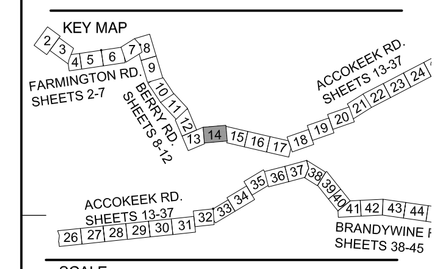
Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE MD, 21244
PHONE: 410.645.1402
FAX: 410.265.8875

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC
10 MILE, 24" DIAMETER RECLAIMED WATER LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

14

SHEET NO. 14 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-14-17.dwg, 1/25/2015 12:26:43 PM

DATUM: MCS/NAD83(1997)/NAVD88

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way	10,998.51					
Despina S. Pisoulakis (Acct. 0334789)	2,354.15					
John P. Denison (Acct. 0410464)	1,162.06					
John P. Denison (Acct. 0365072)	343.03					
TOTAL	14,514.73 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

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- EXISTING TOPOGRAPHY
- OHE — EXISTING OVERHEAD ELECTRIC
- W — EXISTING WATER
- S — EXISTING SEWER
- G — EXISTING GAS
- OHT — EXISTING OVERHEAD TELEPHONE
- SD — EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- SB — EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- WL / TW — EXISTING FORESTED WETLAND
- WL / TM — EXISTING EMERGENT WETLAND
- WB — EXISTING WETLAND BUFFER
- CRZ — CRITICAL ROOT ZONE
- ## — EXISTING SPECIMEN TREE
- ## — EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING TREE LINE
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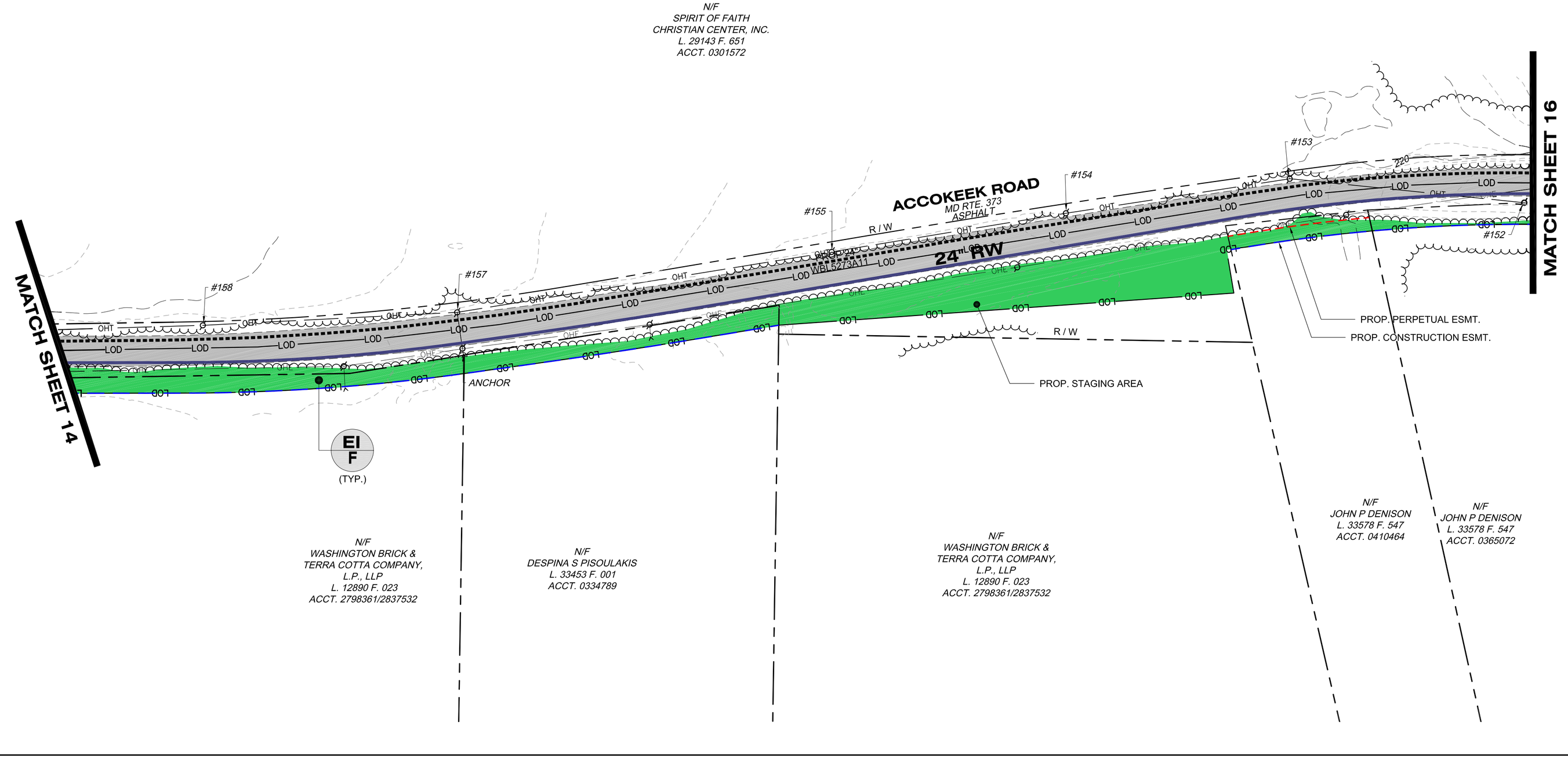

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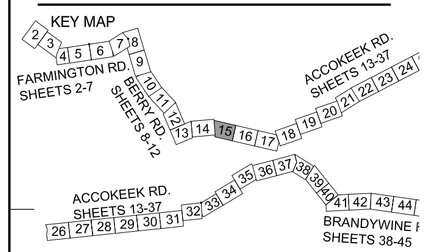
10 MILE, 24" DIAMETER
RECLAIMED WATER LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



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APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

15

SHEET NO. 15 OF 45

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DATUM: MCS/NAD83(1991); NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
John P. Denison (Acct. 0365072)	73.01					
John P. Denison (Acct. 0413203)	1,016.46				962.68	602.73
State Right-of-Way	1,188.07				1,084.29	1,600.21
Bull Run Family, LLC. (Acct. 0315333)	161.89					
TOTAL	2,277.54 AC		- AC		4,249.91 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

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- EXISTING TOPOGRAPHY
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- EXISTING ROAD
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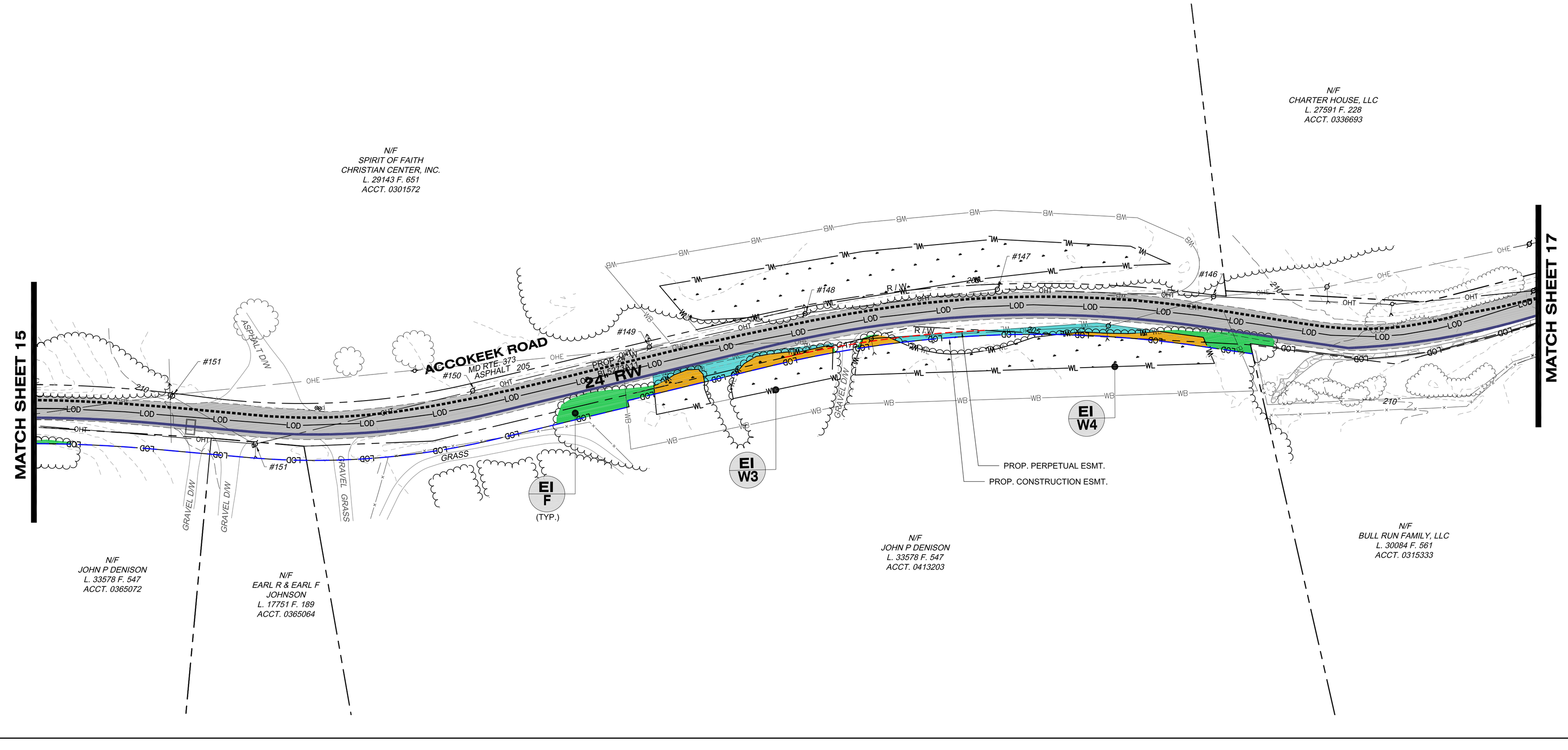

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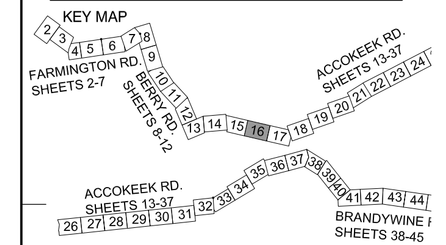
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



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APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

16

SHEET NO. 16 OF 45

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DATUM: MCS/NAD83(1991) NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way						1,701.16
TOTAL	- AC		- AC		0.04 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

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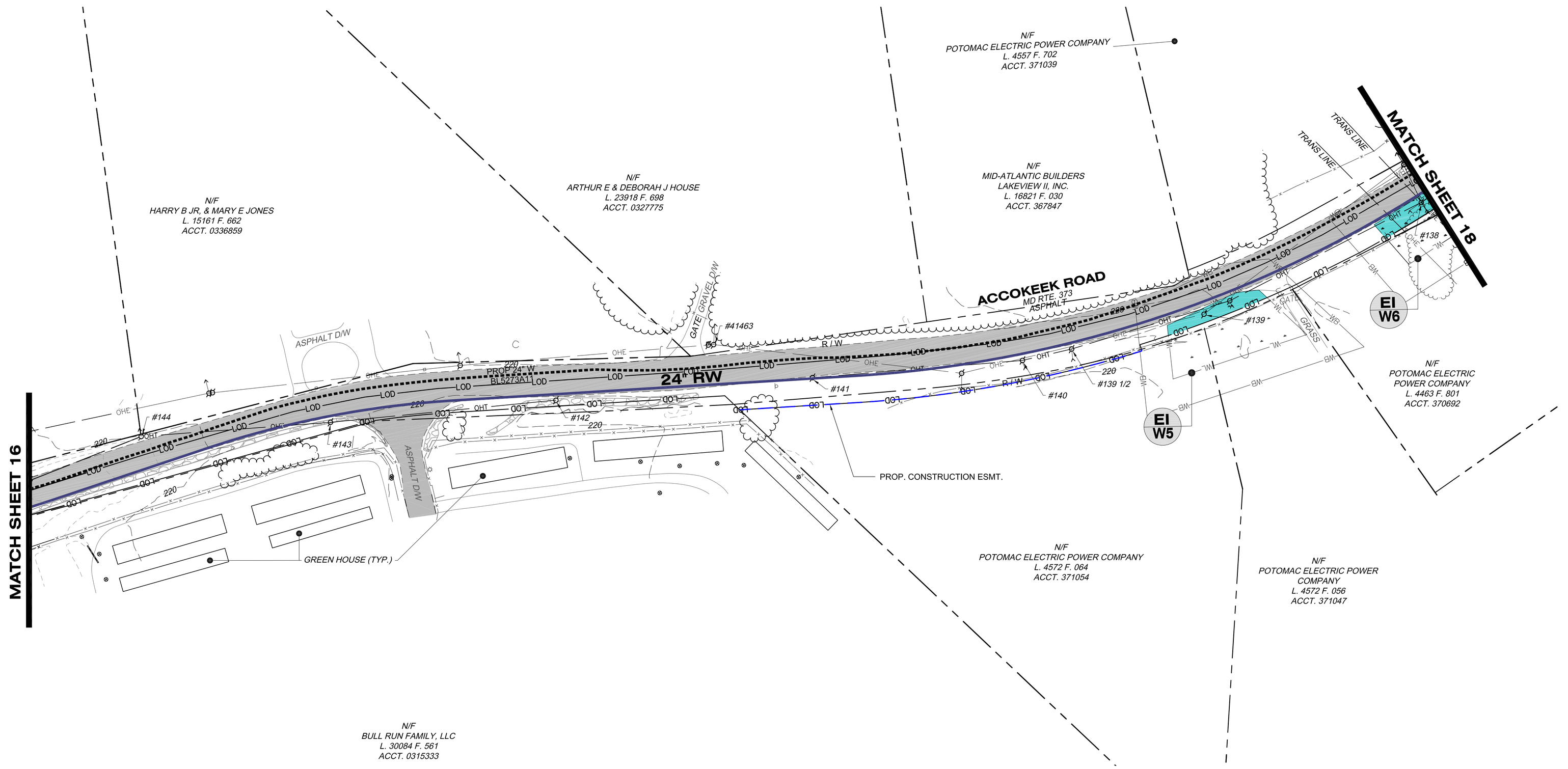

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PRINCE GEORGE'S COUNTY, MD

SEAL

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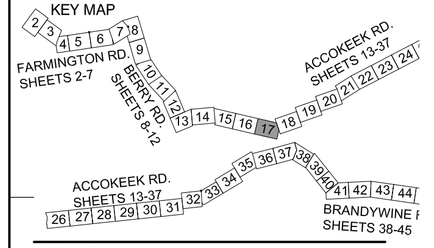

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TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

17

SHEET NO. 17 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-14-17.dwg, 1/25/2015 12:27:00 PM

DATUM: MCS/NAD83(1998)/ NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way	4,718.10					1,370.25
Faith I. & Jennifer Jones (Acct. 0336875)	393.05					
John P. Denison (Acct. 0308007)	10,383.19					
TOTAL	0.36 AC		- AC		0.03 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

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N/F POTOMAC ELECTRIC POWER COMPANY L. 4557 F. 702 ACCT. 371039

N/F MID ATLANTIC BUILDERS OF LAKEVIEW II L.16821 F.30

N/F VALGENE MILLER L. 29921 F. 707 ACCT. 3971405 TCP2-089-03 (CONSERVATION BANK)

N/F DENNIS E WORTHY, JR L. 30096 F. 067 ACCT. 0412312 TCP2-089-03 (CONSERVATION BANK)

N/F DELANTE L WORTHY L. 30096 F. 077 ACCT. 3971421

N/F DENNIS E & BRENDA P WORTHY L. 3984 F. 058 ACCT. 0412254

N/F WALTER L WORTHY L. 4828 F. 418 ACCT. 0412304

N/F MARYLAND NATIONAL CAPITAL AREA PARK & PLANNING COMMISSION L. 8739 F. 674 ACCT. 0281741

MATCH SHEET 17

MATCH SHEET 19

ACCOKEEK ROAD
MD RTE. 373
ASPHALT

24" RW

PROP. 24" W. RECLAIMED WATER LINE

PROP. CONSTRUCTION ESMT.

EI W6

EI F (TYP.)

N/F POTOMAC ELECTRIC POWER COMPANY L. 4463 F. 801 ACCT. 370692

N/F FAITH I & JENNIFER JONES L. 9635 F. 026 ACCT. 0336875

N/F JOHN P DENISON L. 33415 F. 521 ACCT. 0308007

N/F WALTON MARYLAND, LLC L. 34224 F. 066 ACCT. 0298810

Dewberry

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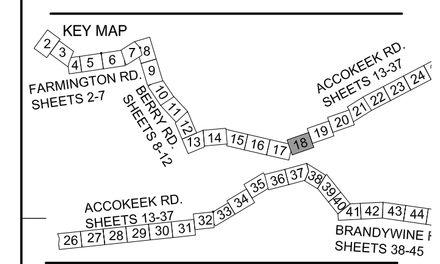
MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE

PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
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APPROVED BY	JCL
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DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

18

SHEET NO. 18 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-18-21.dwg, 1/25/2015 12:27:13 PM

DATUM: MCS/NAD83(1997) NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
John P. Denison (Acct. 0308007)	542.17					
State Right-of-Way	613.62					
Walton Maryland, LLC. (Acct. 0298810)	5,286.47					
TOTAL	0.15 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
28	White Oak	Quercus alba	26	39	Good		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

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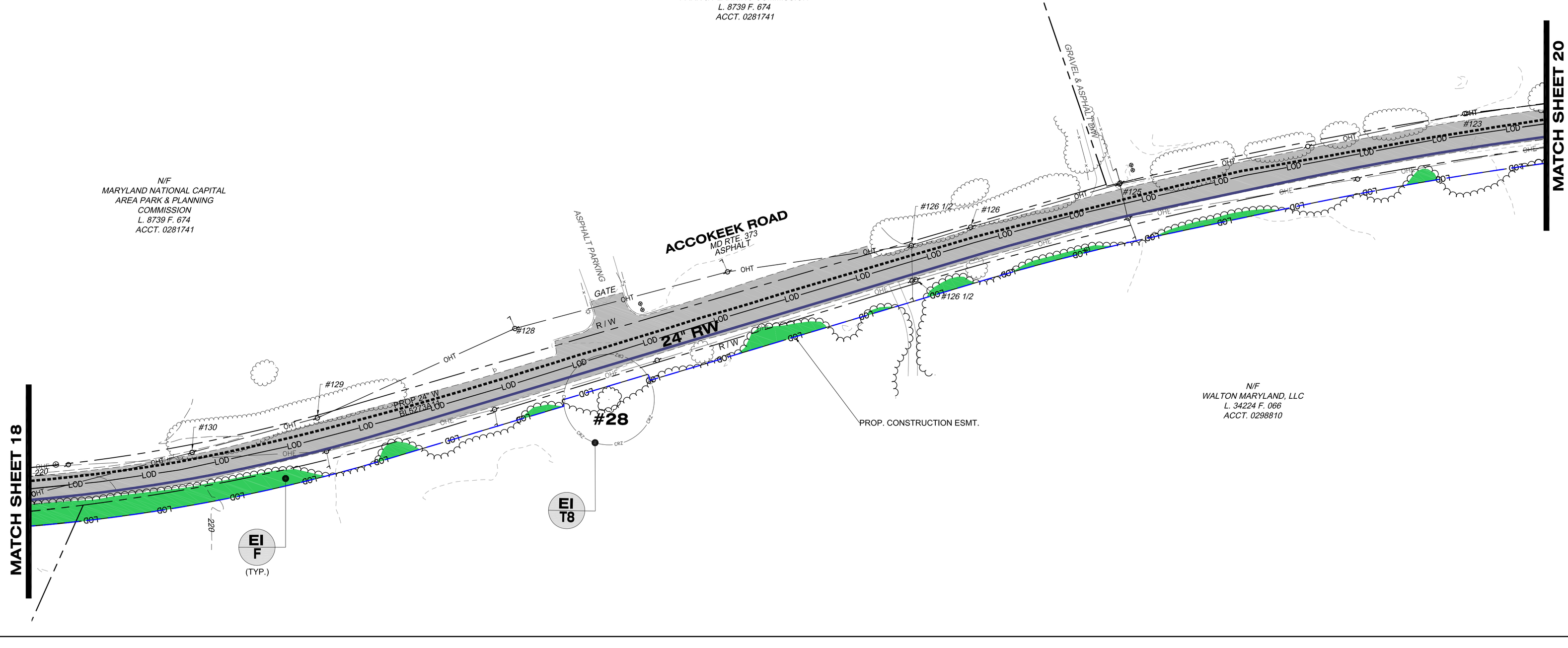

