



Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1 – General Project Description

October 2015

Mountain Valley Pipeline Project

Resource Report 1 – General Project Description

Resource Report 1—General Project Description	
Filing Requirement	Location in Environmental Report
<p>1. Provide a detailed description and location map of the project facilities (§ 380.12(c)(1)).</p> <ul style="list-style-type: none"> • Include all pipeline and aboveground facilities. • Include support areas for construction or operation. • Identify facilities to be abandoned. 	Section 1.2 Figure 1.2-1
<p>2. Describe any non-jurisdictional facilities that would be built in association with the project. (§ 380.12(c)(2)).</p> <ul style="list-style-type: none"> • Include auxiliary facilities (See § 2.55(a)). • Describe the relationship to the jurisdictional facilities. • Include ownership, land requirements, gas consumption, megawatt size, construction status, and an update of the latest status of federal, state, and local permits/approvals. • Include the length and diameter of any interconnecting pipeline. • Apply the four-factor test to each facility (see § 380.12(c)(2)(ii)). 	Section 1.9
<p>3. Provide current, original United States Geological Survey (USGS) 7.5-minute series topographic maps with mileposts showing the project facilities (§ 380.12(c)(3)).</p> <ul style="list-style-type: none"> • Maps of equivalent details are acceptable if legible (check with staff). • Show locations of all linear project elements, and label them. • Show locations of all significant aboveground facilities, and label them. 	Appendix 1-B
<p>4. Provide aerial images or photographs or alignment sheets based on these sources with mileposts showing the project facilities. (§ 380.12(c)(3)).</p> <ul style="list-style-type: none"> • No more than 1-year old • Scale no smaller than 1:6,000 	Appendix 1-A
<p>5. Provide plot/site plans of compressor stations showing the location of the nearest noise-sensitive areas (NSA) within 1 mile. (§ 380.12(c)(3,4)).</p> <ul style="list-style-type: none"> • Scale no smaller than 1:3,600 • Show reference to topographic maps and aerial alignments provided above. 	Appendix 1-C2 (CEII)
<p>6. Describe construction and restoration methods. (§ 380.12(c)(6)).</p>	Section 1.4
<p>7. Identify the permits required for construction across surface waters. (§ 380.12(c)(9)).</p> <ul style="list-style-type: none"> • Include the status of all permits. • For construction in the federal offshore area be sure to include consultation with the MMS. File with the MMS for rights-of-way grants at the same time or before you file with the FERC. 	Section 1.7 Table 1.7-1
<p>8. Provide the names and addresses of all affected landowners as required and certify that all affected landowners will be notified;</p> <ul style="list-style-type: none"> • Affected landowners are defined in § 157.6(d)(2) • Provide an electronic copy directly to the environmental staff. 	Appendix 1-M

Resource Report 1—General Project Description	
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Additional Information Often Missing and Resulting in Data Requests	
1. Describe all authorizations required to complete the proposed action and the status of applications for such authorizations	Section 1.7 Table 1.7-1
2. Provide plot/site plans of all other aboveground facilities that are not completely within the right-of-way.	Appendix 1-C2 (CEII)
3. Provide detailed typical construction right-of-way cross-section diagrams showing information such as widths and relative locations of existing rights-of-way, new permanent rights-of-way, and temporary construction rights-of-way. See Resource Report 8 – Land Use, Recreation, and Aesthetics.	Appendix 1-C1
4. Summarize the total acreage of land affected by construction and operation of the project.	Section 1.3 Resource Report 8
5. If Resource Report 5 - Socioeconomics is not provided, provide the start and end dates of construction, the number of pipeline spreads that would be used, and the workforce per spread.	Section 1.4.5 Resource Report 5 provided
6. Send two (2) additional copies of topographic maps and aerial images/photographs directly to the environmental staff of the Office of Energy Projects (OEP).	To Be Provided

FERC Environmental Information Request for Resource Report 1 Dated March 13, 2015	
Request	Location in Resource Report
1. Discuss whether, to the best knowledge of Mountain Valley, any natural gas transported for this Project would be designated for export. If all of the gas transported in the Mountain Valley pipeline would be for domestic use, describe the type of customers who would be using the gas. In particular, discuss realistic opportunities for use by local distribution companies along the pipeline route.	Section 1.1 Pg. 1-1, 1-2
2. Include descriptions of any planned interconnections along the Mountain Valley pipeline route, including maps showing their locations, and detailed plan view drawings of any new proposed delivery meter stations.	Section 1.2.2.3 Table 1.2-2 Pg. 1-9 Appendix 1-B
3. Describe any modifications needed at Transcontinental Gas Pipe Line Company's (Transco) existing Station 165 to receive the natural gas from Mountain Valley. In addition, identify and describe any other modifications required to existing natural gas systems upstream or downstream of Station 165 to handle volumes from the Project.	Section 1.2.1 Pg. 1-6
4. Indicate if Mountain Valley plans to install any communication towers along the proposed pipeline route, and if so, identify their location and height.	Section 1.2.2 Pg. 1-6
5. Clarify the diameter of the pipeline. Would it be 36-inches or 42-inches in diameter? If multiple diameters would be used, include a table by milepost (MP) that provides the segment for each diameter.	Section 1.1 Pg. 1-1
6. Section 1.1 (page 1-1 of Resource Report [RR] 1) stated that the Project would require approximately 217,000 horsepower while table 1.2-2 sums to 217,200 horsepower. Clarify the apparent discrepancy.	Section 1.1 Pg. 1-5
7. Clarify the expected operating range for the Harris Station.	Section 1.2.2.1 Pg. 1-11

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Request	Location in Resource Report
8. Include information missing from table 1.3-1, Land Requirements (on page 1-8 of RR1).	Table 1.3-1
9. Table 1.2-2 (page 1-6 of RR1) listed MP 75 as the location for one of the pig launcher/receivers, while table 1.3-3 (page 1-10) stated it would be located at MP 76. Clarify the apparent discrepancy.	Tables 1.2-2 and 1.3-3
10. Include a complete justification for the request to use a 125-foot-wide construction right-of-way in uplands and 75-foot-wide permanent easement. In particular, justify the proposed construction right-of-way width in forested areas. Include a detailed justification for the request to modify the FERC's <i>Wetland and Waterbody Construction and Mitigation Procedures</i> (Procedures) to use a 85-foot-wide construction right-of-way across wetlands.	Sections 1.3.1 and 1.4.1.2 Pg. 1-10, 1-29, 1-30
11. Revise table 1.3-3 (page 1-10 in RR1) to include the locations of cathodic protection rectifiers and beds.	Table 1.3-3 Pg. 1-6
12. Include measures to be implemented to avoid or minimize impacts on sensitive resources, such as wetlands and forest, along new access roads.	Section 1.3.3 Pg. 1-12, 1-13
13. Describe and justify any Project-specific deviations from the FERC's May 2013 versions of our <i>Upland Erosion Control, Revegetation, and Maintenance Plan</i> (Plan) and Procedures.	Section 1.4.1.1 Pg. 1-15
14. Include Project-specific plans for burning slash, and detail measures to be implemented to protect forest, waterbodies, wetlands, air quality, nearby residents, and other sensitive resources in areas where slash would be burned.	Section 1.4.1.1 (b) Pg. 1-17
15. Include a Project-specific plan for winter construction. If construction would be halted during the winter, provide a Winterization Plan that outlines measures to secure the right-of-way, and protect it from erosion or other damages, until construction would resume in spring.	Section 1.4.1.2 Pg. 1-31 Appendix 1-K
16. Clarify if automated welding techniques would be used during pipeline construction (see section 1.4.1.1, page 1-16 of RR1).	Section 1.4.1.1 (f) Pg. 1-18
17. Justify the clearing of a 15-foot-wide swath associated with horizontal directional drills (HDD) (see section 1.4, page 1-21 of RR1). Outline measures that would be implemented to minimize impacts on trees along the centerline-guide wire of an HDD. Discuss the possibility that pulling an HDD in segments, thereby increasing construction flexibility and eliminating the need for prefabricated HDD sections (and pullback workspaces) to be the same length as the HDD.	Section 1.4.1.1 (d) Typical Waterbody Crossings Pg. 1-24
18. Clarify the size of the foreign pipeline crossing at MP 0.6 listed on Table 1.4-2 (page 1-22 of RR1) as -99. Also, include details about the size of the seven foreign pipelines at MPs 35.8 and 286.2 listed as "unknown."	Table 1.4-1
19. Describe special measures that would be used for construction or restoration in steep terrain. Explain how Mountain Valley would prevent rocks from rolling off the right-of-way, install erosion controls, and prevent post-construction landslides. Address the comment filed by stakeholders that steep ridge tops often form property boundaries, and that these boundaries could be affected by post-restoration changes in topography.	Section 1.4.1.2 Pg. 1-29, 1-30
20. Identify any nonjurisdictional facilities associated with the Project (implied in Section 1.9, page 1-38 of RR1). If there are any nonjurisdictional facilities that would be built as a result of the new gas volumes associated with this Project, include the following detailed information for each facility: a. company/owner; b. type of facility; c. dimensions (pipe diameter, length, horsepower, etc. as appropriate for pipeline and land area for other facilities);	Section 1.9 Pg. 1-44

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Request	Location in Resource Report
d. maps showing locations; e. federal permits required and their status; f. status of local and state permits required; and g. any environmental reviews required for local, state, or federal permitting authorities.	
21. Clearly state whether or not Mountain Valley would participate in the FERC's third-party construction compliance monitoring program.	Section 1.4.4.1 Pg. 1-36
22. Revise Section 1.10 of RR1 to identify the location [e.g., county, state, watershed, and Air Quality Control Region (AQCR)], timeframe, general description, and estimated impact acres of recently completed, current, and reasonably foreseeable projects. Use the fifth-field hydrologic unit code (HUC) watershed as the geographic extent of the analyses, except where that is non-applicable, such as for an air quality basin and socioeconomics at the county level. Include a detailed discussion of cumulative impacts that these projects combined with the proposed MVP would have on each of the applicable environmental resources, such as soils, vegetation, wildlife, cultural resources, land use, air quality, etc. Outline measures other project proponents may implement, if required for local, state, or federal permitting, to avoid, minimize, or mitigate cumulative impacts.	Section 1.10 Pg. 1-44, 1-45, 1-46
23. Describe the material(s) Mountain Valley would use to backfill the trench over the pipeline. Discuss whether "fly-ash" would be used for backfilling material, as claimed by a comment filed by a stakeholder.	Section 1.4.1.1 (j) Pg. 1-19

FERC Environmental Information Request for Resource Report 1 Dated August 11, 2015	
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1. As previously requested in our comments on the first draft of RRs 1 and 10 dated March 13, 2015, describe in detail realistic opportunities for Mountain Valley to provide natural gas service to local distribution companies (LDC) located along the pipeline route, including specifics on which LDCs are currently coordinating with Mountain Valley and which communities may be served.	Section 1.1.2
2. Revise figure 1.2-1 to depict the planned interconnections.	Section 1.2.1; Figure 1.2-1
3. Include a discussion of shippers for the proposed 2.0 billion cubic feet per day (bcf/d) of natural gas. Indicate how much of this volume is currently under binding contract.	Section 1.2.1
4. Include information on the standard operating pressure of the proposed pipeline, as well as the maximum delivery capacity in dekatherms per day and cubic feet per day at its maximum operating pressure.	Section 1.2.1
5. Identify any communication towers Mountain Valley would install along its proposed pipeline route. Describe the location, dimensions, and design of each tower. Include an analysis of impacts from construction and operation of the towers on environmental resources, and measures to avoid, reduce or mitigate impacts in all applicable RRs.	Section 1.2.2.4
6. Clarify whether the natural gas transported would be odorized.	Section 1.2.1
7. Discuss any potential advantages to installing automatically closing mainline block valves (MLVs). Further, estimate the amount of time between the issuance of a remote signal to close an MLV and the actual closing.	Section 1.2.2.3

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8. Include, in section 1.3.1, an analysis of the potential to reduce the nominal construction right-of-way width in forested areas where topsoil would not typically be segregated, with additional temporary workspaces (ATWS) justified by site-specific conditions.	Section 1.3.1 and 1.3.4; Appendix 1-D
9. Revise table 1.3-2 to include length units for the “distance” column (in feet or miles). Add a column for the off-set (in feet) between the proposed Mountain Valley Pipeline and the edge of the adjacent existing rights-of-way, and a column for the overlap (in feet) of the existing rights-of-way and the Mountain Valley Pipeline construction right-of-way.	Appendix 1-E
10. Revise table 1.3-4 to include a column for land ownership, and a column for current land use at all yards. Include figures that illustrate each pipe storage yard and contractor yard. Each figure should depict the boundary of the yard at a scale of 0.5-inch = 500 feet (1:12,000) on an aerial image. Revise appendix 1-B to include the locations of all pipe storage and contractor yards.	Section 1.4; Table 1.3-4; Appendix 1-B; Appendix 1-C1
11. Include a table that lists all ATWS by milepost (MP), landowner (private, state, federal), dimensions (feet), current land use, and purpose of the ATWS (road crossing, etc.).	Section 1.3.4
12. Summarize all applicable local, state, and federal laws and regulations regarding the burning of brush and slash (also include in table 1.7-1). In section 1.4.1.1, include a description of Mountain Valley’s proposed Best Management Practices (BMP) for the burning of brush and slash in the construction right-of-way that would adhere to those fire control laws and regulations. Include a Fire Prevention and Suppression Plan that outlines the BMPs and other measures that would be implemented to reduce the impacts of proscribed burns on environmental resources. Document that the plan was developed in consultation with applicable agencies and local fire departments.	Section 1.4.1.1 and 1.7; Appendix 1-H
13. Clarify, in section 1.4.1.1, whether tree/brush windrows would be left permanently on the right-of-way or removed before restoration. If removed, describe how the trees and brush would be disposed. If left permanently, describe potential impacts on revegetation and wildlife. In addition, indicate whether the proposed “wildlife breaks/openings” in the windrows would allow for landowner passage by truck or tractor and the degree of landowner pre-coordination and approval required.	Section 1.4.1.1
14. Revise section 1.4.1.1(c) to include depth of cover (in feet) over the pipeline, with and without consolidated rock cover, for all construction scenarios (such as under waterbodies, roads, and railroads).	Section 1.4.1.1
15. Given that Mountain Valley stated in section 1.4.1.1 that it might use sand, clean fill, or limestone dust as backfill of the trench, describe any potential impacts on environmental resources, such as revegetation concerns or altered drainage patterns, associated with use of a backfill material that may not match the ambient soil/substrate conditions. Describe the characteristics of all trench fill materials, such as rock content, weed free certifications, and other relevant factors.	Section 1.4.1.1
16. In the description of horizontal directional drills (HDD), clarify the specific diameter of trees that would not be cut during guide wire installation. Also, discuss the feasibility of not removing any woody vegetation during placement of the guide wires for an HDD.	Section 1.4.1.1
17. Include, in section 1.4.1.1, a discussion of the feasibility of using Direct Pipe technology to cross specific waterbodies where that trenchless construction method may offer advantages relative to an HDD in certain situations such as unfavorable geology.	Section 1.4.1.1

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Request	Location in Resource Report
18. Include additional measures for construction in residential areas, such as preventing overnight access to the trench and the capping of open ends of pipe.	Section 1.4.1.1
19. Include a table of both vertical and lateral (side) slopes between 15 and 30 percent grade and a table listing slopes greater than 30 percent grade that would be crossed by the pipeline route.	Appendix 1-J
20. As previously requested in our comments on first draft RRs 1 & 10 dated March 13, 2015, describe special measures that would be used for construction or restoration in steep terrain (between 15 and 30 percent grade, and above 30 percent grade). Explain how Mountain Valley would prevent rocks from rolling off the right-of-way, and prevent post-construction landslides. Address the comment filed by stakeholders that steep ridge tops often form property boundaries, and that these boundaries could be affected by post-restoration changes in topography (i.e., steep ridgelines could be notably rounded off), and the associated concern that pre-construction topographic contours be returned to their original condition per the FERC Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) section V.A.5. Where applicable, list areas that would be subject to a proposed variance from the Plan section V.A.5. Include typical cross-sectional diagrams that illustrate both construction and restoration processes for the pipeline construction right-of-way for steep-vertical slopes and steep-lateral side slopes.	Section 1.4.1.2
21. Include water supply springs in addition to water supply wells in the pre- and post-blasting surveys discussed in section 1.4.1.2.	Section 1.4.1.2
22. Section 1.4.1.2 states a geotechnical contractor would evaluate uncovered karst features and determine the need for mitigation measures. Clarify if a geotechnical contractor would be on-site daily during construction.	Section 1.4.1.2
23. Section 1.4.1.2 states that "MVP does not plan to conduct construction activities during the winter season," yet table 1.4-2 states that clearing and grading would commence in January 2017. Resolve the apparent discrepancy.	Section 1.4.1.2 and 1.4.5
24. Justify why a permanent right-of-way easement wider than 50 feet is necessary.	Section 1.3.1
25. In section 1.5, include a tabular schedule for maximum intervals between inspections/patrols during operation of the pipeline based on class locations or other criteria.	Section 1.5.1; Table 1.5-1
26. Revise table 1.7-1 to include hydrostatic testing permits discussed in section 2.2.3 of RR 2.	Table 1.7-1
27. In section 1.9, identify any non-jurisdictional facilities, including water or electrical transmission lines that would be needed to supply the proposed compressor stations, meter stations, MLVs, or cathodic protection beds. For each non-jurisdictional facility, include: <ul style="list-style-type: none"> a. description, and dimensions; b. company/owner; c. maps showing location; d. construction schedule; and e. environmental reviews, and permits required and their status. 	Section 1.9
28. Mountain Valley referenced 0.25-, 0.5-, and 10-mile proximity zones for the geographic extent its cumulative impacts analyses in section 1.10. Revise the geographic extent of the cumulative impact analysis to include all recent past, current, and reasonably foreseeable projects within fifth-field hydrologic watersheds, or air basins for air quality, and county boundaries for socioeconomics. Modify table 1.10-1 to include data columns as previously requested in comments on first draft RRs 1 & 10 dated March 13, 2015.	Section 1.10

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<p>29. Quantify cumulative impacts on resource by adding impacts from the planned Mountain Valley facilities to impacts from other projects in the same watersheds, mentioned above in question 28. Quantification of impacts should include the amount of impact (e.g., acreage, water volumes, sound decibels), the duration of impact (e.g., short-term, long-term, permanent), and the degree of impacts (e.g., negligible, minor, major). In addition:</p> <ul style="list-style-type: none"> a. Where cumulative impacts on soils may occur, quantify impacts on erodible soils and prime farmland; b. Where cumulative impacts on waterbodies and groundwater may occur, quantify impacts from sedimentation, turbidity, and water uses; c. Where cumulative impacts on forested areas may occur, quantify the acreage of forest land that would be impacted, the acreage of forest land that would be restored, and the acreage of forestland that would be permanently removed; d. Where cumulative impacts on viewsheds would occur on public lands, evaluate visual impacts using parameters and methodologies developed in conjunction with the applicable land managing agency; e. Where cumulative impacts on air quality may occur, identify each facility that would contribute to the cumulative impact, including the estimated type and amount of pollutant and the airshed(s) that would be affected; and f. Where cumulative impacts from noise may occur, identify each activity or facility that would contribute to the cumulative impact. 	Section 1.10
Appendix 1-A Alignment Sheets	
<p>1. Update all alignment sheets to include the following information:</p> <ul style="list-style-type: none"> a. label all extra work spaces with extra work space number and dimensions (ensure labeling is consistent with table 8A); b. depict the entire length of temporary and permanent access roads using different symbols or colors; c. depict structures within 50 feet of the construction work space; d. depict and label all waterbody and wetland features crossed by the Project, consistent with tables 2A-2, 2A-3, 2B-1, and 2B-2; e. label all existing roadways crossed by the Project with roadway names; f. ensure that font and labels are clear for all sheets. The white font is difficult to read on several of the alignment sheet pages; identify all affected landowners via an identification number that correlates to an affected landowner list; g. depict location of all HDD entry and exit points; and h. depict survey corridor on alignment sheets. 	Appendix 1-A
Appendix 1-C Draft Winter Construction Plan	
<p>1. Clarify whether or not Mountain Valley has already identified ATWS expected to be needed for snow storage (from both the right-of-way and access roads) or if it would be identified on an as-needed basis. Describe all equipment that would be used to remove snow from the right-of-way and access roads.</p>	Appendix 1-K
<p>2. Indicate whether or not an open trench covered in snow would also be marked with high visibility poles to alert persons on all-terrain vehicles and others.</p>	Appendix 1-K
<p>3. Explain why mulching would cover “at least seventy-five percent of the ground surface” and not 100 percent.</p>	Appendix 1-K

