

**ATLANTIC COAST PIPELINE, LLC  
ATLANTIC COAST PIPELINE**

**Construction, Operations, and Maintenance Plans**

**ATTACHMENT P**

**Contingency Plan for the Appalachian National Scenic Trail and the Blue  
Ridge Parkway Crossing**

*Previously filed with FERC on August 4, 2016 (Accession No. 20160804-5169)*



**ATLANTIC COAST PIPELINE, LLC**  
**ATLANTIC COAST PIPELINE**  
**Docket Nos. CP15-554-000 &**  
**CP15-554-001**

**Contingency Plan for the Proposed Crossing of the  
Appalachian National Scenic Trail and Blue Ridge Parkway**

**August 4, 2016**

**TABLE OF CONTENTS**

**1.0 INTRODUCTION.....1**  
**2.0 PURPOSE.....1**  
**3.0 CONDITIONS FOR CONTINGENCY.....1**  
**4.0 INITIAL CONTINGENCY PLAN – NEW HDD PATHS.....2**  
**5.0 DRILL PATH ABANDONMENT.....2**  
**6.0 ALTERNATE CROSSING METHOD .....2**

**LIST OF FIGURES**

Figure 1            Plan View – Blue Ridge Parkway and Appalachian National Scenic Trail  
                         Contingency Crossing Plan..... 4

**LIST OF ACRONYMS AND ABBREVIATIONS**

|          |                                   |
|----------|-----------------------------------|
| ACP      | Atlantic Coast Pipeline           |
| AT       | Appalachian National Scenic Trail |
| Atlantic | Atlantic Coast Pipeline, LLC      |
| BRP      | Blue Ridge Parkway                |
| HDD      | horizontal directional drill      |
| NPS      | National Park Service             |
| USFS     | U.S. Forest Service               |

## **1.0 INTRODUCTION**

Atlantic Coast Pipeline, LLC (Atlantic) – a company formed by four major energy companies - Dominion Resources, Inc.; Duke Energy Corporation; Piedmont Natural Gas Co., Inc.; and AGL Resources, Inc. – proposes to construct and operate approximately 603.8 miles of natural gas transmission pipelines and associated aboveground facilities in West Virginia, Virginia, and North Carolina. This Project, referred to as the Atlantic Coast Pipeline (ACP), will deliver up to 1.5 billion cubic feet per day of natural gas from supply areas in the Appalachian region to demand areas in Virginia and North Carolina. Atlantic has contracted with Dominion Transmission, Inc., a subsidiary of Dominion Resources, Inc., to construct and operate the ACP on behalf of Atlantic.

## **2.0 PURPOSE**

Atlantic has proposed to cross underneath the Blue Ridge Parkway (BRP), located on National Park Service (NPS) lands, and the Appalachian National Scenic Trail (AT), located on U.S. Forest Service (USFS) lands, using horizontal directional drilling (HDD) and installation technology. Atlantic has completed geotechnical subsurface borings at the HDD crossing location and has confirmed its expectations that the drill path would be primarily through solid rock approximately 800 feet below the BRP and the AT. Drilling through solid rock, while a time consuming process, significantly helps to ensure the success of the drill operation due to the avoidance of rock fragments and cobbles that can disrupt or block the drill pathway. As such, and in consultation with its drilling consultant, J. D. Hair & Associates, Atlantic is very confident in a successful HDD and pipeline installation at this location. In the unlikely event that the HDD procedure fails, however, Atlantic has identified the following steps to be implemented as part of a prudent contingency planning process. Selection of the correct contingency action would depend on the specific circumstances of the HDD failure and the stage of HDD operation when failure occurred and action halted.

## **3.0 CONDITIONS FOR CONTINGENCY**

If insurmountable problems are encountered during the HDD process, Atlantic may decide to select a new drill path, abandon the drill hole, or consider alternate crossing methods. Abandonment procedures and alternative crossing measures will be discussed with appropriate permitting, regulatory, and land managing agencies, and required approvals will be obtained prior to implementing alternative crossing measures.

Adverse conditions most commonly encountered during the HDD process are associated with the loss of structural integrity of the drill path. This loss of integrity is generally the result of debris collapsing into the drill path opening. While this can generally occur at any point during an HDD drilling process (i.e., pilot hole, reaming, or pipe pull-back), because this drill will be primarily through solid rock, the likelihood of losing the structural integrity of the drill path is significantly lowered and localized to the drill path through the overburden near the entrance and exit points.