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SEAL

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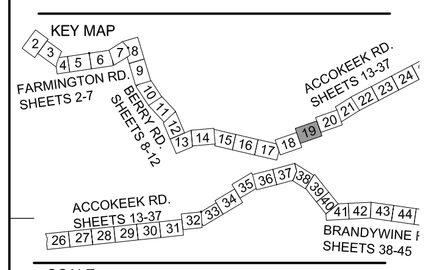

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TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

19

SHEET NO. 19 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-18-21.dwg, 1/25/2015 12:27:20 PM

DATUM: MCS/NAD83/2011 NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way	46.65					
Walton Maryland, LLC. (Acct. 0298810)	1,729.15					
TOTAL	0.04 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
29	White Oak	Quercus alba	32	48	Good		
30	Scarlet Oak	Quercus coccinea	37	55.5	Fair		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- OHE — EXISTING OVERHEAD ELECTRIC
- W — EXISTING WATER
- S — EXISTING SEWER
- G — EXISTING GAS
- OHT — EXISTING OVERHEAD TELEPHONE
- SD — EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- SB — EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- WL / WM — EXISTING FORESTED WETLAND
- WL / WM — EXISTING EMERGENT WETLAND
- WB — EXISTING WETLAND BUFFER
- CRZ — CRITICAL ROOT ZONE
- ## — EXISTING SPECIMEN TREE
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- PROPOSED 24" RECLAIMED WATER LINE
- PROPOSED VALVE VAULT
- PERMANENT PIPE EASEMENT
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- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
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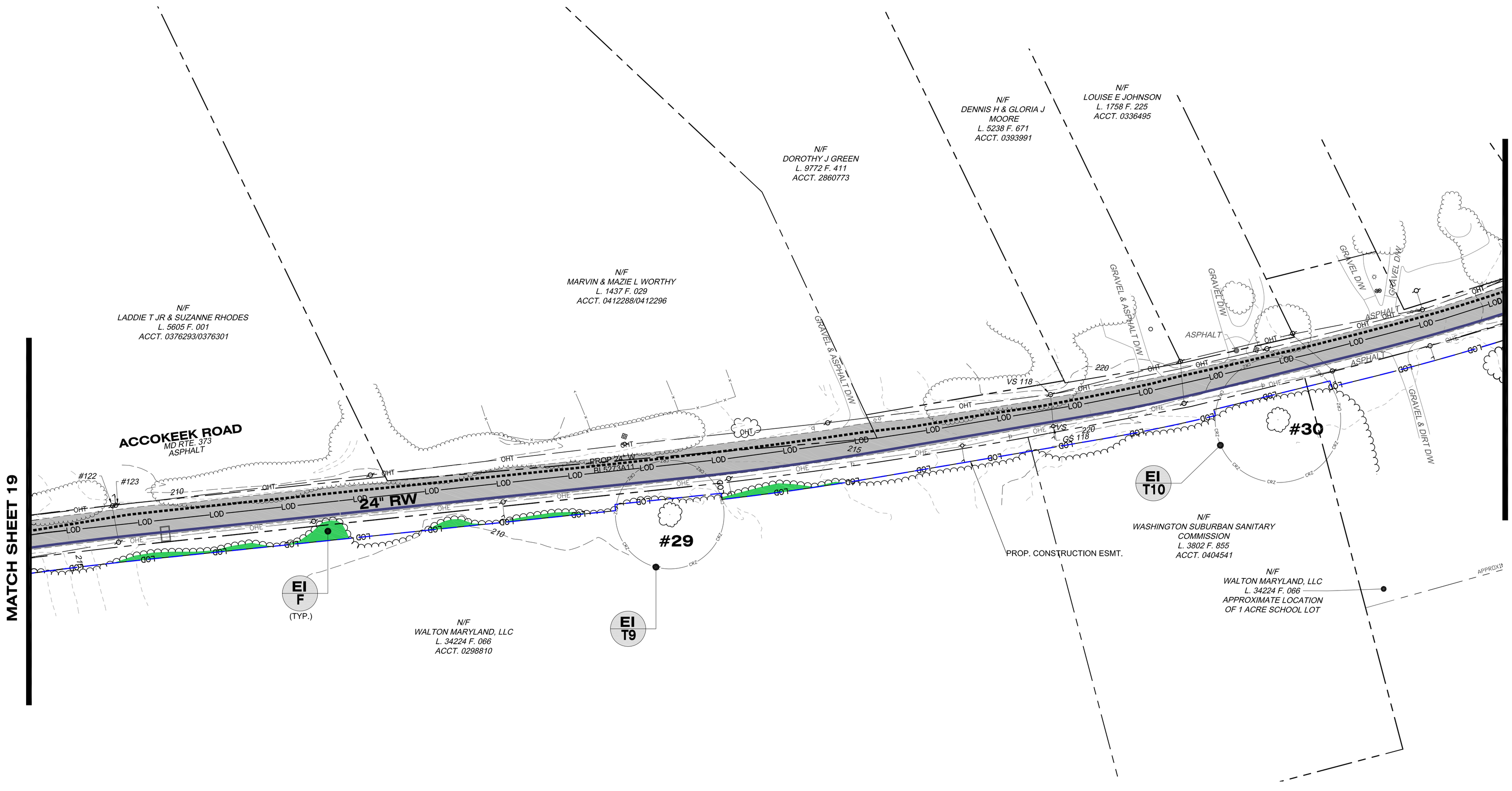

Dewberry

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3106 LORD BALTIMORE DRIVE
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BALTIMORE MD, 21244
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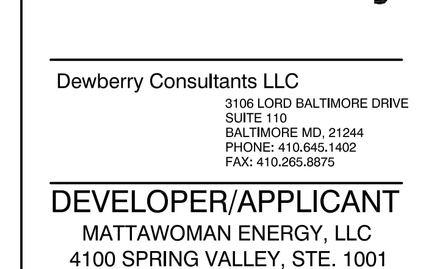
FAX: 410.265.8875

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC
10 MILE, 24" DIAMETER RECLAIMED WATER LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

20

SHEET NO. 20 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-18-21.dwg, 1/25/2015 12:27:25 PM

DATUM: MCS/NAD83(1997)/ NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
Walton Maryland, LLC. (Acct. 0298794)	642.48					235.43
Barbara S. Martinson (Acct. 1161157)	2,478.04					
State Right-of-Way	2,800.52					
Lorenzo Zarate (Acct. 1133099)	1,232.14					
TOTAL	5,921.06 AC		- AC		235.43 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
31	Scarlet Oak	Quercus coccinea	24	36	Good		
32	White Oak	Quercus alba	26	39	Good		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

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- S — EXISTING SEWER
- G — EXISTING GAS
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- EXISTING RAIL ROAD
- EXISTING STREAM
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- EXISTING BUILDING
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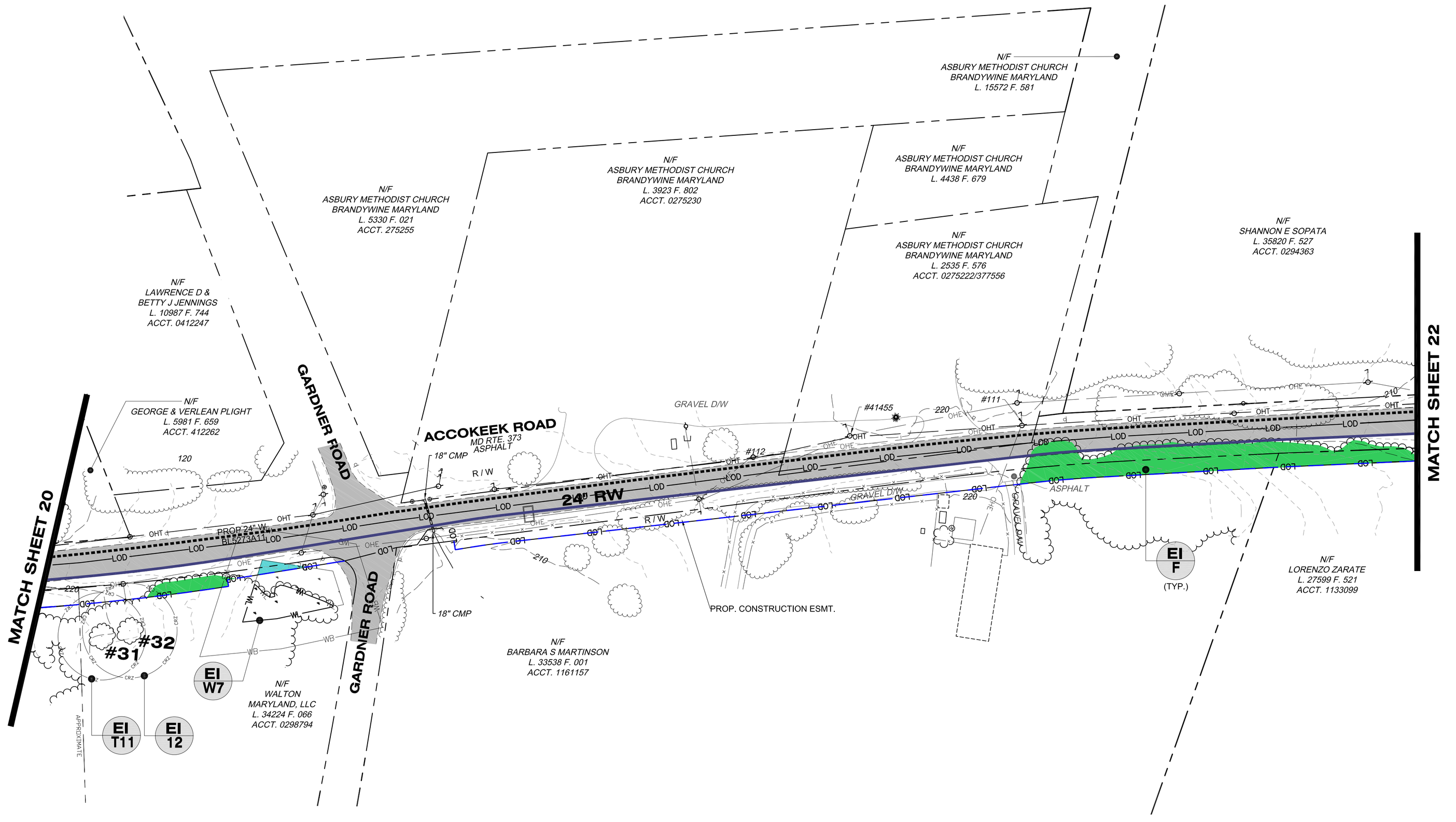

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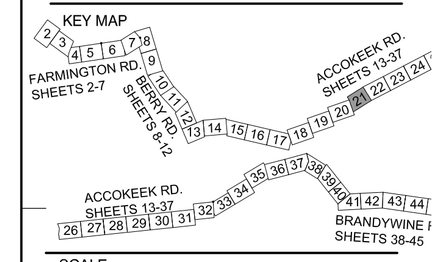
MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE

PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS REC'D FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

21

SHEET NO. 21 OF 45

DATUM: MCS/NAD83(1991) NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
Lorenzo Zarate (Acct. 1133099)	283.25					
State Right-of-Way						
Robert W. Parker (Acct. 1174614)						
William H. Ellis (Acct. 1133024)						
Bardon, Inc. (Acct. 1189216)						
TOTAL	283.25 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
33	Black Jack Oak	Quercus marilandica	27	40.5	Good		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

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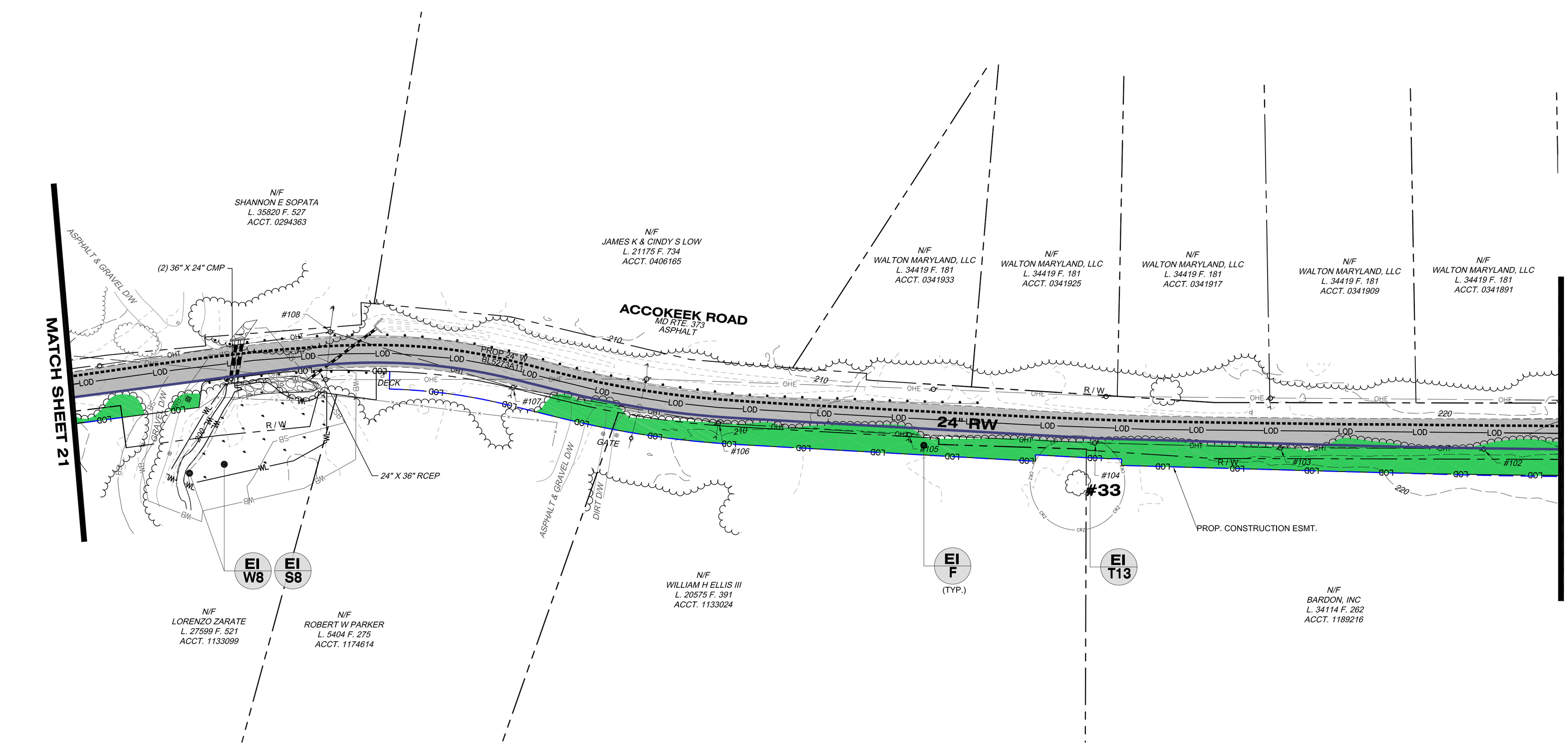

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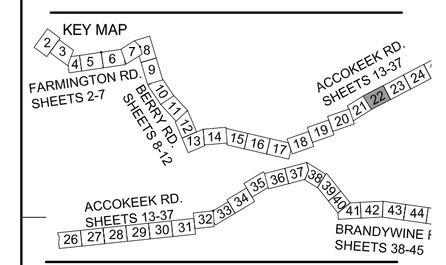
MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE

PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
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No.	DATE	BY	Description
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REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

22

SHEET NO. 22 OF 45

DATUM: MCS/NAD83(1991); NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way	15,854.71				2,752.63	
Bardon, INC. (Acct. 1189216)	10,575.14					
TOTAL	0.61 AC		- AC		0.06 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
34	Scarlet Oak	Quercus coccinea	30	45	Fair		X
35	American Beech	Fagus grandifolia	24	36	Good		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

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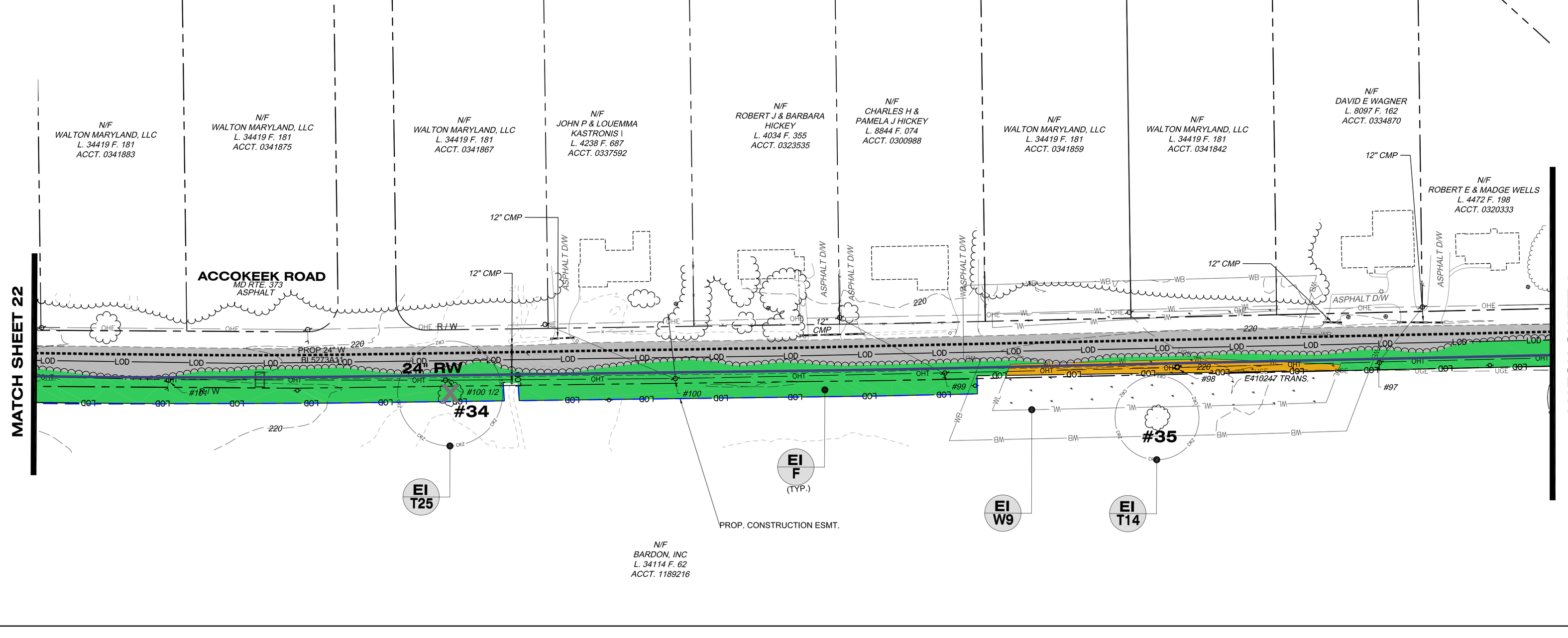