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4.	Clarify whether sediment barriers would be installed with the goal of “minimal reportable control failures” or with a goal of no control failures.	Appendix 1-K
5.	Clarify the statement “topsoil piles will be left in a stabilized condition and replaced (emphasis added) when weather conditions permit proper de-compaction of the areas.”	Appendix 1-K
6.	Include specific timeframes for “continuously” monitored and maintained erosion control devices (ECD) and “consistent” inspections of stabilized and active construction areas.	Appendix 1-K
7.	Clarify why the specialized “shoe” that may be fitted to the blade or bucket of heavy equipment discussed in section 1.4.1 of RR 1 is not discussed in the winter construction plan. Describe in more detail how soil would not be disturbed and mixed with snow when “blading” is conducted during snow management activities on both the construction right-of-way and access roads.	Appendix 1-K
8.	Describe in more detail how ECDs such as silt fence, staked hay bales, and slope breakers would be installed and repaired under frozen conditions or snow cover.	Appendix 1-K
Appendix 1-D Typical Drawings		
1.	Revise appendix 1-D to include a drawing for a dam-and-pump waterbody crossing and wetland crossings.	Appendix 1-C1
Appendix 1-H Agency Correspondence		
1.	Include the “enclosed map” referenced in Mr. Lipford’s September 8, 2014 letter from the Nature Conservancy.	Appendix 1-L
Appendix 1-J Public, Stakeholder, and Agency Participation Plan		
1.	Identify the libraries where copies of the FERC application would be placed.	Appendix 1-N
2.	Include Mountain Valley’s landowner dispute resolution procedures. Include information such as the format of communication (e.g., letter), when landowners would be notified of the procedures, contact number(s), and how quickly Mountain would respond to issues.	Appendix 1-N
3.	Indicate that the FERC Landowner Helpline via the telephone is toll-free 1-877-337-2237; and the e-mail address is LandownerHelp@FERC.Gov.	Appendix 1-N

U.S. Forest Service Comments on Resource Report 1		
Page/Section	Request	Location in Resource Report
	<p>The following comments are specific to National Forest land as well as project effects that could occur outside NFS lands (e.g., downstream effects of project activities).</p> <p>It is unclear if the draft resource reports discussed only the preferred alternative only, or all alternatives combined. The final resource reports should include a detailed comparison of alternatives.</p> <p>Data collection and analysis of all proposed alternatives should be considered in sufficient detail to allow the FS to make informed decisions about the differential impacts of each proposal.</p> <p>In order for the Forest Service to make a reasoned decision as it relates to the Mountain Valley Pipeline proposal, the effects disclosure must be complete. This disclosure of impacts should include all vegetation disturbing activities such as access roads, staging areas, temporary workspace, etc. in addition to the pipeline ROW itself.</p>	Various Resource Reports
1-16	Please replace the graphic on page 1-16 with a graphic that is legible.	NA
1-17	On page 1-17, please determine what meets the Forest Plan direction and site specific objectives with regards to the merchantable timber, topsoil, etc. that are removed during construction and made available to the "landowner." The same comment applies if there is an option of burning the slash.	Section 1.11
General	Please note that the "Appalachian Trail" should be universally referred to by its official and formal name in all instances for this proposal – Appalachian National Scenic Trail.	Various Resource Reports

U.S. Environmental Protection Agency Comments on Resource Report 1		
Page/Section	Request	Location in Resource Report
General	<p>Since impacts to air quality can occur from construction and operation of the proposed action, EPA recommends that the resource reports and the draft EIS address what the project will have on the increase of greenhouse gas and what will the indirect effects the project will have on climate change and greenhouse gas. This could include the annual project operation emissions as well as best management practices that will be adopted to reduce methane leakage from the proposed action's operations.² Additionally, the resource reports and the draft EIS should also discuss the effects climate change could have on the long-term operation of the project such as increase in flooding and the increase in intense storms.</p> <p>² EPA has compiled information on technologies and practices to facilitate methane reductions from natural gas systems that FERC may find useful, see: http://www.epa.gov/gasstar/methaneemissions/onshore_transmission_storage.html</p>	Section 1.10
1-1	The resource report and draft EIS should explain to the readers how horsepower for each station is determined. The report should discuss how the compressors will be powered and if there are adequate power to perform the needed tasks.	Section 1.2.2.1
1-3	A map where the pipelines interconnect with the customers would be helpful for the reader to understand the route and facilities.	Section 1.2.1; Figure 1.2-1

U.S. Environmental Protection Agency Comments on Resource Report 1		
Page/Section	Request	Location in Resource Report
1-3	Wetlands present on, or immediately surrounding the site should be delineated according to the 1987 Federal Manual for Identifying and Delineating Jurisdictional Wetlands [they use the Modified Routine Wetland Delineation Method described in the USACE Wetland Delineation Manual]. Impacts to wetlands should be avoided or minimized whenever possible. The total size of the wetlands should be provided, in addition to the size of the wetland in the study area and size of the direct impact. The draft EIS must analyze the size and functional values of all impacted wetlands and develop a mitigation plan for the replacement of the functions in the watershed.	Section 1.4.1.1
1-3	The project resource report should discuss crossings the Appalachian Trail and National Parks and the process for working with the Department of Interior for the proper permissions.	Section 1.11
1-7	The square footage of the stations and height should be included in Table 1.2-2. It is suggested to add a diagram or picture for the above ground facilities/surface appearance would help the public better understand the visual changes created by the project.	Section 1.2.2.1
1-10	Table 1.3-1 needs additional information when the project plans are finalized. Swann station should be included in this table.	Table 1.3-1
1-12	Information for Table 1.3-3 should be supplied in the next version of the resource report and the draft EIS.	Table 1.3-3
1-16	The reasons for burning trees versus chipping and hauling away the chips should be discussed in the report. Burning is not environmentally preferred because of the potential of particulate matter in the air.	Section 1.4.1.1
1-17	The use of explosives will be disruptive to the environment with possible effects to aquatic resources and terrestrial habitats (as well as the human environment/communities/water supply). The use of explosives for water crossings should be described in complete detail and permitting should be described. Additionally, mitigation and alternatives for the use of explosion should be described. Zone of potential impact from blasting should be identified.	Section 1.4.1.2
1-18	The report should mention if any hazardous waste will be generated or stored from construction and operation of the project. If so, the draft EIS should also explain and list the state and Federal permits or reporting requirements in correlation to hazardous waste generation.	Section 1.4
1-21	The resource report and the draft EIS should explain what topsoil segregation is what it is used for. Any extra soil from pipeline placement and disposal locations should be identified.	Section 1.4.1.1
1-24	Crossings should be accounted for in the draft EIS. Construction of the pipeline will have potential harm to the environment when it crosses streams and rivers. Streams, especially impaired streams, are sensitive to issues like increased sedimentation and nutrients, disruption of hydrology. Best management practices should be listed in the report for each construction technique, and if possible, each crossing.	Section 1.4.1.1
1-27	For Table 1.4-1, the "unknown" size diameters should be investigated and put into the report.	Table 1.4-1
1-33	The report should explain how MVP will communicate and work with the public and municipalities to convert the pipeline corridor to "industrial use".	Section 1.3

U.S. Environmental Protection Agency Comments on Resource Report 1		
Page/Section	Request	Location in Resource Report
1-35	This section of the report should show how the public can find FERC Plan and Procedures.	Section 1.3.3
1-35	The resource report and draft EIS should discuss any hazardous waste from site construction, maintenance or operation of the compressor stations.	Section 1.4

U.S. Army Corps of Engineers, Norfolk District Comments on Resource Reports 1-12		
Page/Section	Request	Location in Resource Report
General	<p>In order for the Norfolk District to make substantive comments the following information will be necessary.</p> <p>All Waters of the U.S. including wetlands need to be delineated and flagged in the field through the entire Virginia portion of the proposed corridor and a wetland delineation report (to include data sheets and wetland/waters maps) must be submitted to the Corps of Engineers, Norfolk District for field/desktop confirmation.</p> <p>All aquatic resources will have a description as to whether or not there is a downstream connection to navigable waters.</p> <p>All impacts to waters of the U.S. including wetlands will need to be identified describing the type of aquatic resource and the quantity of impacts.</p> <p>All threatened and endangered species need to be identified for the project corridor.</p> <p>All cultural resources need to be identified for the project corridor.</p>	Resource Report 2

RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION

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RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION

LIST OF ACRONYMS AND ABBREVIATIONS

AEP	Appalachian Power Company
API	American Petroleum Institute
AQCR	air quality control region
ASME	American Society for Mechanical Engineers
ASV	Automatic Shutoff Valve
ATWS	additional temporary workspace(s)
Bcf/d	billion cubic feet per day
BMPs	best management practices
CEII	Critical Energy Infrastructure Information
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
Columbia	Columbia Gas Transmission, LLC
DOE	U.S. Department of Energy
E&SCP	Erosion and Sediment Control Plan
EI	Environmental Inspector
EIA	Energy Information Administration
FERC	Federal Energy Regulatory Commission
HDD	horizontal directional drilling
hp	horsepower
LDCs	local distribution companies
MAOP	Maximum Allowable Operating Pressure
MLV	mainline block valve
MMcf/d	million cubic feet per day
MMDth/d	million dekatherms per day
MP	milepost
MVP	Mountain Valley Pipeline, LLC
NDE	non-destructive examination
NGA	Natural Gas Act
NPDES	National Pollutant Discharge Elimination System
OSHA	Occupational Safety and Health Administration
PL	Public Law
Plan	FERC's May 2013 version of the Upland Erosion Control, Revegetation, and Maintenance Plan
Procedures	FERC's May 2013 version of the Wetland and Waterbody Construction and Mitigation Procedures
Project	Mountain Valley Pipeline Project
psig	pounds per square inch gauge
Station 165	Transco Zone 5 compressor station 165
Tcf	trillion cubic feet
Transco	Transcontinental Gas Pipe Line Company, LLC
USC	United States Code
USDOT	U.S. Department of Transportation
USGS	U.S. Geological Society

RESOURCE REPORT 1

GENERAL PROJECT DESCRIPTION

1.1 INTRODUCTION

Mountain Valley Pipeline, LLC (MVP), a joint venture between EQT Midstream Partners, LP and affiliates of NextEra Energy, Inc., WGL Holdings, Inc., Vega Energy Partners, Ltd., and RGC Midstream, LLC, is seeking a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission (FERC) pursuant to Section 7(c) of the Natural Gas Act authorizing it to construct and operate the proposed Mountain Valley Pipeline Project (Project) located in 17 counties in West Virginia and Virginia. MVP plans to construct an approximately 301-mile, 42-inch-diameter natural gas pipeline to provide timely, cost-effective access to the growing demand for natural gas for use by local distribution companies (LDCs), industrial users and power generation in the Mid-Atlantic and southeastern markets, as well as potential markets in the Appalachian region.

The proposed pipeline will extend from the existing Equitrans, L.P. transmission system and other natural gas facilities in Wetzel County, West Virginia to Transcontinental Gas Pipe Line Company, LLC's (Transco) Zone 5 compressor station 165 in Pittsylvania County, Virginia. In addition to the pipeline, the Project will include approximately 171,600 horsepower (hp) of compression at three compressor stations currently planned along the route, as well as measurement, regulation, and other ancillary facilities required for the safe and reliable operation of the pipeline. The pipeline is designed to transport up to 2.0 million dekatherms per day of natural gas.

1.1.1 Environmental Resource Report Organization

A complete summary of Project facilities proposed by MVP is provided in Section 1.2. Land requirements for Project facilities are provided in Section 1.3. Construction methods that may be used to install the pipeline and construct aboveground facilities, including restoration, are provided in Section 1.4. This section also includes the proposed construction schedule and workforce. Operation and maintenance of Project facilities is discussed in Section 1.5. MVP currently has no plans for further expansion or abandonment as outlined in Section 1.6. Permits and approvals, including major consultations, are included in Section 1.7. A discussion regarding potential impacts on affected landowners is provided in Section 1.8. Non-jurisdictional facilities are discussed in Section 1.9. Cumulative impacts relating to the Project are discussed in Section 1.10. A description of Project facilities in portions of the Jefferson National Forest is provided in Section 1.11.

1.1.2 Purpose and Need

The Project is a new pipeline designed to transport up to 2.0 MMDth/d of natural gas from the Appalachian Basin to growing markets in the Mid-Atlantic and southeastern United States. The purpose of the Project is to provide timely, cost-effective access to supplies to meet the growing demand for natural gas for use by LDCs, industrial users, and power generation facilities in the Mid-Atlantic, southeastern, and Appalachian markets. The Project will also provide the opportunity for unserved and underserved markets along the route to access natural gas supplies. For example, the routing of the project through the southwest Virginia area resulted in Roanoke Gas Company (Roanoke Gas) becoming a Project shipper and requesting a specific tap location to support its LDC system's growth and expansion. Roanoke Gas' involvement as a

shipper and its site-specific delivery point are concrete evidence of MVP's purpose and need to provide opportunities for economic growth and development along the route of the Project.

In recent years the North American natural gas market has seen enormous growth in production and demand. The United States Energy Information Administration (EIA) estimates that total natural gas consumption in the United States will increase from 26.2 trillion cubic feet (Tcf) in 2013 to between 29.7 Tcf and 37.4 Tcf in 2040 (EIA 2015a). The largest portion of this growth in gas demand is expected to occur in the electric generation sector, where natural gas consumption is expected to increase from 8.2 Tcf in 2013 to 9.4 Tcf in 2040 (EIA 2015a). In addition to increased demand for electricity due to steady population growth, a major driver behind this increase is the retirement of 40.1 gigawatts of coal-fired electric generation by 2025 due to stricter environmental rules (EIA 2015a). On August 3, 2015, the U.S. Environmental Protection Agency (EPA) announced the *Clean Power Plan*, which is designed to reduce carbon pollution from power plants (EPA 2015b). Additionally, the EPA issued its *Final Carbon Pollution Standards for New, Modified, and Reconstructed Power Plants*, and proposed a Federal Plan and model rule to assist states in implementing the *Clean Power Plan*. In the final *Clean Power Plan*, the EPA identifies substituting increased electricity generation from lower-emitting existing natural gas plants for reduced generation from higher-emitting coal-fired power plants as one of the building blocks necessary to achieve the required emission reductions for affected power plants. In particular, it is expected that replacing coal-fired electric generation with natural gas-fired generation will be higher in the southeast because southeastern power markets include some of the most expensive delivered coal prices in the United States. The Project will provide the Mid-Atlantic and southeastern markets with direct access to new gas supplies to meet this increased demand for natural gas and thereby help lower emissions.

A sizable portion of natural gas production growth is occurring in the Appalachian Basin shale region. Appalachian Basin shale gas production has increased from 2 billion cubic feet per day (Bcf/d) in 2010 to over 15 Bcf/d in July 2014. The Project will provide for transportation of these prolific natural gas supplies to Station 165, the pooling point for natural gas in Transco Zone 5 where this natural gas can serve the growing demand for natural gas for use by LDCs, industrial users, and power generation facilities all along the Eastern seaboard.

In response to a request for additional discussion on the potential for export, MVP is not designed to provide natural gas to any LNG export terminal and has no intention of seeking authorization under Section 3 of the NGA to export natural gas. MVP terminates at Transco Station 165, an inland location more than 150 miles from the nearest coastal Virginia port and even farther from the nearest LNG export terminal. Accordingly, MVP does not have the physical ability to export natural gas. The nearest LNG export facility (currently under construction) is the Dominion Cove Point LNG, LP Project (Cove Point) in Lusby, Maryland. Cove Point is more than 250 miles from MVP. Moreover, MVP has no direct connection to Cove Point and is two pipelines removed from the export facility. Therefore, for natural gas transported on MVP to be subsequently exported at Cove Point, it would need to be transported on the Transco or Columbia pipelines to Loudoun or Fairfax Counties, Virginia, and then on the Cove Point Pipeline to the Cove Point facility. MVP transports natural gas for shippers and does not control the shipper's downstream uses for natural gas. Because of MVP's distance from any LNG export terminal and the higher costs to transport gas on MVP to LNG export terminals, it is unlikely that natural gas transported on MVP would be exported.

1.2 LOCATION AND DESCRIPTION OF FACILITIES

The pipeline and aboveground facilities described in this Resource Report will be designed, constructed, tested, operated, and maintained in accordance with the requirements of 49 CFR, Part 192, Transportation of Natural Gas and Other Gas by Pipeline; Minimum Safety Standards; 18 CFR § 380.15, Site and Maintenance Requirements; and other applicable federal and state regulations.

1.2.1 Pipeline Facilities

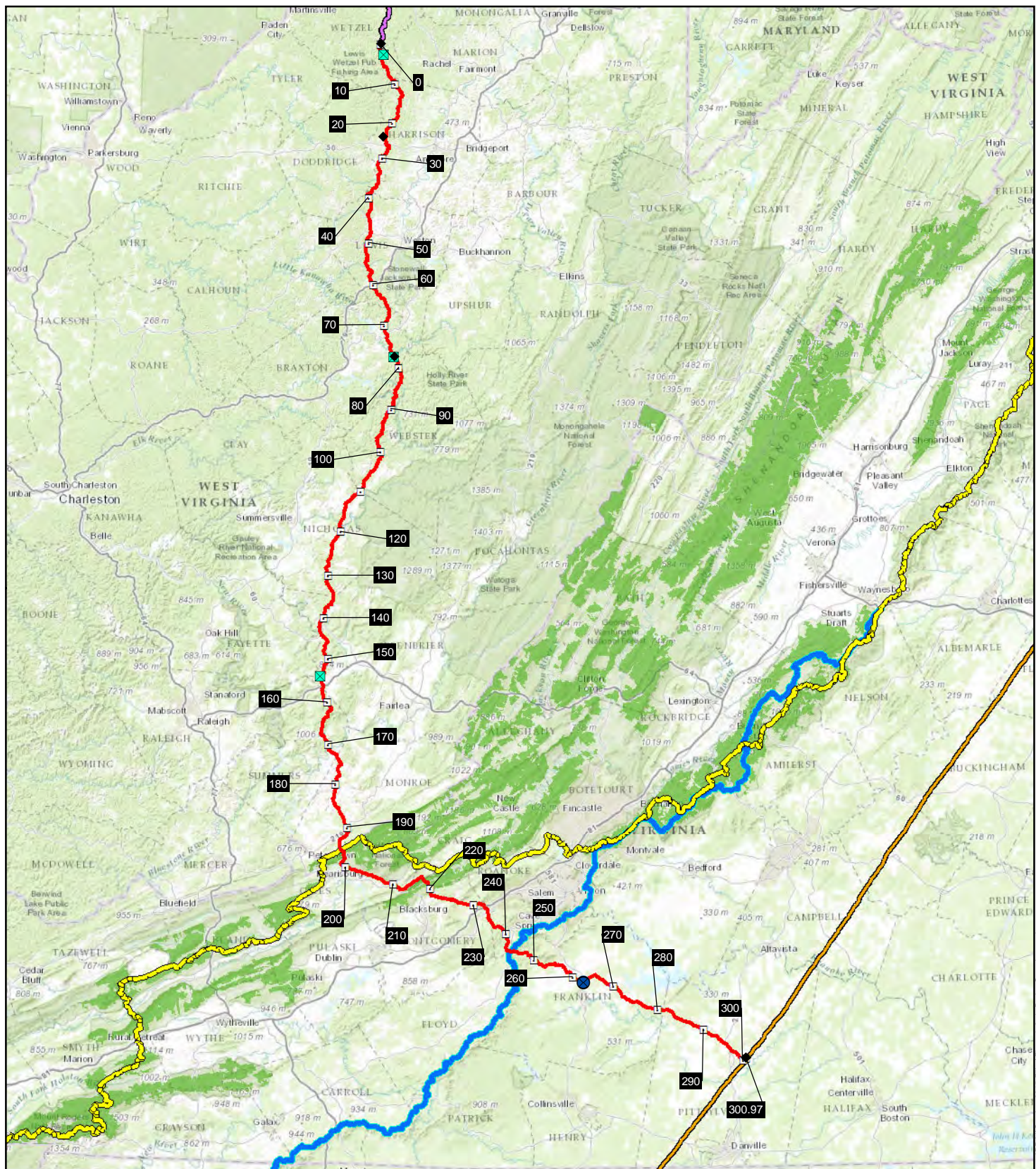
The 301-mile pipeline will extend from an interconnection with Equitrans' existing H-302 pipeline near the MarkWest Liberty Midstream & Resources, L.L.C. (MarkWest) Mobley processing facility in Wetzel County, West Virginia and traverse south-southeast to the town of Wallace, Harrison County, West Virginia near milepost (MP) 14.5. The pipeline will then traverse south past Salem, Harrison County, West Virginia approximately 10 miles west of Clarksburg, West Virginia. The pipeline will continue to head in a southerly direction until approximate MP 101.5 between the towns of Webster Springs, Webster County, West Virginia and Tioga, Nicholas County, West Virginia; here the line will slightly turn to the southwest to avoid the U.S. Forest Service Ownership Boundary for the Monongahela National Forest. The pipeline then will head south passing west of Pence Springs, Summers County, West Virginia near MP 170.7 and Greenville, Monroe County, West Virginia near MP 182.5. The pipeline will then cross the Jefferson National Forest (MP 195.3 to 196.9) including the Appalachian National Scenic Trail (between MP 195.4 and 195.5) northwest of the town of Goldbond, Giles County, Virginia. At approximate MP 199.1, the pipeline co-locates with an Appalachian Power Company (AEP) transmission line west of the town of Kimbleton, Giles County, Virginia. The pipeline deviates from the transmission line in several areas to avoid structures and follow topography with a large deviation from MP 207.5 to 209.6. Northeast of the town of Newport, Giles County, West Virginia, the pipeline heads to the northeast to avoid karst terrain until MP 216.7. Here, the pipeline heads south-southeast and crosses the Jefferson National Forest from approximate MP 217.2 to 218.0 and MP 218.4 to 219.5. The pipeline continues in a southerly direction, rejoins the AEP transmission line at approximate MP 221.8 and generally remains co-located with the AEP transmission line aside from a few small deviations to avoid structures and follow more favorable terrain until approximate MP 229.4 where it deviates to the northeast to follow more favorable terrain and crosses Interstate 81 at approximate MP 232.6. The line then heads south passing approximately one mile west of Spring Hollow Reservoir at approximate MP 234.5 and shifts to the south-southeast passing to the west of Bent Mountain, Roanoke County, Virginia at approximate MP 242.7. At MP 243.8, the pipeline heads east, crossing the Blue Ridge Parkway in an open field between MP 244.3 and 244.4, and continues in an easterly direction passing in between Boones Mill and Rocky Mount, Franklin County, Virginia at approximate MP 262.8. The pipeline then heads in a general southeast direction following the terrain until it terminates at Station 165, near Transco Village, in Pittsylvania County, Virginia.

