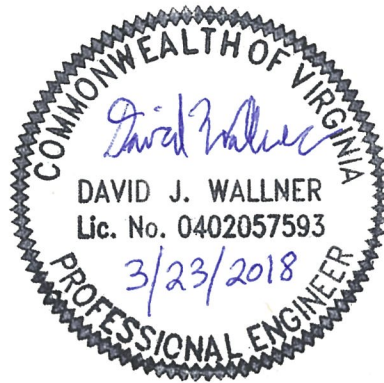
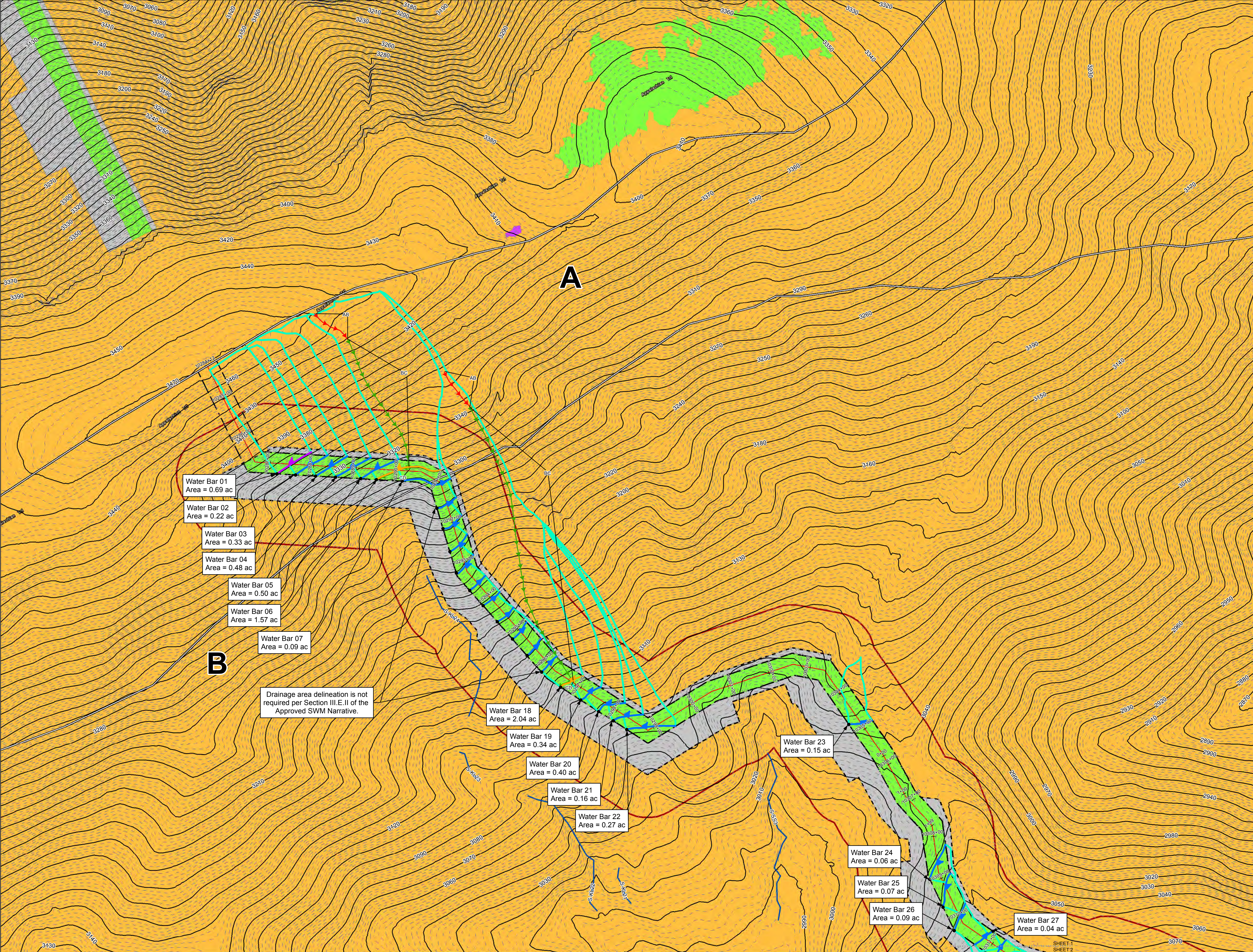


By virtue of this seal and signature, all supporting documents included in this package are accurate and support the design presented herein.







### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
	MLV Site		Open Water
	Access Road Permanent Easement		10-foot Contour
	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 8 Site Specific Analyses" for all calculations related to waterbar end treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N

1" = 100 feet

100 0 100 Feet

### Mountain Valley Pipeline Project

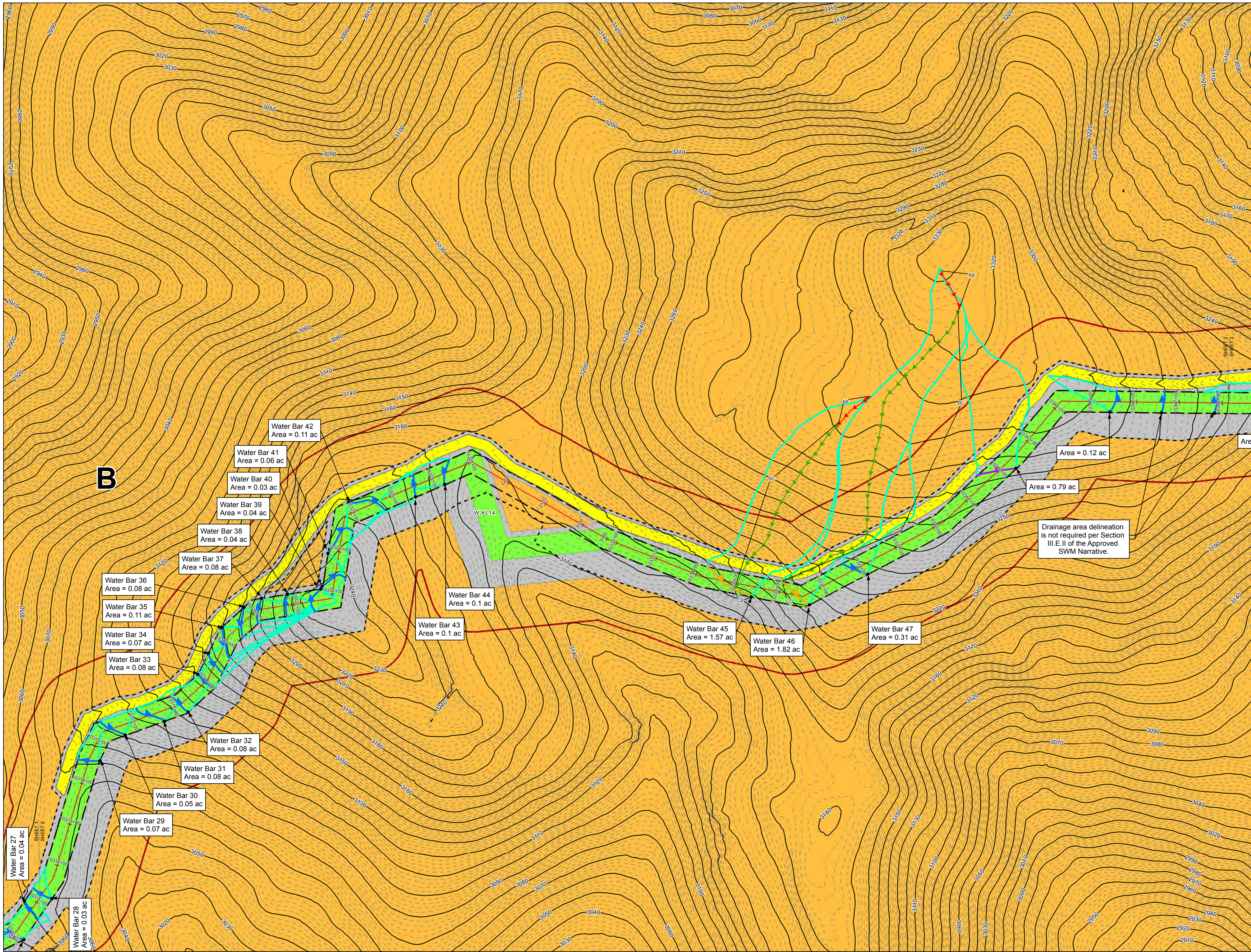
### Drainage Map Spread 8

Figure 1 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From 10284+12	To 10311+00
Post Construction Plan No.	12.02PC	12.02PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

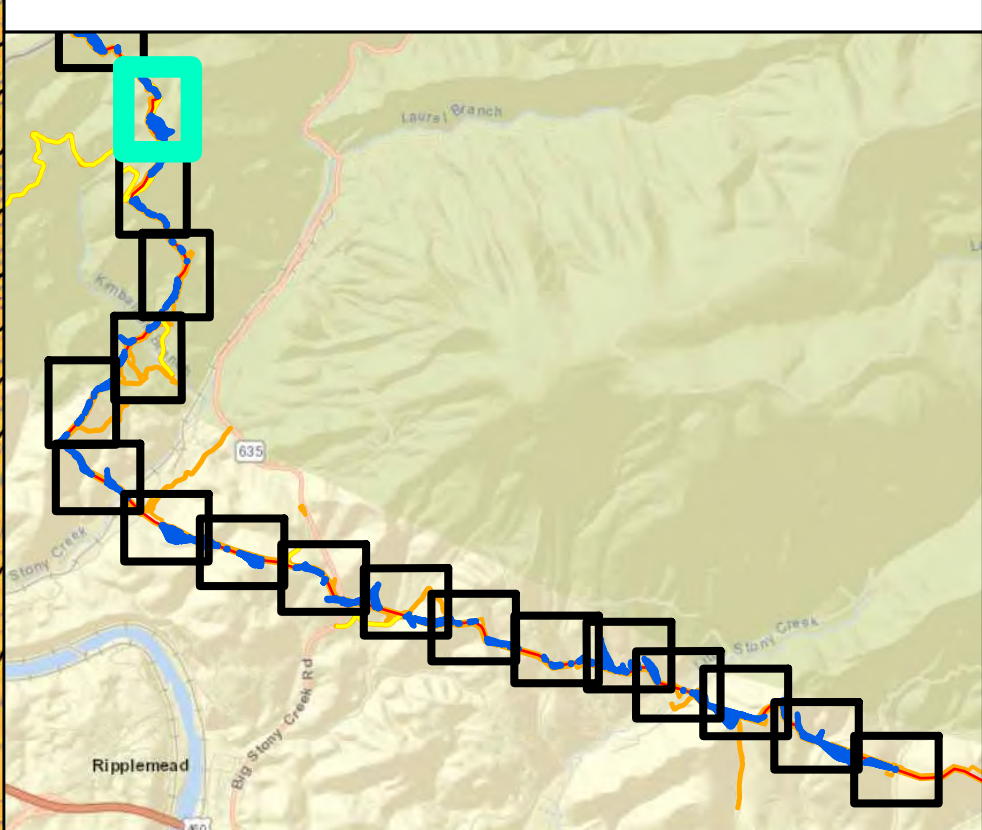
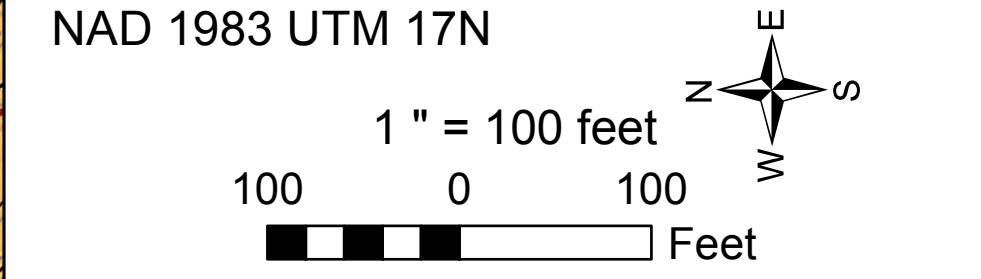