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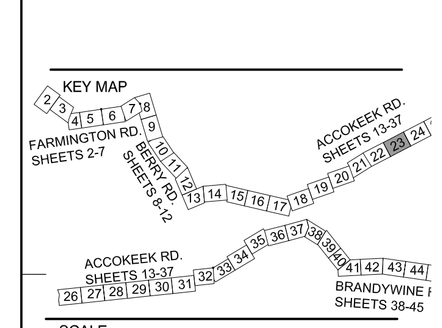
10 MILE, 24" DIAMETER
RECLAIMED WATER LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
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No.	DATE	BY	Description
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REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

23

SHEET NO. 23 OF 45

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DATUM: MCS/NAD83(1997), NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way	17,581.23					
Bardon, INC. (Acct. 1189216)	6,888.58					
Robert E. & Madge Wells (Acct. 1146265)	1,084.05					
LBJ Properties, INC. (Acct. 1174358)	3,573.42					
Apostolic Faith Church of Jesus Chris (Acct. 1133453)	382.49					
John McAllister Trust (Acct. 1160761)	116.23					
TOTAL	0.68 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
36	White Oak	Quercus alba	29	43.5	Good		
37	Black Gum	Nyssa sylvatica	28	42	Good		
38	White Oak	Quercus alba	28	42	Good		
39	White Oak	Quercus alba	28	42	Good		
40	White Oak	Quercus alba	24	36	Good		
41	White Oak	Quercus alba	26	39	Good		
42	White Oak	Quercus alba	28	42	Good		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

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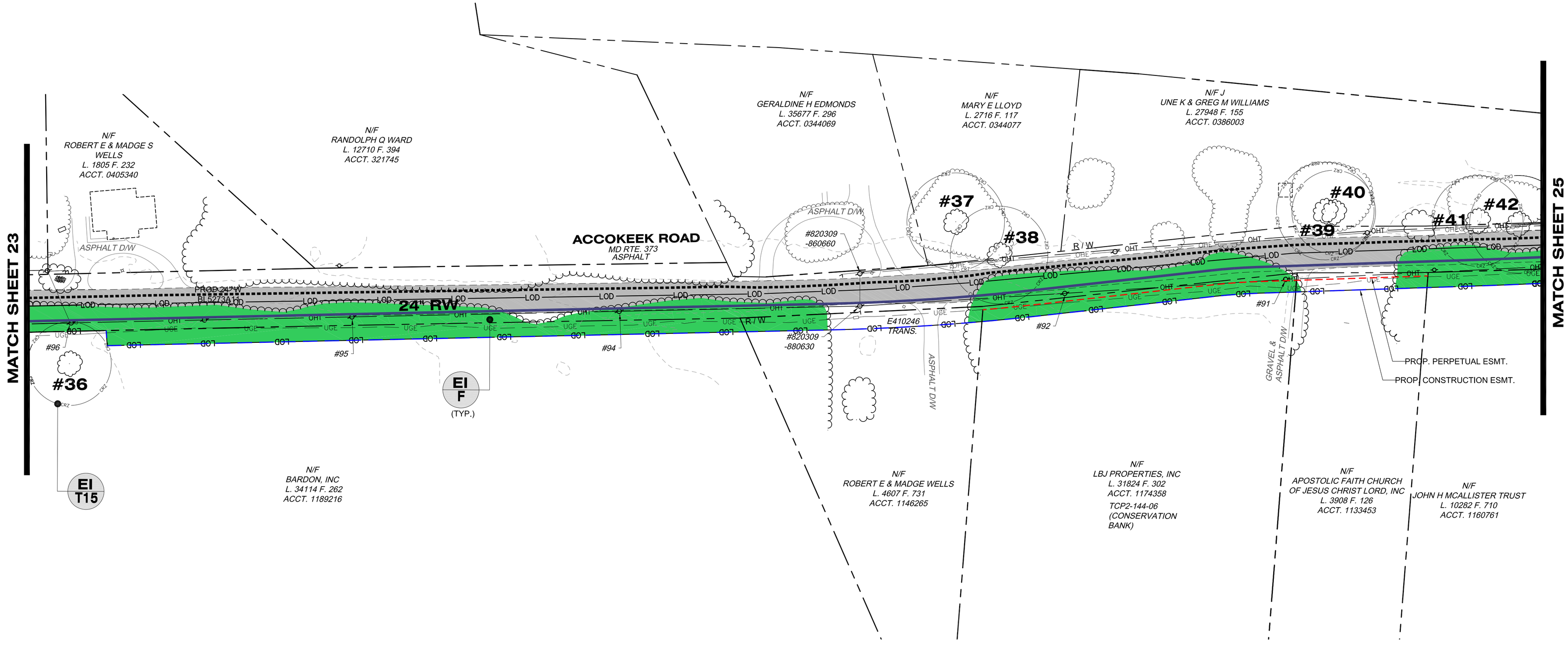

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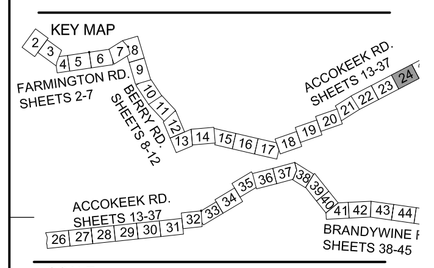
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
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No.	DATE	BY	Description
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REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

24

SHEET NO. 24 OF 45

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DATUM: MCS/NAD83(1997) NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
John McAllister Trust (Acct. 1160761)	928.53					
State Right-of-Way	14,816.17					
Willie G. & Leroy & Eugene Smith (Acct. 1147602)	2,226.24					
Brenda M. Walls-Booth (Acct. 1157288)	2,731.77					
Irene Green (Acct. 1151646)	971.20					
William R. & Mae R. Proctor (Acct. 1177674)	601.35					
Mark & Melba Hargrove (Acct. 1185362)	198.30					
Board of Education (Acct. 1136100)	1,935.65					
Agnes R. Johnson & Howard L. Makle (Acct. 1150556)	2,569.28					
TOTAL	**0.62**	**AC**	**-**	**AC**	**-**	**AC**

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

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- EXISTING WATER
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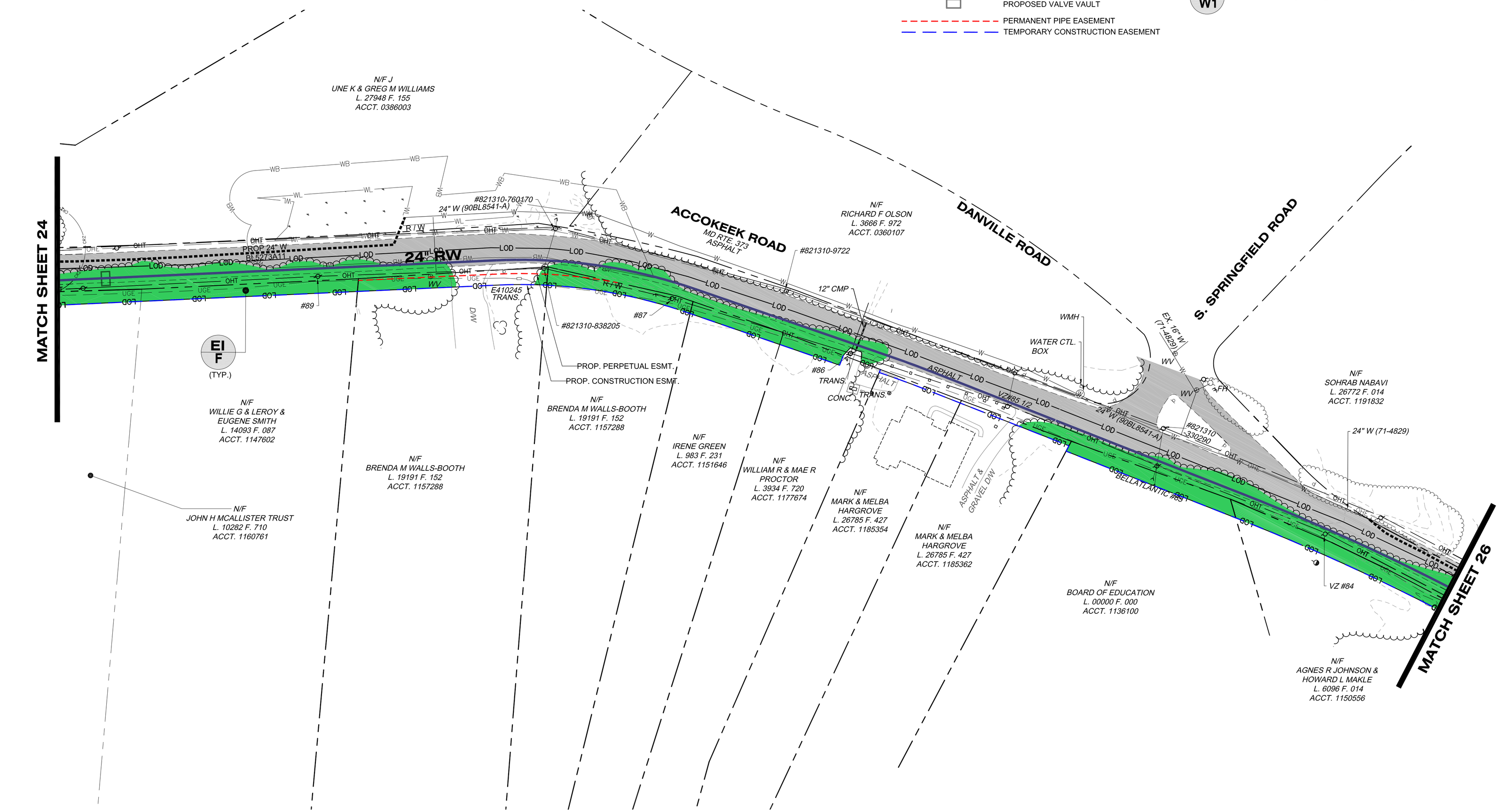

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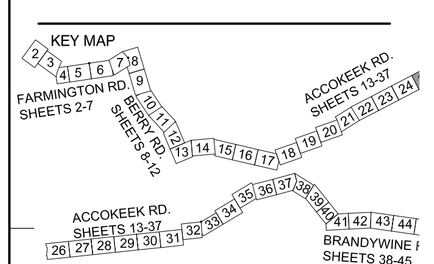

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REVISIONS

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CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

25

SHEET NO. 25 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-22-25.dwg, 1/25/2015 12:28:00 PM

DATUM: MCS(NAD83/1991) NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way	5,136.00					
Agnes R. Johnson & Howard L. Makle (Acct. 1150556)	8,423.10					
TOTAL	**0.31 AC**		**- AC**		**- AC**	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- OHE — EXISTING OVERHEAD ELECTRIC
- W — EXISTING WATER
- S — EXISTING SEWER
- G — EXISTING GAS
- OHT — EXISTING OVERHEAD TELEPHONE
- SD — EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- SB — EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- WL / W — EXISTING FORESTED WETLAND
- WE / W — EXISTING EMERGENT WETLAND
- WB — EXISTING WETLAND BUFFER
- CRZ — CRITICAL ROOT ZONE
- ## — EXISTING SPECIMEN TREE
- ## — EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING TREE LINE
- EXISTING HEDGEROW
- PROPOSED 24" RECLAIMED WATER LINE
- PROPOSED VALVE VAULT
- PERMANENT PIPE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED RECEIVING AND BORE PITS
- LOD — PROPOSED LIMITS OF DISTURBANCE
- FOREST TEMPORARY IMPACT
- EMERGENT WETLAND TEMPORARY IMPACT
- FORESTED WETLAND TEMPORARY IMPACT
- OPEN WATER TEMPORARY IMPACT
- FOREST PERMANENT IMPACT
- FORESTED WETLAND CONVERSION TO EMERGENT WETLAND
- EI F — FOREST ENVIRONMENTAL IMPACT TAG
- EI T1 — SPECIMEN TREE ENVIRONMENTAL IMPACT TAG
- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
- EI W1 — WETLAND ENVIRONMENTAL IMPACT TAG

N/F
PATRICIA G RENKE
L. 7976 F. 215
ACCT. 1171180

N/F
WILLIAM H CARTER, JR
L. 29785 F. 719
ACCT. 1149756

N/F
WALTON MARYLAND, LLC
L. 34550 F. 508
ACCT. 1189158

MATCH SHEET 25

MATCH SHEET 27

822310-730270

822310-980280

823310-220330

823310-650420

823310-620450

ACCOKEEK ROAD
MD RTE. 373
ASPHALT

24" RW

PROP 24" W RECLAIMED WATER LINE

C&P #83

C&P #82

C&P #81

C&P #80

C&P #79

E410244 TRANS.

EI F (TYP.)

EI W10

PROP. CONSTRUCTION ESMT.

N/F
AGNES R JOHNSON
& HOWARD L MAKLE
L. 6096 F. 014
ACCT. 1150556

N/F
AGNES R JOHNSON &
HOWARD L MAKLE
L. 6096 F. 014
ACCT. 1150556

Dewberry

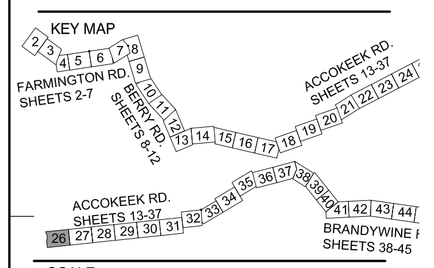
Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE MD, 21244
PHONE: 410.645.1402
FAX: 410.265.8875

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC
10 MILE, 24" DIAMETER RECLAIMED WATER LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE
RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

26

SHEET NO. 26 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-26-29.dwg, 1/25/2015 12:28:14 PM

DATUM: MCS/NAD83(1991), NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way	7,824.57					
Mark S. & Alice E. Smith (Acct. 1183144)	1,032.19					
Maurice & Maggie Robinson (Acct. 1180843)	1,630.85					
TOTAL	0.24 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
43	White Oak	Quercus alba	26	39	Fair		
44	White Oak	Quercus alba	26	39	Fair		
45	Scarlet Oak	Quercus coccinea	42	63	Fair		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

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- EXISTING TOPOGRAPHY
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER
- EXISTING SEWER
- EXISTING GAS
- EXISTING OVERHEAD TELEPHONE
- EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- EXISTING FORESTED WETLAND
- EXISTING EMERGENT WETLAND
- EXISTING WETLAND BUFFER
- CRITICAL ROOT ZONE
- EXISTING SPECIMEN TREE
- EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING TREE LINE
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- PROPOSED 24" RECLAIMED WATER LINE
- PROPOSED VALVE VAULT
- PERMANENT PIPE EASEMENT
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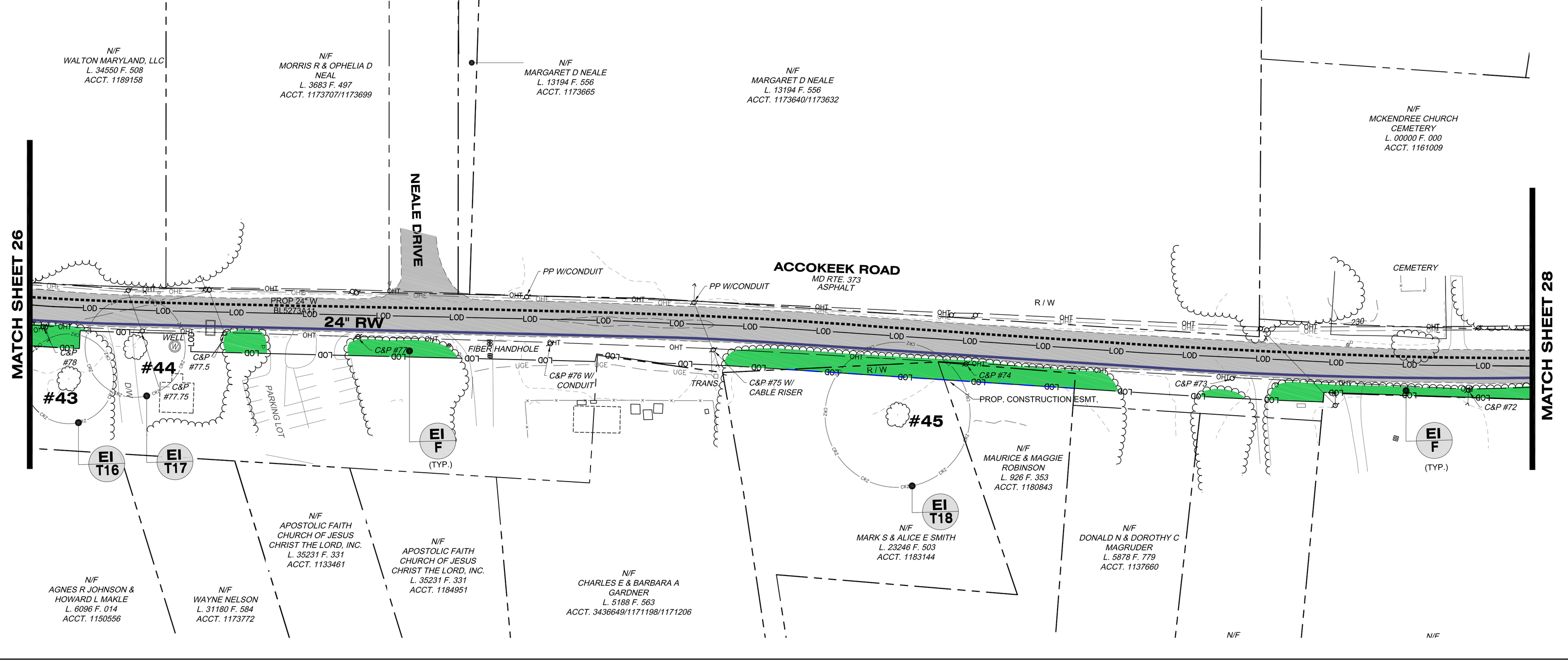
- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
- EI W1 — WETLAND ENVIRONMENTAL IMPACT TAG



Dewberry

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DEVELOPER/APPLICANT
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4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE

PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP

SCALE

0' 50' 100'

1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

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APPROVED BY	JCL
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TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

27

SHEET NO. 27 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-26-29.dwg, 1/25/2015 12:28:20 PM

DATUM: MCS/NAD83(2011) NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way	7,609.83					
Bardon, INC. (Acct. 1189067) (TCP2-009-01)	1,257.16					
TOTAL	0.20 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
46		PM	25.5	38.25	Fair		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

