Federal Energy Regulatory Commission

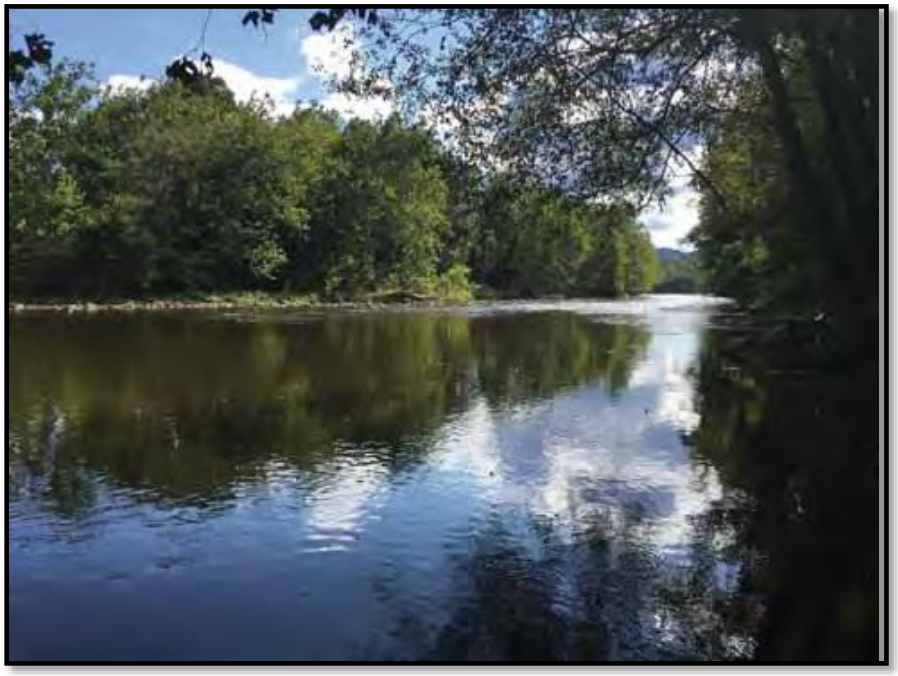
Office of Energy Projects

August 2018

Columbia Gas Transmission, LLC **Docket No. CP18-13-000**

Line 8000 Replacement Project

Environmental Assessment



Washington, DC 20426

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas 2
Columbia Gas Transmission, LLC
Line 8000 Replacement Project
Docket No. CP18-13-000

TO THE PARTY ADDRESSED:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared an environmental assessment (EA) for the Line 8000 Replacement Project (Project) proposed by Columbia Gas Transmission, LLC (Columbia) in the above-referenced docket. Columbia requests authorization to modernize and upgrade Columbia's Line 8000 pipeline system by replacing and abandoning existing pipeline and constructing new pipeline and appurtenant facilities in Mineral County, West Virginia and Allegany County, Maryland.

The EA assesses the potential environmental effects of the construction and operation of the Line 8000 Replacement Project in accordance with the requirements of the National Environmental Policy Act (NEPA). The FERC staff concludes that approval of the proposed Project, with appropriate mitigating measures, would not constitute a major federal action significantly affecting the quality of the human environment.

The Line 8000 Replacement Project would consist of:

- replacement of a total of approximately 13.25 miles of existing 12-inch-diameter bare steel pipeline, with approximately 13.54 miles of new, coated 12-inch-diameter natural gas transmission pipeline in five sections and four modification points along Line 8000 and Lateral Line 8006;
- replacement of a total of approximately 0.54 miles of existing 4-inch-diameter bare steel pipeline, with approximately 0.67 miles of new coated 4-inch-diameter natural gas transmission pipeline along two laterals (Lateral Lines 8225 and 8244);

- installation of two new pig[1] launcher and receiver sites and four new mainline valves associated with pipeline facilities;
- modifications/abandonment of three existing mainline valves and three existing side tap valve sites and modification of tie-ins at two regulator stations; and
- abandonment of 13 active residential taps and 109 inactive taps.

The FERC staff mailed copies of the EA to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners and other interested individuals and groups; and newspapers and libraries in the Project area. In addition, the EA is available for public viewing on the FERC's website (www.ferc.gov) using the eLibrary link. A limited number of copies of the EA are available for distribution and public inspection at:

Federal Energy Regulatory Commission
Public Reference Room
888 First Street NE, Room 2A
Washington, DC 20426
(202) 502-8371

Any person wishing to comment on the EA may do so. Your comments should focus on the EA's disclosure and discussion of potential environmental effects, reasonable alternatives, and measures to avoid or lessen environmental impacts. The more specific your comments, the more useful they will be. To ensure that the Commission has the opportunity to consider your comments prior to making its decision on this Project, it is important that we receive your comments in Washington, DC on or before 5:00pm Eastern Time on **September 28, 2018.**

For your convenience, there are three methods you can use to file your comments with the Commission. In all instances please reference the Project docket number (CP18-13-000) with your submission. The Commission encourages electronic filing of comments and has staff available to assist you at (866) 208-3676 or FercOnlineSupport@ferc.gov.

(1) You can file your comments electronically using the eComment feature located on the Commission's website (www.ferc.gov) under the link to

[1] A "pig" is a tool that the pipeline company inserts into and pushes through the pipeline for cleaning the pipeline, conducting internal inspections, or other purposes.

Documents and Filings. This is an easy method for submitting brief, text-only comments on a project;

(2) You can also file your comments electronically using the eFiling feature on the Commission's website (www.ferc.gov) under the link to Documents and Filings. With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on "eRegister." You must select the type of filing you are making. If you are filing a comment on a particular project, please select "Comment on a Filing"; or

(3) You can file a paper copy of your comments by mailing them to the following address:

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission's Rules of Practice and Procedures (18 CFR 385.214). Only intervenors have the right to seek rehearing or judicial review of the Commission's decision. The Commission may grant affected landowners and others with environmental concerns intervenor status upon showing good cause by stating that they have a clear and direct interest in this proceeding which no other party can adequately represent. **Simply filing environmental comments will not give you intervenor status, but you do not need intervenor status to have your comments considered.**

Additional information about the Project is available from the Commission's Office of External Affairs, at **(866) 208-FERC,** or on the FERC website (www.ferc.gov) using the eLibrary link. Click on the eLibrary link, click on "General Search," and enter the docket number in the "Docket Number" field, excluding the last three digits (i.e., CP18-13). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FercOnlineSupport@ferc.gov or toll free at (866) 208-3676, or for TTY, contact (202) 502-8659. The eLibrary link also provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription which allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to www.ferc.gov/docs-filing/esubscription.asp.

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TECHNICAL ABBREVIATIONS AND ACRONYMS

AQCR	air quality control regions
ATWS	additional temporary workspace
BGEPA	Bald and Golden Eagle Protection Act
CAA	Clean Air Act
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
Columbia	Columbia Gas Transmission, LLC
Corps	U.S. Army Corps of Engineers
Commission	Federal Energy Regulatory Commission
dB	decibels
dBA	decibels on the A-weighted scale
DOT	U.S. Department of Transportation
E&SCP	Erosion and Sedimentation Control Plan
EA	Environmental Assessment
ECS	Environmental Construction Standards
EDR	Environmental Data Resources, Inc.
EI	environmental inspector
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FERC Plan	FERC *Upland Erosion Control, Revegetation, and Maintenance Plan*
FERC Procedures	FERC *Wetland and Waterbody Construction and Mitigation Procedures*
FWS	U.S. Fish and Wildlife Service
GHG	greenhouse gas
GWP	Global Warming Potential
HDD	horizontal directional drill
HUC	Hydrologic Unit Code
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
MBTA	Migratory Bird Treaty Act
MDE	Maryland Department of the Environment
MDNR	Maryland Department of Natural Resources
MGIO	Maryland Geographic Information Office
MGS	Maryland Geologic Survey
MLV	mainline valve
MOU	memorandum of understanding
MSHCP	Multi-Species Habitat Conservation Plan

N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGA	Natural Gas Act
NOI	*Notice of Intent to Prepare an Environmental Assessment for the Line 8000 Replacement Project and Request for Comments on Environmental Issues*
NO_x	nitrogen oxides
NRCS	U.S. Department of Agriculture, Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSA	noise-sensitive area
NWI	National Wetlands Inventory
OEP	FERC's Office of Energy Projects
PCBs	polychlorinated biphenyls
PEM	palustrine emergent
PFO	palustrine forested
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in diameter
POW	palustrine open water
Project	Line 8000 Replacement Project
PSD	Prevention of Significant Deterioration
PSS	palustrine scrub-shrub
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
SPCC Plan	Spill Prevention, Control, and Countermeasure Plan
TMDL	total maximum daily load
tpy	tons per year
TWS	temporary workspaces
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
VOC	volatile organic compound
WMA	Wildlife Management Area
WVDHHR	West Virginia Department of Health and Human Resources
WVECS	West Virginia Environmental Construction Standards
WVGES	West Virginia Geologic & Economic Survey

A. PROPOSED ACTION

1. Introduction

The Federal Energy Regulatory Commission (Commission or FERC) is the lead federal agency responsible for evaluating applications filed for authorization to construct and operate interstate natural gas pipeline facilities under section 7(c) of the Natural Gas Act (NGA) and to abandon pipeline facilities under section 7(b) of the NGA. We[2] have prepared this environmental assessment (EA) to assess the potential environmental impacts of the natural gas facilities and abandonment activities proposed by Columbia Gas Transmission, LLC (Columbia), referred to as the Line 8000 Replacement (Project), in compliance with the requirements of the National Environmental Policy Act (NEPA) (Title 40 of the Code of Federal Regulations, Parts 1500-1508 [40 CFR 1500-1508]) and the Commission's implementing regulations under 18 CFR 380.

The assessment of environmental impacts is an important and integral part of the FERC's decision on whether to issue Columbia a Certificate of Public Convenience and Necessity (Certificate) to construct and operate the proposed Project. The EA includes our assessment and conclusions regarding the proposed action as well as our additional recommendations that we believe would appropriately and reasonably avoid, minimize, or mitigate environmental impacts associated with the Project. Our principal purposes in preparing this EA are to:

- identify and assess the potential impacts on the natural and human environment that would result from the implementation of the Project;
- identify and recommend reasonable alternatives and specific mitigation measures to avoid or minimize environmental impacts; and
- encourage and facilitate public involvement in the environmental review process.

This EA will be used by the Commission in its decision-making process to determine whether to authorize Columbia's proposal. Approval would be granted if, after consideration of both environmental and non-environmental issues, the Commission finds the Project is in the public convenience and necessity.

2. Purpose and Need

Columbia has developed a multi-year, comprehensive modernization program to address its aging infrastructure. According to Columbia, this modernization program is designed to enhance pipeline safety and increase customer service reliability. The modernization program aligns with the U.S. Department of Transportation's (DOT) initiative for pipeline safety that urges pipeline operators to reinvest in their infrastructure to ensure continued pipeline safety and reliability.

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[2] "We," us," and "our" refer to the environmental staff of the FERC's Office of Energy Projects.

Columbia's modernization program identifies projects through a risk-based prioritization process. Modernization projects are identified and prioritized by identifying aging infrastructure that: (a) operates at a relatively higher level of risk; (b) would require upgrades to meet emerging regulations; and/or (c) has lower than desired reliability to meet current or future service requirements due to current design and/or condition. As a result of this identification and prioritization process, Columbia's Line 8000 Replacement Project would replace older high-pressure pipeline with high-pressure modern pipeline, as well as install additional new pipeline and appurtenant facilities in Mineral County, West Virginia and Allegany County, Maryland. To maintain integrity, Columbia would make each pipeline capable of using "smart pigs"[3] and "cleaning pigs."

Columbia's modernization program identified the need to replace existing 12-inch-diameter pipeline with modern pipeline along its Line 8000 (including two associated 4-inch-diameter lateral pipelines, Line 8225 and Line 8244, and one 12-inch-diameter lateral pipeline, Line 8006). These existing pipelines serve various delivery points in Maryland. Along with the replacement of these pipelines, Columbia would also install, modify, or abandon certain associated minor aboveground facilities and abandon 13 active residential taps and 109 inactive taps.

Pursuant to 49 CFR 192.917, new pipelines must be constructed to accommodate the passage of instrumental internal inspection devices including smart pigs for pipeline cleaning and maintenance activities. Smart pigs are used for periodic internal inspection of pipelines as required by DOT pipeline safety regulations. In addition to using smart pigs to inspect pipeline conditions, cleaning pigs are also used to periodically clean the pipeline interior. Meeting this requirement involves installing a vessel at the end of each pipeline segment for launching or receiving these devices. Columbia proposes to modernize Line 8000 by making each new and replaced Project pipeline pig-capable. These modifications would allow Columbia to more effectively monitor the integrity of each new and replaced Project pipeline and identify areas of concern that may require maintenance. The Project would not result in any change to Columbia's certificated capacity.

Under section 7(c) of the NGA, the Commission determines whether proposed interstate natural gas transportation facilities would be in the interest of public convenience and necessity and, if so, grants a Certificate to construct and operate them. The Commission bases its decision on technical competence, financing, rates, market demand, gas supply, environmental impacts, long-term feasibility, and other issues concerning a proposed project. Section 7(b) of the NGA specifies that no natural gas company shall abandon any portion of its facilities subject to the Commission's jurisdiction without the Commission first finding that the abandonment will not negatively affect the present or future public convenience and necessity.

[3] A "pig" is a tool that the pipeline company inserts into and pushes through the pipeline for cleaning the pipeline, conducting internal inspections, or other purposes. Many older pipelines are not piggable.

3. Public Review and Comment

Prior to filing an application with the Commission, Columbia hosted an open house on October 11, 2017 in Westernport, Maryland for landowners and other stakeholders to learn about the Project. The open house provided a forum for landowners and stakeholders in the Project to learn about the Project and provide feedback, express concerns and share comments. While Columbia did not receive written comments during the open house, verbal comments addressed the Project's impacts on existing residential taps, how the Project would impact private properties, abandonment methods, waterbody and wetland crossings, cultural resources, restoration, and collocating the new pipeline with the existing pipeline right-of-way.

On December 19, 2017, the FERC issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Line 8000 Replacement Project and Request for Comments on Environmental Issues* (NOI). The NOI was mailed to various parties, including affected landowners; federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; other interested parties; and local libraries and newspapers. In response to the NOI, the Commission received comments from Columbia Gas of Maryland, Inc., the West Virginia State Historic Preservation Officer (SHPO), the Maryland Department of Environment, and one landowner. The comments addressed the conversion to an alternate energy source for customers who would be affected by the abandonment of residential farm taps, cultural resources, air quality, stormwater and erosion, water resources, and land use.

We also received comments from the Direct Energy Business Marketing, LLC raising concerns with the Project's costs, as the Project is contemplated under the Modernization I and II Settlements. However, this is outside of the scope of the EA and is not discussed further in this EA. The comments that are within the scope of the EA are addressed below and in the applicable sections of the EA.

Columbia Gas of Maryland, Inc. requests that if the Project is granted a Certificate, that the Commission condition the Certificate on Columbia paying the costs to cover certain residential farm taps to an alternate form of energy and that Columbia continue to provide service to the taps until Columbia Gas of Maryland obtains approvals from the Maryland Public Service Commission. Columbia's coordination with affected landowners regarding the abandonment of residential farm taps is further discussed in section A.4.1.

The West Virginia SHPO commented regarding the Project's potential to affect historic properties in West Virginia. The Project's potential impacts on cultural resources are discussed in section B.6.0.

The Maryland Department of Environment commented regarding the potential for the Line 8000 Project to provide additional natural gas supply to a nearby paper mill. As the Project is an in-kind abandonment and replacement of the existing pipeline, there would be no change in the capacity of the new pipeline from the line that is to be abandoned. As such, there is no change to what can be sold on a long-term firm basis that would be able to support additional natural gas to the paper mill.

Mr. Ron Paugh expressed concerns about the pipeline route through his property and his comments are addressed in sections B.5.1.

4. Proposed Facilities

The Project would entail modernization of Columbia's existing Line 8000 and associated laterals through replacement of older high-pressure pipeline with high-pressure modern coated pipeline, installation of pig launchers and receivers, and installation of several mainline valve (MLV) assemblies and fittings to facilitate pipeline maintenance. Additionally, Columbia would abandon 13 active residential taps and 109 inactive taps as part of the Project. The proposed facilities are discussed further below in sections A.4.1 and A.4.2.

The Project includes construction of the pipeline facilities listed in table 1 and minor aboveground facilities listed in table 2, which are also identified on the topographic maps provided in appendix A.[4] Figure 1 illustrates the general location of the Project facilities. All Project facilities are within Allegany County, Maryland and Mineral County, West Virginia.

Table 1: Summary of Pipeline Facilities

Facility	Municipality	Begin MP[2,3]	End MP[2,3]	Approximate Length New Pipeline (mi)	Approximate Length Abandoned Pipeline (mi)
Mineral County, West Virginia					
Line 8000 – Section 1	City of Keyser	0.00	0.20	0.20	0.20
Allegany County, Maryland					
Line 8000 – Section 1	N/A[1]	0.20	0.30	0.10	0.10
	McCoole CDP	0.30	0.61	0.31	0.31
Line 8000 – Section 2	N/A[1]	0.88	5.72	4.84	4.79
	Danville CDP	5.73	7.04	1.31	1.26
	N/A[1]	7.05	7.31	0.26	0.25
Line 8000 – Section 3	N/A[1]	7.65	8.18	0.53	0.53
	Rawlings CDP	8.19	8.60	0.41	0.41
	N/A[1]	8.61	8.71	0.10	0.10
	Rawlings CDP	8.72	9.24	0.52	0.52
	Bier CDP	9.25	9.34	0.09	0.09
	N/A[1]	9.35	9.57	0.22	0.22
	Bier CDP	9.58	10.35	0.77	0.77
	N/A[1]	10.36	11.41	1.05	1.05
	Cresaptown CDP	11.42	11.66	0.24	0.24
	Cresaptown CDP	12.77	13.34	0.57	0.55

[4] Detailed alignment sheets identifying areas of project disturbance, access roads, and staging areas can be viewed on the FERC Internet website as part of Columbia's Environmental Report and supplement filed on November 3, 2017 and January 9, 2018 at https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14616691 and https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14633562, respectively.

Table 1: Summary of Pipeline Facilities

Facility	Municipality	Begin MP[2,3]	End MP[2,3]	Approximate Length New Pipeline (mi)	Approximate Length Abandoned Pipeline (mi)
Line 8000 – Section 4	N/A[1]	13.35	13.59	0.24	0.23
Line 8000 – Section 5	N/A[1]	13.84	15.51	1.67	1.53
Line 8000 Modification Point 1	N/A[1]	15.56	15.57	0.01	0.00
Line 8000 Modification Point 2	N/A[1]	16.24	16.27	0.02	0.03
Line 8000 Modification Point 3	LaVale CDP	16.34	16.38	0.03	0.02
Line 8000 Modification Point 4	LaVale CDP	17.42	17.46	0.03	0.03
Lateral Line 8225	McCoole CDP	0.00	0.24	0.24	0.11
Lateral Line 8244	N/A[1]	0.00	0.17	0.17	0.17
	Dawson CDP	0.17	0.43	0.26	0.26
Lateral Line 8006	N/A[1]	0.00	0.02	0.02	0.02
Total:				**14.32**	**13.80**

Notes:

1.Maryland has locations with no incorporated towns and villages.

2.The mileposts of the Line 8000 pipeline segments represent milepost of the entire proposed Line 8000 which includes portions of the existing line that would not be abandoned. Gaps in the MP indicate areas of the existing Line 8000 that would not be replaced.

3.Lateral lines 8225, 8244, and 8006 have milepost specific to that pipeline, and is not relative to Line 8000.

CDP – census designated places; mi – miles; MP – milepost; N/A – not applicable

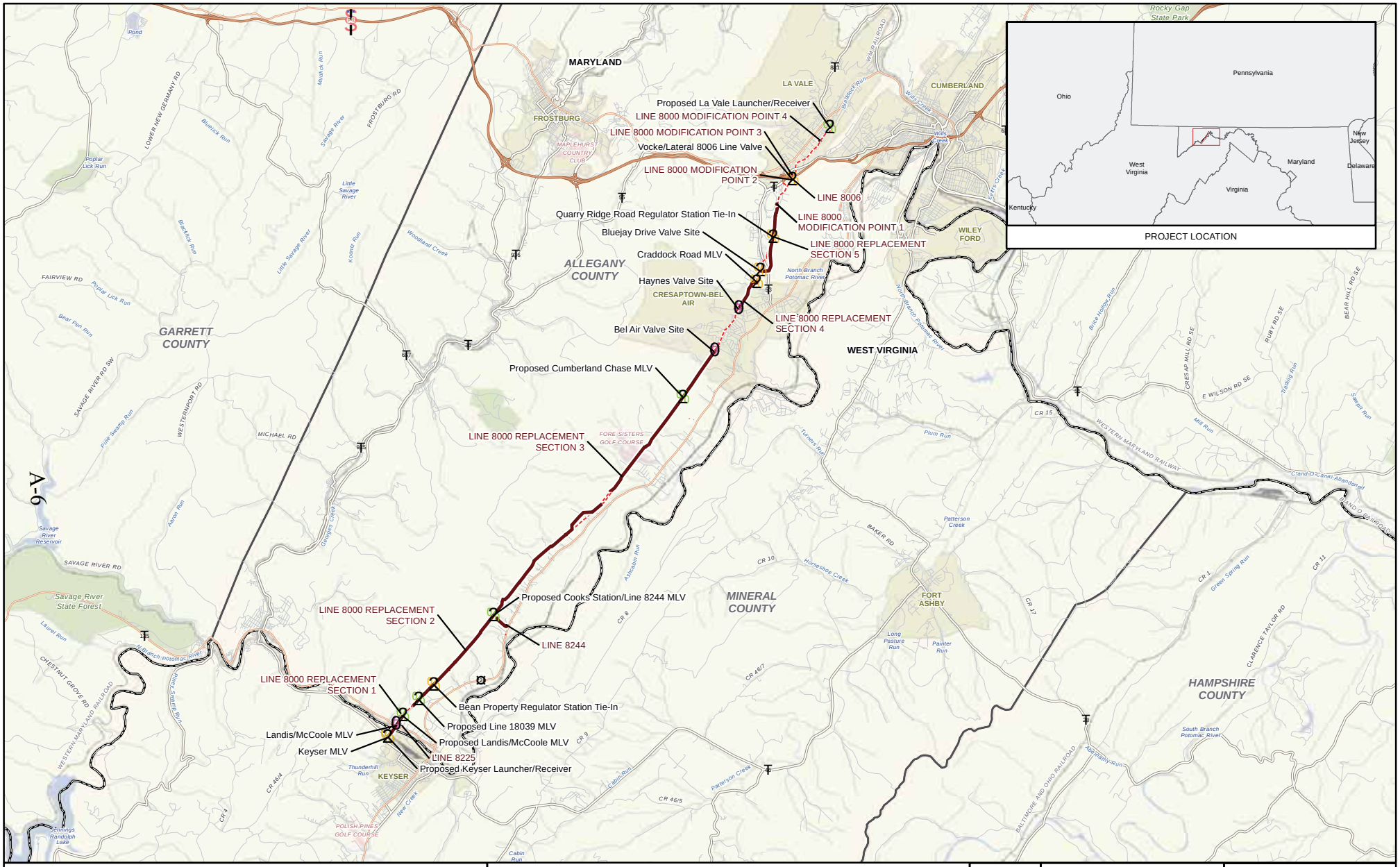
Table 2: Summary of Minor Aboveground Facilities

Facility Name	Facility Type	Modification/New	Milepost[1]
Mineral County, West Virginia			
Keyser MLV and Launcher/Receiver	MLV & Launcher Receiver	Modification to Existing/New	0.00
Allegany County, Maryland			
Landis/McCoole MLV	MLV	Abandon (Removal)	0.35
Landis/McCoole MLV	MLV	New	0.58
Line 18039 MLV	MLV	New	1.10
Bean Property Regulator Station Tie-in	Regulator Station	Modify Existing	1.59
Cooks Station/Line 8244 MLV	MLV	New	3.65
Cumberland Chase MLV	MLV	New	10.36
Bel Air Valve Site	Valve	Abandon (Removal)	11.64
Haynes Valve Site	Valve	Abandon (Removal)	12.77
Craddock Road MLV	MLV	Modify Existing	13.53
Bluejay Drive Valve Site	Valve	Modify Existing	13.83
Quarry Ridge Road Regulator Station Tie-in	Regulator Station	Modify Existing	14.82
Vocke Valve Site/Lateral 8006 Line Valve	MLV	Modify Existing	16.26
La Vale Station Launcher/Receiver	Launcher/Receiver	New	17.82
Line 8225 Tie-In Valve	Tie-in location	Existing	0.24[2]
Line 8244 Tie-In Valve	Tie-in location	Existing	0.43[2]

[1] Milepost for abandoned facilities is relative to the closest milepost of the proposed Line 8000.

[2] Line 8225 and Line 8244 have line specific mileposts. Mileposts are not relative to Line 8000.

MLV – mainline valve



PROPOSED ABOVEGROUND FACILITY
EXISTING ABOVEGROUND FACILITY TO BE MODIFIED
EXISTING ABOVEGROUND FACILITY TO BE ABANDONED
PROPOSED LINE 8000 PIPELINE CENTERLINE
EXISTING PIPELINE CENTERLINE
MAJOR HIGHWAY
HIGHWAY
MAJOR ROAD
LOCAL ROAD
CITY AREA
LANDMARK
PARK BOUNDARY
WATERBODY
COUNTY BOUNDARY
STATE BOUNDARY

LINE 8000 REPLACEMENT PROJECT

PROJECT OVERVIEW

MINERAL COUNTY, WEST VIRGINIA & ALLEGANY COUNTY, MARYLAND

MILES 3 0 3 6

ABSOLUTE SCALE: 1:190,080

REFERENCE SCALE: 1 IN = 3 MI

PREPARED FOR Columbia Gas Transmission

PREPARED BY MOTT MACDONALD

PRELIMINARY FOR REVIEW 12/14/2017
CPG PROPRIETARY

DRAWN BY:	EAP 09/27/2017
CHECKED BY:	ASH 12/14/2017
APPROVED BY:	
REV. DATE:	12/2017
REVISION:	P2
DESC:	ISSUED FOR FERC - SUPPLEMENTAL FILING
PAGE:	1 OF 1

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Figure 1: Location Map for the Project

4.1 Pipeline Facilities

Columbia's proposed new pipeline facilities include: approximately 13.52 miles of 12-inch-diameter replacement pipeline along its Line 8000 pipeline in five sections and four modification points from the existing Keyser Station launcher and receiver in Mineral County, West Virginia to the new LaVale Station launcher and receiver in Allegany County, Maryland; approximately 0.24 mile of 4-inch-diameter replacement pipeline on its Lateral Line 8225 pipeline from the existing Lateral Line 8225 valve site to a new interconnect the new Line 8000, entirely within Allegany County; approximately 0.43 mile of 4-inch-diameter replacement pipeline along its Lateral Line 8244 pipeline the existing Lateral Line 8244 valve site to a new interconnect with the new Line 8000, entirely within Allegany County; and approximately 0.02 miles of 12-inch-diameter replacement pipeline along its Lateral Line 8006 pipeline associated with a modification point on Line 8000 and will tie into the new Line 8000 pipeline in Allegany County. In addition, Columbia would install an impressed current cathodic protection system along the pipeline right-of-way.

The Project pipeline routes are mostly co-located with existing pipeline corridors or other utility line corridors, and are summarized in table B-1 in appendix B.

Columbia also proposes to abandon in place or by removal approximately 13.23 miles of 12-inch-diameter pipeline along Line 8000 in five sections and four modification points from the existing Keyser Station launcher and receiver in Mineral County, West Virginia to the new LaVale Station launcher and receiver in Allegany County, Maryland. In addition, Columbia is proposing to abandon in place 0.11 miles of Lateral Line 8225 and by removal 0.44 miles of Lateral Line 8244 and 0.02 miles of Lateral Line 8006, all are 4-inch-diameter bare steel pipes which extend from the existing Line 8000 in Allegany County. Abandonment methods for these pipeline facilities are specified in table B-2 in appendix B.

Additionally, Columbia would discontinue service on numerous mainline taps attached to Line 8000. Columbia is currently engaged in discussions with affected landowners associated with the abandonment of active residential taps. Columbia reviewed existing active residential taps to determine if a connection to a new distribution line is economically feasible. If it were determined to not be economically feasible, Columbia would provide affected landowners with the reasonable costs associated with converting to propane. According to Columbia's latest filing, of the 13 active residential taps to be abandoned, customers receiving service from seven of these taps would be transferred to a new distribution line, and customers receiving service from the remaining six taps would need to be converted.

4.2 Aboveground Facilities

Columbia proposes to install and modify certain minor aboveground facilities associated with the new and abandoned pipeline facilities, including installing four new mainline valves and a new pig launcher/receiver, as well as modifying existing mainline valves, regulator stations, and side tap valves sites. The Project would include the abandonment by removal of four minor aboveground facilities associated with the pipelines to be abandoned. These facilities are included in table 2.

4.3 Access Roads and Staging/Contractor Yards

Where possible, construction access to the Project and its ancillary facilities would be via existing Columbia rights-of-way and the existing public road network in the Project area. In Project areas where public access is unavailable, Columbia would use 61 access roads (36 permanent and 25 temporary access roads) for construction and operation of the Project, as shown in table B-3 in appendix B. These roads would affect about 34.2 acres of land during construction. Most proposed Project access roads are existing graveled or two-track roads and require only minor improvements. Some access roads may require widening, tree clearing or trimming, or improvements to accommodate use. For construction, the widened areas would be covered with geotextile fabric and gravel. After construction is complete, the gravel and geotextile fabric would be removed and the access roads returned to pre-existing conditions to the extent practicable or left in place at the request of the landowner. Access roads are further discussed in section B.5.1.

Columbia identified three contractor staging areas for potential use during construction of the Project. These sites would be used to store pipe, equipment, and employee vehicles, as well as provide areas for temporary contractor office space. These sites are existing developed and open land and only minor improvements such as grading are anticipated. Proposed staging areas are further discussed in section B.5.1 and are tabulated in table 3.

Table 2: Land Requirements for Contractor Staging Areas

Contractor Staging Area	Nearest Milepost	Total (Acres)
Mineral County, West Virginia - None		
Allegany County, Maryland		
SA-01	0.20	5.81
SA-02	10.27	5.21
SA-03	10.93	4.00
Total:		15.02

5. Land Requirements

The total land required for construction of the Project is about 282 acres. Following construction, approximately 211 of these acres, including construction rights-of-way, temporary workspaces (TWS), additional temporary workspaces (ATWS), staging and contractor yards, and temporary access roads (unless left in place by landowner request) would be returned to pre-construction conditions. Approximately 71 acres would be required for operation of the Project facilities. A general summary of land requirements for construction and operation of the Project is presented in table 4. Additional information about specific land use impacts is provided in section B.5. Although Columbia identified areas where extra workspace would be required, additional or alternative areas could be identified in the future due to changes in site-specific construction requirements. Columbia

would be required to file information on each of those areas for our review and approval prior to use.

Table 3: Land Requirements

Workspace	Land Affected during Construction (acres) [a]	Land Affected during Operation (acres)
Mineral County, West Virginia		
Pipeline Right-of-Way[b]	1.61	0.89
ATWS	2.82	0.00
Access Roads	1.94	0.00
Contractor Staging Areas	0.00	0.00
Minor Aboveground Facilities[c]	N/A	N/A
Cathodic Protection	0.00	0.00
Subtotal West Virginia:	**6.37**	**0.89**
Allegany, Maryland		
Pipeline Right-of-Way[b]	168.19	54.10
ATWS	57.70	0.00
Access Roads	32.26	15.45
Contractor Staging Areas	15.02	0.00
Minor Aboveground Facilities[c]	N/A	N/A
Cathodic Protection	2.44	0.65
Subtotal Maryland:	**276.39**	**70.20**
Total Project		
Pipeline Right-of-Way[b]	169.80	54.99
ATWS	60.52	0.00
Access Roads	34.21	15.45
Contractor Staging Area	15.02	0.00
Minor Aboveground Facilities[c]	N/A	N/A
Cathodic Protection	2.44	0.65
Total:	**281.98**	**71.09**

Notes:

The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.

a. Land affected during construction includes both temporary and permanent work areas.

b. Land required for the installation of the new pipelines as well as abandonment of associated pipelines.

c. Acreage for land affected during construction and operation of minor aboveground facilities has been included in the workspaces for the pipeline right-of-way.

The replacement of Line 8000 would not interrupt service to Columbia's customers, as the existing pipeline would remain in operation until the new pipeline is placed in-service. Approximately 85 percent of the new Line 8000 would be co-located with the existing Line 8000 (to be abandoned). This includes areas where the new Line 8000 would be within the maintained right-of-way for the existing Line 8000 with an offset of 25 feet from the existing line. The typical construction right-of-way for the new Line 8000 would be 100-feet-wide, including 50 feet of the existing right-of-way associated with abandonment, 25 feet of TWS, and 25 feet of new permanent right-of-way. Approximately 15 percent of the new pipeline would be located within a new right-of-way due to construction constraints that prevent

collocation with the pipeline to be abandoned. In these areas, a 75-foot-wide construction right-of-way would be used, which includes 50 feet of new permanent right-of-way and 25 of TWS. The existing Line 8000 would be abandoned in place or removed in accordance with existing landowner agreements. Workspace necessary to abandon Line 8000, whether by removal or in place (cut and cap), would be located entirely within the existing 50-foot-wide maintained right-of-way.

The new Lateral Line 8225 would not be co-located with the existing Lateral Line 8225 pipeline right-of-way due to construction constraints, as such the new pipeline would be constructed entirely within a 50-foot-wide new right-of-way and 25 feet of TWS, for a 75-foot-wide construction right-of-way. The existing Lateral Line 8225 would be abandoned in place and no workspace is required.

The new Lateral Line 8244 would be constructed entirely within the existing right-of-way and would be offset from the existing pipeline by 25 feet. The new Lateral Line 8244 pipeline would require 100-foot construction right-of-way, which would include use of the existing 50-foot-wide permanent right-of-way, an additional 25-foot-wide new permanent right-of-way, and 25 feet of TWS. The existing Lateral Line 8244 would be abandoned in place or removed in accordance with existing landowner agreements.

The new Lateral Line 8006 would be co-located with the existing Lateral Line 8006 right-of-way, and is located within the workspace associated with Modification Point 2 for Line 8000. The existing Lateral Line 8006 would be abandoned by removal in accordance with existing landowner agreements.

The existing rights-of-way would be allowed to revert to pre-construction conditions and would not be subject to routine vegetation maintenance. Columbia would retain ownership, responsibility, and compliance with applicable laws and regulations for the existing rights-of-way.

Columbia would install an impressed current cathodic protection system along the proposed pipeline right-of-way. Based on preliminary design, the system would include two ground beds. Construction of the ground beds would be 50-foot-wide and located perpendicular to the permanent right-of-way. Following construction, Columbia would retain a 30-foot-wide ground bed area as a permanent right-of-way. The preliminary location of ground beds has been determined and are included on Project mapping and in the acreage calculations in table 1. The final selection of the ground bed locations would be based on recommendations and findings from soil resistivity surveys.

At certain locations, ATWS may be required for construction activities (e.g., road bores and wetland and waterbody crossings) where site-specific conditions warrant additional space to construct the pipeline. ATWS are tabulated in table B-4 in appendix B. Within wetland areas, Columbia would ensure that its construction right-of-way width is limited to 75 feet, consistent with the FERC's *Wetland and Waterbody Construction and Mitigation Procedures* (FERC Procedures). See section A.7 for more information on Project construction procedures and appendix C for typical right-of-way configurations.

6. Construction Schedule and Workforce

Columbia anticipates commencing construction in early 2019, subject to the receipt of necessary permits and approvals. Columbia anticipates completing tree-clearing activities for the Project by April 1, 2019 for the protection of federally listed bats (see section B.4.5). Columbia anticipates placing the Project into service by October 31, 2019.

Columbia would construct the Project with one construction spread that would utilize many different types of crews, which include clearing, grading, ditching, stringing, bending welding, coating, lowering, backfilling, testing, horizontal directional drilling, auger boring, and restoration. Columbia estimates requiring a peak temporary workforce of about 150 to 200 workers for construction activities. No new permanent employees would be required for operation or maintenance of the Project.

7. Construction, Operation, and Maintenance Procedures

The proposed facilities would be designed, constructed, tested, operated, and maintained to conform with or exceed federal, state, and local requirements, including the DOT's Minimum Safety Standards in 49 CFR 192, "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards," and 18 CFR 380.15, "Guidelines to be Followed by Natural Gas Pipeline Companies in the Planning, Clearing, and Maintenance of Rights-of-Way and the Construction of Aboveground Facilities."

Columbia has developed a Spill Prevention, Control, and Countermeasure Plan (SPCC Plan) and an Unanticipated Discovery Plan for cultural and paleontological resources. In addition, Columbia has adopted FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (FERC Plan) and the FERC Procedures, and has incorporated relevant portions into its *Environmental Construction Standards* (ECS) and *West Virginia Environmental Construction Standards* (WVECS), which factor in site-specific environmental resources and construction requirements of the Project area. The WVECS was developed specifically to be in compliance with the *West Virginia Erosion and Sediment Control Best Management Practices Manual* (West Virginia Department of Environmental Protection 2006).

7.1 Pipeline Construction Procedures

Columbia would maintain oversight of construction via environmental inspectors (EI). Columbia would assign at least one EI per construction spread. The role of each EI would be to ensure compliance with the mitigation and construction procedures identified in the FERC application/Certificate, as well as those identified in applicable federal, state, and county permits. Columbia would bring in additional inspectors if needed for specific areas or situations. In addition, FERC staff would inspect the Project throughout construction and restoration to independently verify compliance with any Certificate the Commission may issue for the Project. FERC staff would continue to monitor and inspect the Project until restoration and revegetation are deemed successful.

Columbia is requesting site-specific exceptions to sections V.B.2.a and VI.B.1.a of the Procedures related to locating extra workspaces within 50 feet of waterbodies and

wetlands. Locations where these alternative measures are being proposed and Columbia's site-specific justifications are summarized in sections B.3.2 and B.3.3. Based on our review, we conclude that Columbia's requests are justified.

Prior to construction, Columbia would survey each pipeline route and stake the pipeline centerline, mark the presence of other utilities, and delineate approved workspaces as well as adjacent environmentally sensitive areas outside of approved workspaces.

Following issuance of the FERC Certificate, if approved, and receipt of the FERC notice to proceed with construction, crews would commence construction of the Project by performing tree clearing and other vegetation removal activities. Columbia proposes to perform tree clearing activities along the new and replacement pipeline corridors prior to April 1, 2019.

Following clearing and vegetation removal, Columbia would begin excavating the trench for the new and replacement pipelines using backhoes, a rotary wheel-type trenching machine, or rippers. Each trench would be dug to a depth that meets the specifications for the DOT class requirement of the area. Columbia would install the new and replacement pipelines using conventional pipeline construction methods, which are illustrated in figure 2. Construction of each pipeline typically begins with the marking or staking of the construction work area. Once marking is completed, it is followed by these activities: clearing, fencing, grading, trenching, pipe laying, stringing, bending, welding, coating, lowering-in, backfilling, hydrostatic testing, and cleanup and restoration. Areas that typically require special construction techniques include crossings of rights-of-way including roads, railroads, pipelines, or other utilities; waterbodies and wetlands; unusual terrain; unstable soils that affect trenching; residential or urban areas; and areas requiring rock removal.

Abandonment of pipelines include disconnecting all sources of supply, closing the valves on each end, blowing down and evacuating the remaining gas, and pigging and cleaning the pipeline. Columbia proposes to abandon in place or by removal in accordance with existing landowner agreements. If abandoned in place, earth disturbances would be limited to minor excavations where the pipeline will be cut and capped and then filled with inert gas, or grout, as appropriate. Specifically at road and railroad crossings, Columbia would cut, cap, fill with grout, and abandon the pipeline in place. For pipeline what would be abandoned by removal, a narrow trench would be mechanically dug within the existing right-or-way to remove the existing, aged bare steel pipe. The pipeline would be exposed and removed by joints, segments, or long sections. The ditch would then be backfilled, leveled, and restored in accordance with landowner requests or in compliance with the Project's ECS or WVECS. In areas where the existing pipeline is exposed in streams, Columbia would remove the exposed pipe by means of hand excavations, and restore the area in accordance with the Project's ECS/WVECS and agency requirements.

While the Project involves abandonment and removal of existing Line 8000, Columbia indicated that it has never had a source of polychlorinated biphenyls (PCBs) on Line 8000; therefore, no testing has been conducted and PCBs are not expected on any portion of the Project facilities.

Columbia continues to obtain easement agreements with landowners; existing easement agreements allow for the in-place abandonment of Line 8000. Columbia would be required to request a formal variance from FERC for any landowner requests for pipe removal not identified or assessed in this EA.

Columbia proposes to replace Lateral Line 8244 and pipeline associated with Line 8000 Modification Point 1 via the lift and lay method, whereby existing pipeline segments along these lines would be removed and replaced with new coated pipeline. Using the lift and lay method, the old pipeline segments would be blown down to evacuate the remaining gas and removed by sections, joints, and other pieces. The ditch remaining after removal of the old pipeline segments would then be further excavated as necessary to provide a proper alignment for the replacement pipeline as well as a safe work area. The new coated pipeline would then be installed in the same location.

Figure 2. General Pipeline Construction Sequence

The majority of Line 8000 and the associated laterals would be placed within existing rights-of-way (see table B-1 in appendix B), with the exception of locations where deviations were identified in areas of encroachment, environmental sensitivity, or other obstruction. At these locations, Columbia would obtain new permanent right-of-way for the replacement pipeline, and the corresponding segment of the old pipeline abandoned in place or by removal.

In addition to the standard construction techniques described above, Columbia anticipates using specialized techniques for areas having difficult constructability issues, or within areas containing certain sensitive environmental features, such as wetlands and waterbodies. Such specialized construction techniques may include reducing workspace through limited areas, and implementing stove piping,[5] drag section,[6] and mini-crew construction methods. Columbia would also perform two horizontal directional drills (HDD) to avoid sensitive resources. Columbia would prohibit construction equipment, vehicles, hazardous materials, chemicals, fuels, lubricating oils, and petroleum products from being parked, refueled, stored, or serviced within a 200-foot radius of private water wells, within a 400-foot radius of public or municipal water wells, and within 100 feet of a waterbody, pond, or wetland. An inspector would check equipment for leaks before use for construction activities in waterbodies or wetlands. Columbia would follow the mitigation measures outlined in its ECS/WVECS, which incorporate the FERC's Plan and Procedures.

7.2 Special Pipeline Construction Procedures

In addition to the standard construction practices listed above, special construction procedures may be used to install the pipeline, as described below.

Trenchless Construction Methods

Columbia is proposing the use of two methods of trenchless construction: conventional horizontal bore and HDD. These techniques are proposed in order to reduce the impacts typically associated with using conventional (trenching) construction techniques.

To complete a conventional horizontal bore, an entry and exit pit on either side of the feature to be crossed is excavated to provide a working area for the equipment. A boring machine is lowered into one pit, and a horizontal hole is bored to a diameter equal to the diameter of the pipe (or casing, if required) at the depth of pipe installation. The pipe section is then pushed through the bore to the opposite pit. If additional pipe sections are required to

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[5] Stove pipe construction involves installing one joint of pipe at a time. The welding, weld inspection, and coating activities are performed in the open trench. At the end of each work day, after the pipe is installed, the trench is backfilled and/or covered with steel plates.

[6] Drag section construction involves the trenching, installation, and backfill of a prefabricated length of pipe containing several pipe joints pulled into the trench in one work day. At the end of each day, after the pipe is installed, the trench is backfilled and/or covered with steel plates or timber mats.

span the length of the bore, they are welded to the first section of the pipe in the bore pit prior to being pushed through.

The HDD method is a process that allows for trenchless construction by drilling a hole below the depth of a conventional lay and pulling a prefabricated section of pipe through the hole. This method minimizes disturbance to the surface of the right-of-way between the entry and exit points of the drill and is sometimes used to avoid direct impacts on sensitive environmental features or areas that otherwise present difficulties for standard pipeline construction. The HDD method can provide certain advantages over typical construction methods, such as avoidance of surface disturbance, riparian and forested wetland tree clearing, or in-stream construction where appropriate subsurface conditions exist. The HDD method is proposed for the crossing of the North Branch Potomac River and the Fore Sisters Golf Course.

For each HDD crossing, electric grid guide wires would be laid by hand on the ground along the pipeline drill path to create an electromagnetic sensor grid. The grid would be used by the HDD operator to steer the drill head during drilling. No ground or surface disturbing activities would be required for installation of the guide wires except for minor hand clearing of a one to two-foot-wide path for the wires in thickly vegetated areas. However, as noted on the HDD site-specific crossing plan in appendix D, Columbia has requested workspaces between the entry and exit point of the North Branch Potomac River HDD to facilitate construction activities associated with the HDD installation, grouting the existing pipeline to be abandoned at the CSX railroad and Highway 135 road crossings, removal of existing aboveground facilities, and use of an access road (TAR-004A) to remove an existing valve set. Only the workspaces within the identified limits of disturbance would be cleared.

A drill rig would be placed on the entry side of the HDD crossing and a small-diameter pilot hole would be drilled along a predetermined path underground. As drilling progresses, additional segments of drill pipe would be inserted into the pilot hole to extend the length of the drill. The drill bit would be steered and monitored throughout the process to maintain the designated path of the pilot hole. Once the pilot hole is complete, the hole would be enlarged using a series of reaming tools. The first reaming tool would be installed at the end of the drill string on the exit side of the pilot hole, and then drawn back to the drill rig to enlarge the hole. Drill pipe sections would be added to the rear of the reamer as it advanced toward the rig, allowing a string of drill pipe to remain in the hole at all times. Several passes with progressively larger reaming tools would be required to enlarge the hole to a sufficient diameter to accommodate the pipeline.

During this process, drilling fluid consisting of bentonite clay and water would be circulated through the hole to power and lubricate the cutting bit, remove cuttings to the surface, and maintain the integrity of the hole.

The pipeline segment (also called a pull section) to be installed beneath the surface feature would be fabricated on the right-of-way or in approved ATWS on the exit side of the crossing while the drill hole is being established. Once assembled, the welds on the pull section would be inspected for defects and then coated with fusion-bonded epoxy. A

sacrificial abrasion resistant overlay would be applied over the fusion-bonded epoxy coating for protection from abrasive materials that may be encountered as the pull section is installed. Prior to installation, the pull section would be hydrostatically tested prior to installation. The pipe segment would be hydrostatically tested a second-time following installation with the remainder of the pipeline system. A steel bullhead would be welded onto the front end of the pull section to aid in pulling the pipe through the drill hole. After the hole is completed, the pull section would be attached to the drill string on the exit side of the hole and pulled back through the hole toward the drill rig.

Excess drilling fluid would disposed of at an appropriate facility. If water is left over from the drilling process, it would be discharged in accordance with applicable permits into a well-vegetated upland area or an energy dissipation/sediment filtration device, such as a geotextile filter bag or straw bale (weed-free) dewatering structure, at the site.

If an HDD crossing is successful, there are minimal impacts on the surface feature being crossed. If a natural fracture or weak area in the ground is encountered during drilling, an inadvertent return of drilling fluid to the environment could occur. Substrate consisting of unconsolidated gravel, coarse sand, or fractured bedrock could present circumstances that increase the likelihood of an inadvertent return. Depending on the orientation of the natural fracture or substrate, the drilling fluid may move laterally or vertically from the drill hole. If the drilling fluid moves laterally, the release may not be evident on the ground. For an inadvertent return to be evident on the surface there must be a preferential pathway extending vertically from the drill hole to the surface of the ground. The volume of fluid released in an inadvertent return is dependent on a number of factors, including the size of the pathway, the permeability of the geologic material, the viscosity of the fluid, and the pressure of the hydraulic drilling system. In order to minimize potential impacts of inadvertent releases of drilling fluids, Columbia would implement measures identified in the Project's HDD Contingency Plan. This plan describes procedures to be used to monitor, contain, and clean up any inadvertent releases of drilling fluid. It also identifies contingency measures to be implemented in the event that an HDD is unsuccessful.

Columbia's EI would monitor source waters along and near the drill path, such as seeps and springs, for inadvertent returns. Columbia would implement the measures identified in the HDD Contingency Plan to control and clean-up the inadvertent return, test the water for water quality, and provide an alternate supply of water to affected landowners until the inadvertent return is remediated.

In most cases, HDD activities can continue during an inadvertent return. In the event of an inadvertent return into a wetland or waterbody, pumps would be stopped and cleanup would commence in accordance with the HDD Contingency Plan. In some situations, however, the HDD may fail due to refusal of the drill bit or collapse of the hole in non-cohesive, unstable substrate. In cases where drilling fails, construction would be completed using either a new drill path or an alternative crossing method, subject to review and approval of the Commission and receipt of all other required permits or authorizations for the crossing.

The site-specific crossing plan for the proposed North Branch Potomac River HDD is provided in appendix D.

Waterbody Crossings

The pipeline right-of-way would require 86 waterbody crossings (see table B-5 in appendix B). Six of the 86 waterbody crossings would be completed by HDD. Columbia proposes to use conventional upland construction techniques to cross waterbodies if no flow is present at the time of the crossing. Equipment to complete dry-ditch crossings will be onsite as a contingency should stream flow begin during construction. In the event that flow returns in a waterbody where conventional overland construction techniques are proposed, construction would cease and one of the appropriate dry-ditch crossing methods would be used, as discussed below.

A dry-ditch crossing method involves the installation of a flume pipe(s) and/or dam-and-pump prior to trenching, to divert the stream flow over or around the construction area. The dam-and-pump method involves installing temporary dams upstream and downstream of the proposed waterbody crossing, typically using sandbags and plastic sheeting. Trench excavation and pipe installation would then commence through the dewatered and relatively dry portion of the waterbody channel. After pipe installation, backfilling of the trench, and restoration of the stream banks, the temporary dams would be removed, and flow through the construction work area would be restored. The dam-and-pump method is typically used at waterbodies where pumps and hoses can adequately transfer stream flow volumes from upstream of the work area to downstream of the work area, and there are no concerns with preventing the passage of aquatic organisms.

A flume crossing temporarily directs the flow of water through one or more flume pipes placed over the area to be excavated. Trenching would then occur across the waterbody and underneath the flume pipes without reducing downstream water flow. After pipeline installation, backfilling of the trench, and restoration of the stream banks, the flume pipes would be removed. This crossing method generally minimizes downstream turbidity during trenching by allowing excavation under relatively dry conditions.

Wetland Crossings

Construction of the Project would require 46 wetland crossings and impact at total of about one acre. In general, Columbia would utilize a 75-foot construction right-of-way through wetlands to allow for equipment crossings and to safely perform construction. Where soils are unstable, temporary work surfaces would be installed including timber riprap or prefabricated timber mats. ATWS would be located a minimum of 50 feet from the edge of wetlands, unless a site-specific exception is requested (see section B.3.3).

Because little or no grading would occur in wetlands, restoration of contours would be accomplished during backfilling. Prior to backfilling, trench breakers would be installed, where necessary, to prevent subsurface drainage of water from wetlands. Where topsoil is segregated, the subsoil would be backfilled first followed by the topsoil. Topsoil would be replaced to the original ground level leaving a slight crown over the trench line for soil

settlement. In areas where wetlands overlie rocky soils, the pipe would be padded with rock free soil or sand before backfilling with native bedrock and soil. Equipment mats, gravel fill, and/or geotextile fabric would be removed from wetlands following backfilling. Once revegetation is successful, temporary sediment barriers would be removed from the right-of-way and disposed of at an approved disposal facility.

Road Crossings

Construction across paved roads, highways, unpaved county roads, and railroads would be conducted in accordance with the ECS/WVECS and requirements identified in road and railroad crossing permits or approvals. All two lane paved roads, highways, and railroads would be crossed by boring or HDD. Typically, there is little or no disruption to traffic at paved road, highway, or railroad crossings during these operations. The construction contractor would develop a traffic management plan for its specific activities.

ATWS would be required on both sides of the crossing. The size of the workspaces depend on the size of the road crossing and other construction constraints. For all road and railroad crossings, the pipeline is designed in accordance with DOT regulations at Title 49 CFR Part 192, the American Society of Mechanical Engineers' code for gas transmission and distribution piping systems, and the American Petroleum Institute's Recommended Practice 1102 for steel pipelines crossing railroads and highways. Roadway crossing permits would be obtained from applicable state and local agencies. Additionally, Columbia would obtain a permit from CSX for the crossing of the construction activities at railroad crossings.

Steep Terrain

Special construction techniques would be required in areas where the slope exceeds 15 to 30 percent and/or where the proposed pipeline crosses side slopes. Pipe installation and construction activities across steep slopes would be similar to standard upland construction methods, but equipment would be tethered via winch lines to other equipment at the top of slopes. Equipment used to prepare the construction corridor and excavate the trench would be secured with a series of winch tractors to maintain control of the equipment and provide an additional level of safety. Erosion controls including temporary slope breakers would be installed in accordance with the Project's ECS and Project-specific Erosion and Sediment Control Plan (E&SCP). Additional types of temporary erosion controls including anchored erosion control matting and reinforced silt fence may be required.

Permanent trench breakers consisting of sandbags, cement, cement-filled sacks, or other approved materials would be installed within the ditch over and around the pipe in areas of steep slopes to reduce water channeling along the pipeline. During restoration, seed will be applied at an increased application rate to enhance rapid stabilization.

7.3 Environmental Compliance Inspection and Monitoring

Columbia would assign at least one EI to the Project, with additional inspectors as necessary to monitor environmental compliance. The role of the EI would be to verify compliance with the environmental mitigation and construction procedures included in permits issued for the Project. The EI would be required to adhere to the ECS. Columbia

would maintain sufficient oversight of construction, stabilization, and restoration activities via the EI; if additional inspectors are required for specific areas or situations, Columbia would provide additional inspectors as necessary.

In addition to Columbia's EIs, Columbia would require the construction contractors to provide at least one Environmental Foreman per spread. The Environmental Foremen would be responsible for the contractor's efforts to correctly install and maintain environmental controls as well as implementing specific controls for construction in environmentally sensitive areas. Environmental Foremen would be available at all times during the duration of the Project and have a sufficient number of employees to implement the Project's compliance standards.

In addition, Commission staff would oversee environmental compliance, including performing periodic inspections, throughout construction and restoration of the Project.

Columbia would train company and contractor personnel to familiarize them with environmental requirements and other conditions. Columbia would be responsible for implementation of environmental requirements during construction of all Project facilities. Columbia would include environmental compliance, training, and inspection information with the Project's Implementation Plan that would be filed with FERC prior to construction.

Columbia would incorporate relevant environmental requirements and Project-specific environmental mitigation plans into the construction documents for the Project. This step notwithstanding, the contractor selected for the Project would be required to comply with all relevant requirements regardless of whether they were described in bid documents or discussed at the meeting. During construction, if the construction contractor does not comply with environmental requirements, Columbia would direct the contractor to comply and may take other corrective actions as necessary, including issuing stop-work orders, until the contractor meets the environmental requirements.

During the performance of work, construction contractors would comply with the Minimum Federal Safety Standards adopted by the DOT under the Natural Gas Pipeline Safety Act of 1968, as well as additional Columbia standards. Columbia would include copies of relevant environmental permits and approvals in the construction bid packages and contracts. Contractors would be required to become familiar with all permits and licenses obtained by Columbia for the Project.

7.4 Operations and Maintenance

Operation of the facilities would be performed in accordance with Columbia's procedures and commitments. Maintenance of the proposed facilities would be performed in accordance with Columbia's ECS/WVECS.

8. Permit Approvals and Regulatory Consultations

Table 5 summarizes the permits, approvals, and consultations applicable to the Project. Columbia would obtain all required authorizations related to construction and operation of the Project.

9. Non-jurisdictional Facilities

Under Section 7 of the NGA, FERC is required to consider, as part of its decision to certificate jurisdictional facilities, related non-jurisdictional facilities that would be constructed in association with a project. These may be integral to the purpose of a project (e.g., facilities necessary to deliver, receive, or use the proposed gas volumes) or they may be minor, non-integral components of the jurisdictional facilities (e.g., a powerline to service an aboveground facility). There are no non-jurisdictional facilities associated with the Project.

Table 4: Permits, Consultations and Approvals Applicable to the Project

Administering Agency	Permit, Approval, or Consultation	Submittal/Consultation Initiated Date (Anticipated)	Receipt/Completion Date
Federal			
Federal Energy Regulatory Commission (FERC)	Section 7 of the Natural Gas Act, Certificate of Public Convenience and Necessity	November 3, 2017	Pending
U.S. Department of Army, Corps of Engineers (USACE), Baltimore District, Maryland-Northern	Section 404 of the Clean Water Act, Joint Application	November 22, 2017	Pending
U.S. Department of Army, Corps of Engineers (USACE), Pittsburgh District	Nationwide-12 Permit (Pre-construction Notification)	November 22, 2017	Pending
U.S. Department of Interior, Fish and Wildlife, Maryland Field Office	Section 7 of the Endangered Species Act	October 2017	Covered under the Multi-Species Habitat Conservation Plan – no further consultation required.
U.S. Department of Interior, Fish and Wildlife, Maryland Field Office	Migratory Bird Treaty Act/Bald and Golden Eagle Protection Act	February 2018	February 2018
U.S. Department of Interior, Fish and Wildlife Service, West Virginia Field Office	Section 7 of the Endangered Species Act	October 2017	Pending
U.S. Department of Interior, Fish and Wildlife Service, West Virginia Field Office	Migratory Bird Treaty Act/Bald and Golden Eagle Protection Act	February 2018	February 2018
Maryland			
Maryland Department of the Environment (MDE)	Section 401 of the Clean Water Act, Joint Application with USACE	November 22, 2017	Pending
Maryland State Historic Preservation Officer (SHPO)	Section 106 of the NHPA Consultation	October 2017	Archeological: 4/5/4018 Line 8000 Historical Eligibility: 6/5/2018
Maryland Department of Natural Resources (MDNR)	MD T&E Species Consultation and Clearance	October 2017	March 8, 2018
West Virginia			
West Virginia Department of Environmental Protection	Oil and Gas Construction Stormwater General Permit including	(September 2018)	Pending
West Virginia SHPO	Section 106 of the NHPA Consultation	October 2017	Archeological: 11/13/2017 Architectural: 11/27/2017 Line 8000 Eligibility: 5/12/2018
County			
Allegany County, Maryland			
Allegany County Soil Conservation District	Erosion and Sediment Control Plan Review and Approval	(September 2018)	Pending

B. ENVIRONMENTAL ANALYSIS

1.0 Geology

The Project is in the Valley and Ridge Physiographic Province in Allegany County, Maryland and Mineral County, West Virginia. The Valley and Ridge Province in the Project area contains strongly folded and faulted sedimentary formations. Elevations range from approximately 775 feet to 1,280 feet above mean sea level. Bedrock underlying the Project area consists of the Paleozoic, Devonian, and Silurian sedimentary rocks (i.e., shale, siltstone, sandstone, limestone, and chert) (U.S. Geological Survey [USGS], 2017a; Brezinski et al, 2013; and West Virginia Geologic & Economic Survey [WVGES], 2017a).

1.1 Mineral Resources

According to the WVGES (2017b), no active mining operations are present within 0.25 mile of the Project area.

1.2 Blasting and Shallow Bedrock

As indicated by U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) soils data, approximately 103.68 acres (about 59 percent) of the proposed pipeline right-of-way are characterized as having shallow bedrock (five feet or less). If shallow bedrock is encountered, Columbia would first attempt to use hydraulic hammers to break the rock. If the use of hydraulic hammers is not effective, blasting may be required. Where blasting may be required, Columbia would make the appropriate notifications and obtain necessary permits prior to blasting. Blasting activities would adhere to local, state, and federal regulations applying to controlled blasting and blast vibration limits concerning structures and underground and aboveground utilities. Columbia has prepared a Project-specific blasting plan that includes measures to control, minimize, or eliminate detrimental impacts. We have reviewed this plan and find it acceptable. Columbia's contractors would also be required to submit a site-specific blasting plan to Columbia for its approval prior to blasting activities, which Columbia would provide to the FERC for review.

Blasting precautions include, but are not limited to, the following:

- inventorying public and private groundwater drinking wells and completing pre-blast water quality monitoring;
- completing pre-blast inspections of nearby residences and other structures;
- installing blasting mats in congested areas, in shallow waterbodies, or near structures that could be damaged by fly-rock;
- posting warning signals, flags, and barricades;
- notifying occupants of nearby buildings, stores, residences, places of business, and places of public gathering, as well as farmers, 48 hours in advance of blasting activities;

- notifying the local fire marshal of blasting activities prior to blasting (the fire marshal must be notified the day of blasting via phone or email);
- following procedures for safe storage, handling, loading, firing, and disposal of explosive materials;
- manning adjacent pipelines at valves for emergency response; and
- controlling excessive vibration by limiting the size of charges and using charge delays that stagger each charge in a series of explosions.

Columbia would conduct the pre-blasting inspections and water quality monitoring with landowner permission to assess the conditions of structures and water wells within 150 feet of the area in which blasting is anticipated. The survey may include:

- discussions with adjacent property owners to familiarize them with blasting effects and planned precautions to be taken by Columbia;
- identification of site-specific structures, utilities, and water wells;
- documentation of existing conditions including photographs, and/or video records of adjacent structures and utilities; and/or
- detailed mapping and measurement of large cracks, crack patterns, and other evidence of structural stress observed in specific structures, and potential monitoring of certain features.

In the event that property owners identify damage to properties, or if excessive peak particle velocities are recorded during the blasting operations, Columbia would perform an additional post-construction survey of affected properties to verify damage. Columbia would either repair any identified damages or fairly compensate the owner for blast-related damages. If a water well were damaged, Columbia would provide a temporary source of water until the well is repaired, or compensate the landowner.

With the implementation of the proposed measures above to minimize blasting impacts and monitoring during blasting, we do not anticipate significant impacts from blasting activities.

1.3 Geologic Hazards

Geologic hazards are natural physical conditions that can result in damage to land or structures, and/or injury to the public. Potential geologic or other natural hazards can generally include ground failure caused by unstable soils (liquefaction), landslides, karst terrain (unexpected formation of sinkholes), seismicity (earthquakes), faults, hurricanes, and volcanism.

Seismic Hazards

No quaternary faults exist in the vicinity of the Project area according to the USGS Quaternary Fault and Fold database (USGS, 2006). The USGS earthquake hazard program mapping shows that seismicity in terms of peak ground acceleration within the Project area is

between 0 to 5 percent gravity for the 2-percent probability of return period in 50 years and between 0 to 2 percent gravity for the 10-percent probability of return period in 50 years (USGS, 2014a & 2014b). These values represent light ground shaking with little to no associated damage, and low potential for soil liquefaction to occur.