Legend

- |  |   |  |  |
|--|---|--|--|
|  | Karst Feature                                   |  | Water Bar Drainage Area                    |
|  | Approximate Location of Water Bar End Treatment |  | 100-year Floodplain                        |
|  | Permanent Water Bar 10-ft End Treatment         |  | Pond                                       |
|  | Permanent Water Bar 15-ft End Treatment         |  | Wetland                                    |
|  | Permanent Water Bar 20-ft End Treatment         |  | Hydrologic Soil Groups                     |
|  | Sheetflow                                       |  | 100 ft Buffer off of Limits of Disturbance |
|  | Shallow Concentrated Flow                       |  | Agricultural                               |
|  | Streams   |  | Barren                                     |
|  | Stationing                                      |  | Brush                                      |
|  | Alignment Centerline                            |  | Forest                                     |
|  | Permanent Easement                              |  | Impervious                                 |
|  | Limit of Disturbance                            |  | Meadow                                     |
|  | MLV Site  |  | Open Water                                 |
|  | Access Road Permanent Easement                  |  | 10-foot Contour                            |
|  | Existing Impervious Surveyed Road Edge          |  | 2-foot Contour                             |
|  | New/Proposed Impervious Road Edge               |  | State Road Centerline                      |

Notes:  
1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 3 Site Specific Analyses" for all calculations related to waterbar end treatment and drainage area analysis.  
2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.  
3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.



Mountain Valley Pipeline Project



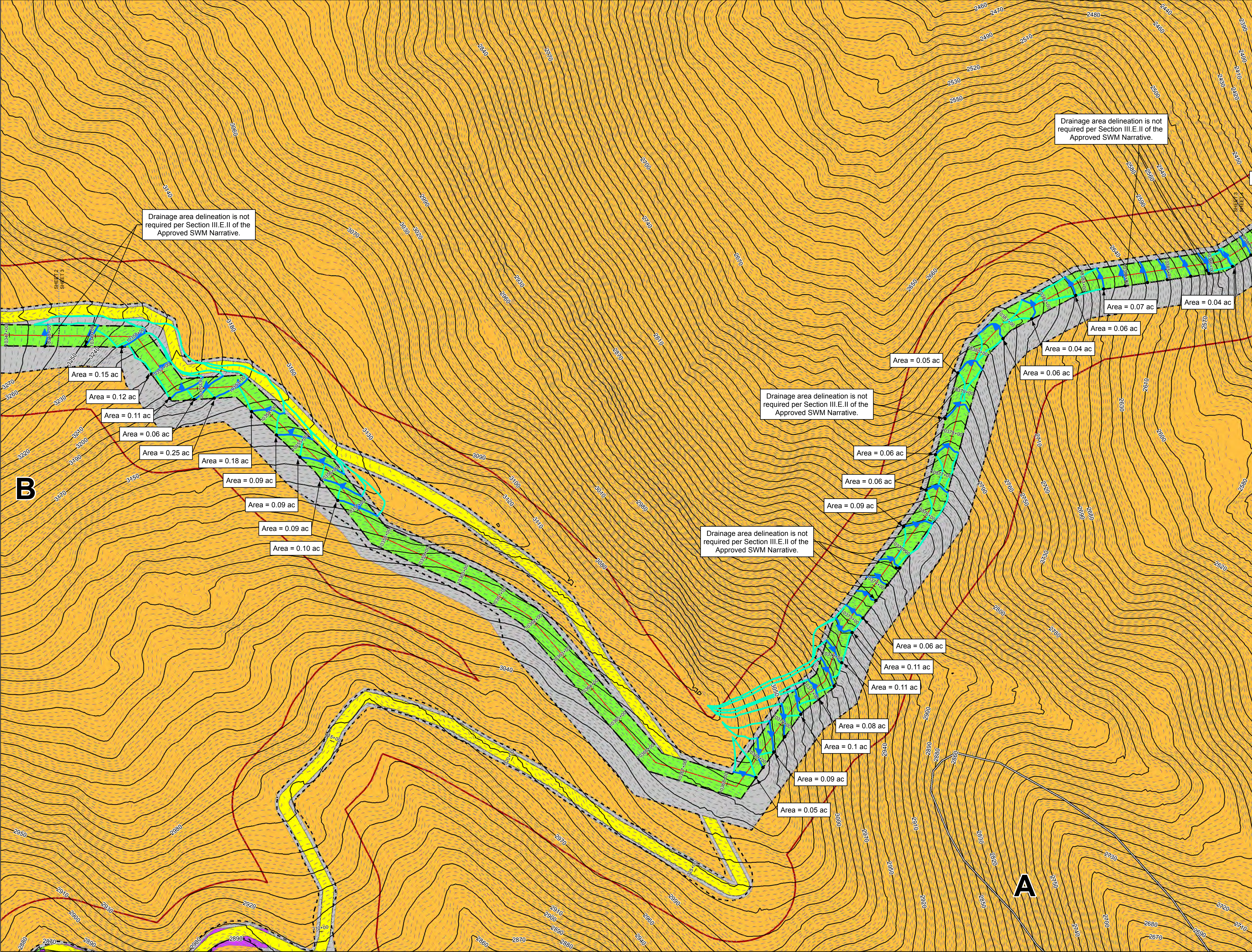
**Drainage Map**  
**Spread 8**  
Figure 2 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From	To
Post Construction Plan No.	10310+00	10348+00
	12.02PC	12.04PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

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### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
	MLV Site		Open Water
	Access Road Permanent Easement		10-foot Contour
	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 8 Site Specific Analyses" for all calculations related to waterbar and treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N

1" = 100 feet

100 0 100 Feet

### Mountain Valley Pipeline Project

### Drainage Map Spread 8

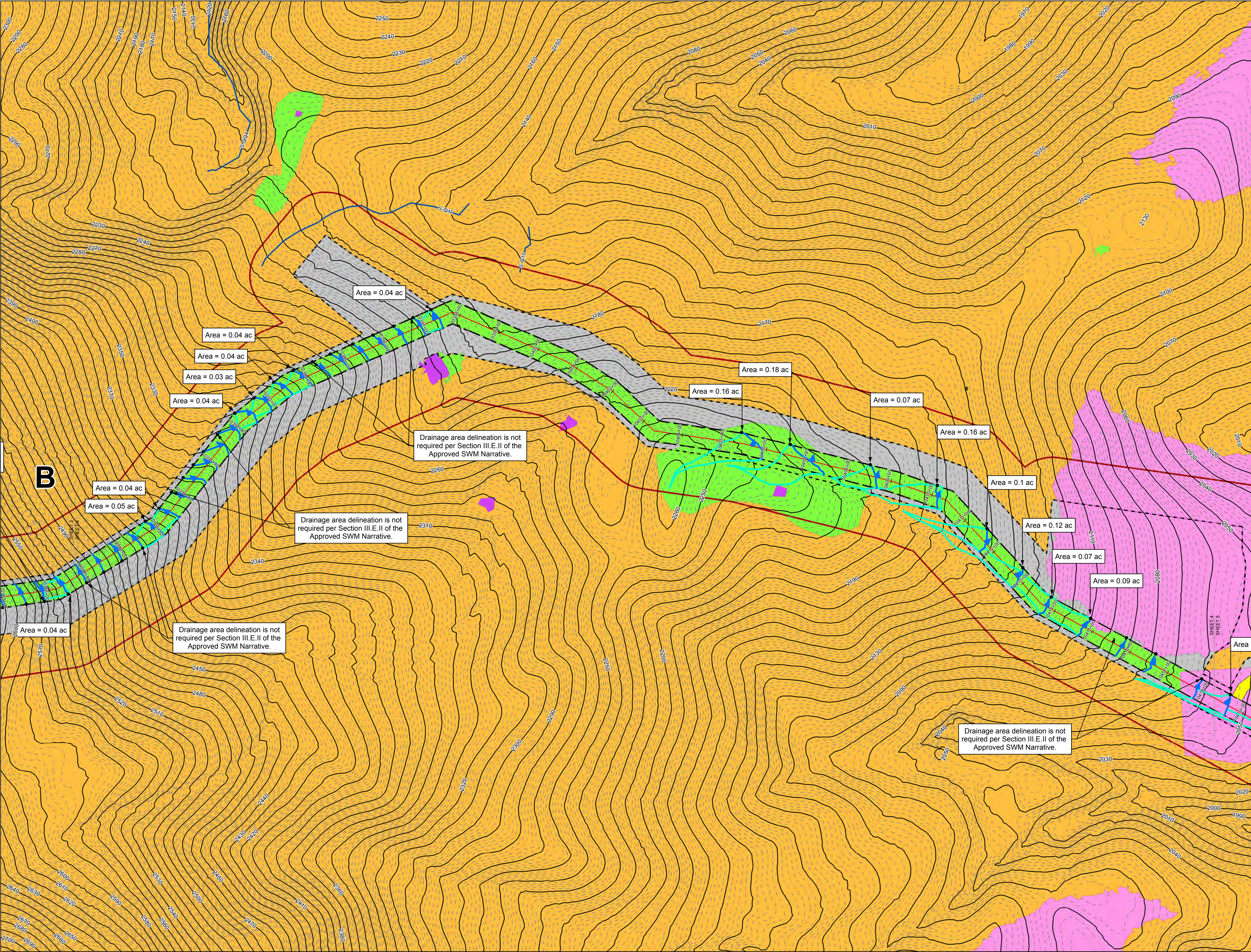
Figure 3 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From 10347+00	To 10387+00
Post Construction Plan No.	12.04PC	12.05PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

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### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
	MLV Site		Open Water
	Access Road Permanent Easement		10-foot Contour
	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

**Notes:**

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 8 Site Specific Analyses" for all calculations related to waterbar end treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