Regardless of when the adverse conditions are encountered, efforts will be made to retrieve the drilling tools from the hole and free the drill path of obstructions. If this cannot be

accomplished, a new drill path will be established within the existing and approved HDD workspace. Development of a new drill path will be the default initial drill contingency plan.

#### **4.0 INITIAL CONTINGENCY PLAN – NEW HDD PATHS**

Efforts will be made to identify and assess the reason for the drill failure as this will be critical for selection of an appropriate alternate HDD pathway. In developing an appropriate alternate measure, consideration will be given to site conditions, such as surrounding topography. The proposed workspace and right-of-way planned for the HDD is adequately sized to allow for multiple attempts of a new drill path. That is, the entry/exit points can be relocated several times within the currently proposed limits of disturbance for the HDD.

Either a modified drill path or an all new drill path would be identified that mitigates or avoids the cause of the problem for the HDD failure. This could result in altering the existing path to utilize a deeper or more shallow vertical path, or a laterally expanded path, while retaining sections of the original drilled path that are not at risk to the problem. Alternatively, depending on the type of obstruction, the drill rig may need to be moved or slightly re-aligned to drill a completely new hole.

#### **5.0 DRILL PATH ABANDONMENT**

For any section of abandoned hole, the abandonment procedures identified below will apply to the abandoned section of the hole:

- Heavy drilling fluid or a cement mixture will be pumped into the hole as the drill assembly is extracted to seal the abandoned drill hole.
- The drill end points within approximately 5 feet of the surface will be filled with soil and the location will be graded to the original contour.

#### **6.0 ALTERNATE CROSSING METHOD**

In the event that all options outlined in the initial contingency plan results in failure, either by way of execution failure or it is determined that the schedule does not permit continued HDD efforts, alternative crossing methods will be initiated.

The alternative crossing would use both traditional open-trench construction as well as a 1,400-foot-long trenchless crossing installed using Direct Pipeline technology. The traditional open-trench section would lead up to the entry and exit locations of the Direct Pipeline trenchless crossing. At these points, surface disturbance would cease and the trenchless crossing would be used to cross beneath USFS and NPS land, the AT, and the BRP simultaneously. The entry and exit points for the trenchless crossing would be on private land, approximately 600 feet south of the BRP and 400 feet north of the AT, respectively. An approximately 200 X 200 foot temporary work space would be located at the entry point and used for drill operations and pipe fabrication (see attached figure).

No ground disturbance or tree clearing would be required on NPS lands or within approximately 600 feet of the BRP. Similarly, no ground disturbance or tree clearing would be

required within approximately 350 feet of the AT. The approximate limits of disturbance are identified in Figure 1 below.