Landslides and Steep Slopes

Landslides involve the downslope movement of earth materials under a force of gravity due to natural or man-made causes. According to the Radbruch-Hall landslide incidence and susceptibility maps (Radbruch-Hall et al, 1982), the Project area has a high incidence and high susceptibility to future landslides. Approximately 6.6 miles of the Project would cross slopes or side slopes greater than 15 percent. To mitigate and avoid the possibility of a landslide, Columbia would implement the Project's ECS and E&SCP. Landslide mitigation and avoidance measures include tethering equipment to winch lines, temporary and permanent slope breakers, trench plugs that would reduce water channeling, and the use of water bars on slopes that would also direct water off the disturbed right-of-way to adjacent undisturbed areas thereby minimizing conditions influencing the frequency of landslides, such as soil saturation.

Land Subsidence and Karst Terrain

Ground subsidence is a lowering of the land surface elevation that results from changes that take place underground. Common causes of land subsidence include dissolution of limestone in areas of karst terrain, collapse of underground mines, and the pumping of water, oil, and gas from underground reservoirs. Underground mines and pumping of oil or gas does not take place within 0.25 mile of the Project facilities. Karst terrain has not been identified within the Project area (Maryland Geologic Survey [MGS], 2017; WVGES, 2017c). Based on the lack of significant collapse hazards, underground mines, and pumping of oil and gas in and around the proposed Project area, impacts on the Project facilities or adjacent land due to land subsidence and karst terrain are not anticipated.

Major Storm Events and Flooding

Flash flood events are less common in the northeastern United States compared to other regions; however, flash flooding is possible on streams in the Project area. The greatest potential for flash flooding is associated with major storms, which are usually accompanied by significant precipitation over a short period of time. As such, the potential for flash flooding to occur and significantly impact construction of the Project facilities is low. Columbia would site aboveground facilities outside Federal Emergency Management Agency 100-year floodplains. We do not anticipate impacts on the Project facilities from flooding caused by severe storms (including hurricanes). Flooding could increase the buoyancy of pipelines, causing them to rise toward the land surface where they may be exposed. However, risks of increased buoyancy would be minimized by implementing standard construction techniques, utilizing the HDD crossing method for the North Branch Potomac River, and maintaining a minimum depth of 3 feet of cover over the pipeline as required by the DOT.

1.4 Paleontology

According to the MGS and WVGES, no known paleontological resources exist in the Project area. However, the Project area is underlain by Paleozoic, Devonian, and Silurian sedimentary rocks that have the potential to contain fossils. If unique or significant fossil specimens are discovered during excavation activities, Columbia would consult with the MGS and WVGES and follow measures in its Unanticipated Discovery Plan for Paleontological Resources.

1.5 Conclusions on Geologic Impacts

The overall effect of the Project on topography and geology would be minor, and significant adverse effects on geological resources are not anticipated. Given the geologic conditions within the Project area and the management and mitigation measures included in the ECS and E&SCP, we do not anticipate that Project facilities would be compromised due to seismicity, ground rupture, soil liquefaction, subsidence, flooding, or landslides and that the proposed facilities would not result in significant impact on geologic or paleontologic resources.

2.0 Soils

The properties and designations of individual soil map units from NRCS sources were used to describe the soil resources associated with the Project and assess potential limitations, impacts, and mitigation measures to be implemented to reduce impacts on soil resources. Construction activities that create soil disturbance, such as clearing, grading, trench excavation, backfilling, and the movement of construction equipment along the right-of-way, would result in temporary and minor impacts on soil resources. Soil characteristics could affect construction performance or increase the potential for adverse construction-related soil impacts. The activities that have the potential to impact soils and reduce soil quality are the mixing topsoil of with subsoil, bringing excess rocks to the surface, compacting soil by heavy equipment, and disrupting surface and subsurface drainage patterns.

2.1 Prime Farmland

The U.S. Department of Agriculture (USDA) defines prime farmland soils as those that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. Prime farmland soils can include either actively cultivated land or land that is potentially available for cultivation. Farmland that does not meet the criteria for prime farmland may still be considered farmland of statewide importance for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the local conservation districts. Generally, this land includes soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Approximately 78.7 acres of the soils temporarily impacted by Project activities are considered prime farmland or farmland of statewide importance. Of this, about 4.93 acres would be required for permanent access roads and about 47.52 acres would be required for

pipeline right-of-way and cathodic protection. None of this land is currently used for agricultural purposes.

2.2 Erosion, Runoff, and Sediment Control

Approximately 59 percent of soils in the Project area have severe to extreme water erosion potential based on soil characteristics and slope. To minimize or avoid potential impacts from soil erosion and sedimentation to nearby waterbodies, Columbia would utilize erosion and sedimentation control devices in accordance with the Project-specific ECS and E&SCP during construction. Temporary erosion control techniques, including slope breakers, trench breakers, sediment barriers, and re-establishment of stabilizing vegetation would be installed prior to or immediately following any clearing activities, based on site-specific conditions.

Temporary erosion control devices would be inspected on a regular basis as well as after each rainfall event of 0.5 inch or greater to ensure that the controls are functioning properly. In addition, Columbia would perform the following to minimize impacts on soils:

- minimize the quantity and duration of soil exposure;
- protect critical areas during construction by reducing the velocity of and redirecting runoff;
- install and maintain erosion and sediment control measures during construction;
- reestablish vegetation as soon as possible following final grading; and
- inspect and maintain erosion and sediment controls as necessary until final stabilization is achieved.

2.3 Compaction and other Soil Impacts

During construction, topsoil and subsoil would be disturbed during grading and trenching activities and the movement of heavy equipment. The potential mixing of topsoil with the subsoil from these activities could result in a loss of soil fertility, which could potentially affect soils, including residential and agricultural soils. To prevent mixing of the soil horizons, topsoil segregation would be performed in croplands, improved pastures, residential areas, non-saturated wetlands, and in areas requested by the landowner or land managing agency. In upland areas, Columbia would strip topsoil from either the full work area or from the trench and subsoil storage area. In non-saturated wetlands, topsoil would only be segregated within the trench line. The topsoil would be segregated and replaced in the proper order during backfilling and final grading. Implementation of proper topsoil segregation would help to ensure post-construction revegetation success, thereby minimizing loss of crop productivity and the potential for long-term erosion problems. Topsoil segregation would also minimize the introduction of subsoil rocks into agricultural topsoil, as further discussed below regarding shallow bedrock and rocky soils.

There is a potential for construction activities to introduce rock into topsoil during excavation in areas of shallow depth to bedrock or areas with stony, rocky soil. Columbia

would attempt to use mechanical methods such as a pneumatic ram, ripping, or conventional excavation to excavate through the rock, where possible. Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock not returned to the trench would be considered construction debris and disposed of appropriately. Excess rock would be removed from at least the top 12 inches of soil in all residential areas, as well as other areas at the landowner's request, to ensure the rock in the area disturbed by construction is similar to adjacent undisturbed areas.

Construction equipment traveling over wet soils could disrupt the soil structure, reduce pore space, increase runoff potential, and cause rutting. The degree of compaction depends on the moisture content and soil texture. Fine-textured soils with poor internal drainage that are moist during construction are the most susceptible to compaction. Approximately 37 percent of the soils that would be affected by the Project are considered prone to compaction. Columbia would minimize compaction and rutting impacts during construction in soft or saturated soils by using measures outlined in the ECS. Measures such as the use of low-ground-weight equipment and/or by temporary installation of timber equipment mats may be used when soil moisture is high. Columbia would test the topsoil and subsoil for compaction in all agricultural and residential areas disturbed by construction. Severely compacted agricultural areas would be mitigated with deep tillage operations during restoration activities using a paraplow or similar implement. In areas where topsoil is segregated, plowing with a paraplow or other deep tillage implement to alleviate subsoil compaction would be conducted before replacement of the topsoil. Columbia would also perform appropriate soil compaction mitigation in severely compacted residential areas.

The clearing and grading of soils with poor revegetation potential could result in a lack of adequate revegetation following construction and restoration of the right-of-way, which could lead to increased erosion, a reduction in wildlife habitat, and adverse visual impacts. About 43 percent of the soils that would be affected by the Project are considered to have revegetation concerns. Columbia would restore and revegetate according to the ECS, which includes specifications for applying soil amendments, working with local soil conservation authorities or other agencies to obtain seed mixture recommendations, and post-construction monitoring to ensure the effectiveness of revegetation and permanent erosion control devices during facility operation.

To minimize or prevent impacts due to soil erosion and off-right-of-way sedimentation during construction, Transco would utilize the erosion and sedimentation controls outlined in the Project-specific ECS and E&SCP. Erosion control devices would be maintained until the right-of-way is successfully revegetated. Temporary erosion controls, including slope breakers and sediment barriers (e.g., hay bales and silt fences), would be installed following initial ground disturbance to control runoff and prevent sediment transport off the construction right-of-way. Temporary erosion controls would be maintained until the Project area is successfully revegetated. During construction, the effectiveness of these temporary erosion control devices would be monitored by Columbia's EIs. Following successful revegetation of construction areas, temporary erosion control devices would be removed. Permanent erosion controls would be installed, as necessary, to ensure the successful restoration of the Project area. The effectiveness of revegetation and permanent erosion control devices would be monitored by operating personnel during the long-term

operation and maintenance of the Project facilities in accordance with the provisions in the ECS. With the implementation of these measures, we conclude that impacts on soils would be adequately minimized.

2.4 Soil Contamination

An Environmental Data Resources, Inc. (EDR) database search report was acquired for the Project area (EDR, 2017). No sites of possible soil contamination within 0.25 mile of the Project area were identified.

At any of the Project sites, inadvertent spills or leaks of fuels, lubricants, or coolant from construction equipment could adversely affect soils. The impacts of such releases are typically minor because of the low frequency and small volumes of spills and leaks. Columbia would implement the measures in its SPCC Plan in conjunction with the ECS to prevent spills of any material that may contaminate soils, and to ensure that inadvertent spills are contained, cleaned up, and disposed of in an appropriate manner. Should Columbia encounter unanticipated contaminated soils during construction, it would evaluate and treat impacted soils in accordance with its Unanticipated Contamination Discovery Plan and applicable federal and state requirements.

Given the impact minimization and mitigation measures described above, we conclude that soils would not be significantly affected by Project construction and operation.

3.0 Water Resources

3.1 Groundwater

The Project area is underlain by the principle aquifer known as the Valley and Ridge Formation and the Appalachian Plateaus aquifers (USGS, 2000). The Valley and Ridge Formation aquifer consists of permeable rocks with a sequence of folded and faulted sedimentary formations. Water moves primarily along fractures and bedding planes and in carbonate rock solution openings (USGS, 2000). Recharge to the aquifer is mostly from runoff flowing over the less permeable shale and sandstone on the flanks of ridges to fractures or sinkholes above the limestone at the valley edges. The Appalachian Plateaus aquifers consist of sandstone, carbonate rocks, and coal beds and seams. Water yield is primarily via fractured joints. These aquifers are highly dissected and have a lower recharge rate than the Valley and Ridge Formation aquifer (USGS, 2000).

<u>Sole-source Aquifers and Wellhead Protection Areas</u>

According to the U.S. Environmental Protection Agency (EPA), no sole source aquifers are in the area of the Project (EPA, 2016). Columbia consulted with the Maryland Department of the Environment (MDE) and the West Virginia Department of Health and Human Resources (WVDHHR) to determine if the proposed Project would affect wellhead protection areas. According to the MDE Water Supply Program, Source Protection and Appropriation Division (Lazarus, 2017), and the WVDHHR, the Project area rely primarily on surface water for public drinking water, and the Project would not cross or affect any wellhead protection areas.

Groundwater Wells, Springs, and Seeps

Numerous localized springs and seeps were identified during Columbia's field surveys throughout the Project area. These springs and seeps were typically noted as the driving hydrology source for many of the wetland resources discussed below in section 3.3. In general, Columbia's field surveys noted that the springs and seeps did not supply notable flow.

Columbia acquired a report of any public and private groundwater supplies from EDR. Columbia also performed field surveys to identify private water wells and water supplies within 150 feet of the Project. Columbia identified 43 groundwater wells in Allegany County within 150 feet of the Project. No groundwater wells were identified in Mineral County.

Groundwater Impacts and Mitigation

Columbia would offer pre- and post-construction well testing to the owners of the identified wells to determine if construction potentially affects water quality or yield. If well tests document impacts due to construction, Columbia would provide an alternative water source, mitigate the impact, or compensate the landowner.

As discussed in section B.1.2 above, Columbia has identified areas of shallow bedrock where blasting may be necessary, and has proposed mitigation measures. If Columbia identifies septic tanks that would be impacted by the Project, Columbia would work with the landowner to relocate the septic tank if blasting is required in the vicinity. Columbia's blasting mitigation measures, and commitment to compensate a landowner for impacts, would ensure that potential impacts on well and septic tank owners would not be significant.

Construction of the pipeline would involve shallow, temporary, and localized excavation, far above the depth at which potable water is obtained from wells. While excavation itself would not result in contamination of groundwater resources, it could temporarily disturb the typical recharge patterns of surficial aquifers, cause temporary increases in turbidity, and disrupt overland flow characteristics. Surficial aquifers, however, exhibit rapid recharge and are greatly influenced by short-term rain events. Therefore, once the pipeline construction is complete and the trench backfilled, we expect baseline conditions to return to their pre-construction state within a few weeks to months following establishment of vegetation on the right-of-way. Columbia's proposed installation of trench plugs, in accordance with the ECS and E&SCP, would ensure the pipeline does not act as a new subsurface water conduit.

Groundwater Contamination

An EDR database search report was acquired for the Project area (EDR, 2017). No sites areas of possible groundwater contamination within 0.25 mile of the Project area were identified.

At any of the Project sites, inadvertent spills or leaks of fuels, lubricants, or coolant from construction equipment could adversely affect groundwater. The impacts of such releases are typically minor because of the low frequency and small volumes of spills and leaks. Columbia would implement the measures in its SPCC Plan in conjunction with the ECS to prevent spills of any material that may contaminate groundwater, and to ensure that inadvertent spills are contained, cleaned up, and disposed of in an appropriate manner. Should Columbia encounter unanticipated contaminated groundwater during construction, it would evaluate and treat impacted groundwater in accordance with its Unanticipated Contamination Discovery Plan and applicable federal and state requirements.

Based on Columbia's ECS, E&SCP, and SPCC Plan measures, we conclude that construction and operation of the Project would not significantly impact groundwater.

3.2 Surface Water

The proposed Project spans three watersheds within the Potomac Basin: Limestone Run-North Branch Potomac River, Mill Run-North Branch Potomac River, and Braddock Creek-Wills Creek. Columbia conducted field surveys of the Project area in July, August, October, and December 2017 to identify waterbodies[7] and wetlands crossed by the Project. The Project would require 132 waterbody crossings (38 perennial, 35 intermittent, and 59 ephemeral waterbodies). Of these, one waterbody, the North Branch Potomac River, is classified as major, 28 are classified as intermediate, and 103 are minor. Twenty-two of these waterbody crossings would be by access roads and ATWS via existing bridges or culverts. Table B-5 in appendix B provides a list of the waterbodies crossed by the Project.

Sensitive Surface Waters

Sensitive surface waters are waterbodies that are afforded additional protections and may include, but are not limited to, waters that do not meet the water quality standards associated with the waters' designated beneficial uses, waterbodies that contain threatened or endangered species or critical habitat, and outstanding or exceptional quality waterbodies.

In accordance with Section 303(d) of the Clean Water Act, states are required to identify waters that do not attain their designated use(s) or meet the state water quality standards. Additionally, the EPA's Water Quality Planning and Management Regulations (40 CFR 130) require states to develop total maximum daily loads for those waters. Total

[7] FERC defines a waterbody as any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes. A minor waterbody is less than or equal to 10 feet wide, an intermediate waterbody is greater than 10 feet wide but less than or equal to 100 feet wide, and a major waterbody is greater than 100 feet wide at the water's edge at the time of crossing.

Maximum Daily Loads represent the maximum amount of a given pollutant that a waterbody may contain while still attaining its designated use. The North Branch Potomac River as the only 303(d) listed waterbody with potential to be affected by the Project. This waterbody is listed as impaired for cadmium, fecal coliform, nutrients, suspended sediment, pH, and biological causes. However, the North Branch Potomac River would be completely avoided during Project construction, as it would be crossed via HDD.

The Project is located within Zone 1 of the LaVale source water protection area in Maryland and is less than three miles outside of the watershed delineation area and the zone of critical concern for the New Creek public water supply intake area in the City of Keyser, West Virginia. Columbia consulted with the MDE and the WVDHHR regarding potential impact on source water protection areas and public water supply intake areas. In correspondence dated February 26, 2018, MDE indicated that while it does not have specific wellhead protection requirements for pipelines, it does work with the Waterways Construction Permit group in evaluating the Project to make sure water sources are protected during construction and will include any required wellhead protection measures in the conditions of the Section 404 permit that would be issued by MDE. Additionally, in correspondence dated March 6, 2018, WVDHHR did not indicate any specific mitigation measures, however requested further consultation with the City of Keyser. On March 27, 2018, Columbia requested comments from the City of Keyser on any impact on the supply intake area. However, no response has been filed.

Potential Impacts and Mitigation

Waterbody impacts would be limited to temporary equipment crossings, temporary access road crossings, and pipeline installation and removal. Columbia proposes to install the pipeline using an HDD under the North Branch Potomac River. All other flowing waterbody crossings would be constructed using a dry-ditch crossing method (i.e., a dry flume or dam-and-pump crossing, as described below). Columbia would cross waterbodies with no perceptible flow at the time of crossing using standard open-cut construction techniques.

Pipeline construction or removal activities within waterbodies could affect surface water resources, depending on the type of crossing used and the specific characteristics of the waterbody. The greatest impacts associated with dry-ditch open-cut crossings would be during the installation and removal of in-waterbody dams and water diversion structures. These impacts include increases in local sediment loading and turbidity from in-waterbody construction activities, or construction adjacent to waterbody channels. Clearing and grading of waterbody banks and in-waterbody construction could result in temporary modifications of aquatic habitat and decreased dissolved oxygen concentration. In addition, backfilling and settling of the streambed trench over time could result in modified contours that lead to minor changes in waterbody flow patterns and velocity. These changes could further result in waterbody bed scouring and/or deposition in new areas.

In general, impacts would be limited to the in-waterbody construction period and immediately thereafter. Columbia anticipates completing crossings of minor and intermediate waterbodies as expeditiously as possible (in 24 to 48 hours, where practicable)

and would restore the bed and banks to pre-construction conditions. Conditions are expected to return to normal after waterbody restoration activities. Columbia would install temporary equipment bridges across waterbodies, in accordance with the Project's ECS and permit requirements, which would allow construction equipment and personnel to cross the waterbodies and avoid direct impacts. During operation, a buffer at least 25 feet wide adjacent to waterbodies would be revegetated to pre-construction conditions over the entire width of the right-of-way (except for a 10-foot-wide strip centered over the pipeline to be maintained in an herbaceous state for pipeline inspection). Trees would not be allowed to grow within 15 feet of the pipeline. Riparian cover on affected waterbody banks would be expected to recover over several months to several years. In accordance with Columbia's ECS/WVECS, Columbia would monitor and maintain erosion controls during construction and throughout restoration and would only remove the controls once restoration is deemed successful.

Use of HDD greatly reduces the temporary and permanent impacts on waterbodies and wetlands by eliminating direct in-stream construction impacts. Additionally, Columbia set back the entry and exit workspaces beyond the riparian areas along the North Branch Potomac River, further reducing impacts. However, with the use of HDD, there is potential for inadvertent returns of drilling fluid, which is mostly non-toxic bentonite. The primary impact of losses of drilling fluid in waterbodies and wetlands is increased sedimentation and turbidity. Columbia has prepared an HDD Contingency Plan, which includes measures it would implement should there be inadvertent returns of drilling fluid while crossing the North Branch Potomac River. We have reviewed this plan and find it acceptable. Specific measures of the plan include:

- visually monitoring the HDD alignment three times per shift for the presence of undetected inadvertent returns along and to the sides of the alignment or immediately if drilling pressures indicated an inadvertent return is suspected;
- immediately shutting off pumps supplying drilling fluids to remove the source producing the inadvertent return; and
- employing containment measures to prevent further flow of the inadvertent return.

All affected areas would be restored as closely as possible to their previous condition.

Columbia indicated that blasting may be required. Blasting in streams would only be used when traditional means of trenching have failed or are deemed impractical due to bedrock constraints. If required, blasting would primarily occur at dry crossings, after the work area has been isolated from stream flow. If blasting is necessary in a flowing waterbody, preparation of the rock for blasting (e.g., drilling shot holes) is expected to cause enough disturbance in waterbodies to displace most aquatic organisms from the immediate vicinity of the blast. Blasting could also impact waterbodies by causing a fissure in the bedrock that could alter local water flow and hydrology. If in-water blasting becomes necessary, Columbia would follow mitigation measures provided in the Project's Blasting Plan and Columbia's ECS/WVECS to avoid or minimize impacts on surface waters. In

addition, Columbia would consult with applicable federal and state regulatory agencies prior to blasting in any streams to determine what protective measures should be taken to minimize impacts on fish and other aquatic life. Blasting techniques would be in compliance with Federal, state, and local regulations governing the use of explosives. Blasting procedures are discussed further in section B.1.2.

Columbia would locate ATWS a minimum of 50 feet from the edges of waterbodies as much as practicable. However, Columbia has requested modifications to section V.B.2.a of FERC's Procedures for a number of ATWS within 50 feet of a waterbody. Table B-6 in appendix B lists each location and purpose for the ATWS. Due to the location of the existing pipelines and facilities, a 50-foot setback is not possible for the placement of these ATWS. Columbia would employ erosion control measures at these workspaces such as silt fence, straw/hay bales, or earthen berms to prevent sedimentation of wetlands and waterbodies. We find the justifications and equal compliance measures for these ATWS to be acceptable.

Given Columbia's proposed waterbody crossing methods, adherence to its ECS/WVECS and HDD Contingency Plan, and compliance with conditions of all applicable permits, we conclude that the Project's impacts on surface water quality would be adequately minimized.

Hydrostatic Testing

Columbia would hydrostatically test the new pipeline in accordance with the DOT pipeline safety regulations prior to commencing any service. Prior to hydrostatically testing the pipeline, cleaning tools would be used to remove loose debris within the pipeline. Columbia would test the pipeline with water obtained from municipal sources, which would require a total of about 422,200 gallons of water. No chemicals or additives would be mixed with the water. As practicable, water would be transferred from one test section to another to reduce the amount of water that is required for testing. After testing, water would be discharged into tanks, hauled offsite, and disposed at an approved receiving facility. Given that Columbia would conduct hydrostatic testing in accordance with its ECS/WVECS and applicable permit conditions, we conclude that the impacts associated with hydrostatic testing would be minimal.

3.3 Wetlands

Wetlands are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of wetland vegetation adapted for life in saturated soil conditions. Wetlands can be a source of substantial biodiversity and serve a variety of functions that include providing wildlife habitat, recreational opportunities, flood control, and naturally improving water quality.

Columbia conducted wetland delineation surveys in accordance with the *Corps of Engineers Wetland Delineation Manual* (Corps, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Corps, 2012). The wetlands that were identified were further classified according to the U.S. Fish and Wildlife Service (FWS) classification system (Cowardin et al., 1979), through which Columbia determined that palustrine forested (PFO), palustrine scrub-shrub (PSS),

palustrine emergent (PEM), and palustrine open water (POW) wetlands, and wetlands sharing characteristics of several types, would be crossed.

Construction of the Project would temporarily impact about one acre of wetlands, of which less than 0.01 acre would be within the permanent right-of-way. Within the permanent right-of-way, less than 0.01 of forested wetlands would be permanently converted and maintained as scrub-shrub or emergent (see table B-7 in appendix B and table 6). Columbia would install the pipeline using standard pipeline construction procedures (per Columbia's ECS/WVECS) in wetlands with firm soils or without standing water. Columbia would segregate non-saturated topsoil over the trench to preserve the natural seedstock and encourage the growth of native plant species during restoration. Conversely, if soils were saturated at the time of construction, Columbia would use timber mats to support construction equipment to avoid rutting and subsurface mixing of soils.

Columbia would locate ATWS a minimum of 50 feet from the edges of wetlands as much as practicable. However, Columbia has requested modifications to section VI.B.1.a of FERC's Procedures for a number of ATWS within 50 feet of a wetland. Table B-8 in appendix B lists each location and purpose for the ATWS. Due to the location of the existing pipelines and facilities, a 50-foot setback is not possible for the placement of these ATWS. Columbia would employ erosion control measures at these workspaces such as silt fence, straw/hay bales, or earthen berms to prevent sedimentation of wetlands and waterbodies. We find the justifications and equal compliance measures for the ATWS to be acceptable.

The primary impacts of construction on wetlands would be the alteration of wetland type and impacts on water quality within wetlands because of sediment loading or inadvertent spills of hazardous materials. As discussed in section B.3.2, inadvertent returns from HDD could increase sedimentation; however, Columbia would implement its HDD Contingency Plan to minimize impacts from a release. Construction in wetlands would convert less than 0.1 acre of PFO wetland types to PEM or PSS due to vegetation maintenance, but these wetlands would still provide important ecological functions including flood control and providing wildlife habitat. The Project would result in no net loss of wetlands.

Columbia would minimize impacts on wetlands by incorporating the measures outlined in its ECS/WVECS. Some of these measures include leaving root systems intact to hasten revegetation, installing hay bales and silt fence to prevent runoff from upland areas reaching wetlands, and installing trench breakers (physical barriers at the bottom of the trench) to maintain wetland hydrology. Columbia would limit the right-of-way width to 75 feet in wetlands to minimize the overall disturbance of construction. The Corps may require additional mitigation, including compensatory mitigation for the permanent conversion of PFO wetlands, as a condition of its Clean Water Act Section 404 authorization. Columbia would be required to complete wetland and waterbody restoration, which would be ensured during construction and restoration inspections.

Given Columbia's proposed construction procedures, the limited overall land disturbance to wetlands, and Columbia's mitigation measures associated with its SPCC Plan,

HDD Contingency Plan, as well as its Corps and state permitting, we conclude that the Project would not result in significant impacts on wetlands.

Table 6: Summary of Wetlands Impacts

Cowardin Classification	Wetland Impacts a/	
	Construction[a] (acres)	Operation[a,b] (acres)
Mineral County, West Virginia		
PEM	0.00	0.00
PSS	<0.01	0.00
PFO	0.24	0.00
Subtotal	*0.24*	*0.00*
Allegany County, Maryland		
PEM	0.62	0.00
PSS	0.10	0.00
PFO	0.03	<0.01
POW	0.09	0.00
Subtotal	*0.85*	*<0.01*
Total	**1.09**	**<0.01**

Notes:

a The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.

b There is no operation impacts on PEM or PSS wetlands, since there is no change in the pre- and post-construction vegetation cover type.

4.0 Vegetation and Wildlife

4.1 Vegetation

In general, vegetation within the Project area is characterized by developed, upland herbaceous, upland shrub, upland forest, and wetland habitat types. Table 7 below provides representative upland vegetation species found in each category. Developed land includes non-forested, non-residential, and non-industrial cleared land, and includes existing rights-of-way. Vegetation found in herbaceous upland vegetation communities can be similar to those found in areas of cleared, developed land. Upland shrub areas identified throughout the Project consisted of species similar to those found in upland herbaceous regions, with the addition of some woody vegetation. Forest cover includes deciduous-dominated forest, mixed evergreen/deciduous forest, and woodlands. Wetland types found within the Project areas are PEM, PSS, PFO, and POW (wetlands in the Project area are discussed in section B.3.3). No vegetation communities of special concern would be affected by the Project.

Table 7: Representative Vegetation and Wildlife Species

Vegetation Habitat Category	Representative Vegetation Species	Representative Wildlife Species
Developed	Generally maintained grasses (fescue) and other herbaceous vegetation including forbs, grasses, and small shrubs.	Virginia opossum, eastern cottontail rabbit, gray squirrel, coyote, raccoon, blue jay, black-capped chickadee, northern cardinal, eastern gartersnake, eastern hognose snake, eastern American toad, red-backed salamander
Upland herbaceous	Canada wildrye, Japanese stiltgrass, spotted touch-me-knot, arrowleaf tearthumb, New York aster, and wingstem.	Northern short-tailed shrew, white-footed mouse, barn swallow, American robin, Coopers hawk, eastern ratsnake, eastern box turtle, northern leopard frog, five-lined skink
Upland shrub	Field brome, curly dock, Allegheny blackberry, and multiflora rose	Similar species are found in upland herbaceous (above).
Upland forest	Silver maple, sycamore, black cherry, northern red oak, eastern poison ivy, Virginia pine, northern white oak, colt's foot, silver maple, and red columbine	Red squirrel, gray fox, white-tailed deer, tufted titmouse, white-breasted nuthatch, Downy woodpecker, eastern ratsnake, wood frog, gray tree frog
Wetlands	Common rush, Japanese stiltgrass, and various sedge species	Muskrat, wood thrush, red-winged blackbird, common ribbonsnake, midland painted turtle, snapping turtle, northern green frog, mink frog, Fowler's toad

The Project would primarily impact upland forest. About 161 acres of upland forest would be impacted by construction, while about 47 acres of this would be permanently impacted for operation. Additionally, about 85 acres of upland herbaceous land and 33 acres of developed land would be temporarily impacted by construction. Of this, less than two acres of upland herbaceous land and 12 acres of developed land would be within the permanent right-of-way. Further, the Project would impact a total of less than two acres of open land and upland shrub during construction, of which less than 0.5 acre would be permanently maintained for operation (see table 8).

Table 8: Vegetation Communities Affected by Construction and Operation of the Project[a]

Workspace	Developed[b]		Upland Herbaceous[b]		Open Land[b]		Upland Shrub[b]		Forest		PEM Wetland[b]		PSS Wetland[b]		PFO Wetland		POW Wetland[b]		Total	
	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Pipeline ROW	5.80	0.00	57.97	0.00	0.95	0.00	0.09	0.00	104.24	44.57	0.62	0.00	0.01	0.00	0.03	<0.01	0.09	0.00	169.80	44.57
ATWS	2.16	0.00	10.26	0.00	0.32	0.00	0.03	0.00	47.51	0.00	0.00	0.00	<0.01	0.00	0.24	0.00	0.00	0.00	60.52	0.00
Access Roads	18.98	12.09	7.08	1.55	0.11	0.02	<0.01	<0.01	8.03	1.70	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.21	15.36
Staging Area	5.81	0.00	9.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.01	0.00
Mainline Valves and Tie-ins[c]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00	0.00	NA	NA
Cathodic Protection[d]	0.37	0.00	0.58	0.00	0.00	0.00	0.00	0.00	1.49	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.44	0.44
Total:	**33.12**	**12.09**	**85.09**	**1.55**	**1.38**	**0.02**	**0.12**	**<0.01**	**161.27**	**46.71**	**0.63**	**0.00**	**0.01**	**0.00**	**0.27**	**<0.01**	**0.09**	**0.00**	**281.98**	**60.37**

[a] The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.
[b] There is no operation impact, since there is no change in the pre- and post-construction vegetation cover type associated with the operation of the new and existing permanent right-of-way, except for permanent access roads.
[c] Acreages for land affected during construction at mainline valve locations and tie-in locations has been included in the TWS for the pipeline construction.
[d] Acreage for land affected during construction along the cathodic protection beds are included with the TWS for the pipeline construction.

The primary impact on vegetation from the Project facilities would be the new permanent conversion of about 47 acres of forested upland to open land, comprised of maintained right-of-way and permanent access roads. In addition, about 161 acres of forested land would be cleared for temporary construction workspaces. This would be considered a long-term impact as it would take more than 20 years for forested vegetation to return to pre-construction conditions. However, vegetation within developed, upland herbaceous, and herbaceous wetland habitat types would likely return to their preconstruction conditions within 1 to 5 years.

After construction, Columbia would revegetate the right-of-way and TWS according to its ECS/WVECS. Staging areas would also be restored as close as practicable to previous conditions or left in an improved state if requested by the landowner. Given that Columbia would use existing rights-of-way as much as possible and that almost all Project workspaces would be revegetated, we conclude that the Project would not have a significant impact on vegetation.

Invasive Species and Noxious Weeds

Invasive species are those that display rapid growth and spread, becoming established over large areas (USDA, 2006). Most commonly, invasive species are exotic species that have been introduced from another part of the United States, another region, or another continent, although some species that exhibit rapid growth and spread are also considered invasive. Similar to invasive species, noxious weeds are defined as those that are injurious to commercial crops, livestock, or natural habitats, and typically grow aggressively in the absence of natural controls (USDA, 2016). Noxious weeds are frequently introduced but occasionally are native. Noxious weeds and invasive species can change or degrade natural vegetation communities which can reduce the quality of habitat for wildlife and native plant species. Invasive species and noxious weeds observed during field surveys include tree-of-heaven, Japanese stiltgrass, multiflora rose, and Japanese knotweed.

Removal of existing vegetation and disturbance of soils during construction of the Project could create conditions conducive to the establishment of noxious weeds and invasive species. Columbia would implement its Invasive and Noxious Weed Plan and ECS to minimize the spread of noxious weeds and invasive species. Specific measures include:

- ensuring that equipment is cleaned prior to entering and exiting the Project area;
- minimizing sediment movement and the associated movement of noxious weed seeds;
- seeding according to the ECS to establish a quick cover crop for stability and to allow native species in the soil to quickly establish to assure that a suitable growing substrate for noxious weeds is not available for long periods of time; and
- monitoring the pipeline right-of-way and disturbed sites following construction to verify that revegetation has been successful and that invasive species have not become widely established. Noxious weeds and invasive species discovered during monitoring would be appropriately treated.

We find these measures to be acceptable.

4.2 Wildlife

The Project consists of developed, upland herbaceous, upland shrub, upland forest, and wetland habitat types. Common wildlife in the area include a wide variety of mammal, amphibian, birds, and reptile species. Table 7 describes examples of species found within each habitat type.

The Project would cross the Dan's Mountain Wildlife Management Area (WMA), which is located in western Allegany County, Maryland and is approximately 9,783 acres of predominately mixed oak forest (Maryland Department of Natural Resources [MDNR], 2017). This wildlife management area provides habitat for many songbirds that nest specifically in the mixed oak forests dominating the landscape and thus, Dan's Mountain WMA has been designated a state significant bird area by the Audubon Society (MDNR, 2017). The Project would cross two areas of the WMA at approximate mileposts 3.33 to 3.68 and 6.46 to 7.30. The specific parts of the Project that would cross the WMA include: Line 8000 Segment 2; Lateral Line 8244; 19 ATWS; an existing, permanent access road (PAR-023); two existing, temporary access roads (TAR-012, TAR-013), both of which would be extended with new portions of access road; and a new, temporary access road (TAR-024). Additionally, the pipeline right-of-way would be within 0.25 mile of the wildlife management area in some places.

Potential impacts on wildlife include habitat removal, construction-related ground disturbance, and noise. Some individuals could be inadvertently injured or killed by construction equipment. However, more mobile species such as birds and larger mammals would likely relocate to other nearby suitable habitat and avoid the Project area once construction activities commence. The temporary disturbance of local habitat is not expected to have population-level effects on wildlife because the amount of habitat crossed represents only a small portion of the habitat available to wildlife throughout the Project area, and much of the disturbed habitat would return to preconstruction condition after construction. Additionally, the Project would be mostly co-located with Columbia's existing Line 8000 and other non-Columbia-owned rights-of-way to the greatest extent practicable. Long-term impacts from habitat alteration would be further minimized by the implementation of Columbia's ECS/WVECS, which would ensure revegetation of most areas disturbed by construction. Further, regarding construction and routine maintenance during operation within Dan's Mountain WMA, Columbia would consult with MDNR and obtain right-of-way agreements.

Given Columbia's proposed mitigation measures, including its commitment to revegetate the right-of-way and TWS, and the abundance of similar habitat adjacent to the Project area, we conclude that the Project would not have a significant impact on wildlife or wildlife habitat in the Project area.

4.3 Migratory Birds

Migratory birds are species that nest in the United States and Canada during the summer and then migrate to and from the tropical regions of Mexico, Central and South America, and the Caribbean for the non-breeding season. Migratory birds are protected under the Migratory Bird Treaty Act ([MBTA] – 16 U.S. Code 703-711), and bald and

golden eagles are additionally protected under the Bald and Golden Eagle Protection Act ([BGEPA] – 16 U.S Code 668-668d). The MBTA, as amended, prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. Executive Order 13186 requires that all federal agencies undertaking activities that may negatively affect migratory birds take a prescribed set of actions to further implement the MBTA, and directs federal agencies to develop a memorandum of understanding (MOU) with the FWS that promotes the conservation of migratory birds through enhanced collaboration between the two agencies. In March 2011, FERC entered into a MOU with the FWS, which focuses on avoiding or minimizing adverse impacts on migratory birds and strengthening migratory bird conservation through enhanced collaboration between the two agencies.

Though all migratory birds are afforded protection under the MBTA, both Executive Order 13186 and the MOU require that Birds of Conservation Concern and federally listed species be given priority when considering effects on migratory birds. Birds of Conservation Concern are a subset of MBTA-protected species identified by the FWS as those in the greatest need of additional conservation action to avoid future listing under the Endangered Species Act (ESA). Executive Order 13186 states that emphasis should be placed on species of concern, priority habitats, key risk factors, and that particular focus should be given to addressing population-level impacts

The Project falls within Bird Conservation Region 28: Appalachian Mountains Region (North American Bird Conservation Initiative, 2016). The Appalachian Mountains Region is characterized by rugged terrain generally dominated by deciduous forest types at lower elevations and combinations of pine, spruce, and fir at higher elevations. Most segments of land remain forested, but many portions are used for agriculture. Priority forest birds include Cerulean warbler at low elevations, olden-winged warbler in early-successional areas, and Henslow's sparrow in grasslands.

Vegetation removal and increased presence of humans and noise during construction would likely cause displacement and avoidance of the area by any birds in the Project area. Birds fleeing an area of disturbance could be injured or suffer mortality, or abandon nests, affecting egg-laying and potentially causing the mortality of young. However, this impact is expected to be intermittent and short term, occurring during work hours and ceasing after construction activities have moved from a given area. Further, migratory birds not already nesting would be able to avoid these activities and move to abundant habitat adjacent to the right-of-way. As such, Project activities during construction may affect individuals but would not likely have notable effects on any local populations of migratory birds.

Impacts resulting from vegetation clearing within developed, upland herbaceous, and herbaceous wetland habitat types is expected to be short term because vegetation within these areas would likely return to their preconstruction conditions within 1 to 5 years. Impacts resulting from vegetation clearing within upland forests and forested wetlands would be permanent or long term. Within the permanent right-of-way, routine vegetation maintenance would preclude the growth of trees. Within TWS, impacts on forests would be considered long term because vegetation within these areas could take decades to return to preconstruction conditions. To minimize these impacts, the Project would be mostly co-

located with Columbia's existing Line 8000 and associated laterals, as well as other non-Columbia-owned rights-of-way to the greatest extent practicable, reducing overall impacts on adjacent forested communities and forest fragmentation.

Implementation of the construction and restoration measures in Columbia's ECS/WVECS would reduce the extent and duration of impacts on migratory bird habitat by restoring a great majority of the construction right-of-way to pre-construction conditions. During operation of the Project, vegetation maintenance clearing would occur outside of the nesting season in accordance with Columbia's ECS/WVECS. Habitat loss could have a greater impact on Birds of Conservation Concern species due to their limited populations in the area and more restrictive habitat needs. However, with the implementation of the measures mentioned previously, we conclude that impacts on migratory birds from construction of the Project would largely be temporary and would not be significant. Furthermore, Columbia anticipates completing a majority of clearing activities prior to the general breeding season for migratory birds (generally April 1-August 15) which would further reduce impacts.

Bald Eagle

Ecological field studies conducted by Columbia between July 17, 2017 and September 19, 2017 did not observe the presence of characteristic nest habitat within or along the banks of the predominately forested North Branch Potomac River. Additionally, the review of the Project using the FWS' Information for Planning and Consultation database did not indicate any known bald eagle nests within the vicinity of the Project in West Virginia. Therefore, the Project is unlikely to affect eagles.

Columbia sent letters to the FWS (Chesapeake Bay Ecological Services Field Office and the West Virginia Field Office) on February 22, 2018, requesting comments on potential impacts on bird species protected under the MBTA and BGEPA. No response has been filed by Columbia.

4.4 Fisheries

The quality of a fishery is associated with the quality of its inhabited waterbody. The Project would cross freshwater waterbodies, including perennial, intermittent and ephemeral streams in both Allegany County, Maryland and Mineral County, West Virginia. In the Maryland Code of State Regulations, Regulation 26.08.02 (Stream Designations for the North Branch Potomac River Area Sub-basin), the waterbodies crossed by the proposed Project in Maryland are designated as I-P and III-P. This designation includes water contact recreation, protection of aquatic life, public waters and nontidal coldwater. Waterbodies crossed by the Project in West Virginia are designated as "C" which includes waters for contact recreation such as fishing, swimming and boating in small craft. Additionally, all waters crossed by the Project are warmwater fisheries. Table 9 lists representative game and commercial fish species known to occur in waterbodies crossed by the Project.

Table 9: Representative Game & Commercial Fish Species Known to Occur in Project Area Waterbodies

Anadromous	Warmwater	Catadromous	Invasive
Mineral County, West Virginia			
None	musky, white crappie, central stoneroller, bluegill, goldfish, saugeye, bluntnose minnow, creek chub, blacknose dace	American eel	Northern snakehead
Allegany County, Maryland			
American shad	Potomac sculpin, white sucker, central stoneroller, bluegill, goldfish, fantail darter, bluntnose minnow, creek chub, blacknose dace, smallmouth bass, largemouth bass, tiger muskie, crappie, channel catfish, walleye,carp	American eel	Northern snakehead

Columbia's consultations with the MDNR and the West Virginia Department of Environmental Protection did not identify any state-designated fisheries of special concern, exceptional or high-quality waterbodies, or habitat for federal or state listed species of concern. The Project would cross the McCoole Fish Management Area, an 8.2 acre fishery management area designated along the North Branch Potomac River in Allegany County, Maryland which is utilized for public fishing (MDNR, 2016). However, this area would not be impacted by the Project, as the portion of the pipeline that crosses through this area, at approximate mileposts 0.24 to 0.30, would be installed via HDD. Additionally, the Project would not impact essential fish habitat.

As previously mentioned, the North Branch Potomac River would be crossed by HDD, and therefore, no impacts are anticipated on this waterbody. However, when using HDD, there is potential for inadvertent returns of drilling fluid (mostly bentonite), which could lead to an increase in turbidity as mentioned in section B.3.2. Columbia would implement measures outlined in its HDD Contingency Plan to stop, contain, and clean up any returns.

As discussed in section B.3.2, all other waterbodies would be crossed with a dry-ditch construction method (dam-and-pump or flume). In-water construction and removal of riparian vegetation may cause a temporary increase in turbidity levels, which can increase the sedimentation rate immediately downstream of the work area. Temporary habitat alteration and substrate disturbance could also occur resulting in potential impacts on fish populations. Loss of riparian vegetation in forested areas could affect fish populations that may be present downstream of construction activities by reducing shade and cover, and increasing water temperature. Refueling of construction equipment and storage of fuel oil or other hazardous materials near waterbodies could contaminate waterbodies, if a spill were to occur. Therefore, Columbia would not refuel equipment within 100 feet of these resources without secondary containment. Columbia also would ensure that all equipment is parked overnight at least 100 feet from a waterbody and that hazardous materials, including chemicals, fuels, and lubricating oils are not stored within 100 feet of a waterbody unless the location is designated for such use by an appropriate governmental authority, in accordance with Columbia's ECS/WVECS.

Dry-ditch, expedited crossing methods for waterbodies would reduce the impacts of waterbody crossings by reducing the amounts of turbidity, which is generally limited to short periods before and after the crossing when the dam structure is installed and removed. Columbia would also restore waterbody banks to pre-construction contours and promptly re-seed and stabilize banks, in accordance with Columbia's ECS/WVECS.

Columbia reviewed the MDE database and consulted with the West Virginia Office of Land and Streams regarding state waterbody classifications for each stream crossing. Columbia anticipates in-stream construction to be restricted as follows:

- for waterbodies in Maryland classified as I-P: in-stream work prohibited from March 1-June 15;
- for waterbodies in Maryland classified as III-P: in-stream work prohibited from October 1-April 30; and
- for waterbodies in West Virginia classified as C: in-stream work prohibited from April 1-June 30.

However, in accordance with the section V.B.1. of the FERC Procedures, Columbia would be required to complete all in-stream work between June 1 and November 30, unless expressly permitted or further restricted by the appropriate federal or state agency in writing on a site-specific basis. Any in-stream work time window restrictions would be incorporated in the Project's Clean Water Act Section 404 permitting.

With Columbia's proposed measures, we conclude that fishery impacts would not be significant.

4.5 Special Status Species

Special status species are those species for which state or federal agencies provide an additional level of protection by law, regulation, or policy. Included in this category are federally listed species that are protected under the ESA, species considered as candidates for such listing by the FWS, those species that are state-listed as threatened or endangered, and state species of special concern.

The bald eagle, while no longer federally listed, is protected under the BGEPA. The potential of the Project to impact the bald eagle is discussed in section B.4.3.

Federally Listed Species

Columbia, acting as a non-federal representative for FERC, in accordance with Section 7(a)(2) of the ESA initiated informal consultation with the FWS to identify federally listed threatened and endangered species that may occur in the Project area. Three federally listed species were identified as potentially occurring in the Project area: the federally

endangered Indiana bat, federally threatened northern long-eared bat, and the federally endangered harperella.

Columbia has developed a Multi-Species Habitat Conservation Plan (MSHCP) in coordination with the FWS, which identifies common pipeline activities that may take place within potential federally listed species habitat. The MSHCP outlines detailed monitoring, reporting, and management protocols for multiple ESA-listed species known to occur in the Project area including the Indiana bat. We have reviewed the MSHCP, Biological Opinion, and associated concurrence letters issued by an inter-agency effort on September 13, 2013. An amendment to the MSHCP, approved by the FWS on May 1, 2015, documents the analysis of impacts, incidental take, and mitigation for the northern long-eared bat. Through the MSHCP, Columbia and the FWS have developed standard mitigation measures that would reduce impacts on listed species to less than significant levels.

Columbia's MSHCP serves as the Section 7 ESA consultation for the Project in both Maryland and West Virginia for up to 0.5 mile on either side of the construction right-of-way. The portion of the Project in Maryland, as well as some of the workspace in Mineral County, West Virginia, would occur on lands covered under Columbia's MSHCP, while a small portion of the Project would occur on lands not covered under the MSHCP. This area includes an existing access road that would be upgraded in Mineral County, West Virginia. This existing access road is adjacent to an existing railroad, south of the North Branch Potomac River. The proposed upgrade of the existing access road would also require side trimming and tree clearing.

For the portion of the Project that would be covered under the MSHCP, Columbia has provided the Interagency Endangered Species Act Consultation Checklist for the MSHCP for FERC review and approval. This checklist is included in appendix E. Additional consultation with FWS is required for the portion of the Project in Mineral County, West Virginia that is not covered under the MSHCP and is discussed further below.

Harperella

Columbia's MSHCP identified harperella, a non-MSHCP species, as having potentially suitable habitat within the portion of the Project footprint in Allegany County, Maryland (on MSHCP-covered lands). Harperella is an annual herb in the Carrot family that only occurs within a narrow band of water depths, is intolerant of dry conditions and requires quickly moving streams to develop and grow. Most of the streams delineated within the Project area in Allegany County possess ephemeral or intermittent flow, which would not possess sufficient hydrology to provide suitable habitat for harperella. Further, the MDNR Wildlife and Heritage Service, in its letter dated, March 8, 2018, did not identify harperella as potentially present within the Project area. The Best Management Practices (BMPs) identified within the MSHCP to protect harperella are incorporated into Columbia's ECS. Given that harperella is a non-MSHCP species that is not likely to be adversely affected by covered activities according to the MSHCP and associated concurrence letters, and because

Columbia has committed to implementing the BMPs identified within the MSHCP, no further consultation is necessary.[8]

Indiana Bat and Northern Long-eared Bat

The Indiana bat and northern long-eared bat may use the Project area for foraging and roosting. Indiana bat summer foraging habitats are generally defined as riparian, bottomland, upland forest, and old fields or pastures with scattered trees. Roosting/maternity habitat consists primarily of live or dead hardwood tree species which have exfoliating bark that provides space for bats to roost between the bark and the bole of the tree. Tree cavities, crevices, splits, or hollow portions of tree boles and limbs also provide roost sites.

As agreed upon with the FWS, Columbia would follow the measures outlined in the MSHCP for avoiding and minimizing impacts on the Indiana bat and northern long-eared bat. The primary impact on these species and associated habitat would be through the clearing of trees. Columbia would avoid impacts on listed bats by clearing trees between October 15 and March 31 on covered lands. Additional avoidance and minimization measures would be implemented as outlined in Columbia's MSHCP and ECS. We conclude that the proposed activities are consistent with the MSHCP and consultation letters; therefore, consultation is complete for this portion of the Project.

In a letter dated November 29, 2018, the FWS indicated that the Indiana bat and northern long-eared bat may use the portion of the Project that occurs on land not covered by the MSHCP in Mineral County, West Virginia for foraging and roosting between April 1 and November 15. This portion of the Project would only involve the upgrade of an existing access road, which is adjacent to a railroad, but would also require side trimming and tree clearing. In its letter, the FWS stated that it does not anticipate that the Project is likely to adversely affect the Indiana bat because: 1) it would affect less than 17 acres of potential Indiana bat foraging or roosting habitat; 2) it is not within any of the FWS-identified Indiana bat hibernacula or summer use buffers; 3) it would not affect any potential caves or mines that could be used as hibernacula for this species; and 4) effects on aquatic features used for foraging habitat would be insignificant. We agree. Therefore, we conclude that the Project *may affect, but is not likely to adversely affect* the Indiana bat and northern long-eared bat.

While we have determined that the Project may affect the northern long-eared bat, incidental take of northern long-eared bats as a result of Project tree clearing is not prohibited under Section 9 of ESA because the Project design meets the conservation requirements of the final rule under Section 4(d) of ESA for the species (81 FR 1900). Specifically, the Project is not within 150 feet of any known, occupied maternity roosts or within 0.25-mile of any known, occupied hibernacula. The streamlined consultation form for the northern long-

[8] For species not covered by the MSHCP, i.e., non-MSHCP species, if the proposed activity includes one of the not likely to adversely affect species or no effect species, Columbia and the federal action agency should confirm that the proposed activity is consistent with the MSHCP and the consultation letter. If so, no further consultation is required. See the MSHCP Consultation Implementation Guidance at https://www.fws.gov/midwest/endangered/permits/hcp/nisource/pdf/NiSourceESAS7ImplementationGuide9May2014FINAL.pdf.

eared bat is included as appendix F. If the FWS does not respond within 30 days from submittal of this form, it is presumed that responsibilities under ESA section 7(a)(2) with respect to the northern long-eared bat are fulfilled through the FWS' January 5, 2016, Programmatic Biological Opinion.

While Columbia would adhere to the timing restrictions that allow for tree clearing between October 15 through March 31, Columbia has indicated that it is undertaking a comprehensive federally listed bat mist net survey, in consultation with FWS, for MSHCP-covered lands within Maryland and West Virginia and the small portion of the Project outside the covered lands in West Virginia. The mist net survey would be conducted to assess the potential for Columbia to implement tree clearing activities outside of the referenced tree clearing time window. Columbia would consult with FWS regarding the survey results to determine flexibilities with the tree clearing restriction time window for federally listed bats.

In compliance with section 7 of the ESA, we are requesting concurrence from the FWS for the Project-related impacts on the Indiana bat. Because this consultation has not yet been completed for the Indiana bat**, we recommend that**:

- **Columbia <u>should not begin construction</u> of the Project <u>until</u>:**

  a. **FERC staff receives comments from the FWS regarding the proposed action;**

  b. **FERC staff completes any necessary ESA section 7 consultation with the FWS; and**

  c. **Columbia receives written notification from the Director of the Office of Energy Projects (OEP) that construction and/or use of the mitigation (including implementation of conservation measures) may begin.**

State-listed Species

In letters dated, December 28, 2017 and March 8, 2018, the MDNR Wildlife Heritage Service determined that there are no official state or federal records for listed plant or animal species within the Project area, and as a result, it has no specific concerns regarding potential impacts or recommendations for protection measures. West Virginia does not have any state endangered species legislation; therefore, the only listed species in West Virginia are federally listed species, which were previously discussed. Therefore, we conclude that the Project would not adversely affect state-listed species.

5.0 Land Use, Recreation, and Visual Resources

5.1 Land Use

The Project would cross six major land use types: forested/woodland, open land, residential land, industrial/commercial land, open water, and other land. The areas disturbed during construction would be restored in accordance with the Project's ECS and Project specific plans, except for permanent roads, and minor aboveground facilities. All temporary rights-of-way would be restored to pre-construction conditions and uses. All permanent

rights-of-way would be restored as per the Project's ECS/WVECS, appropriate landowner agreements, and retained for the operation of the pipeline. This area would be converted from its pre-construction land use to open land for the maintenance and operation of the pipeline. The land uses crossed by the pipeline are shown in table 10 below.

ATWS outside the pipeline construction corridor would be required where site-specific conditions warrant the use of additional space to construct the pipeline in a safe manner. Following construction, ATWS would be restored and allowed to return to pre-construction or similar uses. Columbia would restore these areas in accordance with the Project's ECS/WVECS or as required by federal, state, or local permits and landowner requirements.

Three contractor staging areas have been identified for the Project, which may be used to store pipe, materials, and equipment; employee vehicle parking; vehicle maintenance and storage; and for temporary field offices. The contractor staging areas were selected to minimize the effects on vegetation and land use. After construction has been completed, the contractor staging areas would be restored to pre-reconstruction conditions.

Columbia has identified 61 access roads which would be used to provide access to the Project during construction and operation. Thirty-six would be permanent and twenty-five would be considered temporary access roads. Both new and existing access roads are proposed for the construction activities associated with this Project. Columbia made all efforts to utilize existing roads where practicable; however, new roads would be needed for construction activities associated with the Project.

Columbia would install four new mainline valves and modify or abandon in place existing minor aboveground facilities to support the replacement of Line 8000. The new mainline valves would be installed within the proposed or existing permanent right-of-way of the pipeline. Following construction, an approximately 50-foot by 50-foot area would be fenced, graveled, and maintained within the permanent 50-foot right-of-way for the new pipeline.

Modifications of existing minor aboveground facilities would be located within the existing permanent right-of-way of the facility, and additional areas needed for construction would be located within the workspace of the new pipeline. No additional land outside of the permanent right-of-way would be affected by operation of these facilities. Columbia would install a cathodic protection system along the proposed pipeline right-of-way. The cathodic protection system would cross only industrial/commercial land.

Table 10: Land Use Affected by Construction and Operation of the Project

Workspace	Developed[a,b]		Forest[a,c]		Other[a,g]		Open Land[a,d]		Open Water[a,f]		Residential[a,e]		TOTALS	
	Constr.	Oper.	Constr.	Oper.	Constr.	Oper.	Constr.	Oper.	Constr.	Oper.	Constr.	Oper.	Constr.	Oper.
Mineral County, West Virginia														
Pipeline Right of Way	0.40	0.14	0.93	0.56	0.00	0.00	0.00	0.00	0.19	0.19	0.09	0.01	**1.61**	**0.89**
ATWS	0.09	0.00	2.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	**2.82**	**0.00**
Access Roads	1.66	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**1.94**	**0.00**
Construction Staging Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**	**0.00**
Minor Aboveground Facilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**N/A**	**N/A**
Cathodic Protection	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**	**0.00**
West Virginia Total:													**6.37**	**0.89**
Allegany County, Maryland														
Pipeline Right of Way	46.15	6.27	103.41	44.01	0.20	0.00	11.29	2.55	0.02	0.02	7.20	1.27	**168.19**	**54.10**
ATWS	5.85	0.00	45.50	0.000	0.14	0.00	3.57	0.00	0.00	0.00	2.90	0.00	**57.70**	**0.00**
Access Roads	21.23	12.34	7.74	1.70	0.08	0.00	2.14	0.56	0.00	0.00	1.07	0.85	**32.26**	**15.45**
Construction Staging Areas	9.81	0.00	0.00	0.00	0.00	0.00	5.21	0.00	0.00	0.00	0.00	0.00	**15.02**	**0.00**
Minor Aboveground Facilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**N/A**	**N/A**
Cathodic Protection	0.44	0.12	1.50	0.44	0.00	0.00	0.37	0.06	0.00	0.00	0.14	0.04	**2.44**	**0.65**
Maryland Total:													**275.61**	**70.20**
Total Project														
Pipeline Right of Way	46.55	6.41	106.23	44.57	0.20	0.00	11.29	2.55	0.21	0.21	7.29	1.28	**169.80**	**54.99**
ATWS	5.94	0.00	48.15	0.00	0.14	0.00	3.57	0.00	0.00	0.00	3.12	0.00	**60.52**	**0.00**
Access Roads	22.89	12.35	8.03	1.70	0.08	0.00	2.15	0.56	0.00	0.00	1.07	0.85	**34.20**	**15.45**

Table 10: Land Use Affected by Construction and Operation of the Project

Workspace	Developed[a,b]		Forest[a,c]		Other[a,g]		Open Land[a,d]		Open Water[a,f]		Residential[a,e]		TOTALS	
	Constr.	**Oper.**	**Constr.**	**Oper.**	**Constr.**	**Oper.**	**Constr.**	**Oper.**	**Constr.**	**Oper.**	**Constr.**	**Oper.**	**Constr.**	**Oper.**
Construction Staging Areas	9.81	0.00	0.00	0.00	0.00	0.00	5.21	0.00	0.00	0.00	0.00	0.00	**15.02**	**0.00**
Minor Aboveground Facilities[h]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**N/A**	**N/A**
Cathodic Protection	0.44	0.12	1.50	0.44	0.00	0.00	0.37	0.06	0.00	0.00	0.14	0.04	**2.44**	**0.65**
Project Total:	**85.63**	**18.87**	**163.91**	**46.71**	**0.42**	**0.00**	**22.59**	**3.17**	**0.21**	**0.21**	**11.62**	**2.17**	**281.98**	**71.09**

Notes:

a The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.

b Developed (e.g., electric power or gas utility stations, manufacturing or industrial plants, landfills, mines, quarries, commercial or retail facilities, and roads/improved driveways).

c Upland and wetland forest.

d Herbaceous upland, emergent and scrub-shrub wetland.

e Residential land.

f Water crossings greater than 100 feet wide.

g Miscellaneous special use areas (e.g., land associated with schools, parks, places of worship, cemeteries, sports facilities, camp grounds, golf courses, and ball fields).

h Acreage for land affected during construction and operation of minor aboveground facilities has been included in the workspaces for the pipeline ROW.

Forested/Woodland

The Project would impact forested land with the removal of trees and shrubs from the construction work areas (i.e., rights-of-way and ATWS). Following construction, trees and shrubs in the TWS would be allowed to reestablish to pre-construction conditions through natural succession. The permanent pipeline right-of-way would be maintained in a manner consistent with Columbia's established plans for maintenance of operational areas, including supporting herbaceous and low scrub-shrub communities. For the Project sections that require new right-of-way in forested areas, the result would be a permanent conversion of forested land to open land in the maintained right-of-way. Only approved workspaces would be utilized and all equipment would access these areas along the construction right-of-way or approved access roads.

Open Land

Open land consists of any areas where non-forested land, pastures, and fields exist. These areas would have temporary impacts associated with excavation and construction of the pipeline, and all work spaces and staging areas located in open land would have temporary impacts associated with staging equipment and spoil from excavations/drilling.

Construction and restoration would follow the procedure outlined in the Project's ECS. All disturbed areas would be returned to existing contours and seeded as specified in the restoration requirements or applicable landowner agreements. All areas of open land that are in the temporary and permanent right-of-way are expected to revert to pre-construction land use conditions after construction is completed. Vegetation within the permanent right-of-way would be maintained by periodic mowing.

Residential Land

Based on review of aerial photography and field surveys, there are 160 structures within 50 feet of the Project's construction work areas associated with the Project workspaces.[9]

Temporary impacts on residential areas may include disturbance of lawns, removal of fences, and other minor residential accessory structures. This may include the removal of ornamental shrubs, the disturbance of streets, driveways, and sidewalks; altered traffic patterns; and temporary noise impacts from construction activities. Columbia would work

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[9] Detailed information can be viewed on the FERC internet website as part of Columbia's supplement to its Environmental Report filed on January 9, 2018 at https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14633562. See Volume II for the location of the residential buildings as identified on the alignment sheets provided and table 8.3-1 for the locations of these structures by milepost and the approximate distance from the construction right-of-way.

with landowners to negotiate agreements for replacing items that are removed along the construction right-of-way. The items must be maintained in accordance with Columbia's right-of-way agreements and must not jeopardize the future integrity of the right-of-way or impede access by pipeline personnel for operation and maintenance activities.

For residents within 50 feet of the new pipeline and associated workspaces, Columbia would:

- send landowners a two-week notification prior to construction on their respective properties;
- limit construction activities to 7 am – 7 pm (with the exception of the HDDs) to avoid and mitigate excessive noise during evening and early morning time periods; (HDD construction activities at the North Branch Potomac River crossing are anticipated to be a 24-hour operation, where noise mitigation for nearby noise sensitive areas may be implemented and is discussed in more detail in section 7.2.)
- remove no mature trees and landscaping from the edge of the construction work areas unless necessary for safe operation of construction equipment, or as specified in landowner agreements;
- install safety fencing along the edge of construction work areas at a minimum of a distance of 100 feet on either side of each residence to discourage non-workers from entering the area;
- implement measures (e.g. plating over the open portion of the trench) to maintain passage for landowner and emergency vehicles, or for others who require access where the construction corridor crosses roads necessary for access to private residences or commercial buildings and no alternative entrance exists;
- complete temporary repairs to septic systems damaged by construction activities within 48 hours of damage, and complete permanent repairs between construction and final restoration;
- develop and implement site-specific traffic control plans to limit heavy construction traffic in sensitive areas to specific times of day and/or limit the types of equipment used in these areas to the extent practicable;
- secure trenches with safety fencing each day as construction activities conclude;
- segregate topsoil from either the full work area or from the trench and subsoil storage area in order to prevent the mixing of topsoil and subsoil, unless specified by the landowner or replacement topsoil is imported;
- restore all lawn and landscaping to final restoration conditions or as specified in landowner agreements or, if seasonal or other weather conditions prevent timely restoration, monitor and maintain temporary erosion controls (e.g. sediment barriers, mulch) until conditions allow restoration;

- attempt to prevent the disruption of utilities or, in the event utilities are disturbed, efforts would be made to repair them immediately; and
- control fugitive dust near residential areas using water trucks, tackifiers, or similar dust control methods.