**NAD 1983 UTM 17N**

1" = 100 feet

100 0 100 Feet

**Mountain Valley Pipeline Project**

### Drainage Map Spread 8

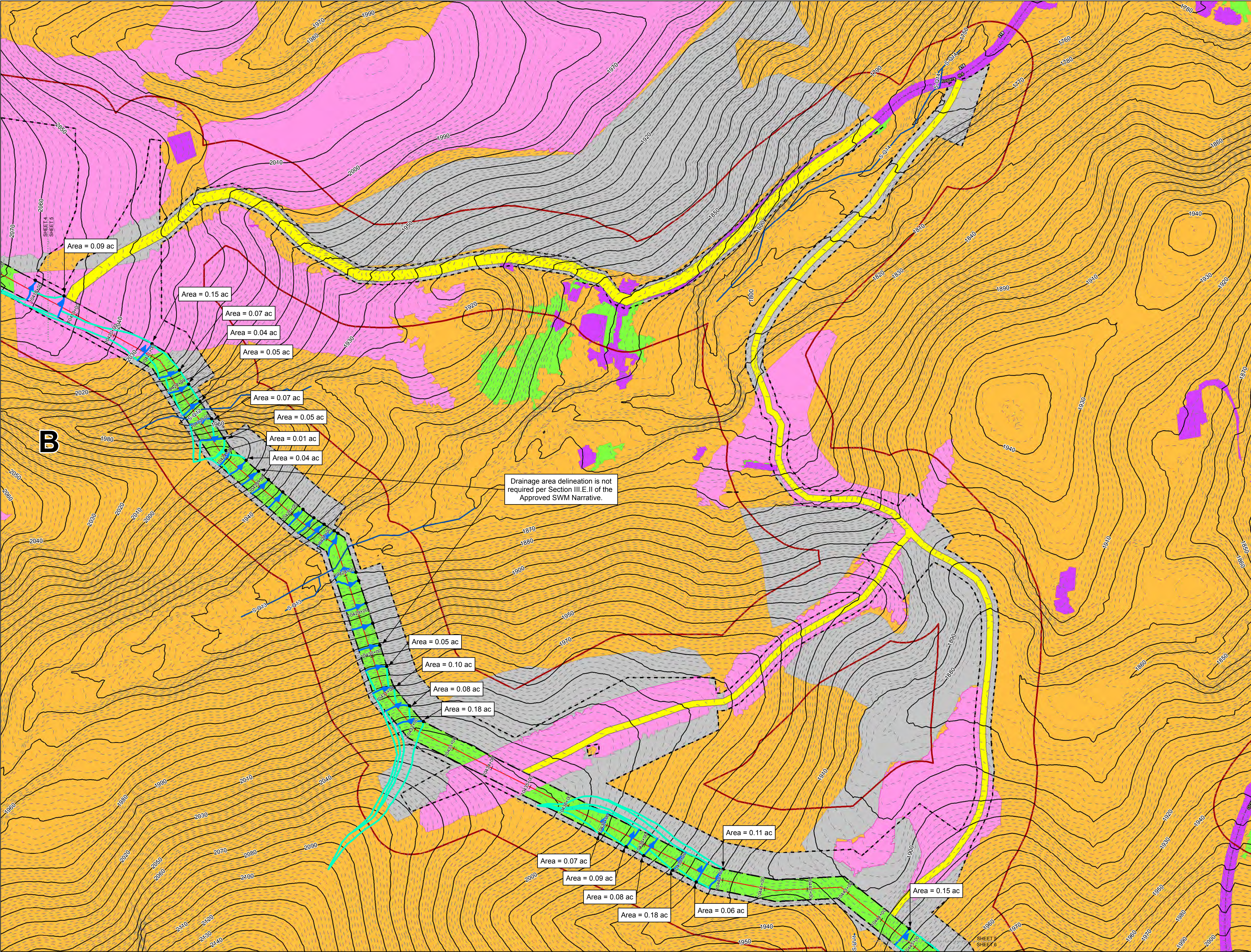
Figure 4 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From 10385+00	To 10419+00
Post Construction Plan No.	12.05PC	12.06PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

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### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
	MLV Site		Open Water
	Access Road Permanent Easement		10-foot Contour
	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

**Notes:**

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 8 Site Specific Analyses" for all calculations related to waterbar and treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

**NAD 1983 UTM 17N**

1" = 100 feet

100 0 100 Feet

**Mountain Valley Pipeline Project**

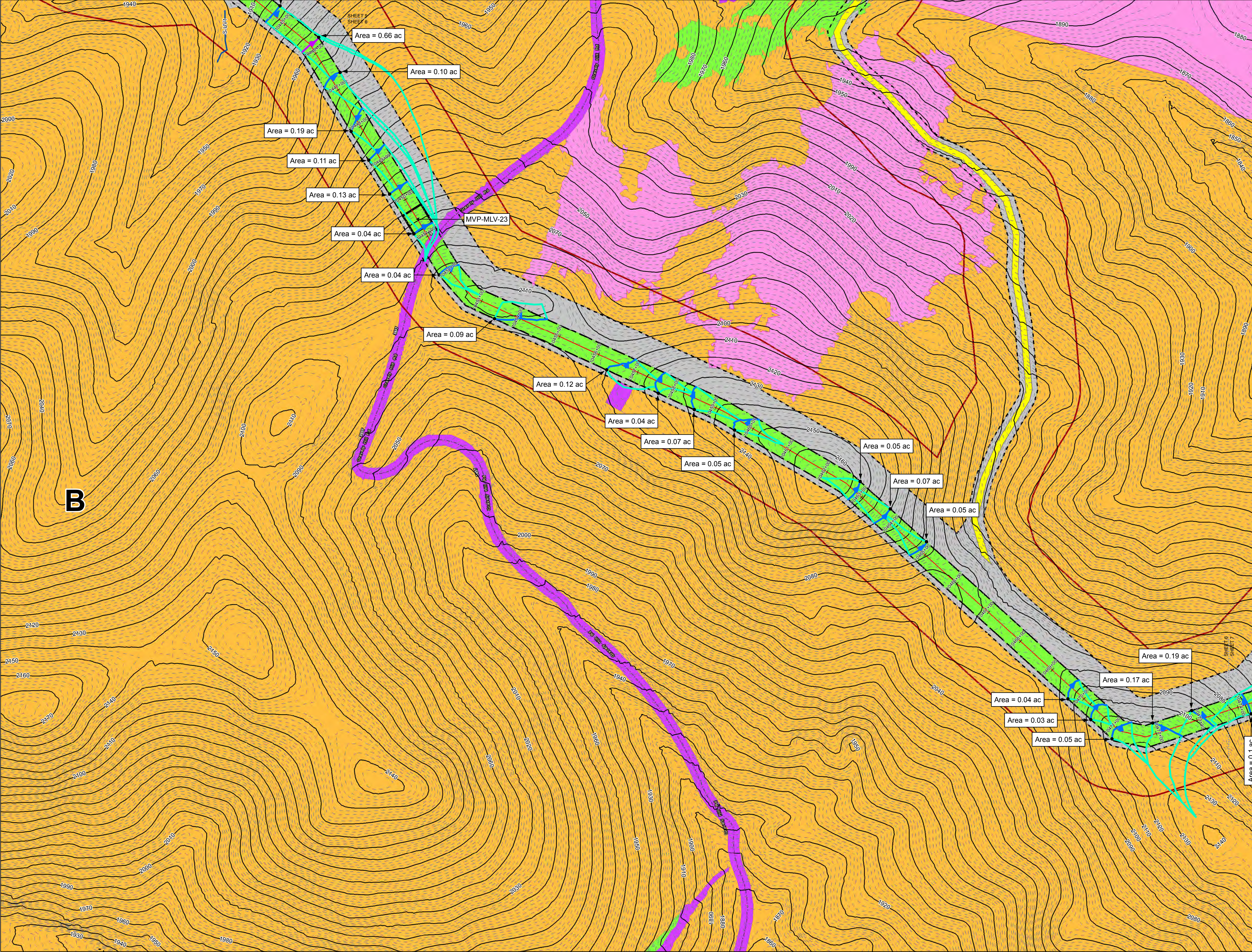
**Drainage Map**  
**Spread 8**  
Figure 5 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From	To
Post Construction Plan No.	10418+00	10455+00
	12.06PC	12.07PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

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**Legend**

- Karst Feature
- Approximate Location of Water Bar End Treatment
- Permanent Water Bar 10-ft End Treatment
- Permanent Water Bar 15-ft End Treatment
- Permanent Water Bar 20-ft End Treatment
- Sheetflow
- Shallow Concentrated Flow
- Streams
- Stationing
- Alignment Centerline
- Permanent Easement
- Limit of Disturbance
- MLV Site
- Access Road Permanent Easement
- Existing Impervious Surveyed Road Edge
- New/Proposed Impervious Road Edge
- Water Bar Drainage Area
- 100-year Floodplain
- Pond
- Wetland
- Hydrologic Soil Groups
- 100 ft Buffer off of Limits of Disturbance
- Agricultural
- Barren
- Brush
- Forest
- Impervious
- Meadow
- Open Water
- 10-foot Contour
- 2-foot Contour
- State Road Centerline

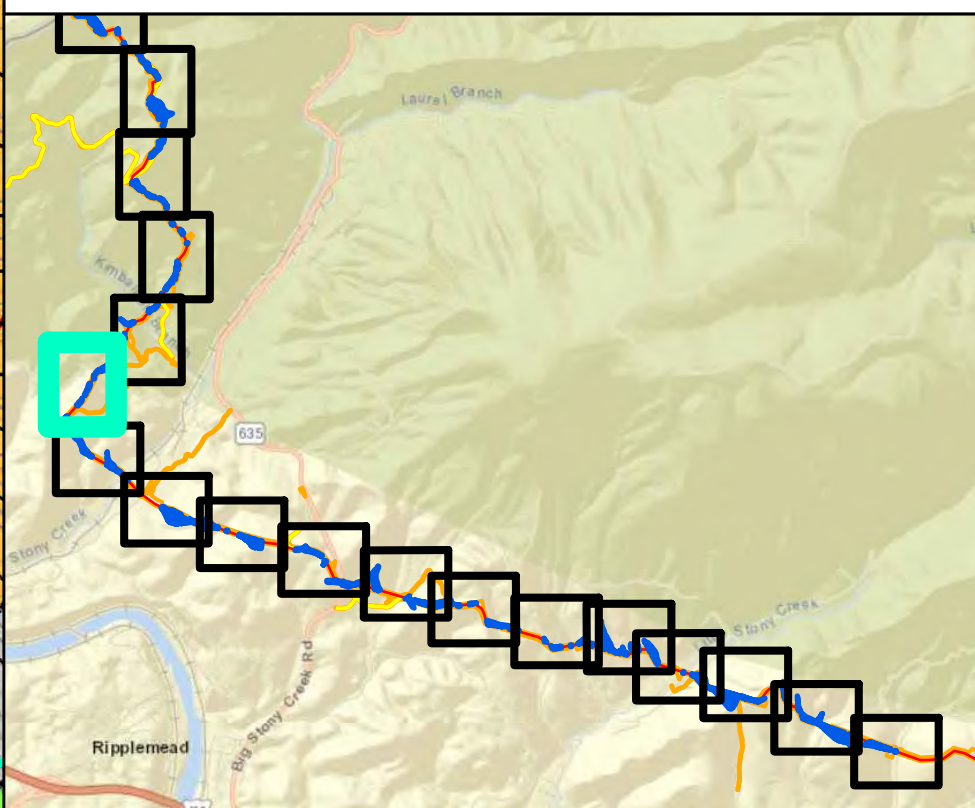
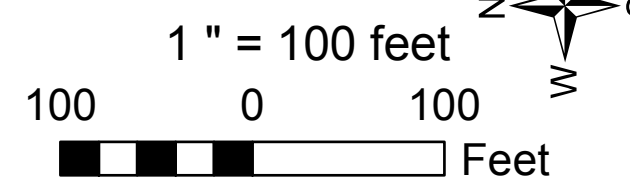
Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 8 Site Specific Analyses" for all calculations related to waterbar end treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N