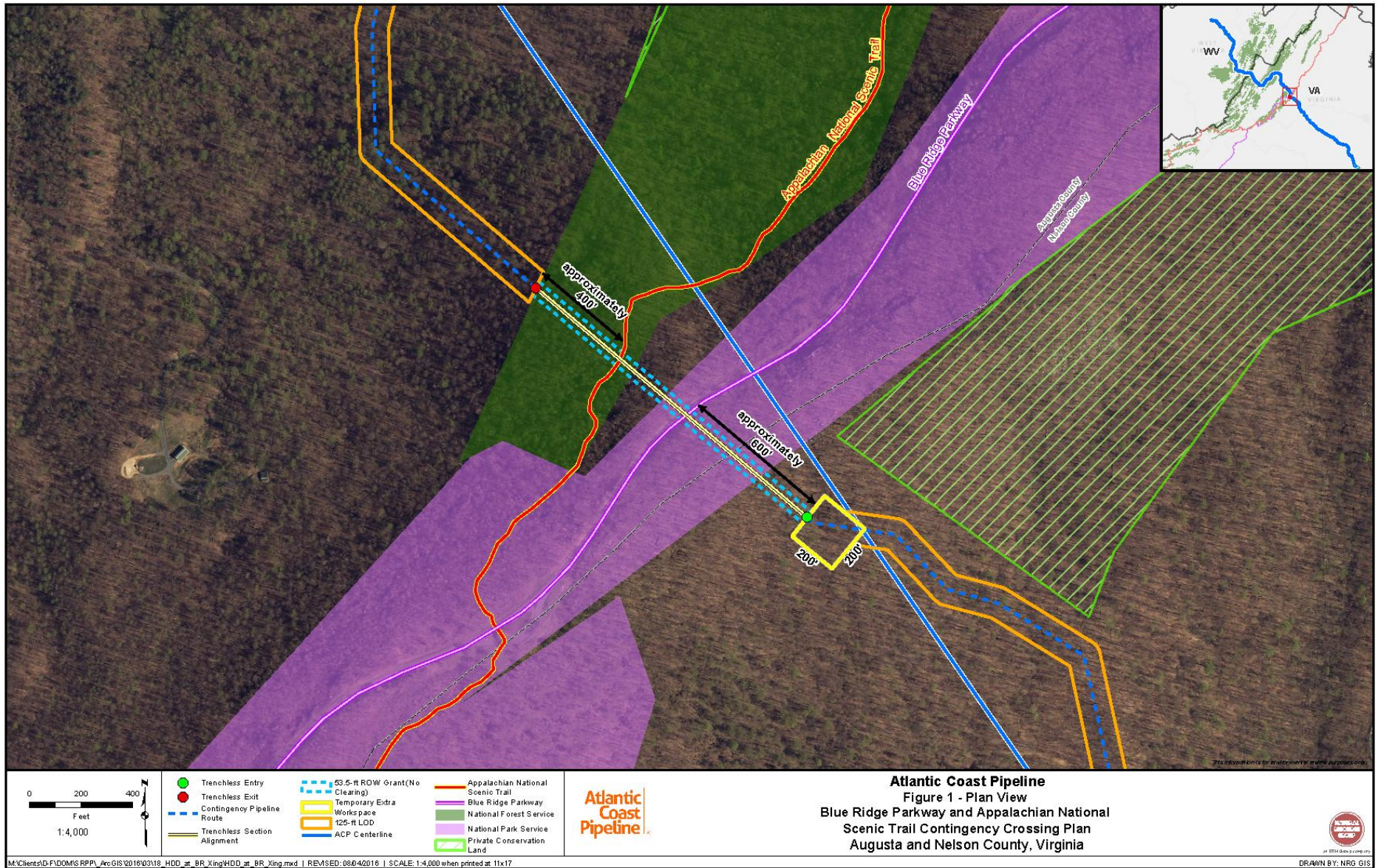
The Direct Pipe installation will require approximately 150,000 gallons of water for the mixing and use of bentonite drilling mud, which will be disposed of at an approved landfill following completion of the Direct Pipe installation. Additionally, the drilling activities will produce approximately 26,000 cubic feet of spoil which will be removed from the drilled path; this spoil will also be disposed of at an approved landfill.

Temporary access to the entry/rig side (south side) of the Direct Pipe installation would be accomplished through the improvement and use of an existing logging/access road off Beech Grove Road. Access to the exit side of the Direct Pipe installation (north side) would be accomplished using the cleared pipeline right-of-way.