Columbia has developed site-specific construction plans for residences and commercial structures within 25 feet of the new pipeline and associated workspace areas for the Project. The site-specific plans are attached to this EA in appendix G. These plans identify the mitigation measures to be implemented by Columbia to promote safe and efficient installation of the pipelines with minimal impacts on landowners. We encourage affected landowners to review the plans and provide us with comments during the EA comment period. The site-specific plans show the following items within a minimum of 25 feet of pipeline construction right-of-way:

- the proposed centerline of the pipeline;
- the limits of the construction work areas;
- each residence/structure;
- existing utilities (e.g., power lines or buried utilities);
- waterbodies, roads, driveways, fences;
- private wells; and
- the location of safety fencing that would be installed during construction.

Columbia has initiated land acquisition negotiations with landowners, including those with a residential structure located within 10 feet of workspaces. As part of these negotiations, Columbia would receive concurrence on each individual residential site-specific plan. Columbia would provide individual landowner concurrence regarding the residential site-specific plans for structures within 10 feet of workspaces to the Commission prior to construction.

If any damages to residential property results from construction, Columbia would repair the damaged property or provide appropriate compensation to the landowner. All workspace on residential land would be restored to its pre-construction condition, or as negotiated with the landowner during right-of-way discussions.

In response to our NOI, we received comments from Mr. Paugh regarding concerns with construction of the Project on his land, including concerns with stormwater runoff, erosion, restoration, and how the Project would affect a forestry management plan. As previously discussed, Columbia would implement measures in its ECS to minimize impacts from stormwater runoff and erosion. In addition, measures in Columbia's ECS would ensure restoration of the right-of-way back to pre-construction conditions or in accordance with landowner agreements. Columbia has reviewed Forest Stewardship Plans that have been issued by the MDNR, Forest Service. The goal of such plans would be to maintain forested property with a focus maintaining forest health, provide habitat for wildlife, forest recreation, firewood production, and timber production. These plans do not preclude development on the property, but rather provides guidance on best practices for maintaining the forests.

Columbia is working with all landowners to determine the fair market value of the timber that would be removed as a result of the Project.

Columbia has established environmental complaint resolution procedures providing landowners and other stakeholders with instructions for identifying and resolving environmental concerns or issues during the construction and restoration phases of the Project. Prior to construction, Columbia would mail a letter describing the procedures to landowners whose properties would be affected by the Project. These procedures include providing contact information for a local Columbia representative and appropriate steps to take in case the response of the local Columbia contact is not satisfactory.

Consultation with planning agencies in Allegany County, Maryland, and Mineral County, West Virginia were initiated in August 2017 and are ongoing to identify all planned residential or commercial business developments or subdivisions. No planned residential or commercial developments have been identified that would be crossed by or within 0.25 miles of the construction work areas. Columbia would continue to consult with state and local authorities to determine if any additional developments could be affected by the Project.

Industrial/Commercial Land

Temporary impacts on industrial/commercial areas may include disturbance of landscaped areas, removal of fences, and other accessory structures. This may include the removal landscaping items, the disturbance of streets, driveways, and sidewalks; altered traffic patterns; and temporary noise impacts from construction activities. Columbia would work with landowners to negotiate agreements for replacing items that are removed along the construction right-of-way. The items must be maintained in accordance with Columbia's right-of-way agreements and must not jeopardize the future integrity of the right-of-way or impede access by pipeline personnel for operation and maintenance activities.

After construction, the sites would be restored to preconstruction conditions as soon as practicable. Most developed land uses would be able to continue in accordance with individual right-of-way agreements for approved and/or restricted use of permanent rights-of-way. However, buildings, structures, wells, reservoirs, pools, obstructions, or removal/addition of cover would not be permitted on the permanent pipeline rights-of-way. Construction of features such as roads or driveways, utility lines, and properly gated fences are generally permissible uses within the permanent rights-of-way.

Open Water

Open water areas within the Project are water crossings that are greater than 100 feet and only one would be crossed by the Project, the North Branch Potomac River. The North Branch Potomac River is classified by the State of Maryland as I-P, which means that it is suitable for water contact sports, leisure activities that encounter surface water, fishing, growth, and propagation of fish and wildlife, and water supply for agriculture, industry, and public water (MDE 2017). The North Branch Potomac River is proposed to be crossed using HDD, therefore, no direct in-water work would occur. Additionally, workspaces would be set back to avoid the river's banks and adjacent riparian areas. Further, Columbia would employ

measures to minimize noise levels during drilling. However, as previously discussed in section B.3.2, there is potential for inadvertent returns of drilling fluid. Columbia would implement measures in its HDD Contingency Plan to reduce the likelihood of inadvertent returns, as well as to minimize potential impacts if they occur, such as containment and cleanup.

5.2 Special Management Areas

The Project would cross or pass within 0.25 miles of areas of land that are publicly owned or managed tracts of land. All areas were identified through desktop review. Public and conservation lands crossed are provided in table 11 below. As part of the agency coordination required for the Project, Columbia would work with State of Maryland officials to avoid or minimize potential impacts to the below areas. In addition, Columbia would work with the agencies responsible for managing these areas to establish safety protocols on-site. All temporary and permanent impacts on these areas would be mitigated per the Project's ECS/WVECS.

Table 11: Public Land and Designated Recreation, Scenic, or Other Areas

Mileposts		Name of Area	Land Owner	Crossing Length (feet)	Area Affected by Construction (acres)	Area Affected by Operation (acres)
Begin	End					
West Virginia						
0.00	0.00	North End Playground Park	City of Keyser	Does not cross (access road within 0.25 miles of Project)	0.00	0.00
Maryland						
0.20	0.24	North Branch Potomac River	State of Maryland	175 feet[1]	0.21	0.21
0.24	0.30	McCoole Fishery Management Area	State of Maryland	300 feet[1]	0.77	0.69
3.10	3.20	MDNR Tract 1	State of Maryland	Does not cross (access road within 0.25 miles of Project)	0.00	0.00
3.33 6.46	3.68 7.30	Dan's Mountain WMA	State of Maryland	3,500 feet	15.02	7.93
8.54	8.80	Fore Sisters Golf Course	Private	1,600 feet1	4.18	4.18
11.74	11.84	Bel Air Elementary School	Allegany County	Does not cross (within 0.25 miles of Project)	0.00	0.00
16.54	16.66	La Vale Lions Park	Allegany County	Does not cross (within 0.25 miles of Project)	0.00	0.00
17.20	17.83	La Vale District Park	Allegany County	Does not cross (within 0.25 miles of Project)	0.00	0.00

Federal and State Managed Lands

As previously discussed, the Project would cross the North Branch Potomac River in Allegany County, Maryland, which is managed by the State of Maryland. The pipeline would run under the North Branch Potomac River for approximately 175 feet and would be

installed via HDD. Therefore, no impacts are anticipated. Additionally, Columbia would obtain the necessary approvals from the State of Maryland for the river crossing.

According to the Maryland Geographic Information Office (MGIO), the MDNR owns a tract of land that is approximately 8.2 acres in size and is located northwest of McCoole, Maryland to the southwest of Route 135. The area is predominantly forested land but also contains paths and is adjacent to the North Branch Potomac River. It is anticipated that the Project would not impact this area because this area would be crossed using HDD.

According to the MGIO, the MDNR owns a tract of land that is approximately 3.5 acres in size and is located south of Dawson, Maryland to the east of Route 220. The area is predominantly forested land but also contains open land and paths and is adjacent to the North Branch Potomac River. Temporary access road TAR-011 would end approximately 0.06 miles from this land. The pipeline construction area is approximately 0.70 miles from this land.

According the MDNR, Dan's Mountain WMA is located in western Allegany County and is composed of 9,873 acres of land. The area is used for general outdoor recreation and hunting and is managed by the Wildlife and Heritage Service. The Project would cross two areas of the WMA to the northeast and southwest of Danville, and several portions of the Project area are within 0.25 miles of the WMA. The following would cross the WMA: Line 8000 Segment 2; Lateral Line 8244; 19 ATWS; existing, permanent access road PAR-023; existing, temporary access roads TAR-012, TAR-013, both of which would be extended with new portions of access road; and a new, temporary access road TAR-024.

According to MGIO, the MDNR owns a tract of land that is approximately 123 acres in size and is located southwest of Rawlings, Maryland to the east of Route 220. The area is predominantly forested land and is adjacent to the North Branch Potomac River. An existing permanent access road (PAR-026A) that would be extended with a new portion of access road would cross this area, and the proposed pipeline construction area lies approximately 0.18 miles from this land.

The Project would cross three areas of locally-managed land in Maryland and one area in West Virginia.

- The North End Playground Park is a park with a playground and basketball court owned by the City of Keyser (West Virginia) located in the eastern portion of Keyser, West Virginia. No construction work areas would be located within the boundary of this park.

- The Fore Sisters Golf Course is a golf course owned by Meadowland Properties LLC located northwest of Rawlings, Maryland. The Project would run through the golf course for approximately 0.24 miles, but this portion of the Project would utilize HDD to cross the entire length of the golf course.

- The Bel Air Elementary School is a school property with recreational facilities, baseball fields, and tennis courts owned by Allegany County (Maryland) located in the southwestern portion of Bel Air, Maryland. Construction work areas for the Project would be approximately 0.06 miles south of the Bel Air Elementary School property.

- The La Vale Lions Park is a small public park with baseball fields and tennis courts owned by Allegany County (Maryland) located in the southern portion of La Vale, Maryland. Construction work areas for the Project would be approximately 0.01 miles south of La Vale Lions Park.

- The La Vale District Park is a large forested public park owned by Allegany County (Maryland) located along the southeast portion of La Vale, Maryland. The Project would not intersect with this park in any area; construction work areas for the Project would be approximately 0.05 miles to the west of the La Vale District Park.

Temporary impacts on these areas may include disturbance of landscaped areas; removal of fences and other accessory structures; the disturbance of streets, driveways, and sidewalks; altered traffic patterns; and temporary noise impacts from construction activities.

Columbia would work with all respective agencies to ensure safe practices and protocols involving the crossing of these areas. Columbia would work with land managing agencies or appropriated trail stewards to ensure that notification of anticipated disruptions would be provided to alert recreational users along these areas; however, at this time no disruptions are anticipated.

There are no Federal managed lands within 0.25 miles of the Project area. Additionally, the Project is not located within coastal zone management areas.

5.3 Visual Resources

The proposed route has been aligned accordingly to avoid impacts to aesthetic features when practicable. Considering that the Project is in the Valley and Ridge Province, much of the line of sight would be fragmented throughout the span of the Project limiting impacts on visual resources; however, the pipeline has been aligned to avoid or minimize the impacts associated with any visually appealing features.

The construction and installation of the Project would result in visual impairment associated with the maintenance of the permanent right-of-way. However, the majority of the Project right-of-way has been co-located with the existing Line 8000 right-of-way.

Therefore, the existing 50-foot-wide maintained right-of-way would be widened by 25 feet, and resulting in a widening of an existing right-of-way which would minimize visual impacts in these areas, compared to the creation of a new right-of-way through previously undisturbed areas. Approximately 43 percent of the land that would be crossed throughout the Project is open land, industrial/commercial, residential, open water, or other land uses. These areas would be returned to their existing pre-construction contours, graded, and seeded, with minimal visual impact. Approximately 57 percent of the area crossed by the Project is forested. About 40 percent would be a temporary, long-term impact due to the growth of trees and about 17 percent would be permanent in nature due to the maintenance of the permanent right-of-way. The right-of-way in these areas would be converted from forested to herbaceous.

The Project would cross the Fore Sisters Golf Course and the North Branch Potomac River, which may be sensitive to visual impacts. These two areas would be crossed via HDD to reduce land impacts, as well as minimize visual impacts. Columbia has requested workspaces between the entry and exit point of the North Branch Potomac River HDD, which would be needed to facilitate construction activities associated with the HDD installation, grouting the existing pipeline to be abandoned at the CSX railroad and Highway 135 road crossings, and to remove existing aboveground facilities associated with the line to be abandoned. Additionally, an access road (TAR-004A) would be required to remove an existing valve set located on the existing Line 8000 to be abandoned. Columbia would minimize tree clearing along the banks of the North Branch Potomac River in Maryland and West Virginia, to reduce the extent of visual impacts. Columbia filed site-specific crossing plans and feasibility assessments, which we have reviewed and find acceptable.

The Project would cross private and public land. Consultation with private owners and state and county representatives for rights-of-way and land use has been initiated. Columbia is working with the State of Maryland and Allegany County for crossings associated with the Project.

The installation of new minor aboveground facilities could also result in visual impacts. The two new pig launcher and receivers would be installed at the existing Keyser and LaVale Stations. Columbia would also install new, and modify or remove existing valves and mainline valves. The modification or removal of these aboveground facilities would occur at their current locations, and no additional land outside of the permanent right-of-way would be affected by operation of the facilities. The installation of four new mainline valves would be constructed outside of residential areas and primarily in forested areas where trees would obstruct the view of these facilities. Columbia would gravel and fence areas where minor aboveground facilities would be installed. Therefore, visual impairment caused minor aboveground facilities is expected to be minimal.

Based on the existing type of land use surrounding the proposed pipeline replacement and construction and the limited number of viewpoints, we believe that the proposed Project would have a minimal impact on visual resources.

6.0 Cultural Resources

Section 106 of the National Historic Preservation Act, as amended, requires the FERC to take into account the effect of its undertakings on properties listed, or eligible for listing, on the National Register of Historic Places (NRHP), and to afford the Advisory Council on Historic Preservation an opportunity to comment. Columbia, as a non-federal party, is assisting the FERC in meeting our obligations under Section 106 and its implementing regulations at 36 CFR Part 800.

Columbia conducted an archaeological resources survey for the Maryland portion of the Project, and provided a *Phase I Archeological Survey* report to the FERC and Maryland State Historic Preservation Office (SHPO). In a letter dated October 5, 2017, the SHPO indicated that an architectural survey field investigation was not warranted for the Project. The archaeological survey included a 250- to 925-foot-wide corridor for the pipelines, as well as access roads, a cathodic protection area, extra workspaces, and staging areas. Survey remained to be completed for approximately 1.7 miles of pipeline and associated workspaces. The survey included visual inspection and excavation of 943 subsurface shovel test units, and covered approximately 794.3 acres. As a result of this survey, two archaeological sites were identified; one historic (18AG289), and one prehistoric (18AG290). The historic site, a fieldstone ruin of an industrial complex (perhaps a furnace or lime kiln), was recommended as potentially eligible for the NRHP. Columbia would fence the edge of the Project workspace and avoid this site. The prehistoric site, a small lithic scatter, was recommended as not eligible for the NRHP. On December 21, 2017, the SHPO concurred that site 18AG290 was not eligible, and 18AG289 was sufficiently avoided, and that no further investigations were warranted at the site. We agree with the Maryland SHPO.

Subsequently, Columbia completed additional archaeological survey for newly identified areas and previously denied access areas, and provided the resulting *Supplemental Phase I Archeological Survey* report to the FERC and Maryland SHPO. The survey included a 250- to 925-foot-wide corridor for 1.45 miles of pipeline, 20 access roads, a cathodic protection area, and extra workspaces. Survey remains to be completed for approximately 0.24 mile of pipeline and an access road. As a result of this supplemental survey, two small pre-contact lithic scatters (18AG293 and 18AG294) were identified. Site 18AG293 was recommended as not eligible for the NRHP, while site 18AG294 was recommended as potentially eligible for the NRHP. This site is located outside the Project workspace (approximately 100 feet) and would be avoided. In a letter dated April 4, 2018, the SHPO concurred that site 18AG293 was not eligible for the NRHP, and that site 18AG294 would be avoided, and that the Project would have no effect on the site. We agree with the Maryland SHPO.

Columbia also provided a “Historic Built Environment” letter report for newly identified Project modifications. The report identified three structures (two residences and a warehouse) older than 45 years in proximity to the existing La Vale Station, where a new launcher/receiver is proposed. Because of the small scale of Project activities and the surrounding vegetative screening at this location, Columbia recommended that the Project changes would have no potential to affect historic properties. In its April 4, 2018 letter, the

SHPO indicated that the Project was unlikely to have an adverse impact on historic buildings, structures, or landscapes, and reiterated that an architectural survey field investigation was not warranted for the Project. We concur with the Maryland SHPO.

As noted above, survey remains to be completed for approximately 0.24 mile of pipeline and an access road. **Therefore, we recommend:**

- **Columbia should <u>not begin construction</u> of facilities and/or use of staging, storage, or temporary work areas and new or to-be-improved access roads <u>until</u>:**

  a. Columbia files an addendum survey report for the outstanding survey areas in Maryland, and the SHPO's comments on the addendum;

  b. the Advisory Council on Historic Preservation is afforded an opportunity to comment if historic properties would be adversely affected; and

  c. the FERC staff reviews and the Director of OEP approves the addendum survey report, and notifies Columbia in writing that construction may proceed.

  All materials filed with the Commission containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "CUI//PRIV – DO NOT RELEASE."

Columbia completed cultural resources surveys for the West Virginia portion of the Project, and provided a *Phase I Archeological Survey* report and a *Phase I Reconnaissance Level Architectural Investigations* report to the FERC and the West Virginia SHPO. The archaeological survey included a 300- to 970-foot-wide corridor for the pipeline, as well as access roads. The survey included visual inspection and excavation of 132 subsurface shovel test units, and covered approximately 63.5 acres. As a result of this survey, no archaeological materials were recovered. The Project was also found to overlap the northern extent of the New Creek Civil War Battlefield, but due to the amount of prior disturbance, no further work was recommended. In a letter dated November 13, 2017, the West Virginia SHPO concurred no further archaeological investigations were warranted, and that the Project would have no effect on archaeological historic properties. We agree.

The architectural study area for West Virginia was defined as the pipeline corridor, an access road, extra workspace, and a 0.05-mile radius around Columbia's existing Keyser Station, where a new launcher/receiver is proposed. Architectural resources 45 years of age or older were recorded. The pipeline route would cross the former Baltimore and Ohio Railroad Main Line (eligible for the NRHP), however the railroad would be avoided by HDD. In a letter dated September 1, 2017, the SHPO agreed the railroad would not be

impacted. The access road would cross the former Baltimore and Ohio Keyser Yard (previously evaluated as not eligible for the NRHP), and be within the boundaries of the Keyser Historic District (eligible for the NRHP) and New Creek Civil War Battlefield (unevaluated for NRHP eligibility). A brick cistern-like structure was also identified near the road, but would be avoided. In addition, four dwellings over 45 years of age were identified within the potential viewshed of Columbia's Keyser Station, but were assessed as lacking integrity. Because no extant built resources associated with the historic district or the battlefield were identified, and views of the road would be screened by a tree buffer, Columbia recommended that the Project had no potential to result in direct or visual effects to the historic district or battlefield. In a letter dated November 27, 2017, the West Virginia SHPO stated that the proposed Project would affect no architectural properties eligible for or included in the NRHP. We agree.

Subsequently, Columbia provided a "Historic Property Inventory Form" for Line 8000 to the Maryland and West Virginia SHPOs and FERC, discussing the history of the pipeline (originally constructed between 1906 and 1907). As a result of this study, Line 8000 was recommended as not eligible for the NRHP. In a letter dated May 23, 2018, the West Virginia SHPO concurred. In a letter dated June 5, 2018, the Maryland SHPO stated the Project would have no adverse effect on historic properties. We concur.

Columbia contacted the following Native American tribes regarding the Project: Absentee-Shawnee Tribe of Oklahoma; Catawba Indian Nation; Cayuga Nation of New York; Cherokee Nation of Oklahoma; Delaware Nation; Eastern Band of Cherokee Indians; Oneida Tribe of Indians of Wisconsin; Oneida Indian Nation of New York; Onondaga Nation of New York; Seneca-Cayuga Tribe of Oklahoma; Seneca Nation of Indians; Shawnee Tribe; St. Regis Band of Mohawk Indians of New York; Tonawanda Band of Seneca Indians of New York; Tuscarora Nation; and United Keetoowah Band of Cherokee Indians of Oklahoma, and Stockbridge-Munsee Community Band of Mohican Indians regarding the Project. No responses have been received to date. We sent our NOI to these same tribes. No responses to our NOI have been received.

Columbia provided plans for each state to address the unanticipated discovery of historic properties and human remains during construction. We requested revisions to the plans. Columbia provided revised plans which we find acceptable. In a letters dated October 23, 2017 from the West Virginia SHPO and November 9, 2017 from the Maryland SHPO found the plan for its state acceptable.

7.0 Air Quality and Noise

7.1 Air Quality

Air quality would be affected by construction of the Project. The proposed construction activities would include HDD and pipeline replacement activities. During construction, short-term emissions would be generated by operation of equipment, land disturbance, and increased traffic from worker and delivery vehicles for all locations. Once

abandonment and replacement activities are completed, there would be no operational emissions, other than fugitive pipeline emissions, from the Project.

Ambient air quality is protected by federal and state regulations. Under the Clean Air Act (CAA) and its amendments, the EPA has established National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO), lead, nitrogen dioxide (NO_2) ozone, particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and sulfur dioxide (SO_2). The CAA is the basic federal statute governing air pollution. The MDE and the West Virginia Department of Environmental Protection has the authority to implement permit programs under the CAA for the proposed Project facilities.

These standards incorporate short-term (hourly or daily) levels and long-term (annual) levels to address acute and chronic exposures to the pollutants, as appropriate. The NAAQS include primary standards, which are designed to protect human health, including the health of sensitive subpopulations such as children and those with chronic respiratory problems. The NAAQS also include secondary standards designed to protect public welfare, including economic interests, visibility, vegetation, animal species, and other concerns not related to human health. Maryland and West Virginia have adopted all of the NAAQS along with additional state regulated standards.

Air quality control regions (AQCRs) are areas established by the EPA and local agencies for air quality planning purposes, in which State Implementation Plans describe how the NAAQS would be achieved and maintained. The AQCRs are intra- and interstate regions such as large metropolitan areas where improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR. Each AQCR, or smaller portion within an AQCR (such as a county), is designated, based on compliance with the NAAQS, as attainment, unclassifiable, maintenance, or nonattainment, on a pollutant by-pollutant basis. Areas in compliance or below the NAAQS are designated as attainment, while areas not in compliance or above the NAAQS are designated as nonattainment. Areas previously designated as nonattainment that have since demonstrated compliance with the NAAQS are designated as maintenance for that pollutant. Maintenance areas may be subject to more stringent regulatory requirements to ensure continued attainment of the NAAQS. Areas that lack sufficient data to determine attainment status are designated unclassifiable and treated as attainment areas. Allegany County, Maryland is part of the Cumberland-Keyser Interstate AQCR, and Mineral County, West Virginia is part of the Cumberland-Keyser Interstate and Allegheny Interstate AQCR. Allegany County, Maryland and Mineral County, West Virginia are in attainment or unclassified for all criteria pollutants.

Greenhouse Gases

Greenhouse gases (GHG) occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. GHGs are gases that absorb infrared radiation in the atmosphere, and an increase in emissions of these gasses has been determined by the EPA to endanger public health and welfare by contributing to human-induced global climate change. The most common GHGs emitted during fossil fuel combustion and natural gas transportation are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O).

Emissions of GHGs are typically expressed in terms of CO_2 equivalents (CO_2e), where the potential of each gas to increase heating in the atmosphere is expressed as a multiple of the heating potential of CO_2 over a specific timeframe, or its global warming potential (GWP). The 100-year GWP of CO_2 is 1, CH_4 is 25, and N_2O is 298. During construction of the Project, these GHGs would be emitted from non-electrical construction equipment, as well as from fugitive CH_4 leaks from the pipeline and aboveground facilities. Construction emissions of GHGs are shown in table 12 below.

On November 8, 2010, the EPA signed a rule that finalizes reporting requirements for the petroleum and natural gas industry under 40 CFR 98. Subpart W of 40 CFR 98 requires petroleum and natural gas facilities that emit 25,000 metric tons or more of CO_2e per year to report annual emissions of specified GHGs from various processes within the facility. Construction emissions are not covered under the GHG Reporting Rule, but those related to the Project are expected to be well below the 25,000 metric tons reporting threshold. Operational emissions from the proposed facilities are likewise not expected to exceed this threshold and be reported to the EPA. The EPA has expanded its regulations to include the emission of GHGs from major stationary sources under the Prevention of Significant Deterioration (PSD) program. The EPA's current rules require that a stationary source that is major for a non-GHG-regulated New Source Review pollutant must also obtain a GHG PSD permit prior to beginning construction of a new or modified major source with mass-based GHG emissions equal to or greater than 100,000 tons per year (tpy) and significant net emission increases in units of CO_2e equal to or greater than 75,000 tpy. There are no NAAQS or other significance thresholds for GHGs.

Construction of the Project would result in short-term increases in emissions of some pollutants from the use of fossil fuel-fired equipment and the generation of fugitive dust due to earthmoving activities. Some temporary indirect emissions, attributable to construction workers commuting to and from work sites during construction and from on-road and off-road construction vehicle traffic, could also occur. Large earth-moving equipment and other mobile equipment are sources of combustion-related emissions, including criteria pollutants (i.e., oxides of nitrogen, CO, volatile organic compounds, SO_2, and PM_{10}). Columbia has committed to employ residential-grade exhaust silencers on all engines in conjunction with any of the HDD equipment, which would include, but not limited to engine-driven generators, engine-driven pumps and drilling rig, hydraulic power unit. Construction emissions are presented in table 12 for the Project. These emissions represent the activity of construction equipment combustion, on-road vehicle travel, off-road vehicle travel, and earthmoving fugitives. Columbia conservatively utilized emission factors from EPA's AP-42. Detailed emissions for each activity are provided in Resource Report 9 of Columbia's application and supplemental filings.[10]

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[10] Detailed emissions for each activity can be viewed on the FERC Internet website as part of Columbia's Environmental Report filed on November 3, 2017 at https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14616691, "Volume I_RR09_Line 8000_Public.PDF."

Table 12: Estimated Construction Emissions (tons per year)

Construction Activity	NOx	CO	VOC	PM_{10}	$PM_{2.5}$	SO2	GHG	HAPs
Brush Hog	0.15	1.31	0.071	0.007	0.007	0.0025	262.84	-
Small Bulldozer	0.51	4.43	0.240	0.025	0.025	0.0086	888.95	-
Bobcat	0.27	2.37	0.128	0.014	0.014	0.0046	475.45	-
28 yard dump truck	0.33	2.88	0.157	0.016	0.016	0.0056	579.24	-
Backhoe	0.36	4.52	0.172	0.018	0.018	0.0062	636.16	-
Ram Hoe	0.09	0.79	0.043	0.005	0.005	0.0015	159.04	-
Hard Rock Trencher	0.17	1.48	0.081	0.008	0.008	0.0029	297.99	-
Flatbed Truck	0.34	2.95	0.160	0.017	0.017	0.0057	592.63	-
40 ton Crane	0.12	1.49	0.0057	0.006	0.006	0.0020	209.26	-
18 yard dump truck	0.47	4.08	0.222	0.023	0.023	0.0079	820.31	-
Shaker/Screen	0.004	0.03	0.002	0.0002	0.0002	0.0001	6.70	-
Compressor for tampers	0.004	0.03	0.002	0.0002	0.0002	0.0001	6.70	0.1584
Hydroseed Sprayer	0.02	0.24	0.009	0.001	0.001	0.0003	33.48	-
Drilling Power Unit	0.71	6.21	0.337	0.036	0.036	0.0121	1248.33	-
Engine-Driven Mud Pump	0.12	1.04	0.056	0.006	0.006	0.002	208.15	-
Engine-Driven Generator	0.003	0.03	0.001	0.0001	0.0001	0.00005	5.02	-
Crane	0.02	0.25	0.009	0.001	0.001	0.0003	34.88	-
HDD Backhoe	0.03	0.26	0.014	0.002	0.002	0.0005	53.01	-
Front Loader	0.02	0.18	0.011	0.001	0.001	0.0004	39.06	-
Truck	0.09	0.82	0.044	0.005	0.005	0.0016	164.62	-
Engine-Driven Light Plant	0.002	0.03	0.001	0.0001	0.0001	0.00004	3.91	-
Sideboom	0.01	0.13	0.007	0.001	0.001	0.0003	25.95	-
Small Engine-Driven Pump	0.0003	0.003	0.0002	0.00002	0.00002	0.00001	0.56	-
Construction Fugitives				58.74	8.22			-
Total	**3.84**	**35.57**	**1.81**	**58.93**	**8.42**	**0.0654**	**6757.24**	**0.1584**

Notes:
NOx: oxides of nitrogen; CO: carbon monoxide; VOC: volatile organic compounds; PM_{10}: particulate matter with an aerodynamic diameter less than or equal to 10 microns in diameter; $PM_{2.5}$: particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in diameter; SO2: sulfur dioxide; GHG: greenhouse gases; HAPs: hazardous air pollutants

Construction related emission estimates were based on a typical construction equipment list, hours of operation, and vehicle miles traveled by the construction equipment and supporting vehicles for the Project area. Columbia submitted a Fugitive Dust Control Plan which we reviewed and find it acceptable. The air quality impacts of Project construction are considered short-term and would be further minimized by Columbia's implementation of the Fugitive Dust Control Plan's measures such as watering exposed soil surfaces, applying temporary mulch, and expediting restoration and revegetation activities.

Site specific fugitive dust control plans for the 51 residences within 25 feet of the construction work areas with site-specific dust control measures would be implemented during construction. Construction of the Project would occur between early 2019 and October 31, 2019 utilizing one construction spread with a peak temporary workforce of approximately 200 workers.

Following construction, air quality would revert to previous conditions. Given the relatively small amount of pipeline to be replaced, the temporary and intermittent nature of construction activities and emissions, and no operational emissions other than minor fugitive emissions, we find that emissions from construction-related activities for the Project are not expected to cause or significantly contribute to a violation of any applicable ambient air quality standard, or significantly affect local or regional air quality.

7.2 Noise

Construction of the Project would temporarily affect the local noise environment in the Project area. The Project does not involve the construction or use of any new permanent noise sources that would impact the surrounding area during operation of the Project.

The ambient sound level of a region, which is defined by the total noise generated within the specific environment, is usually comprised of sounds emanating from both natural and artificial sources. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week, in part due to changing weather conditions and the impacts of seasonal vegetative cover.

Two measurements used by some federal agencies to relate the time-varying quality of environmental noise to its known effects on people are the equivalent sound level (L_{eq}) and the day-night sound level (L_{dn}). The L_{eq} is an A-weighted sound level containing the same sound energy as the instantaneous sound levels measured over a specific time period. Noise levels are perceived differently, depending on length of exposure and time of day. The L_{dn} takes into account the duration and time the noise is encountered. Specifically, in the calculation of the L_{dn}, late night to early morning (10:00 p.m. to 7:00 a.m.) noise exposures are penalized +10 decibels (dB), to account for people's greater sensitivity to sound during the nighttime hours. The A-weighted scale (dBA) is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. For an essentially steady sound source that operates continuously over a 24-hour period and controls the environmental sound level, the L_{dn} is approximately 6.4 dB above the measured L_{eq}.

In 1974, the EPA published its Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Noise levels are expressed as dBA to put more emphasis on frequencies in the range that humans hear best. Because noise levels are perceived differently, depending on length of exposure and time of day, L_{dn} takes into account the duration and time the noise is encountered. Specifically, the L_{dn} adds 10 dBA to nighttime sound levels between the hours of 10 p.m. and 7 a.m. to account for a people's greater sensitivity to sound during the night. The EPA has indicated that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate the potential noise impacts from the proposed Project at noise-sensitive areas (NSAs), such as residences, schools, or hospitals. Also, in general, a person's threshold of perception for a perceivable change in loudness on the A-weighted sound level is about 3 dBA, whereas a 5 dBA change is clearly noticeable, and a 10 dBA change is perceived as either twice or half the loud.

There are no additional state or local noise ordinances that would apply to the Project.

Construction of the facilities would generate noise during installation of construction equipment. Measures to mitigate construction noise would include compliance with federal regulations limiting noise from trucks, proper maintenance of equipment, and ensuring that sound muffling devices provided by the manufacturer are kept in good working condition. Noise from construction activities may be noticeable at nearby NSAs. However, construction equipment would be operated on an as-needed basis during the short-term construction period. Further, Columbia would primarily limit construction activities to occur during daytime hours (7:00AM to 7:00 PM), six days a week. Activities that may occur outside this window or require 24-hour work include HDD activities, pumps running for dry-ditch waterbody crossings, tie-ins, and hydrostatic tests.

Columbia proposes to utilize the HDD method for two crossing locations. An HDD noise study was performed for the HDD crossing locations proposed for the Project. Sound sources from HDD entry and exit sites would include the drilling rig, mud pumps and generators, drilling mid mixers, shale shakers, light plants, front-end loaders, forklifts, backhoe, bulldozer and trucks. Predicted noise contribution with and without mitigation from HDD activities was calculated for each NSA and are shown in tables 13 and 14 below.

Table 13: Calculated HDD Sound Level Contribution with No Mitigation

HDD Entry/Exit	Distance to Closest NSA (feet)	Measured Ambient L_{dn} (dBA)	Estimated HDD L_{dn} (dBA)	Combined L_{dn} (dBA)	Increase above ambient (dBA)
Fore Sisters Golf Course Entry	465 NE	51.3	68.1	68.2	16.9
Fore Sisters Golf Course Exit	1,200 S	51.3	43.9	52.0	0.7
North Branch Potomac River Entry	150 SE	51.6	78.6	78.6	27.0
North Branch Potomac River Exit	230 NE	59.7	62.9	64.6	4.9

Table 14: Calculated HDD Sound Level Contribution with Mitigation

HDD Entry/Exit	Distance to Closest NSA (feet)	Measured Ambient L_{dn} (dBA)	Estimated HDD L_{dn} (dBA)	Combined L_{dn} (dBA)	Increase above ambient (dBA)
Fore Sisters Golf Course Entry	465 NE	51.3	52.8	55.1	3.8
Fore Sisters Golf Course Exit[a]	1,200 S	51.3	-	-	-
North Branch Potomac River Entry	150 SE	51.6	54.5	56.3	4.7
North Branch Potomac River Exit	230 NE	59.7	54.2	60.8	1.1

a. No mitigation proposed at this site as sound levels with no mitigation remain below 55dBA

As shown above in tables 13 and 14, for the NSA's with sound levels above 55 dBA, Columbia proposes to mitigate sound levels from HDD activities by employing a temporary noise barrier or partial noise barriers around the HDD entry and exit site workspace and equipment, exhaust silencers on all engines, low noise generators. In addition, if necessary, for those NSA's located 150 to 300 feet of an entry site, Columbia has offered temporary housing or monetary compensation as a mitigation measure. To ensure that the noise at the HDD crossings would not become significant, **we recommend that:**

- **<u>Prior to construction of the</u> <u>Fore Sisters Golf Course and the North Branch Potomac River crossings,</u> Columbia should file with the Secretary, for the review and written approval by the Director of OEP, an HDD noise mitigation plan to reduce the projected noise level attributable to the proposed drilling operations at the Fore Sisters Golf Course and North Branch Potomac River Crossings. During drilling operations, Columbia shall implement the approved plan, monitor noise levels, and make all reasonable efforts to restrict the noise attributable to the drilling operations to no more than a L_{dn} of 55 dBA or 10 dB over existing ambient levels at the NSAs.**

Construction noise would be highly variable because the types of equipment in use at a construction site changes with the types of construction activities. Noise from construction activities may be noticeable at nearby NSAs; however, construction equipment would be operated on an as-needed basis during the short-term construction period. Further, Columbia would primarily limit construction activities to occur during daytime hours (7:00AM to 7:00PM).

Because of the varied locations of activities, and that construction of the Project would be primarily limited to daytime hours and intermittent, the implementation of the noise mitigation measures proposed by Columbia, and that no operational noise would be proposed, we conclude that construction noise would not have a significant impact on the environment.

8.0 Reliability and Safety

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a major pipeline rupture. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

The pipeline replacement associated with the Project must be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR Part 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures.

The DOT pipeline standards are published in Parts 190-199 of Title 49 of the CFR. For example, Part 192 of 49 CFR specifically addresses natural gas pipeline safety issues,

prescribes the minimum standards for operating and maintaining pipeline facilities, and incorporates compressor station design, including emergency shutdowns and safety equipment. Part 192 also requires a pipeline operator to establish a written emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency.

The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials.

Facilities associated with Columbia's Line 8000 Replacement Project must be designed, constructed, operated, and maintained in accordance with DOT standards, including the provisions for written emergency plans and emergency shutdowns. Columbia would provide the appropriate training to local emergency service personnel before the facilities are placed in service.

The DOT requires all operators of natural gas transmission pipelines to notify the DOT of any significant incident and to submit a report within 30 days. The available data through DOT shows that natural gas transmission pipelines continue to be a safe, reliable means of energy transportation. Because the Project is replacement and modernizing of pipeline to allow for easier monitoring of integrity and identification of areas of possible concern, the overall risk for an incident to occur at any given location distributed over the operating transmission pipeline would decrease.

9.0 Cumulative Impacts

In accordance with NEPA, we identified other actions in the vicinity of the Project facilities and evaluated the potential for a cumulative impact on the environment. As defined by the Council on Environmental Quality, a cumulative effect is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. The Council on Environmental Quality guidance[11] states that an adequate cumulative effects analysis may be conducted by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions. In this analysis, we consider the impacts of past projects within defined geographic scopes as part of the affected environment (environmental baseline) which were described and evaluated in the preceding environmental analysis. However, present effects of past actions that are relevant and useful are also considered.

As described in section B of this EA, constructing and operating the Project would temporarily and permanently affect the environment. The Project would affect geology, soils, water resources, wetlands, vegetation, fish, wildlife, some land uses, recreation, visual

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[11] Council on Environmental Quality, 1997. Considering Cumulative Effects Under the National Environmental Policy Act. Accessed at: https://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-ConsidCumulEffects.pdf

resources, air quality, and noise. However, throughout this EA, we determined that the Project would have only minimal or temporary impacts on these resources, with the exception of impacts on forested land. We also concluded that nearly all of the Project-related impacts would be contained within or adjacent to the temporary construction rights-of-way and ATWS.

As discussed in section B, geology and soil impacts would be highly localized and limited primarily to the Project footprint during the period of construction. In addition, Project-related construction activities would not result in significant impacts on groundwater resources because the majority of construction would involve shallow, temporary, and localized excavation. For other resources, the contribution to regional cumulative impacts is lessened by the expected recovery of ecosystem function. For example, non-forested vegetation communities and wildlife habitats would be cleared, but restoration would proceed immediately following construction. Land use and visual impacts associated with the Project would be minimized to the greatest extent practicable because the majority (85 percent) of the replacement pipelines are proposed to be adjacent to and/or within existing pipeline or other utility rights-of-way.

Based on the Project being adjacent to and/or within existing pipeline rights-of-way; Columbia's implementation of impact avoidance, minimization, and mitigation measures as described in its construction and restoration plans; and our recommendations, we find that most of the Project impacts would be largely limited to the temporary construction workspace and permanent easement. Therefore, we conclude that Project impacts would not be significant and would not contribute cumulatively to impacts on the aforementioned resources, and therefore, they are not assessed further in the cumulative impact analysis. However, we did identify the potential for cumulative impacts on vegetation, specifically forested areas; wetlands; waterbodies; and air quality and noise, which are discussed further below. Table 15 summarizes the resource-specific geographic scopes that were considered in this analysis.

Table 15: Cumulative Impact Resource-Specific Geographic Scope

Resource	Cumulative Impact Geographic Scope
Surface Water, Wetlands, and Forest Vegetation	The Project crosses 3 HUC-12 watershed boundaries: Limestone Run – North Branch Potomac River (020700020402) from mileposts 0.00 to 4.99; Mill Run – North Branch Potomac (020700020403) from mileposts 4.99 to 15.61; and Braddock Creek – Wills Creek (020700020507) from mileposts 15.61 to 17.83.
Air Quality	0.25 mile from pipeline or aboveground facilities for evaluation of construction-related impacts. As the Project would have no operational air quality impacts, cumulative air quality impacts outside the construction window were not assessed.
Noise	For operational impacts, the Project does not involve the construction or use of any new permanent noise sources that would impact the surrounding area during operation of the Project, and therefore would not contribute to cumulative impacts on noise. For construction-related impacts, 0.25 mile from earth-disturbing equipment work (0.5 mile from HDD).
HUC = Hydrologic Unit Code	

9.1 Identified Actions

Columbia identified other actions potentially contributing to cumulative impacts by conducting reviews of federal and state agency websites, county planning documents, and company websites. Columbia contacted multiple planning and development departments within the Project counties (Mineral County, West Virginia and Allegany County, Maryland) and the City of Keyser, West Virginia to obtain information regarding recent, ongoing, or planned projects in their areas.

Table B-9 in appendix B describes the past, present, and reasonably foreseeable projects or actions identified as occurring within the geographic scopes outlined in table 15. Actions outside the geographic scope were not evaluated because their potential to contribute to a cumulative impact diminishes with increasing distance from the Project. Only projects with either ongoing impacts (from past or current projects) or that are "reasonably foreseeable" future actions were evaluated. Existing or reasonably foreseeable future actions that would be expected to affect similar resources during similar periods as the Project were considered further.

9.2 Potential Cumulative Impacts

Based on the geographic and temporal scopes, we identified projects that were considered in the cumulative impact assessment for the Line 8000 Replacement Project (table B-9 in appendix B). A total of 13 municipal or industrial development projects were identified within the geographic scopes that, along with the construction of the Line 8000 Replacement Project, have the potential to contribute to cumulative impacts: 6 projects involve improvements to existing facilities, including roof replacements, paving, and sidewalk improvements; 2 projects involve construction of a new sanitary sewer; and the remaining projects involve construction of a new high school; sanitary sewer repair; construction of a 257,000-gallon water storage tank; municipal water line replacements; and development of an industrial park.

9.2.1 Forested Areas

The primary impact on vegetation would be a result of the permanent loss of forested areas as a result of mowing and maintenance of the permanent pipeline right-of-way. Long-term impacts would occur where forested areas are cleared for TWS because these areas could take decades to return to pre-construction conditions. Forested impacts associated with the Project include about 161 acres of impacts during construction and about 47 acres would be permanently maintained for operation. Potential cumulative impacts on forested areas in the geographic scope could occur from construction and operation of the Project in combination with the 13 identified projects within the three HUC watersheds if trees were or would be cleared. Eight of these projects are roof replacements or improvements to existing facilities and, therefore it is likely that trees were or would not be affected. The construction of the new Allegany High School, the new Rawlings sanitary sewer, the new Vale Summit water storage tank, the new Keyser Sewer Plant and the development of the Keyser Industrial Park could permanently affect forested areas. However, most of these projects are located in or near developed areas that are already fragmented with residences, businesses, and infrastructure. Although some of these projects would be completed before or after the

construction of the Project, forested areas may take several years to return to pre-construction conditions, and the effects of tree clearing would continue beyond restoration.

Although the 13 identified projects and the Line 8000 Replacement Project could result in some forest fragmentation within the HUC-12 watershed, this would only incrementally affect the cumulative impacts on regional forests. It is expected that the identified projects would use best management practices during construction to limit the extent of impacts on forested areas (e.g. minimizing tree clearing) and would revegetate all areas not necessary for operation. Columbia minimized impacts on forested lands by co-locating most of the proposed Project with existing rights-of-way. Columbia would also implement its ECS/WVECS to revegetate all disturbed areas and would allow the regrowth of trees for about 70 percent of the disturbed forested areas. In terms of forested lands functioning as migratory bird habitat, the majority of the forested land consists of small tracts that are already fragmented by residential and industrial development and utility rights-of-way, which has a decreased likelihood of fostering pristine migratory bird habitat. Tree clearing would push back the forest edge and have a long-term effect on forest vegetation, but would not result in a population-level impact on migratory birds as discussed in section B.4.3. For these reasons, we conclude that the projects considered in this analysis would not have a significant cumulative impact on forested lands.

9.2.2 Wetlands

The Project's impacts on wetlands range from short-term to permanent. Specifically, impacts on forested wetlands include long-term construction impacts and permanent operational impacts from clearing and routine maintenance activities. Emergent and scrub shrub wetlands would be impacted by the Project, but are expected to transition relatively quickly back to a community with functionality similar to that of the pre-construction state (typically within 1 to 5 years). Potential cumulative impacts on forested wetlands in the geographic scope could occur from construction and operation of Line 8000 in combination with the 13 recently completed, contemporary or ongoing, or reasonably foreseeable future projects were identified within the three HUC-12 watersheds crossed by the Project (see table B-9 in appendix B). However, each proponent for the identified projects that affects wetlands would be required to comply with applicable federal and state permit requirements. It is assumed each of the project proponents would take steps to minimize these impacts by implementing wetland construction and mitigation measures, potentially including compensatory mitigation for permanent impacts on wetlands. Measures may include, but are not limited to, the installation and monitoring of temporary and permanent erosion controls. These efforts are expected to minimize the cumulative impacts on wetlands affected by the Project.

Most of the Project would be within or along existing pipeline or other utility rights-of-way, avoiding wetlands as much as practicable and minimizing tree clearing in forested wetlands. Routine vegetative maintenance in accordance with FERC's Procedures would maintain less than 0.1 acre of forested wetlands in an emergent state, but these wetlands would maintain their hydrologic function as wetlands. Further, Columbia would coordinate with the Corps to mitigate the Project's impacts on wetlands. As a result, although Project impacts include long-term and permanent impacts on wetlands, the extent of these impacts is

minimal and would not be significant. Therefore, we conclude that the Project would not contribute to cumulative impacts on wetland resources.

9.2.3 Waterbodies

As discussed in section B.3.2 of this EA, the Project's impacts on water resources are expected to be short term and minor. Cumulative impacts on surface waterbodies affected by the Project would be limited primarily to the waterbodies that are affected by other actions within the same HUC-12 watershed that are constructed in a similar timeframe. The Project would cross three HUC-12 watersheds, but based on the review of projects contributing to cumulative impacts, 13 recently completed, contemporary or ongoing, or reasonably foreseeable future projects were identified within the three HUC-12 watersheds crossed by the Project (see table B-9 in appendix B). Those projects are found in Allegany County, Maryland and Mineral County, West Virginia and include municipal building development and repair, road and sidewalk paving and improvement, sanitary sewer construction projects, construction of a water tower, water line replacements, a sewer plant construction, and construction of an industrial park. No information was attainable regarding the surface water impacts of those projects. However, it is expected that the impacts would be minimized through the various permitting processes, which may require best management practices during construction, including use of erosion control devices, and that adequate stabilization would be attained through successful revegetation of disturbed areas associated with those projects.

Cumulative impacts could occur in the event that more than one project affects the same waterbody within a similar period of time, or residual effects from previous projects are present at the same time as construction of the Line 8000 Replacement Project. However, because of the minimal and temporary impacts of the Project on water resources, we conclude that any cumulative impact contribution by the Project on waterbodies would also be temporary and minor and not be cumulatively significant.

9.2.4. Air Quality and Noise

Air quality and noise would be affected by construction of the Project, and once completed, there would be no operational emissions and no new noise sources. As explained in section B.7., both construction-related air quality and noise impacts would be temporary and not result in significant impacts. However, the Rawlings sanitary sewer construction project is within 0.25 mile of milepost 8.0 and is estimated to be start in 2019; therefore, construction of the projects could potentially occur concurrently. While it is possible that the new sanitary sewer and the portion of Line 8000 that is within a 0.25 mile of the new sanitary sewer could be constructed at the same time, due to the nature of pipeline construction, construction emissions and noise would not last in this location for an extended duration of time. Further, as previously explained, Columbia has committed to measures to minimize impacts on air quality and noise, including implementing its Fugitive Dust Control Plan, properly maintaining equipment, and complying with federal and state regulations. Therefore, we conclude that the projects would not result in significant cumulative impacts on air quality and noise.

9.3 Conclusion on Cumulative Impacts

We identified recently completed, ongoing, and planned projects (table B-9 in appendix B) in the Project area that were within the Project's cumulative impact geographic scopes identified in table 15.

Based on our analysis, we concluded that the potential exists for cumulative impacts on forested lands, wetlands, waterbodies, air quality, and noise. However, our analysis concluded that the effects of the Project on these resources, when combined with impacts from other projects in the geographic scope, would not result in significant impacts.

C. ALTERNATIVES

In accordance with NEPA and FERC policies, we evaluated alternatives to the Project including the no-action alternative, system alternatives, and route alternatives. These alternatives were evaluated using a specific set of criteria. The evaluation criteria applied to each alternative include a determination whether the alternative:

- meets the objective of the proposed Project;
- is technically and economically feasible and practical; and
- offers a significant environmental advantage over the proposed Project.

Through environmental comparison and application of our professional judgment, each alternative is considered to a point where it becomes clear if the alternative could or could not meet the three evaluation criteria. The first consideration for including an alternative in our analysis is whether or not it could satisfy the stated purpose of the Project. Many alternatives are technically and economically feasible. Technically practical alternatives, with exceptions, would generally require the use of common construction methods. An alternative that would require the use of a new, unique or experimental construction method may not be technically practical because the required technology is not available or is unproven. Economically practical alternatives would result in an action that generally maintains the price competitive nature of the proposed action. Generally, we do not consider the cost of an alternative as a critical factor unless the added cost to design, permit, and construct the alternative would render the project economically impractical.

Alternatives that would not meet the Project's objective or are not feasible are not brought forward to the next level of review (i.e., the third evaluation criterion). Determining if an alternative provides a significant environmental advantage requires a comparison of the impacts on each resource as well as an analysis of impacts on resources that are not common to the alternatives being considered. The determination must then balance the overall impacts and all other relevant considerations. In comparing the impact between resources, we also considered the degree of impact anticipated on each resource. Ultimately, an alternative that results in equal or minor advantages in terms of environmental impact would not compel us to shift the impacts from the current set of landowners to a new set of landowners.

One of the goals of an alternatives analysis is to identify alternatives that avoid significant impacts. In section B, we evaluated each environmental resource potentially affected by the Project and concluded that constructing and operating the Project would not significantly impact these resources. Consistent with our conclusions, the value gained by further reducing the (not significant) impacts of the Project when considered against the cost of relocating the route/facility to a new set of landowners was also factored into our evaluation.

1.0 No Action Alternative

Although a decision by FERC to deny the proposed action would avoid the environmental impacts addressed in this EA, the Project would be forced by "no action" to forego or delay upgrading a portion of Columbia's pipeline system that is nearing the end of its useful life, thus jeopardizing reliable service to Columbia's customers. The pipeline system currently includes aged, coated pipe. Any substituted projects could require the construction of additional or new pipeline facilities in the same or other locations, which would have environmental impacts equivalent to or greater than those of the proposed Project.

The no-action alternative would result in continued natural gas transmission through pipelines that are not equipped for using internal pipeline inspection devices. Pursuant to 49 CFR 192.917, new pipelines, including replacement pipelines, must be constructed to accommodate the passage of internal pipeline inspection devices. This requirement involves installing a vessel at the end of each pipeline segment for launching or receiving an internal inspection device, commonly referred to as a "smart pig." Smart pigs serve an important function by enabling the periodic internal inspection of pipelines, as required by DOT pipeline safety regulations. In addition to using smart pigs to inspect pipeline conditions, cleaning pigs also are used periodically to clean the pipe interior. Columbia proposes to modernize Line 8000 to make it pig-capable, which allows Columbia to monitor effectively the integrity of the pipeline and identify areas of concern that may require maintenance.

Although the no-action alternative would eliminate potential temporary impacts on environmental resources and the surrounding communities, it would not meet the Project objective. The no-action alternative also could result in greater long-term environmental and community impacts associated with piecemeal pipeline operations and maintenance projects that likely would occur if Line 8000 were not upgraded. Therefore, we do not recommend the no-action alternative.

2.0 System Alternatives

System alternatives would make use of other existing, modified, or proposed pipeline systems to meet the objectives of the Project. The purpose of identifying and evaluating system alternatives is to determine whether the environmental effects associated with construction and operation of the Project could be avoided or reduced by using another pipeline system, while still meeting the objectives of the Project. Given that the Project is the existing primary natural gas supply to multiple points of delivery, a system alternative is not the most appropriate or feasible alternative to maintain service to existing customers.

3.0 Route Alternatives

The primary objective in evaluating route alternatives is to avoid, minimize, or mitigate adverse effects, while satisfying the objectives of the Project. Alternative pipeline routes can be characterized as major, involving reroutes of considerable distances to avoid impacts on large resource areas and construction issues; or minor, involving relatively short route variations to avoid impacts on local resources or addressing construction issues.

Our review of the proposed Project found no significant environmental impacts that would drive an evaluation of additional major route alternatives or minor route variations, as the proposed route follows existing right-of-way. In addition, we received no comments during scoping that suggested we consider route alternatives to the proposed Project.

In conclusion, we have determined that the proposed Project, as modified by our recommended mitigation measures in section D below, is the preferred alternative that can meet the Project objectives.

D. CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in the EA, we have determined that if Columbia constructs and operates the proposed facilities and completes the proposed abandonment activities in accordance with its application and supplements and our recommended mitigation measures, approval of this proposal would not constitute a major federal action significantly affecting the quality of the human environment. We recommend that the Order contain a finding of no significant impact and include the mitigation measures listed below as conditions to any Certificate the Commission may issue.

1. Columbia shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. Columbia must:

    a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
    b. justify each modification relative to site-specific conditions;
    c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
    d. receive approval in writing from the Director of OEP **before using that modification**.

2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the new and replacement Project facilities and activities associated with abandonment. This authority shall allow:

    a. the modification of conditions of the Order;
    b. stop work authority; and
    c. the imposition of any additional measures deemed necessary to assure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of adverse environmental impact resulting from Project construction, operation, and abandonment activities.

3. **Prior to any construction**, Columbia shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.

4. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, Columbia shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference

locations designated on these alignment maps/sheets.

Columbia's exercise of eminent domain authority granted under NGA section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Columbia's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas pipeline facilities to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. Columbia shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area**.

   This requirement does not apply to extra workspace allowed by the Commission's Plan and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

   Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

   a. implementation of cultural resources mitigation measures;
   b. implementation of endangered, threatened, or special concern species mitigation measures;
   c. recommendations by state regulatory authorities; and
   d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

6. **At least 60 days before construction and abandonment by removal activities begin**, Columbia shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. Columbia must file revisions to the plan as schedules change. The plan shall identify:

   a. how Columbia will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;
   b. how Columbia will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and

specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;

c. the number of EIs assigned per spread, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;

d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;

e. the location and dates of the environmental compliance training and instructions Columbia will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change);

f. the company personnel (if known) and specific portion of Columbia's organization having responsibility for compliance;

g. the procedures (including use of contract penalties) Columbia will follow if noncompliance occurs; and

h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:

(1) the completion of all required surveys and reports;
(2) the environmental compliance training of onsite personnel;
(3) the start of construction; and
(4) the start and completion of restoration.

7. Columbia shall employ at least one EI per construction spread. The EIs shall be:

a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;

b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;

c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;

d. a full-time position, separate from all other activity inspectors;

e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and

f. responsible for maintaining status reports.

8. Beginning with the filing of its Implementation Plan, Columbia shall file updated status reports with the Secretary **on a biweekly basis** until all construction and restoration activities are complete. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:

a. an update on Columbia's efforts to obtain the necessary federal authorizations;

b. the construction status of each spread, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally-sensitive areas;
c. a listing of all problems encountered and each instance of noncompliance observed by the EIs during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
d. a description of the corrective actions implemented in response to all instances of noncompliance;
e. the effectiveness of all corrective actions implemented;
f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
g. copies of any correspondence received by Columbia from other federal, state, or local permitting agencies concerning instances of noncompliance, and Columbia's response.

10. Columbia must receive written authorization from the Director of OEP **before commencing construction or abandonment by removal of any Project facilities**. To obtain such authorization, Columbia must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).

11. Columbia must receive written authorization from the Director of OEP **before placing the Project into service**. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.

12. **Within 30 days of placing the authorized facilities in service**, Columbia shall file an affirmative statement with the Secretary, certified by a senior company official:

    a. that the facilities have been constructed and abandoned in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
    b. identifying which of the conditions in the Order Columbia has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.

13. Columbia **shall not begin construction** of the Project **until**:

    a. FERC staff receives comments from the FWS regarding the proposed action;

    b. FERC staff completes any necessary ESA section 7 consultation with the FWS; and

c. Columbia receives written notification from the Director of OEP that construction and/or use of the mitigation (including implementation of conservation measures) may begin.

14. Columbia **shall not begin construction** of facilities and/or use of staging, storage, or temporary work areas and new or to-be-improved access roads **until**:

a. Columbia files an addendum survey report for the outstanding survey areas in Maryland, and the SHPO's comments on the addendum;

b. the Advisory Council on Historic Preservation is afforded an opportunity to comment if historic properties would be adversely affected; and

c. the FERC staff reviews and the Director of OEP approves the addendum survey report, and notifies Columbia in writing that construction may proceed.

All materials filed with the Commission containing **location, character, and ownership** information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: **"CUI//PRIV – DO NOT RELEASE."**

15. **Prior to construction of the Fore Sisters Golf Course and the North Branch Potomac River crossings**, Columbia shall file with the Secretary, for the review and written approval by the Director of OEP, an HDD noise mitigation plan to reduce the projected noise level attributable to the proposed drilling operations at the Fore Sisters Golf Course and North Branch Potomac River Crossings. During drilling operations, Columbia shall implement the approved plan, monitor noise levels, and make all reasonable efforts to restrict the noise attributable to the drilling operations to no more than an L_{dn} of 55 dBA or 10 dB over existing ambient levels at the NSAs.

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F. LIST OF PREPARERS

Mallory, Christine – Project Manager, Surface Water, Vegetation & Wildlife, Cumulative Impacts, Alternatives
M.S., Environmental Management, 2013, Samford University
B.S., Biology, 2012, Stillman College

Rodgers, Keith – Geology, Groundwater, Soils
Professional Geologist, 2008, North Carolina Board for the Licensing of Geologists
M.E., Master of Engineering in Water Resources (Hydrogeochemistry), 2008, University of Arizona
B.S., Geological Sciences (Geochemistry option), 2004, Virginia Tech

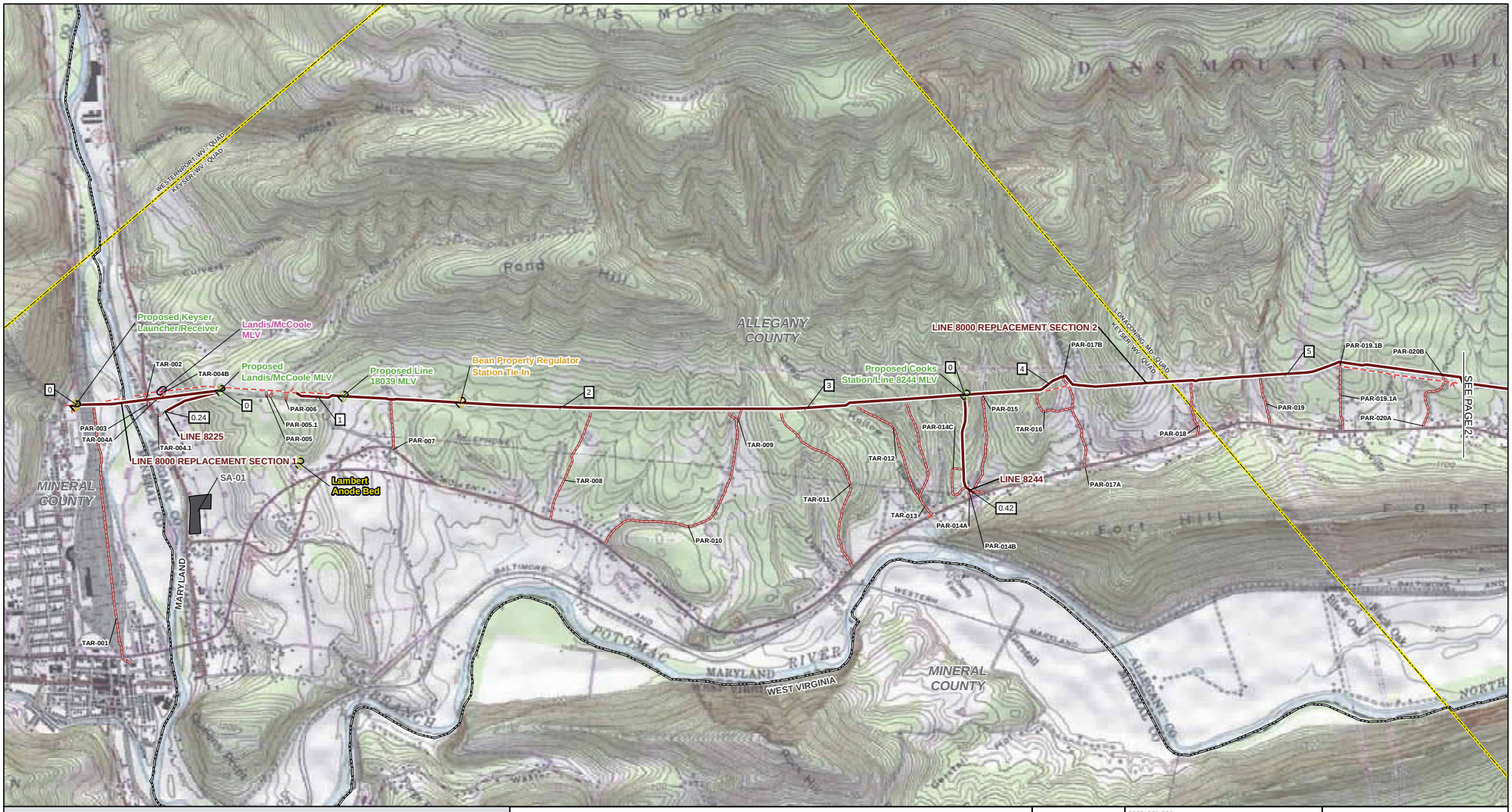
Boros, Laurie – Cultural Resources
B.A., Anthropology/Archaeology, 1980, Queens College, City University of New York

McDaniel, Nina C. –Air Quality & Noise, Safety and Reliability
M.S., Engineering Management, 2012, University of New Orleans
B.S., Civil Engineering, 2010, University of New Orleans

Barakat, Kandilarya – Land Use
B.S. Chemical Engineering, 2003, University of Maryland, College Park
M.E. Environmental Engineering/Project Management, 2006, University of Maryland, College Park

APPENDIX A

Topographic Maps



MILE POST	PROPOSED ACCESS ROAD
PROPOSED ANODE BEDS	EXISTING PIPELINE CENTERLINE
PROPOSED ABOVEGROUND FACILITY	PROPOSED STAGING AREA
EXISTING ABOVEGROUND FACILITY TO BE MODIFIED	COUNTY BOUNDARY
ABANDONED ABOVEGROUND FACILITY	STATE BOUNDARY
PROPOSED LINE 8000 PIPELINE CENTERLINE	USGS QUADRANGLE BOUNDARY

MAPS COMPILED UTILIZING ESRI TOPOGRAPHIC BASEMAP.