Table 1.2-1 identifies the counties crossed by the proposed pipeline route, by milepost. Figure 1.2-1 provides an overview of the proposed pipeline route. Appendix 1-A contains alignment sheets for the Project and Appendix 1-B contains United States Geological Society (USGS) 7.5-minute topographic quadrangle maps.

Table 1.2-1		
MVP Proposed Pipeline by County		
Approximate Milepost	County, State	Length (Miles) <u>a/</u>
0.0-9.6	Wetzel, WV	9.6
9.6-31.6, 32.7-33.7, 37.5-38.1	Harrison, WV	23.7
31.6-32.7, 33.7-37.5	Doddridge, WV	4.8
38.1-65.6	Lewis, WV	27.5
65.6-80.3	Braxton, WV	14.7
80.3-109.5, 109.8-110.6	Webster, WV	30.0
109.5-109.8, 110.6-135.0	Nicholas, WV	24.7
135.0-153.8, 154.3-156.7	Greenbrier, WV	21.2
153.8-154.3	Fayette, WV	0.5
156.7-173.4	Summers, WV	16.7
173.4-195.4	Monroe, WV	22.0
195.4-215.4	Giles, VA	20.0
215.4-217.1	Craig, VA	1.7
217.1-236.1	Montgomery, VA	19.0
236.1-244.4	Roanoke, VA	8.3
244.4-281.0	Franklin, VA	36.7
281.0-300.97	Pittsylvania, VA	19.9
Total		301.0
<u>a/</u> Total length of pipeline is 300.97 miles; however, sum for length of counties crossed shows a difference of 0.03 miles due to rounding.		

The 42-inch-diameter, approximately 301-mile pipeline will deliver gas from the Equitrans L.P. transmission system and other natural gas facilities located near the pipeline to downstream delivery points. MVP will have a proposed delivery interconnect with Columbia in central West Virginia to serve markets supplied by the Columbia WB system and also a proposed tie-in point with Transco at Station 165. MVP will also provide a tap for a Roanoke Gas delivery point in Franklin County, Virginia. The pipeline will operate at a Maximum Allowable Operating Pressure (MAOP) of 1,480 pounds per square inch gauge (psig) and will be constructed in compliance with 49 CFR Part 192 and other applicable standards. The capacity of the MVP system is limited by the design capacity of the compressor stations. The compressor stations are sized for up to 2.0 MMDth/d during peak summertime temperatures as referenced in Section 1.2.2.1.

MVP has been in discussions with Transco for an interconnect (metering, measurement, etc.) at or near Station 165 in Pittsylvania County, Virginia. MVP submitted the tap request to Transco in April 2015. Transco provided an interconnect scope of work in June 2015 and a field visit is expected. At this time, other than standard accommodations for a new interconnect, Transco has not identified any other modifications to its existing Station 165 required to receive gas from MVP. MVP does not believe any modifications on Transco's system are needed upstream or downstream of Station 165 to handle volumes from this Project.



Mountain Valley Pipeline Project



NAD 1983 UTM 17N

1:1,585,000

0 5 10 20 30 40 Miles



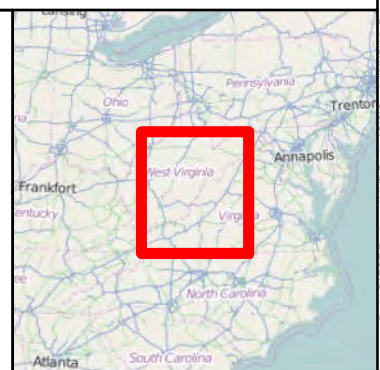
**Figure 1.2-1:
Project Overview**

October 2015

Data Sources: ESRI Streaming Data, 2014; Ventyx 2014; Appalachian Trail Conservancy, United States Department of Agriculture, National Park Service.

Legend

- Milepost
- ◆ Proposed Interconnect
- Roanoke Gas Tap
- Proposed Compressor Station Location
- Proposed Route
- Appalachian Trail
- Blue Ridge Parkway
- Existing Equitrans H-302 Line
- Existing Transco Pipeline
- George Washington and Jefferson National Forest



The pipeline will be located in 17 counties in West Virginia and Virginia. To move the gas from the starting point in Wetzel County, West Virginia to the terminus in Pittsylvania County, Virginia, the pipeline will require three compressor stations along the route. Currently, MVP anticipates four interconnects located along the pipeline but will continue to evaluate market demands to determine if additional interconnects might be warranted. These are discussed in more detail in Section 1.2.2 below. There are no current requirements from a compliance perspective for the gas within the pipeline to be odorized; therefore, natural gas transported by MVP will not be odorized.

As proposed, the pipeline will be constructed of high strength carbon steel pipe, manufactured in accordance with the American Petroleum Institute's (API) specification API 5L PSL2, Specification for Line Pipe. The pipe will be protected from corrosion by a fusion-bonded epoxy coating and an impressed current cathodic protection system during operations. Weld joints, and other piping that are not factory coated will be field coated with a two part epoxy coating.

The placements of cathodic protection rectifiers and beds are provided in Table 1.3-3. The pipeline has been divided into cathodic protection sections. The sections are divided by electrical isolation. Several rectifier and groundbed locations per cathodic protection section have been selected for site inspection and soil resistivity testing to see if they are suitable. When testing is complete, one rectifier and groundbed site will be chosen per cathodic protection section. The groundbed type will be selected based upon the field test data. Many groundbed sites have not been tested due to the status of landowner permissions.

1.2.2 Aboveground Facilities

Table 1.2-2 provides a summary of aboveground facilities proposed to be built as part of the MVP Project. There will be three compressor stations and four meter (interconnect) stations for receipt or delivery with other pipelines. These compressor stations are further described below. Additional ancillary aboveground facilities will include pig launcher and receiver sites at the compressor stations and the beginning and end of the pipeline and meter stations, along with mainline block valve (MLV) sites within the pipeline right-of-way.

1.2.2.1 Compressor Stations

The MVP Project will require three compressor stations to move gas from the beginning of the pipeline at the existing Equitrans transmission system in Wetzel County, West Virginia to the terminus at the Transco Station 165 in Pittsylvania County, Virginia. Plot plans for the compressor stations are included in Appendix 1-C2 (CEII). The Project will require approximately 171,600 hp. Required horsepower is dictated by the volume flow rate and pressure conditions expected on the pipeline. A pressure of approximately 750 psig is expected at the final interconnect (Transco), and a pressure of approximately 765 psig is expected at the front end of the pipeline at the Mobley interconnect. The gas flow will experience a pressure drop due to frictional losses, and elevation changes as it travels along the pipeline. To overcome these losses, as well as meet the pressure at the Transco interconnect, the pressure must be boosted by compressor stations.

The pipeline system design was hydraulically modeled using the Synergi software package to determine the pressure conditions along the pipeline at various flow rates. These pipeline conditions were provided to the compressor vendor to size the compressors and determine the compressor horsepower requirement. Again, the required horsepower is dictated by the volume flow rate of the gas and the pressure boost required to transport the gas the full length of the pipeline at the necessary outlet system pressure.

Table 1.2-2					
Proposed Aboveground Facilities					
Compressor Stations					
Facility	Approximate Milepost	County, State	Isometric HP <u>a/</u>	Suction PSIG	Discharge PSIG
Bradshaw Station	2.8	Wetzel, WV	89,600	765	1,450
Harris Station	77.5	Braxton, WV	41,000	1,110	1,450
Stallworth Station	154.2	Fayette, WV	41,000	1,060	1,450
Pig Launchers/Receivers					
Launcher/Receiver		Approximate Milepost	Associated Facility		
Pig Launcher		0.0	Mobley Interconnect		
Pig Launcher/Receiver		2.8	Bradshaw Compressor Station		
Pig Launcher/Receiver		77.5	Harris Compressor Station		
Pig Launcher/Receiver		154.2	Stallworth Compressor Station		
Pig Receiver		300.97	Transco Interconnect		
Valves and Meter Stations					
Block Valves		Class Distribution	Class Miles		
Class 1		90%	270.3		
Class 2		10%	30.7		
Class 3		0%	0.0		
Class 4		0%	0.0		
Railroad Crossings/Class 1		N/A	N/A <u>a/</u>		
Railroad Crossings/Class 2		N/A	N/A <u>b/</u>		
Total		--	300.97		
Meter Stations			Approximate Milepost		
Mobley Interconnect receipt			0.0		
Sherwood Interconnect receipt			23.7		
WB Interconnect delivery			77.5		
Transco Interconnect delivery			300.97		
<u>a/</u> See Class 1 miles.					
<u>b/</u> See Class 2 miles.					
c/ Project average valve spacing is 8.6 miles (max spacing of 19.5 miles, min spacing of 0.1 miles). Non-Railroad average valve spacing is 11.3 miles (max spacing of 19.5 miles, min spacing of 2.8 miles). Railroad average valve spacing is 1.8 miles (max spacing of 4.2 miles, min spacing of 0.1 miles).					

The compressors on the MVP Project will be powered by natural gas fired turbine engines. There is sufficient fuel gas supply from the pipeline to supply the turbines. The turbines suffer performance losses as a result of higher elevations (such as those in the Appalachian Mountains of West Virginia) and higher ambient temperatures, so they have been sized sufficiently large enough to accommodate firm volume commitments with full pipeline flow of 2.0 MMDth/d during peak summertime temperatures at the specific station locations chosen for the MVP Project.

Bradshaw Compressor Station

Bradshaw Compressor Station will be constructed at approximately MP 2.8 in Wetzel County, West Virginia and will pull gas from the origination point, near Mobley, West Virginia for relay to Harris Compressor Station. The station will contain four gas-driven turbines which combined will provide approximately 89,600 hp of compression. The station will include approximately five structures (compressor, 2 electrical control buildings, office, and air compressor building), with a chain-link security fence installed around the perimeter of the site. As currently designed, equipment at the station will include gas filter/separators, gas coolers, inlet air filters, exhaust silencers, tanks, blowdown silencers, heaters, and auxiliary micro-turbines. Bradshaw Compressor Station is designed to raise the pressure from 765 psig to 1,450 psig. The station is not expected to require dehydration, but typical filtration and separation equipment to protect the operating equipment will be installed. A plot plan of the station is provided in Appendix 1-C2 (CEII).

Harris Compressor Station

Harris Compressor Station will be constructed at approximately MP 77.5 in Braxton County, West Virginia and will pull gas from Bradshaw Compressor Station for relay delivery to Stallworth Compressor Station. The station will contain two gas-driven turbines, which combined will provide approximately 41,000 hp of compression. The station will include approximately five structures (compressor, 2 electrical control buildings, office, and air compressor building), with a chain-link security fence installed around the perimeter of the site. As currently designed, equipment at the station will include gas filter/separators, gas coolers, inlet air filters, exhaust silencers, tanks, blowdown silencers, heaters, and auxiliary micro-turbines. Harris Compressor Station is designed to raise natural gas pressure from 1,110 psig to 1,450 psig. The station is not expected to require dehydration, but typical filtration and separation equipment will be installed. A plot plan of the station is provided in Appendix 1-C2 (CEII).

Stallworth Compressor Station

Stallworth Compressor Station will be constructed at approximately MP 154.2 in Fayette County, West Virginia and will pull gas from Harris Compressor Station, for relay delivery to Transco Station 165. The station will contain two gas-driven turbines, which combined will provide approximately 41,000 hp of compression. The station will include approximately five structures (compressor, 2 electrical control buildings, office, and air compressor building), with a chain-link security fence installed around the perimeter of the site. As currently designed, equipment at the station will include gas filter/separators, gas coolers, inlet air filters, exhaust silencers, tanks, blowdown silencers, heaters, and auxiliary micro-turbines. Stallworth Compressor Station is designed to raise the natural gas pressure from 1,060 psig to 1,450 psig. The station is not expected to require dehydration, but typical filtration and separation equipment will be installed. A plot plan of the station is provided in Appendix 1-C2 (CEII).

1.2.2.2 Pig Launchers and Receivers

Pig launching and receiving facilities will be designed to accommodate in-line inspection tools (smart pigs) for periodic internal inspections of the pipeline during operations.

Pig launchers will be installed at the origination point, near Mobley, West Virginia as well as at the discharge side of each of the compressor stations. Pig receivers will be installed on the suction side of each of the compressor stations, as well as at the terminus of the pipeline at the Transco Interconnect. The locations of these facilities are provided on the alignment sheets found in Appendix 1-A. The additional impacts for these facilities are expected as they are intended to be within the measurement and compression station limits of disturbance. Approximate mileposts for pig launchers and receivers are provided in Table 1.2-2 above.

1.2.2.3 Mainline Block Valves and Meter Stations

MLVs and meter stations will be installed at various locations along the pipeline route. The Project will have four interconnects; one with existing Equitrans facilities (H-302), and three with foreign facilities (MarkWest, Columbia, and Transco)¹. The locations of these interconnects are provided in Table 1.2-2 above.

A pig launcher with a MLV will be installed at the beginning of the line, a receiver with a MLV will be installed at the end of the pipeline, and either launchers with MLVs, receivers with MLVs, or MLVs will be installed at intermediate locations as necessary to meet operational needs and the design and installation requirements described in 49 CFR 192.179(a) – Transmission Line Valves, requiring minimum distances to the nearest valve based on pipeline location class. MVP is proposing to install a greater number of MLVs than are required by USDOT PHMSA regulations (i.e., the spacing between MLVs will be less than the distance required by USDOT regulations). Table 1.2-3 identifies the location of MLVs along the proposed pipeline route.

MLVs will be located within the permanent right-of-way of the pipeline. With the exception of MLVs at launcher/receiver locations, MLVs will be buried with aboveground extensions and will be equipped with valve actuators to allow for local or remote operation. The MLVs will be capable of closing within two minutes of issuance of a remote signal to close. Each of the MLVs will be contained within a fenced, gated and locked area.

MVP evaluated the use of equipping the MLVs/Actuators with an automatic shutoff system. An advantage to equipping the MLVs/Actuators with an automatic shutoff system is that it would function in the extremely rare event of a total communication loss that occurred at the same time as an unintended release of natural gas. This advantage is offset by the dangers that can occur when an automatic shutoff system causes the MLV to close in error. The best method is to have a system of automatic alarms into a control center operated 24/7 so a gas controller can shut the valve while also managing the rest of the system (shutting down compressor stations as an example) so any over-pressure can be managed.

¹ There will be two interconnections between MVP and Equitrans: (1) the Mobley Interconnect, which will be constructed as part of the MVP Project and interconnect MVP's proposed H-600 pipeline with Equitrans' existing H-302 pipeline, and (2) the Webster Interconnect, which will be constructed as part of the separate Equitrans Expansion Project (Docket No. PF15-22-000) and interconnect MVP's proposed H-600 pipeline with Equitrans' existing H-306 pipeline.

Table 1.2-3		
MLVs Along the Proposed MVP Pipeline Route <u>a/</u>		
Name	County, State	Milepost
MVP-MLV-01	Wetzel, WV	0.01
MVP-MLV-02	Wetzel, WV	2.78
MVP-MLV-03	Harrison, WV	15.39
MVP-MLV-04	Harrison, WV	15.49
MVP-MLV-05	Doddridge, WV	34.97
MVP-MLV-06	Lewis, WV	53.08
MVP-MLV-07	Lewis, WV	64.69
MVP-MLV-08	Lewis, WV	65.55
MVP-MLV-09	Braxton, WV	77.49
MVP-MLV-10	Webster, WV	93.17
MVP-MLV-11	Webster, WV	98.73
MVP-MLV-12	Webster, WV	101.77
MVP-MLV-13	Nicholas, WV	111.10
MVP-MLV-14	Nicholas, WV	119.93
MVP-MLV-15	Greenbrier, WV	138.37
MVP-MLV-16	Greenbrier, WV	140.54
MVP-MLV-17	Greenbrier, WV	143.62
MVP-MLV-18	Greenbrier, WV	143.83
MVP-MLV-19	Greenbrier, WV	154.13
MVP-MLV-20	Summers, WV	170.09
MVP-MLV-21	Summers, WV	171.03
MVP-MLV-22	Monroe, WV	185.19
MVP-MLV-23	Giles, VA	198.45
MVP-MLV-24	Giles, VA	200.61
MVP-MLV-25	Giles, VA	211.12
MVP-MLV-26	Montgomery, VA	222.26
MVP-MLV-27	Montgomery, VA	233.56
MVP-MLV-28	Montgomery, VA	234.53
MVP-MLV-29	Montgomery, VA	247.14
MVP-MLV-30	Franklin, VA	256.66
MVP-MLV-31	Franklin, VA	262.41
MVP-MLV-32	Franklin, VA	266.64
MVP-MLV-33	Franklin, VA	280.72
MVP-MLV-34	Pittsylvania, VA	293.40
MVP-MLV-35	Pittsylvania, VA	296.78
MVP-MLV-36	Pittsylvania, VA	300.97
<u>a/</u> All MLV sites will be 50 feet by 50 feet and be contained within the permanent right-of-way.		

Additionally, meter stations are expected to be installed at interconnection points consistent with various receipts and deliveries. A tap location is also tentatively identified in Franklin County, Virginia for Roanoke Gas delivery. No design criterion is available for the Roanoke interconnect. Meter stations consisting of a custody-transfer flow meter, pressure/flow regulator, over pressure protection, isolation block valves, and associated instrumentation and controls, will be installed at the interconnections with each existing pipeline or local distribution company to measure the flow of natural gas between the Project and the interconnecting pipeline. These meter stations are listed with their respective milepost locations and tie-ins in Table 1.2-2 above. Each interconnect will consist of one or more meter runs located inside a fenced and gated site and will contain flow or pressure control. The interconnect sites will be located as close as practicable to the actual intersection of the Project and the interconnecting facilities in order to keep the length of the interconnecting piping to a minimum. The locations of these facilities are shown on the alignment sheets and maps provided in Appendix 1-A and Appendix 1-B, respectively.

1.2.2.4 Telecommunications

Primary and backup telecommunications services will be provided for the compressor stations, measurement stations, and MLV sites. Primary service will be provided by the local service provider and back-up will be Very Small Aperture Terminal (VSAT) service. Cathodic protection sites will receive primary service from the local service provider.

In addition, the three compressor station sites will each have communication towers. The communication towers will be installed inside the compressor station fence lines.

1.2.2.5 Electric Utility Service

Primary and backup electric services will be provided for the compressor stations, measurement stations, MLV sites, and cathodic protection sites.