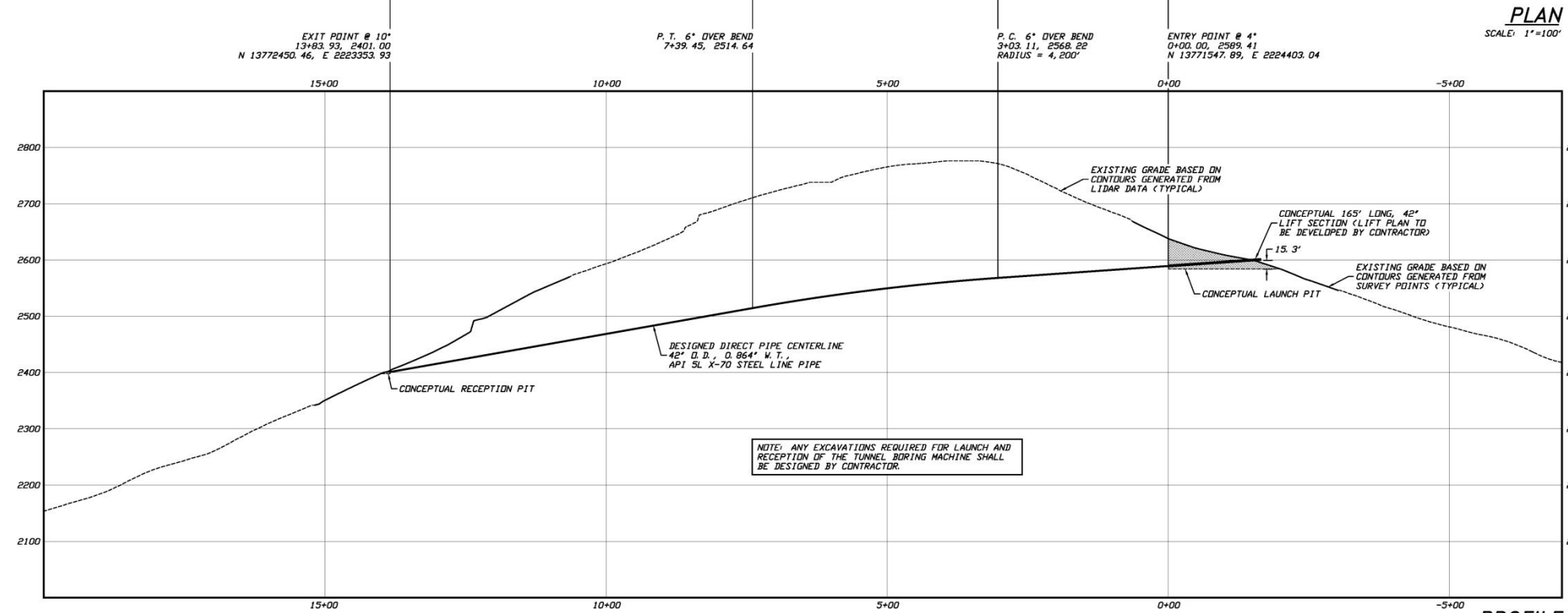
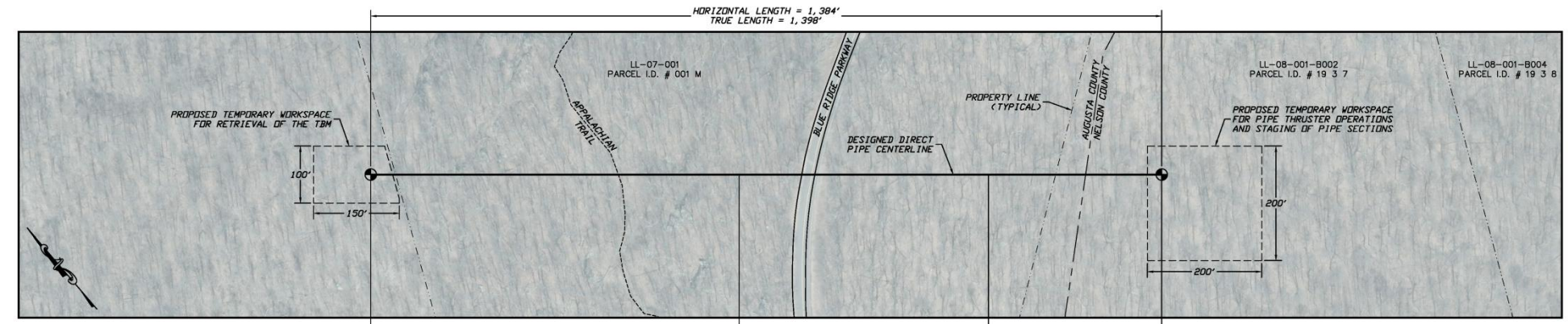
The Direct Pipe installation and the traditional open-trench construction associated with the Alternate Crossing Method will occur simultaneously and together will take approximately 16 weeks to complete. Drilling operations associated with the Direct Pipe installation will take approximately 12 weeks to complete, assuming a 24-hour per day, 7-day per week schedule.

Restoration of access roads, workspace, and temporary construction easements would be restored to as near pre-existing conditions as practical.