**Mountain Valley Pipeline Project**



**Drainage Map  
Spread 8**

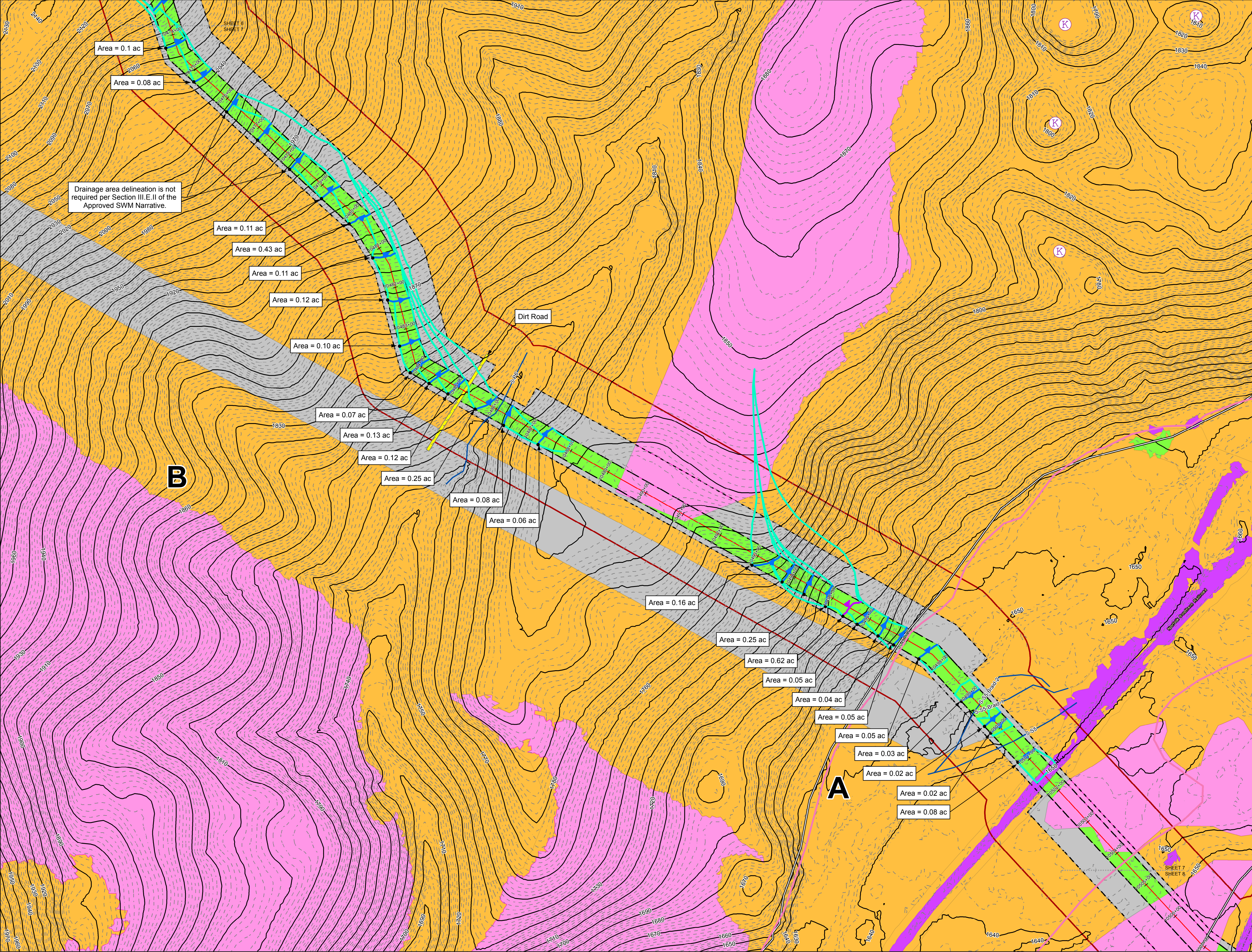
Figure 6 of 18  
Giles County  
March 5, 2018

Pipeline Stationing - Post Construction Plan No.      From 10445+00 12.07PC      To 10474+00 12.08PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

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### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
	MLV Site		Open Water
	Access Road Permanent Easement		10-foot Contour
	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 3 Site Specific Analyses" for all calculations related to waterbar and treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N

1" = 100 feet

100 0 100 Feet

### Mountain Valley Pipeline Project

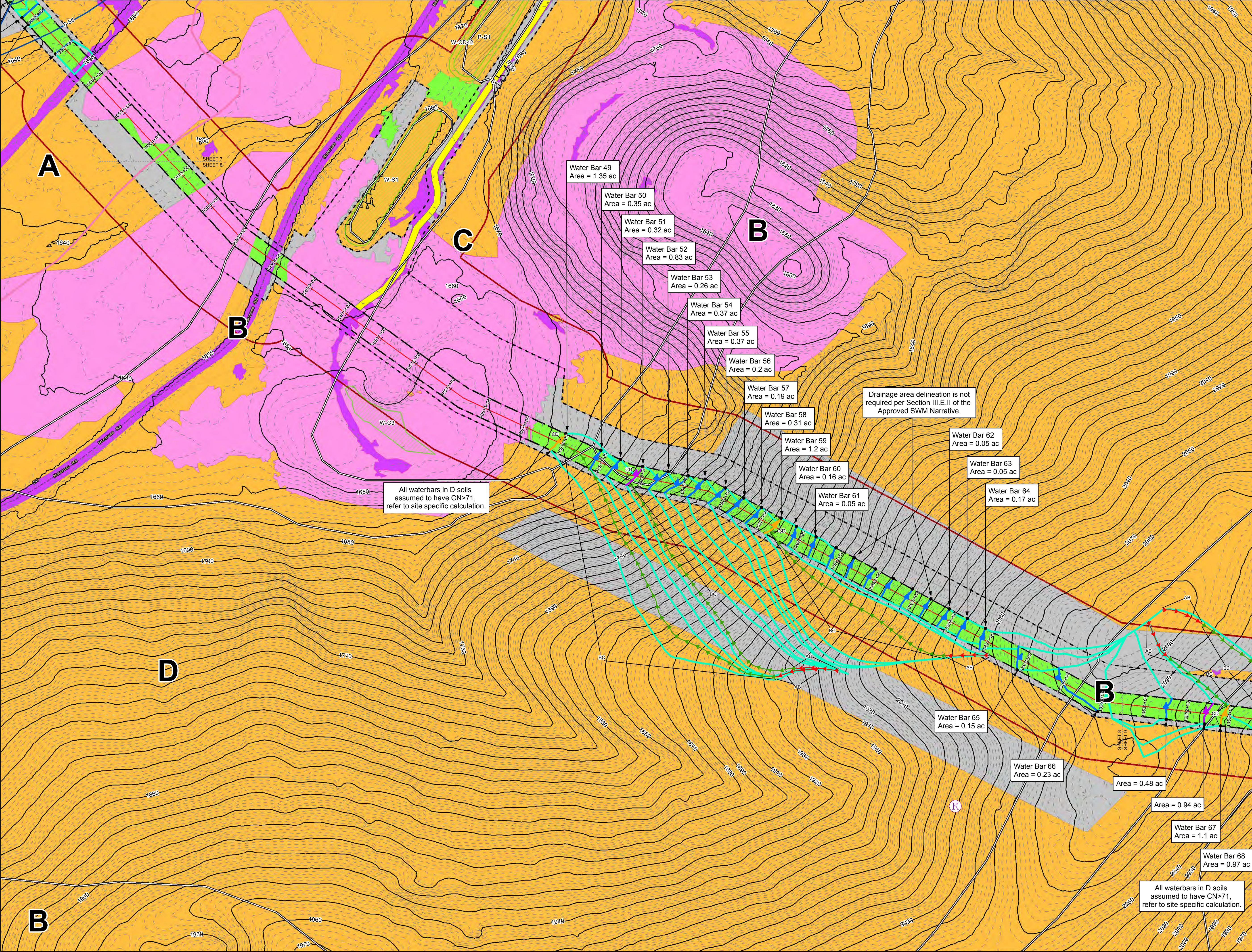
### Drainage Map Spread 8

Figure 7 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From 10473+50	To 10507+00
Post Construction Plan No.	12.08PC	12.09PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.





### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
	MLV Site		Open Water
	Access Road Permanent Easement		10-foot Contour
	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 8 Site Specific Analyses" for all calculations related to waterbar and treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N

1" = 100 feet

100 0 100 Feet

### Mountain Valley Pipeline Project

## Drainage Map

## Spread 8

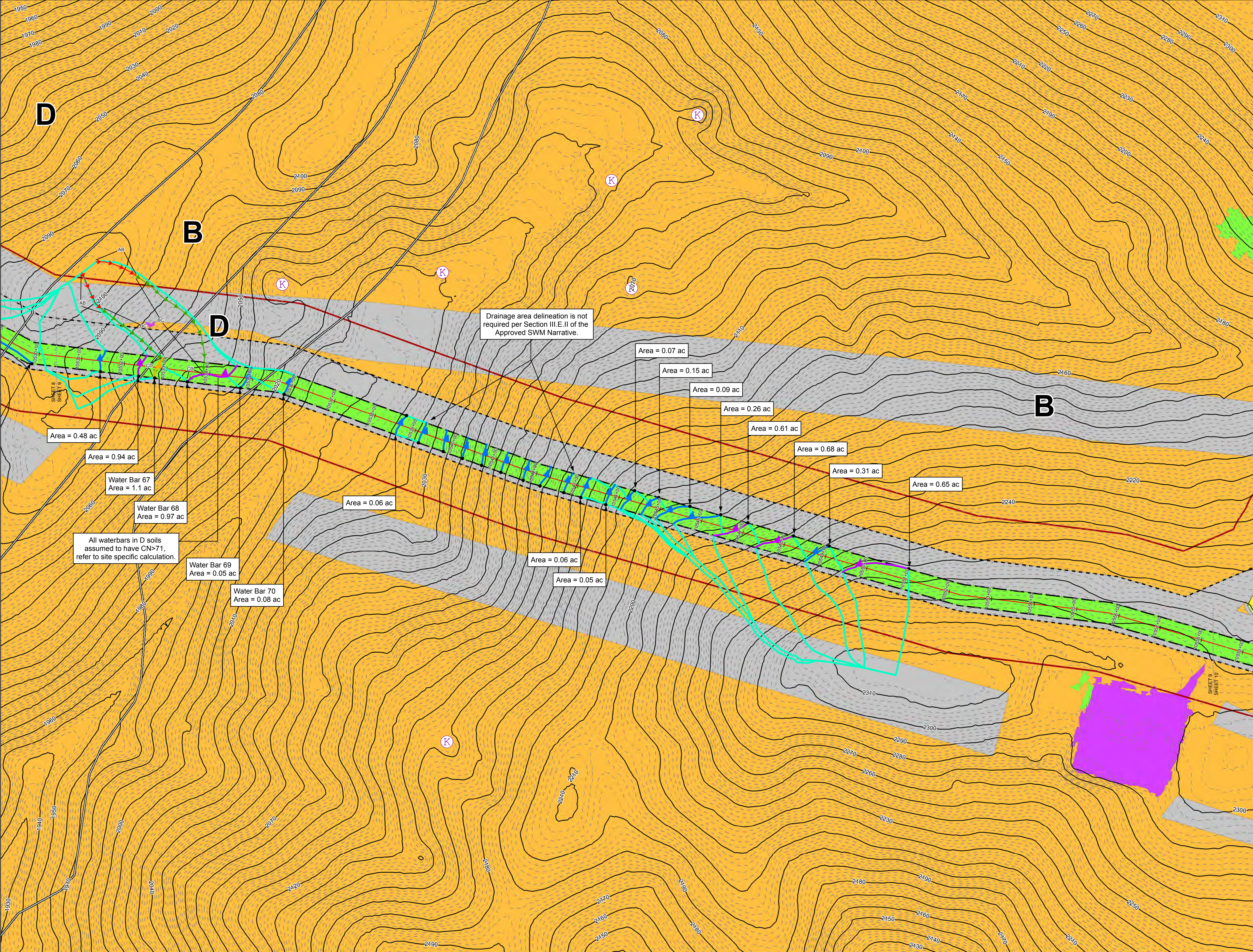
Figure 8 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From 10500+00	To 10533+00
Post Construction Plan No.	12.10PC	12.10PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