A series of microturbine generators will be installed to supply primary electric power to the compressor stations. The first option for backup power to the compressor stations will be commercially purchased from the local distribution company. Where electric power is not feasible to obtain, MVP will deploy additional microturbines for backup.

The measurement stations will be provided electric services from the local distribution company. Backup electric will be via 24 volt UPS system or up to a 20 kilowatt residential style natural gas powered generator. The exception to this is the Columbia WB Interconnect. The WB Interconnect will receive primary and back-up power from the Harris compressor station.

The mainline valve and cathodic protection sites will be provided electric services from the local distribution company. Backup will be a fuel cell with battery bank, solar panel with battery bank, or thermo electric generator with battery bank. The exception to this is MLV sites 2, 9, and 11 which will receive primary power from compressor stations.

1.3 LAND REQUIREMENTS

A summary of Project land requirements is included in Table 1.3-1. Current land uses of those areas affected by the Project are described in more detail in Resource Report 8. The installation of a pipeline on residential or any other property does not change the use designation or zoning category for that property.

Table 1.3-1		
Land Requirements for the Mountain Valley Pipeline Project		
Facility	Land Required for Construction (acres)	Land Required for Operation (acres)
Pipeline <u>a/</u>	4,447.9	1,824.0
Contractor Yards	228.3	0.0
Additional Temporary Workspace (ATWS)	738.2	0.0
Access Roads <u>b/</u>	883.1	247.1
Compressor Stations	70.1	15.9
Measurement Stations	24.5	6.4
Pig Launcher/Receiver Sites <u>c/</u>	0.0	0.0
<u>a/</u> Acreage based on 125-foot construction right-of-way and 50-foot permanent right-of-way. Does not account for reduced workspace in sensitive areas. <u>b/</u> These numbers reflect all access roads. Access roads associated with compressor stations and measurements stations are accounted for in the access road impacts. <u>c/</u> These will be completely located within the measurements and compressor station fence line and therefore impacts are calculated under those presented for the measurements and compressor stations.		

1.3.1 Pipeline

The pipeline will generally require a 125-foot wide construction right-of-way and a 50-foot permanent right-of-way. In mountainous areas where the pipeline will encounter steep side slopes, MVP will employ special construction techniques where the slopes typically exceed 30 to 35 percent, which will require expanded workspace areas. The dimensions of these additional temporary workspaces (ATWS) will vary, depending upon the degree and length of the slope (see Section 1.4.1.2). The additional temporary right-of-way will be necessary for the safe travel of construction and maintenance vehicles and equipment as well as stockpiling any additional material that may be encountered during trenching. Given the ruggedness of the terrain and steep slopes, the full 125-foot construction right-of-way will be necessary in forested areas for the safe construction of the Project. MVP will neck down to a 75-foot construction right-of-way in wetlands wherever possible. A list of the ATWS, by MP, required for the Project including dimensions, landowner, current land use, and reasoning for each ATWS is provided in Appendix 1-D.

To the extent practicable, the pipeline has been aligned parallel to existing corridors. As currently proposed, the pipeline is aligned parallel to existing utility corridors, trails, and roads for approximately 89 miles of the proposed route. Due to the lack of major gas pipeline infrastructure along the pipeline route and the narrow ridgelines where existing natural gas pipeline infrastructure is found, it was not possible to co-locate with existing pipelines in many cases. Likewise, although there are several opportunities to co-locate with electric transmission infrastructure along the pipeline route, in many cases the electric transmission infrastructure is located along side slopes which would result in steep, side slope construction for the pipeline. This type of construction is not considered feasible due to the safety concerns associated with side slope construction and potential for wash-outs and slides along the steep terrain. Locations where segments of the Project are proposed to be parallel to existing utility corridors and other rights-of-way are listed in Appendix 1-E.

1.3.2 Aboveground Facilities

Land requirements for compressor stations, pig launcher and receiver sites, and metering and regulation facilities are included in Table 1.3-2. MLV sites and the Roanoke Tap will be entirely contained within the pipeline right-of-way and will therefore not require any additional land disturbance. In addition, pig launcher/receivers will be located inside the fenced areas for the measurement and compressor stations within already disturbed land and will therefore not require any additional land disturbance.

Table 1.3-2			
Land Requirements for Proposed Aboveground Facilities <u>a/</u> , <u>b/</u>			
Facility Name	Approximate MP	Land Required for Construction (acres)	Land Required for Operation (acres)
Compressor Stations <u>c/</u>			
Bradshaw Compressor Station	2.8	24.0	5.8
Harris Compressor Station	77.5	21.1	4.4
Stallworth Compressor Station	154.2	25.0	5.7
Meter Stations <u>c/</u>			
Mobley Interconnect	0.0	5.0	0.8
Sherwood Interconnect	23.7	7.1	2.0
WB Interconnect	77.5	6.2	1.2
Transco Interconnect	300.97	6.2	2.4
<u>a/</u> MLVs are not included because these will be completely within the right-of-way and will not require additional land outside of that necessary for the pipeline. <u>b/</u> Pig launchers/receivers will be within the disturbed area for the compressor stations. <u>c/</u> Impact calculations do not include associated access roads.			

There are 54 potential rectifier locations provided in Table 1.3-3 below; however, only 30 locations will be required for the Project. Surface groundbeds (25 feet wide by 500 feet long) will be perpendicular to the right-of-way. Deep wells will be contained within the 50-foot permanent right-of-way or adjoining (25 feet by 25 feet additional if required). Once site inspections are completed, any impacts associated with rectifiers can be determined.

Table 1.3-3				
Potential Rectifier and Groundbed Locations				
Nearest Milepost	State	County	Cathodic Protection Section <u>a/</u>	Cathodic Protection Groundbed Type
1.4	WV	Wetzel	1	Surface/Deepwell
2.3	WV	Wetzel	1	Surface/Deepwell
5.0	WV	Wetzel	1	Surface/Deepwell
6.6	WV	Wetzel	1	Surface/Deepwell
12.1	WV	Wetzel	2	Surface/Deepwell
15.5	WV	Harrison	2	Surface/Deepwell
23.1	WV	Harrison	3	Surface/Deepwell
26.0		Harrison	3	Surface/Deepwell

Table 1.3-3

Potential Rectifier and Groundbed Locations

Nearest Milepost	State	County	Cathodic Protection Section <u>a</u>/	Cathodic Protection Groundbed Type
32.7	WV	Harrison	4	Surface
45.5	WV	Lewis	5	Surface
54.8	WV	Lewis	6	Surface/Deepwell
58.6	WV	Lewis	6	Surface/Deepwell
62.3	WV	Lewis	7	Surface/Deepwell
65.5	WV	Lewis/Braxton	7	Surface/Deepwell
71.7	WV	Braxton	8	Surface/Deepwell
73.8	WV	Braxton	8	Surface/Deepwell
81.7	WV	Webster	9	Surface/Deepwell
84.1	WV	Webster	9	Surface/Deepwell
93.2	WV	Webster	10	Deepwell
97.7	WV	Webster	11	Surface/Deepwell
98.7	WV	Webster	11	Surface/Deepwell
106.8	WV	Webster	12	Surface
122.1	WV	Nicholas	13	Surface
127.9	WV	Nicholas	14	Surface
137.9	WV	Greenbrier	15	Surface/Deepwell
140.4	WV	Greenbrier	15	Surface/Deepwell
149.2	WV	Greenbrier	16	Surface
159.1	WV	Summers	17	Surface/Deepwell
159.8	WV	Summers	17	Surface/Deepwell
169.8	WV	Summers	18	Surface/Deepwell
170.9	WV	Summers	18	Surface/Deepwell
178.2	WV	Monroe	19	Surface/Deepwell
181.4	WV	Monroe	19	Surface/Deepwell
189.1	WV	Monroe	20	Surface/Deepwell
190.5	WV	Monroe	20	Surface/Deepwell
199.5	VA	Giles	21	Surface/Deepwell
201.4	VA	Giles	21	Surface/Deepwell
209.9	VA	Giles	22	Surface
225.2	VA	Montgomery	23	Surface
233.8	VA	Montgomery	24	Surface/Deepwell
233.9	VA	Montgomery	24	Surface/Deepwell
243.9	VA	Roanoke	25	Surface/Deepwell
244.0	VA	Roanoke	25	Surface/Deepwell
251.4	VA	Franklin	26	Surface/Deepwell
253.0	VA	Franklin	26	Surface/Deepwell
261.6	VA	Franklin	27	Surface/Deepwell
261.9	VA	Franklin	27	Surface/Deepwell
270.7	VA	Franklin	28	Surface/Deepwell

Table 1.3-3				
Potential Rectifier and Groundbed Locations				
Nearest Milepost	State	County	Cathodic Protection Section <u>a/</u>	Cathodic Protection Groundbed Type
272.1	VA	Franklin	28	Surface/Deepwell
282.6	VA	Pittsylvania	29	Surface/Deepwell
283.3	VA	Pittsylvania	29	Surface/Deepwell
283.8	VA	Pittsylvania	29	Surface/Deepwell
294.2	VA	Pittsylvania	30	Surface/Deepwell
295.1	VA	Pittsylvania	30	Surface/Deepwell

a/ Cathodic Protection Sections are created by installation of isolation

1.3.3 Access Roads

The lengths of new and existing roads that will be used to provide access to the pipeline right-of-way during construction and operation are provided in Appendix 1-F and are further discussed in Resource Report 8. This list does not include existing public roads such as interstate, US, state, and county highways unless upgrades are required, but it does include private roads, drives, lanes, and other roads that will be utilized. Other roads may include existing access roads installed for logging, well or construction access, or may be farm roads, ATV paths/trails, etc. To the extent possible, MVP will use existing roads or pathways for the Project.

Field investigation indicates that the availability of previously used roads and other existing roads is likely sufficient to provide access to most work areas; however, new access roads may be required in several locations that do not parallel existing infrastructure. Maintenance may be required on some of the existing roads prior to hauling construction equipment and materials. Some of the existing dirt or gravel access roads will be graded and maintained to prevent rutting. Others may require placement of additional gravel or crushed stone on the existing surface and/or widening. MVP is currently conducting surveys to identify sensitive resources in the vicinity of the access roads. MVP will utilize survey information to determine if impacts can be avoided or minimized (i.e., shifting the access road). Where impacts cannot be avoided, MVP will adopt the FERC Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) and Wetland and Waterbody Construction and Mitigation Procedures (Procedures) (May 2013 versions) (<http://ferc.gov/industries/gas/enviro/guidelines.asp>) and will develop its own site specific Erosion and Sediment Control Plan (E&SCP) that will outline best management practices (BMPs) to minimize impacts.

1.3.4 Additional Temporary Workspace

ATWS areas will be required for construction activities requiring space outside the 125-foot construction right-of-way. Construction activities which may require ATWS include but are not limited to:

- Road and railroad crossings;
- Winch hills;
- Wetland and waterbody crossings;
- Foreign pipeline crossings and interconnects;
- Foreign utility crossings;
- Areas requiring full-width topsoil segregation;

- Specific request of the landowner or land management agency;
- Areas with steep side slopes, rock, or other difficult terrain;
- Pipeline access and truck turnarounds;
- Fabrication and staging areas; and
- Hydrostatic test water withdrawal and discharge locations.

The extent of ATWS will be determined on a site-specific basis. The ATWS areas will be restricted to the minimum size necessary to safely construct the pipeline with respect to the existing conditions anticipated at the time of construction. The ATWS will be utilized by construction for the purpose of material storage, storage of excess spoil at crossings, parking, and tractor trailer turning radius. In the case of wetlands and waterbodies, the ATWS will be located in accordance with the setback requirements contained in the FERC Procedures and in consultation with other federal and state agencies. If conditions do not allow for the full setback, MVP will request a variance from the FERC Procedures. Additional information regarding variances to FERC Procedures V.A.2.a and VI.B.1.a regarding extra workspace setback requirements is provided in Resource Report 2.

Proposed ATWS and ancillary sites required for the Project are shown on the alignment sheets and maps in Appendix 1-A. A table that lists all ATWS by milepost, landowner (private, state, federal), area (square feet), current land use, and purpose of the ATWS (road crossing, etc.) is provided in Appendix 1-D.

1.3.5 Contractor Yards

Potential pipe storage and contractor staging yards for temporary use during construction have been selected and were designed to avoid streams and wetlands and other sensitive habitats where possible. To the maximum extent practicable, MVP has avoided locating storage and contractor yards in forested tracts. MVP will use pipe storage yards to stockpile pipe and fabricate facilities, as necessary. MVP will use contractor yards during construction to stage construction operations, store materials, park equipment, and set up temporary construction offices. Depending upon the condition of these yards and their current use, some surface grading, drainage improvements, placement of surface materials (e.g., crushed rock), and internal roadways may be required. MVP has identified potential contractor yards along the proposed route. Land requirements, MP, land ownership, and current land use for contractor yards are provided in Table 1.3-4. Contractor yards are shown on aerial mapping provided in Appendix 1-C1. Additional information on potential contractor yards is discussed in Resource Report 8.

1.4 CONSTRUCTION PROCEDURES

MVP intends to implement the FERC Plan and Procedures as a minimum standard during construction unless otherwise specifically noted within this Resource Report. MVP will ensure that construction personnel are adequately trained in the environmental restrictions and/or requirements applicable to their particular job duties. Construction management personnel and environmental inspectors will be provided with the appropriate environmental information/materials specific to the Project. It is not anticipated that hazardous waste will be generated or stored during construction of the Project. However, if for any reason hazardous waste is created during construction or operation of the Project, the Spill, Prevention, Control and Countermeasures Plan would identify methods for handling the waste. All waste would be disposed of at an approved, off-site facility.

Table 1.3-4

Proposed Contractor Yards for Pipeline Construction

Name	Type	MP	County	State	Location	Land Ownership	Land Use <u>a/</u>	Acres
MVP-LY-001	Laydown Yard	3.5	Wetzel	WV	Jacksonburg	Private	Deciduous Forest	0.83
							Developed, Low Intensity	0.24
							Developed, Open Space	0.87
							Pasture/Hay	2.95
MVP-LY-002	Laydown Yard	17.7	Harrison	WV	Lumberport	Private	Deciduous Forest	15.01
							Developed, Open Space	1.96
							Grassland/Herbaceous	2.22
							Pasture/Hay	0.04
MVP-LY-003	Laydown Yard	25.9	County	WV	Salem	Private	Deciduous Forest	2.51
							Developed, Medium Intensity	0.01
							Developed, Open Space	5.93
MVP-RD-001	Rock Disposal	79.0	Braxton	WV	Flatwood Yard	Private	Cultivated Crops	6.17
							Pasture/Hay	9.76
MVP-LY-004	Laydown Yard	86.8	Webster	WV	Route 19 & I-79 Yard	Private	Barren Land	2.69
							Developed, Low Intensity	1.26
							Developed, Medium Intensity	2.19
							Developed, Open Space	0.60
							Grassland/Herbaceous	0.33
							Pasture/Hay	2.16
MVP-LY-005	Laydown Yard	97.2	Webster	WV	Birch River Yard	Private	Developed, Low Intensity	1.68
							Developed, Medium Intensity	0.07
							Developed, Open Space	0.84
MVP-LY-007	Laydown Yard	114.3	Nicholas	WV	Summersville Yard	Private	Deciduous Forest	0.32
							Developed, Low Intensity	0.46
							Developed, Open Space	3.61
							Pasture/Hay	16.06

Table 1.3-4

Proposed Contractor Yards for Pipeline Construction

Name	Type	MP	County	State	Location	Land Ownership	Land Use <u>a/</u>	Acres
MVP-PY-003	Pipe Yard	155.7	Greenbrier	WV	I-64 Dawson	Private	Cultivated Crops	1.80
							Deciduous Forest	2.01
							Developed, Low Intensity	0.09
							Developed, Open Space	0.44
							Pasture/Hay	24.01
MVP-PY-006	Pipe Yard	231.3	Montgomery	VA	Northfork Road - I-81	Private	Deciduous Forest	1.65
							Developed, Low Intensity	1.51
							Developed, Medium Intensity	0.46
							Developed, Open Space	4.00
							Pasture/Hay	15.21
MVP-PY-005	Pipe Yard	262.9	Pittsylvania	VA	Highway 220	Private	Deciduous Forest	0.62
							Developed, Low Intensity	1.63
							Developed, Medium Intensity	0.05
							Pasture/Hay	12.70
							Deciduous Forest	0

a/ NLCD 2006 citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, *PE&RS*, Vol. 77(9):858-864.

MVP does not expect that construction activities will occur in frozen ground conditions, but construction could occur during times of snowfall in West Virginia and Virginia, particularly at higher elevations. Section 1.4.1.2 below outlines procedures to handle construction activities during the inclement winter season in the Northeast and measures to secure the right-of-way and protect it from erosion or other damages during the winter months.

MVP anticipates that it will employ the following procedures to construct the Project; however, deviations are possible based on actual field conditions or to comply with regulatory requirements.

1.4.1 Pipeline

Construction of the Project will follow industry-accepted practices and procedures, as further described below. Generally, construction of the proposed pipeline will follow a set of sequential operations as shown in Figure 1.4-1. In this typical pipeline construction scenario, the construction spread proceeds along the pipeline right-of-way in one continuous operation. The entire process will be coordinated in such a manner as to minimize the total time a tract of land is disturbed and therefore exposed to erosion and temporarily precluded from normal use. To minimize the impacts of construction disturbance, MVP will utilize the FERC Plan and Procedures. Equipment problems, terrain and soil conditions, and weather can affect the timing and consistency of the operation. Typical construction details depicting various construction scenarios are shown in Appendix 1-C1. The following sections provide detailed descriptions of each proposed construction method.

1.4.1.1 Standard Construction and Restoration Techniques

Typical Upland Pipeline Construction Procedures

MVP will conduct all construction activities in accordance with applicable federal and state regulations and guidelines, as well as the specific requirements of applicable permits. In addition to adopting the FERC Plan and Procedures, MVP will develop its own site specific E&SCP that will be based on topography and employed in conjunction with the FERC Plan and Procedures. If deviations from the FERC Plan and Procedures are identified, MVP will request a variance from the specific requirement.

Prior to initializing construction-related activities, MVP will secure right-of-way easements, or other required authorizations, from landowners whose properties will be crossed by the proposed pipeline route. Property will be returned to original contours, and property boundary markers that are removed will be replaced with a civil survey boundary. The ground would be stabilized as outlined in the FERC Plan and Procedures and MVP's site-specific plan; however, plant seed mix components may vary based on site conditions, landowner requests, and coordination with federal and state agencies.

Those portions of the Project located primarily in upland terrain will employ conventional overland construction techniques for large-diameter pipelines. In the typical pipeline construction scenario, the construction contractor will construct the pipeline along the construction right-of-way using sequential pipeline construction techniques, including survey, staking and fence crossing; clearing and grading; trenching; pipe stringing, bending and welding; lowering-in and backfilling; hydrostatic testing; clean-up and restoration; and commissioning.