LINE 8000 REPLACEMENT PROJECT

USGS QUADRANGLE MAP

MINERAL COUNTY, WEST VIRGINIA AND ALLEGANY COUNTY, MARYLAND

2,000 1,000 0 2,000 4,000 FEET

ABSOLUTE SCALE: 1:24,000

REFERENCE SCALE: 1 IN = 2,000 FT

PREPARED FOR: Columbia Gas Transmission

PREPARED BY: MOTT MACDONALD

PRELIMINARY FOR REVIEW 12/05/2017
CPG PROPRIETARY

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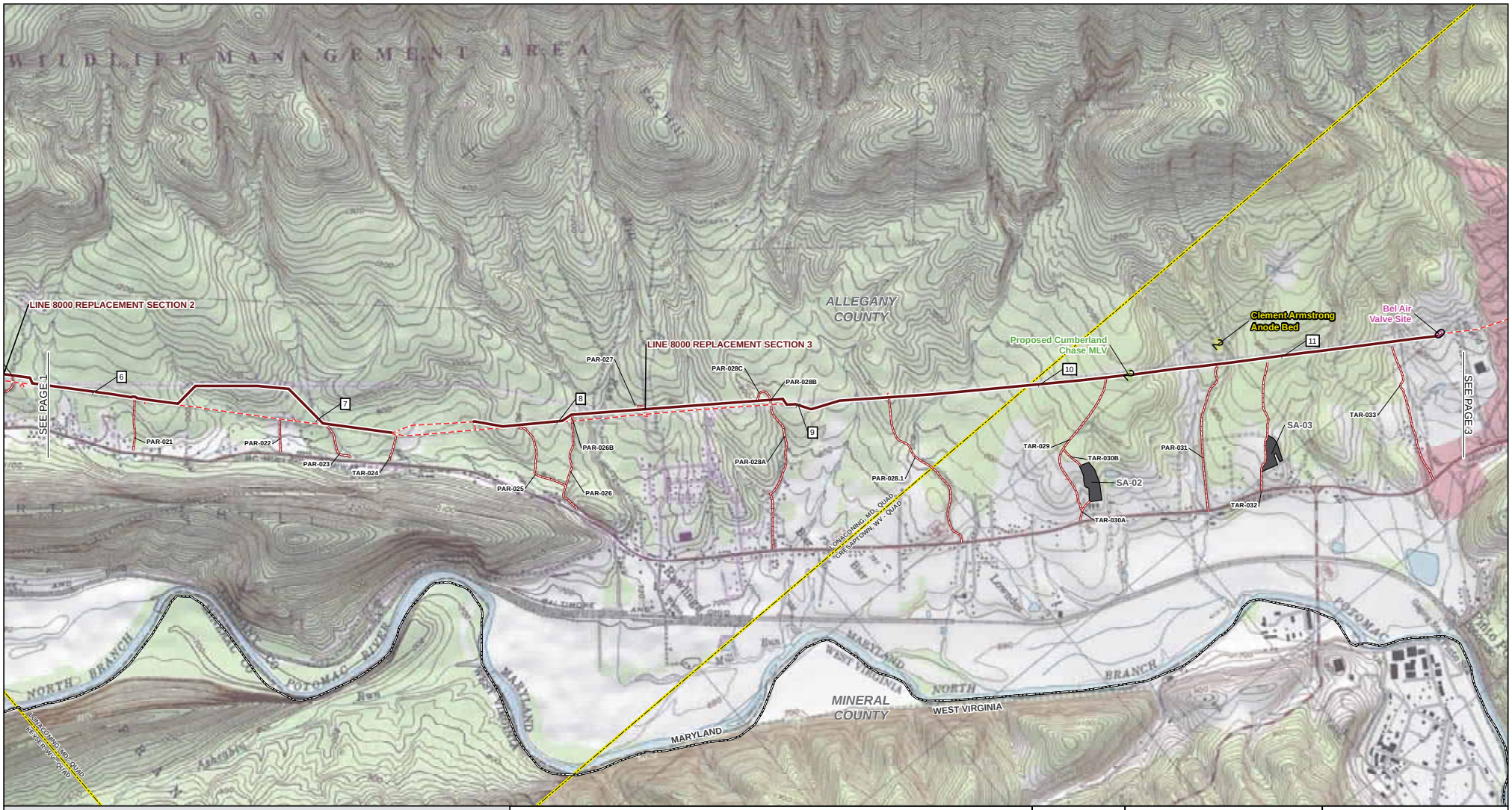

MILE POST	PROPOSED ACCESS ROAD
PROPOSED ANODE BEDS	EXISTING PIPELINE CENTERLINE
PROPOSED ABOVEGROUND FACILITY	PROPOSED STAGING AREA
EXISTING ABOVEGROUND FACILITY TO BE MODIFIED	COUNTY BOUNDARY
ABANDONED ABOVEGROUND FACILITY	STATE BOUNDARY
PROPOSED LINE 8000 PIPELINE CENTERLINE	USGS QUADRANGLE BOUNDARY

MAPS COMPILED UTILIZING ESRI TOPOGRAPHIC BASEMAP.

LINE 8000 REPLACEMENT PROJECT

USGS QUADRANGLE MAP

ALLEGANY COUNTY, MARYLAND

2,000 1,000 0 2,000 4,000 FEET

ABSOLUTE SCALE: 1:24,000

REFERENCE SCALE: 1 IN = 2,000 FT

PREPARED FOR Columbia Gas Transmission

PREPARED BY MOTT MACDONALD

PRELIMINARY FOR REVIEW 12/05/2017
CPG PROPRIETARY

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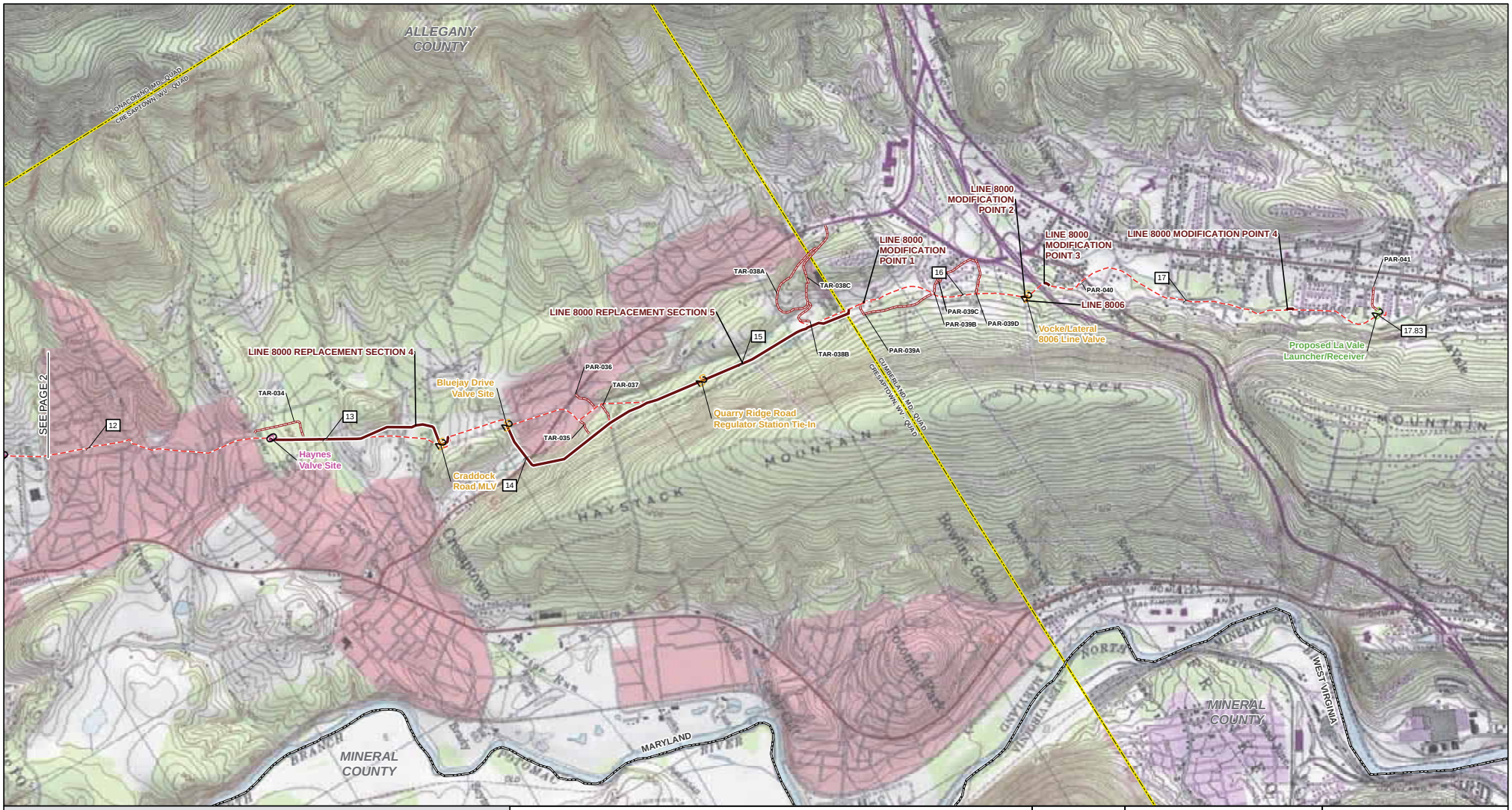

MILE POST
PROPOSED ANODE BEDS
PROPOSED ABOVEGROUND FACILITY
EXISTING ABOVEGROUND FACILITY TO BE MODIFIED
ABANDONED ABOVEGROUND FACILITY
PROPOSED LINE 8000 PIPELINE CENTERLINE
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MAPS COMPILED UTILIZING ESRI TOPOGRAPHIC BASEMAP.

LINE 8000 REPLACEMENT PROJECT

USGS QUADRANGLE MAP

ALLEGANY COUNTY, MARYLAND

FEET
2,000 1,000 0 2,000 4,000

ABSOLUTE SCALE: 1:24,000

REFERENCE SCALE: 1 IN = 2,000 FT

PREPARED FOR Columbia Gas Transmission

PREPARED BY MOTT MACDONALD

PRELIMINARY FOR REVIEW 12/05/2017
CPG PROPRIETARY

DRAWN BY:	EAP 09/15/2017
CHECKED BY:	ASH 12/05/2017
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APPENDIX B

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Table B-1: Summary of Co-Located Pipeline Facilities

Facility	Co-located Utility	Start MP[1,2]	End MP[1,2]	Direction to Existing ROW	Distance of Offset (ft)[3]	Distance Co-located (mi)
Mineral County, West Virginia						
Line 8000	Existing Line 8000	0.14	0.20	W	100	0.06
Allegany County, Maryland						
Line 8000	Existing Line 8000	0.20	0.29	W	100	0.09
Line 8000	Existing Line 8000	0.56	0.61	W	70-120	0.05
Line 8000	Existing Line 8000	0.92	1.06	W	75	0.14
Line 8000	Existing Line 8000	1.06	1.28	W	25	0.22
Line 8000	Existing Line 8000	1.28	1.32	W	35	0.04
Line 8000	Existing Line 8000	1.32	3.16	W	25	1.84
Line 8000	Existing Line 8000	3.16	3.97	E	25	0.81
Line 8000	Power Easement	4.07	4.12	S	35-80	0.05
Line 8000	Existing Line 8000	4.12	4.61	E	25	0.49
Line 8000	Power Easement	4.20	5.09	E	70	0.89
Line 8000	Existing Line 8000	4.61	4.63	E	10	0.02
Line 8000	Existing Line 8000	4.63	5.21	E	25	0.58
Line 8000	Power Easement	5.09	5.23	E	60	0.14
Line 8000	Existing Line 8000	5.21	5.31	E	92	0.10
Line 8000	Power Easement	5.23	5.31	E	50	0.08
Line 8000	Power Easement	5.33	5.78	E/W	80	0.45
Line 8000	Existing Line 8000	5.74	6.15	E	25	0.41
Line 8000	Existing Line 8000	6.15	6.17	E	42	0.02
Line 8000	Existing Line 8000	6.17	6.35	E	25	0.18
Line 8000	Power Easement	6.44	6.83	W	90 - 150	0.39
Line 8000	Existing Line 8000	7.02	7.31	E	25	0.29
Line 8000	Existing Line 8000	7.71	8.04	E	25	0.33
Line 8000	Power Easement	8.11	9.18	E	50	1.07
Line 8000	Existing Line 8000	8.52	8.95	E	100	0.43
Line 8000	Existing Line 8000	8.95	10.25	W	25	1.30
Line 8000	Power Easement	9.18	11.65	W	75 - 80	2.47
Line 8000	Existing Line 8000	10.25	10.35	W	20	0.10
Line 8000	Columbia Maryland Natural Gas Pipeline	10.27	10.36	E	15	0.09
Line 8000	Existing Line 8000	10.35	10.37	W	15	0.02
Line 8000	Existing Line 8000	10.37	11.65	W	25	1.28
Line 8000	Existing Line 8000	12.77	13.21	W	25	0.44
Line 8000	Water Line	12.77	12.94	W	55 - 65	0.17
Line 8000	Existing Line 8000	13.51	13.58	E	40	0.07
Line 8000	Existing Line 8000	14.55	15.50	W	25	0.95
Line 8000	Power Easement	15.35	15.50	W	35	0.15
Line 8000	Water Line	15.37	15.50	E	25 - 55	0.13
Line 8000	Existing Line 8000	16.20	16.26	E	Varies	0.06
Line 8000	Existing Line 8000	16.35	16.38	E	25	0.03
Line 8000	Existing Line 8000	17.42	17.45	E	25	0.03
Lateral Line 8225	Water Line	0.15	0.24	E	10	0.09
Lateral Line 8225	Sewer Line	0.21	0.24	E	22	0.10

Table B-1: Summary of Co-Located Pipeline Facilities

Facility	Co-located Utility	Start MP[1,2]	End MP[1,2]	Direction to Existing ROW	Distance of Offset (ft)[3]	Distance Co-located (mi)
Lateral Line 8244	Existing Line 8244	0.00	0.03	S	25	0.32
Lateral Line 8006	Existing Line 8006	0.00	0.02	S	20	0.02

[1] Milepost for abandoned facilities is relative to the closest milepost of the proposed Line 8000.
[2] Line 8225, Line 8244 and Line 8006 have line specific mileposting. Mileposts are not relative to Line 8000.
[3] Distance of offset is from centerline of new pipeline to center of power line, water line, sewer line, or existing pipeline.

Key:
ft – foot
mi – mile
E – East
S – South
W – West

Table B-2: Pipeline Abandonment Methods

Facility	Begin MP[1]	End MP[1]	Proposed Abandonment Method
Mineral County, West Virginia			
Line 8000 – Section 1	0.00	0.03	Cap/Abandon in Place
	0.03	0.07	Grout/Abandon in Place
	0.07	0.20	Cap/Abandon in Place
Allegany County, Maryland			
Replacement Section 1	0.20	0.29	Cap/Abandon in Place
	0.29	0.31	Grout/Abandon in Place
	0.31	0.61	Cap/Abandon in Place
Replacement Section 2	0.88	1.29	Cap/Abandon in Place
	1.29	1.31	Grout/Abandon in Place
	1.31	3.64	Cap/Abandon in Place
	3.64	3.65	Removal
	3.65	3.72	Cap/Abandon in Place
	3.72	3.74	Removal
Replacement Section 2	3.74	4.09	Cap/Abandon in Place
	4.09	4.10	Grout/Abandon in Place
	4.10	4.60	Cap/Abandon in Place
	4.60	4.62	Grout/Abandon in Place
	4.62	4.63	Removal
	4.63	4.88	Cap/Abandon in Place
	4.88	4.89	Grout/Abandon in Place
	4.89	5.21	Cap/Abandon in Place
	5.21	5.23	Grout/Abandon in Place
	5.23	5.64	Cap/Abandon in Place
	5.64	5.65	Grout/Abandon in Place
	5.65	6.16	Cap/Abandon in Place
	6.16	6.17	Grout/Abandon in Place
	6.17	7.04	Cap/Abandon in Place
	7.04	7.05	Grout/Abandon in Place
	7.05	7.31	Cap/Abandon in Place
Replacement Section 3	7.65	8.35	Cap/Abandon in Place
	8.35	8.36	Grout/Abandon in Place
	8.36	8.54	Cap/Abandon in Place
	8.54	8.60	Grout/Abandon in Place
	8.60	8.61	Removal
	8.61	8.76	Grout/Abandon in Place
	8.76	8.87	Cap/Abandon in Place
	8.87	8.88	Grout/Abandon in Place
	8.88	9.37	Cap/Abandon in Place
	9.37	9.38	Grout/Abandon in Place
	9.38	10.26	Cap/Abandon in Place
	10.26	10.27	Grout/Abandon in Place
	10.27	10.34	Cap/Abandon in Place
	10.34	10.38	Removal
	10.38	10.73	Cap/Abandon in Place
	10.73	10.74	Grout/Abandon in Place
	10.74	11.66	Cap/Abandon in Place
Replacement Section 4	12.77	13.30	Cap/Abandon in Place
	13.30	13.31	Grout/Abandon in Place
	13.31	13.49	Cap/Abandon in Place
	13.49	13.50	Grout/Abandon in Place
	13.50	13.53	Cap/Abandon in Place
	13.53	13.54	Removal
	13.54	13.59	Cap/Abandon in Place
	13.84	13.85	Removal

Table B-2: Pipeline Abandonment Methods

Facility	Begin MP[1]	End MP[1]	Proposed Abandonment Method
Replacement Section 5	13.85	14.32	Grout/Abandon in Place
	14.32	14.36	Cap/Abandon in Place
	14.36	14.37	Removal
	14.37	15.51	Cap/Abandon in Place
Modification Point 1	15.56	15.57	Removal
Modification Point 2	16.24	16.27	Cap/Abandon in Place
Modification Point 3	16.34	16.38	Cap/Abandon in Place
Modification Point 4	17.42	17.46	Cap/Abandon in Place
Lateral Line 8225[2]	0.00	0.24	Cap/Abandon in Place
Lateral Line 8244[2]	0.00	0.42	Removal
Lateral Line 8006[2]	0.00	0.02	Removal

[1] Mileposts of the existing line to be abandoned represent the portion of the proposed replacement pipeline.
[2] Lateral lines 8225, 8244 and 8006 have milepost specific to that pipeline, and is not relative to Line 8000.

Key:
MP – milepost
N/A – New proposed line with no abandonment component

Table B-3: Access Roads used for the Construction and Operation of the Project

Approx. Milepost	Access Road Name	Facility	Type (Permanent/ Temporary)	Type (New/ Existing)	Existing Road Width (feet)	Width x Length (feet)	Proposed Modification[1]	Construction (acres)[2]	Operation (acres)[2]
	West Virginia								
0.07	TAR-001	Replacement Section 1	Temporary	Existing/New	9' - 10'	15'x'5659'	Tree clearing, canopy trimming and additional stone required. Existing road to be widened.	1.95	0.00
	West Virginia Sub Total:							1.95	0.00
	Maryland								
0.29	TAR-002	Replacement Section 1	Temporary	New	N/A	15'x'86'	Tree clearing, canopy trimming and stone required.	0.03	0.00
0.29	PAR-003	Replacement Section 1	Permanent	Existing	10'	Variesx'204'	No improvements.	0.05	0.05
0.33	TAR-004A	Replacement Section 1	Temporary	Existing	Varies	25'x'65'	No improvements.	0.04	0.00
0.34	TAR-004B	Replacement Section 1	Temporary	New	N/A	25'x'133'	Stone Required	0.08	0.00
0.78	PAR-005	Existing Line 8000	Permanent	Existing	10'	15'x'136'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.05	0.05
0.81	PAR-005.1	Existing Line 8000	Permanent	Existing	9'	15'x'136'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.05	0.05
0.87	PAR-006	Existing Line 8000	Permanent	Existing	9'	50'x'145'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.05	0.05
1.30	PAR-007	Replacement Section 2	Permanent	Existing	12'	15'x'1064'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.37	0.37
2.12	TAR-008	Replacement Section 2	Temporary	Existing/New	8' - 10'	15' - 25'x'2519'	Existing portion of road will require additional stone to stabilize surface. Existing road to be widened. Tree clearing, canopy trimming and stone required on new portion.	1.15	0.00
2.68	TAR-009	Replacement Section 2	Temporary	New	N/A	25'x'261'	Tree clearing, canopy trimming, and stone required.	0.14	0.00
2.73	PAR-010	Replacement Section 2	Permanent	Existing	8' - 11'	15'x'5025'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	1.73	1.73
2.89	TAR-011	Replacement Section 2	Temporary	New/Existing	10'	15' - 25'x'4170'	Existing portion of road will require additional stone to stabilize surface. Existing road to be widened. Tree clearing, canopy trimming and stone required on new portion.	2.26	0.00
3.21	TAR-012	Replacement Section 2	Temporary	New/Existing	10'	15' - 25'x'2603'	Existing portion of road will require additional stone to stabilize surface. Existing road to be widened. Tree clearing, canopy trimming and stone required on new portion.	1.44	0.00
3.41	TAR-013	Replacement Section 2	Temporary	New/Existing	8'	15' - 25'x'2619'	Existing portion of road will require additional stone to stabilize surface. Existing road to be widened. Tree clearing, canopy trimming and stone required on new portion.	1.38	0.00
3.72	PAR-015	Replacement Section 2	Permanent	Existing	9' - 12'	15'x'2322'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.80	0.80
3.94	TAR-016	Replacement Section 2	Temporary	New	N/A	25'x'1045'	Tree clearing, canopy trimming, and stone required.	0.59	0.00
4.06	PAR-017B	Replacement Section 2	Permanent	Existing	12'	25'x'181'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened. Some power poles will need to be relocated.	0.10	0.10
4.12	PAR-017A	Replacement Section 2	Permanent	Existing	12'	25'x'1820'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	1.03	1.03

Table B-3: Access Roads used for the Construction and Operation of the Project

Approx. Milepost	Access Road Name	Facility	Type (Permanent/ Temporary)	Type (New/ Existing)	Existing Road Width (feet)	Width x Length (feet)	Proposed Modification[1]	Construction (acres)[2]	Operation (acres)[2]
4.61	PAR-018	Replacement Section 2	Permanent	Existing	10' - 11'	15'x'1186'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.41	0.41
4.89	PAR-019	Replacement Section 2	Permanent	Existing	9'	15'x'1000'	Additional stone to stabilize existing surface required. Existing road to be widened.	0.36	0.36
5.22	PAR-019.1B	Replacement Section 2	Permanent	Existing	10'	10'x'38'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.01	0.01
5.23	PAR-019.1A	Replacement Section 2	Permanent	Existing	10'	10'x'1340'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.47	0.47
5.65	PAR-020B	Replacement Section 2	Permanent	Existing	12'	15'x'91'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.03	0.03
5.65	PAR-020A	Replacement Section 2	Permanent	Existing	12' - 14'	15'x'1227'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.44	0.44
6.17	PAR-021	Replacement Section 2	Permanent	Existing	10' - 12'	15'x'1096'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.38	0.38
6.89	PAR-022	Replacement Section 2	Permanent	Existing	11'	15'x'684'	Additional stone to stabilize existing surface. Existing road to be widened.	0.24	0.24
7.05	PAR-023	Replacement Section 2	Permanent	Existing	12'	15'x'934'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.32	0.32
7.32	TAR-024	Existing Line 8000	Temporary	New	N/A	25'x'579'	Tree clearing, canopy trimming, and stone required.	0.33	0.00
7.83	PAR-025	Replacement Section 3	Permanent	New	N/A	25'x'1936'	Tree clearing, canopy trimming, and stone required.	1.10	1.10
8.04	PAR-026A	Replacement Section 3	Permanent	New/Existing	10'	15'x'2056'	Existing portion of road will require additional stone to stabilize surface. Existing road to be widened. Tree clearing, canopy trimming and stone required on new portion.	0.71	0.71
8.06	PAR-026B	Replacement Section 3	Permanent	New	N/A	15'x'91'	Tree clearing, canopy trimming, and stone required.	0.03	0.03
8.33	TAR-027	Replacement Section 3	Temporary	New	N/A	25'x'157'	Tree clearing, canopy trimming, and stone required.	0.09	0.00
8.87	PAR-028C	Replacement Section 3	Permanent	Existing	8'	25x'463'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.16	0.16
8.87	PAR-028B	Replacement Section 3	Permanent	Existing	8'	25x'54'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.03	0.03
8.87	PAR-028A	Replacement Section 3	Permanent	New/Existing	10' - 20'	15' - 20'x'3318'	Existing portion of road will require additional stone to stabilize surface. Portions of existing road to be widened. Tree clearing, canopy trimming and stone required on new portion.	1.28	1.28
9.38	PAR-028.1	Replacement Section 3	Permanent	Existing	15'	15'x'3783'	Additional stone to stabilize existing surface and canopy trimming required.	1.30	1.30
10.07	TAR-030B	Replacement Section 3	Temporary	Existing	10'	25'x'518'	Additional stone to stabilize existing surface required. Existing road to be widened.	0.29	0.00
10.16	TAR-030A	Replacement Section 3	Temporary	Existing	10'	15'x'295'	Additional stone to stabilize existing surface required. Existing road to be widened.	0.10	0.00
10.27	TAR-029	Replacement Section 3	Temporary	New	N/A	15' - 25'x'3487'	Tree clearing, canopy trimming, and stone required.	1.91	0.00
10.73	PAR-031	Replacement Section 3	Permanent	Existing	10'	15'x'3247'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	1.12	1.12
10.93	TAR-032	Replacement Section 3	Temporary	New/Existing	10'	25'x'2841'	Existing portion of road will require additional stone to stabilize surface. Existing road to be widened. Tree clearing, canopy trimming and stone required on new portion.	1.63	0.00

Table B-3: Access Roads used for the Construction and Operation of the Project

Approx. Milepost	Access Road Name	Facility	Type (Permanent/ Temporary)	Type (New/ Existing)	Existing Road Width (feet)	Width x Length (feet)	Proposed Modification[1]	Construction (acres)[2]	Operation (acres)[2]
11.44	TAR-033	Replacement Section 3	Temporary	New/Existing	TBD	15' - 25'x'3079'	Existing portion of road will require additional stone to stabilize surface. Existing road to be widened. Tree clearing, canopy trimming and stone required on new portion.	1.45	0.00
12.91	TAR-034	Replacement Section 4	Temporary	Existing	8' - 12'	15'x'1331'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.46	0.00
14.32	TAR-035	Replacement Section 5	Temporary	New	N/A	25'x'352'	Tree clearing, canopy trimming, and stone required.	0.20	0.00
14.40	PAR-036	Replacement Section 5	Permanent	Existing	10'	15'x'520'	Additional stone to stabilize existing surface required. Existing road to be widened.	0.21	0.21
14.42	TAR-037	Replacement Section 5	Temporary	New	N/A	25'x'337'	Tree clearing, canopy trimming, and stone required.	0.19	0.00
15.33	TAR-038B	Replacement Section 5	Temporary	Existing	10' - 15'	15'x'775'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.26	0.00
15.36	TAR-038A	Replacement Section 5	Temporary	Existing	10' - 15'	15'x'2820'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.97	0.00
15.36	TAR-038C	Replacement Section 5	Temporary	Existing	52'	50'x'1464'	No improvements.	1.78	0.00
15.86	PAR-039C	Existing Line 8000	Permanent	Existing	18' - 20'	20'x'193'	Additional stone to stabilize existing surface and canopy trimming required.	0.09	0.09
15.87	PAR-039A	Existing Line 8000	Permanent	Existing	10' - 18'	20'x'1769'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.81	0.81
15.87	PAR-039B	Existing Line 8000	Permanent	Existing	18' - 20'	20'x'1269'	Additional stone to stabilize existing surface and canopy trimming required.	0.58	0.58
16.05	PAR-039D	Existing Line 8000	Permanent	Existing	20'	20'x'761'	Additional stone to stabilize existing surface and canopy trimming required.	0.35	0.35
16.50	PAR-040	Existing Line 8000	Permanent	Existing	10'	15'x159'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.04	0.04
17.82	PAR-041	Existing Line 8000	Permanent	New	N/A	25'x'558'	Tree clearing, canopy trimming, and stone required.	0.32	0.32
0.25	TAR-004.1	Line 8225	Temporary	Existing	9'	15'x'64'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.02	0.00
0.40[3]	PAR-014A	Line 8244	Permanent	Existing	9'	15'x'162'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.06	0.06
0.39[3]	PAR-014B	Line 8244	Permanent	Existing	9'	15'x'18'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.01	0.01
0.30[3]	PAR-014C	Line 8244	Permanent	Existing	9'	15'x'1074'	Additional stone to stabilize existing surface and canopy trimming required. Existing road to be widened.	0.37	0.37
0.29	TAR-002	Replacement Section 1	Temporary	New	N/A	15'x'86'	Tree clearing, canopy trimming, and stone required.	0.03	0.00
							Maryland Sub Total:	**32.26**	**15.46**
							Project Total:	**34.20**	**15.46**

[1]Proposed modifications were determined off of survey data and desktop review. Additional modifications may be required for construction.

[2]The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.

[3]Line 8244 has line specific mileposting. Mileposting is not relative to Line 8000.

Table B-4: Additional Temporary Workspace Justifications

ATWS ID	Mileposts	Justification	Dimensions (feet) - Length x Width	Total Acres[1]	Existing Land Use Types		
West Virginia							
ATWS-001	0.00	ATWS is required for HDD construction	Varies	2.01	Industrial/Commercial	Residential	Forested
ATWS-002	0.00	ATWS is required for HDD construction	190 x 133	0.61	Industrial/Commercial	Residential	Forested
ATWS-003	0.10	ATWS required for pipe abandonment	50 x 103	0.12	Industrial/Commercial	Forested	-
ATWS-004	0.10	ATWS required for pipe abandonment	25 x 118	0.07	Industrial/Commercial	Forested	-
ATWS-005	0.24	ATWS required for vehicle access	71 x 44	0.06	Forested	-	-
ATWS-006	0.24	ATWS required for vehicle access	100 x 68	0.09	Forested	-	-
ATWS-007	0.20	ATWS is required for access between easements	42 x 25	0.02	Forested	-	-
			West Virginia Subtotal:	2.96			
Maryland							
ATWS-008	0.30	ATWS required for removal of cathodic protection	24 x 50	0.03	Forested	-	-
ATWS-009	0.30	ATWS required for removal of cathodic protection	24 x 50	0.03	Forested	-	-
ATWS-010	0.24	ATWS required for Tie-in	100 x 100	0.16	Forested	-	-
ATWS-011	0.50	ATWS required for lateral construction and tie-in to existing line	9 x 59 (irregular)	0.01	Forested	-	-
ATWS-012	0.70	ATWS required for lateral construction and tie-in to existing line	1362 x 50 (irregular)	1.22	Industrial/Commercial	Forested	-
ATWS-013	0.00	ATWS required for lateral construction and tie-in to existing line	73 x 180	0.31	Industrial/Commercial	Forested	-
ATWS-014	0.60	ATWS required for lateral construction and tie-in to existing line	100 x 200	0.34	Industrial/Commercial	Forested	-
ATWS-015	0.80	ATWS required for vehicle access	26 x 110	0.07	Industrial/Commercial	Forested	-
ATWS-016	0.80	ATWS required for vehicle access	24 x 131	0.07	Industrial/Commercial	Forested	-
ATWS-017	0.90	ATWS required for vehicle access	25 x 133	0.08	Industrial/Commercial	Forested	-
ATWS-018	0.90	ATWS required for tie-in to existing line	27 x 134	0.08	Forested		-
ATWS-019	0.90	ATWS required for tie-in to existing line	25 x 153	0.09	Industrial/Commercial	Forested	-
ATWS-020	0.90	ATWS required for vehicle access	27 x 101	0.06	Industrial/Commercial	Forested	-
ATWS-021	1.00	ATWS required for forested construction	25 x 386	0.24	Industrial/Commercial	Forested	-
ATWS-022	1.00	ATWS required for side bend construction	25 x 80	0.06	Forested	-	-
ATWS-023	1.00	ATWS required for side bend construction	25 x 193	0.11	Forested	-	-
ATWS-024	1.10	ATWS required for above ground facility construction	75 x 200	0.34	Forested	-	-
ATWS-025	1.10	ATWS required for above ground facility construction	50 x 237	0.25	Forested	-	-
ATWS-026	1.20	ATWS required for water body crossing	50 x 196	0.23	Forested	-	-
ATWS-027	1.20	ATWS required for water body crossing	50 x 88	0.08	Open Land	Forested	-

Table B-4: Additional Temporary Workspace Justifications

ATWS ID	Mileposts	Justification	Dimensions (feet) - Length x Width	Total Acres[1]	Existing Land Use Types		
ATWS-028	1.30	ATWS required for vehicle access	61 x 42	0.03	Industrial/Commercial	Residential	-
ATWS-029	1.30	ATWS required for vehicle access	77 x 68	0.09	Industrial/Commercial	Forested	-
ATWS-030	1.40	ATWS required for water body crossing	50 x 210	0.23	Open Land	Forested	-
ATWS-031	1.50	ATWS required for water body crossing	50 x 224	0.29	Forested	-	-
ATWS-032	1.60	ATWS required for above ground facility construction	75 x 200	0.34	Forested	-	-
ATWS-033	1.70	ATWS required for water body crossing	50 x 204	0.23	Forested	-	-
ATWS-034	1.70	ATWS required for water body crossing	50 x 224	0.30	Forested	-	-
ATWS-035	1.80	ATWS required for water body crossing	50 x 125	0.16	Forested	-	-
ATWS-036	1.90	ATWS required for water body crossing	50 x 261	0.29	Forested	-	-
ATWS-037	1.90	ATWS required for water body crossing	50 x 259	0.29	Forested	-	-
ATWS-038	2.00	ATWS required for vehicle access	45 x 100	0.10	Industrial/Commercial	Open Land	-
ATWS-039	2.00	ATWS required for vehicle access	40 x 100	0.09	Industrial/Commercial	Residential	-
ATWS-040	2.00	ATWS required for water body crossing	50 x 268	0.35	Forested	-	-
ATWS-041	2.10	ATWS required for water body crossing	50 x 359	0.39	Forested	-	-
ATWS-042	2.20	ATWS required for water body crossing	50 x 194	0.24	Forested	-	-
ATWS-043	2.20	ATWS required for vehicle access	15 x 75	0.02	Industrial/Commercial	Residential	-
ATWS-044	2.20	ATWS required for vehicle access	45 x 75	0.08	Industrial/Commercial		-
ATWS-045	2.30	ATWS required for water body crossing	50 x 204	0.23	Forested	-	-
ATWS-046	2.30	ATWS required for water body crossing	50 x 193	0.22	Forested	-	-
ATWS-047	2.40	ATWS required for water body crossing	50 x 197	0.23	Forested	-	-
ATWS-048	2.50	ATWS required for water body crossing	50 x 193	0.22	Forested	-	-
ATWS-049	2.70	ATWS required for water body crossing	50 x 233	0.26	Forested	-	-
ATWS-050	2.80	ATWS required for water body crossing, forested construction, and constructability constraints	50 x 1629	1.88	Open Land	Forested	-
ATWS-051	0.40	ATWS required for vehicle access	67 x 87	0.10	Industrial/Commercial	Residential	-
ATWS-052	3.20	ATWS required for water body crossing and pipeline crossover	50 x 268 (irregular)	0.22	Industrial/Commercial	Forested	-
ATWS-053	0.40	ATWS required for vehicle access	68 x 25	0.03	Industrial/Commercial	Forested	-
ATWS-054	3.10	ATWS required for foreign easement crossing	25 x 100	0.06	Industrial/Commercial	Forested	-
ATWS-055	3.30	ATWS required for water body crossing, forested construction, and pipeline crossover	50 x 1319	1.39	Industrial/Commercial	Forested	-
ATWS-056	3.10	ATWS required for foreign easement crossing	25 x 100	0.06	Industrial/Commercial	Forested	-
ATWS-057	3.20	ATWS required for vehicle access	50 x 100	0.11	Industrial/Commercial	Forested	-
ATWS-058	3.40	ATWS required for foreign easement crossing	25 x 74	0.04	Industrial/Commercial	Forested	-
ATWS-059	3.40	ATWS required for foreign easement crossing	25 x 82	0.05	Industrial/Commercial	Forested	-
ATWS-060	3.40	ATWS required for vehicle access	50 x 100	0.11	Forested	-	-
ATWS-061	3.50	ATWS required for water body crossing and forested construction	50 x 358	0.42	Forested	-	-
ATWS-062	0.20	ATWS required for foreign easement crossing	25 x 96	0.06	Industrial/Commercial	Forested	-

Table B-4: Additional Temporary Workspace Justifications

ATWS ID	Mileposts	Justification	Dimensions (feet) - Length x Width	Total Acres[1]	Existing Land Use Types		
ATWS-063	0.20	ATWS required for foreign easement crossing	25 x 74	0.04	Industrial/Commercial	Forested	-
ATWS-064	0.40	ATWS required for vehicle access	106 x 40	0.06	Other	-	-
ATWS-065	0.40	ATWS required for vehicle access	105 x 100	0.19	Other	Forested	-
ATWS-066	3.60	ATWS required for stream crossing, forested construction, above ground facility construction	50 x 1024	0.82	Forested	-	-
ATWS-067	0.40	ATWS required for vehicle access	45 x 72	0.06	Industrial/Commercial	Forested	-
ATWS-068	0.00	ATWS required for lateral construction	105 x 70	0.18	Industrial/Commercial	Forested	-
ATWS-069	0.43	ATWS required for vehicle access	5 x 60	0.07	Industrial/Commercial	Forested	-
ATWS-070	0.00	ATWS required for tie-in	157 x 55 (irregular)	0.15	Industrial/Commercial	Forested	-
ATWS-071	0.00	ATWS required for lateral construction	105 x 54	0.12	Forested	-	-
ATWS-072	0.43	ATWS required for vehicle access	100 x 100	0.17	Industrial/Commercial	Residential	-
ATWS-073	0.43	ATWS required for vehicle access	25 x 25	0.03	Industrial/Commercial	Forested	-
ATWS-074	3.70	ATWS required for water body crossing	50 x 125	0.12	Forested	-	-
ATWS-075	3.80	ATWS required for water body crossing	50 x 209	0.23	Forested	-	-
ATWS-076	3.90	ATWS required for vehicle access	50 x 100	0.11	Industrial/Commercial	Forested	-
ATWS-077	4.00	ATWS required for forested construction and stream crossing	50 x 478	0.53	Forested	-	-
ATWS-078	4.00	ATWS required for side bend construction	38 x22 (irregular)	0.01	Industrial/Commercial	Forested	-
ATWS-079	4.10	ATWS required for side bend construction and stream crossing	50 x 81	0.10	Industrial/Commercial	Forested	-
ATWS-080	4.10	ATWS required for vehicle access	50 x 47	0.01	Forested	-	-
ATWS-081	4.10	ATWS required for vehicle access	50 x 97	0.12	Residential	Forested	-
ATWS-082	4.20	ATWS required for water body crossing	50 x 223	0.27	Forested	-	-
ATWS-083	4.20	ATWS required for water body crossing	25 x 100	0.06	Industrial/Commercial	Forested	-
ATWS-084	4.20	ATWS required for water body crossing	25 x 100	0.06	Industrial/Commercial	Forested	-
ATWS-085	4.10	ATWS required for water body crossing	50 x 96	0.11	Forested	-	-
ATWS-086	4.20	ATWS required for vehicle access	40 x 96	0.09	Industrial/Commercial	Residential	-
ATWS-087	4.20	ATWS required for vehicle access	40 x 96	0.07	Industrial/Commercial	-	-
ATWS-088	4.50	ATWS required for water body crossing	50 x 202	0.23	Forested	-	-
ATWS-089	4.60	ATWS required for water body crossing	50 x 378	0.43	Open Land	Forested	-
ATWS-091	4.60	ATWS required for vehicle access	78 x 85	0.10	Industrial/Commercial	Residential	-
ATWS-092	4.60	ATWS required for vehicle access	70 x 10	0.02	Industrial/Commercial	Residential	-
ATWS-093	4.70	ATWS required for forested construction	25 x 774	0.44	Residential	Forested	-
ATWS-094	4.80	ATWS required for water body crossing	50 x 200	0.24	Industrial/Commercial	Forested	-
ATWS-096	4.90	ATWS required for water body crossing	50 x 102	0.12	Industrial/Commercial	-	-
ATWS-097	4.90	ATWS required for vehicle access	83 x 30	0.06	Industrial/Commercial	Residential	-
ATWS-098	4.90	ATWS required for vehicle access	79 x 60	0.08	Industrial/Commercial	Open Land	-
ATWS-099	5.10	ATWS required for forested construction	50 x 300	0.34	Forested	-	-
ATWS-100	5.20	ATWS required for sidebend construction	50 x 126	0.16	Industrial/Commercial	Open Land	Forested
ATWS-101	5.30	ATWS required for forested construction	25 x 267	0.15	Forested	-	-
ATWS-102	5.30	ATWS required for water body crossing	50 x 167	0.19	Forested	-	-

Table B-4: Additional Temporary Workspace Justifications

ATWS ID	Mileposts	Justification	Dimensions (feet) - Length x Width	Total Acres[1]	Existing Land Use Types		
ATWS-103	5.40	ATWS required for water body crossing	50 x 200	0.26	Forested	-	-
ATWS-104	5.60	ATWS required for vehicle access	78 x 75	0.09	Industrial/Commercial	Residential	Forested
ATWS-105	5.60	ATWS required for vehicle access	78 x 30	0.05	Industrial/Commercial	Residential	
ATWS-106	5.60	ATWS required for vehicle access	50 x 75	0.07	Forested	-	-
ATWS-107	5.60	ATWS required for foreign easement crossing	49 x 89	0.07	Industrial/Commercial	Forested	-
ATWS-108	5.70	ATWS required for foreign easement crossing	60 x 88	0.10	Industrial/Commercial	Forested	-
ATWS-109	5.80	ATWS required for sidebend construction and stream crossing	50 x 516	0.60	Industrial/Commercial	Forested	-
ATWS-110	5.90	ATWS required for stream crossing	50 x 300	0.34	Forested	-	-
ATWS-111	6.20	ATWS required for sidebend construction	50 x 260	0.30	Industrial/Commercial	Forested	-
ATWS-112	6.20	ATWS required for vehicle access	50 x 50	0.05	Industrial/Commercial	Forested	-
ATWS-113	6.20	ATWS required for vehicle access	46 x 78	0.08	Industrial/Commercial	Residential	-
ATWS-114	6.20	ATWS required for vehicle access	38 x 78	0.07	Industrial/Commercial	Forested	-
ATWS-115	6.30	ATWS required for sidebend construction and stream crossing	50 x 100	0.14	Forested	-	-
ATWS-116	6.40	ATWS required for sidebend construction and stream crossing	50 x 158	0.19	Industrial/Commercial	Forested	-
ATWS-117	6.50	ATWS required for stream crossing	50 x 213	0.28	Forested	-	-
ATWS-118	6.60	ATWS required for stream crossing	50 x 200	0.21	Forested	-	-
ATWS-119	6.80	ATWS required for forested construction	25 x 1205	0.69	Forested	-	-
ATWS-120	6.80	ATWS required for sidebend construction	25 x 1205	0.22	Forested	-	-
ATWS-121	6.90	ATWS required for forested construction	25 x 1205	0.48	Forested	-	-
ATWS-123	7.00	ATWS required for vehicle access	30 x 65	0.04	Residential	-	-
ATWS-124	7.00	ATWS required for vehicle access	94 x 60	0.11	Industrial/Commercial	Residential	-
ATWS-125	7.00	ATWS required for stream crossing	50 x 110	0.16	Forested	-	-
ATWS-126	7.00	ATWS required for vehicle access	50 x 99	0.12	Forested	-	-
ATWS-127	7.10	ATWS required for stream crossing	50 x 193	0.22	Forested	-	-
ATWS-128	7.10	ATWS required for vehicle access	147 x 30	0.10	Industrial/Commercial	Forested	-
ATWS-129	7.10	ATWS required for vehicle access	43 x 26	0.03	Industrial/Commercial	Forested	-
ATWS-130	7.30	ATWS required for tie in to existing line	25 x 105	0.06	Forested	-	-
ATWS-131	7.30	ATWS required for tie in to existing line	159 x 224	0.78	Forested	-	-
ATWS-132	7.30	ATWS required for vehicle access	46 x 96	0.10	Forested	-	-
ATWS-133	7.30	ATWS required for vehicle access	27 x 90	0.06	Forested	-	-
ATWS-134	7.30	ATWS required for tie in to existing line	50 x 180	0.16	Industrial/Commercial	Forested	-
ATWS-135	7.70	ATWS required for tie in to existing line	2444 x 231 (irregular)	7.23	Forested	-	-
ATWS-136	7.60	ATWS required for tie in to existing line	130 x 94	0.31	Other	Forested	-
ATWS-137	7.70	ATWS required for tie in to existing line	502 x 130 (irregular)	0.70	Industrial/Commercial	Forested	-
ATWS-138	7.80	ATWS required for vehicle access	100 x 50	0.08	Forested	-	-
ATWS-139	8.00	ATWS required for vehicle access	100 x 55	0.10	Industrial/Commercial	Forested	-
ATWS-140	8.00	ATWS required for vehicle access	22 x 19	0.01	Industrial/Commercial	Forested	-
ATWS-141	8.00	ATWS required for tie in to existing line	195 x 89 (irregular)	0.17	Forested	-	-

Table B-4: Additional Temporary Workspace Justifications

ATWS ID	Mileposts	Justification	Dimensions (feet) - Length x Width	Total Acres[1]	Existing Land Use Types		
ATWS-142	8.00	ATWS required for vehicle access	50 x 45	0.05	Forested	-	-
ATWS-143	8.10	ATWS required for vehicle access	50 x 39	0.05	Forested	-	-
ATWS-144	8.10	ATWS required for tie in to existing line	91 x 59	0.10	Industrial/Commercial	Forested	-
ATWS-145	8.20	ATWS required for stream crossing	25 x 222	0.13	Industrial/Commercial	Forested	-
ATWS-146	8.30	ATWS required for tie in to existing line associated with HDD entry point	250 x 311 (irregular)	1.70	Forested	-	-
ATWS-146.1	8.30	ATWS required for tie in to existing line associated with HDD entry point	50 x 236	0.27	Industrial/Commercial	Forested	
ATWS-148	8.30	ATWS required for vehicle access	38 x 100	0.09	Industrial/Commercial	Forested	-
ATWS-149	8.30	ATWS required for vehicle access	37 x 100	0.09	Industrial/Commercial	-	-
ATWS-150	8.80	ATWS required for vehicle access and forested construction	150 x 150	0.63	Forested	-	-
ATWS-151	8.80	ATWS required for forested construction	50 x 250	0.27	Industrial/Commercial	Forested	-
ATWS-152	8.90	ATWS required for vehicle access	53 x 41	0.05	Industrial/Commercial	Forested	-
ATWS-153	8.90	ATWS required for vehicle access	50 x 25	0.03	Forested	-	-
ATWS-154	8.90	ATWS required for forested construction	50 x 157	0.18	Industrial/Commercial	Forested	-
ATWS-155	8.90	ATWS required for vehicle access	55 x 35	0.04	Industrial/Commercial	-	-
ATWS-156	8.90	ATWS required for vehicle access	50 x 30	0.03	Forested	-	-
ATWS-157	8.90	ATWS for HDD pullback	200 x 2326	4.89	Industrial/Commercial	Forested	-
ATWS-158	9.00	ATWS required for sidebend construction	25 x 370	0.22	Forested	-	-
ATWS-159	9.50	ATWS required for stream crossing	63 x 200	0.25	Forested	-	-
ATWS-160	9.60	ATWS required for stream crossing	25 x 109	0.06	Forested	-	-
ATWS-161	9.60	ATWS required for stream crossing	50 x 200	0.25	Forested	-	-
ATWS-162	9.70	ATWS required for stream crossing	50 x 200	0.21	Industrial/Commercial	Forested	-
ATWS-163	9.80	ATWS required for stream crossing	50 x 200	0.25	Forested	-	-
ATWS-164	10.10	ATWS required for vehicle access	28 x 25 (irregular)	0.01	Industrial/Commercial	-	-
ATWS-165	10.10	ATWS required for vehicle access	41 x 25 (irregular)	0.01	Industrial/Commercial	-	-
ATWS-166	10.10	ATWS required for vehicle access	51 x 69	0.08	Industrial/Commercial	Open Land	-
ATWS-167	10.10	ATWS required for vehicle access	28 x 68	0.04	Industrial/Commercial	Open Land	-
ATWS-168	10.10	ATWS required for vehicle access	18 x 25 (irregular)	0.01	Industrial/Commercial	-	-
ATWS-169	10.30	ATWS required for vehicle access	25 x 50	0.05	Forested	-	-
ATWS-170	10.30	ATWS required for road crossing	25 x 122	0.07	Industrial/Commercial	-	-
ATWS-171	10.60	ATWS required for stream crossing	50 x 200	0.24	Forested	-	-
ATWS-172	10.60	ATWS required for vehicle access	55 x 100	0.13	Industrial/Commercial	Forested	-
ATWS-173	10.60	ATWS required for vehicle access	28 x 100	0.07	Industrial/Commercial	Forested	-
ATWS-174	10.70	ATWS required for stream crossing	50 x 434	0.46	Industrial/Commercial	Forested	-
ATWS-175	10.70	ATWS required for stream crossing	50 x 176	0.20	Industrial/Commercial	Forested	-
ATWS-176	10.80	ATWS required for stream crossing	50 x 200	0.24	Forested	-	-

Table B-4: Additional Temporary Workspace Justifications

ATWS ID	Mileposts	Justification	Dimensions (feet) - Length x Width	Total Acres[1]	Existing Land Use Types		
ATWS-177	10.80	ATWS required for vehicle access	55 x 60	0.08	Industrial/Commercial	-	-
ATWS-178	10.90	ATWS required for vehicle access	62 x 70	0.10	Industrial/Commercial	-	-
ATWS-179	10.90	ATWS required for vehicle access	50 x 100	0.12	Industrial/Commercial	Forested	-
ATWS-180	11.10	ATWS required for stream crossing	50 x 200	0.23	Forested	-	-
ATWS-181	11.20	ATWS required for stream crossing	50 x 200	0.25	Forested	-	-
ATWS-182	11.40	ATWS required for stream crossing	50 x 200	0.24	Forested	-	-
ATWS-183	11.40	ATWS required for stream crossing	50 x 197	0.22	Open Land	-	-
ATWS-184	11.50	ATWS required for vehicle access	45 x 100	0.10	Industrial/Commercial	Open Land	-
ATWS-185	11.50	ATWS required for vehicle access	40 x 100	0.09	Industrial/Commercial	Open Land	-
ATWS-186	11.60	ATWS required for tie in to existing line	162 x 200	0.73	Open Land	Residential	-
ATWS-187	11.70	ATWS required for tie in to existing line	50 x 30	0.06	Open Land	Residential	-
ATWS-188	12.70	ATWS required for vehicle access	28 x 41	0.01	Open Land	Forested	-
ATWS-189	12.80	ATWS required for tie in to existing line	180 x 214	0.68	Industrial/Commercial	Forested	-
ATWS-190	12.80	ATWS required for tie in to existing line	25 x 207	0.13	Forested	-	-
ATWS-191	12.90	ATWS required for vehicle access	25 x 88	0.05	Industrial/Commercial	Forested	-
ATWS-192	13.00	ATWS required for stream crossing	50 x 200	0.23	Forested	-	-
ATWS-193	13.10	ATWS required for stream crossing	50 x 200	0.23	Residential	-	-
ATWS-194	13.20	ATWS required for pipeline crossover	25 x 235	0.16	Forested	-	-
ATWS-195	13.30	ATWS required for forested construction and stream crossing	25 x 1081	0.63	Industrial/Commercial	Open Land	Forested
ATWS-196	13.30	ATWS required for stream crossing	25 x 226	0.13	Forested	-	-
ATWS-197	13.40	ATWS required for stream crossing	50 x 148	0.19	Open Land	Forested	-
ATWS-198	13.40	ATWS required for stream crossing	25 x 198	0.12	Industrial/Commercial	Residential	-
ATWS-199	13.50	ATWS required for stream crossing	50 x 190	0.15	Open Land	Forested	-
ATWS-200	13.50	ATWS required for aboveground facility construction and side	15 x 47 (irregular)	0.01	Forested	-	-
ATWS-201	13.50	ATWS required for aboveground facility construction and side	25 x 50	0.02	Industrial/Commercial	-	-
ATWS-202	13.50	ATWS required for aboveground facility construction and side	27 x 84	0.04	Open Land	-	-
ATWS-203	13.60	ATWS required for tie in to existing line	163 x 113	0.34	Open Land	-	-
ATWS-204	13.60	ATWS required for tie in to existing line	159 x 62	0.12	Open Land	-	-
ATWS-205	0.00	ATWS required for tie in to existing line lateral tie in	50 x 150	0.17	Open Land	Forested	-
ATWS-206	0.00	ATWS required for tie in to existing line lateral tie in	130 x 109	0.30	Residential	-	-
ATWS-207	0.00	ATWS required for tie in to existing line lateral tie in	50 x 51	0.04	Forested	-	-
ATWS-208	0.11	ATWS required for tie in	15 x 18	0.06	Residential	-	-
ATWS-209	0.11	ATWS required for tie in	41 x 71 (irregular)	0.01	Residential	-	-
ATWS-210	13.90	ATWS required for stream and wetland crossing	25 x 538	0.30	Residential	Forested	-
ATWS-211	14.10	ATWS required for forested construction	50 x 2721	3.07	Forested	-	-
ATWS-212	14.00	ATWS required for road crossing and side bend	50 x 182	0.24	Forested	-	-
ATWS-213	14.30	ATWS required for vehicle access	30 x 25	0.01	Forested	-	-
ATWS-214	14.40	ATWS required for vehicle access	25 x 62	0.04	Residential	-	-

Table B-4: Additional Temporary Workspace Justifications

ATWS ID	Mileposts	Justification	Dimensions (feet) - Length x Width	Total Acres[1]	Existing Land Use Types		
ATWS-215	14.40	ATWS required for vehicle access	25 x 55	0.03	Residential	-	-
ATWS-216	14.40	ATWS required for vehicle access	49 x 52 (irregular)	0.07	Industrial/Commercial	-	-
ATWS-217	14.40	ATWS required for vehicle access	68 x 14	0.01	Industrial/Commercial	Residential	-
ATWS-218	14.70	ATWS required for forested construction	25 x 930	0.58	Forested	-	-
ATWS-219	14.80	ATWS required for stream crossing	50 x 195	0.22	Forested	-	-
ATWS-220	14.80	ATWS required for stream crossing	50 x 195	0.22	Forested	-	-
ATWS-221	14.80	ATWS required for aboveground facility construction	25 x 100	0.06	Industrial/Commercial	Forested	-
ATWS-222	14.90	ATWS required for forested construction	25 x 733	0.42	Forested	-	-
ATWS-223	15.00	ATWS required for stream crossing	50 x 199	0.22	Forested	-	-
ATWS-224	15.10	ATWS required for stream crossing	50 x 200	0.22	Industrial/Commercial	Forested	-
ATWS-225	15.10	ATWS required for wetland crossing	50 x 200	0.23	Forested	-	-
ATWS-226	15.20	ATWS required for adjacent wetland buffers reducing workspace	25 x 465	0.27	Forested	-	-
ATWS-227	15.30	ATWS required for wetland crossing	25 x 100	0.06	Open Land	-	-
ATWS-228	15.30	ATWS required for vehicle access	50 x 100	0.11	Open Land	-	-
ATWS-229	15.30	ATWS required for vehicle access	42 x 100	0.10	Industrial/Commercial	-	-
ATWS-230	15.40	ATWS required for vehicle access	42 x 100	0.10	Industrial/Commercial	-	-
ATWS-231	15.40	ATWS required for sidebend construction	25 x 163	0.10	Open Land	-	-
ATWS-232	15.40	ATWS required to conjoin easements	8 x 514	0.08	Open Land	-	-
ATWS-233	15.50	ATWS required to tie in to existing line	50 x 79	0.11	Open Land	-	-
ATWS-234	15.50	ATWS required to tie in to existing line	50 x 150	0.17	Open Land	-	-
ATWS-235	15.50	ATWS required for vehicle access	75 x 75 (irregular)	0.15	Industrial/Commercial	-	-
ATWS-236	15.50	ATWS required for vehicle access	25 x 25	0.05	Industrial/Commercial	-	-
ATWS-237	15.60	ATWS required for vehicle access	25 x 150	0.09	Industrial/Commercial	-	-
ATWS-238	15.60	ATWS required for vehicle access	25 x 150	0.09	Open Land	-	-
ATWS-239	0.01	ATWS required for aboveground facility, lateral, and tie in	25 x 50	0.03	Open Land	-	-
ATWS-240	0.01	ATWS required for aboveground facility, lateral, and tie in	25 x 73	0.04	Open Land	-	-
ATWS-241	0.00	ATWS required for aboveground facility, lateral, and tie in	25 x 42	0.03	Open Land	-	-
ATWS-242	17.40	ATWS required for sidebend construction and tie ins	50 x 248	0.26	Residential	Forested	-
ATWS-243	17.83	ATWS required for aboveground facility	161 x 121	0.10	Residential	-	-
ATWS-244	17.80	ATWS required for aboveground facility	161 x 91	0.39	Residential	-	-
ATWS-245	17.83	ATWS required for vehicle access	23 x 100	0.05	Residential	-	-
ATWS-246	17.83	ATWS required for vehicle access	32 x 100	0.07	Residential	-	-
ATWS-247	17.80	ATWS required for aboveground facility	153 x 97	0.19	Residential	Forested	-
ATWS-248	16.50	ATWS required for vehicle access	25 x 25	0.01	Industrial/Commercial	Residential	-
ATWS-249	9.00	ATWS required for vehicle access	25 x 100	0.06	Industrial/Commercial	Residential	-
ATWS-250	4.90	ATWS required for vehicle access and waterbody crossing	50 x 75	0.07	Industrial/Commercial	-	-
ATWS-251	4.90	ATWS required for vehicle access and waterbody crossing	50 x 25	0.03	Open Land	-	-
ATWS-252	6.90	ATWS required for vehicle access	33 x 50	0.04	Industrial/Commercial	Residential	Forested

Table B-4: Additional Temporary Workspace Justifications

ATWS ID	Mileposts	Justification	Dimensions (feet) - Length x Width	Total Acres[1]	Existing Land Use Types		
ATWS-253	6.90	ATWS required for vehicle access	50 x 52	0.06	Industrial/Commercial	Residential	-
ATWS-254	4.60	ATWS required for vehicle access	50 x 75	0.08	Industrial/Commercial	Open Land	-
ATWS-255	1.30	ATWS required for topsoil segregation, side bend construction, and vehicle access	12 x 38	0.01	Industrial/Commercial	Forested	-
ATWS-256	1.30	ATWS required for topsoil segregation, side bend construction, and vehicle access	50 x 135	0.13	Industrial/Commercial	Open Land	-
ATWS-257	4.10	ATWS required for vehicle access	50 x 47	0.02	Residential	Forested	-
ATWS-258	5.70	ATWS required for vehicle access	50 x 25	0.03	Industrial/Commercial	Forested	-
ATWS-259	6.20	ATWS required for vehicle access	50 x 50	0.05	Industrial/Commercial	Forested	-
ATWS-260	7.80	ATWS required for vehicle access	29 x 12	0.00	Forested	-	-
ATWS-261	10.20	ATWS required for road crossing	25 x 224	0.18	Industrial/Commercial	Forested	-
			Maryland Subtotal:	**57.70**			
			Project Total	**60.52**			

[1] The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.