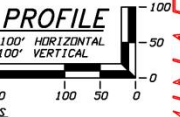


**GENERAL LEGEND**  
 ● DESIGNED DIRECT PIPE ENTRY/EXIT POINT

- TOPOGRAPHIC SURVEY NOTES:**
1. TOPOGRAPHIC SURVEY DATA PROVIDED BY GAI CONSULTANTS, CANDISBURG, PENNSYLVANIA.
  2. NORTHINGS AND EASTINGS ARE IN U.S. SURVEY FEET REFERENCED TO UTM COORDINATES, ZONE 17, NAD 83.
  3. ELEVATIONS ARE IN FEET REFERENCED TO NAVD 88.
- COORDINATE GEOMETRY NOTES:**
1. STATIONING IS IN FEET BY HORIZONTAL MEASUREMENT AND IS REFERENCED TO CONTROL ESTABLISHED FOR THE DIRECT PIPE SEGMENT.
  2. COORDINATES REFER TO DESIGNED DIRECT PIPE CENTERLINE AS OPPOSED TO TOP OF INSTALLED PIPE.

- PILOT HOLE TOLERANCES:**
- THE CENTERLINE OF THE DIRECT PIPE SEGMENT SHALL CONFORM TO THE TOLERANCES LISTED BELOW. HOWEVER, IN ALL CASES, RIGHT-OF-WAY RESTRICTIONS AND CONCERN FOR ADJACENT FACILITIES SHALL TAKE PRECEDENCE OVER THESE TOLERANCES.
1. ENTRY POINT: UP TO 10 FEET FORWARD OR BACK FROM THE DESIGNED ENTRY POINT, UP TO 5 FEET RIGHT OR LEFT OF THE DESIGNED ALIGNMENT
  2. EXIT POINT: UP TO 10 FEET SHORT OR LONG RELATIVE TO THE DESIGNED EXIT POINT, UP TO 5 FEET RIGHT OR LEFT OF THE DESIGNED ALIGNMENT
  3. ELEVATION: UP TO 10 FEET ABOVE OR BELOW THE DESIGNED PROFILE
  4. ALIGNMENT: UP TO 10 FEET RIGHT OR LEFT OF THE DESIGNED ALIGNMENT
  5. CURVE RADIUS: NO LESS THAN 2,800 FEET

- PROTECTION OF EXISTING FACILITIES:**
- CONTRACTOR SHALL UNDERTAKE THE FOLLOWING STEPS PRIOR TO COMMENCING DRILLING OPERATIONS:
1. CONTACT THE UTILITY LOCATION/NOTIFICATION SERVICE FOR THE CONSTRUCTION AREA.
  2. POSITIVELY LOCATE AND STAKE ALL EXISTING UNDERGROUND FACILITIES. ANY FACILITIES LOCATED WITHIN 10 FEET OF THE DESIGNED DRILLED PATH SHALL BE EXPOSED.
  3. MODIFY DRILLING PRACTICES AND DOWNHOLE ASSEMBLIES AS NECESSARY TO PREVENT DAMAGE TO EXISTING FACILITIES.



**PRELIMINARY**

**ATLANTIC COAST PIPELINE PROJECT**

**PLAN AND PROFILE**  
**42-INCH PIPELINE CROSSING OF THE BLUE RIDGE PARKWAY BY THE DIRECT PIPE METHOD**

|           |  |                |               |
|-----------|--|----------------|---------------|
| LOCATION: | AUGUSTA COUNTY & NELSON COUNTY, VIRGINIA | DRAWING LABEL: | REVISION      |
| DATE:     | 07/29/16                                 | SCALE:         | DP            |
| APPROVED: | JSP                                      | SHOWN FOR:     | BR PARKWAY DP |
| CHECKED:  | JSP                                      | D-SIZES:       | P1            |
| DATE:     | 07/29/16                                 |                |               |
| DRAWN:    | ACM                                      |                |               |

| NO. | DATE     | REVISION DESCRIPTION                         | BY  | CHECKED | APP. |
|-----|----------|--|-----|---------|------|
| P1  | 08/04/16 | MODIFY PROPOSED WORKSPACE AS DIRECTED BY ACP | JSP | KMN     | JSP  |

**Jeffrey S. Puckett, P.E.**  
 Consulting Engineer

2424 East 71st Street  
 Suite 510  
 Falls Church, Virginia 22044

PROJECT NO.  
**Dominion1508**

MILE POST  
**AP1-158**