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### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
	MLV Site		Open Water
	Access Road Permanent Easement		10-foot Contour
	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 8 Site Specific Analyses" for all calculations related to waterbar and treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N

1" = 100 feet

100 0 100 Feet

### Mountain Valley Pipeline Project

### Drainage Map Spread 8

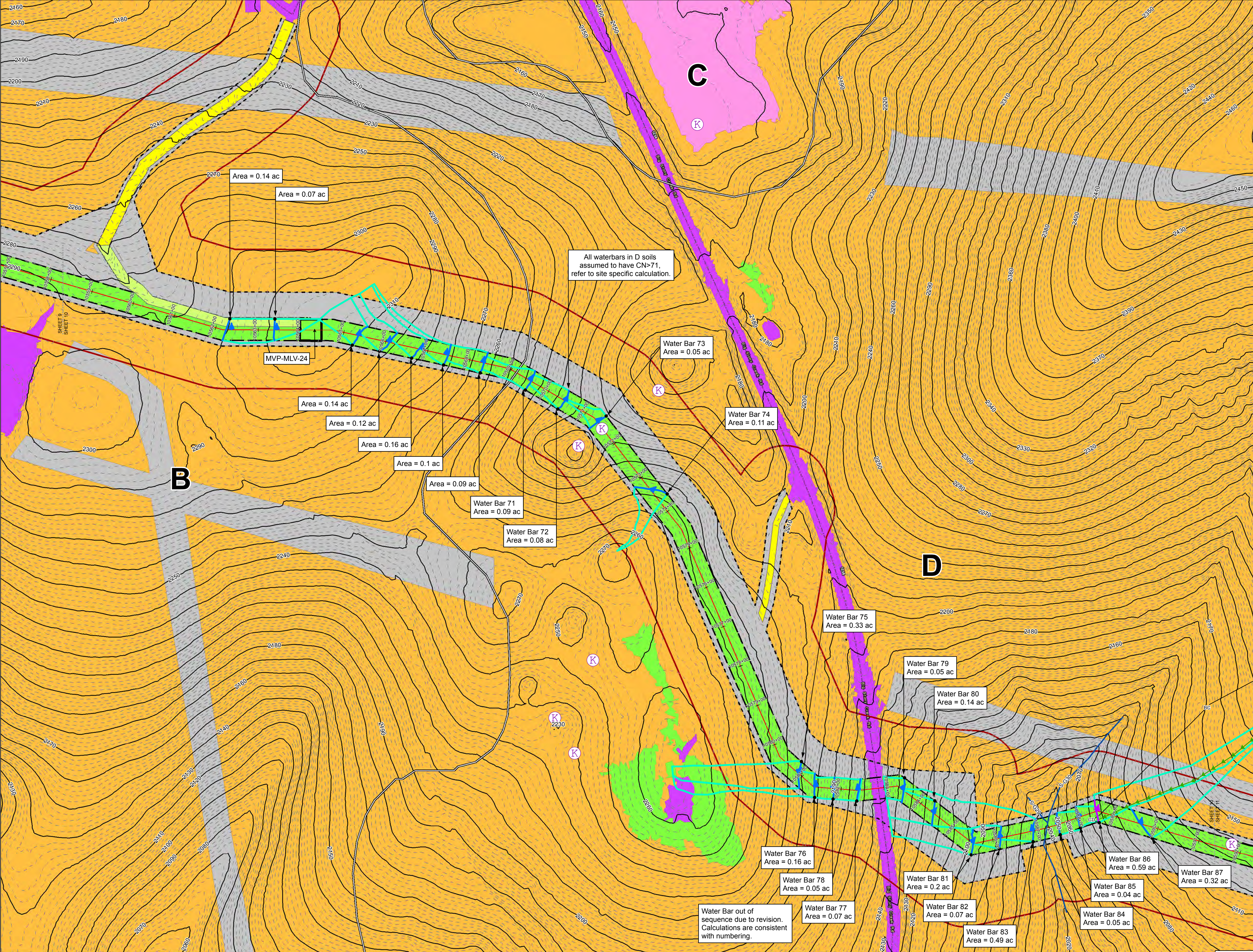
Figure 9 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From 10530+00	To 10559+00
Post Construction Plan No.	12.11PC	12.11PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LiDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

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### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
	MLV Site		Open Water
	Access Road Permanent Easement		10-foot Contour
	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 8 Site Specific Analyses" for all calculations related to waterbar and treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N

1" = 100 feet

100 0 100 Feet

### Mountain Valley Pipeline Project

### Drainage Map Spread 8

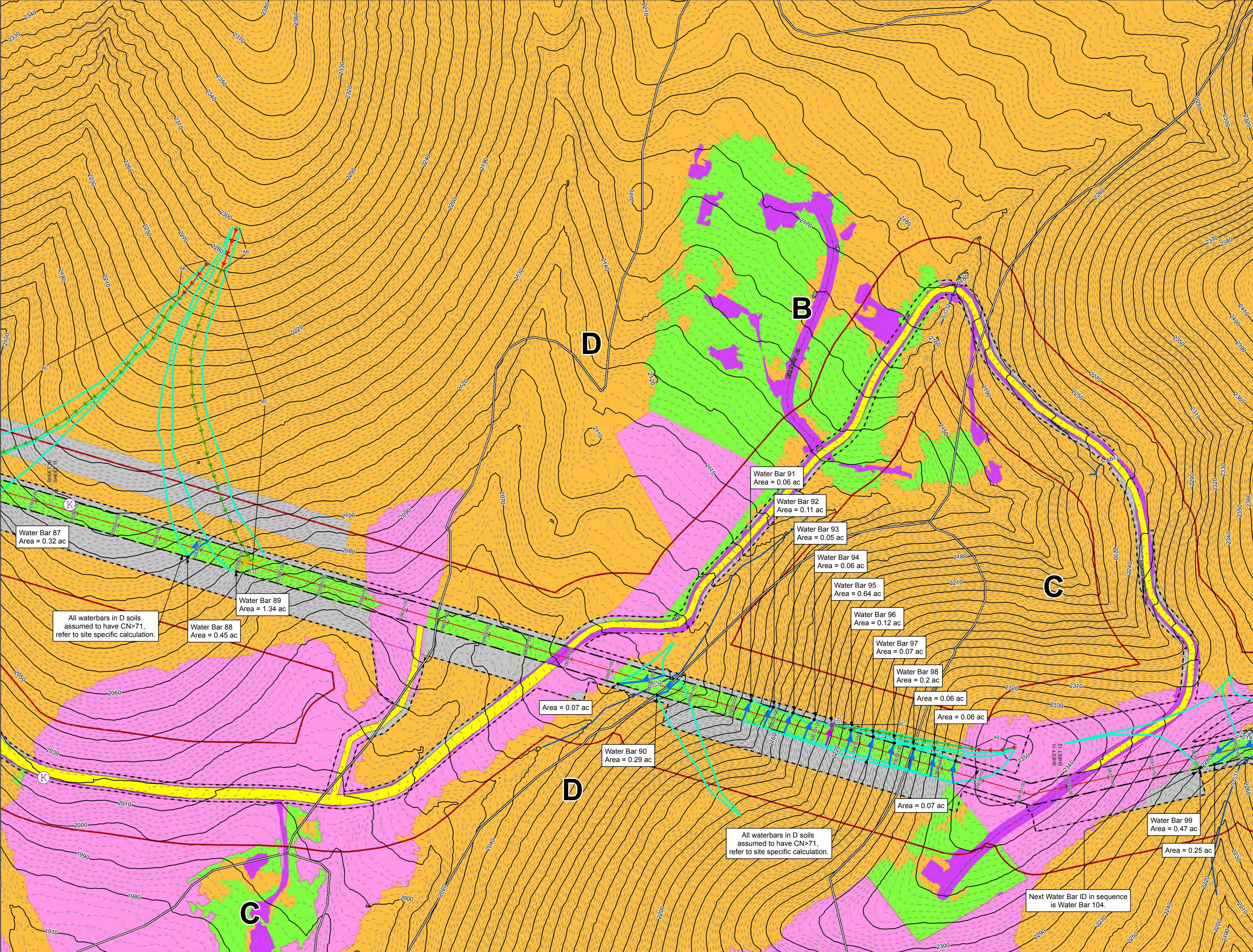
Figure 10 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From 10557+00	To 10592+00
Post Construction Plan No.	12.11PC	12.12PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

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### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
	MLV Site		Open Water
	Access Road Permanent Easement		10-foot Contour
	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 3 Site Specific Analyses" for all calculations related to waterbar and treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N

1" = 100 feet

100 0 100 Feet

### Mountain Valley Pipeline Project

### Drainage Map

### Spread 8

Figure 11 of 18

Giles County

March 5, 2018

Pipeline Stationing -	From 10591+00	To 10620+00
Post Construction Plan No.	12.13PC	12.13PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

All waterbars in D soils assumed to have CN>71, refer to site specific calculation.