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- SB — EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
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- WB — EXISTING WETLAND BUFFER
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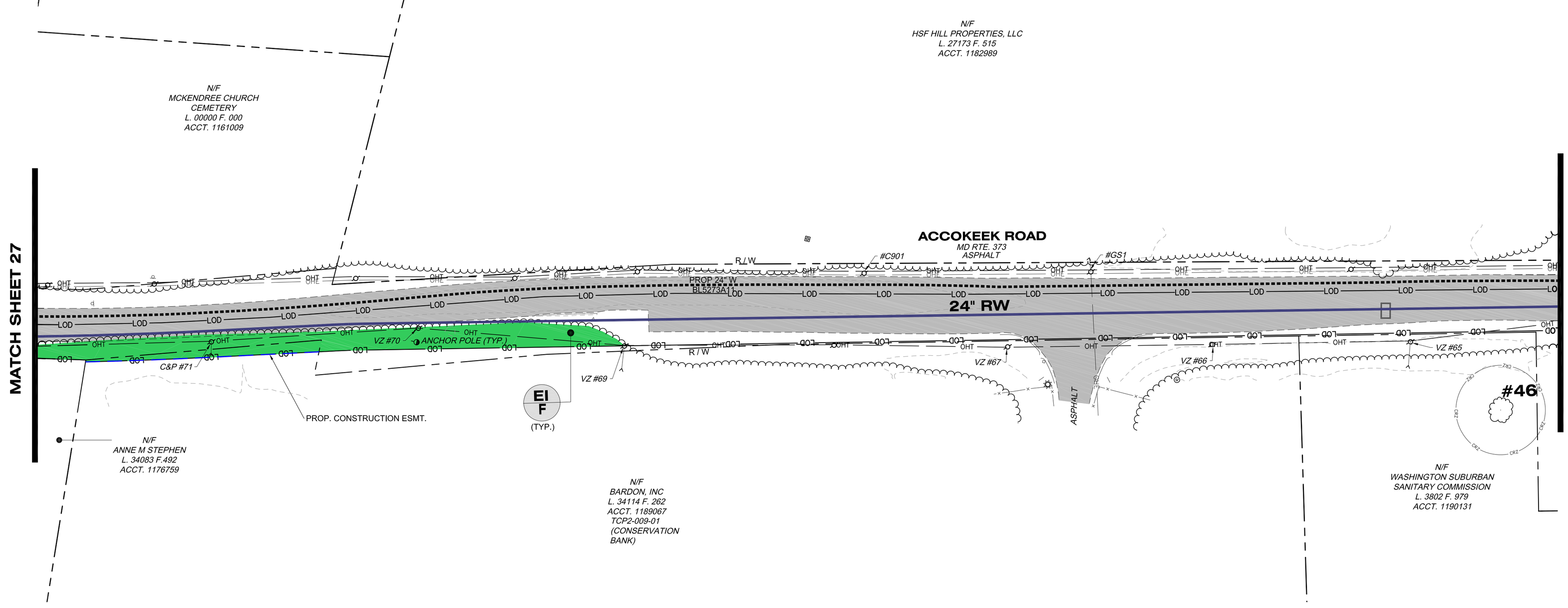

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RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

28

SHEET NO. 28 OF 45

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DATUM: MCS/NAD83(1998)/ NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way	1,286.96					
TOTAL	**0.03 AC**		**- AC**		**- AC**	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

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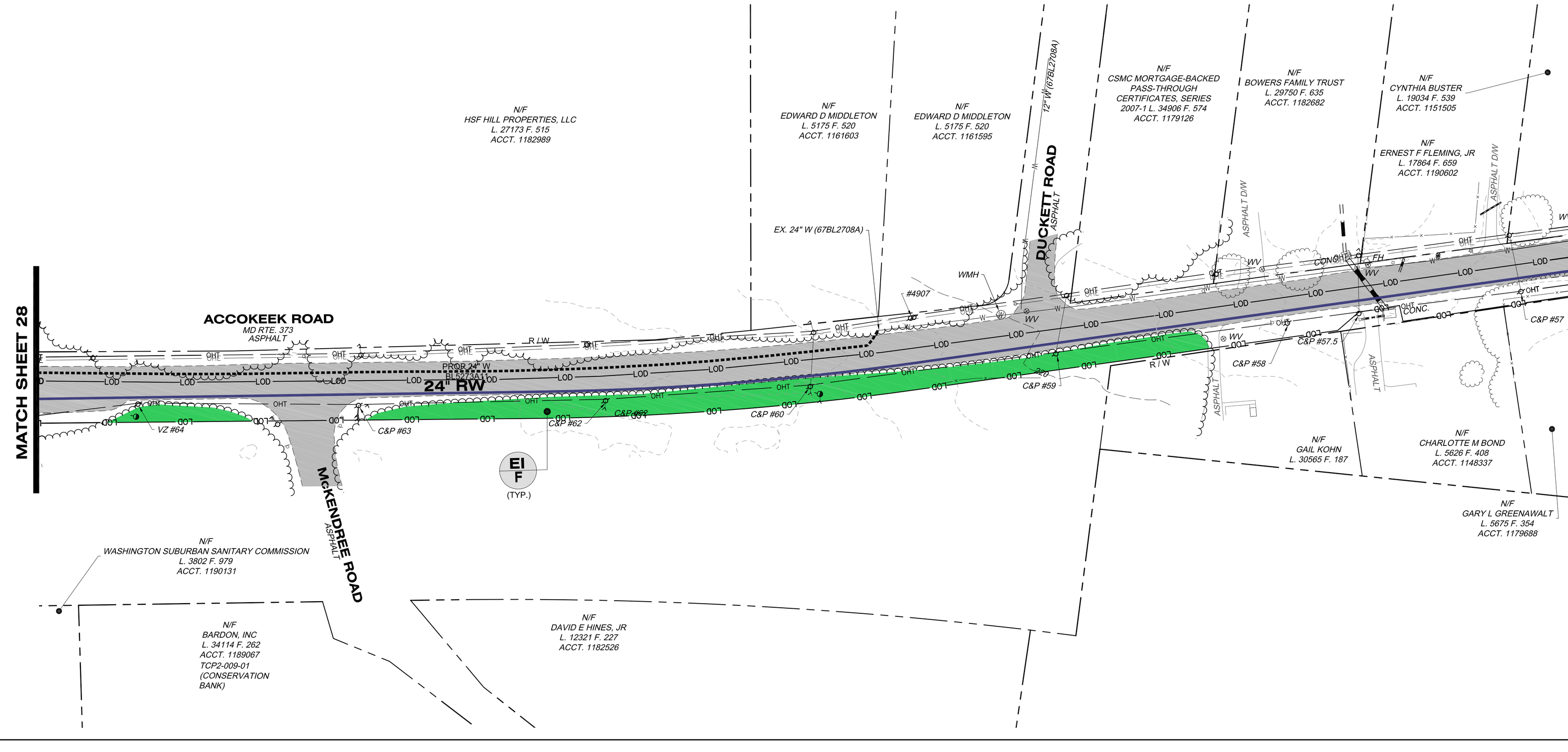

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PRINCE GEORGE'S COUNTY, MD

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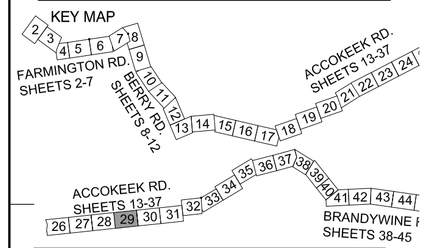

SCALE

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TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

29

SHEET NO. 29 OF 45

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DATUM: MCS/NAD83(1991) NAVD29

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- OHE — EXISTING OVERHEAD ELECTRIC
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- EXISTING ROAD
- EXISTING BUILDING
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N/F CYNTHIA BUSTER L. 19034 F. 539 ACCT. 1151505

N/F JAMIL S & TERRYHA JONES L. 28547 F. 205 ACCT. 1158096

N/F JEANNE E GHRIST L. 29565 F. 709 ACCT. 1190586

N/F ALBERT L & DANIELLE M BAKER L. 30057 F. 644 ACCT. 1171560

N/F CLORINDA MENDOZA L. 33565 F. 599 ACCT. 1157056

N/F CERIESE E COLEMAN L. 35667 F. 572 ACCT. 1181197

N/F LESTER W & CYNTHIA A ECKARD L. 6249 F. 153 ACCT. 1133719

N/F EDWARD B SANFORD L. 35394 F. 434 ACCT. 1188465

N/F ELIE & ROSITA SANTI L. 3522 F. 982 ACCT. 1181379

N/F ROY A AUSTIN L. 16083 F. 305 ACCT. 1171065

N/F WILLIAM MALONE L. 35735 F. 189

MATCH SHEET 29

MATCH SHEET 31

BECKER ROAD

ACCOKEEK ROAD MD RTE. 373 ASPHALT

24" RW

EX. 24" W (67BL2708A)

ASPHALT & GRAVEL D/W

CONC. & GRAVEL D/W

ASPHALT D/W

GRAVEL D/W

VZ #55

VZ #54

C&P #56.5

C&P #53

C&P #52

C&P #51

C&P #50

PROP. CONSTRUCTION ESMT.

N/F CARL F & CARL PRATT L. 5844 F. 857 ACCT. 1158658

N/F GRACE P & SHAUNA M ROYE L. 22458 F. 004 ACCT. 1151885

N/F JAMES F & MIRIAM MYERS L. 8149 F. 540 ACCT. 1171859

N/F GARY L GREENAWALT L. 5675 F. 354 ACCT. 1179688

N/F MILLVILLE QUARRY, INC L. 17814 F. 033 ACCT. 1137041/1137058/1137066/ 1137074/ 1151488/1137082/1136993/ 1137009 TCP2-059-09

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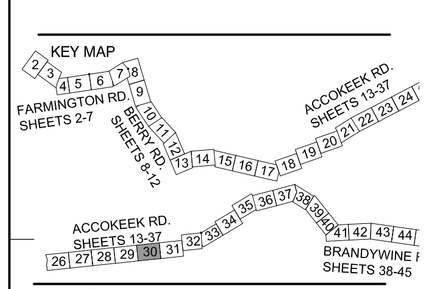
MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE

PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
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RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

30

SHEET NO. 30 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-30-33.dwg, 1/25/2015 12:28:43 PM

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way	307.17					
Millville Quarry, INC. (Acct. 1137041) (TCP2-059-09)		1,078.72				
TOTAL	0.03 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

DATUM: MCS/NAD83/2011 NAVD29

LEGEND

- EXISTING PROPERTY LINE
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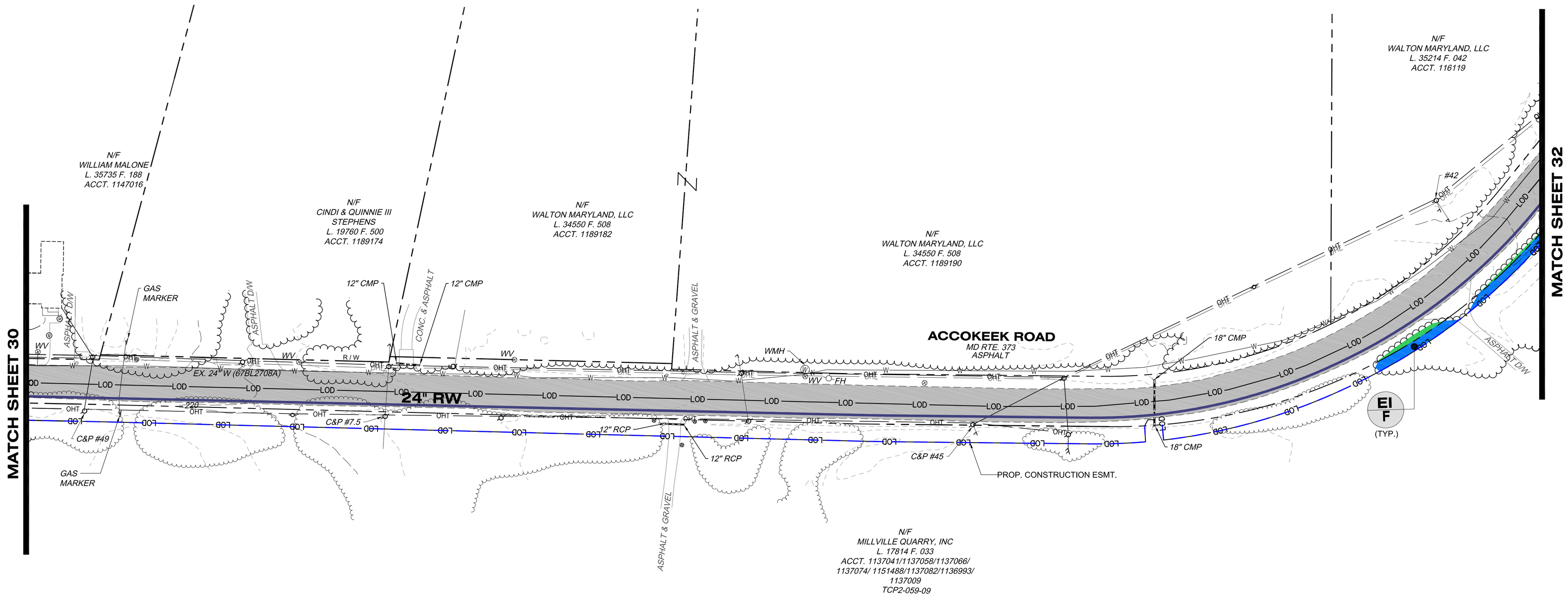

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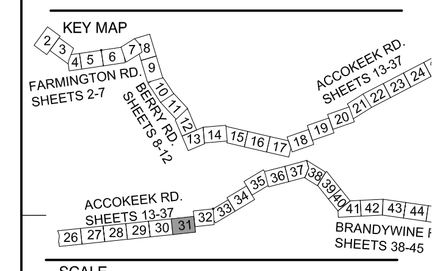
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
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APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

31

SHEET NO. 31 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-30-33.dwg, 1/25/2015 12:28:50 PM

DATUM: MCS/NAD83/2011 NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-W	3,200.08					
Millville Quarry, INC. (Acct. 1137041) (TCP2-059-09)		2,443.29				
Millville Quarry, INC. (Acct. 1189075) (TCP2-059-09)		6,815.52				
TOTAL	0.29 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
47	Pin Oak	Quercus palustris	30	45	Fair		
48	Scarlet Oak	Quercus coccinea	32	48	Poor		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER
- EXISTING SEWER
- EXISTING GAS
- EXISTING OVERHEAD TELEPHONE
- EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- EXISTING FORESTED WETLAND
- EXISTING EMERGENT WETLAND
- EXISTING WETLAND BUFFER
- CRITICAL ROOT ZONE
- EXISTING SPECIMEN TREE
- EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING TREE LINE
- EXISTING HEDGEROW
- PROPOSED 24" RECLAIMED WATER LINE
- PROPOSED VALVE VAULT
- PERMANENT PIPE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED RECEIVING AND BORE PITS
- PROPOSED LIMITS OF DISTURBANCE
- FOREST TEMPORARY IMPACT
- EMERGENT WETLAND TEMPORARY IMPACT
- FORESTED WETLAND TEMPORARY IMPACT
- OPEN WATER TEMPORARY IMPACT
- FOREST PERMANENT IMPACT
- FORESTED WETLAND CONVERSION TO EMERGENT WETLAND
- EI F — FOREST ENVIRONMENTAL IMPACT TAG
- EI T1 — SPECIMEN TREE ENVIRONMENTAL IMPACT TAG
- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
- EI W1 — WETLAND ENVIRONMENTAL IMPACT TAG

N/F
WALTON MARYLAND, LLC
L. 35214 F. 042
ACCT. 116119
TCP2-039-03
(CONSERVATION BANK)

N/F
WALTON MARYLAND, LLC
L. 35214 F. 042
ACCT. 1189109/1137025

N/F
WALTON MARYLAND, LLC
L. 35214 F. 042
ACCT. 1189109/1137025

EX. CULVERT
EX. 24" W (67BL2708A)
HEADWALL
BURCH BRANCH R.I.W.
C&P #41
C&P #37 ANCHOR
24" RW
GAS MARKER
C&P #39
HEADWALL
VZ #37
ACCOKEEK ROAD
MD RTE. 373
ASPHALT
C&P #41
BURCH BRANCH
PROP. CONSTRUCTION ESMT.
C&P 36
#47
#48
BELLATLANTIC 35
MATCH SHEET 31
MATCH SHEET 33
EI S13
EI F (TYP.)