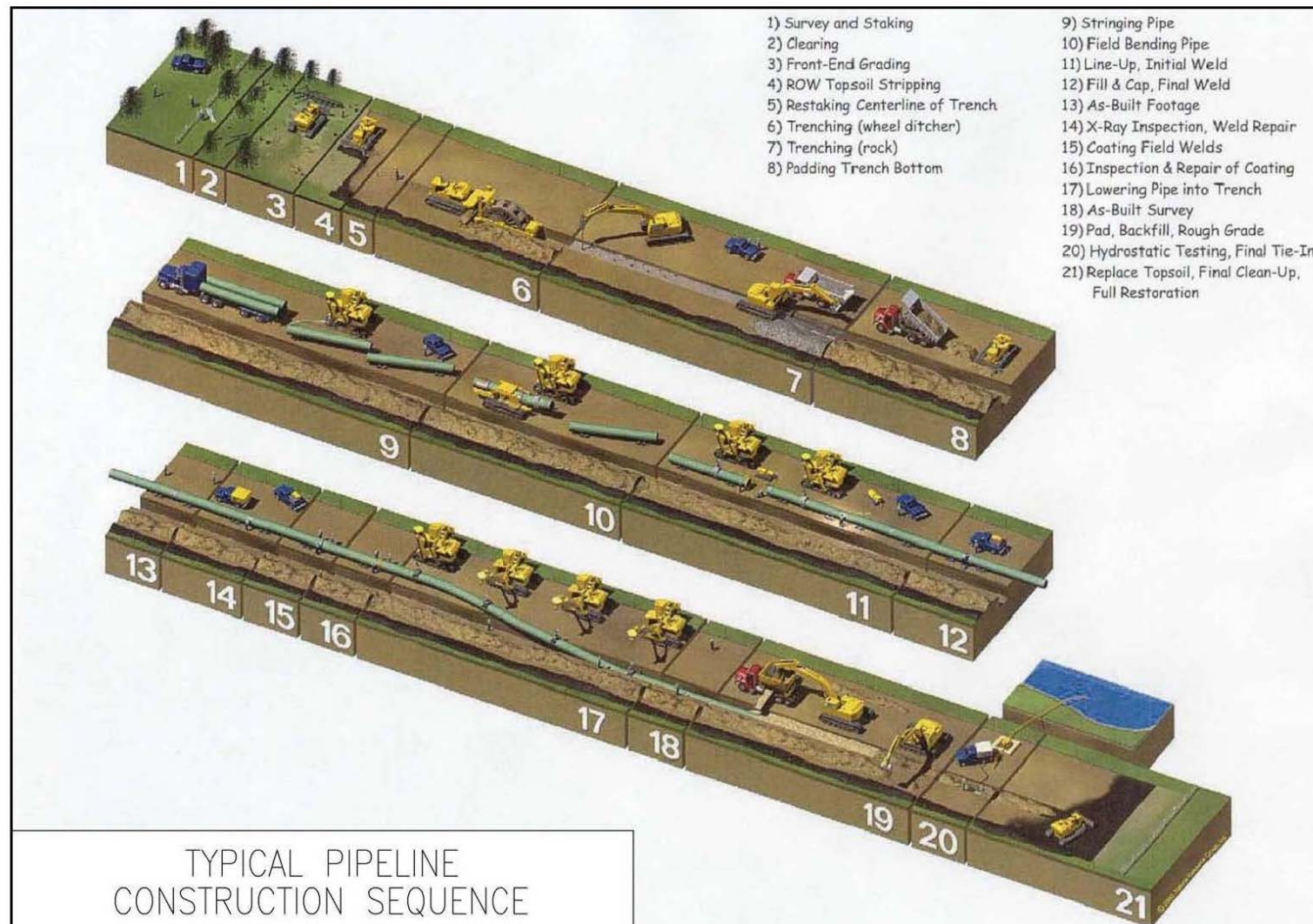


Figure 1.4-1 Typical Pipeline Construction Sequence

MVP will utilize 11 construction spreads to construct the pipeline. Table 1.4-1 provides spread by beginning and ending MP, length and construction year. The majority of the pipeline construction process will be accomplished using conventional open-cut methods, which typically include the steps described in the following paragraphs. The proposed methods for accomplishing pipeline installation across wetlands and waterbodies, as well as other specialized construction procedures, are also described in the following paragraphs describing special construction procedures.

Table 1.4-1					
Proposed Spreads for Pipeline Construction					
Spread	Begin MP	Ending MP	Mainline Length (Miles)	Construction Year	Spread Length (Miles)
1	0	25.9	25.9	2017	25.9
2	25.9	48.05	22.15	2017	22.15
3	48.05	77.6	29.55	2017	29.55
4	77.6	104.25	26.65	2017	26.65
5	104.25	127.9	23.65	2017	23.65
6	127.9	154.2	26.3	2018	26.3
7	154.2	181.8	27.6	2018	27.6
8	181.8	204.75	22.95	2018	22.95
9	204.75	234.0	29.25	2018	29.25
10	234.0	261.5	27.5	2018	27.5
11	261.5	300.97	39.47	2018	39.45

(a) Surveying

The initial step in preparing the right-of-way for construction will be the civil survey. A civil survey crew will stake the outside limits of the construction right-of-way, the centerline location of the pipeline, elevations, highway and railroad crossings, access roads, and any temporary extra workspace, such as lay down areas or at stream crossings. The “One Call” system of each state will be contacted, and underground utilities (e.g., cables, conduits, and pipelines) will be located and flagged. Affected landowners will be notified prior to surveying and staking of the proposed route, following applicable state/federal guidelines.

(b) Clearing and Grading

After the right-of-way has been surveyed and easements have been secured (for the permanent and temporary construction right-of-way, and any existing right-of-way if necessary), the right-of-way will be cleared of obstructions (i.e., trees and stumps, brush, logs, and large rocks) according to the FERC Plan and outlined in MVP’s Project-specific E&SCP (Appendix 1-G Pending). The right-of-way will be cleared to the width required for construction, but not more than specified on the pipeline alignment sheets. These right-of-way widths indicate the maximum width necessary for construction, operation, and maintenance of the pipeline. At no time will MVP or its contractor clear or alter any areas outside of the boundaries of the pipeline right-of-way area, including ATWS areas, shown on the pipeline alignment sheets.

Merchantable timber will be cut into lengths and stacked off the edge of the right-of-way. Timber ranging from four inches to eight inches in diameter at the butt end, suitable for fence posts or other uses, will be cut into usable lengths. Timber will be stacked adjacent to the right-of-way in accordance with landowner preferences. If the landowner does not wish to use timber products or any other tree material it will be windrowed, no taller than four feet with wildlife breaks/openings every 200 feet. Brush and slash will be handled according to local permitting and landowner requests. MVP will dispose of brush and slash through burning, windrowing or chipping, in this order. Burning will be on a case-by-case basis and will be done by permit, subject to local ordinances. MVP has developed a Fire Prevention and Suppression Plan which is included in Appendix 1-H. The plan was developed based on MVP's experience in working throughout the region; however, it was not developed in consultation with any agencies. The plan identifies BMPs for the burning of brush and slash in the construction right-of-way. MVP will not burn within the Jefferson National Forest. Brush and slash may also be both windrowed permanently and removed depending on the terrain and landowner request. All windrow breaks/openings will allow for landowner passage, per pre-coordination and approval. If removed, trees/brush will be hauled off to an approved location for chipping or burning. If left permanently, the brush/slash windrow can provide habitat for wildlife and will not have any impacts on achieving adequate vegetative cover. If brush and slash is chipped, it shall be blown off right-of-way per landowner pre-coordination and approval. This will ensure the successful revegetation of the right-of-way. Burning is the preferable method for disposing of brush and slash because it minimizes the number of trucks that would be required to remove chips from the right-of-way; it reduces the emissions associated with multiple round trips and also reduces safety hazards of trucks entering the right-of-way in difficult terrain and steep slopes. All stumps will be disposed of to the satisfaction of the property owner and/or company representative in accordance with applicable law including, but not limited to, any anti-pollution law, rule or regulation. When feasible, vegetation will be cut to ground level only, leaving the root systems intact.

If fences (barbed wire, chain link, or other) are encountered along the construction right-of-way, then a fence crew will install temporary gates. The contractor's fence crew will install new posts to brace the areas on either side of the proposed cut to ensure that no damage occurs to other portions of the fence or wall. Temporary gates will be installed, if necessary, to contain livestock or to prohibit or otherwise control public access across the right-of-way. These temporary fences and/or gates will remain closed at all times except as required for construction purposes.

Where needed for erosion control, the FERC Plan and Project E&SCP will be implemented along the construction right-of-way. BMPs will be properly maintained throughout construction and will remain in place until permanent erosion controls are installed or restoration is completed.

(c) Trenching

To bury the pipeline underground, it will be necessary to excavate a trench. The trench will be excavated with a track-mounted backhoe or similar equipment. Explosives will only be used when necessary in areas where rock substrates are found at depths that interfere with conventional excavation or rock-trenching methods. Blasting, including a Project Blasting Plan, is further discussed in Resource Report 6. On actively-cultivated agricultural tracts and in residential areas, subsoil will be stockpiled separately from topsoil (or the upper 12 inches of topsoil, if the topsoil is deeper). Topsoil segregation is further discussed in Resource Report 7.

Generally, the trench will be excavated at least 12 inches wider than the diameter of the pipe. The sides of the trench will be sloped with the top of the trench up to 12 feet across, or more, depending upon the stability of the native soils. The trench will be excavated to a sufficient depth to allow a minimum of three feet of soil cover between the top of the pipe and the final land surface after backfilling (minimum of 18 inches of cover will be provided in consolidated rock in Class 1 or greater locations or in ditches, where 24 inches of cover is required). Locations such as waterbodies, roads and railroads will include 36 inches of cover per applicable permits.

Excavated soils will typically be stockpiled along the right-of-way on the side of the trench (the “spoil” side) away from the construction traffic and pipe assembly area (the “working” side). Where the route is co-located adjacent to an existing infrastructure, the spoil generally will be placed on the same side of the trench as the existing infrastructure.

(d) Stringing

Steel pipe for the pipeline will be procured in nominal double random and/or triple random lengths, or “joints,” protected with an epoxy coating applied at the factory or at a coating yard (the beveled ends will be left uncoated for welding) and shipped to strategically located materials storage areas, or “pipe yards.” The individual joints will be transported to the right-of-way by truck and placed along the excavated trench in a single, continuous line, easily accessible to the construction personnel on the working side of the trench, typically opposite the spoil side. This will allow the subsequent lineup and welding operations to proceed efficiently. At stream crossings, the amount of pipe required to span the stream will be stockpiled in the ATWS on one or both banks of the stream.

(e) Pipe Bending

The pipe will be delivered to the job site in straight joints. The use of field controlled internal diameter fittings, in addition to the bending of pipe, will be required to allow the pipeline to follow natural grade changes and directional changes of the right-of-way. Prior to welding, selected joints will be bent in the field by track-mounted hydraulic bending machines.

(f) Pipe Assembly and Welding

Following stringing and bending, the joints of pipe will be placed on temporary supports, adjacent to the trench. The ends will be carefully aligned and welded together using multiple passes for a full penetration weld. Only qualified welders will be allowed to perform the welding. Automated welding techniques may be used in flatter areas if the terrain is suitable. Welders and welding procedures will be qualified according to applicable American Society for Mechanical Engineers (ASME), API, and 49 CFR Part 192 Standards.

(g) Non-Destructive Examination and Weld Repair

To ensure that the assembled pipe will meet or exceed the design strength requirements, the completed welds will be visually inspected and tested for integrity using non-destructive examination (NDE) methods such as radiography (X-ray), or ultrasound, in accordance with API standards. Welds displaying unacceptable slag inclusions, void spaces, or other defects will be repaired or cut out and re-welded.

(h) Coating Field Welds, Inspection, and Repair

Following welding, the previously uncoated ends of the pipe at the joints will be sandblasted to a near white finish and epoxy coated. The coating on the completed pipe section will be inspected, and damaged areas

will be repaired. Coating will be inspected prior to lowering in accordance with applicable industry standards. Defects discovered in the coating will be repaired prior to lowering.

(i) Pipe Lowering

The completed section of pipe will be lifted off temporary supports and lowered into the trench by side-boom tractors or equivalent equipment. Prior to lowering the pipe, the trench will be inspected to ensure that it is free of rocks and other debris that could damage the pipe or the coating. Before the pipe is lowered into the trench, the pipe and trench will be inspected to ensure that the pipe and trench configurations are compatible. In rocky areas, if the bottom is not smooth, a layer of soil or sand may be placed on the bottom of the trench to protect the pipe using a padding machine or excavator with a “shaker bucket,” which separates rocks from satisfactory padding materials. Concrete-coated pipe or aggregate filled sacks will be used if required for negative buoyancy in areas of saturated soils.

(j) Padding and Backfilling

After the pipe is lowered into the trench, the trench will be backfilled. Previously excavated materials will be pushed back into the trench using equipment or backhoes. Where the previously excavated material contains large rocks or other materials that could damage the pipe or coating, clean fill will be used to protect the pipe. Due to concerns about the acidity of fly-ash and its potential impacts on cathodic protection, fly-ash will not be used as backfill material. However, limestone dust or sand, which is typically basic and will often aid in the cathodic protection of the pipeline, may be used as backfill material. The first 12 inches above the top of the pipe will be clean fill free of rocks from the excavation. The remaining fill of the trench will be the aggregate of the excavation material removed at the time of the excavation. If additional fill is brought in, it will be either flowable fill or topsoil. MVP does not plan to have certifications of the fill that is brought in. Topsoil will be segregated per the FERC Plan and Procedures and will be placed after backfilling the trench above the subsoil. Following backfilling in agricultural land, grassland, and open land, a small crown may be left to account for any future soil settling that might occur. In wetlands, a crown will not be left in order to restore hydrology to pre-existing conditions. Excess soil will be distributed evenly on the right-of-way, only in upland areas, while maintaining existing contours and will be in accordance with landowner and agency requirements.

(k) Hydrostatic Test and Final Tie-In

Following backfilling of the trench, the pipeline will be hydrostatically tested to ensure that it is capable of safely operating at the design pressure. Baseline water samples will be taken at the source prior to water-up and prior to discharge. Test segments of the pipeline will be capped with test manifolds and filled with water and pressurized to a minimum of 1.1 to 1.25 times (based on location class) the designed operating pressure for a minimum of eight hours in accordance with the U.S. Department of Transportation (USDOT) requirements identified in 49 CFR Part 192 prior to being placed in service. Loss of pressure that cannot be attributed to other factors, such as temperature changes, will be investigated. Leaks detected will be repaired, and the segment will be retested.

Upon completion of the test, the water may be pumped to the next segment for testing, or the water may be discharged. The test water will be discharged through an energy-dissipating device in compliance with National Pollutant Discharge Elimination System (NPDES) permit conditions. Topography and the availability of test water will influence the length of each test segment. Hydrostatic test water withdrawal and discharge locations are provided in Resource Report 2. Test water will contact only new pipe. If chlorinated water is used for testing, a de-chlorinating agent may be required prior to discharge.

Once a segment of pipe has been successfully tested and dried, the test manifold will be removed, and the pipe will be connected to the remainder of the pipeline. Desiccant will not be used to dry the pipe. MVP will implement Section VII of the FERC Procedures regarding hydrostatic testing, as well as any specifications in individual state permit guidelines. Hydrostatic testing is discussed further in Resource Report 2.

(l) Cleanup and Restoration

Post-construction restoration activities will be undertaken in accordance with the measures specified in the FERC Plan and Procedures as applicable. After a segment of pipe has been installed, backfilled, and successfully tested, the right-of-way, temporary extra workspaces, and other disturbed areas will be finish-graded, and the construction debris will be disposed of properly. The surface of the right-of-way disturbed by construction activities will be graded to match original contours and to be compatible with surrounding drainage patterns, except at those locations where permanent changes in drainage will be required to prevent erosion, scour, and possible exposure of the pipeline. In agricultural areas, the segregated topsoil will be returned to its original horizon. Temporary and permanent erosion and sediment control measures, including silt fencing, diversion terraces, and vegetation, will be installed at that time. Private and public property, such as fences, gates, driveways, and roads that have been disturbed by the pipeline construction will be restored to original or better condition. More information on restoration is provided in Section 1.4.3.

Typical Wetland Pipeline Construction

Crossing of jurisdictional wetlands will be done in accordance with state and federal permits and the FERC Procedures. Pending site conditions, MVP may request variances from these Procedures, and these would require approval by FERC prior to construction in these areas. A discussion on wetland delineations performed for the Project and potential impacts on wetlands is provided in Resource Report 2.

As field surveys are complete, MVP has been conducting a full analysis of each wetland crossing to determine the potential for avoidance and minimization through the use of a reduced construction right-of-way; however, due to the size of the pipe and equipment necessary for its construction, the construction right-of-way width will utilize the maximum 75-foot limit in wetlands MVP will conduct a full analysis of construction through wetlands once surveys are complete and will identify the location and justification for each variance. Operation of construction equipment in wetlands will be limited to that needed to clear the right-of-way, dig the trench, fabricate the pipe, install the pipe, backfill the trench, and restore the right-of-way.

MVP will segregate the topsoil up to one foot in depth in wetlands where hydrologic conditions permit this practice. Segregated topsoil will be placed in the trench following subsoil backfilling. Restoration and monitoring of wetland crossings will be conducted in accordance with the FERC Procedures to ensure successful wetland revegetation. In accordance with the FERC Procedures, fuel will not be stored within 100 feet of wetlands or other water bodies.

Hydrological conditions along the construction corridor in areas proposed for open ditch construction will likely dictate the use of either open ditch lay or open ditch push/pull lay methods. Selection of the most appropriate method will depend on site-specific weather conditions, inundation, soil saturation, and soil stability at the time of construction. The conventional open ditch lay method will be the most frequently used technique for installation of the pipeline in wetlands. The push/pull lay method will be used in inundated or saturated wetland areas that necessitate this technique. Selection of the push/pull method will

be decided during construction by the construction supervisor and/or the MVP representative depending on the conditions at the time of construction.

MVP has considered avoidance of potential impacts to wetlands during the routing process for this pipeline. Where wetlands cannot be avoided, MVP will seek to minimize potential impacts through the use of wetland construction procedures. MVP is committed to constructing the Project in accordance with the FERC Plan and Procedures and approved E&SCP to the maximum extent practicable. Proposed ATWS will be located at least 50 feet from wetland boundaries. However, if site conditions require, MVP will request site-specific variances to Section VI.B.1.a (location of extra workspaces in wetlands) of the FERC Procedures providing a location-specific justification for each requested variance. A list of variances identified to date is provided in Resource Report 2.

(a) Unsaturated Wetland Crossings

In crossing unsaturated wetlands (wetlands without standing water or saturated soils), construction will be similar to the typical upland construction described in Section 1.4.1.1 above, with some exceptions, including that only one traffic lane will be provided for construction equipment. If normal construction equipment causes rutting or mixing of wetland topsoil and subsoil, low ground pressure equipment will be used, or temporary equipment mats will be installed to allow passage of equipment with minimal disturbance of the surface and vegetation. Trees will be cut to grade, but stumps will only be removed within 15 feet of the edge of the pipe trench, or where safety concerns dictate otherwise. Topsoil over the pipe trench will be segregated from subsoils. A vegetation buffer zone will be left between the wetland and the upland construction areas, except for the pipe trench and travel lane. Erosion control measures such as silt fences and erosion control sock will be installed and maintained to minimize sedimentation within the wetland. Trench plugs will be installed where necessary to prevent the unintentional draining of water from the wetland. Upon completion of construction, the right-of-way will be restored, and a 10-foot wide strip centered on the pipeline will be maintained in an herbaceous state.

(b) Saturated Wetland Crossings

For the purposes of this report, saturated wetlands include wetlands with standing water, but not those wetlands that are constantly or regularly completely submerged. Topsoil segregation will not be practical in saturated wetlands. Otherwise, construction will be similar as described for unsaturated wetlands to provide for anticipated widths of the pipeline trench and trench spoil areas. Equipment mats or timbers will be used to facilitate equipment movement through and work within the wetland. Equipment not associated with the pipeline construction within the wetland will be allowed to pass through the wetland when there is no other reasonable access, as provided in the FERC Procedures.

Typical Waterbody Crossings

Construction across waterbodies will be performed to minimize the time that the trenches for the pipeline crossings of flowing streams and rivers will be left open. The normal trenching operation will skip the waterbody crossing, stopping on each side near the top of bank. The waterbody section of the pipeline will be installed by one of the methods described below. In general, pipe will be bent and fabricated as the work progresses along the right-of-way so that the excavation of the waterbody crossing is only completed immediately prior to pipe installation by the tie-in crew. Locations and methods for waterbody crossings are discussed in Resource Report 2.

Construction methods at waterbody crossings will vary with the characteristics of the waterbody encountered and will be performed consistent with permit conditions outlined in the regulatory approvals.

Intermediate waterbodies (between 10 and 100 feet wide at water's edge) and minor waterbodies (less than 10 feet wide at water's edge) will be crossed by the open-cut/conventional lay or dry ditch crossing methods, unless otherwise required. Pipe will be installed to provide a minimum of four feet of cover from the waterbody bottom to the top of the pipeline, except in consolidated rock, where a minimum of two feet of cover will be required. Trench spoil will be placed on the bank above the high water mark for use as backfill.

A prefabricated segment of pipeline will be laid horizontally across the waterbody bed and continue 10 feet past the high banks on each side of the waterbody before raising in elevation to the normal trench level. If necessary, the pipeline may be weighted with concrete weights, and/or aggregate filled sacks in order to obtain sufficient negative buoyancy of the line. All adjacent pipelines will be protected as necessary.

Normal backfill cover requirements will be met. Compaction percentage of backfill will be equal to or above that of the adjacent undisturbed areas. Ditch plugs of crushed stone, sandbags, or dry soil may also be used to keep backfill from sloughing in toward the center of the waterbody. All waterbody banks will be restored to their original grades and foreign objects will be removed from the waterbody. Excavated material not required for backfill will be removed and disposed of at an upland site.

MVP will follow the FERC Procedures to limit water quality and aquatic resource impacts during and following construction. Construction activities will be scheduled so that the pipeline trench is excavated immediately prior to pipe laying activities. In accordance with the FERC Procedures, the duration of construction will be limited to 24 hours across minor waterbodies (10 feet wide or less) and 48 hours across intermediate waterbodies (between 10 and 100 feet wide) when blasting or extensive rock excavation is not required.