Table B-5: Waterbodies Crossed by Project

Stream ID	Approximate Milepost	Workspace	Name of Waterbody	Flow Regime	USGS Blue Line Stream [a]	Water Edge to Water Edge Crossing Width (ft)	FERC Classification	State Water Quality Classification [b]	Fishery Type [b]	Crossing Method[c]
Mineral County, West Virginia										
Pipeline ROW										
TM1-S67A	0.19	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	No	16.26	Intermediate	C	WWF	IV
TM1-S67	0.20	Pipeline ROW	North Branch Potomac River	Perennial	Yes	26.45	Intermediate	C	WWF	IV
TM1-S67	0.20	Pipeline ROW	North Branch Potomac River	Perennial	Yes	27.51	Intermediate	C	WWF	IV
Access Roads										
TM1-S64	TAR-001	Access Road	Thunderhill Run	Perennial	Yes	14.63	Intermediate	C	WWF	Temporary Bridge
Allegany County, Maryland										
Pipeline ROW										
TM1-S66	0.20	Pipeline ROW	North Branch Potomac River	Perennial	Yes	179.63	Major	I-P	WWF	IV
TM1-S66	0.20	Pipeline ROW	North Branch Potomac River	Perennial	Yes	26.36	Intermediate	I-P	WWF	IV
TM1-S66A	0.24	Pipeline ROW	North Branch Potomac River	Perennial	Yes	27.69	Intermediate	I-P	WWF	IV
TM1-S73	1.01	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	No	2.89	Minor	III-P	WWF	II
TM2-S3	1.22	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	No	3.12	Minor	III-P	WWF	II
TM1-S2	1.44	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	No	3.97	Minor	III-P	WWF	II
TM1-S1	1.44	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	Yes	4.72	Minor	III-P	WWF	II
TM1-S3	1.46	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	No	2.66	Minor	III-P	WWF	II
TM1-S1	1.48	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	Yes	5.28	Minor	III-P	WWF	II

Table B-5: Waterbodies Crossed by Project

Stream ID	Approximate Milepost	Workspace	Name of Waterbody	Flow Regime	USGS Blue Line Stream [a]	Water Edge to Water Edge Crossing Width (ft)	FERC Classification	State Water Quality Classification [b]	Fishery Type [b]	Crossing Method[c]
TM1-S1	1.50	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	Yes	7.13	Minor	III-P	WWF	II
TM1-S4	1.69	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	No	2.87	Minor	III-P	WWF	II
TM1-S6	1.77	Pipeline ROW	UNT to North Branch Potomac River	Intermittent	No	6.06	Minor	III-P	WWF	II
TM1-S8	1.89	Pipeline ROW	UNT to North Branch Potomac River	Intermittent	No	3.85	Minor	III-P	WWF	II
TM1-S9	1.97	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	Yes	2.10	Minor	III-P	WWF	II
TM1-S10	2.04	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	Yes	7.08	Minor	III-P	WWF	II
TM1-S11	2.06	Pipeline ROW	UNT to North Branch Potomac River	Perennial	Yes	6.03	Minor	III-P	WWF	II
TM1-S12	2.17	Pipeline ROW,	UNT to North Branch Potomac River	Ephemeral	No	2.12	Minor	III-P	WWF	II
TM2-S7	2.32	Pipeline ROW	UNT to North Branch Potomac River	Intermittent	Yes	4.15	Minor	III-P	WWF	II
TM2-S6	2.44	Pipeline ROW	UNT to North Branch Potomac	Ephemeral	Yes	3.00	Minor	III-P	WWF	II
TM2-S5	2.73	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	Yes	8.19	Minor	III-P	WWF	II
TM2-S8	3.05	Pipeline ROW	UNT to North Branch Potomac River	Perennial	Yes	12.65	Intermediate	III-P	WWF	II
TM2-S8B	3.06	Pipeline ROW	UNT to North Branch Potomac River	Perennial	Yes	29.65	Intermediate	III-P	WWF	II

Table B-5: Waterbodies Crossed by Project

Stream ID	Approximate Milepost	Workspace	Name of Waterbody	Flow Regime	USGS Blue Line Stream [a]	Water Edge to Water Edge Crossing Width (ft)	FERC Classification	State Water Quality Classification [b]	Fishery Type [b]	Crossing Method[c]
TM1-S15	3.43	Pipeline ROW	UNT to North Branch Potomac River	Intermittent	Yes	14.11	Intermediate	III-P	WWF	II
TM1-S14	3.51	Pipeline ROW	UNT to North Branch Potomac River	Perennial	Yes	5.17	Minor	III-P	WWF	II
TM1-S13	3.73	Pipeline ROW	UNT to North Branch Potomac River	Intermittent	Yes	4.11	Minor	III-P	WWF	II
TM1-S18	4.04	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	No	1.00	Minor	III-P	WWF	II
TM1-S18	4.11	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	No	1.28	Minor	III-P	WWF	II
TM1-S19	4.13	Pipeline ROW	UNT to North Branch Potomac River	Perennial	Yes	8.40	Minor	III-P	WWF	II
TM2-S11	4.50	Pipeline ROW	UNT to North Branch Potomac River	Perennial	Yes	11.92	Intermediate	III-P	WWF	II
TM2-S9	4.60	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	No	5.93	Minor	III-P	WWF	III
TM1-S21	4.83	Pipeline ROW	UNT to North Branch Potomac River	Perennial	Yes	10.78	Intermediate	III-P	WWF	II
TM2-S12	5.36	Pipeline ROW	UNT to Mill Run	Perennial	No	5.00	Minor	I-P	WWF	II
TM2-S13	5.73	Pipeline ROW	UNT to Mill Run	Ephemeral	No	5.82	Minor	I-P	WWF	II
TM2-S14	5.85	Pipeline ROW	UNT to Mill Run	Perennial	Yes	8.20	Minor	I-P	WWF	II
TM2-S16	5.91	Pipeline ROW	UNT to Mill Run	Ephemeral	No	4.13	Minor	I-P	WWF	II
TM2-S17	6.08	Pipeline ROW	UNT to Mill Run	Ephemeral	No	1.83	Minor	I-P	WWF	II
TM2-S17	6.10	Pipeline ROW	UNT to Mill Run	Ephemeral	No	2.00	Minor	I-P	WWF	II
TM2-S18	6.43	Pipeline ROW	UNT to Mill Run	Perennial	Yes	5.16	Minor	I-P	WWF	II
TM2-S19	6.52	Pipeline ROW	UNT to Mill Run	Ephemeral	No	6.87	Minor	I-P	WWF	II
TM1-S32	7.06	Pipeline ROW	UNT to Mill Run	Perennial	Yes	16.58	Intermediate	I-P	WWF	II
TM1-S29	7.55	Pipeline ROW	UNT to Mill Run	Intermittent	No	3.07	Minor	I-P	WWF	II
TM1-S30	7.44	Pipeline ROW	UNT to Mill Run	Ephemeral	No	3.05	Minor	I-P	WWF	II
TM1-S25	7.91	Pipeline ROW	UNT to Mill Run	Ephemeral	No	2.29	Minor	I-P	WWF	II
TM1-S24	8.12	Pipeline ROW	UNT to Mill Run	Perennial	Yes	17.51	Intermediate	III-P	WWF	II

Table B-5: Waterbodies Crossed by Project

Stream ID	Approximate Milepost	Workspace	Name of Waterbody	Flow Regime	USGS Blue Line Stream [a]	Water Edge to Water Edge Crossing Width (ft)	FERC Classification	State Water Quality Classification [b]	Fishery Type [b]	Crossing Method[c]
TM1-S24A	8.15	Pipeline ROW	UNT to Mill Run	Intermittent	Yes	18.75	Intermediate	III-P	WWF	II
TM1-S24B	8.13	Pipeline ROW	UNT to Mill Run	Ephemeral	No	9.12	Minor	III-P	WWF	II
TM1-S23	8.20	Pipeline ROW	Mill Run	Perennial	Yes	12.57	Intermediate	III-P	WWF	II
TM1-S43	8.31	Pipeline ROW	UNT to Mill Run	Ephemeral	No	3.59	Minor	III-P	WWF	II
TM1-S44	8.45	Pipeline ROW	UNT to Mill Run	Intermittent	No	1.95	Minor	III-P	WWF	II
TM1-S83	9.00	Pipeline ROW	UNT to Mill Run	Perennial	Yes	2.01	Minor	I-P	WWF	II
TM1-S87	9.10	Pipeline ROW	UNT to North Branch Potomac River	Intermittent	No	13.81	Intermediate	III-P	WWF	II
TM1-S88	9.20	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	No	2.00	Minor	III-P	WWF	II
TM1-S89	9.30	Pipeline ROW	UNT to North Branch Potomac River	Intermittent	No	7.69	Minor	III-P	WWF	II
TM2-S26	9.52	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	No	16.56	Intermediate	III-P	WWF	II
TM2-S25	9.58	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	No	4.32	Minor	III-P	WWF	II
TM2-S24	9.60	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	Yes	9.64	Minor	III-P	WWF	II
TM2-S24B	9.63	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	Yes	4.66	Minor	III-P	WWF	II
TM2-S24C	9.60	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	Yes	1.89	Minor	III-P	WWF	II
TM2-S23	9.76	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	No	5.04	Minor	III-P	WWF	II
TM2-S22	10.62	Pipeline ROW	UNT to North Branch Potomac River	Perennial	Yes	3.53	Minor	III-P	WWF	II
TM2-S20	10.77	Pipeline ROW	UNT to North Branch Potomac River	Perennial	Yes	8.69	Minor	III-P	WWF	II

Table B-5: Waterbodies Crossed by Project

Stream ID	Approximate Milepost	Workspace	Name of Waterbody	Flow Regime	USGS Blue Line Stream [a]	Water Edge to Water Edge Crossing Width (ft)	FERC Classification	State Water Quality Classification [b]	Fishery Type [b]	Crossing Method[c]
TM1-S45	11.09	Pipeline ROW	UNT to North Branch Potomac River	Intermittent	No	1.25	Minor	III-P	WWF	II
TM1-S46	11.13	Pipeline ROW	UNT to North Branch Potomac River	Perennial	Yes	10.71	Intermediate	III-P	WWF	II
TM1-S47	11.41	Pipeline ROW	UNT to North Branch Potomac River	Ephemeral	No	2.06	Minor	III-P	WWF	II
TM1-S38	13.03	Pipeline ROW	UNT to Warrior Run	Intermittent	No	4.01	Minor	III-P	WWF	II
TM1-S34	13.34	Pipeline ROW	Warrior Run	Perennial	Yes	18.45	Intermediate	III-P	WWF	II
TM1-S35	13.40	Pipeline ROW	UNT to Warrior Run	Intermittent	No	7.63	Minor	III-P	WWF	II
TM1-S36	13.46	Pipeline ROW	UNT to Warrior Run	Intermittent	Yes	9.04	Minor	III-P	WWF	II
TM1-S37	13.51	Pipeline ROW	UNT to Warrior Run	Ephemeral	No	1.66	Minor	III-P	WWF	II
TM1-S78	13.89	Pipeline ROW	UNT to Warrior Run	Ephemeral	No	6.07	Minor	III-P	WWF	II
TM1-S48	14.01	Pipeline ROW	UNT to Warrior Run	Perennial	Yes	19.79	Intermediate	III-P	WWF	III
TM1-S79	14.35	Pipeline ROW	UNT to Warrior Run	Intermittent	No	2.02	Minor	III-P	WWF	II
TM1-S50	14.35	Pipeline ROW	UNT to Warrior Run	Intermittent	No	2.14	Minor	III-P	WWF	II
TM2-S31	14.48	Pipeline ROW	UNT to Warrior Run	Perennial	Yes	20.40	Intermediate	III-P	WWF	II
TM2-S31	14.50	Pipeline ROW	UNT to Warrior Run	Perennial	Yes	12.13	Intermediate	III-P	WWF	II
TM2-S30	14.78	Pipeline ROW	UNT to Warrior Run	Intermittent	No	2.97	Minor	III-P	WWF	II
TM2-S29	15.03	Pipeline ROW	UNT to Warrior Run	Perennial	No	10.51	Intermediate	III-P	WWF	II
TM2-S27	15.27	Pipeline ROW	UNT to Warrior Run	Perennial	No	7.18	Minor	III-P	WWF	II
TM1-S60	15.50	Pipeline ROW	UNT to Warrior Run	Ephemeral	No	1.68	Minor	III-P	WWF	II
TM1-S57	16.12	Pipeline ROW	UNT to Braddock Run	Intermittent	No	1.17	Minor	III-P	WWF	II

Table B-5: Waterbodies Crossed by Project

Stream ID	Approximate Milepost	Workspace	Name of Waterbody	Flow Regime	USGS Blue Line Stream [a]	Water Edge to Water Edge Crossing Width (ft)	FERC Classification	State Water Quality Classification [b]	Fishery Type [b]	Crossing Method[c]
TM1-S39	0.42	Pipeline ROW (Lateral 8244)	UNT to North Branch Potomac River	Perennial	Yes	5.17	Minor	III-P	WWF	II
TM1-S56	0.02	Pipeline ROW (Lateral 8006)	UNT to Braddock Run	Intermittent	No	3.09	Minor	III-P	WWF	II
Cathodic Protection										
TM1-S81	-	Cathodic Protection	UNT to North Branch Potomac River	Ephemeral	No	4.82	Minor	III-P	WWF	II
TM1-S81	-	Cathodic Protection	UNT to North Branch Potomac River	Ephemeral	No	3.76	Minor	III-P	WWF	II
Access Roads										
TM1-S7	TAR-008	Access Road	UNT to North Branch Potomac River	Ephemeral	No	2.08	Minor	III-P	WWF	Temporary Bridge
TM1-S12	TAR-008	Access Road	UNT to North Branch Potomac River	Ephemeral	No	3.75	Minor	III-P	WWF	Temporary Bridge/
TM2-S1	PAR-007	Access Road	UNT to North Branch Potomac River	Intermittent	No	1.74	Minor	III-P	WWF	Existing Culvert
TM2-S5	TAR-009	Access Road	UNT to North Branch Potomac River	Ephemeral	Yes	3.55	Minor	III-P	WWF	Temporary Bridge
TM1-S13	PAR-015	Access Road	UNT to North Branch Potomac River	Intermittent	Yes	5.81	Minor	III-P	WWF	Bridge/Culvert
TM1-S13	PAR-015	Access Road	UNT to North Branch Potomac River	Intermittent	Yes	8.21	Minor	III-P	WWF	Bridge/Culvert
TM1-S20	PAR-017A	Access Road	UNT to North Branch Potomac River	Ephemeral	No	4.58	Minor	III-P	WWF	Temporary Bridge
TM1-S31	PAR-026A	Access Road	UNT to Mill Run	Ephemeral	No	1.80	Minor	I-P	WWF	Existing Culvert
TM1-S33	TAR-024	Access Road	UNT to Mill Run	Ephemeral	No	2.46	Minor	I-P	WWF	Temporary Bridge
TM1-S33	TAR-024	Access Road	UNT to Mill Run	Ephemeral	No	2.47	Minor	I-P	WWF	Temporary Bridge

Table B-5: Waterbodies Crossed by Project

Stream ID	Approximate Milepost	Workspace	Name of Waterbody	Flow Regime	USGS Blue Line Stream [a]	Water Edge to Water Edge Crossing Width (ft)	FERC Classification	State Water Quality Classification [b]	Fishery Type [b]	Crossing Method[c]
TM1-S48B	PAR-036	Access Road	UNT to Warrior Run	Perennial	Yes	5.66	Minor	III-P	WWF	Existing Culvert
TM2-S2	PAR-007	Access Road	UNT to North Branch Potomac River	Ephemeral	No	1.53	Minor	III-P	WWF	Existing Culvert
TM1-S18	PAR-017B	Access Road	UNT to North Branch Potomac River	Ephemeral	No	1.34	Minor	III-P	WWF	Existing Culvert
TM1-S40	PAR-021	Access Road	UNT to Mill Run	Ephemeral	No	2.22	Minor	I-P	WWF	Existing Culvert
TM1-S42	PAR-022	Access Road	UNT to Mill Run	Perennial	Yes	13.89	Intermediate	I-P	WWF	Existing Bridge
TM2-S32	TAR-037	Access Road	UNT to Warrior Run	Ephemeral	No	2.86	Minor	III-P	WWF	Temporary Bridge
TM1-S71	PAR-010	Access Road	UNT to North Branch Potomac River	Intermittent	Yes	7.20	Minor	III-P	WWF	Existing Culvert
TM1-S84	TAR-038B	Access Road	UNT to Warrior Run	Ephemeral	No	4.43	Minor	III-P	WWF	Existing Culvert
TM1-S19A	PAR-017A	Access Road	UNT to North Branch Potomac River	Perennial	Yes	14.04	Intermediate	III-P	WWF	Existing Culvert
TM1-S41	PAR-021	Access Road	UNT to Mill Run	Intermittent	No	2.04	Minor	I-P	WWF	Existing Culvert
TM1-S102	PAR-028.1	Access Road	UNT to North Branch Potomac River	Intermittent	No	2.20	Minor	III-P	WWF	Existing Culvert
TM1-S104	PAR-028.1	Access Road	UNT to North Branch Potomac River	Intermittent	No	1.31	Minor	III-P	WWF	Existing Culvert
TM1-S104	PAR-028.1	Access Road	UNT to North Branch Potomac River	Intermittent	No	1.34	Minor	III-P	WWF	Bridge/Culvert
TM1-S106	PAR-019.1A	Access Road	UNT to Mill Run	Ephemeral	No	2.99	Minor	I-P	WWF	Existing Culvert
TM1-S107	PAR-028C	Access Road	UNT to Mill Run	Perennial	Yes	1.32	Minor	I-P	WWF	Bridge/Culvert
TM1-S108	PAR-039A	Access Road	UNT to Warrior Run	Ephemeral	No	5.00	Minor	III-P	WWF	Existing Culvert
TM1-S109	PAR-039A	Access Road	UNT to Warrior Run	Ephemeral	No	3.28	Minor	III-P	WWF	Existing Culvert

Table B-5: Waterbodies Crossed by Project

Stream ID	Approximate Milepost	Workspace	Name of Waterbody	Flow Regime	USGS Blue Line Stream [a]	Water Edge to Water Edge Crossing Width (ft)	FERC Classification	State Water Quality Classification [b]	Fishery Type [b]	Crossing Method[c]
TM1-S110	PAR-039D	Access Road	UNT to Braddock Run	Ephemeral	No	2.25	Minor	III-P	WWF	Existing Culvert
TM1-S73	PAR-006	Access Road	UNT to North Branch Potomac River	Ephemeral	No	1.74	Minor	I-P	WWF	Existing Culvert
TM1-S83	PAR-0028A	Access Road	UNT to Mill Run	Intermittent	No	6.03	Minor	I-P	WWF	Existing Culvert
TM1-S83	PAR-0028A	Access Road	UNT to Mill Run	Intermittent	No	9.05	Minor	I-P	WWF	Existing Culvert
TM1-S95	PAR-007	Access Road	UNT to North Branch Potomac River	Intermittent	No	3.30	Minor	III-P	WWF	Existing Culvert
ATWS										
TM1-S20	ATWS 083	ATWS	UNT to North Branch Potomac River	Ephemeral	No	1.21	Minor	III-P	WWF	Temporary Bridge
TM1-S20	ATWS-083	ATWS	UNT to North Branch Potomac River	Ephemeral	No	4.58	Minor	III-P	WWF	Temporary Bridge
TM1-S19A	ATWS-083	ATWS	UNT to North Branch Potomac River	Perennial	Yes	14.42	Intermediate	III-P	WWF	Existing Bridge
TM1-S19A	ATWS-084	ATWS	UNT to North Branch Potomac River	Perennial	Yes	14.04	Intermediate	III-P	WWF	Existing Bridge
TM1-S41	ATWS-113	ATWS	UNT to Mill Run	Intermittent	No	5.50	Minor	I-P	WWF	Temporary Bridge
TM1-S41	ATWS 114	ATWS	UNT to Mill Run	Intermittent	No	5.51	Minor	I-P	WWF	Temporary Bridge
TM1-S40	ATWS 114	ATWS	UNT to Mill Run	Ephemeral	No	6.32	Minor	I-P	WWF	Temporary Bridge
TM1-S107	ATWS 151	ATWS	UNT to Mill Run	Perennial	Yes	2.45	Minor	I-P	WWF	Temporary Bridge
TM1-S87	ATWS 157	ATWS	UNT to North Branch Potomac River	Intermittent	No	12.77	Intermediate	III-P	WWF	Temporary Bridge
TM1-S89	ATWS 157	ATWS	UNT to North Branch Potomac River	Intermittent	No	7.26	Minor	III-P	WWF	Temporary Bridge

Table B-5: Waterbodies Crossed by Project

Stream ID	Approximate Milepost	Workspace	Name of Waterbody	Flow Regime	USGS Blue Line Stream [a]	Water Edge to Water Edge Crossing Width (ft)	FERC Classification	State Water Quality Classification [b]	Fishery Type [b]	Crossing Method[c]
TM1-S97	ATWS 157	ATWS	UNT to North Branch Potomac River	Perennial	Yes	4.58	Minor	III-P	WWF	Temporary Bridge
TM1-S98	ATWS 157	ATWS	UNT to North Branch Potomac River	Intermittent	No	1.79	Minor	III-P	WWF	Temporary Bridge

Notes:
[a] Refers to whether stream is identifiable by a blue line feature displayed on U.S. Geological Survey (USGS) 7.5 -minute series topographical map.
[b] Refer to Table 2.2-4 for definition of State Water Quality Classification and Fishery Type in accordance with each state (Maryland, West Virginia) classification system.

Key:
ft - feet
HDD – horizontal directional drill
I-P - Water Contact Recreation, and Protection of Aquatic Life
PAR – permanent access road
TAR – temporary access road
WS – workspace
Proposed Construction Limits – temporary workspace
ATWS – additional temporary workspace
Pipeline ROW – proposed pipeline right-of-way
Existing – existing pipeline right-of-way
WWF – warmwater fishery
Category C – Water Contact Recreation

[c] Crossing Methods:
I = Conventional Trenching
II = Dry Crossing, including Flume or Dam and Pump
III = Conventional Bore
IV = HDD
*Intermittent streams containing discernible flow at the time of construction will be crossed using a dry crossing method, unless otherwise authorized by applicable regulatory agencies.

Table B-6: Waterbodies within 50 Feet of Additional Temporary Workspace

Stream ID	Location	Name of Waterbody	Approx Milepost	Justification
Mineral County, West Virginia				
No waterbodies occur within 25 feet of an ATWS in Mineral County, WV				
Allegany County, Maryland				
TM1-S66A	ATWS-008	North Branch Potomac River	0.30	ATWS required for removal of cathodic protection
TM1-S73	ATWS-017	UNT to North Branch Potomac River	0.90	ATWS required for vehicle access
TM1-S73	ATWS-018	UNT to North Branch Potomac River	0.90	ATWS required for tie-in to existing line
TM1-S73	ATWS-020	UNT to North Branch Potomac River	0.90	ATWS required for vehicle access
TM1-S72	ATWS-021	UNT to North Branch Potomac River	1.00	ATWS required for forested construction
TM1-S72	ATWS-022	UNT to North Branch Potomac River	1.00	ATWS required for side bend construction
TM1-S95	ATWS-023	UNT to North Branch Potomac River	1.00	ATWS required for side bend construction
TM1-S95	ATWS-029	UNT to North Branch Potomac River	1.30	ATWS required for vehicle access
TM1-S71	ATWS-043	UNT to North Branch Potomac River	2.20	ATWS required for vehicle access
TM1-S71	ATWS-044	UNT to North Branch Potomac River	2.20	ATWS required for vehicle access
TM1-S5	ATWS-050	UNT to North Branch Potomac River	2.80	ATWS required for waterbody crossing, forested construction, and constructability constraints
TM1-S39	ATWS-067	UNT to North Branch Potomac River	0.40	ATWS required for vehicle access
TM1-S39	ATWS-069	UNT to North Branch Potomac River	0.43	ATWS required for vehicle access
TM1-S39	ATWS-070	UNT to North Branch Potomac River	0.00	ATWS required for tie-in
TM1-S13	ATWS-074	UNT to North Branch Potomac River	3.70	ATWS required for waterbody crossing
TM1-S18	ATWS-080	UNT to North Branch Potomac River	4.10	ATWS required for vehicle access
TM1-S19A	ATWS-083	UNT to North Branch Potomac River	4.20	ATWS required for waterbody crossing
TM1-S19A	ATWS-084	UNT to North Branch Potomac River	4.20	ATWS required for waterbody crossing
TM2-S10	ATWS-091	UNT to North Branch Potomac River	4.60	ATWS required for vehicle access
TM1-S21	ATWS-094	UNT to North Branch Potomac River	4.80	ATWS required for waterbody crossing
TM2-S16	ATWS-110	UNT to Mill Run	5.90	ATWS required for waterbody crossing
TM2-S41	ATWS-113	UNT to Mill Run	6.20	ATWS required for vehicle access
TM2-S41	ATWS-114	UNT to Mill Run	6.20	ATWS required for vehicle access
TM2-S18	ATWS-116.01	UNT to Mill Run	6.43	ATWS required for vehicle access
TM1-S32	ATWS-128	UNT to Mill Run	7.10	ATWS required for vehicle access
TM1-S82	ATWS-133	UNT to Mill Run	7.30	ATWS required for vehicle access
TM1-S33	ATWS-134	UNT to Mill Run	7.30	ATWS required for tie-in to existing line
TM1-S25	ATWS-135	UNT to Mill Run	7.70	ATWS required for tie-in to existing line

Table B-6: Waterbodies within 50 Feet of Additional Temporary Workspace

Stream ID	Location	Name of Waterbody	Approx Milepost	Justification
TM1-S23	ATWS-146	Mill Run	8.30	ATWS required for tie-in in to existing line and aboveground facility construction
TM1-S107	ATWS-150	UNT to Mill Run	8.80	ATWS required for vehicle access and forested construction
TM1-S107	ATWS-151	UNT to Mill Run	8.80	ATWS required for forested construction
TM1-S83	ATWS-153	UNT to Mill Run	8.80	ATWS required for vehicle access
TM1-S83	ATWS-156	UNT to Mill Run	8.90	ATWS required for vehicle access
TM1-S87	ATWS-157	UNT to North Branch Potomac River	8.90	ATWS for HDD pullback
TM1-S104	ATWS-158.04	UNT to North Branch Potomac River	PAR0.28.1	ATWS required for vehicle access
TM1-S47	ATWS-183	UNT to North Branch Potomac River	11.40	ATWS required for waterbody crossing
TM1-S38	ATWS-193	UNT to Warrior Run	13.10	ATWS required for waterbody crossing
TM1-S48	ATWS-210	UNT to Warrior Run	13.90	ATWS required for stream and wetland crossing
TM1-S50	ATWS-213	UNT to Warrior Run	14.30	ATWS required for vehicle access
TM1-S79	ATWS-214	UNT to Warrior Run	14.40	ATWS required for vehicle access
TM1-S48B	ATWS-216	UNT to Warrior Run	14.40	ATWS required for vehicle access
TM1-S48B	ATWS-217	UNT to Warrior Run	14.40	ATWS required for vehicle access
TM1-S110	ATWS-238.07	UNT to Braddock Run	PAR-039D	ATWS required for vehicle access
TM1-S110	ATWS-238.08	UNT to Braddock Run	PAR-039D	ATWS required for vehicle access
TM1-S83	ATWS-249	UNT to Mill Run	9.00	ATWS required for vehicle access
TM1-S18	ATWS-257	UNT to North Branch Potomac River	4.10	ATWS required for vehicle access

Notes:

[a] Refers to whether stream is identifiable by a blue line feature displayed on U.S. Geological Survey (USGS) 7.5 -minute series topographical map.

[b] Refer to Table 2.2-4 for definition of State Water Quality Classification and Fishery Type in accordance with each state (Maryland, West Virginia) classification system.

[c] Crossing Methods:
II = Dry Crossing, including Flume or Dam and Pump
N/A = Not Applicable
Intermittent streams containing discernible flow at the time of construction will be crossed using a dry crossing method, unless otherwise authorized by applicable regulatory agencies.

Table B-7: Wetlands Crossed by the Project

Wetland ID	Approximate Milepost	NWI Classification[c]	Source[b]	Crossing Length[a] (ft)	Crossing Method/ Workspace Type	Area of Construction Impact (acres)[d]	Area of Operation Impact (acres)[d,e]
Mineral County, West Virginia							
Pipeline ROW							
TM1-W36	0.00	PFO	FD	10.61	Pipeline ROW	0.24[f]	0.00
ATWS							
TM1-W36	ATWS-001	PFO	FD	51.53	ATWS	0.23	0.00
TM1-W18	ATWS-002	PSS	FD	9.47	ATWS	<0.01	0.00
Aboveground Facilities - none							
Allegany County, Maryland							
Pipeline ROW							
TM1-W29	0.02	PFO	FD	2.65	Pipeline ROW	0.01[f]	0.00
TM1-W30	0.02	PFO	FD	35.13	Pipeline ROW	0.02	<0.01
TM1-W42	0.30	PEM	FD	10.55	Pipeline ROW	<0.01	0.00
TM2-W5	0.41	PSS	FD	84.36	Pipeline ROW	0.17	0.00
TM2-W4	1.07	PEM	FD	44.88	Pipeline ROW	0.04	0.00
TM2-W4	1.07	PSS	FD	44.88	Pipeline ROW	<0.01	0.00
TM2-W3	1.26	PEM	FD	10.50	Pipeline ROW	0.01	0.00
TM1-W1	1.69	PEM	FD	5.47	Pipeline ROW	<0.01	0.00
TM1-W2	1.73	PEM	FD	1.41	Pipeline ROW	<0.01	0.00
TM2-W6	0.39	POW	FD	46.70	Pipeline ROW	0.04	0.00
TM2-W8	3.08	PEM	FD	1.97	Pipeline ROW	<0.01	0.00
TM1-W27	4.05	PEM	FD	34.68	Pipeline ROW	0.05	0.00
TM1-W7	4.86	PEM	FD	94.89	Pipeline ROW	0.08	0.00
TM2-W15	5.74	PEM	FD	31.83	Pipeline ROW	0.05	0.00
TM2-W17	5.90	PEM	FD	69.66	Pipeline ROW	0.02	0.00
TM2-W18	5.96	PEM	FD	16.61	Pipeline ROW	0.03	0.00
TM2-W19	6.08	PEM	FD	20.94	Pipeline ROW	0.01	0.00
TM2-W26	9.58	PEM	FD	8.26	Pipeline ROW	<0.01	0.00
TM1-W12	7.90	PEM	FD	14.05	Pipeline ROW	<0.01	0.00
TM1-W16	7.26	PEM	FD	13.00	Pipeline ROW	0.04	0.00
TM1-W13	7.59	PEM	FD	8.47	Pipeline ROW	<0.01	0.00
TM1-W9	8.01	PEM	FD	30.18	Pipeline ROW	0.08	0.00
TM1-W19	8.32	PEM	FD	9.50	Pipeline ROW	0.02	0.00
TM1-W20	8.47	PEM	FD	5.64	Pipeline ROW	0.02	0.00
TM1-W52	8.62	PEM	FD	10.61	Pipeline ROW	<0.01	0.00
TM1-W70	8.62	POW	FD	<0.01	Pipeline ROW	0.04	0.00
TM1-W69	8.64	POW	FD	50.54	Pipeline ROW	0.01	0.00
TM1-W57	8.86	PEM	FD	21.43	Pipeline ROW	0.03	0.00
TM1-W58	9.21	PEM	FD	19.97	Pipeline ROW	0.01	0.00
TM1-W21	11.09	PEM	FD	14.53	Pipeline ROW	0.02	0.00
TM1-W47	14.36	PEM	FD	2.00	Pipeline ROW	<0.01	0.00
TM2-W32	15.12	PEM	FD	30.46	Pipeline ROW	0.01	0.00

Table B-7: Wetlands Crossed by the Project

Wetland ID	Approximate Milepost	NWI Classification[c]	Source[b]	Crossing Length[a] (ft)	Crossing Method/ Workspace Type	Area of Construction Impact (acres)[d]	Area of Operation Impact (acres)[d,e]
TM2-W31	15.27	PEM	FD	13.07	Pipeline ROW	<0.01	0.00
TM2-W30	15.29	PEM	FD	13.76	Pipeline ROW	<0.01	0.00
TM1-W33	15.45	PEM	FD	15.55	Pipeline ROW	0.07	0.00
TM1-W32	15.51	PEM	FD	9.96	Pipeline ROW	0.03	0.00
ATWS							
TM1-W57	ATWS-150	PEM	FD	27.00	ATWS	0.03	0.00
TM1-W59	ATWS-157	PEM	FD	17.50	ATWS	0.01	0.00
Access Roads							
TM2-W2	PAR-007	PEM	FD	3.32	Access Road	<0.01	0.00
TM1-W5	TAR-008	PEM	FD	25.10	Access Road	<0.01	0.00
TM2-W12	PAR-019	PEM	FD	11.66	Access Road	<0.01	0.00
TM2-W14A	PAR-019	PEM	FD	1.05	Access Road	<0.01	0.00
Cathodic Protection							
TM1-W50	0.93	PEM	FD	16.57	Temporary WS for Cathodic Protection	<0.01	0.00
			Total:	**1,172.63**		**1.09**	**<0.01**

Notes:
[a] Length represents the distance crossed by the pipeline construction corridor. Wetland lengths do not represent full corridor width impacts.
[b] FD: Field Delineation.
[c] NWI Wetland Types: Palustrine: PFO = Forested; PSS = Scrub/Shrub; PEM = Emergent; POW = Open Water
[d] The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.
[e] There is no operation impact on PEM or PSS wetlands, since there is no change in the pre- and post-construction vegetation cover type.
[f] PFO wetland impacts occur within temporary workspace along pipeline ROW only, thus no operational impacts will occur.

Table B-8: Wetlands Within 50 Feet of Additional Temporary Workspace

Wetland ID	Location	NWI Classification[c]	Approx. Milepost	Justification
Mineral County, West Virginia				
TM1-W36	ATWS-001	PFO	0.00	ATWS is required for HDD construction
TM1-W18	ATWS-002	PSS	0.00	ATWS is required for HDD construction
Allegany County, Maryland				
TM1-W39	ATWS-007	PEM	0.20	ATWS required for access between easements
TM1-W42	ATWS-009	PEM	0.30	ATWS required for removal of cathodic protection
TM1-W42	ATWS-010.01	PEM	0.30	ATWS required for vehicle access
TM1-W42	ATWS-010.02	PEM	0.30	ATWS required for vehicle access
TM1-W63	ATWS-028	PEM	1.00	ATWS required for vehicle access
TM1-W27	ATWS-079	PEM	4.10	ATWS required for side bend construction and waterbody crossing
TM1-W68	ATWS-120	POW	6.80	ATWS required for side bend construction
TM1-W16	ATWS-130	PEM	7.30	ATWS required for tie-in to existing line
TM1-W9	ATWS-141	PEM	8.00	ATWS required for tie in to existing line
TM1-W9	ATWS-142	PEM	8.00	ATWS required for vehicle access
TM1-W9	ATWS-143	PEM	8.10	ATWS required for vehicle access
TM1-W9	ATWS-144	PEM	8.10	ATWS required for tie in to existing line
TM1-W57	ATWS-152	PEM	8.90	ATWS required for vehicle access
TM1-W57	ATWS-155	PEM	8.90	ATWS required for vehicle access
TM1-W66	ATWS-158.03	PEM	9.00	ATWS required for side bend construction
TM1-W17	ATWS-207	PFO	0.00	ATWS required for tie-in to existing line lateral tie in
TM1-W26	ATWS-215	PEM	14.40	ATWS required for vehicle access
TM2-W33	ATWS-227	PFO	15.30	ATWS required for wetland crossing
TM2-W29	ATWS-231	PSS	15.40	ATWS required for side bend construction
TM1-W33	ATWS-232	PEM	15.40	ATWS required to conjoin easements
TM1-W32	ATWS-233	PEM	15.50	ATWS required for tie in to existing line
TM1-W32	ATWS-234	PEM	15.50	ATWS required to tie in to existing line
TM1-W29	ATWS-239	PFO	15.60	ATWS required for aboveground facility, lateral, and tie in
TM1-W29	ATWS-240	PFO	0.01	ATWS required for aboveground facility, lateral, and tie in
TM1-W31	ATWS-241	PFO	0.00	ATWS required for aboveground facility, lateral, and tie in
TM2-W9	ATWS-254	POW	4.60	ATWS required for vehicle access

Table B-9: Recently Completed, Contemporary or Ongoing, and Reasonably Foreseeable Future Projects in the Cumulative Impact Assessment Area

Project Name	Project Type	Proponent	State	County	Closest Distance and Direction	Description	Status of Project	Permits, Authorizations, or Environmental Review Required	Potentially Affected Resources	In same HUC-12 watershed as the Project?
Allegany College Building	Development – University	Allegany College	MD	Allegany	4.27 miles from milepost 17.83	Building improvements on Allegany College campus.	Project to be completed in 2017.	Not listed	Land Use	No
Allegany Fair	Municipal – Development	Allegany County	MD	Allegany	1.81 miles from milepost 14.20	Building improvements to Caretaker's House and Restrooms at fairgrounds.	Project to be completed in 2017.	Not listed	-Water and Aquatic Resources -Fisheries, Wildlife, and Vegetation -Geological -Soils -Land Use	Yes
Allegany High School	Municipal – Development	Allegany County Public Schools	MD	Allegany	0.89 miles from milepost 17.83	Construction of a new high school.	Project to be completed for opening in fall, 2018.	Not listed	-Water and Aquatic Resources -Fisheries, Wildlife, and Vegetation -Geological -Soils -Land Use	Yes
Mount Savage Middle School	Municipal – Construction	Allegany County Public Schools	MD	Allegany	5.01 miles from milepost 17.83	Roof replacement.	Project to be completed in 2017.	Not listed	Land use	No
Bel Air Elementary School	Municipal – Construction	Allegany County Public Schools	MD	Allegany	0.00 miles (crosses milepost 11.8)	Roof replacement.	Project to be completed in 2018.	Not listed	-Water and Aquatic Resources -Fisheries, Wildlife, and Vegetation -Geological -Soils -Land Use -Air Quality and Noise	Yes
Northeast Elementary School	Municipal – Construction	Allegany County Public Schools	MD	Allegany	3.34 miles from milepost 17.83	Roof replacement.	Project to be completed in 2019.	Not listed	-Water and Aquatic Resources -Fisheries, Wildlife, and Vegetation -Geological -Soils -Land Use	Yes
Braddock Middle School	Municipal – Construction	Allegany County Public Schools	MD	Allegany	2.33 miles from milepost 17.83	Paving and sidewalk improvements.	Project to be completed in 2017.	Not listed	-Water and Aquatic Resources -Fisheries, Wildlife, and Vegetation -Geological -Soils -Land Use	Yes
Washington Middle School	Municipal – Construction	Allegany County Public Schools	MD	Allegany	3.55 miles from milepost 17.80	Paving and sidewalk improvements.	Project to be completed in 2017.	Not listed	Land Use	No

Table B-9: Recently Completed, Contemporary or Ongoing, and Reasonably Foreseeable Future Projects in the Cumulative Impact Assessment Area

Project Name	Project Type	Proponent	State	County	Closest Distance and Direction	Description	Status of Project	Permits, Authorizations, or Environmental Review Required	Potentially Affected Resources	In same HUC-12 watershed as the Project?
Frost Elementary School	Municipal – Construction	Allegany County Public Schools	MD	Allegany	6.01 miles from milepost 15.80	Paving.	Project to be completed in 2018.	Not listed	Land Use	No
Allegany County Office Complex	Municipal – Construction	Allegany County	MD	Allegany	1.73 miles from milepost 17.80	County office complex building improvements.	Project to be completed in 2018.	Not listed	-Water and Aquatic Resources -Fisheries, Wildlife, and Vegetation -Geological -Soils -Land Use	Yes
Watercliff Street Bridge Replacement	Municipal – Construction	Allegany County Department of Public Works	MD	Allegany	4.59 miles from milepost 6.80	Bridge replacement.	Project to be completed in 2017.	Not listed	Land Use	No
NBIP Bridge Rehab	Municipal – Bridge Construction	Allegany County Department of Public Works	MD	Allegany	4.99 miles from milepost 14.20	Bridge repairs.	Project to be completed in 2018.	Not listed	Land Use	No
Mason Road Bridge Replacement	Municipal – Bridge Construction	Allegany County Department of Public Works	MD	Allegany	7.06 miles from milepost 17.83	Bridge replacement.	Project to be completed in 2018.	Not listed	Land Use	No
Orleans Road Bridge Replacement	Municipal – Bridge Construction	Allegany County Department of Public Works	MD	Allegany	22.53 miles from milepost 17.83	Bridge replacement.	Project to be completed in 2019.	Not listed	Land Use	No
Bedford Street Sewer	Municipal – Sanitary Sewer Repair	Allegany County Department of Public Works	MD	Allegany	4.36 miles from milepost 17.83	Project consists of 11,000' of cured-in-place-pipe (CIPP) lining, 5,500' of open cut replacement, and rehab / replacement of sanitary sewer manholes.	Project to be completed in 2018.	Not listed	Land Use	No
Braddock Run Sewer Repairs	Municipal – Sanitary Sewer Repair	Allegany County Department of Public Works	MD	Allegany	4.82 miles from milepost 15.70	Repair, replace, or rehab sanitary sewer in Braddock Run Sanitary District in the Grahamtown area.	Project to be completed in 2018.	Not listed	Land Use	No
Rawlings Sewer	Municipal – Sewer Construction	Allegany County Department of Public Works	MD	Allegany	0.036 miles from milepost 8.40	Construction of a new sanitary sewer in Rawlings.	Project scheduled to start in 2019 and be completed in 2021.	Not listed	-Water and Aquatic Resources -Fisheries, Wildlife, and Vegetation -Geological -Soils -Land Use	Yes

Table B-9: Recently Completed, Contemporary or Ongoing, and Reasonably Foreseeable Future Projects in the Cumulative Impact Assessment Area

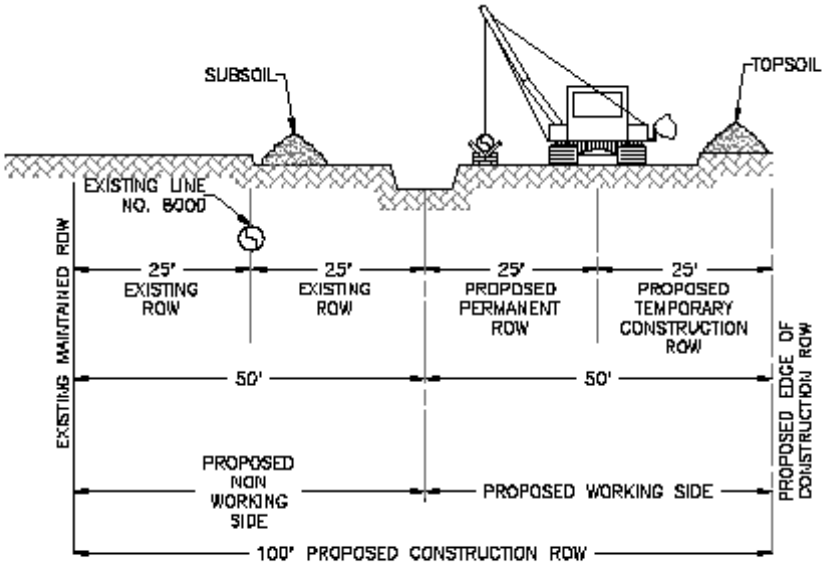
Project Name	Project Type	Proponent	State	County	Closest Distance and Direction	Description	Status of Project	Permits, Authorizations, or Environmental Review Required	Potentially Affected Resources	In same HUC-12 watershed as the Project?
									-Air Quality and Noise	
Biers Lane Collector System	Municipal – Sewer Repair	Allegany County Department of Public Works	MD	Allegany	0.62 miles from milepost 9.70	Replacement of septic tank effluent collector system with pressure sewer.	Project to be completed in 2019.	Not listed	-Water and Aquatic Resources -Fisheries, Wildlife, and Vegetation -Geological -Soils -Land Use	Yes
Vale Summit Water Storage Tank	Municipal – Water Tank Construction	Allegany County Department of Public Works	MD	Allegany	3.60 miles from milepost 13.30	Construction of a 257,000 gallon water storage tank.	Project to be completed in 2020.	Not listed	-Water and Aquatic Resources -Fisheries, Wildlife, and Vegetation -Geological -Soils -Land Use	Yes
Prince Albert and Sunnyside Water	Municipal – Water Line Construction	Allegany County Department of Public Works	MD	Allegany	4.30 miles from milepost 17.83	Extend water service and fire protection to neighborhood.	Project to be completed in 2018.	Not listed	Land Use	No
Creek Road/Sunrise Avenue Water	Municipal – Water Line Construction	Allegany County Department of Public Works	MD	Allegany	3.83 miles from milepost 17.83	Extend water service and fire protection to neighborhood.	Project to be completed in 2018.	Not listed	Land Use	No
MD-51 Road Construction	Municipal – Road Construction	Maryland DOT	MD	Allegany	2.76 miles from milepost 17.70	Construction of left turn lane in the median.	Project completed in August, 2017.	Not listed.	Land Use	No
Barrelville Road Bridge Replacement	Municipal – Bridge Construction	Maryland DOT	MD	Allegany	4.50 miles from milepost 17.83	Bridge replacement.	Project completed in July, 2017.	Not listed.	Land Use	No
Winchester Road Paving	Municipal – Road Resurfacing	Maryland DOT	MD	Allegany	0.69 miles from milepost 15.80	Resurfacing of approximately 1 mile of road.	Project to begin summer of 2017 and end in spring of 2018.	Not listed.	-Water and Aquatic Resources -Fisheries, Wildlife, and Vegetation -Geological -Soils -Land Use	Yes
MD-51 Road Construction (2)	Municipal – Road Construction	Maryland DOT	MD	Allegany	4.60 miles from milepost 4.10	Widening of right turn lane.	Project to be completed in fall 2017.	Not listed.	Land Use	No
MD-51 Bridge Construction	Municipal – Bridge Construction	Maryland DOT	MD	Allegany	20.48 miles from milepost 17.80	Bridge replacement.	Not started. Timeline unknown.	Not listed.	Land Use.	No
Kriegbaum Road Bridge Construction	Municipal – Bridge Construction	Maryland DOT	MD	Allegany	3.13 miles from milepost 17.83	Bridge replacement.	Not started. Timeline unknown.	Not listed.	Land Use.	No

Table B-9: Recently Completed, Contemporary or Ongoing, and Reasonably Foreseeable Future Projects in the Cumulative Impact Assessment Area

Project Name	Project Type	Proponent	State	County	Closest Distance and Direction	Description	Status of Project	Permits, Authorizations, or Environmental Review Required	Potentially Affected Resources	In same HUC-12 watershed as the Project?
New George's Creek Road Bridge Construction	Municipal – Bridge Construction	Maryland DOT	MD	Allegany	3.80 miles from milepost 17.83	Bridge replacement.	Not started. Timeline unknown.	Not listed.	Land Use.	No
Mount Savage Road Bridge Construction	Municipal – Bridge Construction	Maryland DOT	MD	Allegany	4.71 miles from milepost 17.83	Bridge replacement.	Project will run from summer 2018 to fall 2019.	Not listed.	Land Use.	No
Randolf Lake Hydroelectric Plant	Hydroelectric (FERC)	Fairlawn Hydroelectric Company, LLC	WV	Mineral	7.03 miles from milepost 0.00	Construction of a new hydroelectric facility.	To start in September, 2018.	FERC USACE Section 404 Maryland NPDES Maryland Stormwater Discharge General Permit	Land Use.	No
Fort Ashby Water	Municipal – Tank Rehabilitation	Mineral County	WV	Mineral	6.75 miles from milepost 10.00	Rehabilitation of 160,000 gallon water tank.	2017-2018.	Not listed.	Land Use.	No.
Keyser Water Lines	Municipal – Water Line Replacement	City of Keyser	WV	Mineral	0.00 miles (crosses milepost 0.00)	Replacement of water lines throughout the City.	Completed in 2017.	Not listed.	-Water and Aquatic Resources -Fisheries, Wildlife, and Vegetation -Geological -Soils -Land Use -Air Quality and Noise	Yes
Keyser Sewer Plant	Municipal – Sewer Plant Construction	Mineral County	WV	Mineral	1.95 miles from milepost 1.00	New sewer plant construction.	To be completed in 2017.	Not listed.	-Water and Aquatic Resources -Fisheries, Wildlife, and Vegetation -Geological -Soils -Land Use	Yes
Keyser Industrial Park	Industrial Park Construction	Mineral County Development Authority	WV	Mineral	2.10 miles from milepost 1.40	Industrial park development.	Depends on lot sales. Construction in future.	Not listed.	-Water and Aquatic Resources -Fisheries, Wildlife, and Vegetation -Geological -Soils -Land Use	Yes
Fort Ashby Business and Technology Park	Business Park Construction	Mineral County Development Authority	WV	Mineral	6.91 miles from milepost 9.10	Business park development.	Depends on lot sales. Construction in future.	Not listed.	Land Use.	No.

APPENDIX C

Typical Right-of-Way Configurations

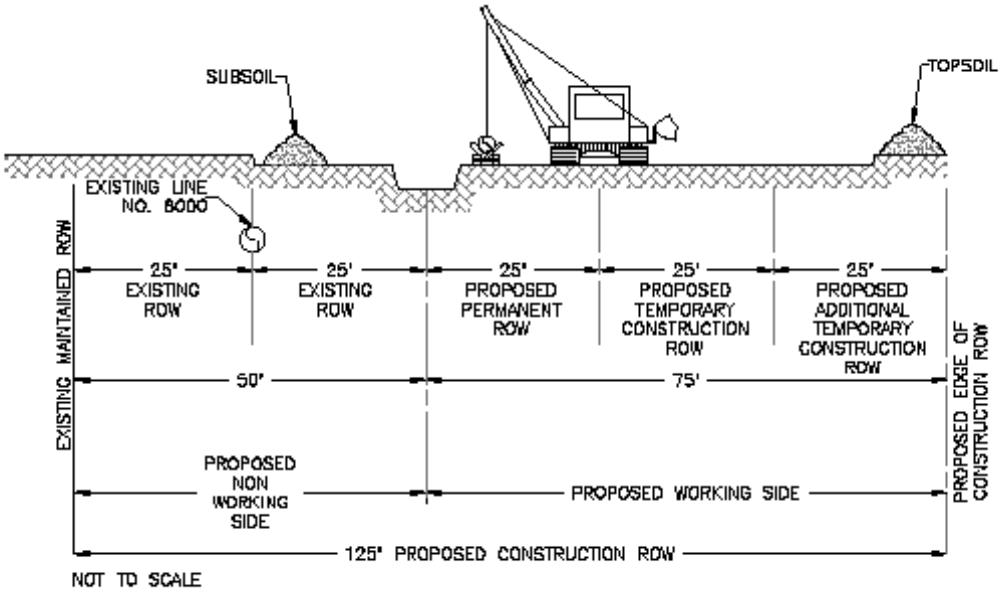


NOT TO SCALE

NOTES:

1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 100 FEET WIDE CONSISTING OF 25 FEET OF PROPOSED PERMANENT EASEMENT, 50 FEET OF EXISTING PERMANENT EASEMENT AND 25 FEET OF TEMPORARY WORKSPACE. ADDITIONAL TEMPORARY WORKSPACE (ATWS) WILL BE NECESSARY AT MAJOR ROADS, RAILROADS, RIVER CROSSINGS AND OTHER SPECIAL CIRCUMSTANCES, AS REQUIRED. CERTAIN SITUATIONS MAY REQUIRE A NARROWER WIDTH.
2. USE FOR 20-INCH OR LESS DIAMETER PIPELINE.
3. THE DIMENSIONS SHOWN ON THIS FIGURE ARE TYPICAL.
4. VARIATIONS FOR STAGING AREAS MAY BE NECESSARY DUE TO SITE-SPECIFIC TERRAIN FEATURES; HOWEVER, UNLESS OTHERWISE INDICATED IN TRANSCANADA'S ENVIRONMENTAL MANAGEMENT & CONSTRUCTION PLANS, THE MAXIMUM WIDTH OF CONSTRUCTION ROW WILL BE 100 FEET.

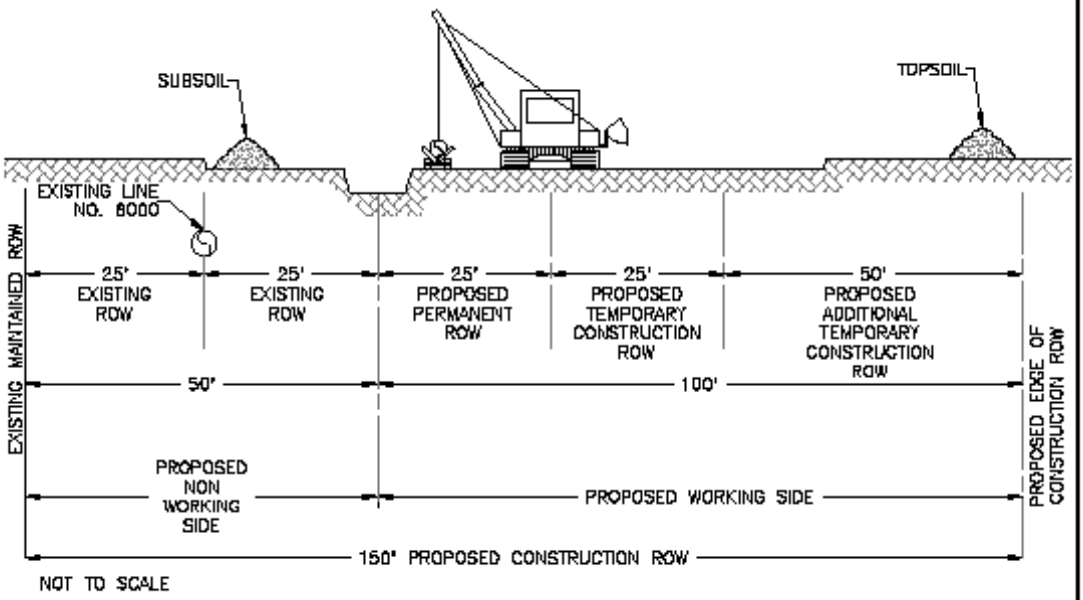
Columbia Gas Transmission	TYPICAL OFFSET CO-LOCATION CONFIGURATION WITH TRANSCANADA PIPELINE	LINE 8000 REPLACEMENT PROJECT DETAIL-ROW001



NOTES:

1. USE FOR 20-INCH OR LESS DIAMETER PIPELINE.
2. THE DIMENSIONS SHOWN ON THIS FIGURE ARE TYPICAL.
3. VARIATIONS FOR STAGING AREAS MAY BE NECESSARY DUE TO SITE-SPECIFIC TERRAIN FEATURES; HOWEVER, UNLESS OTHERWISE INDICATED IN TRANSCANADA'S ENVIRONMENTAL MANAGEMENT & CONSTRUCTION PLANS, THE MAXIMUM WIDTH OF CONSTRUCTION ROW WILL BE 125 FEET.

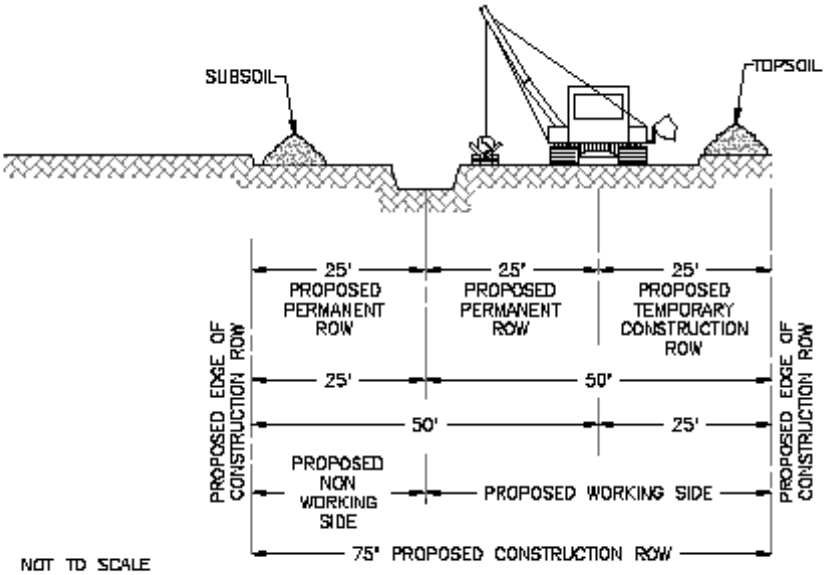
Columbia Gas Transmission	TYPICAL OFFSET CO-LOCATION CONFIGURATION WITH TRANSCANADA PIPELINE (25' ADDITIONAL)	LINE 8000 REPLACEMENT PROJECT DETAIL-ROW002



NOTES:

1. USE FOR 20-INCH OR LESS DIAMETER PIPELINE.
2. THE DIMENSIONS SHOWN ON THIS FIGURE ARE TYPICAL.
3. VARIATIONS FOR STAGING AREAS MAY BE NECESSARY DUE TO SITE-SPECIFIC TERRAIN FEATURES; HOWEVER, UNLESS OTHERWISE INDICATED IN TRANSCANADA'S ENVIRONMENTAL MANAGEMENT & CONSTRUCTION PLANS, THE MAXIMUM WIDTH OF CONSTRUCTION ROW WILL BE 150 FEET.

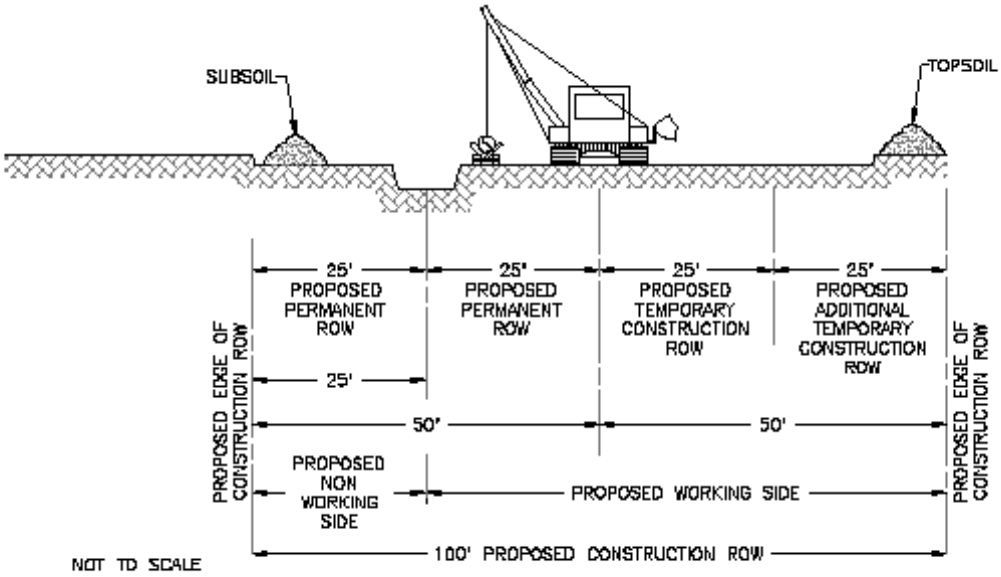
Columbia Gas Transmission	TYPICAL OFFSET CO-LOCATION CONFIGURATION WITH TRANSCANADA PIPELINE (50' ADDITIONAL)	LINE 8000 REPLACEMENT PROJECT DETAIL-ROW003



NOTES:

1. USE FOR 20-INCH OR LESS DIAMETER PIPELINE.
2. THE DIMENSIONS SHOWN ON THIS FIGURE ARE TYPICAL.
3. VARIATIONS FOR STAGING AREAS MAY BE NECESSARY DUE TO SITE-SPECIFIC TERRAIN FEATURES; HOWEVER, UNLESS OTHERWISE INDICATED IN TRANSCANADA'S ENVIRONMENTAL MANAGEMENT & CONSTRUCTION PLANS, THE MAXIMUM WIDTH OF CONSTRUCTION ROW WILL BE 75 FEET.

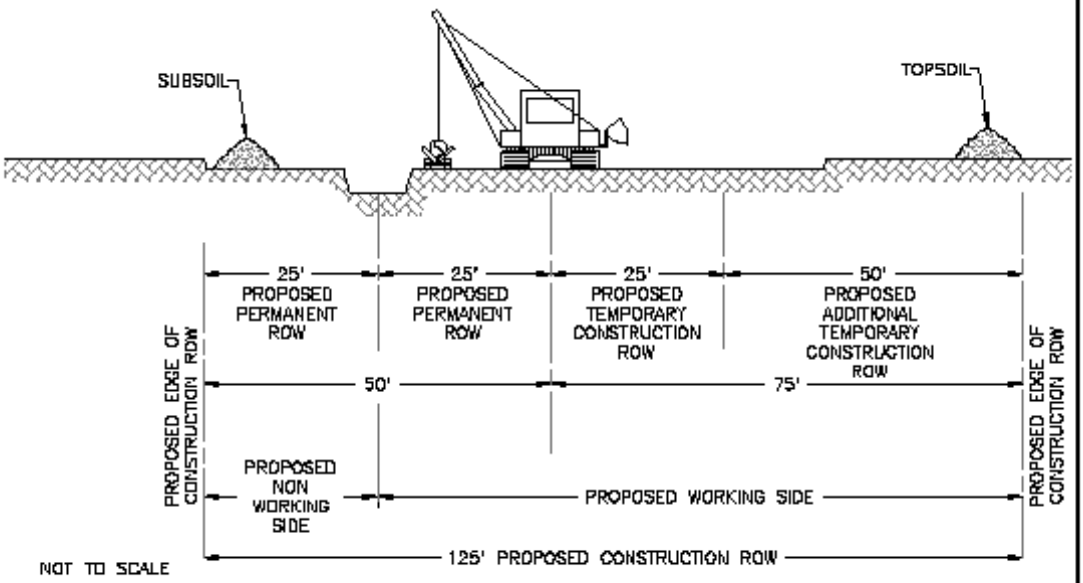
Columbia Gas Transmission	TYPICAL GREENFIELD CONSTRUCTION CONFIGURATION	LINE 8000 REPLACEMENT PROJECT DETAIL-ROW004



NOTES:

1. USE FOR 20-INCH OR LESS DIAMETER PIPELINE.
2. THE DIMENSIONS SHOWN ON THIS FIGURE ARE TYPICAL.
3. VARIATIONS FOR STAGING AREAS MAY BE NECESSARY DUE TO SITE-SPECIFIC TERRAIN FEATURES; HOWEVER, UNLESS OTHERWISE INDICATED IN TRANSCANADA'S ENVIRONMENTAL MANAGEMENT & CONSTRUCTION PLANS, THE MAXIMUM WIDTH OF CONSTRUCTION ROW WILL BE 100 FEET.

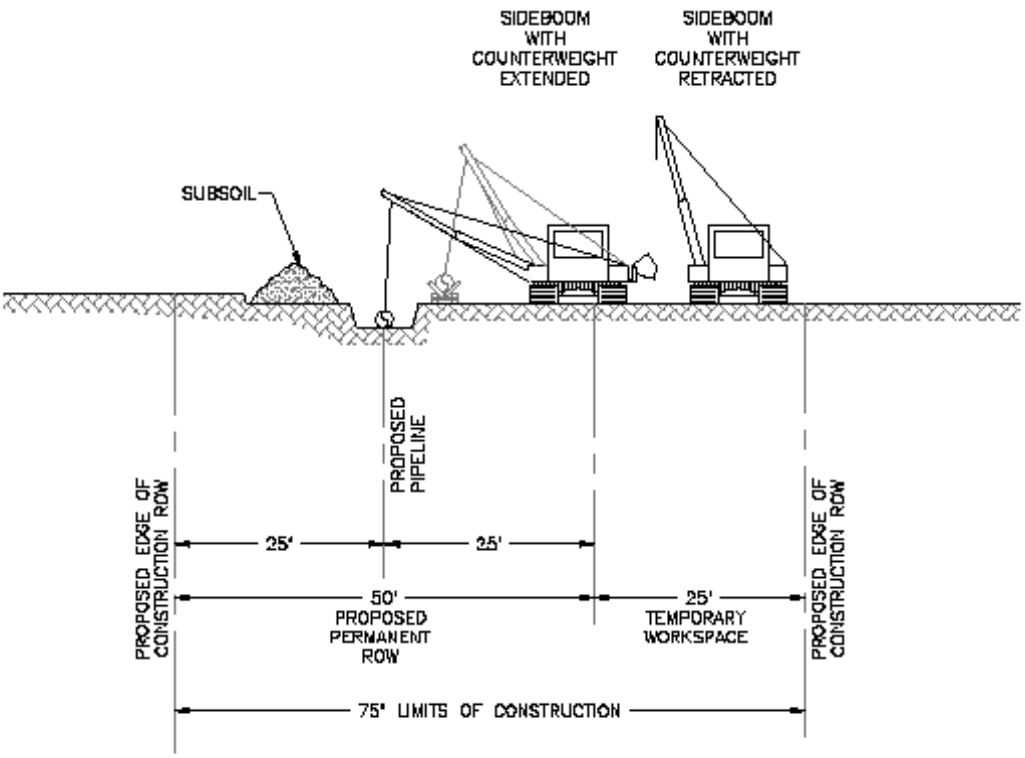
Columbia Gas Transmission	TYPICAL GREENFIELD CONSTRUCTION CONFIGURATION (25' ADDITIONAL)	LINE 8000 REPLACEMENT PROJECT DETAIL-ROW005



NOTES:

1. USE FOR 20-INCH OR LESS DIAMETER PIPELINE.
2. THE DIMENSIONS SHOWN ON THIS FIGURE ARE TYPICAL.
3. VARIATIONS FOR STAGING AREAS MAY BE NECESSARY DUE TO SITE-SPECIFIC TERRAIN FEATURES; HOWEVER, UNLESS OTHERWISE INDICATED IN TRANSCANADA'S ENVIRONMENTAL MANAGEMENT & CONSTRUCTION PLANS, THE MAXIMUM WIDTH OF CONSTRUCTION ROW WILL BE 125 FEET.