N/F
MILLVILLE QUARRY, INC
L. 16268 F. 161
ACCT. 1189075
TCP2-059-09

N/F
MILLVILLE QUARRY, INC
L. 17814 F. 033
ACCT. 1137041/1137058/1137066/ 1137074/ 1151488/1137082/1136993/ 1137009
TCP2-059-09

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE MD, 21244
PHONE: 410.645.1402
FAX: 410.265.8875

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC
10 MILE, 24" DIAMETER RECLAIMED WATER LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP
FARMINGTON RD. SHEETS 2-7
BERRY RD SHEETS 8-12
ACCOKEEK RD. SHEETS 13-37
ACCOKEEK RD. SHEETS 13-37
BRANDYWINE RD SHEETS 38-45

SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE
RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

32

SHEET NO. 32 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-30-33.dwg, 1/25/2015 12:28:55 PM

DATUM: MCS/NAD83(1991); NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
Millville Quarry, INC. (Acct. 1189075) (TCP2-059-09)		1,355.04				
TOTAL	0.03 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
49	American Sycamore	Planatus occidentalis	31	46.5	Good		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER
- EXISTING SEWER
- EXISTING GAS
- EXISTING OVERHEAD TELEPHONE
- EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- EXISTING FORESTED WETLAND
- EXISTING EMERGENT WETLAND
- EXISTING WETLAND BUFFER
- CRITICAL ROOT ZONE
- EXISTING SPECIMEN TREE
- EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING TREE LINE
- EXISTING HEDGEROW
- PROPOSED 24" RECLAIMED WATER LINE
- PROPOSED VALVE VAULT
- PERMANENT PIPE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED RECEIVING AND BORE PITS
- PROPOSED LIMITS OF DISTURBANCE
- FOREST TEMPORARY IMPACT
- EMERGENT WETLAND TEMPORARY IMPACT
- FORESTED WETLAND TEMPORARY IMPACT
- OPEN WATER TEMPORARY IMPACT
- FOREST PERMANENT IMPACT
- FORESTED WETLAND CONVERSION TO EMERGENT WETLAND
- EI F — FOREST ENVIRONMENTAL IMPACT TAG
- EI T1 — SPECIMEN TREE ENVIRONMENTAL IMPACT TAG
- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
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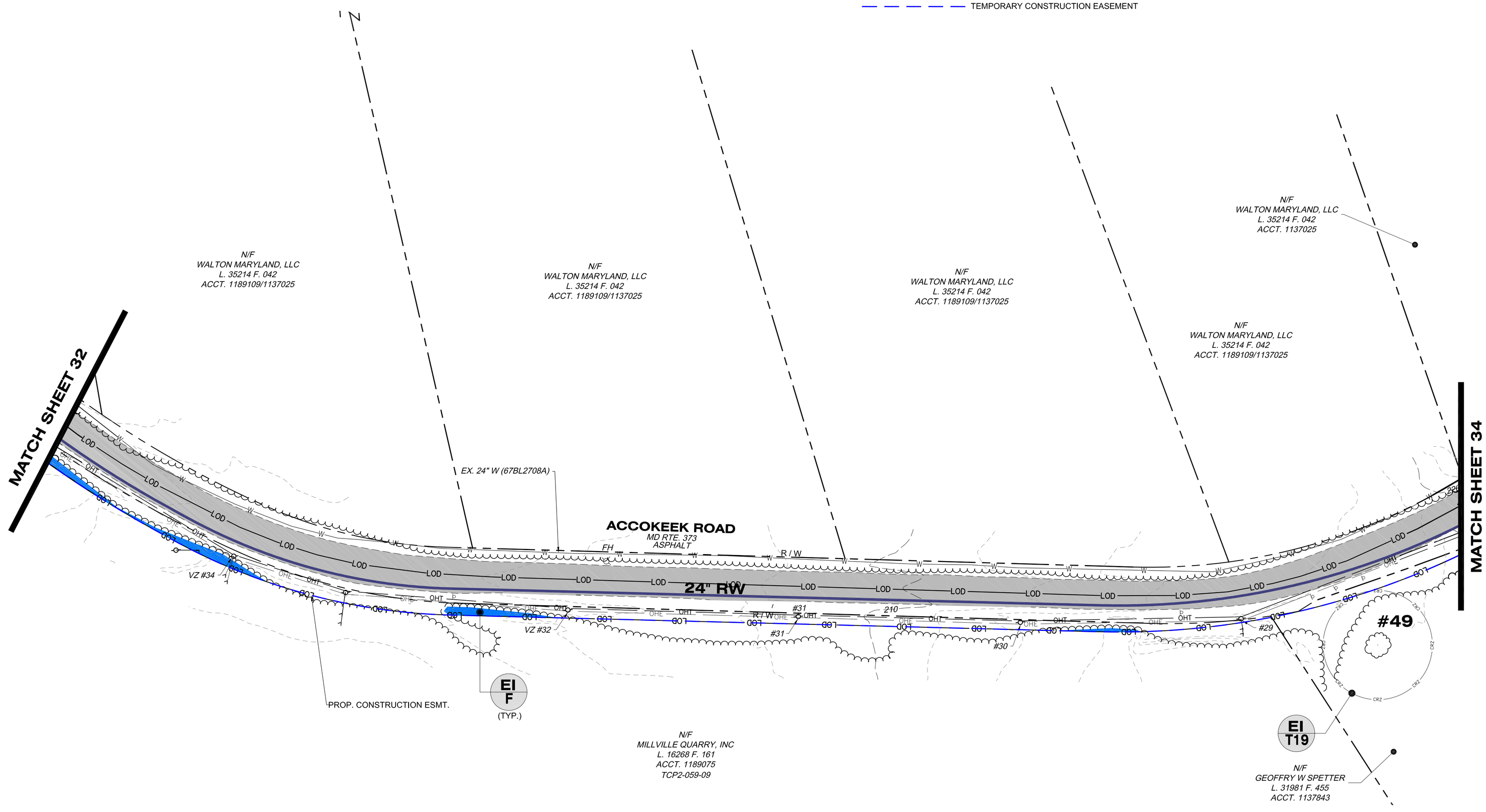

Dewberry

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DEVELOPER/APPLICANT
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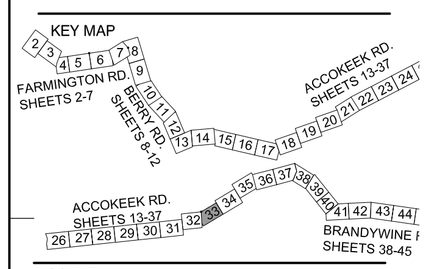
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

33

SHEET NO. 33 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-30-33.dwg, 1/25/2015 12:29:00 PM

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way	504.79					
TOTAL	**0.01 AC**		**- AC**		**- AC**	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

DATUM: MCS/NAD83(1991); NAVD29

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER
- EXISTING SEWER
- EXISTING GAS
- EXISTING OVERHEAD TELEPHONE
- EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- EXISTING STREAM BUFFER
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- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
- EI W1 — WETLAND ENVIRONMENTAL IMPACT TAG

N/F
WALTON MARYLAND, LLC
L. 35214 F. 042
ACCT. 1137025

N/F
WALTON MARYLAND, LLC
L. 35214 F. 042
ACCT. 1137025

N/F
MARYLAND NATIONAL
CAPITAL PARK & PLANNING
COMMISSION
L. 21116 F. 196
ACCT. 3649654

N/F
MARYLAND NATIONAL CAPITAL
PARK & PLANNING
COMMISSION
L. 22417 F. 005
ACCT. 1137835/3649654/1137827

ACCOKEEK ROAD
MD RTE. 373
ASPHALT

ASPHALT

EX. 24" W (67BL2708A)

PP W/GAS MARKER ANCHOR

#23 W/GAS MARKER ANCHOR

WMH

WV

FH

24" RW

R / W

C&P #24

C&P #25

C&P #19

PP W/CONDUIT

#420447 W/CONDUIT

#26

#27 W/ CONDUIT

EI F (TYP.)

MATCH SHEET 33

MATCH SHEET 35

N/F
LAKEVIEW BRANDYWINE
HOMEOWNERS ASSOCIATION, INC.
L. 33702 F. 017
ACCT. 3830478
TCP2-165-04

N/F
GEOFFRY W SPETTER
L. 31981 F. 455
ACCT. 1137843

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE MD, 21244
PHONE: 410.645.1402
FAX: 410.265.8875

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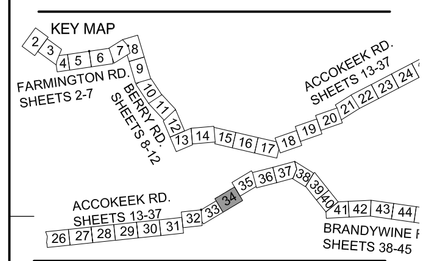
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS REC'D FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

34

SHEET NO. 34 OF 45

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DATUM: MCS/NAD83(1997)/ NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
Lakeview Brandywine Homeowner's Association, INC. (Acct. 3830544) (TCP2-165-04)	256.26					
Lakeview Brandywine Homeowner's Association, INC. (Acct. 3831088) (TCP2-165-04)	1,802.80					
TOTAL	0.05 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
50	White Oak	Quercus alba	24	36	Fair		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- OHE — EXISTING OVERHEAD ELECTRIC
- W — EXISTING WATER
- S — EXISTING SEWER
- G — EXISTING GAS
- OHT — EXISTING OVERHEAD TELEPHONE
- SD — EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- SB — EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- WL — EXISTING FORESTED WETLAND
- WL — EXISTING EMERGENT WETLAND
- WB — EXISTING WETLAND BUFFER
- CRZ — CRITICAL ROOT ZONE
- ## — EXISTING SPECIMEN TREE
- ## — EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING TREE LINE
- EXISTING HEDGEROW
- PROPOSED 24" RECLAIMED WATER LINE
- PROPOSED VALVE VAULT
- PERMANENT PIPE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED RECEIVING AND BORE PITS
- LOD — PROPOSED LIMITS OF DISTURBANCE
- FOREST TEMPORARY IMPACT
- EMERGENT WETLAND TEMPORARY IMPACT
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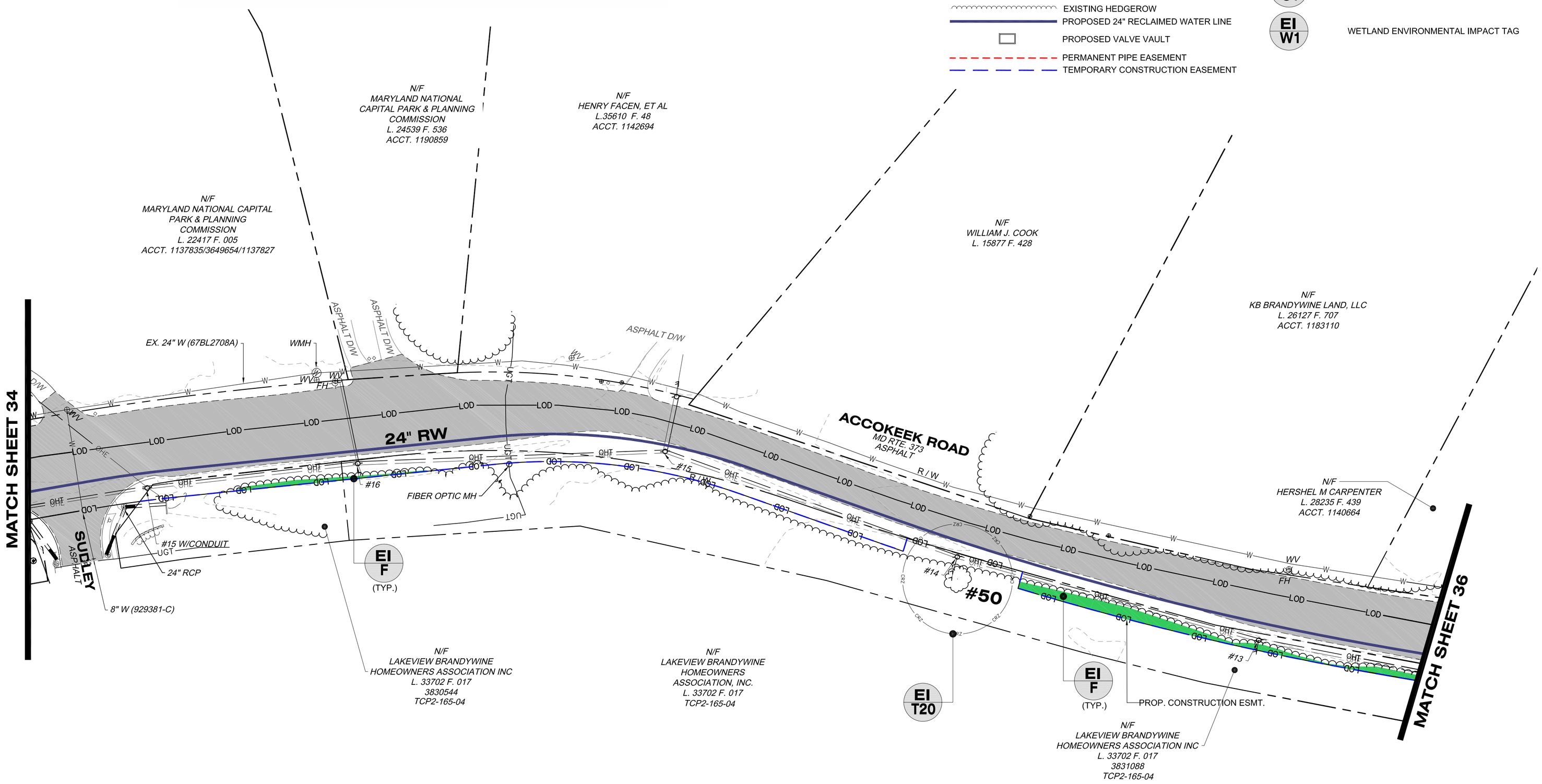

Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
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FAX: 410.265.8875

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
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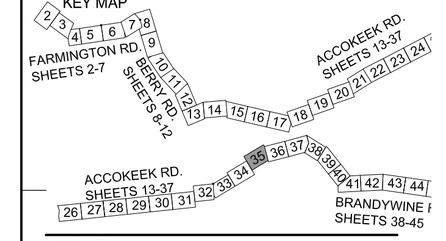
(972) 361-2000

MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE

PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

35

SHEET NO. 35 OF 45

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DATUM: MCS/(NAD83/2011) NAVD29

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
Lakeview Brandywine Homeowner's Association, INC. (Acct. 3831088) (TCP2-165-04)	328.51					
TOTAL	0.01 AC		- AC		- AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- OHE — EXISTING OVERHEAD ELECTRIC
- W — EXISTING WATER
- S — EXISTING SEWER
- G — EXISTING GAS
- OHT — EXISTING OVERHEAD TELEPHONE
- SD — EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- SB — EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- WL — EXISTING FORESTED WETLAND
- WL — EXISTING EMERGENT WETLAND
- WB — EXISTING WETLAND BUFFER
- CRZ — CRITICAL ROOT ZONE
- ## — EXISTING SPECIMEN TREE
- ## — EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING TREE LINE
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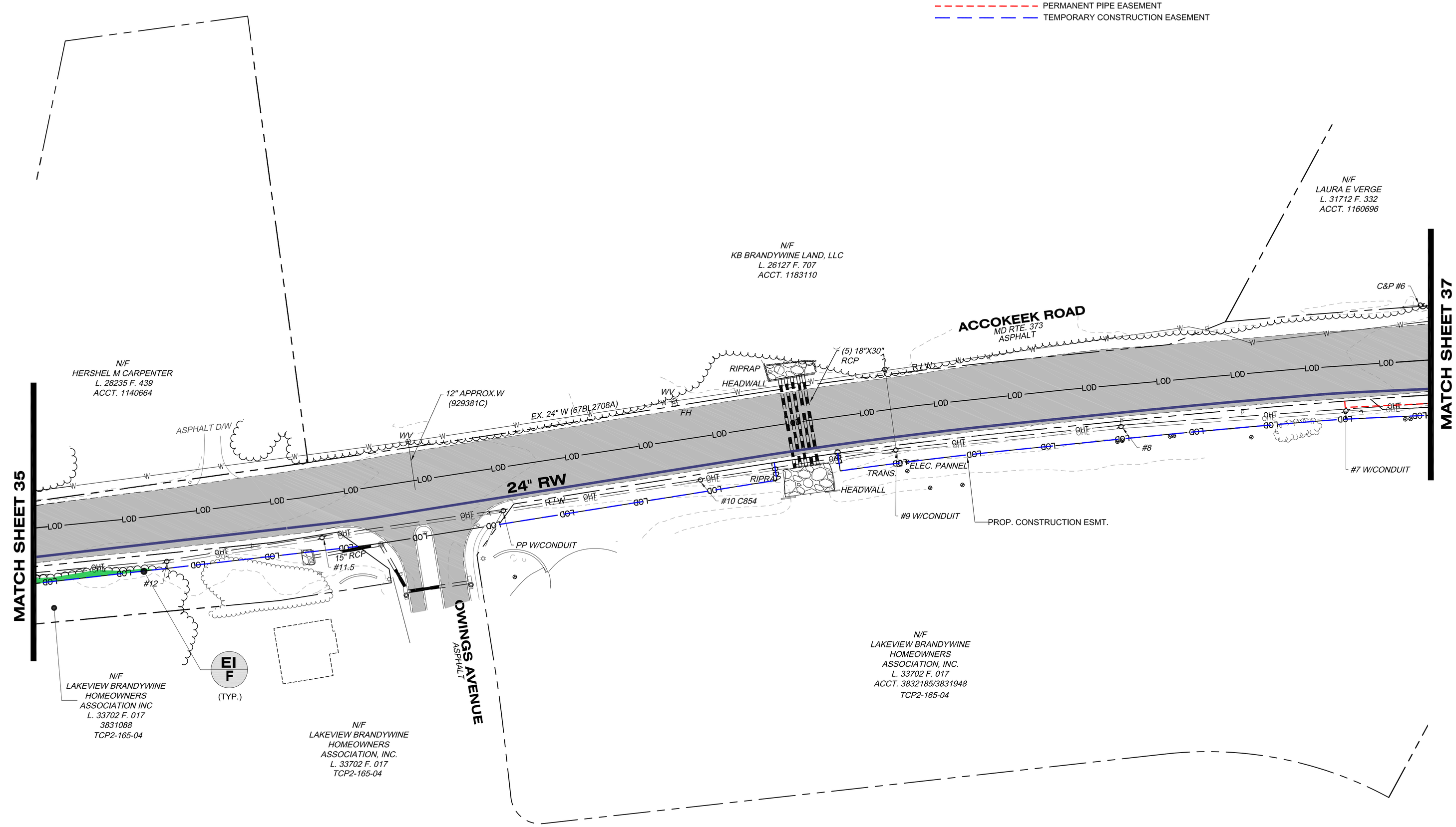

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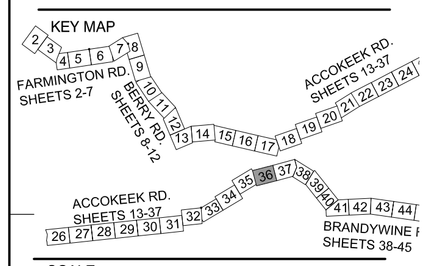
10 MILE, 24" DIAMETER RECLAIMED WATER LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
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1"=50'

No.	DATE	BY	Description
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REVISIONS

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TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

36

SHEET NO. 36 OF 45

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DATUM: MCS/NAD83(1998)/, NAD29

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER
- EXISTING SEWER
- EXISTING GAS
- EXISTING OVERHEAD TELEPHONE
- EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING ROAD
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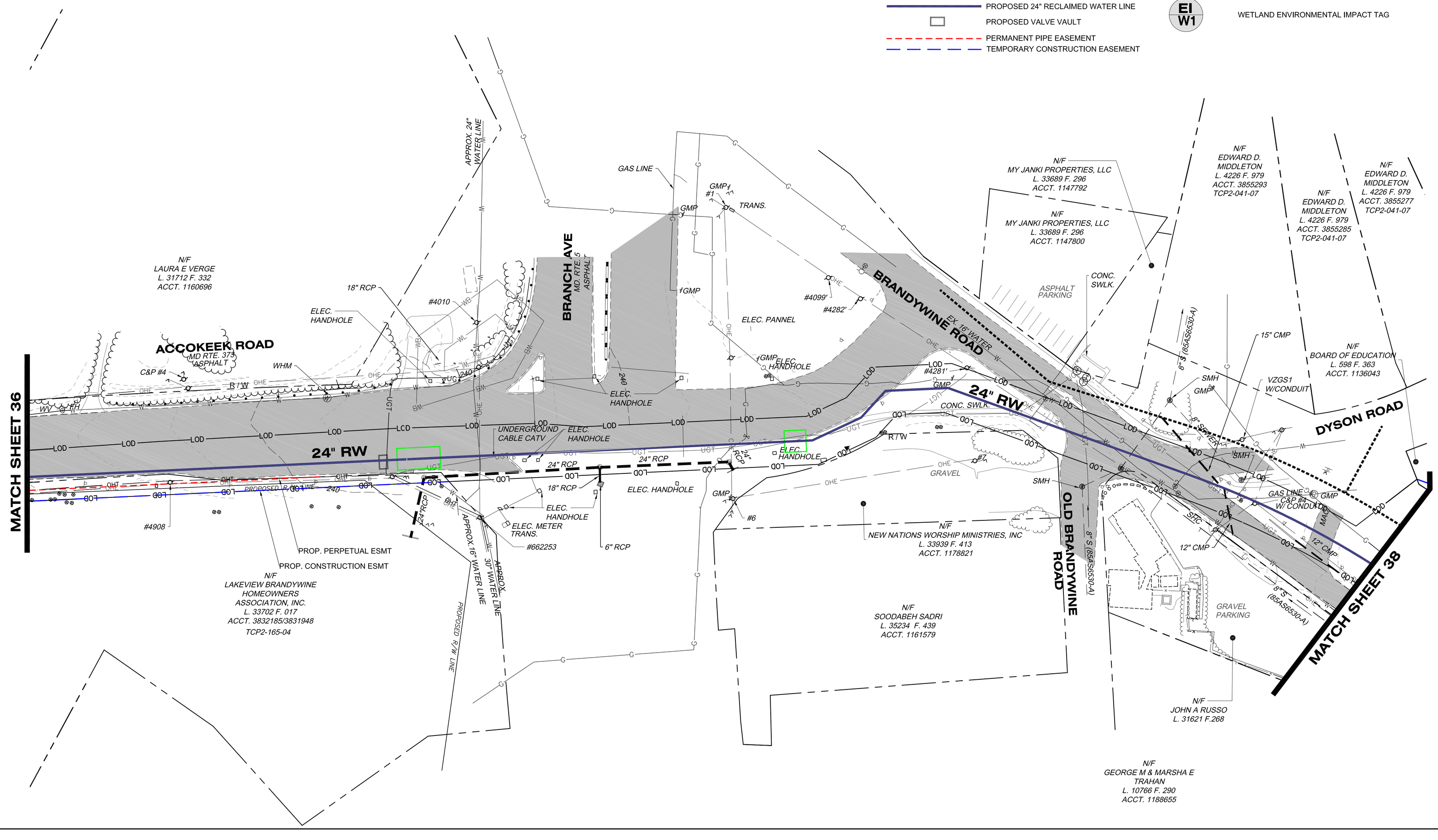