Water Bar 87  
Area = 0.32 ac

Water Bar 88  
Area = 0.45 ac

Water Bar 89  
Area = 1.34 ac

Water Bar 90  
Area = 0.29 ac

Water Bar 91  
Area = 0.06 ac

Water Bar 92  
Area = 0.11 ac

Water Bar 93  
Area = 0.05 ac

Water Bar 94  
Area = 0.06 ac

Water Bar 95  
Area = 0.64 ac

Water Bar 96  
Area = 0.12 ac

Water Bar 97  
Area = 0.07 ac

Water Bar 98  
Area = 0.2 ac

Water Bar 99  
Area = 0.47 ac

Area = 0.07 ac

Area = 0.06 ac

Area = 0.06 ac

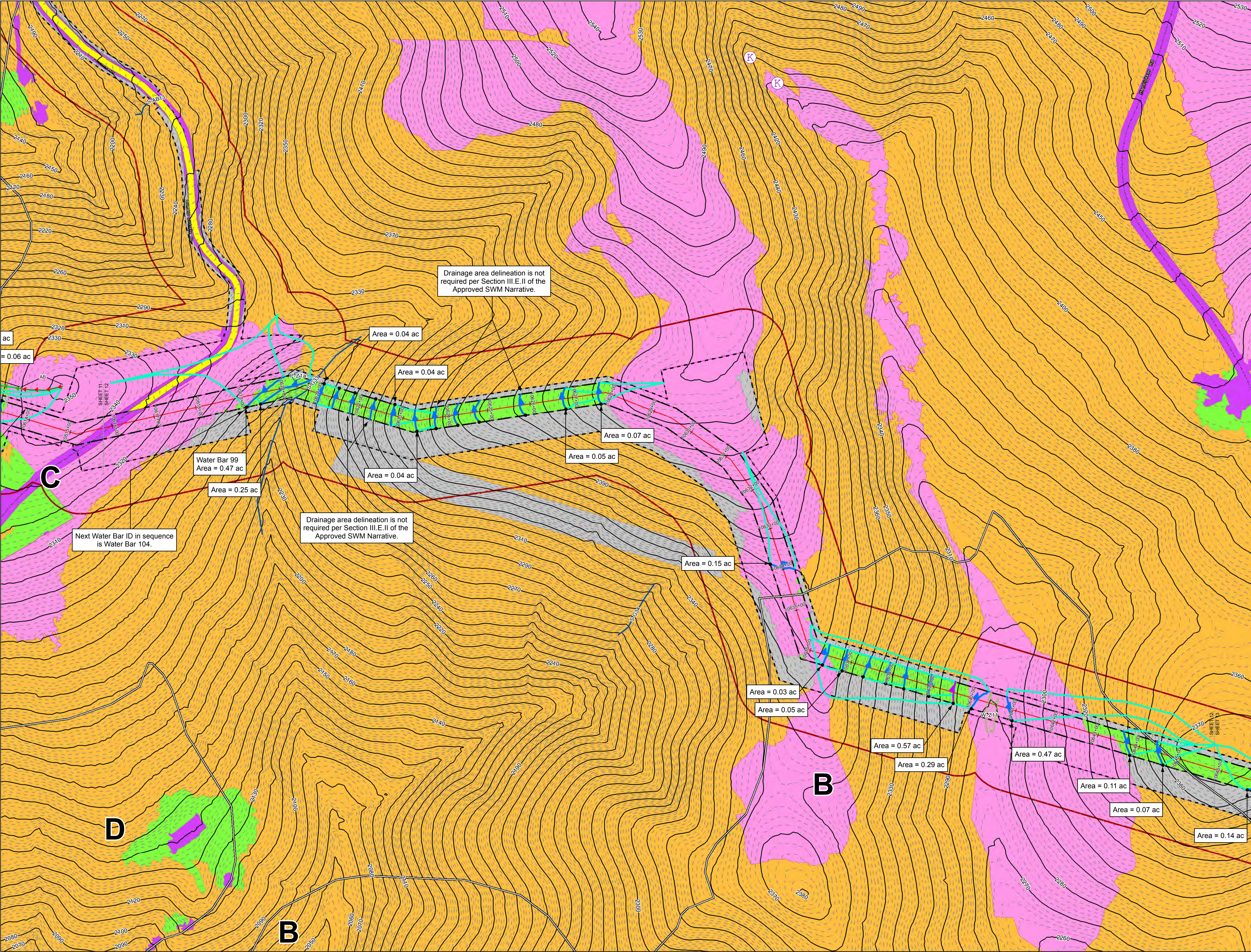
Area = 0.07 ac

Area = 0.25 ac

Next Water Bar ID in sequence is Water Bar 104.

All waterbars in D soils assumed to have CN>71, refer to site specific calculation.





**Legend**

Karst Feature

Approximate Location of Water Bar End Treatment

Permanent Water Bar 10-ft End Treatment

Permanent Water Bar 15-ft End Treatment

Permanent Water Bar 20-ft End Treatment

Sheetflow

Shallow Concentrated Flow

Streams

Stationing

Alignment Centerline

Permanent Easement

Limit of Disturbance

MLV Site

Access Road Permanent Easement

Existing Impervious Surveyed Road Edge

New/Proposed Impervious Road Edge

Water Bar Drainage Area

100-year Floodplain

Pond

Wetland

Hydrologic Soil Groups

100 ft Buffer off of Limits of Disturbance

Agricultural

Barren

Brush

Forest

Impervious

Meadow

Open Water

10-foot Contour

2-foot Contour

State Road Centerline

Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 8 Site Specific Analyses" for all calculations related to waterbar and treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N

1" = 100 feet

100

0

100

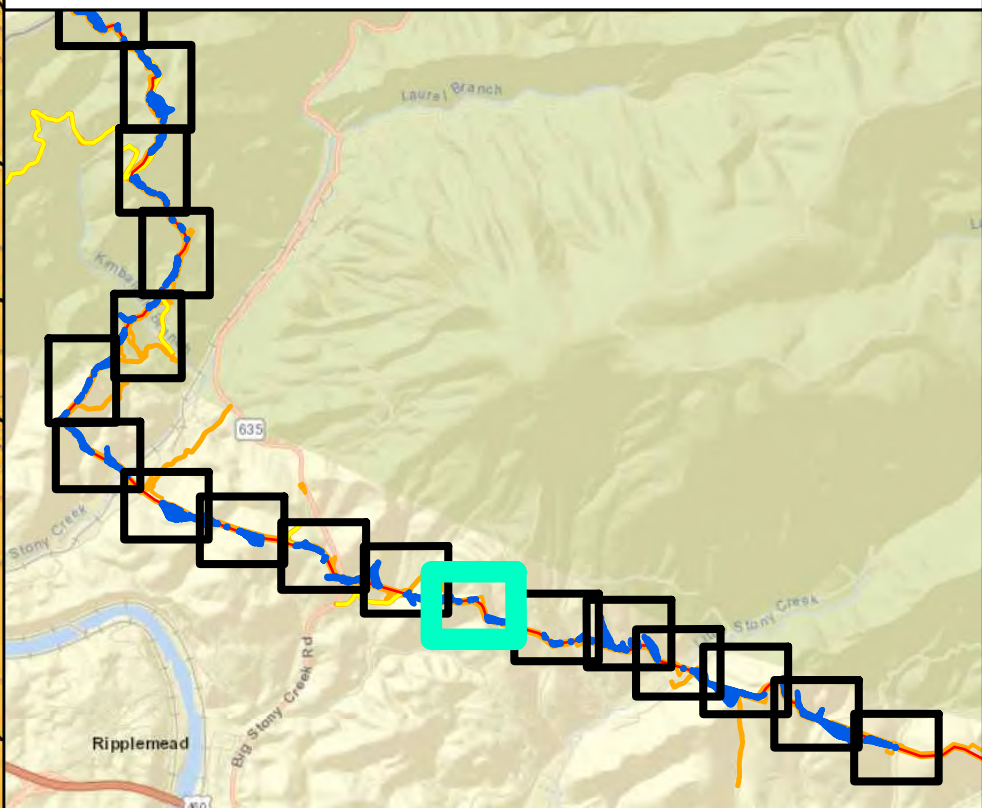
Feet

W

E

N

S



**Mountain Valley Pipeline Project**

**Drainage Map  
Spread 8**

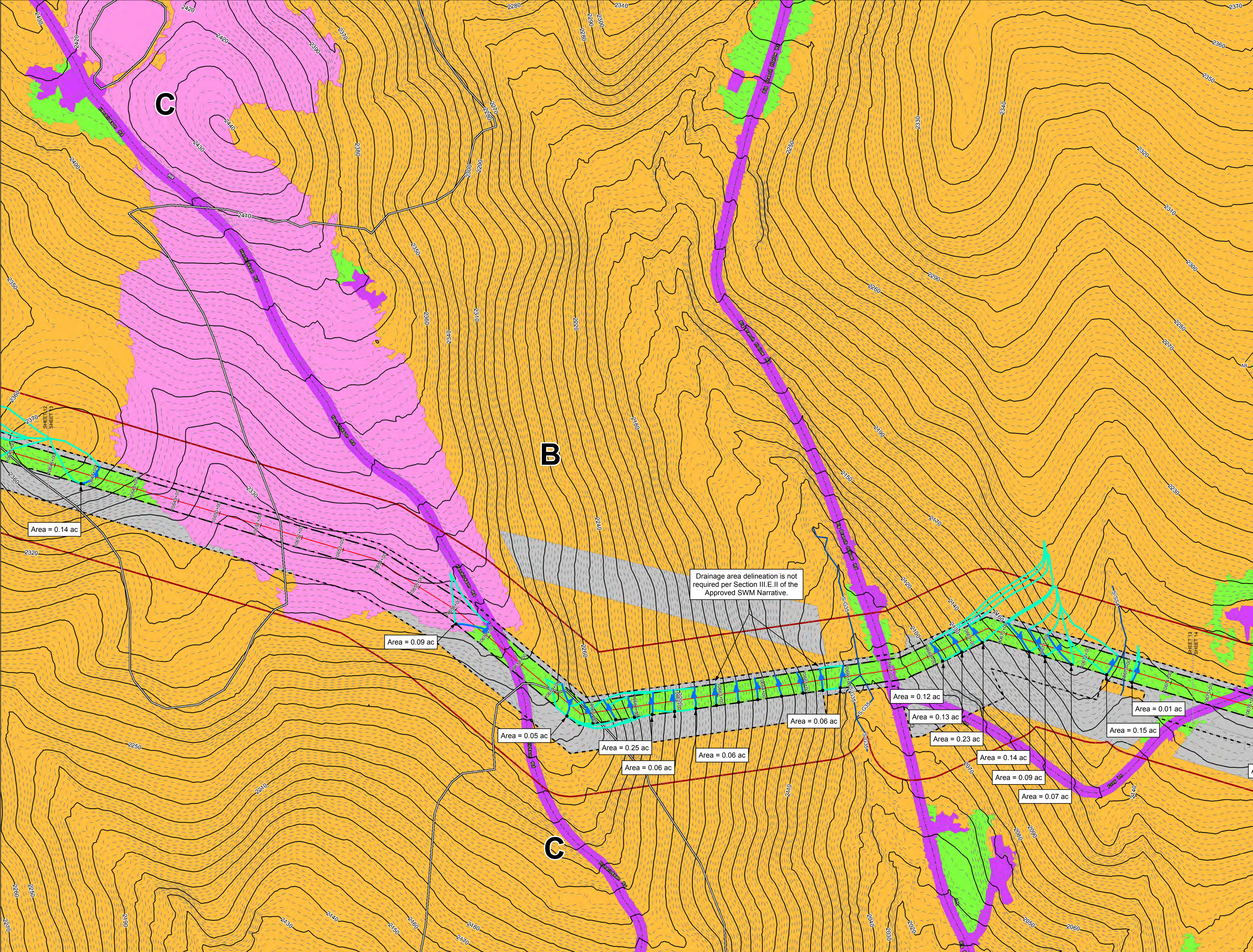
**Figure 12 of 18  
Giles County  
March 5, 2018**

Pipeline Stationing -	From 10614+00	To 10646+00
Post Construction Plan No.	12.14PC	12.14PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

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### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
	MLV Site		Open Water
	Access Road Permanent Easement		10-foot Contour
	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 8 Site Specific Analyses" for all calculations related to waterbar and treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N