Columbia Gas Transmission	TYPICAL GREENFIELD CONSTRUCTION CONFIGURATION (50' ADDITIONAL)	LINE 8000 REPLACEMENT PROJECT DETAIL-ROW006



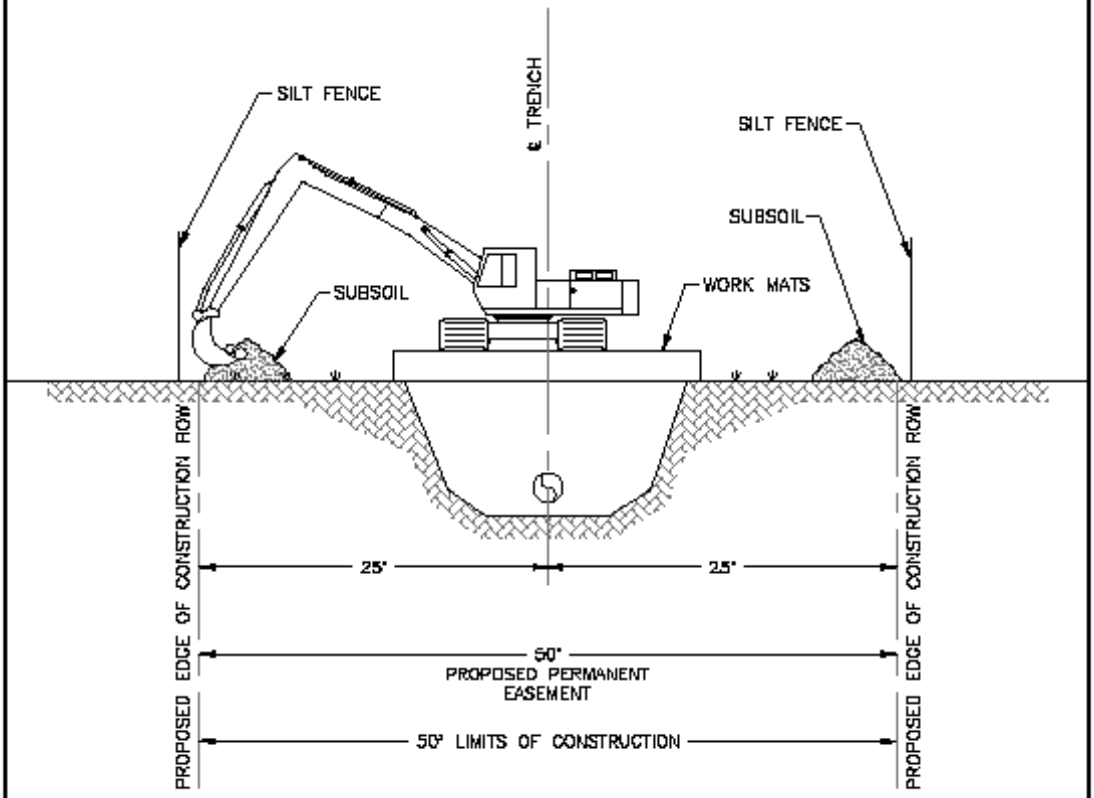
NOT TO SCALE

NOTES:

1. CONSTRUCTION RIGHT-OF-WAY THROUGH WETLANDS WILL TYPICALLY BE REDUCED TO 75 FEET WIDE CONSISTING OF 50 FEET OF PROPOSED PERMANENT EASEMENT AND 25 FEET OF TEMPORARY WORKSPACE.

2. LEAVE GAPS IN SPOIL PILES AT OBVIOUS DRAINAGES. DO NOT PUSH UPLAND SOILS INTO CREEKS OR WETLANDS. DO NOT USE TOPSOIL FOR PADDING. AVOID SCALPING VEGETATED GROUND SURFACE WHEN BACKFILLING TOPSOIL AND SPOIL PILES.

Columbia Gas Transmission	TYPICAL NO TOPSOIL SEGREGATION WITH TRANSCANADA PIPELINE	LINE 8000 MODERNIZATION PROJECT DETAIL-ROW007

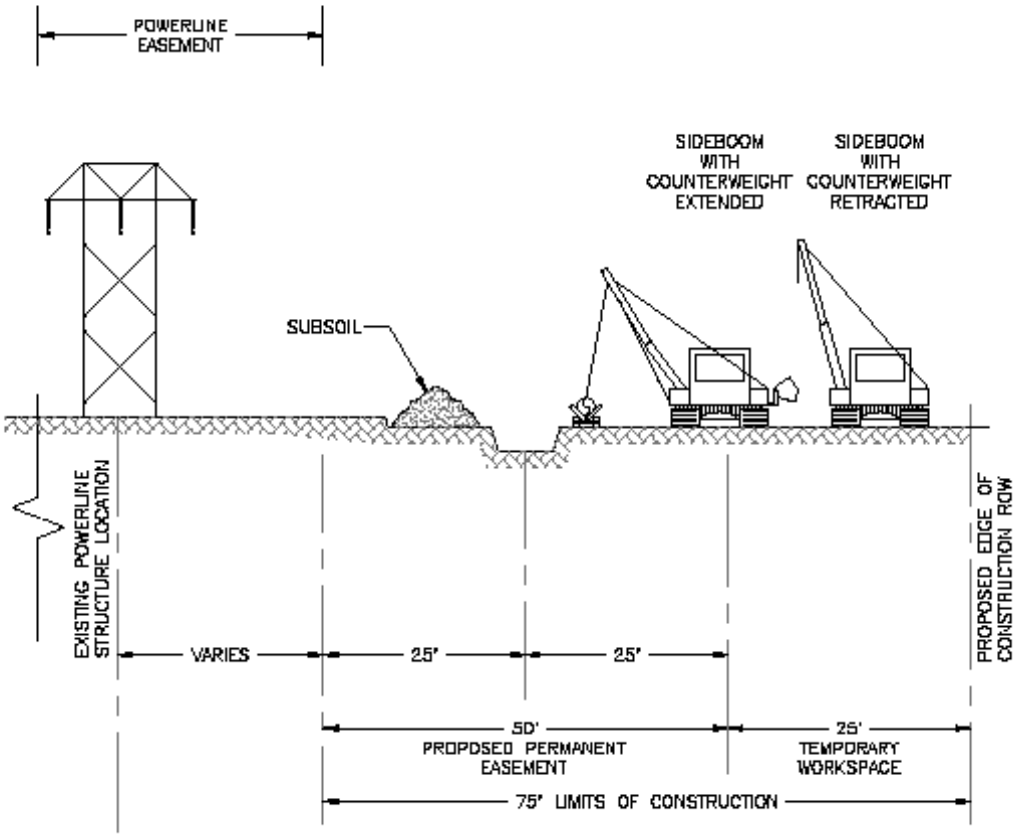


NOT TO SCALE

1. CONSTRUCTION RIGHT-OF-WAY THROUGH WETLANDS WILL TYPICALLY BE REDUCED TO 50 FEET WIDE.

2. LEAVE GAPS IN SPOIL PILES AT OBVIOUS DRAINAGES. DO NOT PUSH UPLAND SOILS INTO CREEKS OR WETLANDS. DO NOT USE TOPSOIL FOR PADDING. AVOID SCALPING VEGETATED GROUND SURFACE WHEN BACKFILLING TOPSOIL AND SPOIL PILES.

Columbia Gas Transmission	TYPICAL CONSTRUCTION SUBMERGED WETLAND CONFIGURATION WITH TRANSCANADA PIPELINE	LINE 8000 REPLACEMENT PROJECT DETAIL-ROW008



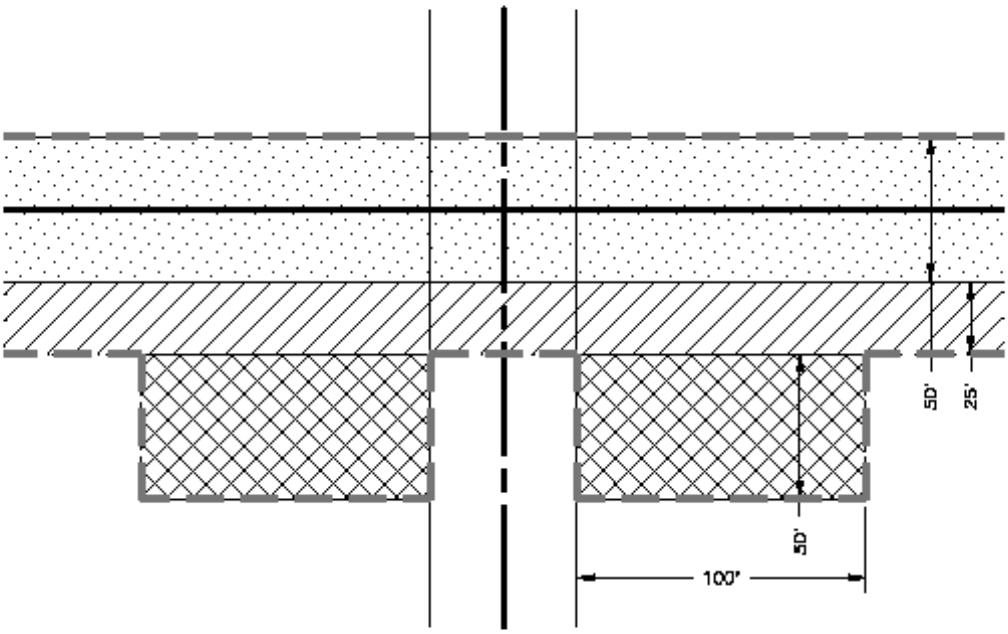
NOT TO SCALE

* EXISTING POWERLINE EASEMENT VARIES BASED ON EXISTING PROPERTY RIGHTS

NOTES:

1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 75 FEET WIDE CONSISTING OF 50 FEET OF PROPOSED PERMANENT EASEMENT AND 25 FEET OF TEMPORARY WORKSPACE. ADDITIONAL TEMPORARY WORKSPACE (ATWS) WILL BE NECESSARY AT MAJOR ROADS, RAILROADS, RIVER CROSSINGS AND OTHER SPECIAL CIRCUMSTANCES, AS REQUIRED. CERTAIN SITUATIONS MAY REQUIRE A NARROWER WIDTH.
2. ADD 25 FEET OF ATWS ON WORKING SIDE (TYPICALLY) FOR TOPSOIL STORAGE IN AGRICULTURAL FIELDS, RESIDENTIAL YARDS, AND AS PER LANDOWNER AGREEMENTS.
3. LEAVE GAPS IN SPOIL PILES AT OBVIOUS DRAINAGES. DO NOT PUSH UPLAND SOILS INTO CREEKS OR WETLANDS. DO NOT USE TOPSOIL FOR PADDING. AVOID SCALPING VEGETATED GROUND SURFACE WHEN BACKFILLING TOPSOIL AND SPOIL PILES.

Columbia Gas Transmission	TYPICAL CONSTRUCTION PARALLEL TO POWERLINES CONFIGURATION WITH TRANCANADA PIPELINE	LINE 8000 REPLACEMENT PROJECT DETAIL-ROW009



NOT TO SCALE

PROPOSED LINE 8000

LIMIT OF DISTUBANCE

EXISTING PERMANENT EASEMENT

PROPOSED PERMANENT EASEMENT

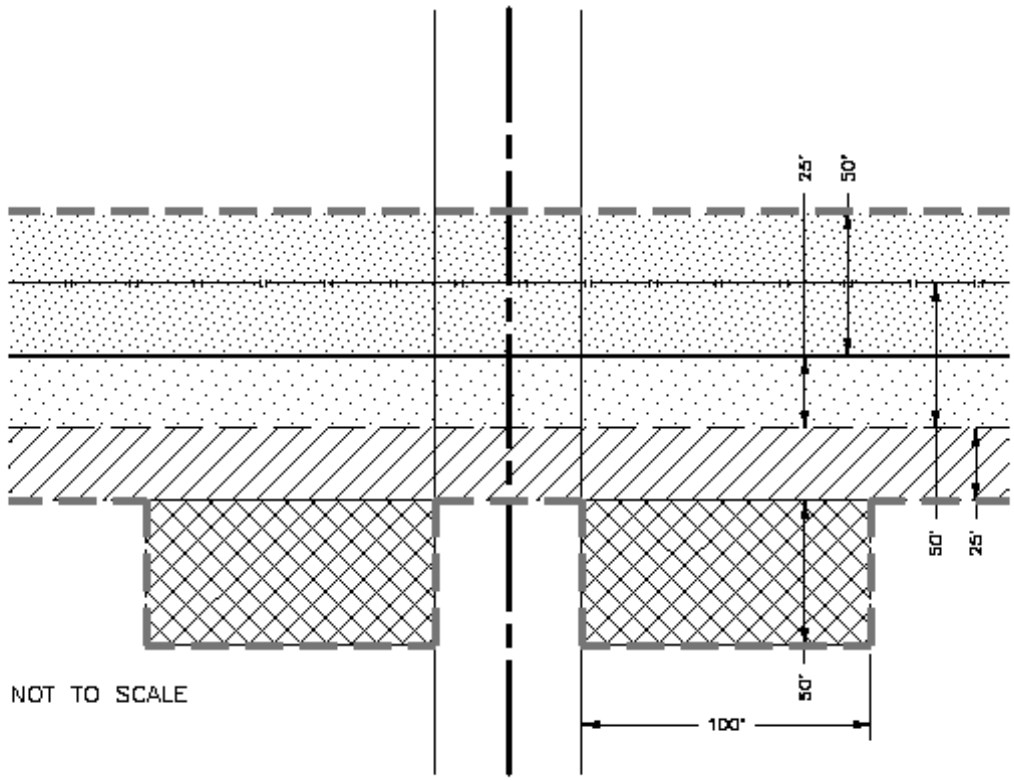
TEMPORARY WORKSPACE

ADDITIONAL TEMPORARY WORKSPACE

NOTES:

1. TEMPORARY WORKSPACE NEEDS TO BE REDUCED IN ORDER FOR THE CROSSING WIDTH TO BE 50' STARTING 50' FROM THE EDGE OF WETLAND STREAM.
2. ADDITIONAL TEMPORARY WORKSPACES CANT BE PLACED WITHIN 50' OF WETLAND EDGES OR TOP OF BANKS.
3. 25' OF TEMPORARY WORKSPACE WILL BE REMOVED WITHIN ROAD AT BORED CROSSINGS.

Columbia Gas Transmission	TYPICAL CROSSING OPEN CUT	LINE 8000 REPLACEMENT PROJECT DETAIL—ROW010



NOT TO SCALE

PROPOSED LINE 8000

EXISTING LINE

LIMIT OF DISTUBANCE

EXISTING PERMANENT EASEMENT

PROPOSED PERMANENT EASEMENT

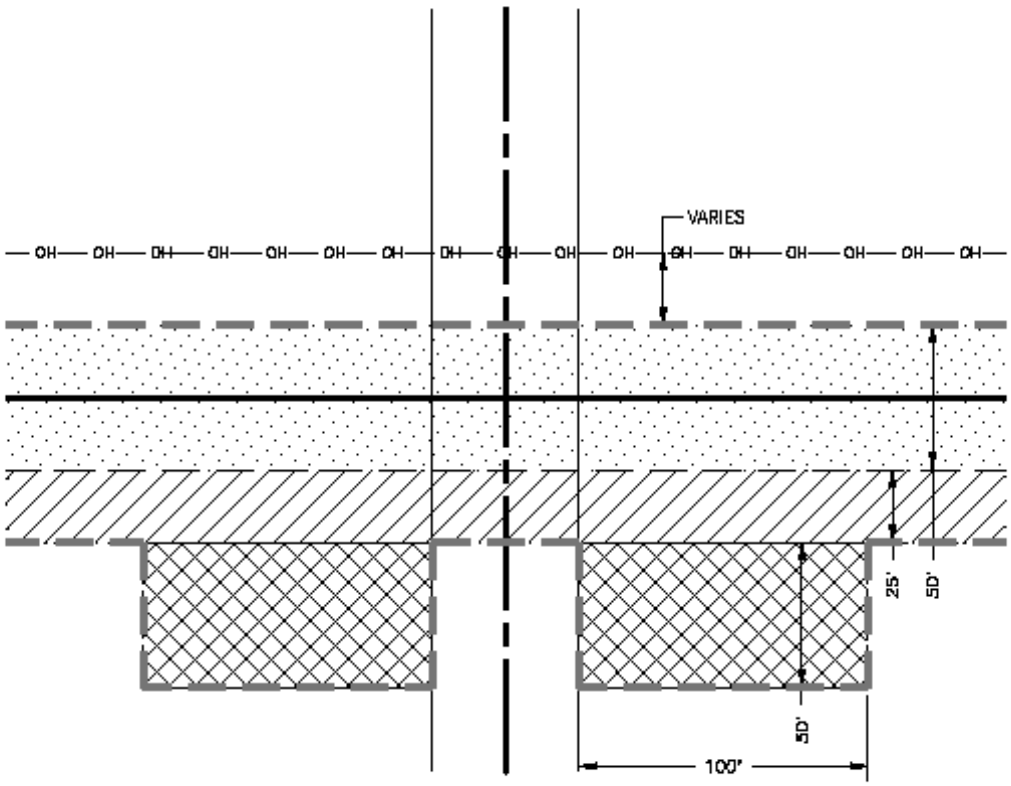
TEMPORARY WORKSPACE

ADDITIONAL TEMPORARY WORKSPACE

NOTES:

1. TEMPORARY WORKSPACE AND EXISTING EASEMENT NEEDS TO BE REDUCED IN ORDER FOR THE CROSSING WIDTH TO BE 50' STARTING 50' FROM THE EDGE OF WETLAND STREAM.
2. ADDITIONAL TEMPORARY WORKSPACES CANT BE PLACED WITHIN 50' OF WETLAND EDGES OR TOP OF BANKS.
3. 25' OF TEMPORARY WORKSPACE WILL BE REMOVED WITHIN ROAD AT BORED CROSSINGS.

Columbia Gas Transmission	TYPICAL CROSSING CO-LOCATING CLIENT PIPELINE OPEN CUT	LINE 8000 REPLACEMENT PROJECT DETAIL–ROW011



PROPOSED LINE 8000

LIMIT OF DISTUBANCE

EXISTING PERMANENT EASEMENT

PROPOSED PERMANENT EASEMENT

TEMPORARY WORKSPACE

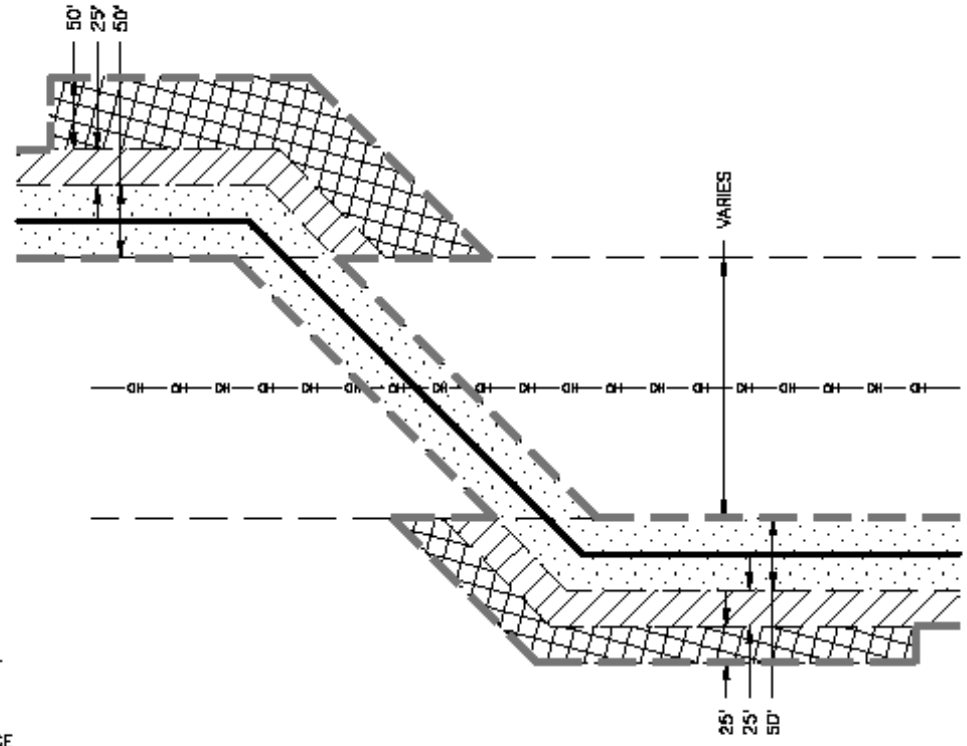
ADDITIONAL TEMPORARY WORKSPACE

NOTES:

1. TEMPORARY WORKSPACE NEEDS TO BE REDUCED IN ORDER FOR THE CROSSING WIDTH TO BE 50' STARTING 50' FROM THE EDGE OF WETLAND STREAM.
2. ADDITIONAL TEMPORARY WORKSPACES CANT BE PLACED WITHIN 50' OF WETLAND EDGES OR TOP OF BANKS.
3. POWERLINE EASEMENT VARIES.
4. 25' OF TEMPORARY WORKSPACE WILL BE REMOVED WITHIN ROAD AT BORED CROSSINGS.

NOT TO SCALE

Columbia Gas Transmission	TYPICAL CROSSING CO-LOCATING POWERLINES OPEN CUT	LINE 8000 REPLACEMENT PROJECT DETAIL—ROW012



PROPOSED LINE 8000

LIMIT OF DISTUBANCE

EXISTING PERMANENT EASEMENT

PROPOSED PERMANENT EASEMENT

TEMPORARY WORKSPACE

ADDITIONAL TEMPORARY WORKSPACE

NOT TO SCALE

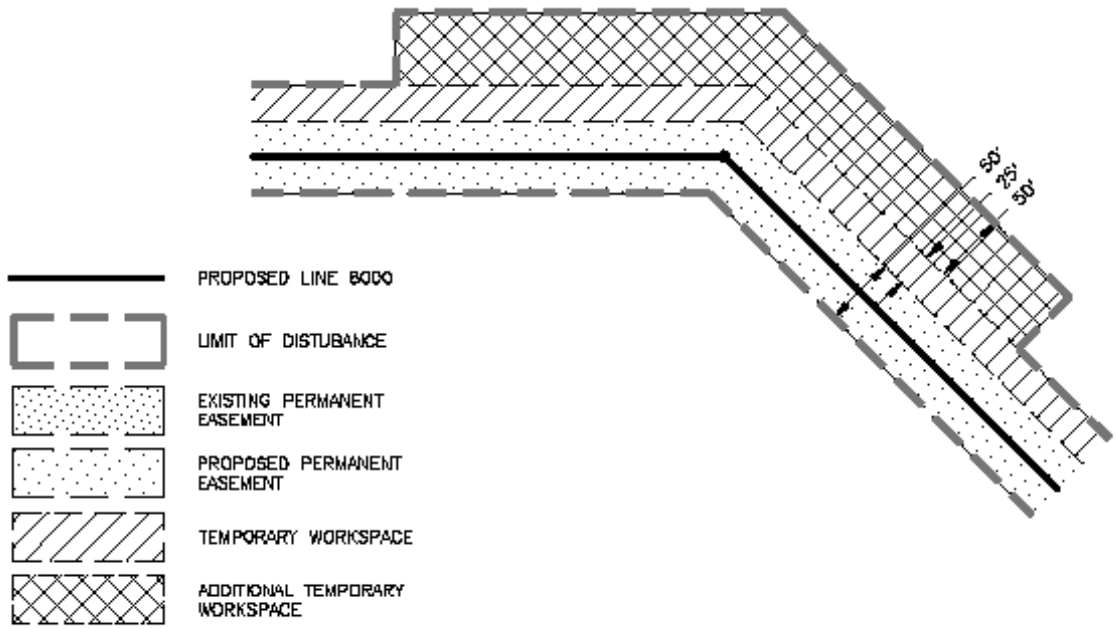
NOTE: TYPICAL DETAIL MAY BE MODIFIED BASED ON SITE SPECIFIC REQUIREMENTS.

Columbia Gas Transmission

TYPICAL CROSSOVER OF POWERLINE CORRIDOR

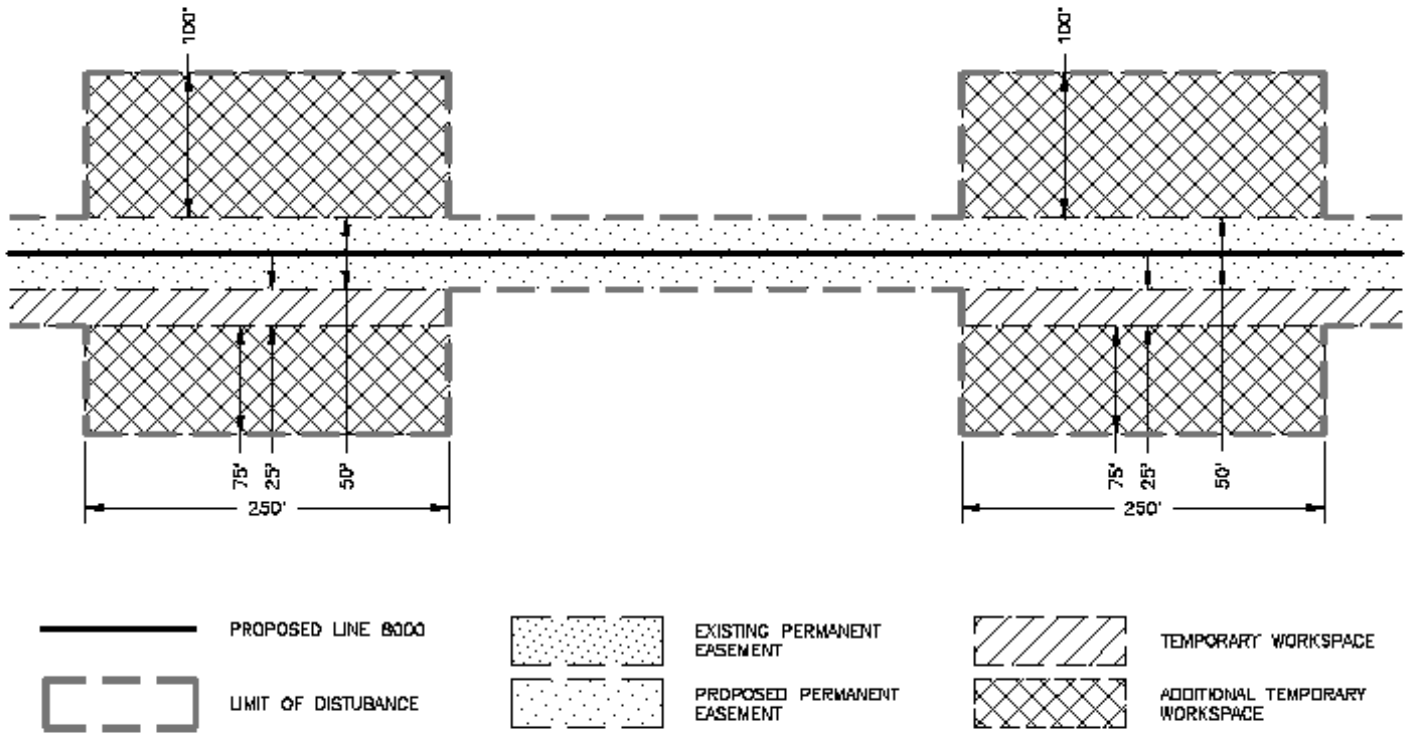
LINE 8000
REPLACEMENT PROJECT

DETAIL–ROW013



NOT TO SCALE

Columbia Gas Transmission	TYPICAL MAJOR PI	LINE B000 REPLACEMENT PROJECT DETAIL–ROW014



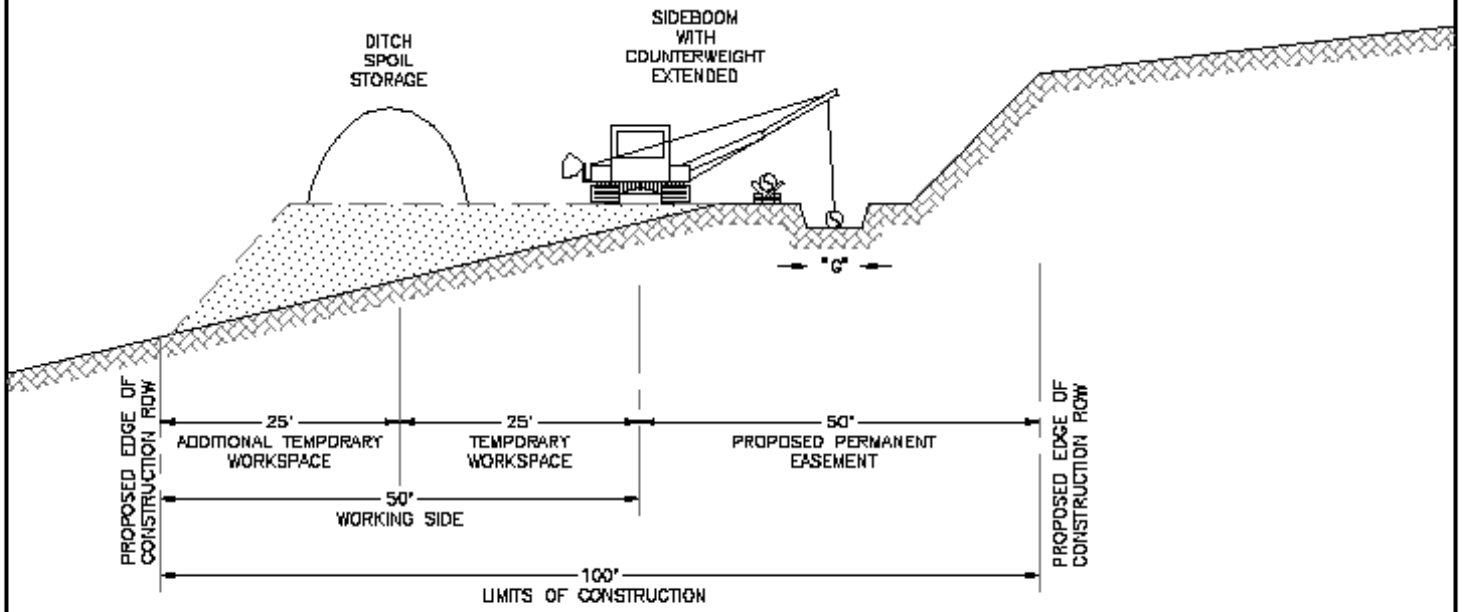
NOT TO SCALE

Columbia Gas Transmission

TYPICAL HDD ENTRY/EXIT

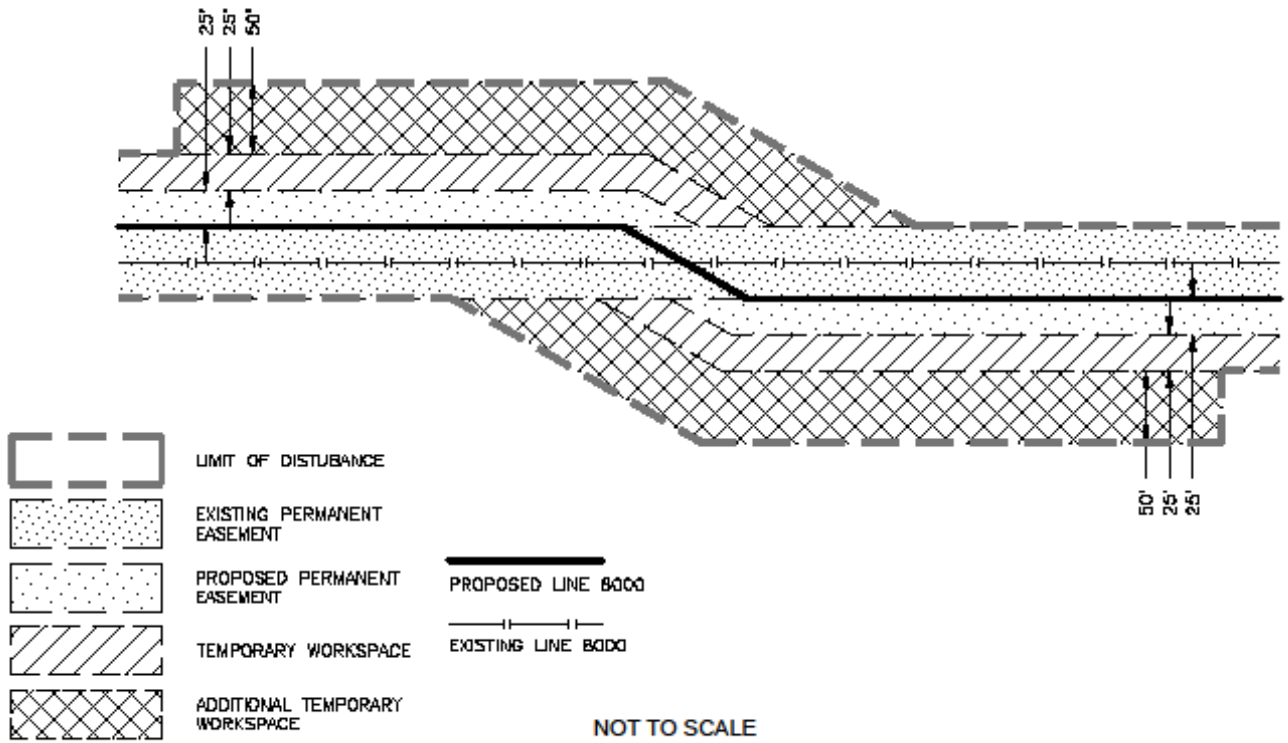
LINE 8000
REPLACEMENT PROJECT

DETAIL–ROW015



NOT TO SCALE

Columbia Gas Transmission	TYPICAL SIDE HILL RIGHT-OF-WAY	LINE B000 REPLACEMENT PROJECT DETAIL–ROW016



Columbia Gas Transmission

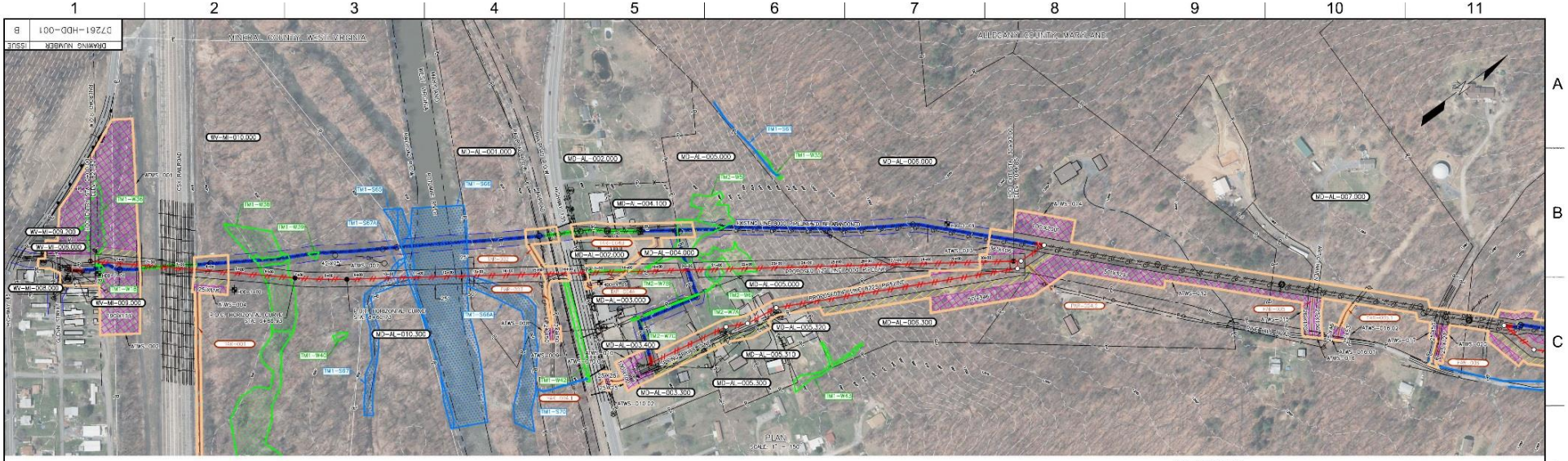
TYPICAL CROSSOVER OF EXISTING LINE 8000

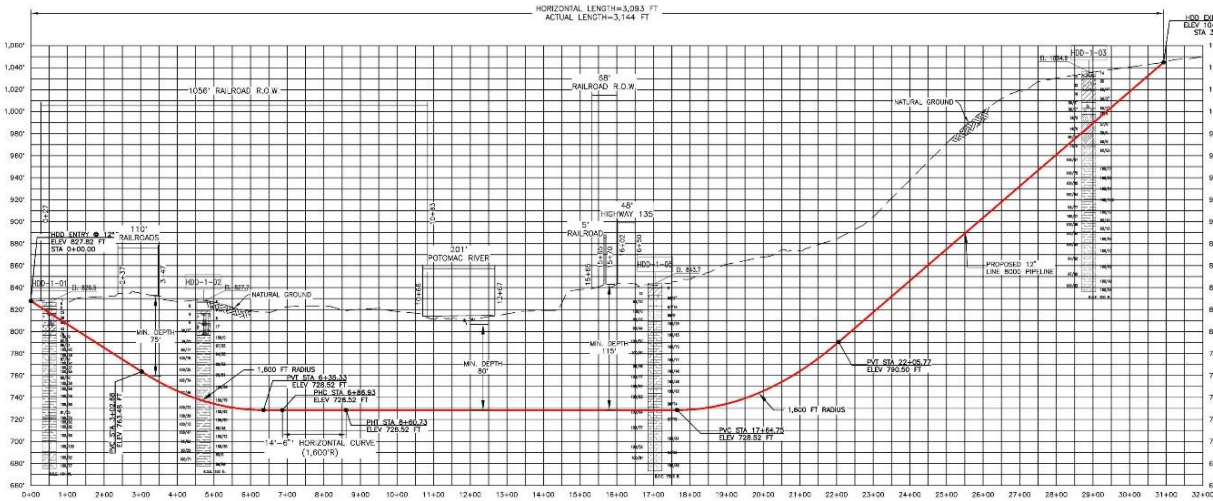
LINE 8000
REPLACEMENT PROJECT

DETAIL–ROW017

APPENDIX D

Site-Specific Crossing Plan for the North Branch Potomac River HDD





BORING LEGEND

HDD-1-01 LOCATION AND DESIGNATION OF GEOTECHNICAL BORINGS DRILLED BY GEHELLBERGERS INC BETWEEN AUGUST 2017 AND SEPTEMBER 2017

EXPLORATION DESIGNATION — BH-1
GROUND SURFACE ELEVATION AT EXPLORATION — EL 596.0 13.5' RT
UNMODIFIED FIELD STANDARD PENETRATION TEST (SPT) N-VALUE
OFFSET DISTANCE AND DIRECTION FROM CENTERLINE
BOUNDARY BETWEEN DIFFERING SOIL TYPES
ROCK CORE SAMPLE RECOVERY (%)
BOTTOM OF EXPLORATION — BASE 29.8
ROCK CORE SAMPLE RQD (%)

SOIL & ROCK STRATIGRAPHY

BOULDERS, GRAVEL-STONE, CLAYSTONE, SHALE, CL, SC, LIMESTONE, SILTSTONE, FILL, TOPSOIL, SANDSTONE

GENERAL NOTES:

1. THE OPERATIONAL ROW BETWEEN THE HDD ENTRY/EXIT LOCATIONS WILL BE CLEARED WITHIN THE PROPOSED PROJECT CONSTRUCTION LIMITS.
2. CONTRACTOR SHALL SUBMIT A DETAILED PLAN OF WORK FOR ALL DRILLING OPERATIONS INCLUDING PILOT BORE, REAMING, AND PULLBACK OPERATIONS FOR APPROVAL BEFORE HDD OPERATIONS ARE COMMENCED.
3. PILOT BORE WILL BE TRACKED CONSTANTLY WITH LOCATION AND DEPTH MARKED EVERY 10 FEET. NO BLIND SECTION SHALL BE PERMITTED.
4. THROUGHOUT PILOT BORE DRILLING THE DRILLING FLUID PRESSURE SHALL BE MEASURED AT ALL TIMES AND AT A POINT AS CLOSE AS POSSIBLE BEHIND THE DRILL BIT. AT NO TIME WILL THE DRILLING FLUID PRESSURE BE PERMITTED TO EXCEED ONE-HALF OF THE CALCULATED MAXIMUM ALLOWABLE PRESSURE OF THE FORMATION.

HDD CONSTRUCTION:

1. CONTRACTOR SHALL DRILL THIS INSTALLATION FROM THE LOWER ELEVATION TOWARDS THE HIGHER ELEVATION (SOUTH TO NORTH).
2. CONTRACTOR SHALL USE A GYROSCOPIC GUIDANCE SYSTEM TO COMPLETE THE PILOT BORE STAGE OF THE INSTALLATION PROCESS.
3. COMPOSITION OF THE DRILLING FLUID USED SHALL BE APPROVED BY CPG'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF THE DRILLING OPERATION. DURING DRILLING OR PIPE PULL OPERATIONS, NO SUBSTANCE SHALL BE ADDED TO THE DRILLING FLUID WITHOUT CPG'S WRITTEN AUTHORIZATION.
4. CONTRACTOR SHALL SUBMIT AND DEVELOP A SPILL RESPONSE PROGRAM FOR CPG'S REVIEW.
5. IF A SUMP PIT IS USED, THE CONTRACTOR SHALL ENSURE DRILLING FLUID IS CONTAINED WITHIN A LINED OR IMPERMEABLE SUMP PIT.
6. A SLURRY PIT LOCATION MAY BE IDENTIFIED WITHIN THE WORK AREA FOR DRILLING FLUID DISPOSAL. IF AN APPROVED LOCATION IS IDENTIFIED, THE CONTRACTOR SHALL ENSURE PROPER MAINTENANCE, STORAGE AND TRUCKING OF ALL DRILLING FLUIDS TO THE SLURRY PIT. IF NOT IDENTIFIED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER STORAGE, TRUCKING AND DISPOSAL OF ALL DRILLING FLUIDS. ALL ACTIVITIES RELATING TO DRILLING FLUIDS SHALL CONFORM TO APPLICABLE REGULATIONS.
7. IF CONTRACTOR ENCOUNTERS AND OBSTRUCTION WHICH PREVENTS THE INSTALLATION ACCORDING TO THE SPECIFICATIONS, THE BORE SHALL BE ABANDONED IN PLACE AND IMMEDIATELY FILLED WITH GROUT. WORK SHALL NOT RESUME UNTIL REVISED PLANS HAVE BEEN SUBMITTED TO AND APPROVED BY CPG.
8. UPON COMPLETION, CONTRACTOR SHALL PLACE A UNIFORM CELLULAR GROUT UNDER PRESSURE TO FILL ANY VOIDS BETWEEN THE PRODUCT PIPE AND THE UNDISTURBED EARTH FOR THE ENTIRE LENGTH OF THE COMPLETED INSTALLATION.

SURVEY AND PIPE ALIGNMENT:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN FEET, UNLESS OTHERWISE SPECIFIED.
2. ALL STATIONING VALUES ART BASED ON A HORIZONTAL DATUM.
3. MINIMUM ALLOWABLE PIPE BEND RADIUS IS 800 FT BASED ON A 3-JOINT AVERAGE.
4. INSTALL PIPELINE AS CLOSE AS PRACTICAL TO THE PROPOSED PIPELINE CENTERLINE, AS SHOWN ON THE DRAWING. DEVIATIONS SHALL FOLLOW THE BELOW REQUIREMENTS:
   - PILOT ENTRY ANGLE: INCREASE ANGLE UP TO 1 DEGREE (STEEPER), BUT NO DECREASE IN ANGLE ALLOWED.
   - PILOT ENTRY LOCATION: AS STAKED BY OWNER. NO CHANGES WITHOUT CPG APPROVAL.
   - PILOT EXIT ANGLE: DECREASE ANGLE UP TO 2 DEGREES (FLATTER), BUT NO INCREASES IN EXIT ANGLE ALLOWED.
   - PILOT DEPTH: UP TO TWO (2) FEET SHALLOWER IN DEPTH ALLOWED. UP TO 15 FEET INCREASE IN PIPE DESIGN DEPTH (DEEPER) ALLOWED.
   - PILOT ALIGNMENT: BETWEEN FIVE (5) FEET LEFT AND FIVE (5) RIGHT OF THE OWNER SURVEY CENTERLINE BUT NOT WITHIN TEN (10) FEET OF THE RIGHT-OF-WAY/EASEMENT BOUNDARY.
5. CONTRACTOR SHALL PROVIDE A FINAL AS-BUILT PIPELINE PLAN AND PROFILE TO CPG WITHIN 15 DAYS OF COMPLETION.
6. CONTRACTOR IS REQUIRED TO PULL AN ADDITIONAL AMOUNT OF PIPELINE, AMOUNT TO BE REQUESTED BY CPG'S REPRESENTATIVE (MINIMUM 15 FEET), COMPLETELY THROUGH THE BOREHOLE TO ALLOW FOR VISUAL INSPECTION OF POTENTIAL PIPELINE OR COATING DAMAGE.

ENVIRONMENTAL:

1. REFER TO ENVIRONMENTAL PROTECTION PLAN ALIGNMENT SHEETS FOR ENVIRONMENTAL FEATURES.
2. CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS AS SET OUT IN THE PROJECT'S ENVIRONMENTAL PROTECTION PLAN.
3. DURING CONSTRUCTION, TEMPORARY EROSION CONTROL MEASURES SUCH AS SILT FENCES OR BERMS SHALL BE INSTALLED TO PREVENT SEDIMENT RUNOFF.

LEGEND:

PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FOREIGN PIPELINE; LIMIT OF DISTURBANCE; 10' CONTOURS; ℄ OF RAILROAD; EXISTING EASEMENT LOCATION; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; PROPERTY TRACT NUMBER; ACCESS ROAD NUMBER; RAILROAD ID; AS CROSSED ID; METHOD; WATERWAY

PROFILE
HORIZ: 1" = 150'
VERT: 1" = 50'

SCALE: 1" = 150'-0"

ISSUED FOR BID
DATE: 07/2018

NO.	REVISIONS	BY	DATE	APPROVED	DATE
3	ISSUED FOR BID				
2	–				
1	–				

NO.	REVISIONS	BY	DATE	APPROVED	DATE
3	–				
2	–				
1	–				

NO.	REVISIONS	BY	DATE	APPROVED	DATE
3	–				
2	–				
1	–				

DESIGN PRESSURE ___ PSIG AT ___ % SMYS, BASED ON ___ DESIGN FACTOR; MAXIMUM HOOP STRESS LEVEL ___ PSIG ___ % SMYS, BASED ON ___
MAOP OF ___ PSIG AT ___ °F IS LIMITED BY ___
MINIMUM TEST PRESSURE ___ PSIG; MAXIMUM TEST PRESSURE ___ PSIG
TEST LIMITED BY ___; TEST PERIOD ___ HOURS
TEST MEDIUM ___; SERVICE ___
NONDESTRUCTIVE INSPECTION REQUIREMENTS ___

CERTIFICATE
TO THE BEST OF MY KNOWLEDGE ALL COMPONENTS OF THIS DRAWING ARE DESIGNED IN ACCORDANCE WITH APPLICABLE COLUMBIA GUIDELINES AND SPECIFICATIONS

DESIGN ENGINEER — DATE

NOTE: ANY CHANGES TO THE DESIGN SHOWN ON THIS DRAWING MUST BE AUTHORIZED BY THE DESIGN ENGINEER.

DWG. NO.	REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: PROPOSED 12" HORIZONTAL DIRECTION DRILL
MINERAL COUNTY, WEST VIRGINIA & ALLEGANY COUNTY, MARYLAND

DRAWN BY: – DATE: –
PROJECT NUMBER: M.000688.2
W.O. NUMBER: 5120949
DRAWING NUMBER: D7261-HDD-001
ISSUE: B

DRAWING NUMBER D7261-HDD-001 ISSUE B

G:\Columbia\385318_Line_8000\Pipeline\Drafting\HDDs\D7261-HDD-001_Potomac River -HDD.dwg
4/5/2018 8:53 AM Gulgoton, Kristelle L.

APPENDIX E

Interagency Endangered Species Act Consultation Checklist for the Multi-Species Habitat Conservation Plan

INTERAGENCY ENDANGERED SPECIES ACT CONSULTATION CHECKLIST FOR THE NISOURCE MULTI-SPECIES HABITAT CONSERVATION PLAN

APPLICANT SECTION

ACTION AGENCY (Recipient): __Federal Energy Regulatory Commission_____

OTHER INVOLVED FEDERAL AGENCIES: __U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service_____

PROJECT NAME: _____Line 8000 Replacement Project_____

PROJECT I.D. NO. (if applicable): __CP18-13_____

NiSource and Columbia Pipeline Group (Columbia) has provided the attached documentation to involved federal agencies in accordance with "Project Review and Documentation Protocols" of the NiSource/Columbia Pipeline MSHCP Consultation Implementation Guidance [4]. This documentation describes if and how the project is covered by the NiSource Multi-Species Habitat Conservation Plan (MSHCP), programmatic biological opinion (BO), and/or programmatic concurrence letters. In addition, the action agency could refer to the following sections and/or pages of the MSHCP, BO, and/or concurrence letters to verify that the activity is covered by the MSHCP and associated Section 7 consultation under the Endangered Species Act (ESA):

Reference:

- NiSource MSHCP Chapter 2.3 Covered Lands (pp 2-11)
- NiSource MSHCP Chapter 2.4 Covered Activities (pp 11- 25)
- NiSource/Columbia Pipeline MSHCP Consultation Implementation Guidance Quick Reference for Species Consultation Categories (pp 5-6)
- NiSource/Columbia Pipeline Group's, "Habitat Conservation Program Best Management Practices Guidebook", v.1.0, March 12, 2014 (specific pages for each species are referenced in the attached application material)

By signing below, Columbia certifies that its proposed activity, as outlined in the accompanying application or notification, is consistent with the MSHCP, BO, and/or concurrence letters.

_____ June 20, 2018

Columbia Pipeline representative Date

☐ By checking the box, Columbia is notifying the involved federal agencies that the proposed activity will require additional ESA Section 7 consultation because part of the activity may include: (1) any of the 10 Likely to Adversely Affect (LAA) species that are not included in the MSHCP[5], (2) species not addressed in the MSHCP, BO, or concurrence letters[5], (3) non-covered activities, (4) activities outside of the covered lands, or (5) activities otherwise deviating from the MSHCP, BO, and/or concurrence letters. Additional biological information about the species, habitat, or effects of the action may be required. The federal agencies can contact the U.S. Fish and

[4] See NiSource/Columbia Pipeline MSHCP Consultation Implementation Guidance. May 8, 2014. Pg 11.

[5] See NiSource/Columbia Pipeline MSHCP Consultation Implementation Guidance. May 8, 2014. Pg. 5.

Wildlife Service's NiSource/Columbia MSHCP Implementation Coordinator (Karen Herrington, 850.348.6495, karen_herrington@fws.gov) for more information.

FEDERAL AGENCY SECTION

This checklist serves as the official documentation that each action agency involved has completed its Section 7 responsibilities under the ESA for NiSource and Columbia Pipeline Group (Columbia) projects conducted as described in the MSHCP, BO, and/or concurrence letters. Every agency that receives a copy of this checklist should fill it out. The MSHCP, BO, and concurrence letters can be found on the U.S. Fish and Wildlife Service (FWS) NiSource website:

http://www.fws.gov/midwest/endangered/permits/hcp/nisource/index.html

Quick access to the required Avoidance and Minimization Measures (AMMs) and Best Management Practices (BMP) can be found in the Columbia BMP Guidebook, which is also posted on the above website.

1. Does the federal action occur entirely within the covered lands as described in the MSHCP?
   _____ Yes. Go to #2.
   __X__ No. Additional consultation is required because the action is not consistent with the MSHCP, BO, and/or concurrence letters. If the project may affect listed species, contact your local FWS Field Office.

2. Is the proposed action as described in the MSHCP, programmatic BO, and/or concurrence letter?
   ___X__ Yes. Go to #3.
   _____ No. Additional consultation is required because the action is not consistent with the MSHCP, BO, and/or concurrence letters. If the project may affect listed species, contact your local FWS Field Office.

3. Does the proposed action pose any effects on species not included in the MSHCP, BO or concurrence letters[6]?
   _____ Yes. Additional consultation is required because the species was not included in the MSHCP, BO, and/or concurrence letters. If the project may affect listed species not included in the consultation, contact your local FWS Field Office.
   __X___ No. Go to #4.

4. Does the proposed action include MSHCP species[6] only?
   _____ Yes. Go to #6.
   ___X__ No. Go to #5.

5. Does the proposed action include any of the 10 Likely to Adversely Affect (LAA) species that are not included in the MSHCP (i.e., LAA non-MSHCP species) as addressed in the BO?
   _____ Yes. Additional consultation is required. Enter into tiered consultation with your local FWS office for any LAA non-MSHCP species.
   ___X__ No. Go to #6.

[6] See NiSource/Columbia Pipeline MSHCP Consultation Implementation Guidance. May 8, 2014. Pg. 5

6. Are all mandatory AMMs and/or BMPs for each species included in the action?[7]
   __X___ Yes. Go to #7.
   _____ No. Additional consultation is required because the proposed action is not consistent with the MSHCP, BO, and/or concurrence letter. Request additional information from Columbia about AMMs.

7. Are all non-mandatory AMMs and/or BMPs for each species included in the action?
   _____ Yes. Consultation is complete because the proposed action is consistent with the MSHCP, BO, and/or concurrence letter.
   __X___ No. Go to #8.

8. Are reasons provided for not including non-mandatory AMMs for each species?[8]
   __X___ Yes. Consultation is complete.
   _____ No. Request justification from Columbia, and attach documentation here. Once justification is provided, consultation is complete.

It is the federal agency's responsibility to comply with ESA Section 7 requirements for this project. The programmatic BO and/or the concurrence letters cover most of Columbia's activities implemented under the MSHCP within the covered lands. By signing below, the federal agency verifies that the proposed action within the agency's authority complies with the programmatic BO, and/or concurrence letters. If additional Section 7 consultation is required, the U.S. Fish and Wildlife Service's supplemental concurrence letter or biological opinion will be attached to this documentation.

AGENCY COMMENTS:

Additional consultation is required for the portion of the Project outside of covered lands.
Completion of Section 7 Consultation is required prior to construction.

Christine Mallory

Federal Agency representative

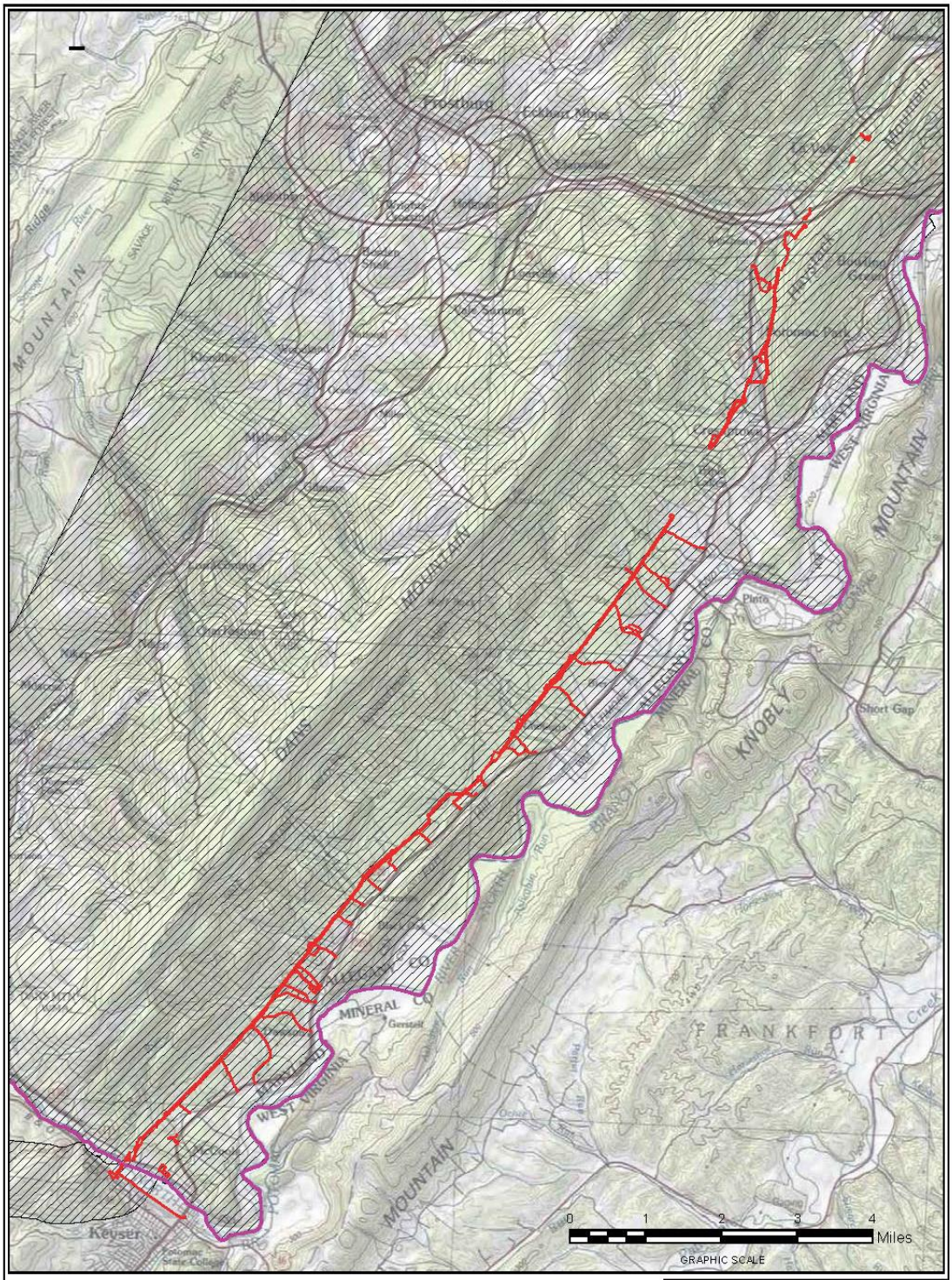
8/29/2018

Date

[7] See NiSource/Columbia Pipeline Group's, "Habitat Conservation Program Best Management Practices Guidebook", v.1.0, March 12, 2014.

[8] Per the MSHCP, explanation for non-mandatory AMM use is not required for the Indiana Bat.

City: Wexford Div/Group: ENV Created By: JON PODESZEK
Document Path: C:\Users\JPodeszek\Documents\Columbia\Line 8000\USFWS_SITE_LOC.mxd Date: 2/20/2018



LEGEND:

- CONSTRUCTION LIMITS OF DISTURBANCE
- STATE BOUNDARY
- MSHCP COVERED LANDS

NOTE:
1) USGS TOPOGRAPHIC QUADRANGLES FOR CUMBERLAND, CRESAPTOWN, LONACONING AND KEYSER OBTAINED FROM ESRI IMAGE SERVICE

COLUMBIA GAS TRANSMISSION, LLC.

LINE 8000 REPLACEMENT PROJECT

SITE LOCATION MAP

ARCADIS

FIGURE 1

APPENDIX F

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

Information to Determine 4(d) Rule Compliance:	**YES**	**NO**
1. Does the project occur wholly outside of the WNS Zone[1]?	☐	☒
2. Have you contacted the appropriate agency[2] to determine if your project is near known hibernacula or maternity roost trees?	☒	☐
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	☐	☒
4. Could the project alter the entrance or interior environment of a known hibernaculum?	☐	☒
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	☐	☒
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	☐	☒

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency and Applicant[3] (Name, Email, Phone No.):
Federal Energy Regulatory Commission: Christine Mallory, Christine.mallory@ferc.gov, (202)502-6748
Columbia Gas Transmission, LLC: Ernest Ladkani, ernest_ladkani@transcanada.com, (832)320-5780

Project Name: Line 8000 Replacement Project

Project Location (include coordinates if known):Allegany County, MD and Mineral County, WV

Basic Project Description (provide narrative below or attach additional information):
Columbia is proposing the abandonment and replacement of approximately 14 miles of pipeline associated with Line 8000 and three lateral natural gas transmission pipelines and associated minor aboveground facilities. About 161 acres of tree clearing is proposed, and about 47 acre would be permanently impacted and converted to herbaceous vegetation due to routine vegetation maintenance. Tree clearing would be conducted outside of the active bat season (April 1-October 15), unless surveys are conducted and result in probable absence. Columbia is

[1] http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf
[2] See http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html
[3] If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

also using its Multi-Species Habitat Conservation Plan for the portion of the Project on covered lands, which includes the northern long eared bat as a covered species. See attached EA for more information.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	☐	☒
Does the project occur within 150 feet of a known maternity roost tree?	☐	☒
Does the project include forest conversion[4]? (if yes, report acreage below)	☒	☐
Estimated total acres of forest conversion	47 acres	
If known, estimated acres[5] of forest conversion from April 1 to October 31		
If known, estimated acres of forest conversion from June 1 to July 31[6]		
Does the project include timber harvest? (if yes, report acreage below)	☐	☒
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	☐	☒
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	☐	☒
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: Christine Mallory Date Submitted: 8/29/2018

[4] Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).
[5] If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.
[6] If the activity includes tree clearing in June and July, also include those acreage in April to October.