Crossings of minor perennial and intermittent streams will be accomplished in accordance with the FERC Procedures. Dry-ditch waterbody crossing methods include dam and pump, flume, and conventional bore. Where a dry-ditch crossing method is not specifically required by the FERC Procedures, the waterbody may be crossed using the open-cut crossing method. Milepost crossing locations, the crossing width measured at the time of the environmental survey, the significance for fisheries or other aquatic resources as reported by each state and the proposed crossing method are provided in Resource Report 2. The crossing method is subject to change depending upon the actual conditions encountered at the time of construction. Crossing methods are described below.

(a) Dam and Pump Crossing Method

The dam and pump method involves installation of temporary dams upstream and downstream of the proposed waterbody crossing. The temporary dams will typically be constructed using sandbags and plastic sheeting. Following dam installation, appropriately sized pumps will be used to dewater and transport the stream flow around the construction work area and trench. Intake screens will be installed at the pump inlets to prevent entrainment of aquatic life, and energy dissipating devices will be installed at the pump discharge point to minimize erosion and stream bed scour. Trench excavation and pipeline installation will then commence through the dewatered portion of the waterbody channel. Following completion of pipeline installation, backfill of the trench, and restoration of stream banks, the temporary dams will be removed, and flow through the construction work area will be restored. This method is generally only appropriate

for those waterbody crossings where pumps can adequately transfer the stream flow volume around the work area and there are no concerns about the passage of sensitive species.

(b) Flume Crossing Method

The flume crossing method will consist of temporarily directing the flow of water through one or more flume pipes placed over the area to be excavated. This method will allow excavation of the pipe trench across the waterbody completely underneath the flume pipes without disruption of water flow in the stream. Stream flow will be diverted through the flumes by constructing two bulkheads and using sand bags or plastic dams to direct the stream flow through the flume pipes. Following completion of pipeline installation, backfill of the trench, and restoration of stream banks, the bulkheads and flume pipes will be removed. This crossing method generally minimizes the duration of downstream turbidity by allowing excavation of the pipeline trench under relatively dry conditions.

(c) Conventional Bore Crossing Method

Some waterbodies crossed by the Project are directly associated with or adjacent to roads or railroads. Where these roads or railroads are to be crossed using a horizontal boring machine, the waterbody will typically be included within the length of the bore. Some elevated or channelized waterbodies, such as irrigation ditches, may also be successfully bored, depending upon the groundwater level in the area. To complete a horizontal bore, two pits will be excavated, one on each side of the feature to be bored. A boring machine will be lowered into one pit, and a horizontal hole will be bored to a diameter equal to the diameter of the pipe (or casing, if required) at the depth of the pipeline installation. The pipeline section and/or casing will then be pushed through the bore to the opposite pit. If additional pipeline sections are required to span the length of the bore, they will be welded to the first section of the pipeline in the bore pit before being pushed through the bore.

(d) Horizontal Directional Drilling

Horizontal directional drilling is a method that allows for trenchless construction across an area by pre-drilling a hole below the depth of a conventional pipeline lay and then pulling the pipeline through the pre-drilled borehole. Currently, due to constructability issues, there are no HDDs planned for MVP, so the following discussion is conceptual in nature. The HDD method has been in use since the 1970s as a means to install pipelines across rivers and at shore approaches to eliminate pipeline exposure from erosion and scour and eliminate impacts to water quality from construction activities within the waterbody. Pipelines up to 60 inches in diameter have been successfully installed using this method. The length of pipeline that can be installed by HDD depends upon soil conditions and pipe diameters and is limited by available technology and equipment sizes.

For most HDD crossings, electric-grid guide wires will be hand-laid across the land surface along the pipeline right-of-way to help guide the drill bit along the predetermined HDD route. In thickly vegetated areas, a swath approximately two to three feet wide may be cut across the land surface using hand tools to lay these electric-grid guide wires, resulting in minimal ground and vegetation disturbance. No trees 8 inches in diameter or greater will be cut during guide wire installation. At this time it is not anticipated that any hand clearing will be required to install guide wires. Any and all measure will be implemented to avoid the removal of any woody vegetation. Following guide wire installation, a directional drilling rig will be set up and a small-diameter pilot hole will be drilled along a prescribed profile.

For HDD crossings where a thickly vegetated riparian buffer exists, pumps for obtaining water for the drilling process and/or for hydrostatic testing could require that up to a 15-foot wide swath of land be cleared on one side of the crossing to allow access to get the pumps in and to lay water pipe from the river to the drilling operation, similar to that required for the guide wire installation. This may occur over the pipe or temporary access may be utilized if it does less harm to the vegetation. Because no HDD's are anticipated, it is not anticipated that any clearing will be required to lay water pipes or for access to pumps.

Electromagnetic sensors located on the tip of the drill bit will follow an electromagnetic field created by the guide wires along the prescribed path. Where guide wires cannot be used, bit tip positioning sensors will be used to guide the drill bit. In either case, once the pilot hole is completed, it will be enlarged, using reaming tools to provide access for the pipe. The reaming tools will be attached to the drill string at the exit point of the pilot hole and then rotated and drawn back to the drilling rig, thus progressively enlarging the pilot hole with each pass. During this process, drilling fluid consisting of bentonite clay and water will be continuously pumped into the hole to remove cuttings and maintain the integrity of the hole. Once the hole has been sufficiently enlarged, a prefabricated segment of pipe will be attached behind the reaming tool on the exit side of the crossing and pulled back through the drill hole to the drill rig, completing the crossing.

The primary advantage of the HDD method is that there is minimal planned disturbance of the surface between the entry and exit points of the HDD (limited to the temporary deployment of telemetry cable and water pipe), provided there is reasonable access to the entry and exit points for the drilling rig and fluids handling equipment. However, because it is necessary to prefabricate a section of pipe aboveground that is equal to the length of the HDD, and because existing surface features such as roads and railroads could restrict the length of the prefabricated section to less than that of the HDD, the HDD method may not be appropriate for every site condition encountered. A typical HDD installation is shown in Appendix 1-D.

Where the HDD and the adjacent right-of-way are in or near parallel alignment, the pull section will be prefabricated within the construction right-of-way to the greatest extent practical; minimal extra work space will be required for this pull section. However, if the adjacent right-of-way is not aligned with the HDD, it will not be possible to bend the pull section into the borehole, and an extra work space (sometimes referred to as a "false right-of-way") may be required to accommodate the pullback section.

Although the HDD method is a proven technology for pipe installation, the potential exists for a HDD installation to fail for a number of reasons, including encountering soil conditions not conducive to boring, caving of the borehole, loss of the drill string in the borehole, loss of circulation, and pullback refusal. Many of these potential failures can be avoided or mitigated by making appropriate adjustments to the operation of the HDD equipment. If needed, the borehole can usually be moved to another, adjacent location.

An assessment was completed for several major waterbody crossings to determine whether an HDD crossing is feasible based on site characteristics, the geometry of each crossing, and the advantages/disadvantages of HDD. Based on the commonly accepted industry practice of a bending radius of 100 times the pipe outer diameter, the allowable bending radius for 42-inch steel pipe is 4,200 feet. This is a typical conservative industry rule of thumb and is not based on any actual stress analysis. Based on the stress analysis for the pipe grade and wall thickness used for the MVP Project, the minimum bend radius without over stressing the pipe is 1,510 feet. For assessment purposes, an allowable minimum pipe bend radius of 2,500 feet was used for HDD crossings, with some exceptions made on a case by case basis. An

HDD with an entry angle of 12 degrees, exit angle of 6 degrees and a bend radius of 2,500 would require a minimum length of at least 1,287 feet if the terrain was flat. Changes in site elevation from entry to exit may cause the minimum required length to change. A bend radius of 2,500 feet is the max radius for a 42-inch-diameter pipe, but was necessary to traverse the crossings within the MVP alignment provided. Use of a 2,500-foot radius will increase the risk associated with successfully completing the crossings by HDD, utilizing analysis based on pipeline depths of at least 25 feet below rivers for HDD construction. The pipeline depth for HDD was based on minimizing the potential for inadvertent returns. An analysis for specific major waterbody crossings is provided in Resource Report 2.

Due to design limitations inherent with the size of the pipe and the difficult terrain, often not allowing adequate pullback space, it was determined that the HDD method is not preferable at any location along the MVP route. Therefore, MVP will not utilize the HDD at any location along the proposed route, including in areas of karst terrain. If MVP decides to use an HDD crossing, geotechnical and geophysical investigations will be conducted. The data will be submitted once it is available.

(e) Direct Pipe ©

Direct Pipe © is a trenchless installation method that combines features of HDD and microtunneling. Direct Pipe © was developed by the HerrenKnecht Company in Germany to provide a one-step pipe jacking method that offered the advantages of both HDD and microtunneling. Direct Pipe © utilizes a Microtunnel Boring Machine (MTBM) connected to the leading edge of an assembled length of pipe and a pipe thruster to jack the pipeline into place, similar to, but in the opposite direction of HDD pullback operations.

Direct Pipe © projects can range in diameter for 30 to 60 inches. Drilling lengths for Direct Pipe © projects can range from 900 to 4,900 feet. Two projects installing 30 inch diameter and 48 inch diameter pipelines were completed in the United States during 2015. A wide range of soil types are suitable for installation by Direct Pipe ©, including boulders and rock. Boulders and cobbles up to one third the diameter of the installed pipe can be accommodated by the MTBM at the front end of the pipeline. Due to the relatively new nature of the technology and the terrain crossed by the Project, Direct Pipe© is not anticipated to be used.

During Direct Pipe © operations, the tunnel face is excavated by an MTBM similar to the microtunneling and pipe-jacking method. The tunnel face is slurry-supported using a bentonite suspension. The excavated material is removed via a slurry circuit with separation plant in order to separate the spoil from the slurry liquid before feed pumps transport the liquid back to the tunnel face. The coated carrier pipe is attached to the MTBM. Typically, an abrasive resistant overcoat is used in combination with fusion bonded epoxy as the corrosion control coating. With the combination from the hole being 1 to 2 inches larger than the pipe and the abrasive resistant overcoat, the fusion bonded epoxy is protected during pipe installation. The MTBM is controlled from the operating container located on the surface adjacent to the pipe thruster. A gyro compass is used for steering control of the MTBM allow drill radius similar to HDD to be completed.

An advantage of Direct Pipe © system is one-step jacking method, which allows the pipe to be installed in one pass. Also, the installation of the pipe directly behind the MTBM provides constant support to the bore hole. The receiving side footprint for Direct Pipe © is small compared to other methods since all materials and equipment are located on the launch side. The advance control and guidance system provide high-precision target control. Finally, as with microtunneling, the slurry collection/recycling system and pressure control features at the excavation face minimize the potential for drilling fluid loss.

A disadvantage of Direct Pipe © is the high equipment and project costs compared to more familiar methods. Direct Pipe © requires a large work area on the launch side of a proposed crossing to accommodate the pipe thruster, supporting equipment and long lengths of welded product pipe. The pipe thruster requires that structural steel, including piles, be installed to support the operation. If a geologic formation is encountered that the cutting head cannot penetrate, the pipe and tunneling assembly must be extracted from the hole to change the cutting head creating a significant risk of hole collapse. If the pipe becomes stuck during installation, the pipe and hole will be filled with concrete and abandoned. Direct Pipe © is a relatively new trenchless technology with the first pipeline construction projects in the United States using Direct Pipe © during 2015. Because Direct Pipe © is a new technology, limited experience with the technology exists among the few contractors that can perform it.

Due to the relative newness of the Direct Pipe © technology, potential risk associated with geologic formations, and large impact area on the launch side, MVP does not intend to utilize Direct Pipe © technology for the Project.

(f) Open-Cut Crossing Method

An open-cut waterbody crossing will be conducted using methods similar to conventional upland open-cut trenching. The open-cut construction method will involve excavation of the pipeline trench across the waterbody, installation of a prefabricated segment of pipeline, and backfilling of the trench with native material. No effort will be made to isolate the stream flow from the construction activities. Depending upon the width of the crossing and the reach of the excavating equipment, excavation, and backfilling of the trench will generally be accomplished using backhoes or other excavation equipment operating from one or both banks of the waterbody. If necessary for reach, the equipment may operate within the waterbody. Equipment in the waterbody will be limited to that needed to complete the crossing. All other construction equipment will cross the waterbody using equipment bridges, unless otherwise allowed by the FERC Procedures for minor waterbody crossings.

Measures will be implemented to minimize impacts to the aquatic environment during construction as described in the FERC Procedures. Construction activities will be scheduled so that the trench is excavated immediately prior to pipe laying activities. The duration of construction within each waterbody will be limited to 24 hours for minor waterbodies (10 feet wide or less) and 48 hours for intermediate waterbodies (greater than 10 feet wide but less than or equal to 100 feet in width). In accordance with the FERC Procedures, excavated spoil that is stockpiled in the construction right-of-way will be at least 10 feet from the stream bank or in approved additional work areas and will be surrounded by sediment control devices to prevent sediment from returning to the waterbody. The waterbody banks will be returned to as near to pre-construction conditions as possible upon completion of each open-cut crossing.

Typical Road and Railroad Crossings

Road crossings will be maintained continuously using provisions such as steel plates or alternate access to minimize inconvenience to the public. Construction of the pipeline across hard surface roads will typically be installed through the roadbed by boring, with a pit on either side of the road or railroad to provide a working area for the equipment. At points of access to the right-of-way from hard-surfaced roads, a stone pad will be installed as a construction entrance to control mud and dirt tracking onto the highway. Most of the smaller unpaved roads and drives will be crossed by open trenching, and then restored to pre-construction conditions or better. If an open-cut road requires extensive construction time, provisions will be made for temporary detours or other measures to allow safe traffic flow during construction. The

pipeline will be buried to a depth of at least three feet below the road surface, and 10 feet below a rail of the railroad, and will be designed to withstand anticipated external loadings. Road and railroad crossing locations are discussed in Resource Report 8. Typical details of road and railroad crossings are provided in Appendix 1-C1.

Typical Foreign Pipeline Crossings

Portions of the Project are located in active oil and gas producing areas, resulting in crossings of numerous foreign pipelines and flow lines. The Project will cross under most existing foreign pipelines due to the large size of the pipeline and soil cover and separation requirements. The larger spoil volumes from increased excavation depths at these pipeline crossings and the preference not to place spoil or construction equipment over existing pipelines will require extra work space at most crossings. The locations of known foreign pipelines and other identified underground utilities in relation to the proposed pipeline are listed in Appendix 1-I. Ownership of some foreign pipelines is not known. While the pipelines are generally discernible in the field, some companies may not participate in the 811 notification system leaving the line operators unidentifiable. Experience shows that additional foreign lines or flow lines will likely be identified during the pre-construction surveys.

Precautions will be taken to ensure that the existing pipelines are positively identified, not damaged and the pipeline crossing area is safe during construction, including:

- One Call will be contacted to locate all known pipelines and utilities;
- The existing pipelines will be precisely located prior to excavation using a hand-held magnetometer and/or by probing, as appropriate for actual conditions encountered;
- Right-of-way edges will be scanned prior to grading with Passive Inductive Locating equipment to ensure that no unknown foreign pipelines cross into the work area;
- The operators of the existing pipelines will be given adequate notice of the crossing and the opportunity to be present during work around their pipelines;
- No mechanized excavation will be allowed within three feet of existing pipelines; the excavations will be completed by hand shoveling;
- Construction equipment and spoil piles will be kept off the existing pipeline centerline, to the extent practicable;
- The existing pipelines will be temporarily and adequately supported for the length of the span exposed by the crossing excavation. Supports will not be removed until the soil under the piping has been compacted and can adequately support the pipeline;
- The existing pipelines will be inspected before and after installation of the Project to ensure there is no damage to the existing pipelines or their coatings that could compromise their integrity;
- The minimum separation distance between the pipelines specified by the USDOT will be maintained; and
- Safety requirements of the foreign pipeline crossing operator will be followed.

MVP will require monitoring of excavation activities whenever a contractor is excavating over or near a foreign pipeline. A working combustible gas indicator (when crossing hydro-carbon lines) will be available at the work site, and appropriate safety and rescue equipment will be available, based on Occupational Safety and Health Administration (OSHA) standards for working in excavations or confined spaces.

In the event accidental damage occurs to a foreign pipeline during construction, the area will be inspected, the owner of the pipe notified, and the pipe repaired. Appropriate measures will be implemented to minimize undesirable effects to human health and the environment.

Typical Construction in Residential Areas

Where residences are located in close proximity to the edge of the construction right-of-way, MVP will reduce construction workspace areas as practicable to minimize inconvenience to property owners. If construction requires the removal of private property features, such as gates or fences, the landowner or tenant will be notified prior to the action.

Residential structures within 50 feet of construction work areas are identified in Resource Report 8. Special care will be taken in residential areas to minimize neighborhood and traffic disruption and to control noise and dust to the extent practicable.

In general, the following measures will be taken in residential areas:

- Fence the boundary to the construction work area for a distance of 100 feet on either side of the residence to ensure construction equipment, materials and spoil remain in the construction right-of-way;
- Notify local residents two weeks in advance of construction activities;
- Preserve trees and landscaping to the extent practicable;
- Utilize topsoil segregation procedures, as required, in accordance with the FERC Plan;
- Ensure piping is welded and installed as quickly as reasonably possible consistent with prudent pipeline construction practices to minimize construction time affecting a neighborhood;
- Backfill the trench and complete cleanup as soon as the pipe is laid or temporarily steel plate the trench;
- Complete cleanup (including grading) and installation of permanent erosion control measures within 10 days after the trench is backfilled, weather conditions permitting;
- Restore lawns and landscaping as soon as practical following final clean-up, or as specified in landowner agreements, weather conditions permitting; and
- If weather conditions prevent timely restoration of these areas, maintain and monitor temporary erosion controls until restoration is completed.

Additional measures such as high visibility safety fence or jersey barriers, will be used to prevent overnight access to the trench, in addition to installing overnight temporary end caps at the end of each work day. Site-specific Residential Construction Plans for each of the residences within 25 feet of the construction workspace are included in Resource Report 8. These plans show the construction area to be disturbed and safety measures that will be implemented, as described above. Additional details regarding the construction techniques, including proposed mitigation measures to be used in residential areas, are provided in Resource Report 8.

Following completion of major construction, the property will be restored in accordance with MVP standards regarding right-of-way restoration and maintenance. Property restoration will be in accordance with any agreements between MVP and the landowner.

Typical Construction in Commercial and Industrial Areas

Impacts to commercial and industrial areas will be limited to the construction and post-construction restoration periods when construction activities can inconvenience business owners, employees, and customers. MVP will maintain close coordination with business owners to maintain access, decrease construction duration, and generally minimize impacts.

Typical Topsoil Segregation

MVP will conserve topsoil in actively cultivated and rotated cropland, improved pastureland, and non-saturated wetlands. In residential areas, MVP will either conserve topsoil or import topsoil as an alternative to topsoil segregation and conservation. A minimum of 12 inches of topsoil will be segregated as described in the FERC Plan (Section IV.B.3), and in other areas at the specific request of the landowner or land management agency, if applicable (e.g., U.S. Fish and Wildlife Service, National Park Service, or Natural Resources Conservation Service). Where topsoil is less than 12 inches deep, the actual depth of the topsoil will be removed and segregated. The topsoil and subsoil will be temporarily stockpiled in separate windrows on the construction right-of-way. Rock will not be used as upper backfill in rotated or permanent cropland.

Under typical conditions, the trench will be adequate to accommodate the 42-inch-diameter pipeline with 36 inches of cover and 48 inches of cover in actively cultivated agricultural lands. The trench width will vary based on site conditions (e.g., soil types and bedrock). In actively cultivated agricultural areas and at certain crossings (e.g., road, waterbody), the trench depth will be greater in order to achieve the greater depth of cover requirements. Once landowner consultations have been completed, topsoil ATWS may be added, and the preliminary alignment sheets will be updated accordingly. ATWS may also be requested by MVP during construction if conditions encountered are found to be conducive to topsoil segregation in areas not previously designated for topsoil segregation. Upon completing construction, MVP will cooperate with local farmers and agricultural agencies to allow continued agricultural use of property while minimizing impacts to pipeline operations.