1" = 100 feet

100 0 100 Feet

### Mountain Valley Pipeline Project

### Drainage Map Spread 8

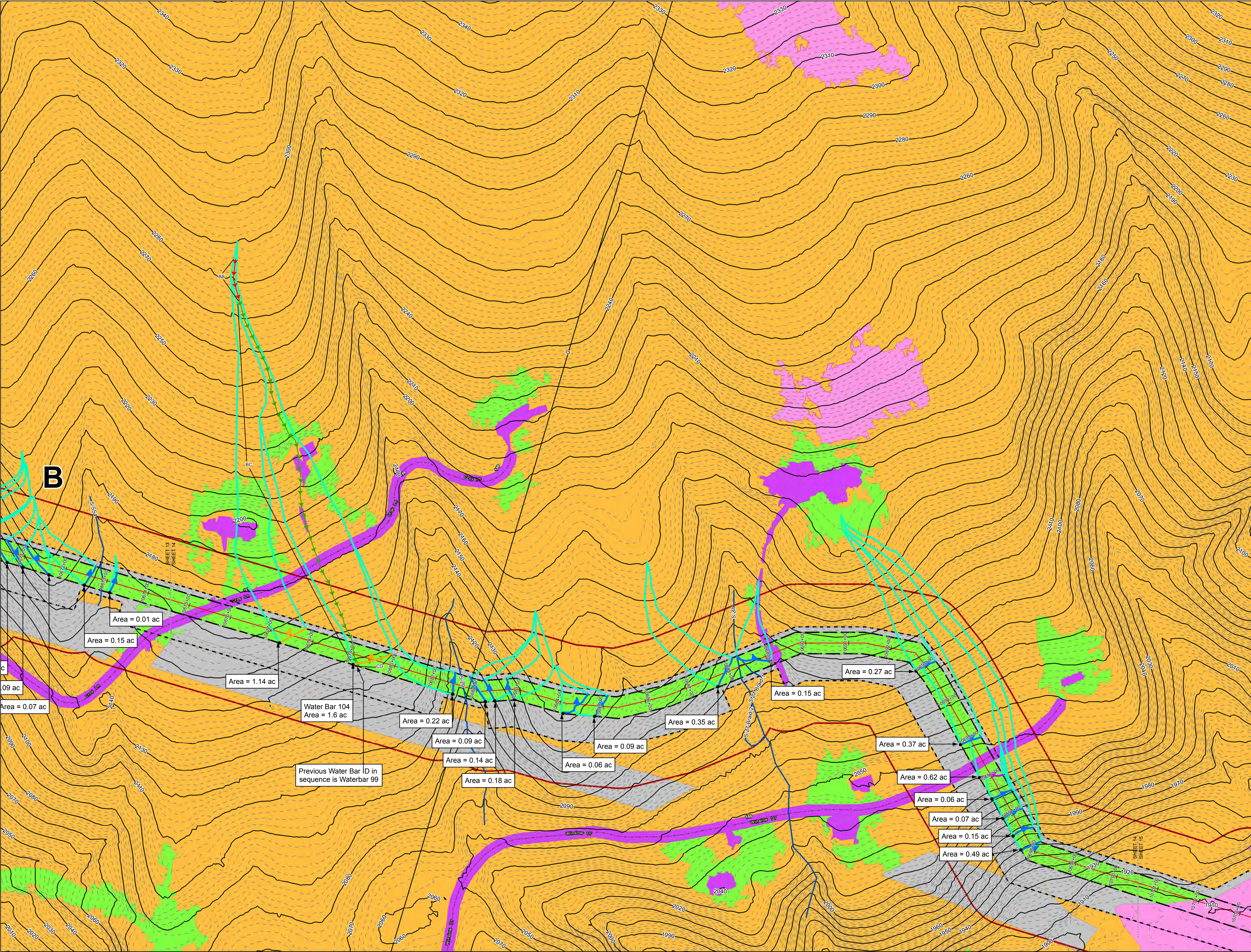
Figure 13 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From 10645+00	To 10676+00
Post Construction Plan No.	12.14PC	12.15PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

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### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
	MLV Site		Open Water
	Access Road Permanent Easement		10-foot Contour
	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 3 Site Specific Analyses" for all calculations related to waterbar and treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N

1" = 100 feet

100 0 100 Feet

### Mountain Valley Pipeline Project

## Drainage Map Spread 8

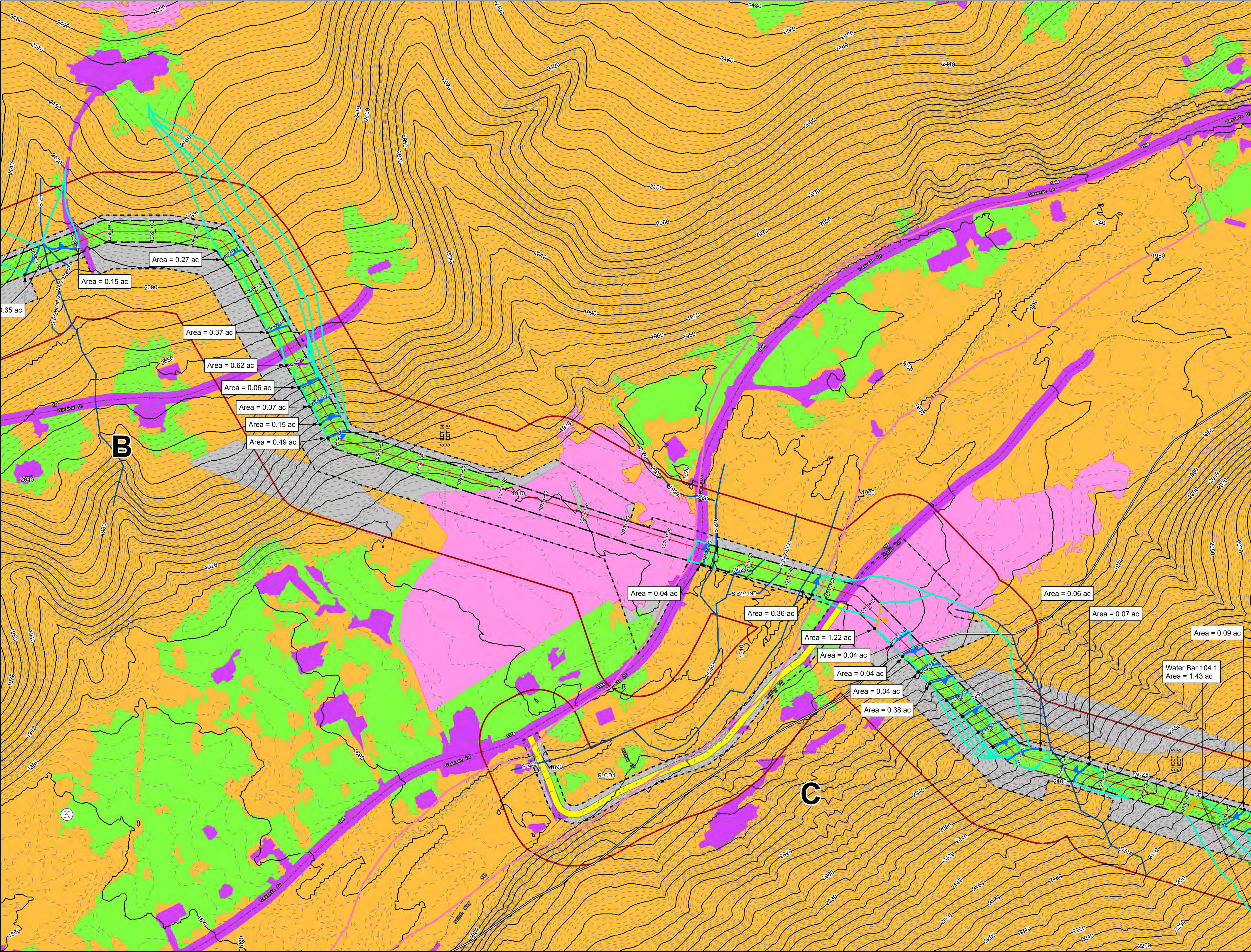
Figure 14 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From 10671+00	To 10703+00
Post Construction Plan No.	12.15PC	12.16PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

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### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
	MLV Site		Open Water
	Access Road Permanent Easement		10-foot Contour
	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix B Site Specific Analyses" for all calculations related to waterbar and treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N

1" = 100 feet

100 0 100 Feet

### Mountain Valley Pipeline Project

### Drainage Map Spread 8

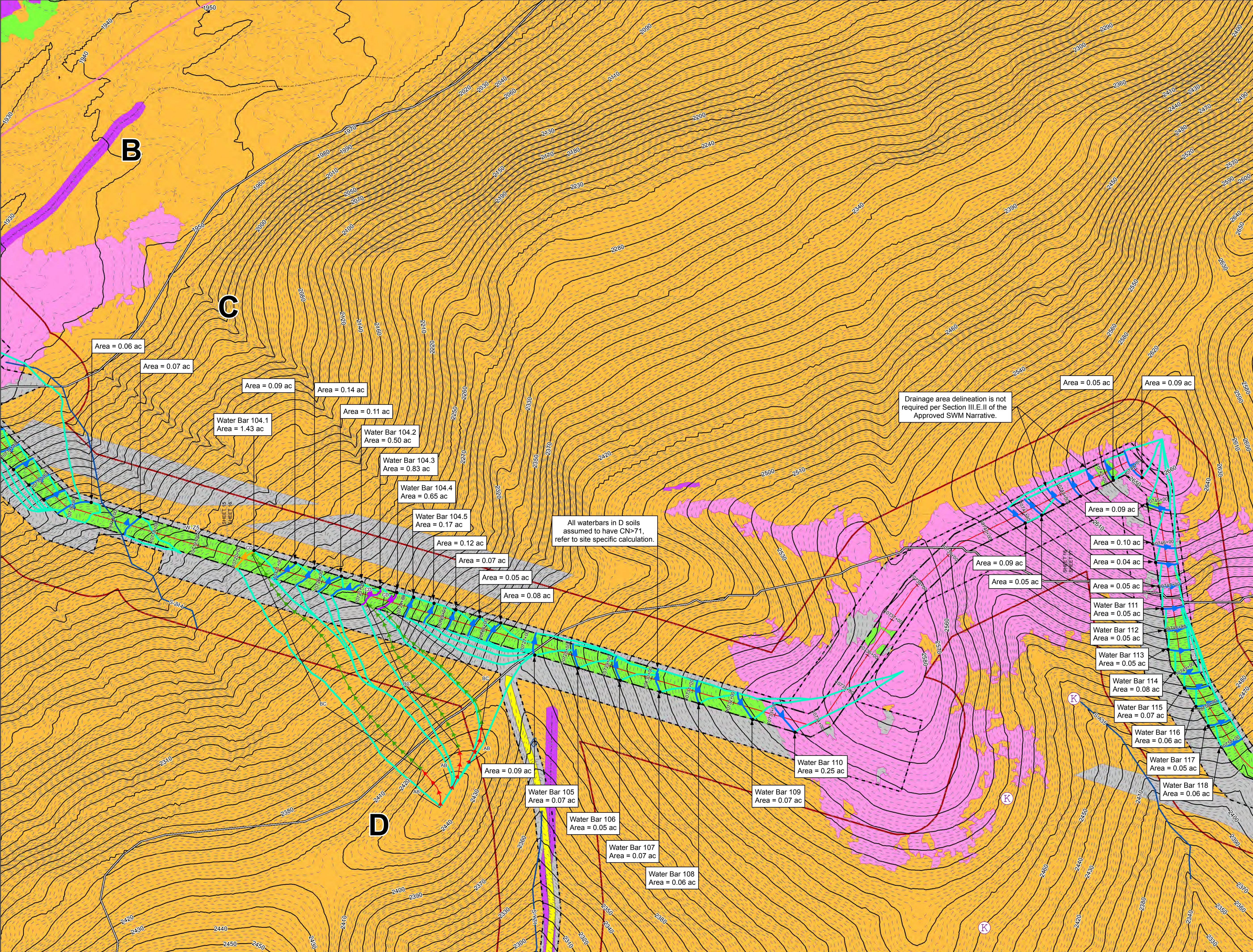
Figure 15 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From 10690+00	To 10721+00
Post Construction Plan No.	12.16PC	12.17PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