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(972) 361-2000

MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP

SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

37

SHEET NO. 37 OF 45

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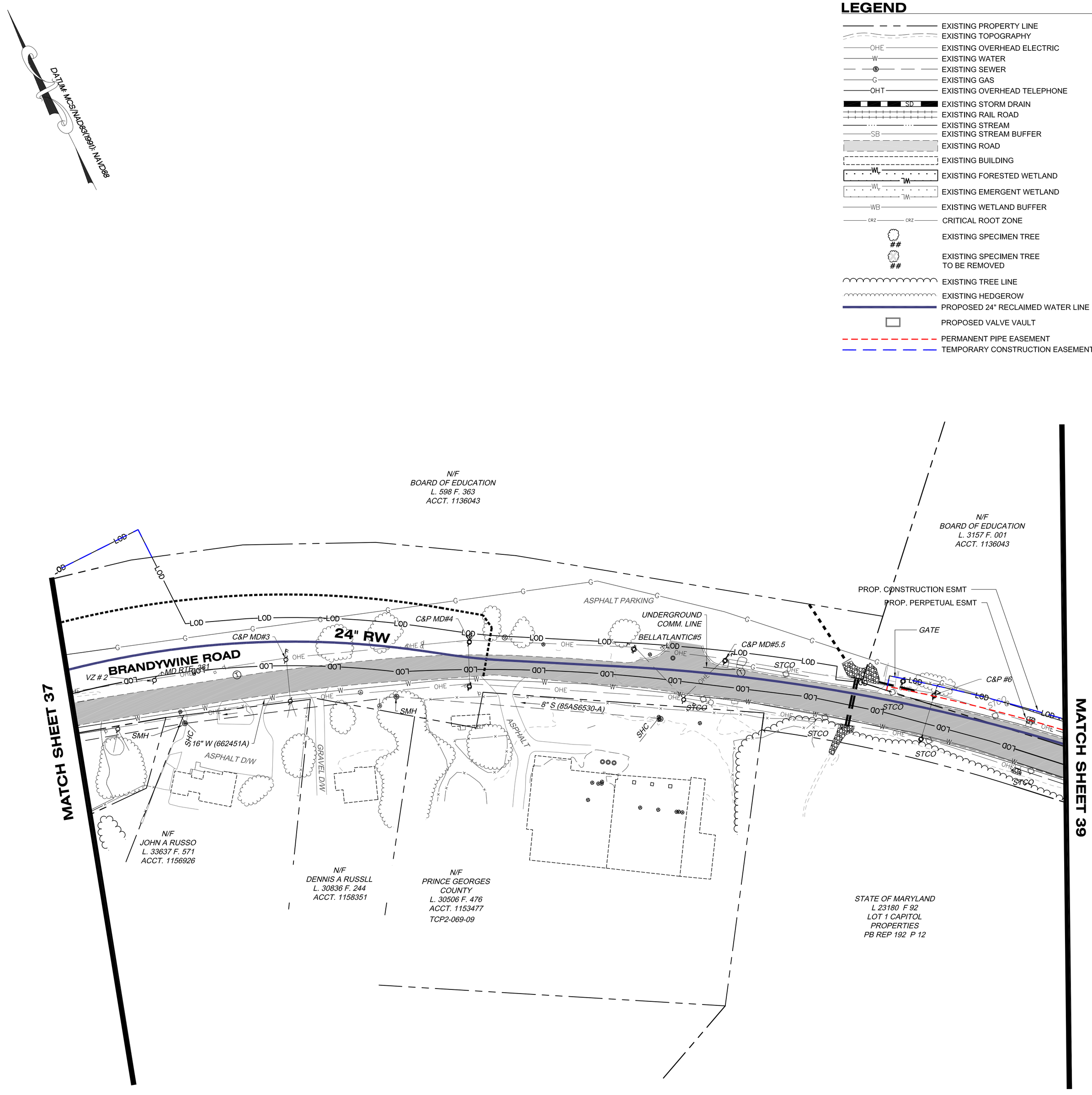


Dewberry

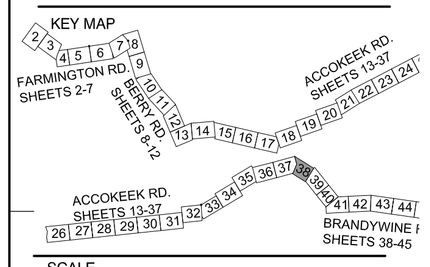
Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE MD, 21244
PHONE: 410.645.1402
FAX: 410.265.8875

DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

38

SHEET NO. 38 OF 45

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DATUM: MCS(NAD83/1999) NAVD88

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
51	White Oak	Quercus alba	27.5	41.25	Fair		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- OHE — EXISTING OVERHEAD ELECTRIC
- W — EXISTING WATER
- S — EXISTING SEWER
- G — EXISTING GAS
- OHT — EXISTING OVERHEAD TELEPHONE
- SD — EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- SB — EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- WL — EXISTING FORESTED WETLAND
- WL — EXISTING EMERGENT WETLAND
- WB — EXISTING WETLAND BUFFER
- CRZ — CRZ — CRITICAL ROOT ZONE
- ## — EXISTING SPECIMEN TREE
- ## — EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING TREE LINE
- EXISTING HEDGEROW
- PROPOSED 24" RECLAIMED WATER LINE
- PROPOSED VALVE VAULT
- PERMANENT PIPE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED RECEIVING AND BORE PITS
- LOD — PROPOSED LIMITS OF DISTURBANCE
- FOREST TEMPORARY IMPACT
- EMERGENT WETLAND TEMPORARY IMPACT
- FORESTED WETLAND TEMPORARY IMPACT
- OPEN WATER TEMPORARY IMPACT
- FOREST PERMANENT IMPACT
- FORESTED WETLAND CONVERSION TO EMERGENT WETLAND
- EI F — FOREST ENVIRONMENTAL IMPACT TAG
- EI T1 — SPECIMEN TREE ENVIRONMENTAL IMPACT TAG
- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
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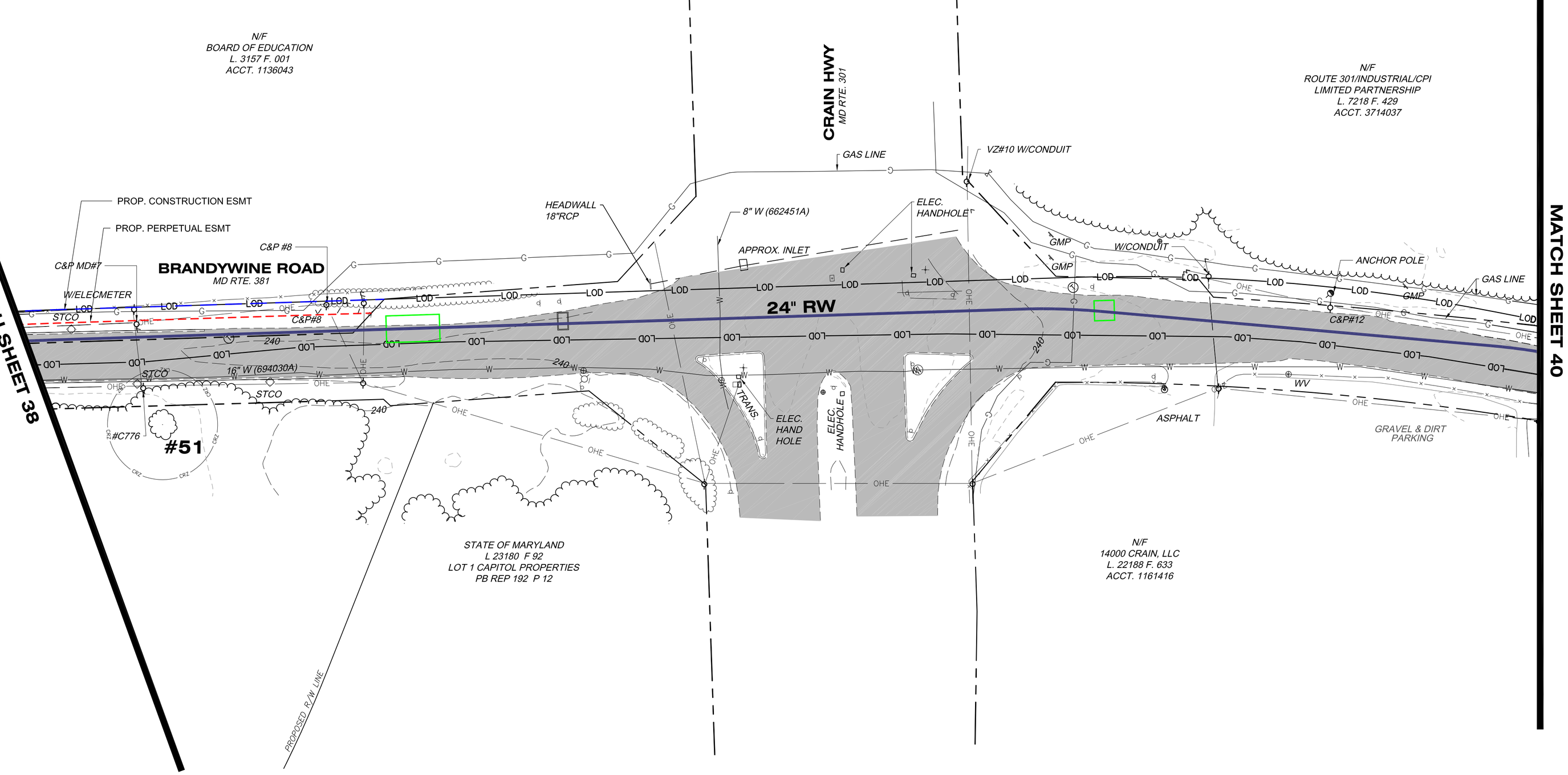

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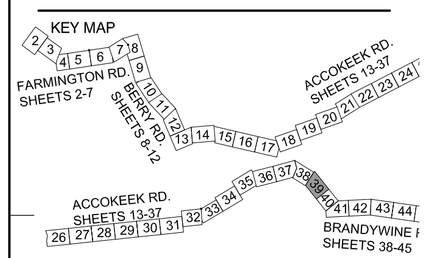
10 MILE, 24" DIAMETER RECLAIMED WATER LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
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PROJECT NO. 50064932

39

SHEET NO. 39 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-38-41.dwg, 1/25/2015 12:29:50 PM

DATUM: MCS/NAD83(1998); NAVD88

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way						3,413.41
TOTAL	- AC		- AC		0.08 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
52	Red Maple	Acer rubrum	31	46.5	Good	Twin	

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- EXISTING OVERHEAD ELECTRIC
- EXISTING WATER
- EXISTING SEWER
- EXISTING GAS
- EXISTING OVERHEAD TELEPHONE
- EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- EXISTING FORESTED WETLAND
- EXISTING EMERGENT WETLAND
- EXISTING WETLAND BUFFER
- CRITICAL ROOT ZONE
- EXISTING SPECIMEN TREE
- EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING TREE LINE
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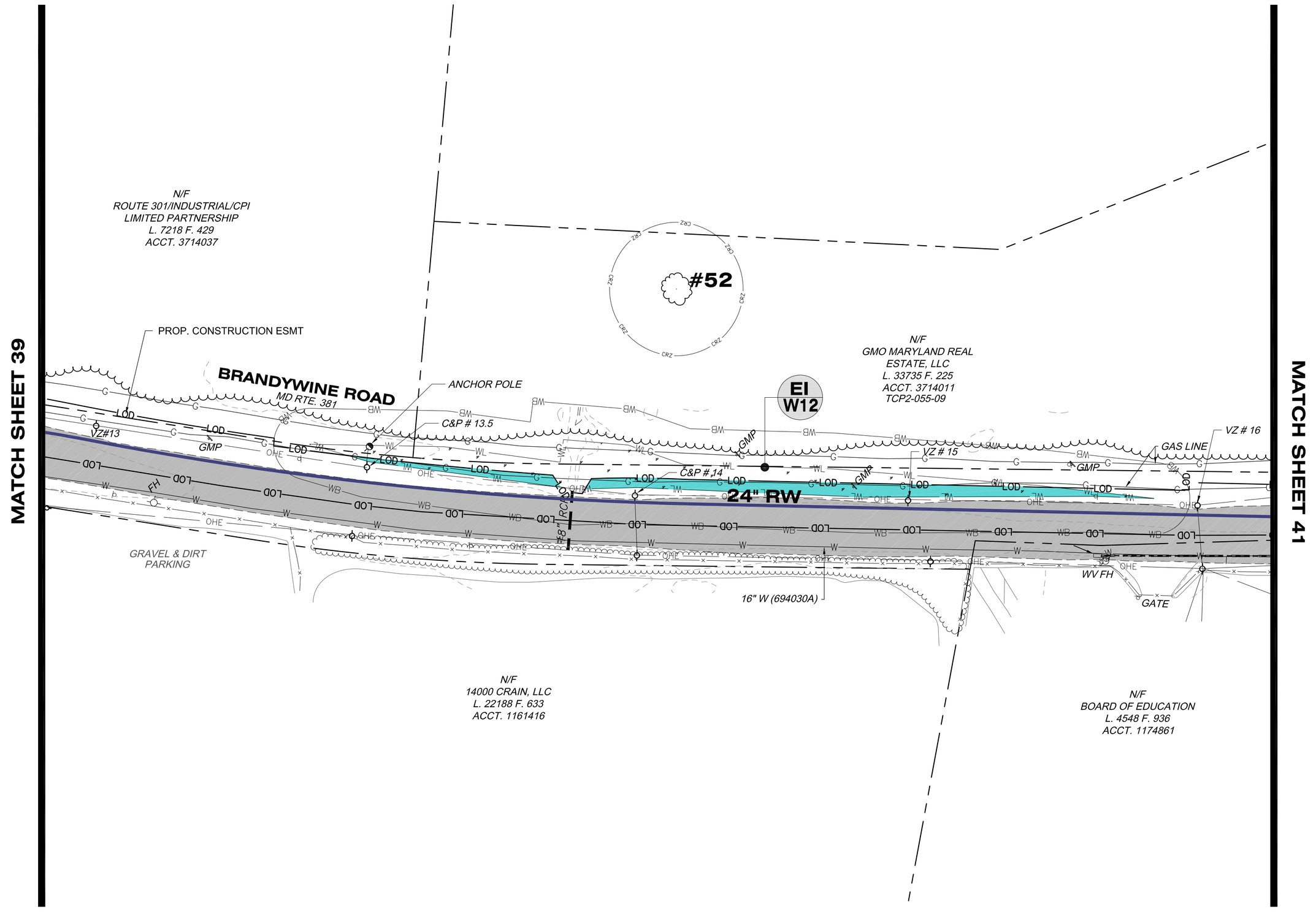

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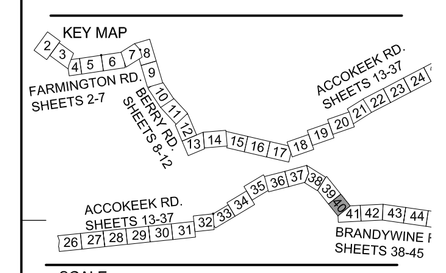
10 MILE, 24" DIAMETER RECLAIMED WATER LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



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APPROVED BY	JCL
CHECKED BY	JCL
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TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

40

SHEET NO. 40 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-38-41.dwg, 1/25/2015 12:29:55 PM

DATUM: MCS/NAD83(1991), NAVD88

Owner	EI F		EI S#		EI W#	
	Perm. (SF)	Temp. (SF)	Perm. (SF)	Temp. (SF)	Conversion* (SF)	Temp. Emergent (SF)
State Right-of-Way						1,051.01
TOTAL	- AC		- AC		0.02 AC	

*Note: Conversion indicated the SF of forested wetland that has been permanently converted to emergent wetland.

TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
53	Willow Oak	Quercus phellos	36	54	Good		

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

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- WB — EXISTING WETLAND BUFFER
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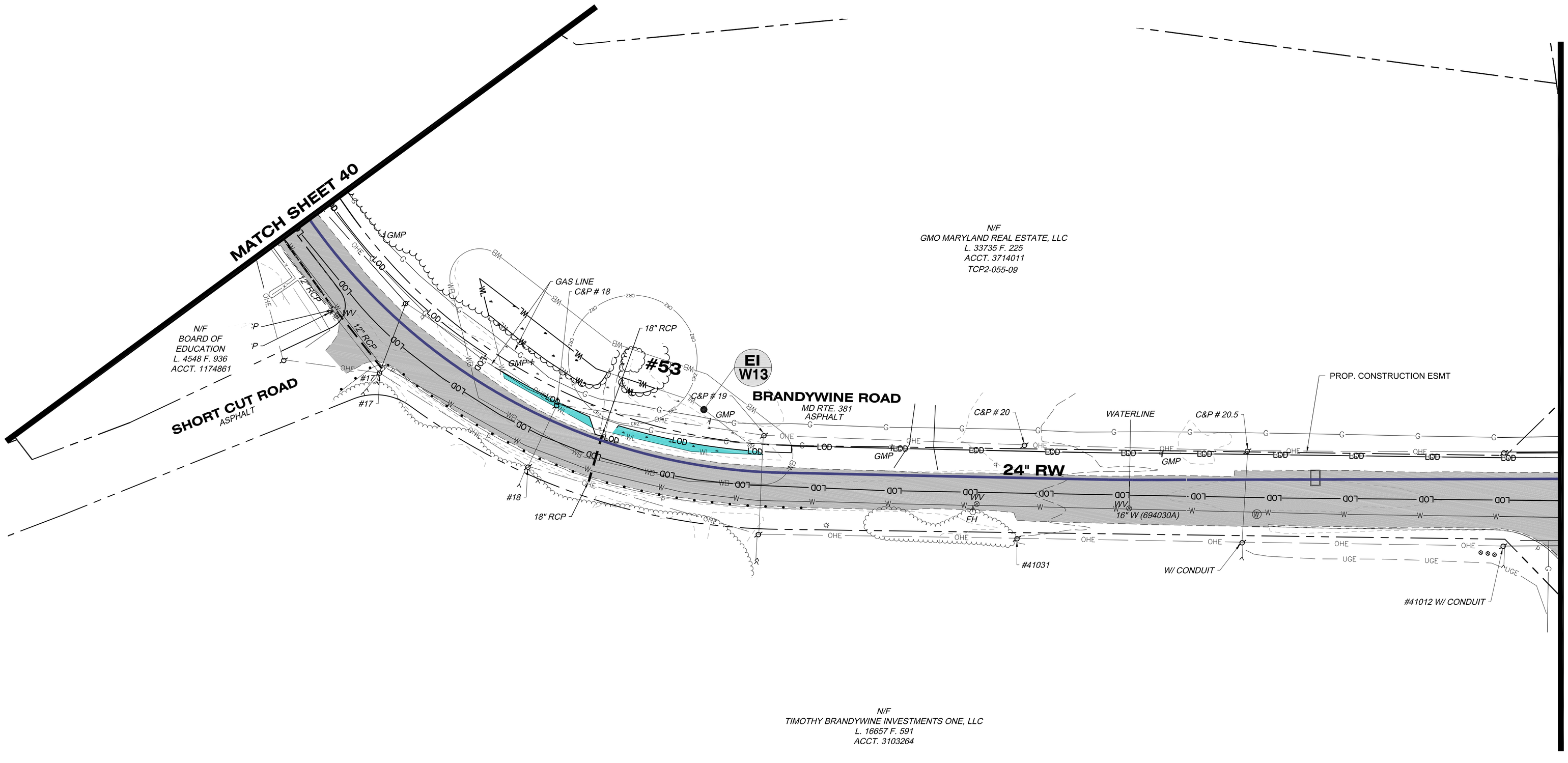

Dewberry

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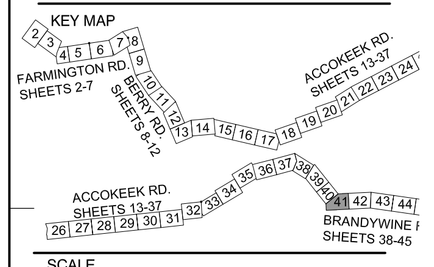
(972) 361-2000

MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
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APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

41

SHEET NO. 41 OF 45

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DATUM: MCS/NAD83(1999): NAVD88

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- OHE — EXISTING OVERHEAD ELECTRIC
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- WB — EXISTING WETLAND BUFFER
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- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
- EI W1 — WETLAND ENVIRONMENTAL IMPACT TAG

N/F
ROUTE
301/INDUSTRIAL/CPI
LIMITED PARTNERSHIP
L. 7218 F. 429
ACCT. 3714003
TCP2-055-09

N/F
WASHINGTON GAS LIGHT
COMPANY
L. 16209 F. 343
ACCT. 3465614
TCP2-023-02

N/F
ROUTE
301/INDUSTRIAL/CPI
LIMITED PARTNERSHIP
L. 7218 F. 429
ACCT. 3713948

MATCH SHEET 41

MATCH SHEET 43

BRANDYWINE ROAD
MD RTE. 381
ASPHALT
21.5
C&P#20
C&P # 22
C&P # 23
C&P # 24
ANCHORE POLE
COMM. LINE
24" RW
16" W (69BL4030-A)
16" WATER LINE
PROP. CONSTRUCTION ESMT
PROP. PERPETUAL ESMT
#22.5 BELLATLANTIC
W/ CONDUIT
#41018 W/ CONDUIT
ABANDON
GAS LINE
GAS LINE
PAINT
TRANS.
18" RCP
24" RCP
24" RCP
24" RCP
EI W14
EI S18
GATE
GMP
TGMP
WV
FH
UGE
SB

MATTAWOMAN DRIVE
ASPHALT

N/F
TIMOTHY BRANDYWINE
INVESTMENTS ONE, LLC
L. 16657 F. 591
ACCT. 2937886

Dewberry

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10 MILE, 24" DIAMETER RECLAIMED WATER LINE
PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP
FARMINGTON RD. SHEETS 2-7
ACCOKEEK RD. SHEETS 13-37
BERRY RD. SHEETS 8-12
ACCOKEEK RD. SHEETS 13-37
BRANDYWINE RD. SHEETS 38-45

SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

42

SHEET NO. 42 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-42-45.dwg, 1/25/2015 12:30:13 PM

DATUM: MCS/NAD83(1997); NAVD88

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- OHE — EXISTING OVERHEAD ELECTRIC
- W — EXISTING WATER
- SS — EXISTING SEWER
- G — EXISTING GAS
- OHT — EXISTING OVERHEAD TELEPHONE
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- EXISTING STREAM
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- WB — EXISTING WETLAND BUFFER
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- EI T1 — SPECIMEN TREE ENVIRONMENTAL IMPACT TAG
- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
- EI W1 — WETLAND ENVIRONMENTAL IMPACT TAG

MATCH SHEET 42

MATCH SHEET 44

EI S19

BRANDYWINE ROAD
MD RTE. 381
ASPHALT

24" RW

KATHLEEN LANE
ASPHALT

N/F ROUTE 301/INDUSTRIAL/CPI LIMITED PARTNERSHIP L. 7218 F. 429 ACCT. 3713948

N/F ROUTE 301/INDUSTRIAL/CPI LIMITED PARTNERSHIP L. 7218 F. 429 ACCT. 3713930

N/F DENISE M SHELTON L. 34767 F. 353 ACCT. 1180942

N/F BRYAN R HAYNES L. 32716 F. 212 ACCT. 1148196

N/F AARON D SR & TONIERE L LEE L. 30098 F. 424 ACCT. 1176353

N/F JENNIFER HOLMES L. 17302 F. 179 ACCT. 1140912

N/F JOSE L PORTILLO L. 19499 F. 450 ACCT. 1174606

N/F LAMONT T & MESCHECA C BUNYON L. 19064 F. 489 ACCT. 1184399 TCP2-009-91

N/F GWENDOLYN O ANDERSON L. 15871 F. 729 ACCT. 1184381 TCP2-009-91

N/F BRANDYWINE VILLAGE HOMEOWNERS ASSOCIATION, INC. L. 8770 F. 402 ACCT. 1184415 TCP2-009-91

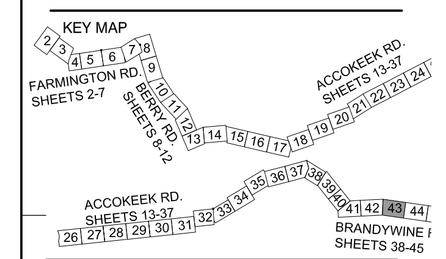
N/F BRANDYWINE VILLAGE HOMEOWNERS ASSOCIATION I L. 8770 F. 402

N/F TIMOTHY BRANDYWINE INVESTMENTS ONE, LLC L. 16657 F. 591 ACCT. 2937886

N/F BOARD OF EDUCATION L. 1409 F. 196 L. 2199 F. 175 L. 3820 F. 291 L. 3820 F. 294 ACCT. 1136027

SMH · 12" SEWER · 12" S (105088Z) · 10" S (85CT6590B) · (4) 53" CMP · TIMOTHY BRANCH · TEL. PED · 12" W (91894SL) · 16" W (69BL4030-A) · #28 W/ CONDUIT · EBX · VZ #27 · C&P #25 · C&P #26 · SILT FENCE · GAS LINE · GAS LINE · CONC. SIDEWALK · ASPHALT · ASPHALT & GRAVEL · PROP. CONSTRUCTION ESMT · PROP. PERPETUAL ESMT · LIGHT POLE · CURB · FH · #2 · #4470 · 220

KEY MAP



SCALE

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1"=50'

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PROJECT NO. 50064932

43

SHEET NO. 43 OF 45

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DATUM: MCS/NAD83(1997); NAVD88

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- EXISTING RAIL ROAD
- EXISTING STREAM
- SB — EXISTING STREAM BUFFER
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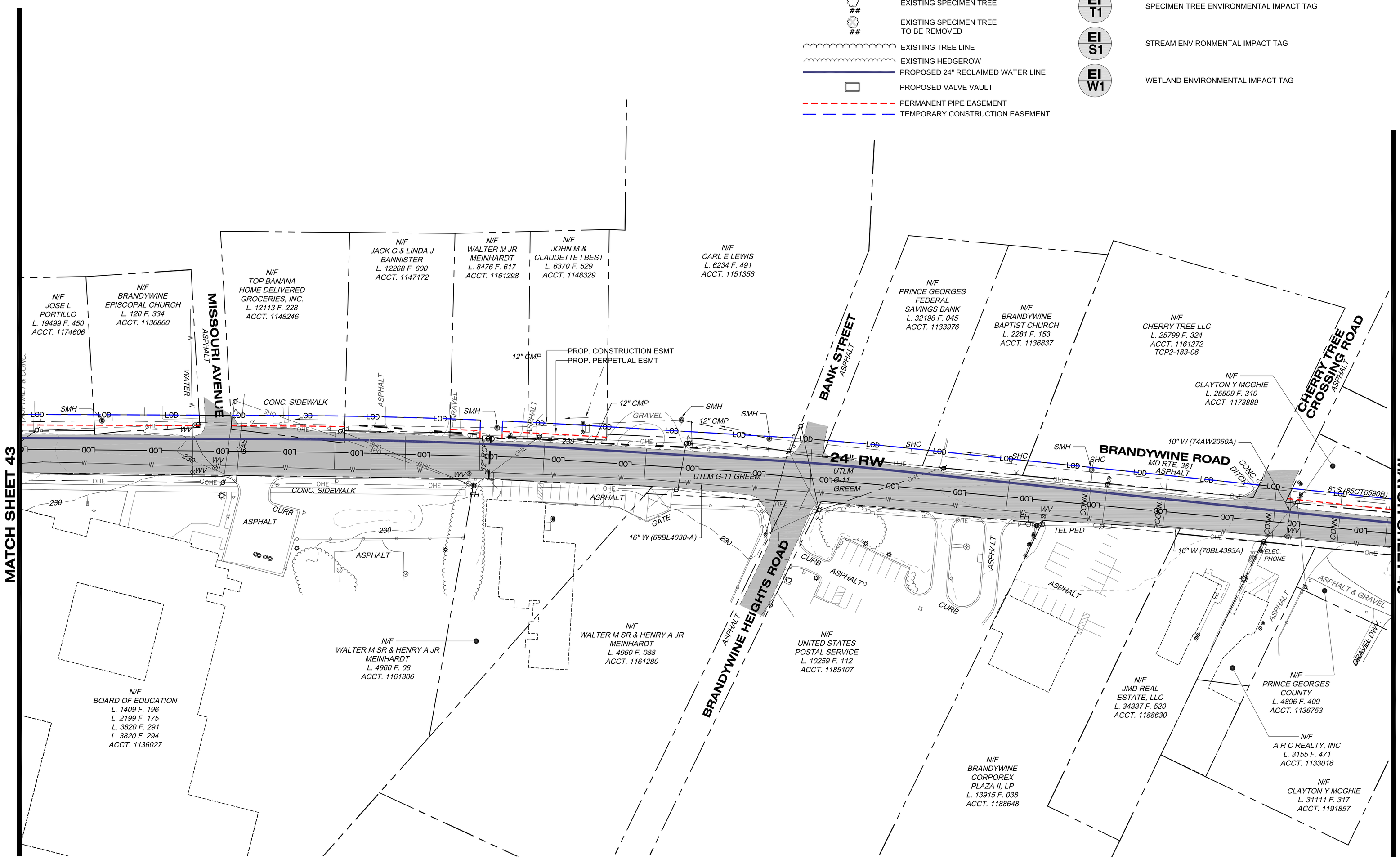
- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
- EI W1 — WETLAND ENVIRONMENTAL IMPACT TAG



Dewberry

Dewberry Consultants LLC
3106 LORD BALTIMORE DRIVE
SUITE 110
BALTIMORE MD, 21244
PHONE: 410.645.1402
FAX: 410.265.8875

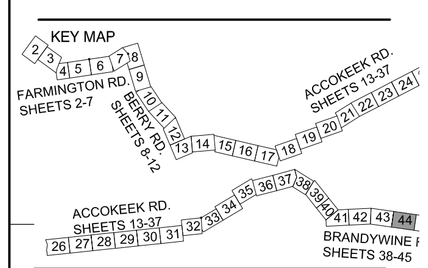
DEVELOPER/APPLICANT
MATTAWOMAN ENERGY, LLC
4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE

PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP



SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

44

SHEET NO. 44 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-42-45.dwg, 1/25/2015 12:30:25 PM

DATUM: MCS/NAD83(1997): NAVD88

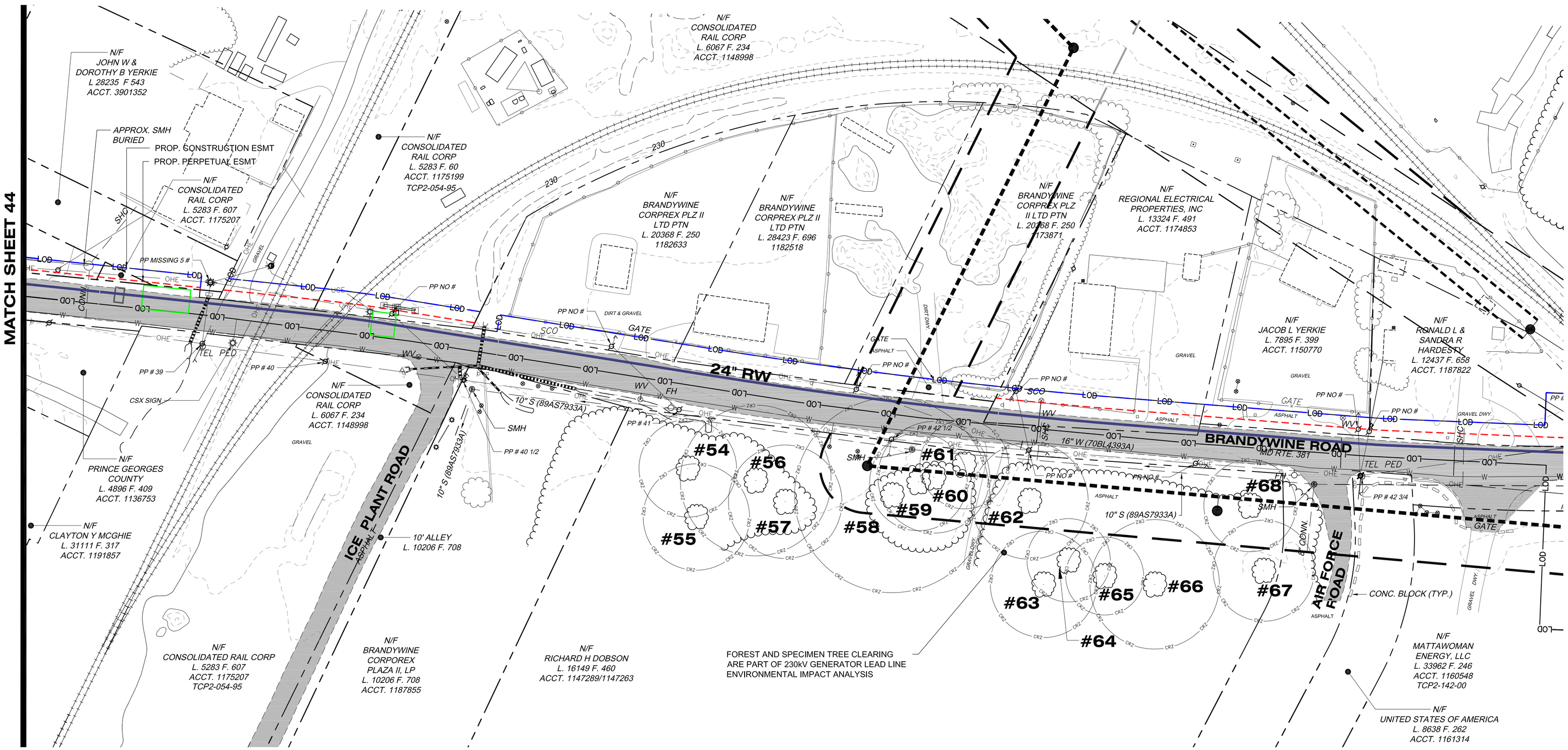
TABLE OF SIGNIFICANT TREES

Tree #	Common Name	Scientific Name	DBH (in.)	CRZ (ft.)	Condition	Remarks	Loss*
54	White Oak	Quercus alba	30	45	Fair	Poison Ivy	
55	White Oak	Quercus alba	30	45	Good		
56	Willow Oak	Quercus phellos	42.5	63.75	Good	Twin	
57	White Oak	Quercus alba	32	48	Good		
58	White Oak	Quercus alba	55	82.5	Fair		
59	White Oak	Quercus alba	27.5	41.25	Good		x
60	White Oak	Quercus alba	31.5	47.25	Fair		x
61	White Oak	Quercus alba	25	37.5	Fair		x
62	White Oak	Quercus alba	33	49.5	Good		x
63	White Oak	Quercus alba	30	45	Good		
64	White Oak	Quercus alba	23.5	35.25	Good		
65	White Oak	Quercus alba	22	33	Good		
66	White Oak	Quercus alba	36.5	54.75	Good		
67	White Oak	Quercus alba	28.5	42.75	Good		
68	White Oak	Quercus alba	26	39	Good		x

*NOTE: Trees are considered to be lost if there is greater than 1/3 root disturbance.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING TOPOGRAPHY
- OHE — EXISTING OVERHEAD ELECTRIC
- W — EXISTING WATER
- EXISTING SEWER
- G — EXISTING GAS
- OHT — EXISTING OVERHEAD TELEPHONE
- SD — EXISTING STORM DRAIN
- EXISTING RAIL ROAD
- EXISTING STREAM
- SB — EXISTING STREAM BUFFER
- EXISTING ROAD
- EXISTING BUILDING
- WL — EXISTING FORESTED WETLAND
- WE — EXISTING EMERGENT WETLAND
- WB — EXISTING WETLAND BUFFER
- CRZ — CRZ — CRITICAL ROOT ZONE
- ## — EXISTING SPECIMEN TREE
- ## — EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING TREE LINE
- EXISTING HEDGEROW
- PROPOSED 24" RECLAIMED WATER LINE
- PROPOSED VALVE VAULT
- PERMANENT PIPE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED RECEIVING AND BORE PITS
- LOD — PROPOSED LIMITS OF DISTURBANCE
- FOREST TEMPORARY IMPACT
- EMERGENT WETLAND TEMPORARY IMPACT
- FORESTED WETLAND TEMPORARY IMPACT
- OPEN WATER TEMPORARY IMPACT
- FOREST PERMANENT IMPACT
- FORESTED WETLAND CONVERSION TO EMERGENT WETLAND
- EI F — FOREST ENVIRONMENTAL IMPACT TAG
- EI T1 — SPECIMEN TREE ENVIRONMENTAL IMPACT TAG
- EI S1 — STREAM ENVIRONMENTAL IMPACT TAG
- EI W1 — WETLAND ENVIRONMENTAL IMPACT TAG



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DEVELOPER/APPLICANT
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4100 SPRING VALLEY, STE. 1001
DALLAS, TX 75244
(972) 361-2000

MATTAWOMAN ENERGY, LLC 10 MILE, 24" DIAMETER RECLAIMED WATER LINE PRINCE GEORGE'S COUNTY, MD

SEAL

KEY MAP
FARMINGTON RD. SHEETS 2-7
ACCOKEEK RD. SHEETS 13-37
SHERRY RD. SHEETS 8-12
ACCOKEEK RD. SHEETS 13-37
BRANDYWINE RD. SHEETS 38-45

SCALE
0' 50' 100'
1"=50'

No.	DATE	BY	Description
1	01/15/15	JM / EDL	PER ENGINEERING REFINEMENT & COMMENTS RECD FROM AGENCIES

REVISIONS

DRAWN BY	JM
APPROVED BY	JCL
CHECKED BY	JCL
DATE	AUGUST 28, 2014

TITLE

RECLAIMED WATERLINE ENVIRONMENTAL IMPACT ANAYLIS

PROJECT NO. 50064932

45

SHEET NO. 45 OF 45

Q:\50064932\CAD\Civil\2-Deliverables\Environmental Impacts\Reclaimed Water Line\EI-PP-42-45.dwg, 1/25/2015 12:30:30 PM

APPENDIX H

AGENCY CORRESPONDENCE

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John R. Griffin, Secretary
Joseph P. Gill, Deputy Secretary

July 29, 2014

Ms. Lisa Ricker
ECT, Inc.
6440 Southpoint Pkwy., Suite 130
Jacksonville, FL 32216

RE: Environmental Review for Revised Proposed Linear Facilities for the Mattawoman Energy Power Plant Project, Mattawoman Energy, LLC – Charles and Prince George's Counties, Maryland.