1.4.1.2 Special Construction Procedures

Blasting

At this time, the extent of blasting for the Project is unknown. MVP will minimize the amount of blasting required to the extent practicable. Where unrippable subsurface rock is encountered, blasting for ditch excavation may be necessary. In these areas, MVP is committed to taking measures to prevent damage to underground structures (e.g., cables, conduits, and pipelines) or to springs, water wells, or other water sources. Blasting mats or padding will be used as necessary to prevent the scattering of loose rock. All blasting will be conducted during daylight hours and will not begin until occupants of nearby buildings, stores, residences, places of business, and farms have been notified. Where competent sandstone bedrock occurs in the stream bed, blasting may be used to reduce bedrock so that the trench can be excavated. All blasting will be conducted in accordance with the Project Blasting Plan. Pre- and post- blasting structural surveys will be conducted of occupied structures, water supply wells and water supply springs that will be specified in the Blasting Plan. Per Section III of the FERC Plan, MVP has developed a draft Blasting Plan (Appendix 6-B), and will finalize the Blasting Plan in consultation with the appropriate agencies. Additional information on geologic resources, as well as information on blasting, is provided in Resource Report 6.

Rugged Terrain

In mountainous areas where the pipeline will encounter steep side slopes, MVP will employ special construction techniques where the slopes typically exceed 30 to 35 percent. Tables that detail areas of the pipeline that cross lateral and vertical slopes between 15 and 30 percent grade and lateral and vertical slopes greater than 30 percent grade are presented in Appendix 1-J. The construction techniques will require expanded workspace areas. The dimensions of these ATWS will vary, depending upon the degree and length of the slope. Land requirements for ATWS are identified in Appendix 1-D and Resource Report 8. In rugged terrain, temporary sediment barriers, such as silt sock and reinforced silt fences will be installed during clearing to prevent movement of sediment off of the right-of-way. In addition, temporary slope breakers may be installed during grading in accordance with the E&SCP to reduce water runoff or divert water to vegetated areas. Construction activities on rugged terrain will be similar to the typical construction described in Section 1.4.1.1; however, equipment will be tethered via winch lines to other equipment at the top of the slopes to ensure the safety of the construction personnel and surrounding areas.

Equipment used for the construction activity will be suspended from a series of winch tractors to maintain control of the equipment and provide an additional level of safety. All construction equipment and their winch lines will be inspected prior to operation to ensure the equipment is operable and sound. Spoil piles adjacent to the trench will be protected by temporary sediment barriers to keep excavated soils on the right-of-way. Pipe joints will be stockpiled at the top or bottom of each slope. A side-boom tractor will be suspended from a winch that will carry one joint at a time up or down the slope and place the joint along the trenchline. The joint will then be lowered into the ditch by a tractor. Welders will connect the joint to the previous joint within the trench to assemble the pipeline. Once welding is complete, the welds will be visually and radiographically inspected. The weld joints will be hand coated with fusion bonded epoxy coatings in accordance with required specifications. The coating will be inspected for defects, and repaired, if necessary. Sand trench breakers will be installed in the trench along the pipeline to prevent or slow the movement of water along the trench. The pipeline will be padded and the trench backfilled by equipment tethered to the winch tractors. The surface of the right-of-way will be restored to original contours, and permanent slope breakers will be installed in accordance with the E&SCP. Erosion control blankets or hydroseed, in lieu of mulch, will be installed on steep slopes to provide stabilization for vegetation to help control sediment and water runoff.

In areas where the Project route crosses laterally across the face of a slope or side slope construction, cut-and-fill grading may be required to establish a safe, flat work terrace; this may require ATWS along the construction right-of-way.

MVP will incorporate erosion and sediment control measures such as super silt fence, silt fence, sock filtration, erosion control socks, temporary and permanent water bars, ditch breakers, temporary mulch, and erosion control blankets as per Project design specifications based on slope.

On steep slopes, various measures will be taken in order to properly control erosion and sedimentation on the right-of-way. Spoil piles from trenching operations will be staged along the side of the right-of-way and will be compacted via rolling with dozers on site as additional material is added. Once a soil pile is completed it will be temporarily mulched to control washouts. Additionally, spoil piles will be separated at intervals of 50 feet by temporary water bars which will serve to slow the flow of runoff down the right-of-way and divert it into straw bales or No. 3 aggregate. Silt fence and super silt fence would be used to stop

rocks from rolling off the right-of-way. Other measures such as erosion control blankets, temporary mulching, hydroseed, and sock filtration may be used.

Within the trench, sand filled sacks will be stacked across the width of the trench as necessary based on field conditions. This will permit water to slowly filter through without carrying large amounts of soil with it. Similarly, permeable trench breakers constructed of sand or aggregate-filled sacks will be installed along the open ditch. Rock fall protection measures such as rock fences, placement of concrete barriers, or creating catchment areas may be added where excavation is planned at the top of steep slopes, as determined by the contractor. Once the area is stabilized, following construction, MVP will remove any temporary stabilization methods. Contours will be returned to pre-existing conditions to the extent practicable.

In addition to the measures taken on slopes to control erosion and sedimentation, trench drains will be installed on side slopes and excessively steep slopes before the pipe is placed in order to channel water away from the ditch and will not be removed after construction is complete. These drains will consist of perforated tile or pipe surrounded with rock (1 inch stone or similar, which may be taken from excavated spoils) that will terminate either at the bottom of a very steep slope into a well vegetated area, near a roadway at the edge of the right-of-way, at the low point along a side cut onto a riprap pad near the edge of the right-of-way, or at a wooded area off the right-of-way.

On side hill construction tree stumps and other organic material will be removed from backfill material along the right-of-way, since this can lead to soil saturation and eventual slippage. Special attention will be paid to ensure that natural drains alongside slopes are properly restored after construction activities are complete. In order to accomplish this, additional french drains or rock lined channels may be constructed to efficiently convey water across or around the right-of-way. Where possible, compaction on side cut sections should be completed in 12-inch lifts using a sheep's foot roller.

Karst Area

Based on consultation with MVP's karst experts, Draper Aden, following their local geologic expertise and a preliminary review of mapping from the United States Geological Survey, West Virginia Department of Environmental Protection, and Virginia Department of Mines, Minerals, and Energy, among other sources, it was determined that portions of pipeline will cross areas with the potential to contain karst features. MVP is continuing to work with Draper Aden to identify and map potential sinkholes and karst related features along the proposed route in order to identify and avoid those areas during the routing process. The study and results of the karst assessment to date are included in Resource Report 6. MVP has made route adjustments to avoid areas containing dense concentrations of features, such as sinkholes, which are indicative of karst development; however, the route may encounter areas of karst geology that are not readily identifiable until construction activity. MVP will utilize minimum Class 2 pipe in areas of karst which will withstand greater stress should a sinkhole develop under the pipe. MVP hired a consultant, D.G. Honegger Consulting, that specializes in constructing pipelines in areas with potential external forces, to perform an analysis of potential karst construction methods of the Project. The results of this analysis documented that class 2 pipe buried with a normal depth of cover of 3 feet could tolerate a sinkhole span of 145 feet, and if buried at an abnormal depth of cover of 10 feet, could tolerate a sinkhole span of 57 feet. MVP will have a geotechnical contractor, Karst Specialists, on site daily for construction in karst areas, which is further documented in the Karst Mitigation Plan. The contractor will be able to immediately identify potential problematic features and direct crews to immediately employ mitigation measures as needed. During construction, erosion and sediment controls will be installed along the edge of the

construction right-of-way and other work areas upslope of known sinkholes or other karst features with a direct connection to the phreatic zone of the karst (i.e., groundwater). If features are uncovered, they will be evaluated by Karst Specialists to determine the need for mitigation measures, such as stabilization. A typical mitigation method for a sinkhole would be to excavate the feature to expose its throat, and then plug the throat using graded rock or sand fill to allow drainage and minimize alteration of flow patterns. Additional construction methods are incorporated in Resource Report 6.

Trench Dewatering

In most cases, trench dewatering will be limited to the removal of storm water in the pipe trench excavated in upland locations. In saturated wetlands, it would not be practical to attempt to dewater the trench, since the groundwater level is at or near the ground surface. In those locations, the pipe may be concrete-coated or weighted with aggregate filled sacks to overcome buoyancy in the flooded trench. In uplands, storm water will typically be removed from the trench prior to lowering the pipe into place. The storm water will be pumped from the trench to a location down-gradient of the trench. The trench will be dewatered in a manner that does not cause erosion and does not result in heavily silt-laden water flowing into any waterbody or wetland. The storm water will be discharged to an energy dissipation/filtration dewatering device, such as a hay bale structure. Heavily-silt laden water may first be passed through a filter bag. The dewatering structure will be removed as soon as possible after completion of the dewatering activities. Trench breakers (ditch plugs) will be used where necessary to separate the upland trench from adjacent wetlands or waterbodies to prevent the inadvertent draining of the wetland or diversion of water from the waterbody into the pipe trench.

Winter Construction

MVP plans is to begin cutting trees and clearing in the trees in December 2016. The grading is anticipated to begin in February 2017; however, it can be expected that construction activities will occur in frozen ground conditions before and after winter months in various sections of the route, meaning construction may occur during times of snowfall. MVP has developed a Winter Construction Plan (Appendix 1-K), which identifies BMPs for construction activities during snow accumulation.

As necessary during snow accumulation, snow will be removed from construction work areas to expose soils for grading and excavation. Snow removal will be limited to active construction areas and areas needed to maintain access to the construction right-of-way. Snow will be bladed or pushed to the edges of the right-of-way with a motor-grader, snowplow, or bulldozer fitted with a “shoe” to minimize impacts on underlying soils and vegetation, and stockpiled within the right-of-way or an approved ATWS areas. Snow will not be bladed off the right-of-way. Snow removal equipment will access the Project areas from approved access roads, and will operate from within the construction right-of-way or approved ATWS areas. When snow accumulation is more than one foot, it will be removed from both the working and spoil sides of the construction right-of-way prior to topsoil segregation and grading to prevent mixing of snow with excavated spoil. Erosion and sediment control devices and diversion berms will be installed where needed to control snow and melting run off.

1.4.2 Aboveground Facilities Construction

Typical construction activities associated with the installation of the aboveground facilities are summarized below. No special construction methods will be required for the proposed facilities.

General

Construction activities and storage of construction materials and equipment will be confined within the compressor station and interconnect site boundaries. Debris and wastes generated from construction will be disposed of as appropriate. Disturbed surface areas will be restored in a timely manner. The facilities will be constructed in accordance with MVP construction standards and specifications as more generally described in the paragraphs that follow.

Foundations

Excavation will be performed to accommodate the new reinforced concrete foundations for the compressors, launching and receiving facilities, filtration equipment, coolers, and buildings. Subsurface friction piles may be required to support the foundations, depending upon the bearing capacity of the existing soils and the equipment loads. Forms will be set, rebar installed, and the concrete poured and cured in accordance with applicable industry standards. Concrete batches for equipment buildings will be tested to verify compliance with minimum strength requirements. Backfill will be compacted in place, and excess soil will be used elsewhere or distributed around the site to improve grade.

Equipment

The compression, piping and other equipment will be shipped to the sites by truck. The equipment will be offloaded using cranes or front-end loaders, or both. The equipment will then be positioned on the foundations, leveled, grouted where necessary, and secured with anchor bolts.

Non-screwed piping associated with the aboveground facilities will be welded, except where connected to flanged components. Welders and welding procedures will be qualified in accordance with API standards. Welds in gas piping systems will be examined using radiography, ultrasound, or other approved NDE methods to ensure compliance with code requirements.

Aboveground piping surfaces will be cleaned and painted in accordance with MVP construction specifications. Paint inspection and cleanup will be conducted in accordance with regulatory requirements and best engineering practices.

Testing

Components in high-pressure natural gas service will be tested prior to placing in service. Hydrostatic testing will follow all applicable federal and state requirements. Before being placed in service, controls and safety equipment and systems, including emergency shutdown, relief valves, gas and fire detection, and engine overspeed and vibration protection will be calibrated and tested.

Pig launching and receiving facilities will be installed at the beginning and at the end of each of the lines of the Project, and at certain other points as identified in Table 1.2-2. The launcher and receiver stations will be designed to accommodate smart pigs for periodic internal inspections of the pipeline during operations. These facilities will meet the same standards and regulatory requirements established for the pipelines.

MLVs will be installed within proposed new compressor station sites and/or completely within the Project's permanent right-of-way, at locations dictated by pipeline class in accordance with 49 CFR Part 192.179(a) Transmission Line Valves. The installation of the MLVs will meet the same standards and requirements established for the construction of the compressor stations and the pipeline. MVP will attempt to locate

these MLVs as close to existing roads as possible to minimize impact to property and provide easy access for MVP maintenance personnel.

1.4.3 Restoration

Following construction of the Project, the areas disturbed by construction will be restored to their original grades, condition, and use, to the greatest extent practicable. However, aboveground facilities will be fenced.

Restoration will be considered successful if the disturbed surface condition is similar to adjacent undisturbed lands, construction debris is removed (unless requested otherwise by the landowner or land managing agency), revegetation is successful, proper drainage has been restored, and the appropriate federal and state agencies approve.

MVP has also enlisted the services of the Wildlife Habitat Council to aid in restoration through the recommendation of seed mixes, of conservation opportunities, and establishing partnership opportunities with agencies to address conservation priorities. The Project will be a candidate for a Wildlife Habitat Council Conservation Certification. More information is provided on this work in Resource Report 3.

1.4.3.1 Pipeline

Upon completion of the pipeline installation, the surface of the right-of-way disturbed by construction activities will be graded to match original contours and to be compatible with surrounding drainage patterns, except at those locations where permanent changes in drainage will be required to prevent erosion, scour, and possible exposure of the pipeline. Segregated topsoil will be replaced, and soils that have been compacted by construction equipment traffic will be decompacted. Permanent erosion control measures will be installed at this time. Temporary construction erosion control measures may be left in place, or replaced with interim erosion control measures, where appropriate, until sufficient vegetative cover is re-established to prevent significant erosion and sedimentation.

Uplands

In most upland locations, excluding actively cultivated cropland, a herbaceous vegetative cover will be re-established by spreading a grass seed and hydro/straw-mulch mixture over the disturbed surface. The type of seed will be selected to match adjacent cover, as recommended by the Wildlife Habitat Council, or as otherwise requested by the landowner or land management agency. Depending upon the time of year a temporary seed mix recommended by the Wildlife Habitat Council may be broadcast or drilled until a more permanent cover can be established. Steep slopes (e.g., stream banks) may require erosion control fabric, revetments, or sod. Vegetation success in these areas will be monitored by MVP, and reseeded, fertilizing, hydroseed, measures will be employed until based upon visual survey, the density and cover of non-nuisance vegetation is similar in density and cover to adjacent undisturbed lands. With approval, temporary and interim erosion control measures will be removed at that time. An exception to this approach will be made for the permanent right-of-way that must be maintained in herbaceous vegetative cover. Woody vegetation will not be allowed to grow within the permanent right-of-way.

Actively cultivated cropland may be left unseeded at the request of the landowner. Pasture will be reseeded with a similar species or mixture. Pasture re-vegetation will be considered successful when density and cover are similar to adjacent undisturbed portions of the same pasture.

Residential and commercial lawns will be reseeded or sodded, depending upon the original grass variety and landowner requests. Shrubs and small trees on residential properties will be temporarily transplanted and replaced, where practicable and where allowed relative to the permanent right-of-way. Forested areas will be allowed to recover, except that no trees will be allowed to grow within the permanent right-of-way.

Wetlands

Original surface hydrology will be re-established in wetlands by backfilling the pipe trench and grading the surface with backhoes operating from the equipment mats or low-ground-pressure tracked vehicles working in the spoil pile, depending upon the ambient water level, degree of soil saturation, and the bearing capacity of the soils. Segregated topsoil will be replaced in unsaturated wetlands. Roots and stumps will have been removed only in the areas of the pipe trench, allowing existing vegetation to recover more rapidly in the remainder of the right-of-way once the equipment mats and spoil piles have been removed. Wetlands along the proposed pipeline are expected to exhibit varying degrees of saturation and water elevation, requiring a variety of plant species to be re-established. In unsaturated wetlands, most vegetation will be replaced by seeding. Saturated wetlands will typically be allowed to re-vegetate naturally. Wetland revegetation will be considered successful when the cover of herbaceous and/or woody species is at least 80 percent of the type, density, and distribution of the vegetation in adjacent wetland areas that were not disturbed by construction. Revegetation efforts will continue until wetland revegetation is successful. Restoration and mitigation for impacts to forested wetlands are addressed in Resource Report 2.

1.4.3.2 Aboveground Facilities

The areas inside the fence at the aboveground facilities will be permanently converted to industrial use. Most areas in and around the buildings, meters, and associated piping and equipment will be covered with crushed rock (or equivalent) to minimize the amount of maintenance required. Roads and parking areas may be crushed rock, concrete, or asphalt. Other ground surfaces will be seeded with a grass that is compatible with the climate and will be easily maintained. Disturbed areas outside the fence will be restored as described above for the pipeline right-of-way.

1.4.3.3 Access Roads

Previously existing access roads that were modified and used during construction will be returned to original or better condition upon completion of the pipeline facilities installation. New access roads constructed specifically for the Project installation will be removed, the surface graded to original contours, and the land restored to its original use, unless otherwise requested by the landowner, or unless the roads will be required for permanent access to the right-of-way during pipeline operations, and in accordance with any permit requirements. Temporary erosion control measures will be removed upon final stabilization and approval from applicable federal and state agencies and installation of permanent erosion control measures.

1.4.3.4 Contractor Yards

Upon completion of construction, all temporary facilities (e.g., trailers, sheds, latrines, pipe racks, fencing, and gates) will be removed from the pipe storage and contractor yards. Unless otherwise requested by the landowner, each site will be graded to original contours, and the land restored to its original use. The site will be re-vegetated, permanent erosion control measures will be installed, and temporary erosion control measures will be removed.

1.4.4 Quality Assurance Measures

To ensure that construction of the proposed facilities will comply with measures identified in the Resource Reports, the FERC evaluation of the Project, and the requirements of other federal and state permitting agencies, MVP will include, whenever appropriate, implementation details in its construction drawings and specifications. Selected contractors will receive copies of specifications and a Construction Drawing Package containing, among other things, plant and equipment drawings designated as being approved for construction.

For those measures that address permit conditions from federal and state agencies, copies of permits and related drawings will be added to the Construction Bid Package. For those measures that, in part, address post-construction requirements, instructions and documentation will be provided to operating personnel following the completion of construction.

The selected contractors will install facilities according to company specifications, the Construction Drawing Package, the terms of the negotiated contract, federal and state permits, and the FERC Plan and Procedures. MVP conducts training for all personnel involved on the Project prior to the start of construction or authorization to enter any Project work area. The Project's inspectors will be selected from the industry's inspector pool utilizing only qualified third party contractors. Prior to and during construction, training for field construction personnel and contractor personnel will be conducted. This training will focus on the FERC Plan and Procedures as well as other regulatory requirements for categories such as endangered species, cultural resources, and wetlands. The training will also cover Project specific construction and mitigation plans, operator qualification and site specific safety requirements.

For purposes of quality assurance and compliance with mitigation measures, other applicable regulatory requirements, and company specifications, a Chief Inspector will represent MVP. The Chief Inspector will be assisted by a Lead Inspector (on each spread), one or more craft inspectors, and Non-Destructive Evaluation (NDE) technicians. In addition, there will be at least one environmental inspector for each spread who will report to the Lead Environmental Inspector (EI), who in turn reports to the Construction Project Manager at a level equivalent to the Chief Inspector. The environmental inspector's duties are consistent with those contained in Section II.B (Responsibilities of the Environmental Inspector) of the FERC Plan and shall be:

- Responsible for monitoring and documenting compliance with all mitigation measures required by the FERC's Order and any other grants, permits, certificates, or other authorizing documents;
- Responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract or any other authorizing document;
- Empowered to order correction of acts that violate the environmental conditions of the FERC's Order, or any other authorizing document (e.g., USACE Section 404 permit), including stop work authority;
- A full-time position separate from all other activity inspectors; and
- Responsible for maintaining status reports and training records.

An ample number of copies of the Construction Drawing Package will be distributed to inspectors and to contractors' supervisory personnel. If a contractor's performance is unsatisfactory, the terms of the contract will allow for work stoppage and will require the contractor to begin remedial work.

The MVP engineering and construction departments are responsible for designing and constructing certificated facilities in compliance with regulatory and contractual requirements and agreements. If technical or management assistance is required, the responsible MVP Construction Manager and/or Chief Inspector will request assistance from the appropriate company department. The operations department will be responsible for long-term Project maintenance and regulatory compliance once the Project has been turned in line.