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### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
	MLV Site		Open Water
	Access Road Permanent Easement		10-foot Contour
	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 3 Site Specific Analyses" for all calculations related to waterbar and treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N

1" = 100 feet

100 0 100 Feet

### Mountain Valley Pipeline Project

### Drainage Map Spread 8

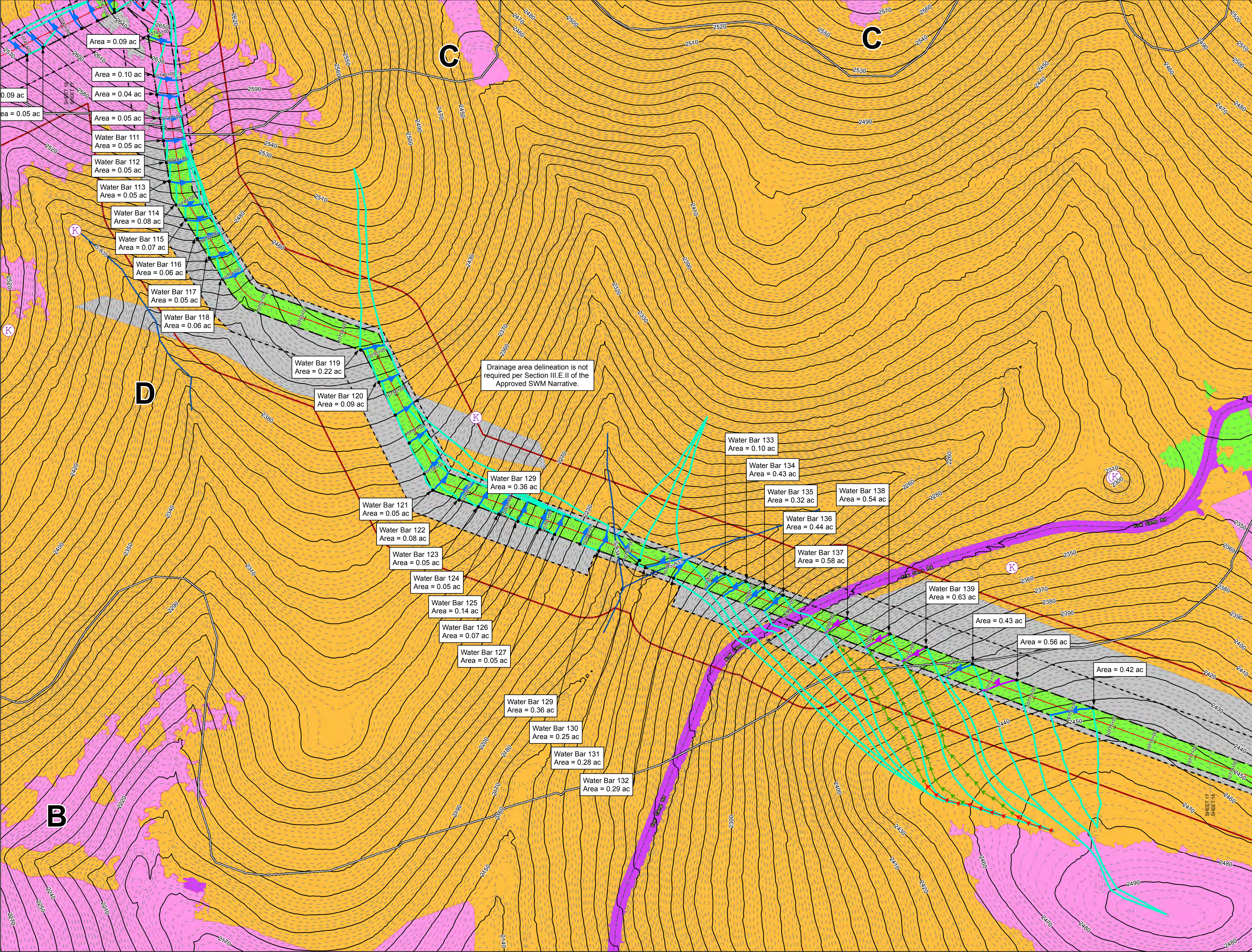
Figure 16 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From 10714+00	To 10751+00
Post Construction Plan No.	12.17PC	12.18PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

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### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
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	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 8 Site Specific Analyses" for all calculations related to waterbar end treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N

1" = 100 feet

100 0 100 Feet

### Mountain Valley Pipeline Project

## Drainage Map Spread 8

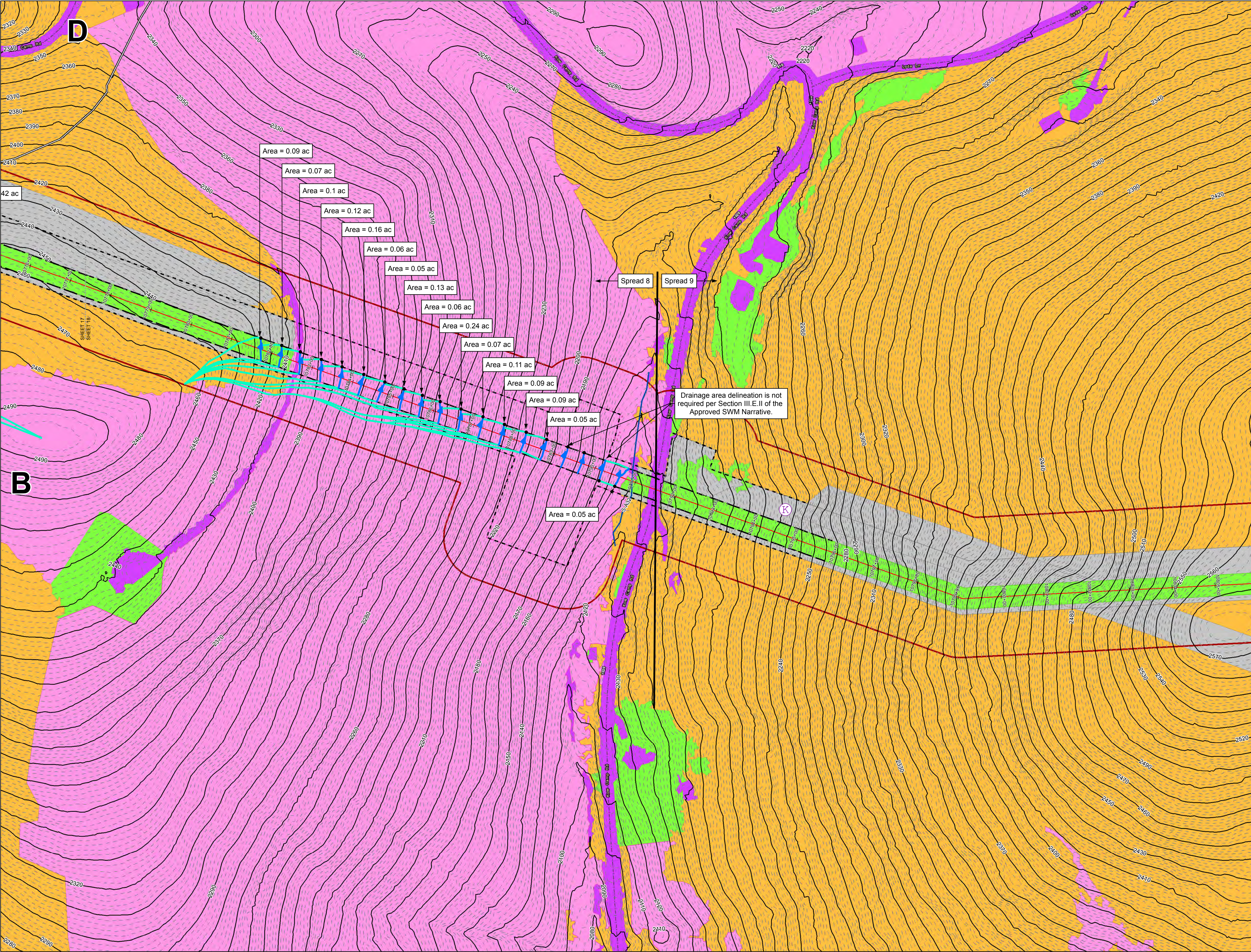
Figure 17 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From 10745+00	To 10778+00
Post Construction Plan No.	12.18PC	12.19PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.

Document Path: PGH\_P\GIS\EQT\_MVP\MapDocs\Drainage\MXD\MVP\_Drainages\_Spread8\_36x24.mxd





### Legend

	Karst Feature		Water Bar Drainage Area
	Approximate Location of Water Bar End Treatment		100-year Floodplain
	Permanent Water Bar 10-ft End Treatment		Pond
	Permanent Water Bar 15-ft End Treatment		Wetland
	Permanent Water Bar 20-ft End Treatment		Hydrologic Soil Groups
	Sheetflow		100 ft Buffer off of Limits of Disturbance
	Shallow Concentrated Flow		Agricultural
	Streams		Barren
	Stationing		Brush
	Alignment Centerline		Forest
	Permanent Easement		Impervious
	Limit of Disturbance		Meadow
	MLV Site		Open Water
	Access Road Permanent Easement		10-foot Contour
	Existing Impervious Surveyed Road Edge		2-foot Contour
	New/Proposed Impervious Road Edge		State Road Centerline

Notes:

1) Note that only waterbars with a number designation required site specific analysis. Refer to "Appendix - Spread 8 Site Specific Analyses" for all calculations related to waterbar and treatment and drainage area analysis.

2) Unless otherwise noted, the water bar drainage areas on this sheet are less than or equal to 1.5-acres and have a CN less than or equal to 71 and thus do not need a site specific calculation. In HSG A and B soils, it can be determined by inspection if the CN exceeds 71 because impervious cover must exceed 60% in A soils and 32% in B soils (assuming a worst case of meadow conditions in the remainder of the water bar drainage area). A weighted CN is provided for water bar drainage areas with HSG C soils and any impervious cover. Water bar drainage areas with HSG D soils are assumed to have a CN greater than 71. A site specific calculation is provided if the water bar drainage area is greater than 1.5-acres or has a CN greater than 71. Site specific calculations will use the Rational Method equation with runoff coefficients contained in VASWMH Table 4-5a and 4-5b.

3) Per the Approved Test Area Stormwater Narrative (1/22/2018), Section II.A and II.B, the 75-foot temporary construction and 50-foot permanent ROW will be restored to predevelopment conditions except where that condition is forested. In this case the 75-foot temporary construction LOD post-development condition will be brush (seeded with a mix of herbaceous and woody species) and may naturally return to forest condition subject to landowner actions; and the 50-foot permanent ROW when indicated will be seeded and restored to meadow conditions.

NAD 1983 UTM 17N

1" = 100 feet

100 0 100 Feet

### Mountain Valley Pipeline Project

## Drainage Map

### Spread 8

Figure 18 of 18  
Giles County  
March 5, 2018

Pipeline Stationing -	From 10776+00	To 10791+50
Post Construction Plan No.	12.19PC	12.20PC

Data Sources: Imagery from ESRI Streaming Data 2014, Delineated streams surveyed by Tetra Tech Inc. 2014 to 2017, Elevation data derived from LIDAR provided by EQT 2016, Soils from NRCS Gridded Soil Survey Geographic (SSURGO) database 2014, Forest cover land use from the VGIN Land Cover Dataset, Transportation data from VITA map layer 2016, Existing and proposed roads were surveyed by EQT.