Dear Ms. Ricker:

For the **Proposed Reclaimed Water Pipeline** as shown on your map, the Wildlife and Heritage Service has determined that there are no State or Federal records for rare, threatened or endangered species on or within close proximity to the project route. As a result, we have no specific comments or requirements pertaining to protection measures at this time. This statement should not be interpreted however as meaning that rare, threatened or endangered species are not in fact present. If appropriate habitat is available, certain species could be present without documentation because adequate surveys have not been conducted.

For the **Proposed Gas Pipeline Route** as shown on your map, the Wildlife and Heritage Service's database indicates that there is a record for state-listed threatened Racemed Milkwort (*Polygala polygama*) and state-listed threatened Buxbaum's Sedge (*Carex buxbaumii*) located within the northern segment of this project route, in an existing railroad right-of-way. These occurrences could be directly impacted by the proposed work.

Our database also indicates that there are records for the following rare, threatened or endangered species known to occur within close proximity to this part of the project route, near Brandywine Receiving Station. These species could potentially occur on the project site itself, in areas of suitable habitat:

Scientific Name	Common Name	State Status
Carex buxbaumii	Buxbaum's Sedge	Threatened
Linum intercursum	Sandplain Flax	Threatened
Agalinis skinneriana	Midwestern Gerardia	Endangered
Polygala polygama	Racemed Milkwort	Threatened

In addition, the project route crosses through state land at Cedarville State Forest. In this area there are records for the following rare, threatened or endangered species known to occur within close proximity to this part of the project route, associated with a branch of Wolf Den Branch/Zekiah Swamp Run. This particular branch is designated in state regulations as a Wetland of Special State Concern and is regulated by Maryland Department of the Environment.

Your project may need review by MDE for any necessary permits associated with this wetland. These species are known to occur downstream here and could potentially occur on the project route itself, in areas of suitable habitat:

Scientific Name	Common Name	State Status
Ilex decidua	Deciduous Holly	Rare
Parnassia asarifolia	Kidneyleaf Grass-of-Parnassus	Endangered

Also occurring in close proximity to the gas pipeline route near Jordan Swamp, are multiple records for state rare Primrose Willow (*Ludwigia decurrens*). It is important to note that Jordan Swamp is designated in state regulations as a Wetland of Special State Concern and is regulated by Maryland Department of the Environment. Your project may need review by MDE for any necessary permits associated with this wetland.

For the **Mattawoman Energy Proposed Facility Site**, the WHS has determined that there are the following records for RT&E species documented in close proximity to the project site, which could potentially occur on the project site itself, in areas of appropriate habitat. They are:

Scientific Name	Common Name	State Status
Carex buxbaumii	Buxbaum's Sedge	Threatened
Linum intercursum	Sandplain Flax	Threatened
Agalinis skinneriana	Midwestern Gerardia	Endangered
Polygala polygama	Racemed Milkwort	Threatened

For the **Proposed Transmission Line** (as shown on the 2014 map), our database indicates that there are records for the state-listed threatened American Brook Lamprey (*Lampetra appendix*) occurring in the portion of Piscataway Creek that is crossed by this segment in several areas along the route. In order to reduce the likelihood of adverse impacts to this and to other important aquatic species on Piscataway Creek, we would encourage the applicant to adhere stringently to all appropriate best management practices during any work near these crossings.

For the **overall project site**, our analysis of the information provided also suggests that the forested area on or adjacent to the project site contains Forest Interior Dwelling Bird habitat. Populations of many Forest Interior Dwelling Bird Species (FIDS) are declining in Maryland and throughout the eastern United States. The conservation of FIDS habitat is strongly encouraged by the Department of Natural Resources. The following guidelines will help minimize the project's impacts on FIDS and other native forest plants and wildlife:

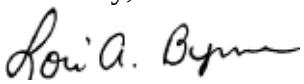
1. Avoid placement of new utility lines construction in the forest interior. If forest loss or disturbance is absolutely unavoidable, restrict development to the perimeter of the forest (i.e., within 300 feet of the existing forest edge), and avoid line placement in areas of high quality FIDS habitat (e.g., old-growth forest). Maximize the amount of remaining contiguous forested habitat.

2. Do not remove or disturb forest habitat during April-August, the breeding season for most FIDS. This seasonal restriction may be expanded to February-August if certain early nesting FIDS (e.g., Barred Owl) are present.
3. Maintain forest habitat as close as possible to the utility line, and maintain canopy closure where possible.
4. Maintain grass height at least 10" during the breeding season (April-August).

We look forward to working with your agency to develop avoidance and minimization measures for these important species, as project details become available. We would be interested in receiving a copy of the rare species survey efforts as mentioned in your correspondence, as this would help to determine our level of concern for the resources involved. Attached is a copy of our rare plant survey protocol, which outlines the information we need to make this determination.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,



Lori A. Byrne
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER # 2014.1015.pg/ch
Cc: K. McCarthy, DNR
F. Kelley, DNR
Attachment

Lisa Walker

From: Frederick Kelley -DNR- <frederick.kelley@maryland.gov>
Sent: Wednesday, November 12, 2014 11:04 AM
To: Lisa Ricker; John Boswell
Cc: Katharine McCarthy -DNR-; Kristine Sillett; Strebel, Don; Steve Harriott; Shane E Johnston -DNR-
Subject: WHS Comments on Mattawoman's RTE Surveys

The Wildlife and Heritage Service has accepted the findings of the rare species survey report, which indicated no rare species were observed in the Mattawoman project areas surveyed. The report also states that surveys for the spring blooming sedge, *Carex buxbaumii* (State Threatened), will be conducted in April 2015. WHS supports this additional survey work; however, it is recommended that this survey be done the first week of June instead. All of the records for this species in Maryland were documented in early June, with the exception of one record from the first week of May. This may have been miscommunicated to Mattawoman in previous discussions regarding the survey design.

Previous comments made by WHS with respect to the overall project's impacts to forest interior dwelling birds and measures to reduce those impacts are still applicable.

Regarding the proposed transmission line, WHS continued to advocate for stringent adherence to best management practices to reduce sedimentation at stream crossings in order to maintain water quality for the American Brook Lamprey, a State Threatened species.

Thank you,
Fred

--
Frederick S. Kelley
Power Plant Research Program
Department of Natural Resources
Tawes Building B-3
Annapolis, MD 21401
ph 410-260-8672
fax 410-260-8670
frederick.kelley@maryland.gov

Please visit us on the web at -
http://www.dnr.state.md.us/bay/pprp/

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Martin O'Malley, *Governor*
Anthony G. Brown, *Lt. Governor*
Joseph P. Gill, *Secretary*
Frank W. Dawson III, *Deputy Secretary*

December 11, 2014

Ms. Lisa Ricker
Environmental Consulting & Technology, Inc.
6440 Southpoint Parkway, Suite 130
Jacksonville, FL 32216

RE: Environmental Review for Revised Electrical Transmission Line, Mattawoman Energy Project, Prince George's County, Maryland.

Dear Mr. Ricker:

The Wildlife and Heritage Service has determined that there are no State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. As a result, we have no specific comments or requirements pertaining to protection measures at this time. This statement should not be interpreted however as meaning that rare, threatened or endangered species are not in fact present. If appropriate habitat is available, certain species could be present without documentation because adequate surveys have not been conducted.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

Lori A. Byrne

Lori A. Byrne,
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER# 2014.1701.pg
Cc: F. Kelley, DNR

United States Department of the Interior
U.S. Fish & Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401
410/573 4575

Online Certification Letter

Today's date: April 24, 2012

Project: Mattawoman Energy Center

Dear Applicant for online certification:

Thank you for choosing to use the U.S. Fish and Wildlife Service Chesapeake Bay Field Office online list request certification resource. This letter confirms that you have reviewed the conditions in which this online service can be used. On our website (http://www.fws.gov/chesapeakebay/EndSppWeb/ELEMENTS/listreq.html) are the USGS topographic map areas where no federally proposed or listed endangered or threatened species are known to occur in Maryland, Washington, D.C. and Delaware.

You have indicated that your project is located on the following USGS topographic map(s)

Brandywine, Prince Georges County

Based on this information and in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), we certify that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For additional information on threatened or endangered species in Maryland, you should contact the Maryland Wildlife and Heritage Division at (410) 260-8540. For information in Delaware you should contact the Delaware Natural Heritage and Endangered Species Program, at (302) 653-2880. For information in the District of Columbia, you should contact the National Park Service at (202) 535-1739.

The U.S. Fish and Wildlife Service also works with other Federal agencies and states to minimize loss of wetlands, reduce impacts to fish and migratory birds, including bald eagles, and restore habitat for wildlife. Information on these conservation issues and how development projects can avoid affecting these resources can be found on our website (www.fws.gov/chesapeakebay)

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Chesapeake Bay Field Office Threatened and Endangered Species program at (410) 573-4527.

Sincerely,

Genevieve LaRouche
Field Supervisor

United States Department of the Interior
U.S. Fish & Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401
410/573 4575

Online Certification Letter

Today's date: December 3, 2014

Project: Mattawoman Energy Transmission Line

Dear Applicant for online certification:

Thank you for using the U.S. Fish and Wildlife Service (Service) Chesapeake Bay Field Office online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA).This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

Based on this information and in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), we certify that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For additional information on threatened or endangered species in Maryland, you should contact the Maryland Wildlife and Heritage Division at (410) 260-8540. For information in Delaware you should contact the Delaware Natural Heritage and Endangered Species Program, at (302) 653-2880. For information in the District of Columbia, you should contact the National Park Service at (202) 535-1739.

The U.S. Fish and Wildlife Service also works with other Federal agencies and states to minimize loss of wetlands, reduce impacts to fish and migratory birds, including bald eagles, and restore habitat for wildlife. Information on these conservation issues and how development projects can avoid affecting these resources can be found on our website (www.fws.gov/chesapeakebay)

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Chesapeake Bay Field Office Threatened and Endangered Species program at (410) 573-4527.

Sincerely,

Genevieve LaRouche
Field Supervisor

United States Department of the Interior
U.S. Fish & Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401
410/573 4575

Online Certification Letter

Today's date: May 12, 2015

Project: Mattawoman Energy Substation Site, Prince Georges County, MD

Dear Applicant for online certification:

Thank you for using the U.S. Fish and Wildlife Service (Service) Chesapeake Bay Field Office online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA).This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

Based on this information and in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), we certify that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For additional information on threatened or endangered species in Maryland, you should contact the Maryland Wildlife and Heritage Division at (410) 260-8573. For information in Delaware you should contact the Delaware Division of Fish and Wildlife, Wildlife Species Conservation and Research Program at (302) 735-8658. For information in the District of Columbia, you should contact the National Park Service at (202) 339-8309.

The U.S. Fish and Wildlife Service also works with other Federal agencies and states to minimize loss of wetlands, reduce impacts to fish and migratory birds, including bald eagles, and restore habitat for wildlife. Information on these conservation issues and how development projects can avoid affecting these resources can be found on our website (www.fws.gov/chesapeakebay)

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Chesapeake Bay Field Office Threatened and Endangered Species program at (410) 573-4527.

Sincerely,

Genevieve LaRouche
Field Supervisor

U.S. Fish & Wildlife Service

My project

IPaC Trust Resource Report

Generated May 12, 2015 02:43 PM MDT

US Fish & Wildlife Service

IPaC Trust Resource Report

Project Description

NAME

My project

PROJECT CODE

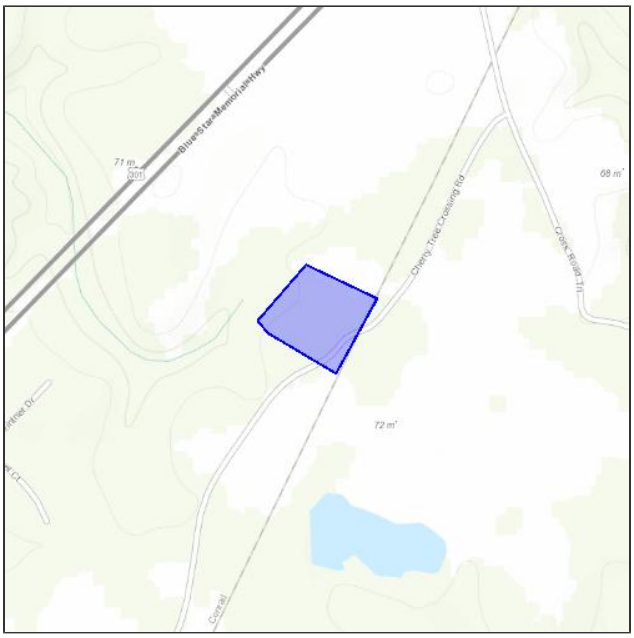
LRYRW-DP2IV-EJTBG-FSZOJ-IWTKVI

LOCATION

Prince George's County, Maryland

DESCRIPTION

No description provided



U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
(410) 573-4599

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the Endangered Species Program and should be considered as part of an effect analysis for this project.

There are no endangered species identified for this project area

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

American Oystercatcher Haematopus palliatus — **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0G8

American Bittern Botaurus lentiginosus — **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F3

Bald Eagle Haliaeetus leucocephalus — **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008

Black-billed Cuckoo Coccyzus erythropthalmus — **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HI

Blue-winged Warbler Vermivora pinus — **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JY

Fox Sparrow Passerella iliaca — **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0NE

Gull-billed Tern Gelochelidon nilotica — **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JV

Kentucky Warbler Oporornis formosus — **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0IN

Least Bittern Ixobrychus exilis — **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JW

Marbled Godwit Limosa fedoa — **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JL

Nelson's Sparrow Ammodramus nelsoni **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JB

Peregrine Falcon Falco peregrinus **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU

Pied-billed Grebe Podilymbus podiceps **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JQ

Prairie Warbler Dendroica discolor **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0K4

Prothonotary Warbler Protonotaria citrea **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0IJ

Purple Sandpiper Calidris maritima **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0L1

Red Knot Calidris canutus rufa **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DM

Red-headed Woodpecker Melanerpes erythrocephalus **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HR

Rusty Blackbird Euphagus carolinus **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JI

Saltmarsh Sparrow Ammodramus caudacutus **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0MY

Seaside Sparrow Ammodramus maritimus **Bird of conservation concern**
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0N0

Short-billed Dowitcher Limnodromus griseus **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JK

Short-eared Owl Asio flammeus **Bird of conservation concern**
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD

Snowy Egret Egretta thula **Bird of conservation concern**
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0LC

Wood Thrush Hylocichla mustelina **Bird of conservation concern**

Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0IB

Worm Eating Warbler Helmitheros vermivorum **Bird of conservation concern**

Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0II

Refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

Impacts to NWI wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

Maryland Department of Planning
Maryland Historical Trust

Sustainable Attainable

February 6, 2015

Ms. Kathy Anderson
Chief, Maryland Section Southern
Regulatory Branch, Baltimore District
U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore, MD 21203-1715

Re: MHT Review of Phase I Archeological Survey for Proposed Linear Facilities
Mattawoman Energy Project – Prince George's and Charles Counties, Maryland

Dear Ms. Anderson:

The Maryland Historical Trust (MHT) has been provided with a copy of the draft report detailing the results of the Phase I archeological survey that has been conducted for the above-referenced project. The proposed energy facility and its linear facilities (a reclaimed water pipeline, a natural gas pipeline, and a transmission line) will require permits from the Corps and the Maryland Department of the Environment (MDE) and will also require a Certificate of Public Convenience and Necessity from the Maryland Public Service Commission, making the project subject to state and federal historic preservation law. We are therefore reviewing the draft document in accordance with Section 106 of the National Historic Preservation Act and §§ 5A-325 and 5A-326 of the State Finance and Procurement Article and are writing to provide the following comments and recommendations regarding potential effects on historic properties.

As noted in our August 22, 2014 letter, MHT has concurred that no cultural resources investigations are warranted for the proposed power generating facility or for the 10-mile long reclaimed water line. Following our review of a November 12, 2014 submittal from Environmental Consulting & Technology, Inc., we have also concurred that no investigations are warranted for the proposed 2.3-mile long transmission line. We did, however, recommend that Phase I archeological survey work *would* be needed for the 0.9-mile long section of the proposed gas line alignment that leaves the PEPCO corridor just north of the Jordan Swamp.

In response to our recommendation, a draft Phase I report was prepared by SEARCH and was submitted to our office for review by Environmental Consulting & Technology, Inc. on behalf of Mattawoman Energy, LLC. The draft document, *Phase I Intensive Archaeological Survey of a 0.9-Mile (1.45 Kilometer) Segment of a Proposed Natural Gas Pipeline, Charles County, Maryland (*Arbuthnot 2015*)* is consistent with the reporting requirements of the *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994) and presents the necessary documentation on the goals, methods, results, and recommendations of the Phase I investigation that has been conducted within the project area. Please note, however, that the following items should be addressed in the preparation of the final document:

- The final report should be double-sided, as this practice will conserve space in the MHT Library.
- The Title Page needs to include the date of the current version of the report (January 2015)
- The final report should include the qualifications of the principal investigator as an appendix.

The Phase I survey was carried out during September and October of 2014 and consisted of both surface survey and the excavation of 81 shovel test pits. Although the potential for archeological deposits had been anticipated given the project area's location just north of the Jordan Swamp and the proximity of several prehistoric and early Contact sites, the survey failed to identify any archeological resources within the natural gas pipeline's impact area. Based on the documentation presented in the draft Phase I report, we concur that the Mattawoman Energy project area possesses no archeological research potential and that further archeological investigations are not warranted for Section 106 purposes.

The archeological survey work that has been conducted for the Mattawoman Energy project has generated important information regarding the presence of historic properties within the project area. We appreciate the conscientious efforts that have been made to recover this information, and we look forward to receiving the final Phase I report, when it becomes available. If you have any questions or require further information, please do not hesitate to contact me at 410-514-7638 or dixie.henry@maryland.gov. Thank you for providing us with this opportunity to comment.

Sincerely,

Dixie Henry

Dixie L. Henry, Ph.D.
Preservation Officer
Maryland Historical Trust

DLH/201406125
CC: Vera Koskelo (COE)
Jeff Thompson (MDE)
John Sherwell (DNR)
Cathy Thompson (Charles County)
Lisa Ricker (Environmental Consulting & Technology)
Michael Arbuthnot (SEARCH)