APPENDIX G

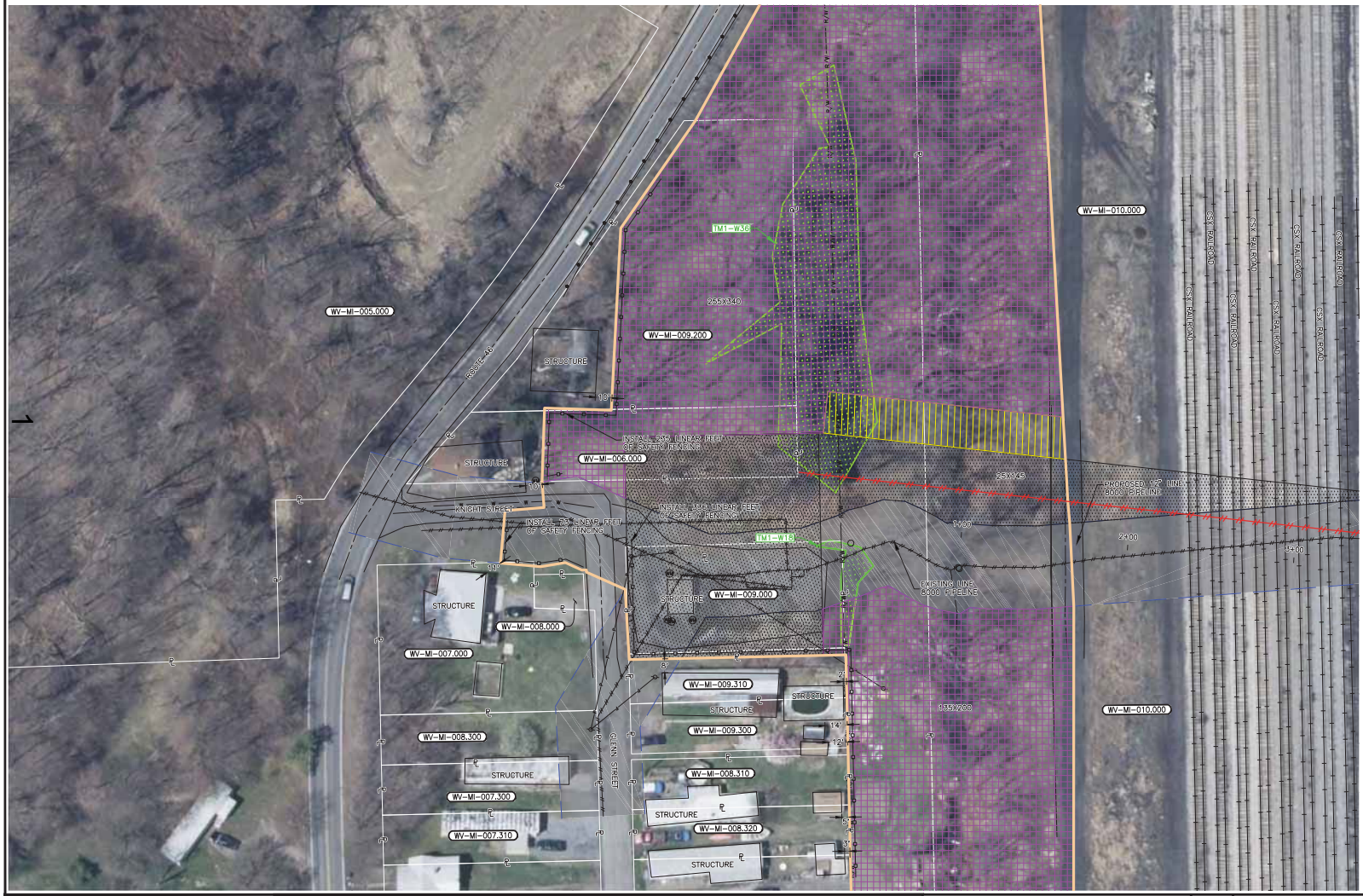
Site-Specific Residential Construction Plans

Index of Site-Specific Residential Construction Plans		
Parcel Numbers	**Nearby Street(s)/Landmarks**	**Page**
Mineral County, West Virginia		
WM-MI-003.300, WM-MI-005.000, WM-MI-006.000, WM-MI-007.000, WM-MI-007.300, WM-MI-007.310, WM-MI-008.000, WM-MI-008.300, WM-MI-008.310, WM-MI-008.320, WM-MI-009.000, WM-MI-009.200, WM-MI-009.300, WM-MI-009.310, WM-MI-010.000	Route 46, Glenn Street, CSX Railroad	1
Allegany County, Maryland		
MD-AL-001.000, MD-AL-002.000, MD-AL-003.000, MD-AL-003.100, MD-AL-004.000, MD-AL-004.100, MD-AL-005.000,	Westernport Road SW–Highway 135, CSX Railroad,	2
MD-AL-003.300.620, MD-AL-003.300, MD-AL-003.310.660, MD-AL-003.400, MD-AL-005.300, MD-AL-005.310, MD-AL-005.000, MD-AL-005.320, MD-AL-006.300		3
MD-AL-001.300, MD-AL-001.301, MD-AL-001.311, MD-AL-001.329, MD-AL-001.330, MD-AL-001.331, MD-AL-001.331.614	Westernport Road SW-Hwy 135	4
MD-AL-003.300.710, MD-AL-008.005, MD-AL-008.010, MD-AL-008.020, MD-AL-008.025, MD-AL-008.035	McMullen Hwy (Hwy 220)	5
MD-AL-008.000, MD-AL-009.000, MD-AL-010.000, MD-AL-010.300	Granny Lane	6
MD-AL-014.000, MD-AL-014.040, MD-AL-014.050, MD-AL-014.050.730, MD-AL-014.050.720, MD-AL-014.300,	Placid Lane	7
MD-AL-016.300, MD-AL-016.310, MD-AL-016.310.100, MD-AL-016.310.105, MD-AL-016.310.110, MD-AL-017.300.730,	McMullen Hwy (Hwy 220), Copperhead Road	8
MD-AL-017.300, MD-AL-017.310, MD-AL-017.310.100 ,MD-AL-017.320, MD-AL-018.000, MD-AL-018.005, MD-AL-018.005.730, MD-AL-018.005.750, MD-AL-018.007.770	McMullen Hwy (Hwy 220), Deep Hollow Road	9
MD-AL-019.000, MD-AL-019.310, MD-AL-019.320	Shady Run Road	10
MD-AL-018.005.600, MD-AL-019.000, MD-AL-019.010, MD-AL-020.000, MD-AL-020.300	field road	11
MD-AL-019.0310.600, MD-AL-021.000, MD-AL-022.000, MD-AL-024.000	Tom's Hollow Road SW	12
MD-AL-021.330, MD-AL-021.340, MD-AL-021.350, MD-AL-021.360, MD-AL-021.370, MD-AL-021.375, MD-AL-021.380 MD-AL-024.320, MD-AL-024.330, MD-AL-024.340, MD-AL-024.340.700, MD-AL-026.720	McMullen Hwy (Hwy 220), Tom's Hollow Road SW	13
MD-AL-028.300, MD-AL-028.100, MD-AL-029.000	Carman Drive	14
MD-AL-028.005, MD-AL-028.010, MD-AL-028.300, MD-AL-028.300.710, MD-AL-028.330, MD-AL-028.360, MD-AL-028.370, MD-AL-029.0000	Carman Drive, McMullen Hwy (Hwy 220)	15
MD-AL-031.100, MD-AL-031.105, MD-AL-031.300, MD-AL-032.300	McMullen Hwy (Hwy 220), Alt Hill Lane	16
MD-AL-035.000, MD-AL-036.000, MD-AL-037.000, MD-AL-038.000, MD-AL-039.600,	Middle Ridge Road	17
MD-AL-039.000, MD-AL-040.000, MD-AL-041.000		18
MD-AL-041.000, MD-AL-041.300, MD-AL-042.000, MD-AL-046.700	McMullen Hwy (Hwy 220), Crossland Road SW	19
MD-AL-046.000, MD-AL-049.000, MD-AL-050.000, MD-AL-051.000,		20
MD-AL-064.000, MD-AL-064.300.105, MD-AL-064.320, MD-AL-065.300.110, MD-AL-065.000, MD-AL-065.300, MD-AL-065.310, MD-AL-065.710, MD-AL-065.730	McMullen Hwy (Hwy 220), Ketterman Lane	21
MD-AL-065.000, MD-AL-065.001, MD-AL-065.002, MD-AL-065.220, MD-AL-065.210, MD-AL-065.300, MD-AL-066.000		22
MD-AL-066.000, MD-AL-066.300	McMullen Hwy (Hwy 220), Forest Lane	23
MD-AL-067.000, MD-AL-069.010.745, MD-AL-070.000, MD-AL-071.200, MD-AL-071.300, MD-AL-072.000, MD-AL-071.300, MD-AL-073.000, MD-AL-073.300, MD-AL-073.730, MD-AL-074.200	North Conda Way,	24
MD-AL-078.304, MD-AL-078.306, MD-AL-078.775, MD-AL-078.308, MD-AL-078.309, MD-AL-078.310, MD-AL-078.311, MD-AL-078.312, MD-AL-081.730, MD-AL-081.710, MD-AL-081.720, MD-AL-081.735, MD-AL-081.740,	Flanagan Road, Maple Lane	25
MD-AL-076.000, MD-AL-078.000, MD-AL-078.304, MD-AL-079.000,		26
MD-AL-080.000, MD-AL-082.000, MD-AL-083.000,	Mountain Ridge Road	27
MD-AL-094.100	McMullen Hwy (Hwy 220)	28
MD-AL-106.000, MD-AL-106.300, MD-AL-106.310, MD-AL-106.320	McMullen Hwy (Hwy 220)	29
MD-AL-107.325, MD-AL-107.300, MD-AL-107.315, MD-AL-107.320, MD-AL-107.330, MD-AL-107.335, MD-AL-107.345, MD-AL-107.350, MD-AL-108.000, MD-AL-108.300	Niners Lane SW, Rephann Drive SW	30
MD-AL-178.000, MD-AL-180.000, MD-AL-181.000, MD-AL-182.000, MD-AL-182.100, MD-AL-183.000, MD-AL-183.100, MD-AL-183.110, MD-AL-183.300, MD-AL-183.300.700, MD-AL-183.300.710, MD-AL-184.000, MD-AL-185.000, MD-AL-185.700, MD-AL-186.000, MD-AL-187.000, MD-AL-187.700, MD-AL-187.710	Brant Road SW	31
MD-AL-192.000, MD-AL-192.100, MD-AL-194.000, MD-AL-195.000, MD-AL-195.200, MD-AL-196.000,	Spruce Springs Road	32

Index of Site-Specific Residential Construction Plans		
Parcel Numbers	**Nearby Street(s)/Landmarks**	**Page**
MD-AL-196.000, MD-AL-197.000, MD-AL-197.200, MD-AL-198.000, MD-AL-199.000, MD-AL-200.000, MD-AL-207.200, MD-AL-207.200.620, MD-AL-207.200.630, MD-AL-207.200.640,	Craddock Road SW	33
MD-AL-201.320, MD-AL-273.000, MD-AL-253.315, MD-AL-253.320, MD-AL-253.325,	Winchester Road (Hwy 53)	34
MD-AL-200.000, MD-AL-245.200, MD-AL-247.200, MD-AL-247.210, MD-AL-249.000, MD-AL-251.000, MD-AL-251.200, MD-AL-252.000, MD-AL-252.200, MD-AL-252.200.600, MD-AL-252.200.610, MD-AL-252.210, D-AL-253.000, MD-AL-253.315.600, MD-AL-254.000, MD-AL-255.000, MD-AL-256.000, MD-AL-257.000, MD-AL-258.000, MD-AL-259.000, MD-AL-259.310, MD-AL-265.610	Blue Jay Drive SW	35
MD-AL-254.000, MD-AL-256.000, MD-AL-257.000, MD-AL-258.000, MD-AL-259.000, MD-AL-259.310, MD-AL-260.000, MD-AL-261.000, MD-AL-262.000, MD-AL-263.000, MD-AL-264.000, MD-AL-264.300, MD-AL-265.000, MD-AL-267.200, MD-AL-267.210, MD-AL-277.000,	Winchester Road SW (Hwy 53)	36
MD-AL-264.300, MD-AL-273.000, MD-AL-273.500, MD-AL-273.900, MD-AL-276.300, MD-AL-277.000, MD-AL-278.000, MD-AL-280.000, MD-AL-281.000, MD-AL-285.000,		37
MD-AL-316.000, MD-AL-317.000, MD-AL-317.600, MD-AL-317.610, MD-AL-319.000, MD-AL-320.000, MD-AL-321.000, MD-AL-321.300, MD-AL-322.000, MD-AL-322.200, MD-AL-323.000, MD-AL-324.000	Braddock Road	38
MD-AL-379.005, MD-AL-381.230, MD-AL-381.230.612, MD-AL-381.230.604, MD-AL-381.230.606, MD-AL-381.230.614, MD-AL-381.230.618, MD-AL-381.230.600, MD-AL-381.230.602, MD-AL-381.230.604, MD-AL-381.240, MD-AL-381.250, MD-AL-381.270, MD-AL-384.000, MD-AL-384.200, MD-AL-384.210, MD-AL-384.220, MD-AL-384.230, MD-AL-384.240, MD-AL-384.300	Braddock Ave, Allendale Avenue	39
MD-AL-076.00, MD-AL-078.000	Flanagan Road	40
MD-AL-191.000, MD-AL-192.000, MD-AL-192.100		41
MD-AL-287.000, MD-AL-288.638, MD-AL-288.640, MD-AL-304.000, MD-AL-305.300, MD-AL-305.310, MD-AL-307.100, MD-AL-307.200, MD-AL-307.300, MD-AL-309.000	Martz Lane	42
MD-AL-078.315, MD-AL-078.316, MD-AL-078.317, MD-AL-078.318, MD-AL-078.319, MD-AL-078.320, MD-AL-078.320.100, MD-AL-078.321, MD-AL-078.323, MD-AL-078.324, MD-AL-078.324.100, MD-AL-078.325, MD-AL-078.326, MD-AL-078.328, MD-AL-081.705,	McMullen Hwy (Hwy 220), Maple Lane	43
MD-AL-287.000, MD-AL-298.000, MD-AL-299.000, MD-AL-300.000, MD-AL-300.200, MD-AL-301.000, MD-AL-302.000,MD-AL-303.210, MD-AL-303.220	Timber Ridge Road, McKenzie Road, Twin Oaks Road, Johns Lane	44
	Route 658/Vocke Road, Clubhouse Road	45
MD-AL-287.000, MD-AL-287.015, MD-AL-287.030		46
MD-AL-311.000, MD-AL-311.600, MD-AL-312.000, MD-AL-312.600, MD-AL-312.610, MD-AL-312.600, MD-AL-313.000, MD-AL-314.600, MD-AL-314.610, MD-AL-315.000	Glenview Tarrace	47
NOTE: Parcel number and nearby street(s) and landmarks are as indicated on site-specific residential plans.		

DRAWING NUMBER	ISSUE
D7261-RSD-001	B

MINERAL COUNTY, WEST VIRGINIA



DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
2. A MINIMUM OF 25 FEET WILL BE MAINTAINED BETWEEN THE RESIDENCE AND CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF THE RESIDENCE. IF THE FACILITY MUST BE WITHIN 25 FEET OF A RESIDENCE, IT MUST BE INSTALLED SUCH THAT THE TRENCH DOES NOT REMAIN OPEN OVERNIGHT.
3. MATURE TREES AND LANDSCAPING WILL NOT BE REMOVED FROM WITHIN THE EDGE OF THE CONSTRUCTION WORK AREA UNLESS NECESSARY FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT OR AS SPECIFIED IN LANDOWNER AGREEMENTS.
4. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
5. TRENCH SHALL NOT BE EXCAVATED UNTIL PIPELINE IS READY FOR INSTALLATION AND SHALL BE BACKFILLED IN SAME DAY AS PIPE INSTALLATION IN THIS AREA. ALL OPEN DITCHES SHALL BE BARRICADED/FENCED OFF OR PLATED WHEN CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.
6. IMMEDIATELY AFTER BACKFILLING THE TRENCH, ALL LAWN AND LANDSCAPING WILL BE RESTORED TO FINAL RESTORATION, OR TEMPORARY RESTORATION PENDING WEATHER AND SOIL CONDITIONS. IF SEASONAL OR WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES, TEMPORARY EROSION CONTROLS MUST BE MONITORED AND MAINTAINED UNTIL CONDITIONS ALLOW COMPLETION OF RESTORATION.
7. CONTRACTOR SHALL UTILIZE WATER TRUCKS AS NECESSARY TO MINIMIZE FUGITIVE DUST FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES/BUSINESSES.
8. ACCESS TO RESIDENCES BY CAR WILL BE MAINTAINED AT ALL TIMES, OR OTHER ACCOMMODATIONS WILL BE MADE WITH EACH RESPECTIVE LANDOWNER.
9. CONTRACTOR SHALL MAINTAIN AGREED UPON ACCESS TO THE IMPACTED AREA DURING CONSTRUCTION.
10. CONTRACTOR SHALL LIMIT WORK IN THIS AREA TO DAYLIGHT HOURS, UNLESS OTHERWISE AGREED UPON WITH LANDOWNER/OCCUPANT.
11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.
12. NO REFUELING OR FUEL STORAGE IS AUTHORIZED WITHIN 200' OF A WELL.
13. SAFETY FENCE MAY BE OMITTED IN AREAS WHERE FENCING IS PRE-EXISTING.

ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MICHAEL BERT MACDONALD
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-0105
INFO@MCDTMAC.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FORDIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-A-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
MINERAL COUNTY, WEST VIRGINIA

DRAWN BY	DATE	DRAWING NUMBER	SHEET	ISSUE
RPM	09/2017	D7261-RSD-001	1	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-002	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
2. A MINIMUM OF 25 FEET WILL BE MAINTAINED BETWEEN THE RESIDENCE AND CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF THE RESIDENCE. IF THE FACILITY MUST BE WITHIN 25 FEET OF A RESIDENCE, IT MUST BE INSTALLED SUCH THAT THE TRENCH DOES NOT REMAIN OPEN OVERNIGHT.
3. MATURE TREES AND LANDSCAPING WILL NOT BE REMOVED FROM WITHIN THE EDGE OF THE CONSTRUCTION WORK AREA UNLESS NECESSARY FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT OR AS SPECIFIED IN LANDOWNER AGREEMENTS.
4. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
5. TRENCH SHALL NOT BE EXCAVATED UNTIL PIPELINE IS READY FOR INSTALLATION AND SHALL BE BACKFILLED IN SAME DAY AS PIPE INSTALLATION IN THIS AREA. ALL OPEN DITCHES SHALL BE BARRICADED/FENCED OFF OR PLATED WHEN CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.
6. IMMEDIATELY AFTER BACKFILLING THE TRENCH, ALL LAWN AND LANDSCAPING WILL BE RESTORED TO FINAL RESTORATION, OR TEMPORARY RESTORATION PENDING WEATHER AND SOIL CONDITIONS. IF SEASONAL OR WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES, TEMPORARY EROSION CONTROLS MUST BE MONITORED AND MAINTAINED UNTIL CONDITIONS ALLOW COMPLETION OF RESTORATION.
7. CONTRACTOR SHALL UTILIZE WATER TRUCKS AS NECESSARY TO MINIMIZE FUGITIVE DUST FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES/BUSINESSES.
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11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.
12. NO REFUELING OR FUEL STORAGE IS AUTHORIZED WITHIN 200' OF A WELL.
13. SAFETY FENCE MAY BE OMITTED IN AREAS WHERE FENCING IS PRE-EXISTING.

ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MDCI MACDONALD
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-0100
INFO@MCDTMAC.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FOREIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-AL-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SS SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

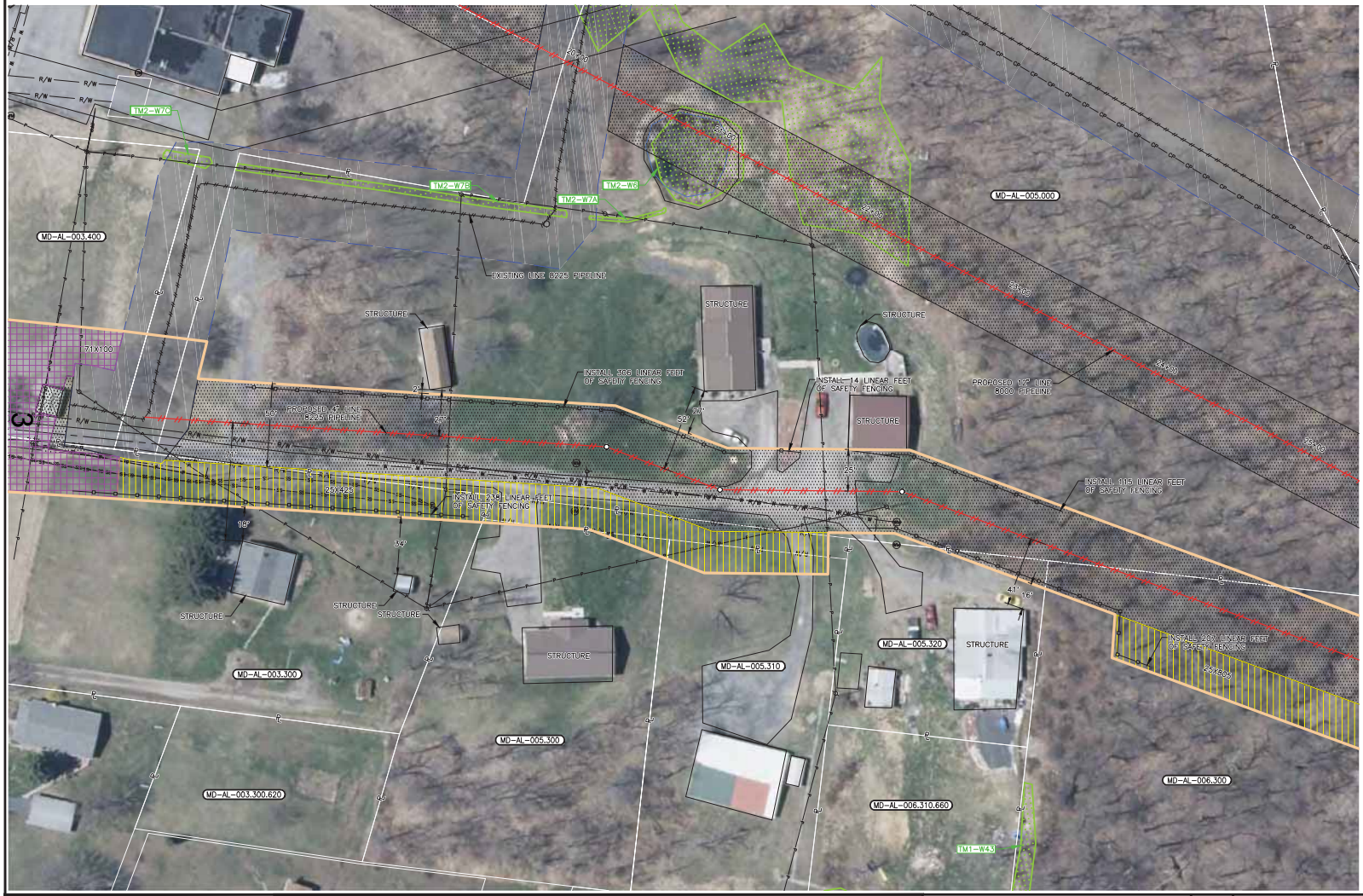
TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
RPM	09/2017	D7261-RSD-002	2	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-003	B

ALLEGANY COUNTY, MARYLAND



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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MDEC MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-0100
INFO@MDCTINAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FOREIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
PROPOSED PERMANENT EASEMENT	TEMPORARY WORKSPACE	ADDITIONAL TEMPORARY WORKSPACE	ACCESS ROAD	MD-AL-001.000 PROPERTY TRACT NUMBER	PAR-001 ACCESS ROAD NUMBER	XXX-WXX WETLAND ID	XXX-XXXX WATERBODY ID	LIMIT OF DISTURBANCE	UNDERGROUND CABLE	CABLE LINE	WATERLINE
SEWER LINE	SAFETY FENCE	WETLAND	WATERBODY								

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
RPM	09/2017	D7261-RSD-003	3	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-004	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MICHAEL BERGER MCDONALD
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-0100
INFO@MCDTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FOREIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
PROPOSED PERMANENT EASEMENT	TEMPORARY WORKSPACE	ADDITIONAL TEMPORARY WORKSPACE	ACCESS ROAD	MD-AL-001.000 PROPERTY TRACT NUMBER	PAR-001 ACCESS ROAD NUMBER	XXX-WXX WETLAND ID	XXX-XXXX WATERBODY ID	LIMIT OF DISTURBANCE	UNDERGROUND CABLE	CABLE LINE	WATERLINE
SEWER LINE	SAFETY FENCE	WETLAND	WATERBODY								

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
9	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
RPM	09/2017	D7261-RSD-004	4	B

PROJECT CODE: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-005	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

M MOTT MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-6100
INFO@MOTTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	FOREIGN PIPELINE	MAINLINE VALVE (MLV)	PROPOSED PERMANENT EASEMENT	MD-AL-001.000	PROPERTY TRACT NUMBER	LIMIT OF DISTURBANCE	SS	SEWER LINE
	PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD	TEMPORARY WORKSPACE	PAR-001	ACCESS ROAD NUMBER	U UNDERGROUND CABLE		SAFETY FENCE
	EXISTING COLUMBIA PIPELINE	FENCE	EXISTING PERMANENT EASEMENT	ADDITIONAL TEMPORARY WORKSPACE	XXX-WXX	WETLAND ID	CABLE LINE		WETLAND
		P OVERHEAD POWER LINE	CONTRACTOR / PIPE YARD	ACCESS ROAD	XXX-XXXX	WATERBODY ID	WATERLINE		WATERBODY

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

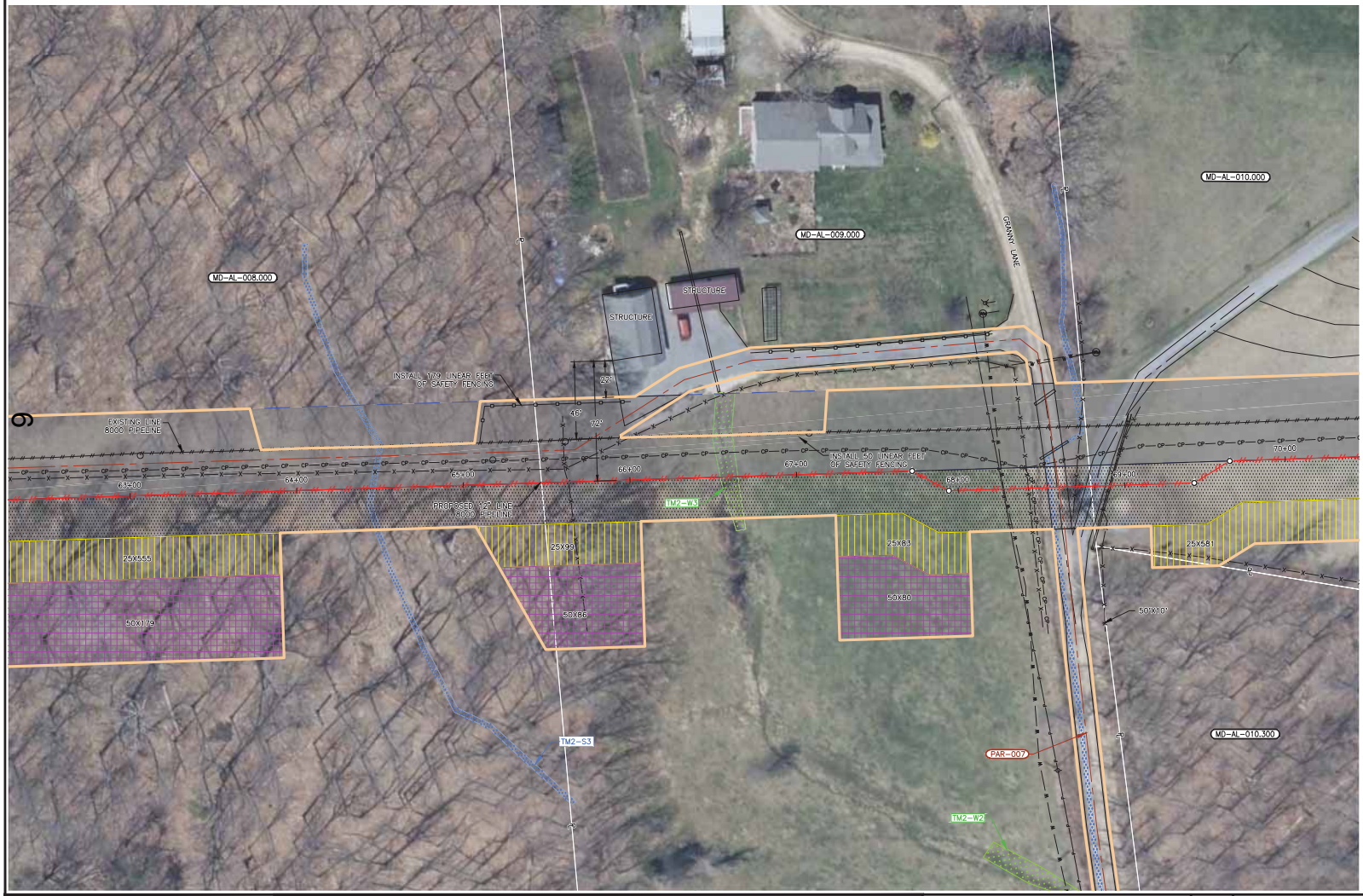
TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
RPM	09/2017	D7261-RSD-005	5	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-006	B

ALLEGANY COUNTY, MARYLAND



DESCRIPTION

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ISSUED FOR BID
DATE: 07/2018

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WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-6100
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LEGEND

MILEPOST	PIPELINE MARKER	FOREIGN PIPELINE	MAINLINE VALVE (MLV)	PROPOSED PERMANENT EASEMENT	MD-AL-001.000	PROPERTY TRACT NUMBER	LIMIT OF DISTURBANCE	SS	SEWER LINE
	PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD	TEMPORARY WORKSPACE	PAR-001	ACCESS ROAD NUMBER	UNDERGROUND CABLE		SAFETY FENCE
	EXISTING COLUMBIA PIPELINE	FENCE	EXISTING PERMANENT EASEMENT	ADDITIONAL TEMPORARY WORKSPACE	XXX-WXX	WETLAND ID	CABLE LINE		WETLAND
		OVERHEAD POWER LINE	CONTRACTOR / PIPE YARD	ACCESS ROAD	XXX-XXXX	WATERBODY ID	WATERLINE		WATERBODY

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
RPM	09/2017	D7261-RSD-006	6	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-007	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MICHAEL BERGER MCDONALD
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-0100
INFO@MCBMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FOREIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
PROPOSED PERMANENT EASEMENT	TEMPORARY WORKSPACE	ADDITIONAL TEMPORARY WORKSPACE	ACCESS ROAD	MD-AL-001.000 PROPERTY TRACT NUMBER	PAR-001 ACCESS ROAD NUMBER	XXX-WXX WETLAND ID	XXX-XXXX WATERBODY ID	LIMIT OF DISTURBANCE	UNDERGROUND CABLE	CABLE LINE	WATERLINE
SEWER LINE	SAFETY FENCE	WETLAND	WATERBODY								

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
ACS	09/2017	D7261-RSD-007	7	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-008	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

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DATE: 07/2018

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MICHAEL BERRY MCDONALD
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-0100
INFO@MCDTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	FOREIGN PIPELINE	MAINLINE VALVE (MLV)	PROPOSED PERMANENT EASEMENT	MD-AL-001.000	PROPERTY TRACT NUMBER	LIMIT OF DISTURBANCE	SS	SEWER LINE
	PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD	TEMPORARY WORKSPACE	PAR-001	ACCESS ROAD NUMBER	U UNDERGROUND CABLE		SAFETY FENCE
	EXISTING COLUMBIA PIPELINE	FENCE	EXISTING PERMANENT EASEMENT	ADDITIONAL TEMPORARY WORKSPACE	XXX-WXX	WETLAND ID	C CABLE LINE		WETLAND
		P OVERHEAD POWER LINE	CONTRACTOR / PIPE YARD	ACCESS ROAD	XXX-XXXX	WATERBODY ID	WATERLINE		WATERBODY

SCALE: 1" = 30'
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B	ISSUED FOR BID	MM	07/2018

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No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

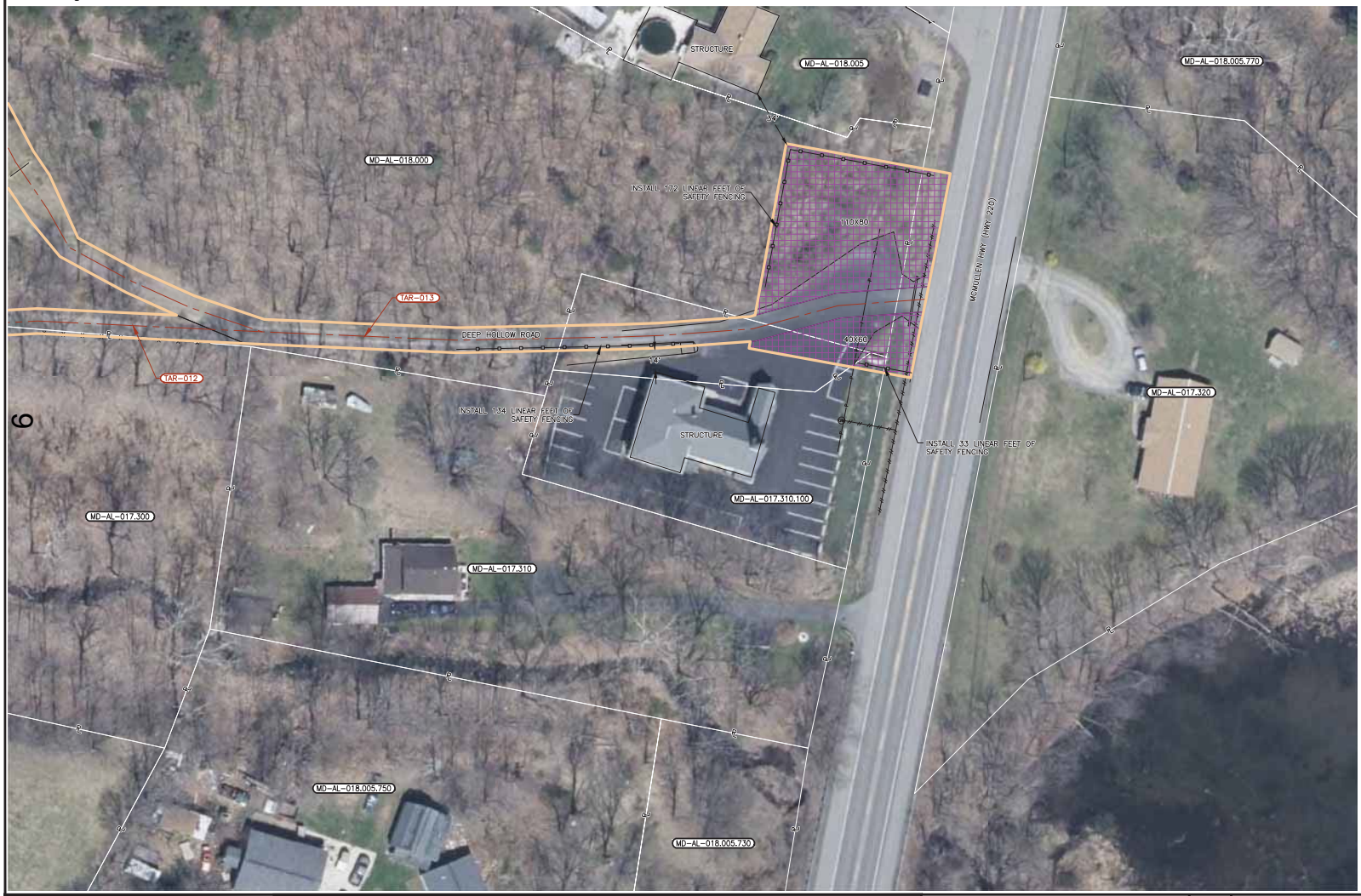
TITLE RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
ACS	09/2017	D7261-RSD-008	8	B

PROJECT NUMBER M.000688.2
WORK ORDER NUMBER 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-009	B

ALLEGANY COUNTY, MARYLAND



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DATE: 07/2018

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M MOTT MACDONALD
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-6100
INFO@MOTTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FOREIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
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SCALE: 1" = 30'
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8	ISSUED FOR BID	MM	07/2018

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DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC

ALLEGANY COUNTY, MARYLAND

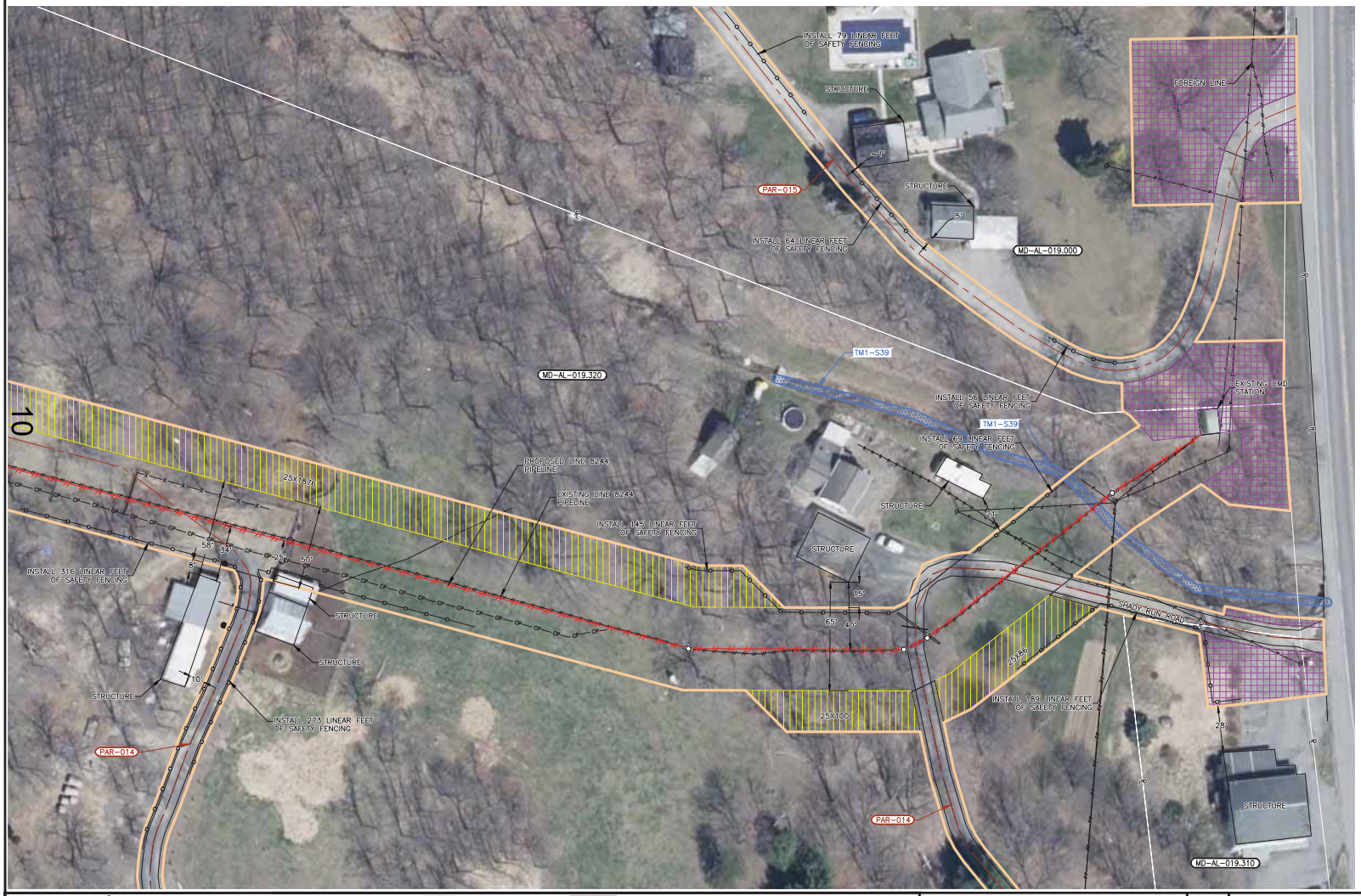
DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-009	9	B

PROJECT NUMBER M.000688.2
WORK ORDER NUMBER 5120949

9

DRAWING NUMBER	ISSUE
D7261-RSD-010	B

ALLEGANY COUNTY, MARYLAND



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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

M MOTT MACDONALD
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-0100
INFO@MOTTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	FOREIGN PIPELINE	MAINLINE VALVE (MLV)	PROPOSED PERMANENT EASEMENT	MD-AL-001.000	PROPERTY TRACT NUMBER	LIMIT OF DISTURBANCE	SS SEWER LINE
	PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD	TEMPORARY WORKSPACE	PAR-001	ACCESS ROAD NUMBER	U UNDERGROUND CABLE	SAFETY FENCE
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SCALE: 1" = 30'
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No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-010	10	B

PROJECT NUMBER M.000688.2
WORK ORDER NUMBER 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-011	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

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LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FOREIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
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SCALE: 1" = 30'
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9	ISSUED FOR BID	MM	07/2018

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DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC

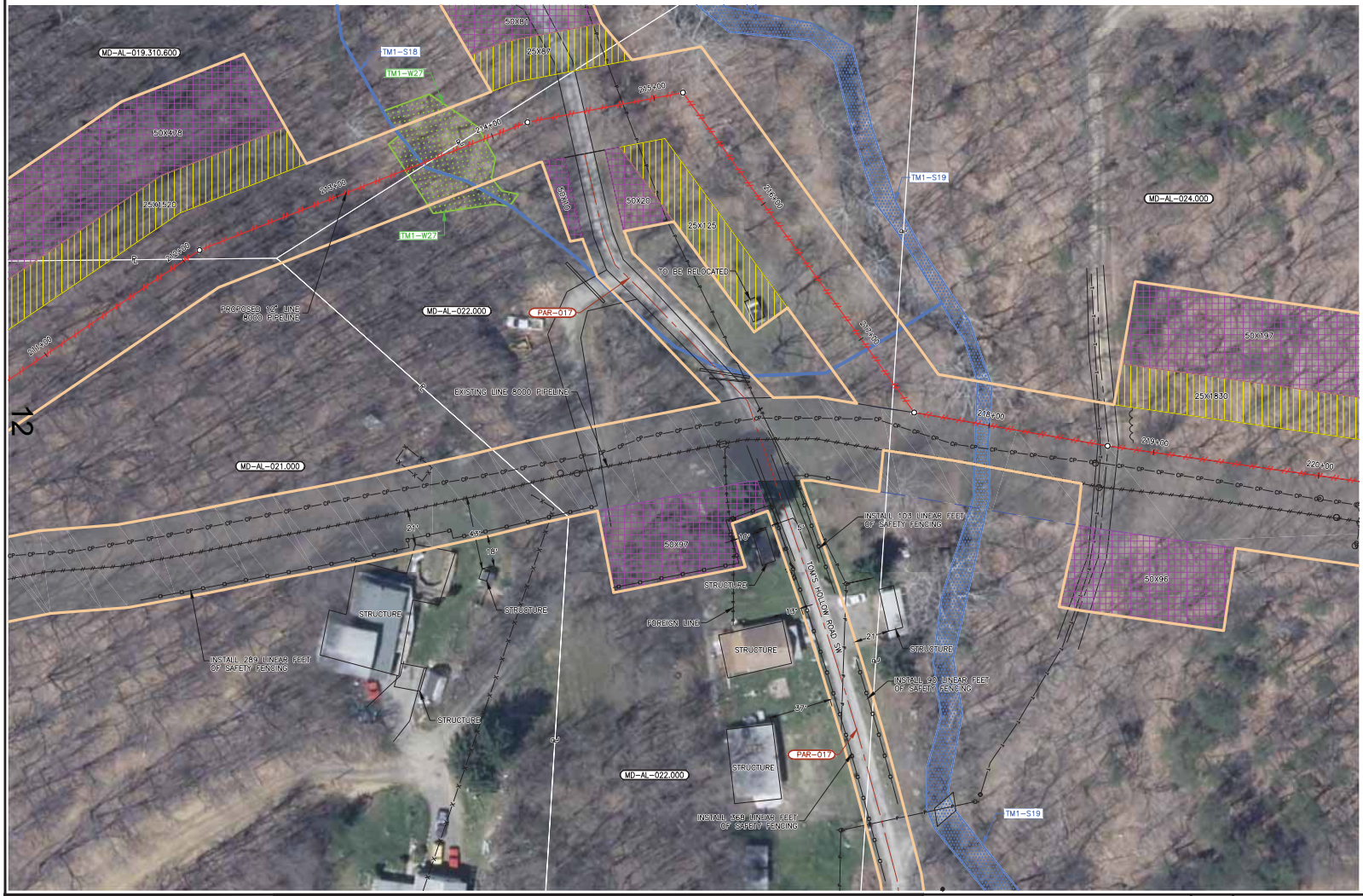
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-011	11	B

PROJECT NUMBER M.000688.2
WORK ORDER NUMBER 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-012	B

ALLEGANY COUNTY, MARYLAND



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134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-6100
INFO@MOTTMAC.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FOREIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-AL-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID		07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY	DATE	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-012	12	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-013	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
2. A MINIMUM OF 25 FEET WILL BE MAINTAINED BETWEEN THE RESIDENCE AND CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF THE RESIDENCE. IF THE FACILITY MUST BE WITHIN 25 FEET OF A RESIDENCE, IT MUST BE INSTALLED SUCH THAT THE TRENCH DOES NOT REMAIN OPEN OVERNIGHT.
3. MATURE TREES AND LANDSCAPING WILL NOT BE REMOVED FROM WITHIN THE EDGE OF THE CONSTRUCTION WORK AREA UNLESS NECESSARY FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT OR AS SPECIFIED IN LANDOWNER AGREEMENTS.
4. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
5. TRENCH SHALL NOT BE EXCAVATED UNTIL PIPELINE IS READY FOR INSTALLATION AND SHALL BE BACKFILLED IN SAME DAY AS PIPE INSTALLATION IN THIS AREA. ALL OPEN DITCHES SHALL BE BARRICADED/FENCED OFF OR PLATED WHEN CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.
6. IMMEDIATELY AFTER BACKFILLING THE TRENCH, ALL LAWN AND LANDSCAPING WILL BE RESTORED TO FINAL RESTORATION, OR TEMPORARY RESTORATION PENDING WEATHER AND SOIL CONDITIONS. IF SEASONAL OR WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES, TEMPORARY EROSION CONTROLS MUST BE MONITORED AND MAINTAINED UNTIL CONDITIONS ALLOW COMPLETION OF RESTORATION.
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11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.
12. NO REFUELING OR FUEL STORAGE IS AUTHORIZED WITHIN 200' OF A WELL.
13. SAFETY FENCE MAY BE OMITTED IN AREAS WHERE FENCING IS PRE-EXISTING.

ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

M MOTT MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-6100
INFO@MOTTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	FOREIGN PIPELINE	MAINLINE VALVE (MLV)	PROPOSED PERMANENT EASEMENT	MD-AL-001.000	PROPERTY TRACT NUMBER	LIMIT OF DISTURBANCE	SS	SEWER LINE
	PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD	TEMPORARY WORKSPACE	PAR-001	ACCESS ROAD NUMBER	U UNDERGROUND CABLE		SAFETY FENCE
	EXISTING COLUMBIA PIPELINE	FENCE	EXISTING PERMANENT EASEMENT	ADDITIONAL TEMPORARY WORKSPACE	XXX-WXX	WETLAND ID	CABLE LINE		WETLAND
		P OVERHEAD POWER LINE	CONTRACTOR / PIPE YARD	ACCESS ROAD	XXX-XXXX	WATERBODY ID	WATERLINE		WATERBODY

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-013	13	B

PROJECT NUMBER M.000688.2
WORK ORDER NUMBER 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-014	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MDM MICHAEL DEVONALD
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-2125
INFO@MDMTMAC.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FOREIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-AL-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SS SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-014	14	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-015	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MDEC MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-0100
INFO@MCDTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	FOREIGN PIPELINE	MAINLINE VALVE (MLV)
	PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD
	EXISTING COLUMBIA PIPELINE	FENCE	EXISTING PERMANENT EASEMENT
		OVERHEAD POWER LINE	CONTRACTOR / PIPE YARD

PROPOSED PERMANENT EASEMENT	MD-AL-001.000 PROPERTY TRACT NUMBER	LIMIT OF DISTURBANCE	SEWER LINE
TEMPORARY WORKSPACE	PAR-001 ACCESS ROAD NUMBER	UNDERGROUND CABLE	SAFETY FENCE
ADDITIONAL TEMPORARY WORKSPACE	XXX-WXX WETLAND ID	CABLE LINE	WETLAND
ACCESS ROAD	XXX-XXXX WATERBODY ID	WATERLINE	WATERBODY

SCALE: 1" = 30'

30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC

ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-015	15	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-016	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

M MOTT MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-4100
INFO@MOTTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FOREIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
PROPOSED PERMANENT EASEMENT	TEMPORARY WORKSPACE	ADDITIONAL TEMPORARY WORKSPACE	ACCESS ROAD	MD-AL-001.000 PROPERTY TRACT NUMBER	PAR-001 ACCESS ROAD NUMBER	XXX-WXX WETLAND ID	XXX-XXXX WATERBODY ID	LIMIT OF DISTURBANCE	UNDERGROUND CABLE	CABLE LINE	WATERLINE
SEWER LINE	SAFETY FENCE	WETLAND	WATERBODY								

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
9	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC

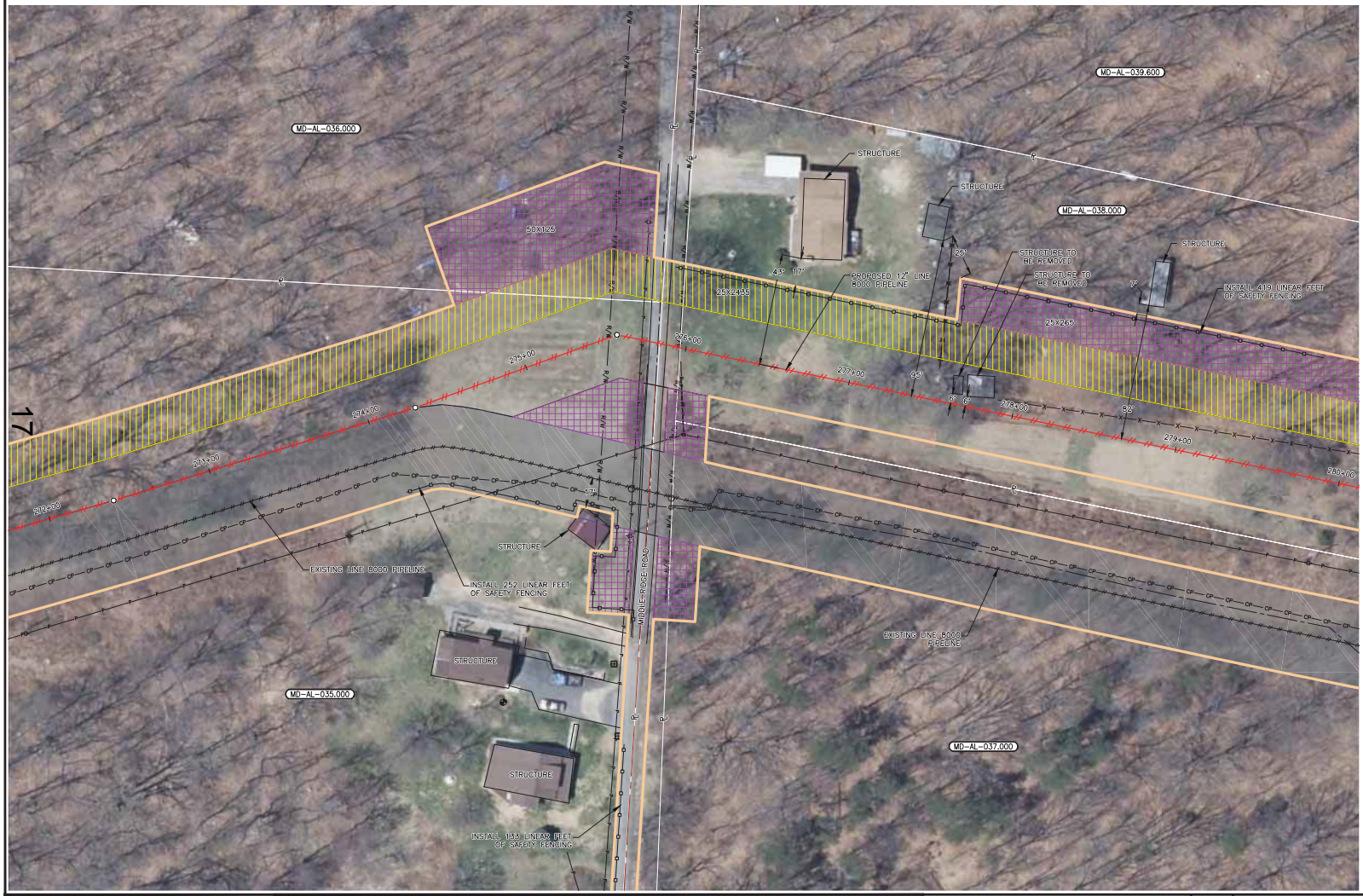
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-016	16	B

PROJECT NUMBER M.000688.2
WORK ORDER NUMBER 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-017	B

ALLEGANY COUNTY, MARYLAND



DESCRIPTION

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DATE: 07/2018

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M MOTT MACDONALD
134 CAPITAL DRIVE, SUITE C
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-0100
INFO@MOTTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FOREIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
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SCALE: 1" = 30'
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No.	REVISIONS	APPROVED BY	DATE
9	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY	DATE	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-017	17	B

PROJECT NUMBER M.000688.2
WORK ORDER NUMBER 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-018	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

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6. IMMEDIATELY AFTER BACKFILLING THE TRENCH, ALL LAWN AND LANDSCAPING WILL BE RESTORED TO FINAL RESTORATION, OR TEMPORARY RESTORATION PENDING WEATHER AND SOIL CONDITIONS. IF SEASONAL OR WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES, TEMPORARY EROSION CONTROLS MUST BE MONITORED AND MAINTAINED UNTIL CONDITIONS ALLOW COMPLETION OF RESTORATION.
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10. CONTRACTOR SHALL LIMIT WORK IN THIS AREA TO DAYLIGHT HOURS, UNLESS OTHERWISE AGREED UPON WITH LANDOWNER/OCCUPANT.
11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.
12. NO REFUELING OR FUEL STORAGE IS AUTHORIZED WITHIN 200' OF A WELL.
13. SAFETY FENCE MAY BE OMITTED IN AREAS WHERE FENCING IS PRE-EXISTING.

ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MICHAEL BERT MCDONALD
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-0155
INFO@MCBTINAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	FOREIGN PIPELINE	MAINLINE VALVE (MLV)
	PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD
	EXISTING COLUMBIA PIPELINE	FENCE	EXISTING PERMANENT EASEMENT
		OVERHEAD POWER LINE	CONTRACTOR / PIPE YARD

PROPOSED PERMANENT EASEMENT	MD-AL-001.000 PROPERTY TRACT NUMBER	LIMIT OF DISTURBANCE	SS SEWER LINE
TEMPORARY WORKSPACE	PAR-001 ACCESS ROAD NUMBER	U UNDERGROUND CABLE	SAFETY FENCE
ADDITIONAL TEMPORARY WORKSPACE	XXX-WXX WETLAND ID	C CABLE LINE	WETLAND
ACCESS ROAD	XXX-XXXX WATERBODY ID	WATERLINE	WATERBODY

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018								

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-018	18	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-019	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

M MICHAEL BAKER INTERNATIONAL
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-2100
INFO@MICHAELBAKER.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FOREIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-AL-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-019	19	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-020	B

ALLEGANY COUNTY, MARYLAND

20

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MDM MICHAEL DONALD MARTIN
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-0100
INFO@MDMTINAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FORDIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
PROPOSED PERMANENT EASEMENT	TEMPORARY WORKSPACE	ADDITIONAL TEMPORARY WORKSPACE	ACCESS ROAD	MD-AL-001.000 PROPERTY TRACT NUMBER	PAR-001 ACCESS ROAD NUMBER	XXX-WXX WETLAND ID	XXX-XXXX WATERBODY ID	LIMIT OF DISTURBANCE	UNDERGROUND CABLE	CABLE LINE	WATERLINE
SEWER LINE	SAFETY FENCE	WETLAND	WATERBODY								

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
8	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC

ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-020	20	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-021	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MOTT MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-6100
INFO@MOTTMAC.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FOREIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-AL-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-021	21	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-022	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MDEV MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-2100
INFO@MDEVTRIAD.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FOREIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-AL-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-022	22	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-023	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MICHAEL BERGER MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-0100
INFO@MCDTMAC.COM

LEGEND

PIPELINE MARKER	FOREIGN PIPELINE	MAINLINE VALVE (MLV)	PROPOSED PERMANENT EASEMENT
PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD	TEMPORARY WORKSPACE
EXISTING COLUMBIA PIPELINE	FENCE	EXISTING PERMANENT EASEMENT	ADDITIONAL TEMPORARY WORKSPACE
MILEPOST	OVERHEAD POWER LINE	CONTRACTOR / PIPE YARD	ACCESS ROAD

MD-AL-001.000 PROPERTY TRACT NUMBER	LIMIT OF DISTURBANCE	SS SEWER LINE	
PAR-001 ACCESS ROAD NUMBER	U UNDERGROUND CABLE	SAFETY FENCE	
XXX-WXX WETLAND ID	C CABLE LINE	WETLAND	
XXX-XXXX WATERBODY ID	WATERLINE	WATERBODY	

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC

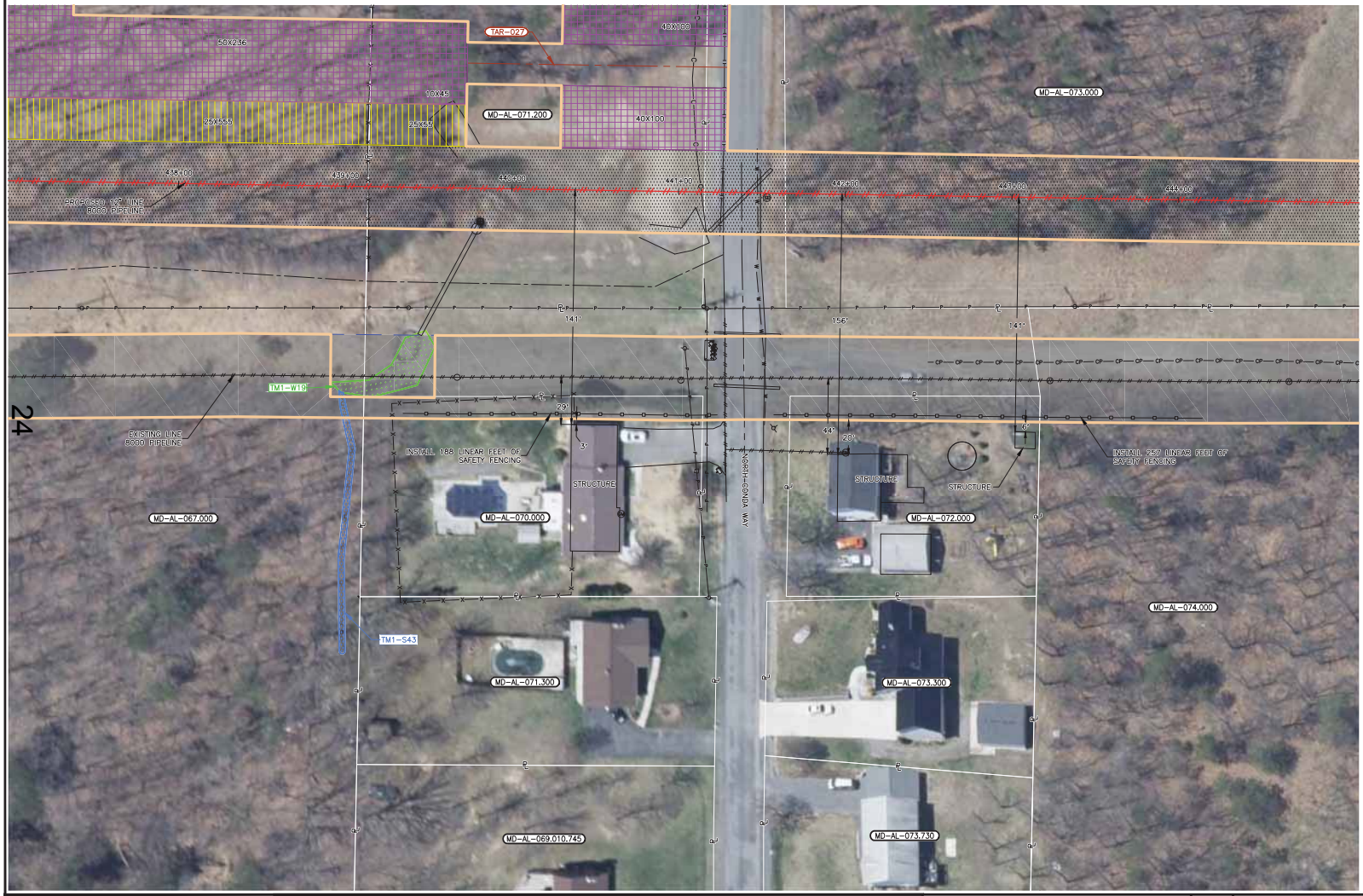
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
KSS	09/2017	D7261-RSD-023	23	B

PROJECT NUMBER M.000688.2
WORK ORDER NUMBER 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-024	B

ALLEGANY COUNTY, MARYLAND



DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
2. A MINIMUM OF 25 FEET WILL BE MAINTAINED BETWEEN THE RESIDENCE AND CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF THE RESIDENCE. IF THE FACILITY MUST BE WITHIN 25 FEET OF A RESIDENCE, IT MUST BE INSTALLED SUCH THAT THE TRENCH DOES NOT REMAIN OPEN OVERNIGHT.
3. MATURE TREES AND LANDSCAPING WILL NOT BE REMOVED FROM WITHIN THE EDGE OF THE CONSTRUCTION WORK AREA UNLESS NECESSARY FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT OR AS SPECIFIED IN LANDOWNER AGREEMENTS.
4. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
5. TRENCH SHALL NOT BE EXCAVATED UNTIL PIPELINE IS READY FOR INSTALLATION AND SHALL BE BACKFILLED IN SAME DAY AS PIPE INSTALLATION IN THIS AREA. ALL OPEN DITCHES SHALL BE BARRICADED/FENCED OFF OR PLATED WHEN CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.
6. IMMEDIATELY AFTER BACKFILLING THE TRENCH, ALL LAWN AND LANDSCAPING WILL BE RESTORED TO FINAL RESTORATION, OR TEMPORARY RESTORATION PENDING WEATHER AND SOIL CONDITIONS. IF SEASONAL OR WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES, TEMPORARY EROSION CONTROLS MUST BE MONITORED AND MAINTAINED UNTIL CONDITIONS ALLOW COMPLETION OF RESTORATION.
7. CONTRACTOR SHALL UTILIZE WATER TRUCKS AS NECESSARY TO MINIMIZE FUGITIVE DUST FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES/BUSINESSES.
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11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.
12. NO REFUELING OR FUEL STORAGE IS AUTHORIZED WITHIN 200' OF A WELL.
13. SAFETY FENCE MAY BE OMITTED IN AREAS WHERE FENCING IS PRE-EXISTING.

ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MICHAEL BERGER & ASSOCIATES
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-2100
INFO@MCBTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FORDIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
PROPOSED PERMANENT EASEMENT	TEMPORARY WORKSPACE	ADDITIONAL TEMPORARY WORKSPACE	ACCESS ROAD	MD-AL-001.000	PAR-001	XXX-WXX	XXX-XXXX	PROPERTY TRACT NUMBER	ACCESS ROAD NUMBER	WETLAND ID	WATERBODY ID
LIMIT OF DISTURBANCE	UNDERGROUND CABLE	CABLE LINE	WATERLINE	SEWER LINE	SAFETY FENCE	WETLAND	WATERBODY				

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
9	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC

ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
ACS	09/2017	D7261-RSD-024	24	B

PROJECT NUMBER M.000688.2
WORK ORDER NUMBER 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-025	B

ALLEGANY COUNTY, MARYLAND

25

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MDEC MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-0100
INFO@MDCTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FORDIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
PROPOSED PERMANENT EASEMENT	TEMPORARY WORKSPACE	ADDITIONAL TEMPORARY WORKSPACE	ACCESS ROAD	MD-AL-001.000	PAR-001	XXX-WXX	XXX-XXXX	PROPERTY TRACT NUMBER	ACCESS ROAD NUMBER	WETLAND ID	WATERBODY ID
LIMIT OF DISTURBANCE	UNDERGROUND CABLE	CABLE LINE	WATERLINE	SEWER LINE	SAFETY FENCE	WETLAND	WATERBODY				

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018								

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC

ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
ACS	09/2017	D7261-RSD-025	25	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-026	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MDEV MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-0100
INFO@MDEVTMAC.COM

LEGEND

PIPELINE MARKER	FOREIGN PIPELINE	MAINLINE VALVE (MLV)	PROPOSED PERMANENT EASEMENT
MILEPOST	PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD	TEMPORARY WORKSPACE
	EXISTING COLUMBIA PIPELINE	FENCE	EXISTING PERMANENT EASEMENT	ADDITIONAL TEMPORARY WORKSPACE
		OVERHEAD POWER LINE	CONTRACTOR / PIPE YARD	ACCESS ROAD

MD-AL-001.000	PROPERTY TRACT NUMBER	LIMIT OF DISTURBANCE	SEWER LINE
PAR-001	ACCESS ROAD NUMBER	UNDERGROUND CABLE	SAFETY FENCE
XXX-WXX	WETLAND ID	CABLE LINE	WETLAND
XXX-XXXX	WATERBODY ID	WATERLINE	WATERBODY

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC

ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
ACS	09/2017	D7261-RSD-026	26	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-027	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MDM MOTT MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-6100
INFO@MOTTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FOREIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
PROPOSED PERMANENT EASEMENT	TEMPORARY WORKSPACE	ADDITIONAL TEMPORARY WORKSPACE	ACCESS ROAD	MD-AL-001.000 PROPERTY TRACT NUMBER	PAR-001 ACCESS ROAD NUMBER	XXX-WXX WETLAND ID	XXX-XXXX WATERBODY ID	LIMIT OF DISTURBANCE	UNDERGROUND CABLE	CABLE LINE	WATERLINE
SEWER LINE	SAFETY FENCE	WETLAND	WATERBODY								

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
ACS	09/2017	D7261-RSD-027	27	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-028	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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MDM MOTT MACDONALD
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WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-6100
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LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FOREIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
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SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
9	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC

ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
ACS	09/2017	D7261-RSD-028	28	B

PROJECT NUMBER M.000688.2
WORK ORDER NUMBER 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-030	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

M MICHAEL BERGER & ASSOCIATES McDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-0100
INFO@MCBTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FOREIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
PROPOSED PERMANENT EASEMENT	TEMPORARY WORKSPACE	ADDITIONAL TEMPORARY WORKSPACE	ACCESS ROAD	MD-AL-001.000 PROPERTY TRACT NUMBER	PAR-001 ACCESS ROAD NUMBER	XXX-WXX WETLAND ID	XXX-XXXX WATERBODY ID	LIMIT OF DISTURBANCE	UNDERGROUND CABLE	CABLE LINE	WATERLINE
SS SEWER LINE	SAFETY FENCE	WETLAND	WATERBODY								

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
9	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC

ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
ACS	09/2017	D7261-RSD-030	30	B

PROJECT NUMBER M.000688.2
WORK ORDER NUMBER 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-031	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

M MICHAEL BAKER INTERNATIONAL
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-4100
INFO@MICHAELBAKER.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FORDIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-AL-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

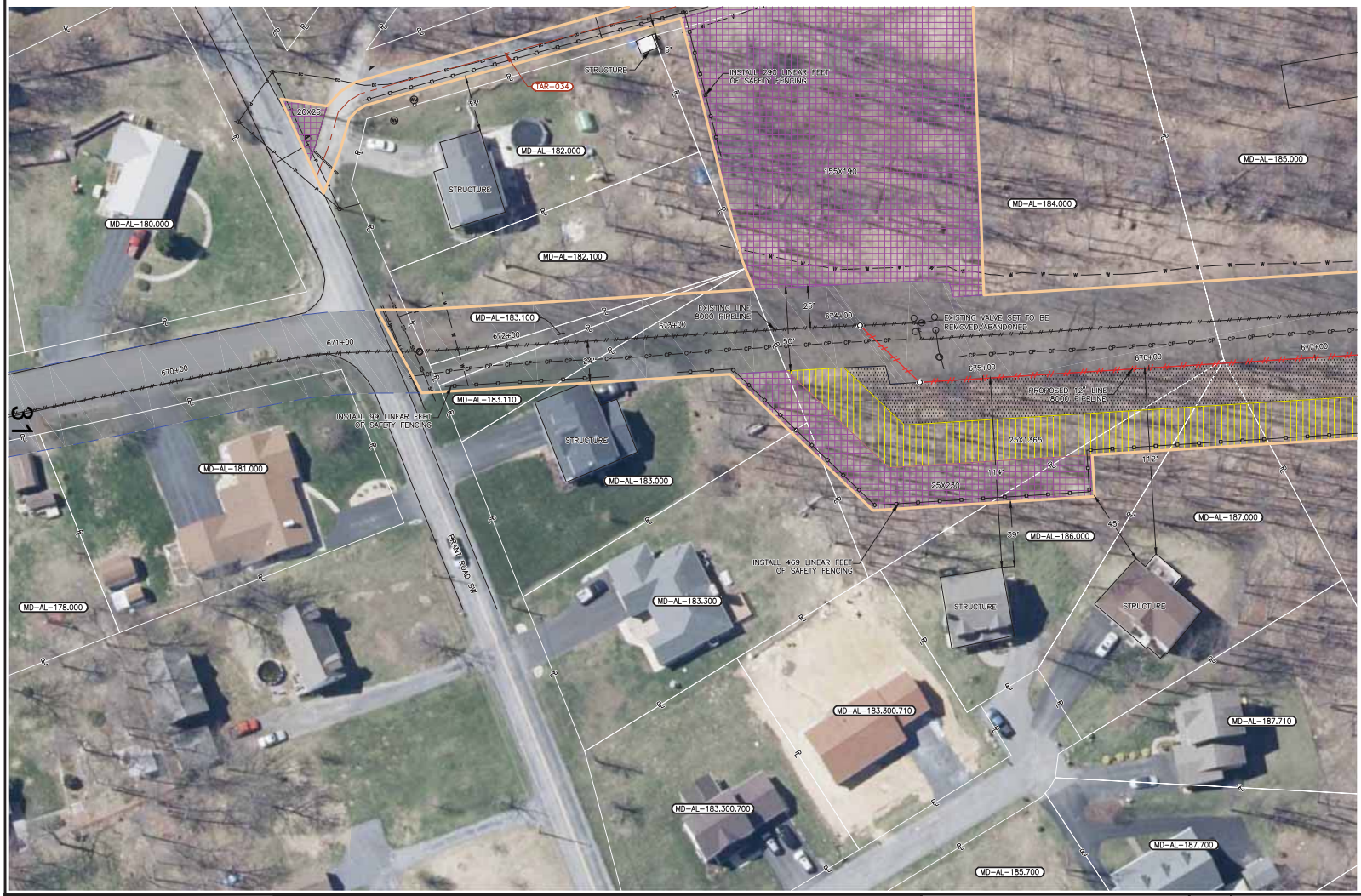
TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
ACS	09/2017	D7261-RSD-031	31	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-032	B

ALLEGANY COUNTY, MARYLAND



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DATE: 07/2018

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MDM MICHAEL DEDONALD
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-0100
INFO@MDMTMAC.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FOREIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-AL-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'

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B	ISSUED FOR BID	MM	07/2018

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No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

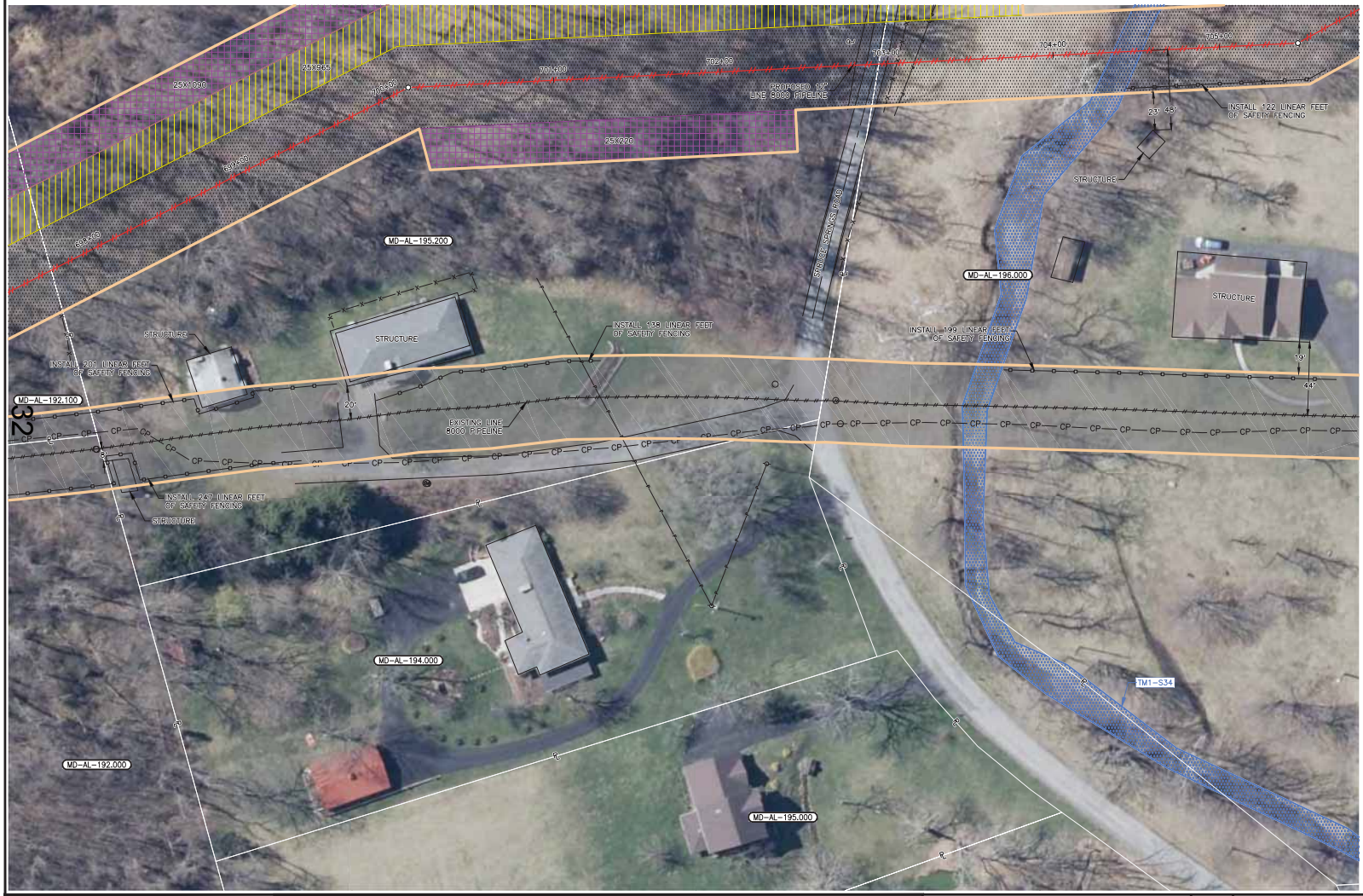
TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY	DATE	DRAWING NUMBER	SHEET	ISSUE
ACS	09/2017	D7261-RSD-032	32	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-033	B

ALLEGANY COUNTY, MARYLAND



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ISSUED FOR BID
DATE: 07/2018

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MDM MOTT MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-6100
INFO@MOTTMAC.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FOREIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-AL-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SS SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

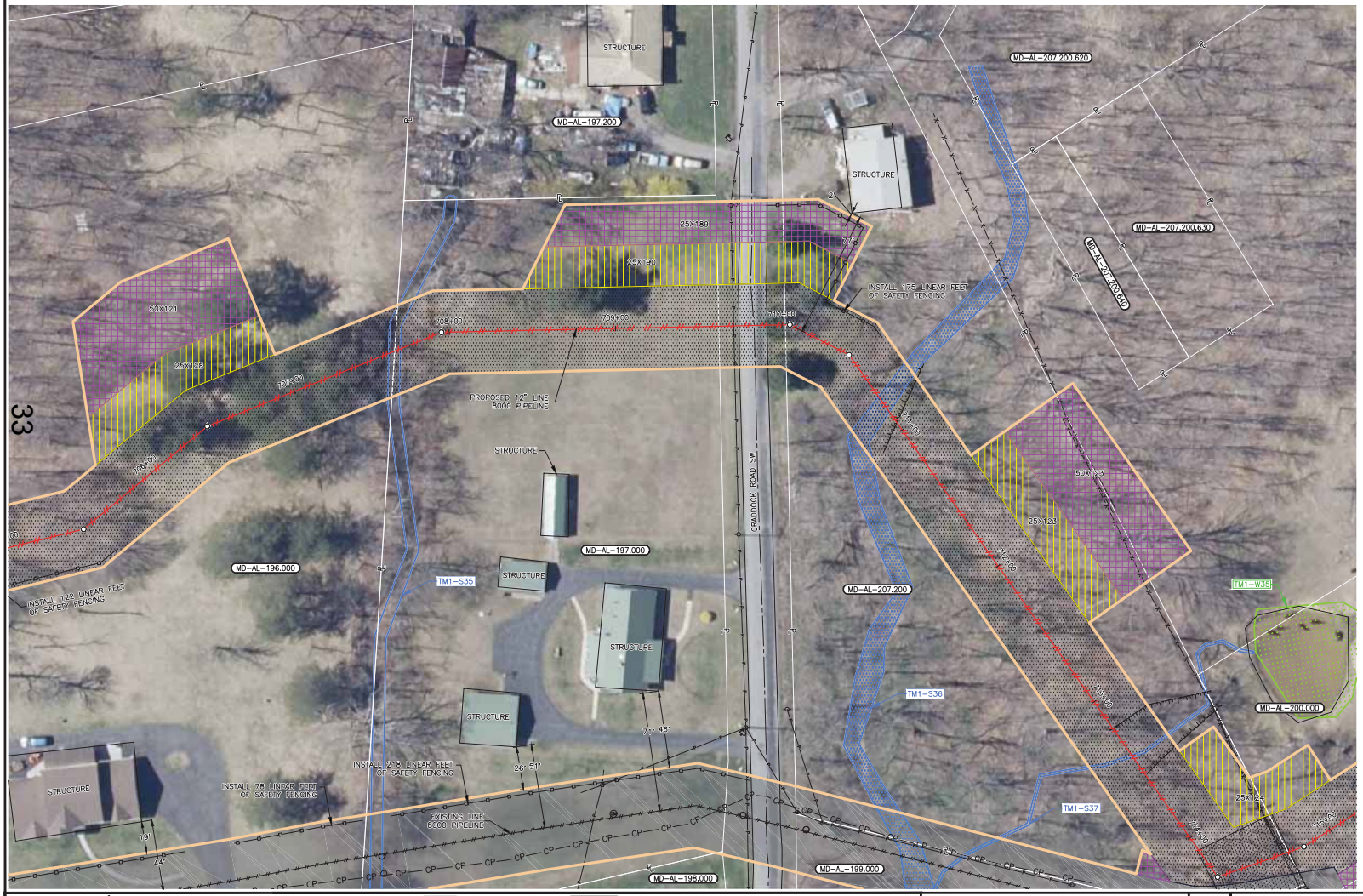
TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
RJW	09/2017	D7261-RSD-033	33	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-034	B

ALLEGANY COUNTY, MARYLAND



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ISSUED FOR BID
DATE: 07/2018

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M — MICHAEL BAKER INTERNATIONAL
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-2103
INFO@MCBTRIAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FOREIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
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SCALE: 1" = 30'
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No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018								

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

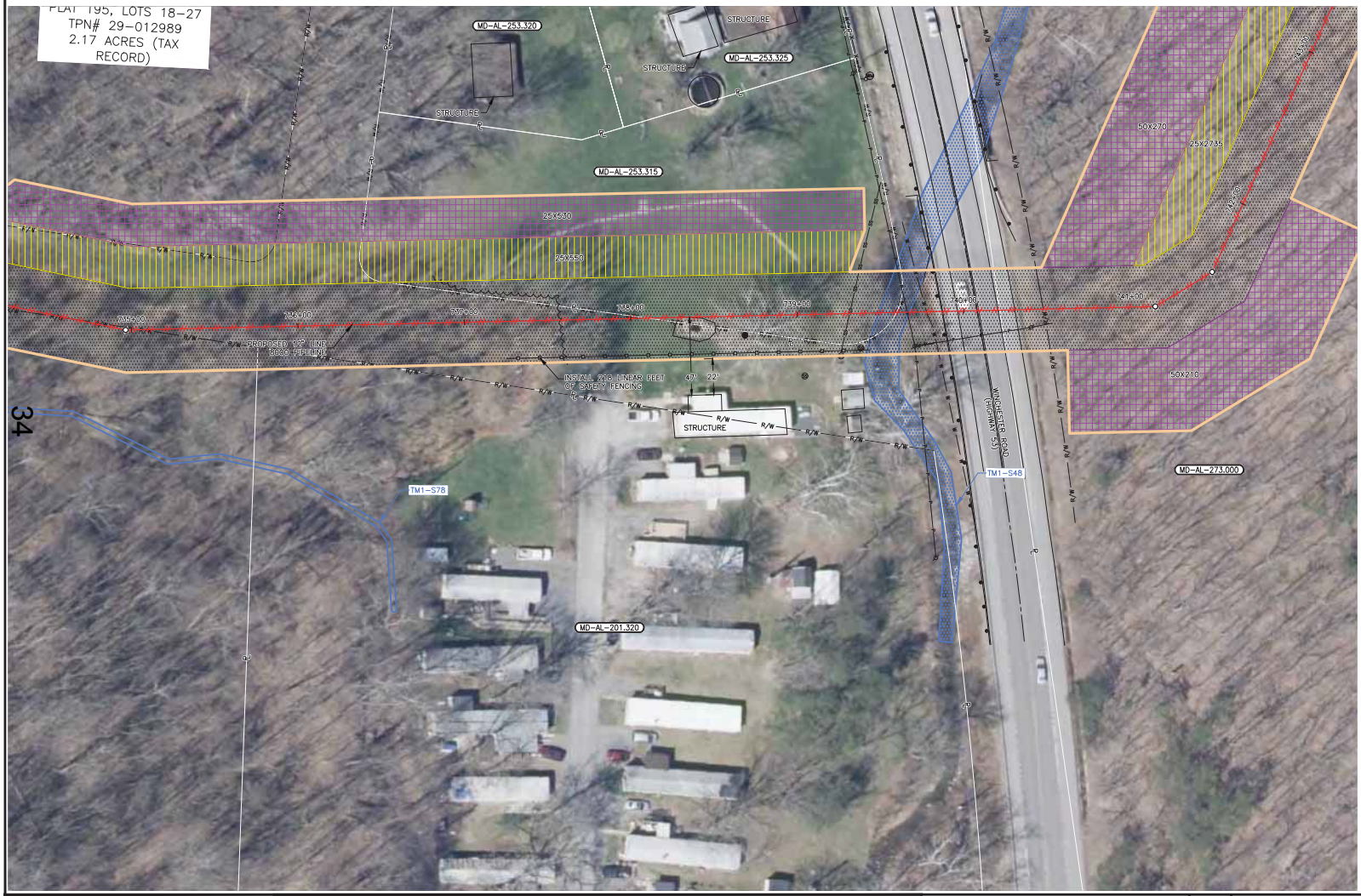
DRAWN BY	DATE	DRAWING NUMBER	SHEET	ISSUE
RJW	09/2017	D7261-RSD-034	34	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

33

DRAWING NUMBER	ISSUE
D7261-RSD-035	B

ALLEGANY COUNTY, MARYLAND



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WEST SPRINGFIELD, MA 01089
UNITED STATES
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LEGEND

MILEPOST	PIPELINE MARKER	FOREIGN PIPELINE	MAINLINE VALVE (MLV)
	PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD
	EXISTING COLUMBIA PIPELINE	FENCE	EXISTING PERMANENT EASEMENT
		OVERHEAD POWER LINE	CONTRACTOR / PIPE YARD
	PROPOSED PERMANENT EASEMENT	MD-AL-001.000 PROPERTY TRACT NUMBER	LIMIT OF DISTURBANCE
	TEMPORARY WORKSPACE	PAR-001 ACCESS ROAD NUMBER	UNDERGROUND CABLE
	ADDITIONAL TEMPORARY WORKSPACE	XXX-WXX WETLAND ID	CABLE LINE
	ACCESS ROAD	XXX-XXXX WATERBODY ID	WATERLINE
			SEWER LINE
			SAFETY FENCE
			WETLAND
			WATERBODY

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

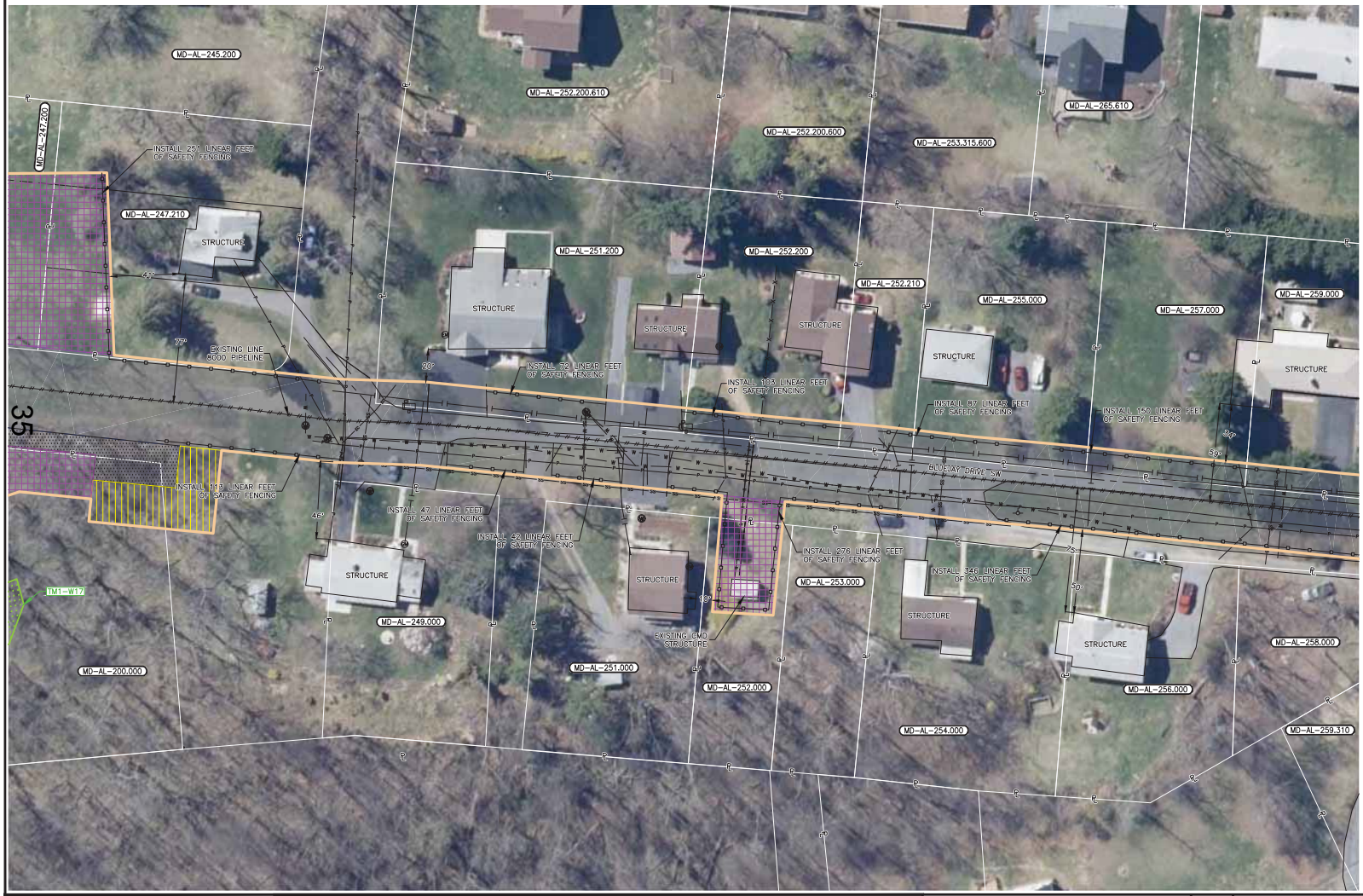
TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
R/W	09/2017	D7261-RSD-035	35	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-036	B

ALLEGANY COUNTY, MARYLAND



DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MICHAEL BERGER MCDONALD
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-0155
INFO@MCDTMAC.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FOREIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-AL-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
RJW	09/2017	D7261–RSD–036	36	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-037	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

M MICHAEL BERGER & ASSOCIATES
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-0100
INFO@MICHTMAC.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FORDIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-AL-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SS SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
RJW	09/2017	D7261-RSD-037	37	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-038	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MICHAEL BERRY MACDONALD
13A CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-0100
INFO@MCDTMAC.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FOREIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-AL-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

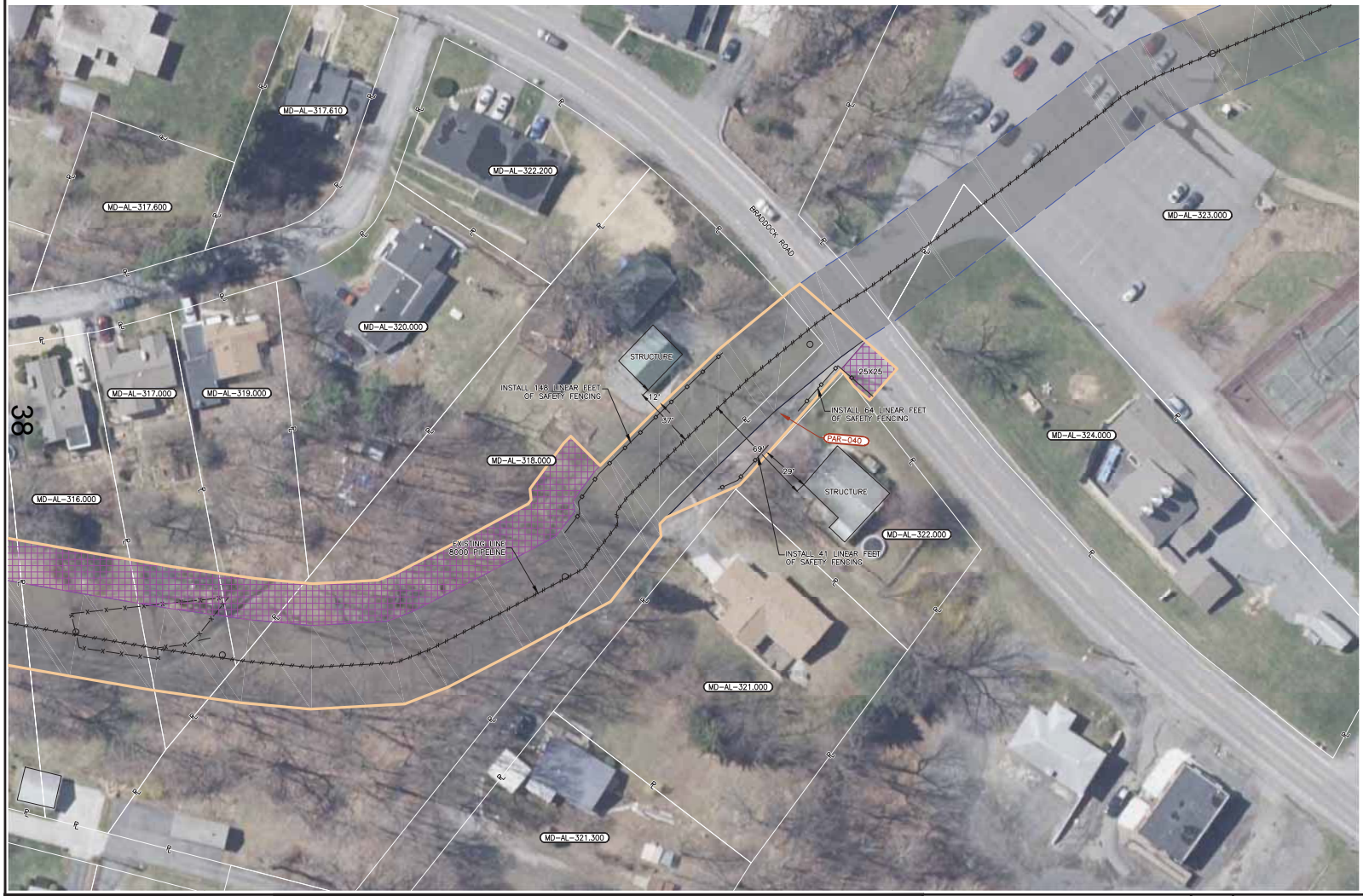
TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
RJW	09/2017	D7261-RSD-038	38	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-039	B

ALLEGANY COUNTY, MARYLAND



38

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

M MOTT MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-2100
INFO@MOTTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	FOREIGN PIPELINE	MAINLINE VALVE (MLV)
	PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD
	EXISTING COLUMBIA PIPELINE	FENCE	EXISTING PERMANENT EASEMENT
		OVERHEAD POWER LINE	CONTRACTOR / PIPE YARD
	PROPOSED PERMANENT EASEMENT	MD-AL-001.000	PROPERTY TRACT NUMBER
	TEMPORARY WORKSPACE	PAR-001	ACCESS ROAD NUMBER
	ADDITIONAL TEMPORARY WORKSPACE	XXX-WXX	WETLAND ID
	ACCESS ROAD	XXX-XXXX	WATERBODY ID
	LIMIT OF DISTURBANCE	SS	SEWER LINE
	UNDERGROUND CABLE		SAFETY FENCE
	CABLE LINE		WETLAND
	WATERLINE		WATERBODY

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
8	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

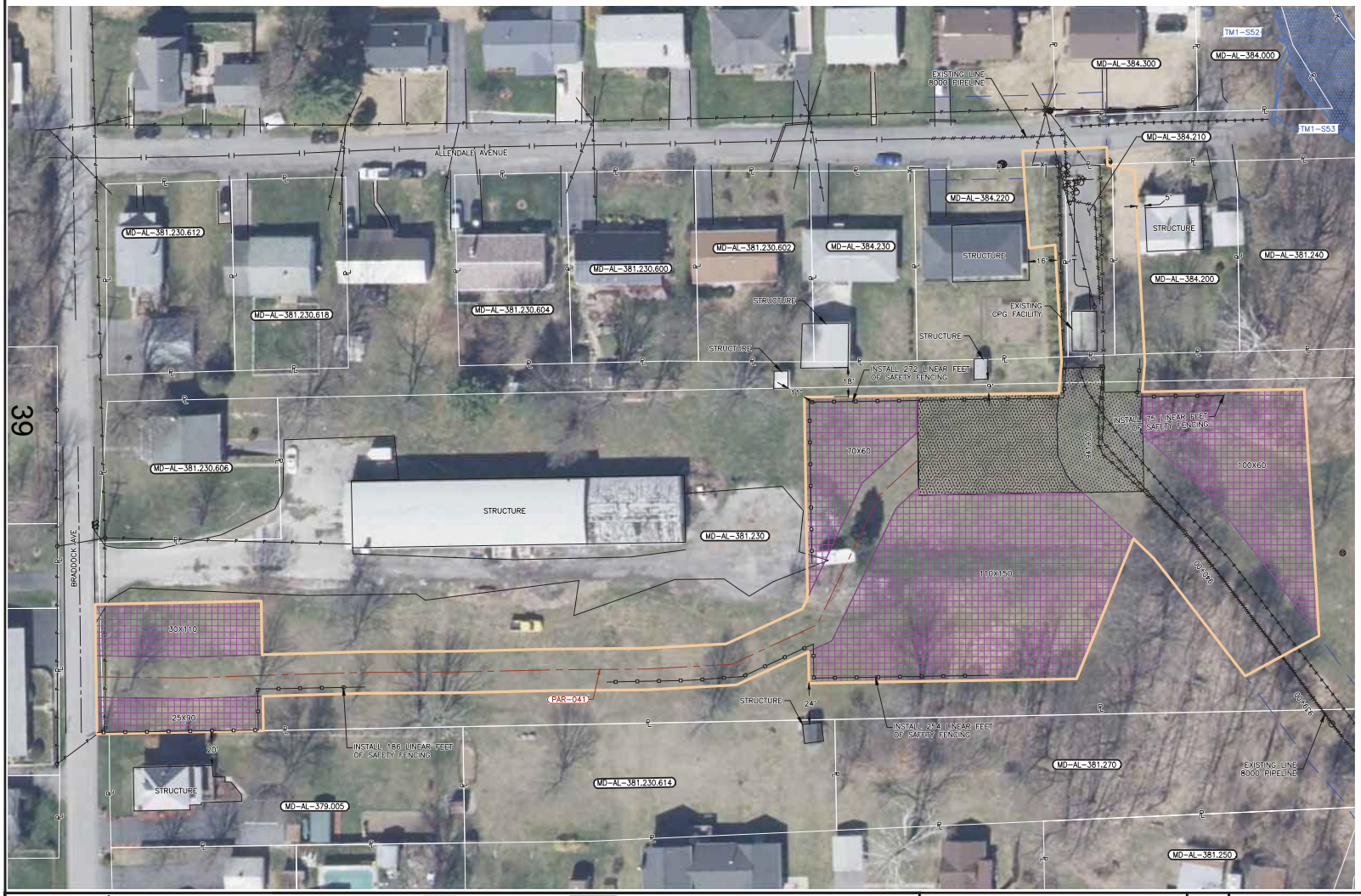
TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
R/W	09/2017	D7261-RSD-039	39	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-041	B

ALLEGANY COUNTY, MARYLAND



39

DESCRIPTION

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

M MOTT MACDONALD — 134 CAPITAL DRIVE, SUITE D, WEST SPRINGFIELD, MA 01089, UNITED STATES, 413-539-6100, INFO@MOTTMAC.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FOREIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-AL-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

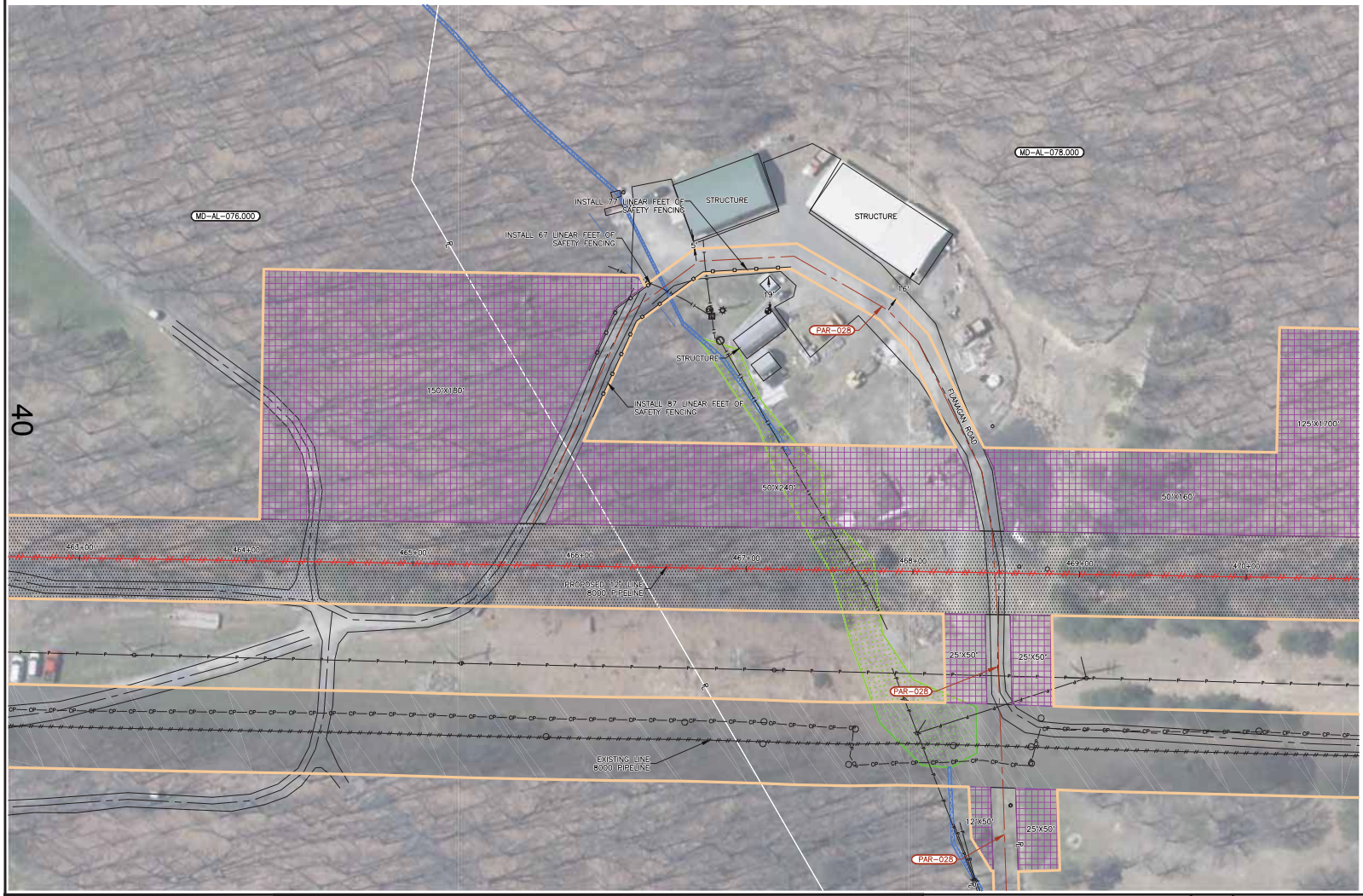
TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY	DATE	DRAWING NUMBER	SHEET	ISSUE
RJW	09/2017	D7261-RSD-041	41	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-042	B

ALLEGANY COUNTY, MARYLAND



40

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
2. A MINIMUM OF 25 FEET WILL BE MAINTAINED BETWEEN THE RESIDENCE AND CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF THE RESIDENCE. IF THE FACILITY MUST BE WITHIN 25 FEET OF A RESIDENCE, IT MUST BE INSTALLED SUCH THAT THE TRENCH DOES NOT REMAIN OPEN OVERNIGHT.
3. MATURE TREES AND LANDSCAPING WILL NOT BE REMOVED FROM WITHIN THE EDGE OF THE CONSTRUCTION WORK AREA UNLESS NECESSARY FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT OR AS SPECIFIED IN LANDOWNER AGREEMENTS.
4. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
5. TRENCH SHALL NOT BE EXCAVATED UNTIL PIPELINE IS READY FOR INSTALLATION AND SHALL BE BACKFILLED IN SAME DAY AS PIPE INSTALLATION IN THIS AREA. ALL OPEN DITCHES SHALL BE BARRICADED/FENCED OFF OR PLATED WHEN CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.
6. IMMEDIATELY AFTER BACKFILLING THE TRENCH, ALL LAWN AND LANDSCAPING WILL BE RESTORED TO FINAL RESTORATION, OR TEMPORARY RESTORATION PENDING WEATHER AND SOIL CONDITIONS. IF SEASONAL OR WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES, TEMPORARY EROSION CONTROLS MUST BE MONITORED AND MAINTAINED UNTIL CONDITIONS ALLOW COMPLETION OF RESTORATION.
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12. NO REFUELING OR FUEL STORAGE IS AUTHORIZED WITHIN 200' OF A WELL.
13. SAFETY FENCE MAY BE OMITTED IN AREAS WHERE FENCING IS PRE-EXISTING.

ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MICHAEL BERGER MCDONALD
M
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-0100
INFO@MCBTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	FOREIGN PIPELINE	MAINLINE VALVE (MLV)	PROPOSED PERMANENT EASEMENT	MD-AL-001.000	PROPERTY TRACT NUMBER	LIMIT OF DISTURBANCE	SEWER LINE
	PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD	TEMPORARY WORKSPACE	PAR-001	ACCESS ROAD NUMBER	UNDERGROUND CABLE	SAFETY FENCE
	EXISTING COLUMBIA PIPELINE	FENCE	EXISTING PERMANENT EASEMENT	ADDITIONAL TEMPORARY WORKSPACE	XXX-WXX	WETLAND ID	CABLE LINE	WETLAND
		OVERHEAD POWER LINE	CONTRACTOR / PIPE YARD	ACCESS ROAD	XXX-XXXX	WATERBODY ID	WATERLINE	WATERBODY

SCALE: 1" = 30'

30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC

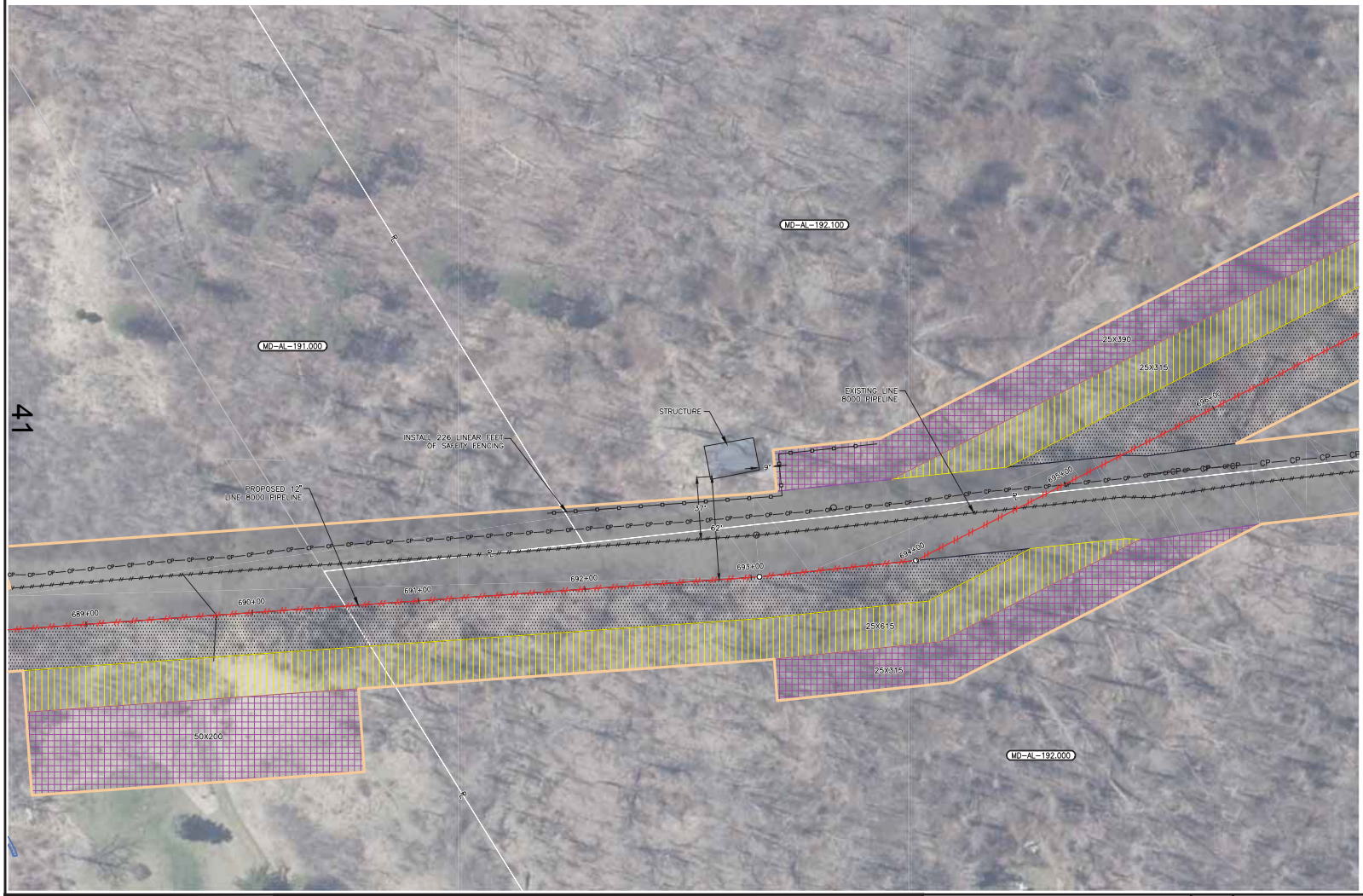
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
ACS	09/2017	D7261-RSD-042	42	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-043	B

ALLEGANY COUNTY, MARYLAND



41

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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

M MOTT MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-6100
INFO@MOTTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FORDIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD	PROPOSED PERMANENT EASEMENT	TEMPORARY WORKSPACE
ADDITIONAL TEMPORARY WORKSPACE	ACCESS ROAD	MD-AL-001.000	PAR-001	XXX-WXX	XXX-XXXX	PROPERTY TRACT NUMBER	ACCESS ROAD NUMBER	WETLAND ID	WATERBODY ID	LIMIT OF DISTURBANCE	UNDERGROUND CABLE	CABLE LINE	WATERLINE
SEWER LINE	SAFETY FENCE	WETLAND	WATERBODY										

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

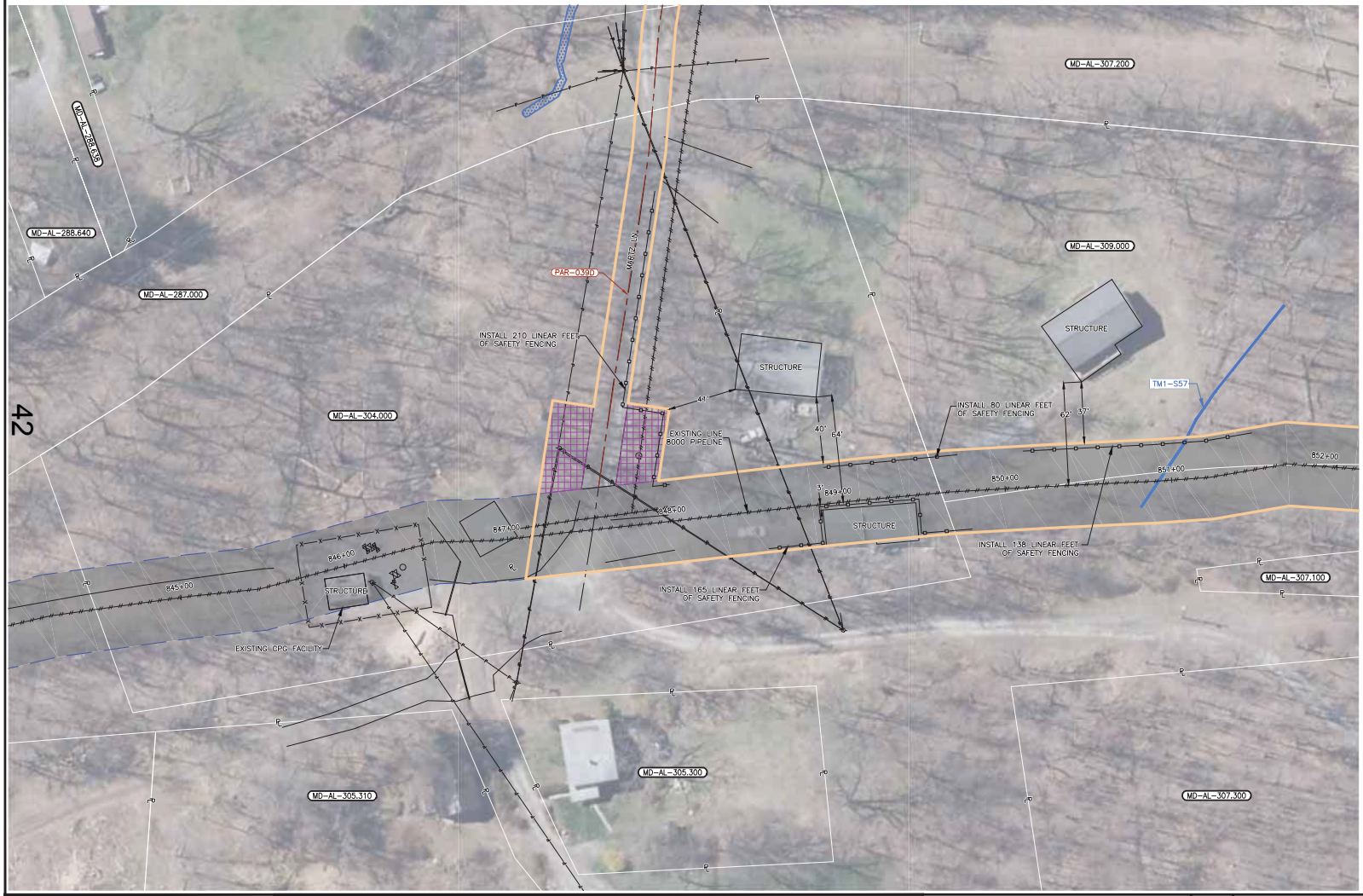
TITLE RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
RJW	09/2017	D7261-RSD-043	43	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-044	B

ALLEGANY COUNTY, MARYLAND



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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

M MOTT MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-6100
INFO@MOTTMAC.COM

LEGEND: PIPELINE MARKER; MILEPOST; PROPOSED PIPELINE; EXISTING COLUMBIA PIPELINE; FOREIGN PIPELINE; COUNTY BORDER; FENCE; OVERHEAD POWER LINE; MAINLINE VALVE (MLV); TEST LEAD; EXISTING PERMANENT EASEMENT; CONTRACTOR / PIPE YARD; PROPOSED PERMANENT EASEMENT; TEMPORARY WORKSPACE; ADDITIONAL TEMPORARY WORKSPACE; ACCESS ROAD; MD-AL-001.000 PROPERTY TRACT NUMBER; PAR-001 ACCESS ROAD NUMBER; XXX-WXX WETLAND ID; XXX-XXXX WATERBODY ID; LIMIT OF DISTURBANCE; UNDERGROUND CABLE; CABLE LINE; WATERLINE; SEWER LINE; SAFETY FENCE; WETLAND; WATERBODY

SCALE: 1" = 30'

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

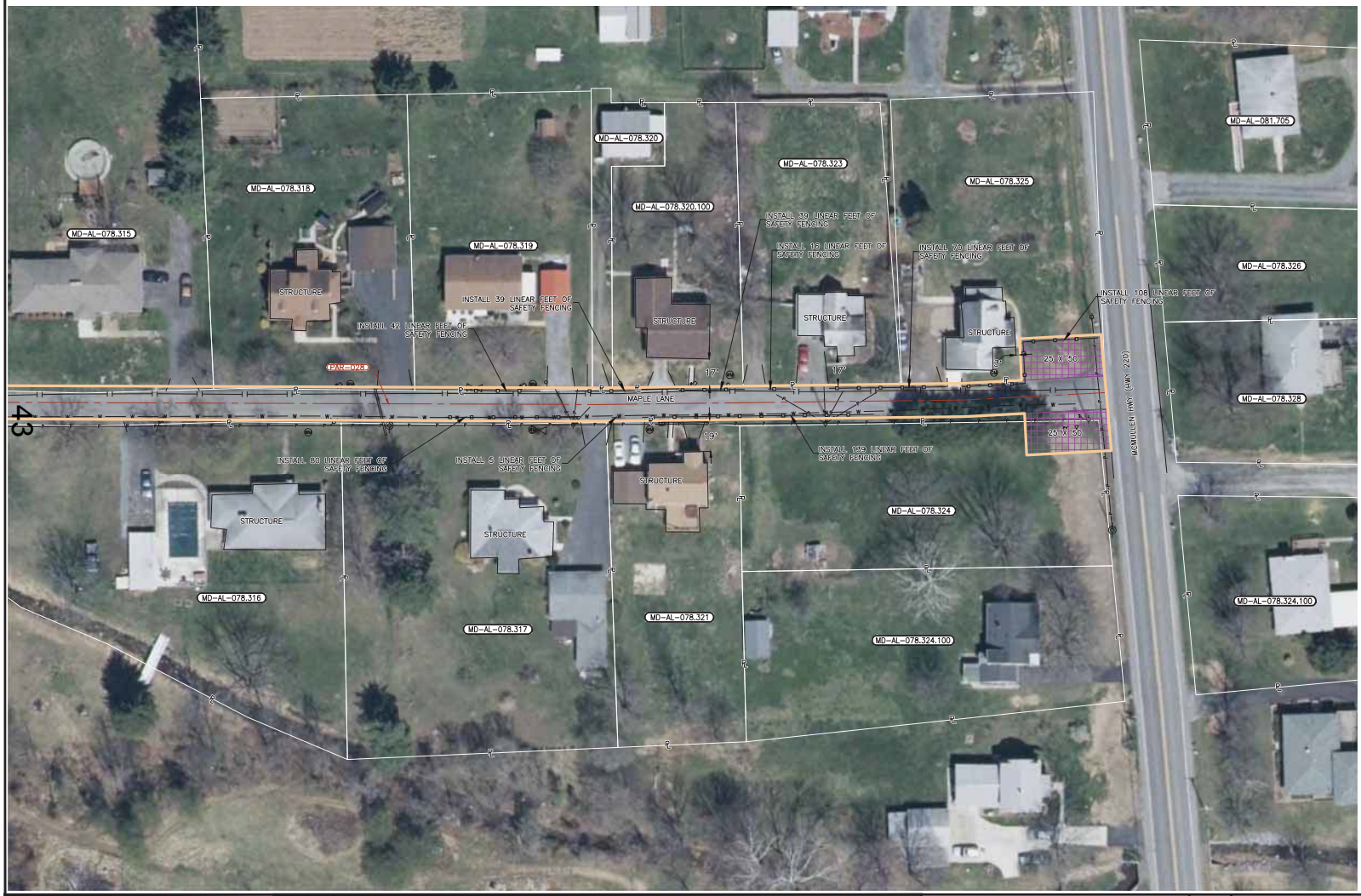
TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
RJW	09/2017	D7261-RSD-044	44	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-045	B

ALLEGANY COUNTY, MARYLAND



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ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

MDM MICHAEL DEVELOPMENT MCDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-535-0100
INFO@MDMTINAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FORIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
PROPOSED PERMANENT EASEMENT	TEMPORARY WORKSPACE	ADDITIONAL TEMPORARY WORKSPACE	ACCESS ROAD	MD-AL-001.000 PROPERTY TRACT NUMBER	PAR-001 ACCESS ROAD NUMBER	XXX-WXX WETLAND ID	XXX-XXXX WATERBODY ID	LIMIT OF DISTURBANCE	UNDERGROUND CABLE	CABLE LINE	WATERLINE
SS SEWER LINE	SAFETY FENCE	WETLAND	WATERBODY								

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
8	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
ACS	09/2017	D7261-RSD-045	45	B

PROJECT NUMBER M.000688.2
WORK ORDER NUMBER 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-046	B

ALLEGANY COUNTY, MARYLAND

44

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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ISSUED FOR BID
DATE: 07/2018

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LEGEND

MILEPOST	PIPELINE MARKER	PROPOSED PIPELINE	EXISTING COLUMBIA PIPELINE	FORDIGN PIPELINE	COUNTY BORDER	FENCE	OVERHEAD POWER LINE	MAINLINE VALVE (MLV)	TEST LEAD	EXISTING PERMANENT EASEMENT	CONTRACTOR / PIPE YARD
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SEWER LINE	SAFETY FENCE	WETLAND	WATERBODY								

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
3	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO.	REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC

ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
R/W	09/2017	D7261-RSD-046	46	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-047	B

ALLEGANY COUNTY, MARYLAND

DESCRIPTION

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6. IMMEDIATELY AFTER BACKFILLING THE TRENCH, ALL LAWN AND LANDSCAPING WILL BE RESTORED TO FINAL RESTORATION, OR TEMPORARY RESTORATION PENDING WEATHER AND SOIL CONDITIONS. IF SEASONAL OR WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES, TEMPORARY EROSION CONTROLS MUST BE MONITORED AND MAINTAINED UNTIL CONDITIONS ALLOW COMPLETION OF RESTORATION.
7. CONTRACTOR SHALL UTILIZE WATER TRUCKS AS NECESSARY TO MINIMIZE FUGITIVE DUST FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES/BUSINESSES.
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11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.
12. NO REFUELING OR FUEL STORAGE IS AUTHORIZED WITHIN 200' OF A WELL.
13. SAFETY FENCE MAY BE OMITTED IN AREAS WHERE FENCING IS PRE-EXISTING.

ISSUED FOR BID
DATE: 07/2018

811 Know what's below. Call before you dig.

M — MOTT MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
413-539-6100
INFO@MOTTMAC.COM

LEGEND

MILEPOST	PIPELINE MARKER	FOREIGN PIPELINE	MAINLINE VALVE (MLV)	PROPOSED PERMANENT EASEMENT	MD-A-001.000	PROPERTY TRACT NUMBER	LIMIT OF DISTURBANCE	SS	SEWER LINE
	PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD	TEMPORARY WORKSPACE	PAR-001	ACCESS ROAD NUMBER	UNDERGROUND CABLE		SAFETY FENCE
	EXISTING COLUMBIA PIPELINE	FENCE	EXISTING PERMANENT EASEMENT	ADDITIONAL TEMPORARY WORKSPACE	XXX-WXX	WETLAND ID	CABLE LINE		WETLAND
		OVERHEAD POWER LINE	CONTRACTOR / PIPE YARD	ACCESS ROAD	XXX-XXXX	WATERBODY ID	WATERLINE		WATERBODY

SCALE: 1" = 30'
30 0 15 30

No.	REVISIONS	APPROVED BY	DATE
B	ISSUED FOR BID	MM	07/2018

No.	REVISIONS	APPROVED BY	DATE

No.	REVISIONS	APPROVED BY	DATE

DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE: RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE:	DRAWING NUMBER	SHEET	ISSUE
GJH	12/2017	D7261-RSD-047	47	B

PROJECT NUMBER: M.000688.2
WORK ORDER NUMBER: 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-048	B

ALLEGANY COUNTY, MARYLAND

46

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 25 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
2. A MINIMUM OF 25 FEET WILL BE MAINTAINED BETWEEN THE RESIDENCE AND CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF THE RESIDENCE. IF THE FACILITY MUST BE WITHIN 25 FEET OF A RESIDENCE, IT MUST BE INSTALLED SUCH THAT THE TRENCH DOES NOT REMAIN OPEN OVERNIGHT.
3. MATURE TREES AND LANDSCAPING WILL NOT BE REMOVED FROM WITHIN THE EDGE OF THE CONSTRUCTION WORK AREA UNLESS NECESSARY FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT OR AS SPECIFIED IN LANDOWNER AGREEMENTS.
4. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
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M MOTT MACDONALD
134 CAPITAL DRIVE, SUITE D
WEST SPRINGFIELD, MA 01089
UNITED STATES
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LEGEND

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	PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD	TEMPORARY WORKSPACE	PAR-001	ACCESS ROAD NUMBER	U UNDERGROUND CABLE	SAFETY FENCE
	EXISTING COLUMBIA PIPELINE	FENCE	EXISTING PERMANENT EASEMENT	ADDITIONAL TEMPORARY WORKSPACE	XXX-WXX	WETLAND ID	C CABLE LINE	WETLAND
		P OVERHEAD POWER LINE	CONTRACTOR / PIPE YARD	ACCESS ROAD	XXX-XXXX	WATERBODY ID	WATERLINE	WATERBODY

SCALE: 1" = 30'
30 0 15 30

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B	ISSUED FOR BID	MM	04/2018

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DWG. NO. REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1273 CHARLESTON, WV 25325-1273
1700 MACCORKLE AVENUE SE, CHARLESTON, WV 25314

Columbia Gas Transmission

LINE 8000 REPLACEMENT PROJECT

TITLE RESIDENTIAL – SITE SPECIFIC
ALLEGANY COUNTY, MARYLAND

DRAWN BY:	DATE	DRAWING NUMBER	SHEET	ISSUE
ACS	09/2017	D7261-RSD-048	48	B

PROJECT NUMBER M.000688.2
WORK ORDER NUMBER 5120949

DRAWING NUMBER	ISSUE
D7261-RSD-049	B

ALLEGANY COUNTY, MARYLAND

47

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MILEPOST	PROPOSED PIPELINE	COUNTY BORDER	TEST LEAD	TEMPORARY WORKSPACE
	EXISTING COLUMBIA PIPELINE	FENCE	EXISTING PERMANENT EASEMENT	ADDITIONAL TEMPORARY WORKSPACE
		OVERHEAD POWER LINE	CONTRACTOR / PIPE YARD	ACCESS ROAD

MD-AL-001.000	PROPERTY TRACT NUMBER	LIMIT OF DISTURBANCE
PAR-001	ACCESS ROAD NUMBER	UNDERGROUND CABLE
XXX-WXX	WETLAND ID	CABLE LINE
XXX-XXXX	WATERBODY ID	WATERLINE

SEWER LINE	WETLAND	WATERBODY
SAFETY FENCE		

SCALE: 1" = 30'

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