1.4.4.1 Environmental Training and Inspection

Consistent with the FERC guidelines, environmental training will be given to the MVP personnel and to contractor personnel whose activities may impact the environment during pipeline and aboveground facility construction. The level of training will be commensurate with the type of duties of the personnel. All construction personnel from the Chief Inspector, EI, craft inspectors, and contractor job superintendent to loggers, welders, equipment operators, and laborers will be given the appropriate level of environmental training. The training will be given prior to the start of construction and throughout the construction process, as needed. The training program will cover job-specific permit conditions, contaminated sediment and groundwater management, health and safety, company policies, cultural resource procedures, threatened and endangered species restrictions, the Spill Prevention Control Plan, NPDES, Stormwater Pollution Prevention Plan, and any other pertinent information related to the job. In addition to the EIs, all other construction personnel will play an important role in maintaining strict compliance with all permit conditions to protect the environment during construction.

At least one EI will be assigned to each construction spread during active construction or restoration. In addition, MVP will participate in the FERC's third-party construction compliance monitoring program. The EI will have peer status with all other activity inspectors and will report directly to the Resident Engineer/Chief Inspector who has overall authority on the construction spread. The EI will have the authority to stop activities that violate the environmental conditions of the FERC certificate (if applicable), other federal and state permits, or landowner requirements, and to order corrective action.

1.4.5 Construction Schedule and Work Force

The order in which each facility will be constructed may vary, depending upon numerous factors, including the receipt of necessary authorizations, the capabilities of each contractor, available work force, and optimized logistics. Clearing is expected to commence in December 2016 and pipeline construction is anticipated to begin February 2017 with a target full in-service date for the Project of December 2018. A Construction Duration Schedule is provided in Table 1.4-2. Details on workforce required for the Project are presented in Resource Report 5.

Table 1.4-2		
Construction Schedule for Major Components of the Project <u>a/</u>		
Component	Commence Activity	Complete Activity
Clearing	December 2016	March 2018
Pipeline Construction	February 2017	October 2018
Compressor Stations	March 2017	October 2018
Restoration	May 2017	December 2018
Hydrostatic Testing	December 2017	October 2018
<u>a/</u> Anticipated full in-service date of December 2018		

1.5 OPERATIONS AND MAINTENANCE

Following construction of the Project facilities, certain areas along the pipeline alignment (and at aboveground facilities) will comprise permanent right-of-way or facility sites. For pipeline facilities, MVP will maintain a typical permanent right-of-way easement of 50 feet in width. MLVs will be contained within the operational right-of-way. Land requirements for permanent operating right-of-way for pipeline facilities are listed in Table 1.3-1. In some locations it will be necessary to retain access roads used for construction to support ongoing pipeline operations. Land requirements for permanent access roads are listed in Appendix 1-F.

MVP will operate and maintain the Project and aboveground facilities in compliance with PHMSA regulations provided at 49 CFR Part 192, FERC regulations at 18 CFR § 380.15, and maintenance provisions of the FERC Plan and Procedures. Unless requested by a land management agency, it is MVP policy not to use herbicides or pesticides to maintain the right-of-way or any of its Project facilities. Operations and maintenance considerations for pipeline facilities are described in Resource Report 11.

1.5.1 Pipeline

Operational activity on the pipeline will be limited primarily to maintenance of the right-of-way and inspection, repair, and cleaning of the pipeline. Periodic aerial and ground inspections by pipeline personnel will identify soil erosion that may expose the pipe; dead vegetation that may indicate a leak in the line; conditions of the vegetation cover and erosion control measures; unauthorized encroachment on the right-of-way, such as buildings and other substantial structures; and other conditions that could present a safety hazard or require preventive maintenance or repairs. A schedule for the maximum intervals between inspections/patrols by class area is provided in Table 1.5-1. The pipeline's cathodic protection system will also be monitored and inspected in accordance with 49 CFR Part 192 requirements to ensure proper and adequate corrosion protection. The pipeline will be designed for internal inspection technology. Appropriate responses to conditions observed during internal inspections will be taken as necessary. In addition, class change studies will also occur to identify areas of development. Vegetation on the permanent right-of-way will be maintained by mowing, cutting, and trimming. The permanent right-of-way will be allowed to revegetate; however, large brush and trees will be periodically removed in accordance with the FERC Plan and Procedures. In uplands, trees or deep-rooted shrubs could damage the pipeline's protective coating, obscure periodic surveillance, or interfere with potential repairs and would not be allowed to grow within the permanent right-of-way. Along the length of the pipeline, including wetlands, a 10-foot-wide strip over the pipeline will be maintained by mowing. Vegetation maintenance will be conducted in accordance with the FERC Plan and Procedures.

Table 1.5-1	
Schedule for Major Components of the Project <u>a/</u>	
Pipe Class	Inspection/Patrol Interval
Highway and Railroad Crossings	
Class 1 and 2	7.5 months but at least twice per year
	4.5 months but at least twice per year
All Other Locations	
Class 1 and 2	15 months but at least once per year
<u>a/</u> Intervals comply with 49 CFR § 192.705. Regulations include intervals for Class 3 and 4 pipe; however, there will be no Class 3 or 4 pipe locations on the MVP Project and it was therefore not included.	

Vegetation maintenance normally will not be required in agricultural or grazing areas. Other than preventing tree growth and clearing the 10-foot inspection corridor as described above, vegetation maintenance will also not normally be required in wetlands.

The pipeline facilities will be clearly marked at line-of-sight intervals and at crossings of roads, railroads, waterbodies, and other key points, in accordance with PHMSA regulations. The markers will clearly indicate the presence of the pipeline and provide a telephone number and address where a company representative can be reached in the event of an emergency or prior to any excavation in the area of the pipeline by a third party. MVP will participate in “One Call” systems in West Virginia and Virginia.

1.5.2 Aboveground Facilities

1.5.2.1 Compressor Stations

The compressor station crews will perform operation and maintenance of all equipment. Crews will perform routine checks of the facilities including calibration of equipment and instrumentation, inspection of critical components, and scheduled and routine maintenance of equipment. Safety equipment, such as pressure relief devices and fire and gas detection systems will be tested for proper operation. Corrective actions will be taken if problems are identified.

The compressor stations will be equipped with combustible gas and fire detection alarm systems, as well as emergency shutdown system. The gas detection system will alarm upon detection of 25 percent of the lower explosive limit of natural gas in the air. Automatic emergency shutdown of the compressors, evacuation or venting of gas from the station piping, and isolation of the station from the main pipeline will occur following a fire detection alarm or the detection of a 50 percent lower explosive limit inside the station. The compressor stations will also be equipped with relief valves or pressure protection devices to protect the station piping from overpressure if station or unit control systems fail. The stations will be unmanned with start/stop control capabilities controlled by the MVP’s Gas Control headquarters, located in Pittsburgh, Pennsylvania at EQT Plaza. A telemetry system will notify personnel locally and at the gas control headquarters of the activation of safety systems and alarms as appropriate. Maintenance personnel may be dispatched to investigate and take proper corrective actions, if necessary.

1.5.2.2 Measurement Stations

Measurement technicians, based at EQT Corporation office locations, will operate and maintain the new equipment. Site personnel will perform routine checks of the facilities, including calibration of equipment and instrumentation, inspection of critical components, and scheduled and preventative maintenance of equipment. Safety equipment, such as pressure reducing devices, will be tested for proper operation, per 49 CFR Part 192 requirements. Corrective actions will be taken if problems are identified.

The interconnect sites will be equipped with control valves or other pressure-protection devices to protect the site piping from overpressure conditions. A telemetry system will notify personnel locally and at MVP’s Gas Control headquarters of the activation of safety systems and alarms, which may in turn instruct maintenance personnel to investigate and take proper corrective action.

1.6 FUTURE PLANS AND ABANDONMENT

MVP currently has no plans for either future expansion or abandonment of the facilities. Market forces will determine the timing and need for future expansions. MVP will seek the appropriate authorizations from FERC and other federal and state agencies should facilities need to be expanded or abandoned.

1.7 PERMITS AND APPROVALS

Various federal and state laws provide protection of resources that may be potentially affected by the Project. For example, cultural resources are protected by the Antiquities Act of 1906 (16 USC 431-433), the National Historic Preservation Act of 1966 (Public Law [PL] 89-665), as amended, and its regulations (36 CFR 800), the Archaeological and Historical Preservation Act of 1974 (PL 93-291), the Archaeological Resources Protection Act of 1979 (PL 96-95) and its regulations (43 CFR 7), the American Indian Religious Freedom Act (42 USC 1996), and the Native American Graves Protection and Repatriation Act of 1990.

Threatened and endangered flora and fauna species are protected under the Endangered Species Act of 1973, as amended (PL 94-325). Additionally, the Migratory Bird Treaty Act (16 USC 703-71 L) and the Bald and Golden Eagle Protection Act (16 USC 668a-668b) protect other sensitive wildlife species potentially occurring within the Project area.

The states of West Virginia and Virginia maintain a permit program for activities in and around waterbodies. In Virginia, the permit is a joint permit with the USACE, which satisfies the requirements of Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899, and the respective state agency permit requirements. In West Virginia, an individual 401 state stream crossing permit will be required.

At the time of MVP's application to the USACE, USFWS and SHPO consultations will not have been completed and therefore the USACE will be unable to determine the application complete. However, MVP has been in coordination with the USACE and received confirmation that they will start their reviews prior to finalization of those consultations. Once the USFWS and SHPO consultations have been completed, the 45-day clock will begin.

Each state has its own National Pollutant Discharge Elimination System (NPDES) program. The WVDEP Division of Water and Waste Management has issued a State General Water Pollution Control Permit to regulate the discharge of stormwater runoff associated with oil and gas related construction activities. The General Permit authorizes discharges composed entirely of stormwater associated with oil and gas field activities or operations associated with exploration, production, processing or treatment operations or transmission facilities, disturbing one acre or greater of land area, to the waters of the West Virginia. In Virginia, administration of the NPDES under Section 402 of the federal Clean Water Act has been delegated to the VDEQ. General permits are issued for activities that will have a minimal effect and that fall within a class of facilities with similar effluent characteristics; individual permits can be issued if VDEQ determines the project exceeds minimal impact standards. MVP will file the required permit applications with each respective state.

Both West Virginia and Virginia have regulations regarding the burning of brush and slash. In addition to the state wide regulations, each county and municipality may also have specific regulations that pertain to burning. In West Virginia, a permit is required for brush burning from March 1st through May 31st and October 1st through December 31st of each year. Outside commercial burning permits may be obtained by

public utilities and people burning in conjunction with commercial, manufacturing, mining or like activities. An air quality permit in West Virginia is granted after the county forester has inspected the proposed burn site. In Virginia, there are state wide burn regulations, along with some additional rules for some counties and municipalities along the pipeline route. The state regulations require that no burning shall occur until after 4:00 p.m. from February 15 through April 30 of each year, if the fire is in or within 300 feet of woodland, brushland or field containing dry grass or other flammable material. At the county level, Pittsylvania, Roanoke, and Franklin Counties have their own regulations. At the municipal level, Salem and Rocky Mount have their own their own rules, and both of those municipalities have a complete ban on open burns.

The applicable federal, state, and local permits and approvals, responsible agencies, and the anticipated schedule for filing applications or documentation for these permits and approvals for the Project are summarized in Table 1.7-1. Appendix 1-L contains agency correspondence.

1.8 AFFECTED LANDOWNERS

The names and addresses of affected landowners are included in Appendix 1-M (Privileged). Affected landowners include:

- All landowners whose land will be crossed or used for the proposed construction activities, including all facility sites, right-of-ways, access roads, pipe and contractor yards, ancillary sites and temporary workspaces;
- Landowners and residents within 0.5 mile of new compressor stations; and
- Landowners whose land abuts the edge of the proposed facility site or right-of-way or which contains a residence within 50 feet of the proposed construction work area.

MVP has developed a comprehensive Public Participation Plan (Appendix 1-N) that outlines a commitment to engage actively with stakeholders throughout the life cycle of the Project and provides the following activities that MVP has identified to ensure successful ongoing communication with stakeholders, including establishing a Project website, a toll-free phone line, and a single point of contact.

- MVP held 14 open houses in December 2014 through January 2015 and two additional open houses in April 2015 in order to provide information about the Project to all interested federal and state agencies, stakeholders, as well as the public;
- MVP continues to identify and hold meetings with local associations, affected public groups and other non-governmental organizations concerning the Project;
- MVP continues to meet with federal, state and local government representatives to seek input, provide updates as the Project progresses, and extend an open invitation to all public meetings;
- MVP continues to meet frequently with state and federal agencies for guidance during permitting and with development of the Resource Reports. MVP will respond rapidly to requests for information from permitting agencies and the Commission, and will meet with them in person, if that assists in understanding the request and providing the best possible response;

Table 1.7-1

Agencies with Relevant Permit or Consultation Requirements

Agency	Permit/ Approval/ Consultation <u>a</u>/	Consultation Initiated	Permit Application Filed	Anticipated Permit Receipt Date
Federal				
Federal Energy Regulatory Commission	NGA Section 7; Certificate for construction and operation of interstate natural gas pipeline.	October 16, 2014	October 23, 2015	October 15, 2016
Bureau of Indian Affairs, Eastern Regional Office	Consultation regarding which tribes may have potential interest in project area or presence of traditional cultural properties, and contact tribes as appropriate	October 13, 2014	N/A	N/A
U.S. Department of Transportation (USDOT), Office of Safety, Energy, and the Environment	Consultation	October 13, 2014	N/A	N/A
U.S. Department of Transportation (USDOT), Office of Pipeline Safety	Consultation	Prior to the start of construction	4 th Quarter 2016	4 th Quarter 2016
National Park Service (NPS), Southeast Region	Consultation regarding potential impacts to Appalachian National Scenic Trail and Blue Ridge Parkway	October 13, 2014	N/A	N/A
	Survey Permission on NPS lands (Blue Ridge Parkway)		April 2015	August 2015
	Right-of-way through NPS lands (Blue Ridge Parkway)		4 th Quarter 2015	3 rd Quarter 2016
U.S. Army Corps of Engineers (USACE), Huntington District	Section 404 Permit for impacts on waters of the U.S., including wetlands Section 10 Permit for activities affecting navigation	October 13, 2014	4 th Quarter 2015	4 th Quarter 2016
USACE, Norfolk District	Same as USACE, Huntington District	October 13, 2014	4 th Quarter 2015	4 th Quarter 2016
USACE, Pittsburgh District	Same as USACE, Huntington District	October 13, 2014	4 th Quarter 2015	4 th Quarter 2016
U.S. Department of Agriculture (USDA), Virginia	Consultation regarding permanent conversion of important farmland	October 13, 2014	N/A	N/A
USDA, West Virginia	Same as USDA, Virginia	October 13, 2014	N/A	N/A
EPA, Region 3 Water Protection Division	National Pollutant Discharge Elimination System (NPDES) stormwater construction permit for stormwater runoff	October 13, 2014	N/A	N/A
U.S. Forest Service (USFS)	Consultation regarding potential impacts Survey Permission on USFS lands (Preferred Route)	September 11, 2014	N/A November 24, 2014	N/A April 2015
	Survey Permission on USFS lands (Alternate Routes)		March 10, 2015	April 2015
	Survey Permission on USFS lands (Alternate Routes)		August 21, 2015	September 2015
	Right-of-way through USFS lands		1 st Quarter 2016	3 rd Quarter 2016

Table 1.7-1

Agencies with Relevant Permit or Consultation Requirements

Agency	Permit/ Approval/ Consultation <u>a/</u>	Consultation Initiated	Permit Application Filed	Anticipated Permit Receipt Date
U.S. Fish and Wildlife Service (USFWS), Virginia	Consultation under Section 7 of ESA for potential impacts on federally protected species Consultation regarding impacts on migratory birds Consultation regarding impacts on fish and wildlife	September 24, 2014 March 2015 March 2015	N/A	N/A
USFWS, West Virginia	Same as USFWS, Virginia	September 24, 2014	N/A	N/A
Virginia				
Virginia Department of Forestry	Consultation regarding potential impacts to state-managed forests	October 13, 2014	N/A	N/A
Virginia Department of Game and Inland Fisheries (VDGIF)	Consultation regarding potential impacts to state-managed lands	October 13, 2014	N/A	N/A
Virginia Department of Mines, Minerals, and Energy – Division of Gas and Oil	Consultation	October 13, 2014	N/A	N/A
Virginia Department of Transportation (VDOT)	Road bonds and crossing permits	4 th Quarter 2015	2 nd Quarter 2016	4 th Quarter 2016
Virginia Department of Historic Resources (VDHR), Division of Review and Compliance (SHPO)	Consultation and clearance regarding potential impacts on pre-historic and historic resources eligible for listing on the National Register of Historic Places	October 3, 2014	N/A	N/A
Virginia Department of Conservation and Recreation (VDCR)	Consultation on potential impacts to wildlife species and habitat	October 13, 2014	N/A	N/A
VDCR, Division of Natural Heritage	Consultation for state threatened and endangered species	October 13, 2014	N/A	N/A
VDCR, Division of Planning and Recreation	Consultation for state parks and managed lands	October 13, 2014	N/A	N/A
VDEQ, Water Division	Water Quality Certification for construction and operation impacts on water and wetlands	October 13, 2014	4 th Quarter 2015	1 st Quarter 2016
VDEQ	General Permit No. VAG83	N/A	December 2017	October 2018
VDEQ, Office of Environmental Impact Review	Consultation	October 13, 2014	N/A	N/A
West Virginia				
West Virginia Department of Environmental Protection (WVDEP), Division of Air Quality	Air Quality permit for air emissions	October 10, 2014	4 th Quarter 2015	2 nd Quarter 2016
WVDEP, Division of Water and Waste Management	401 Water Quality Certification for construction and operation impacts on water and wetlands	October 13, 2014	4 th Quarter 2015	1 st Quarter 2016

Table 1.7-1

Agencies with Relevant Permit or Consultation Requirements

Agency	Permit/ Approval/ Consultation <u>a/</u>	Consultation Initiated	Permit Application Filed	Anticipated Permit Receipt Date
WVDEP, Division of Water and Waste Management	NPDES Permit – Construction Stormwater General Permit for Oil and Gas Related Construction Activities		3 rd Quarter 2015	4 th Quarter 2016
WVDEP, Division of Water and Waste Management	NPDES Hydrostatic Test Discharge Permit		1 st Quarter 2016	2 nd Quarter 2016
West Virginia Division of Energy	Consultation	October 13, 2014	N/A	N/A
West Virginia Department of Transportation (WVDOT)	Road bonds and crossing permits	4 th Quarter 2015	2 nd Quarter 2016	4 th Quarter 2016
West Virginia Division of Culture and History (SHPO)	Consultation and clearance regarding potential impacts on pre-historic and historic resources eligible for listing on the National Register of Historic Places	October 3, 2014	N/A	N/A
West Virginia Department of Natural Resources (WVDNR), Office of Land and Streams	Stream Activity Permit for construction in or across a stream	October 13, 2014	1 st Quarter 2016	2 nd Quarter 2016
West Virginia Division of Forestry	Consultation on potential impacts to state parks and forests	October 13, 2014	N/A	N/A
<u>a/</u> Consultations will occur continuously throughout the development of the Project.				

- MVP issued two volumes of its “In the Pipeline” newsletter to landowners, community members, and elected officials who are located along the proposed route and plans to issue another within weeks of formal application; newsletters are sent via U.S. Mail and also are also available electronically; and
- MVP has established and updates a publicly available website providing pertinent information about the Project. The website has the following address: www.mountainvalleypipeline.info.

MVP will work to address and resolve complaints regarding the construction and/or operation of the Project in timely manner. MVP has an established protocol to resolve any landowner concerns prior to and during construction, using the Project 24-Hour hotline. The hotline is a toll-free number that serves as a means for landowners and stakeholders to contact appropriate Project representatives with questions, concerns, and complaints. Affected landowners will be provided with the 24-Hour hotline number by land agents during construction notification. The call response is a three-step process.

Step 1: Gathering Information

A MVP representative will contact and request all necessary information to complete the caller information section of the hotline record, including the caller’s name, address, phone number, and Project reference. Additionally, any details offered by the caller regarding the purpose of the call will be entered on the hotline record.

Step 2: Defining the Issues

The MVP representative will work with the caller to help understand and address their concerns. If a representative can resolve the issue, they will record this on the hotline record. Otherwise, the caller will be advised that their concerns have been documented and that they can generally expect a return call within 24 hours from an appropriate MVP representative. The hotline record documenting the concerns will then be directed to the appropriate right-of-way agent.

Step 3: Resolution

If the issues are resolved during Step 2, a representative will complete the process by documenting how a resolution was reached for the hotline record. If a resolution is not reached during Step 2, the hotline record will be forwarded to the appropriate right-of-way agent who will return the call. The delegation of the issue should generally follow this progression until resolution is reached. If a right-of-way agent receives a direct phone call relating to environmental, construction, or off-right-of-way issues from a landowner during pre-construction, construction, or post-construction activities, the agent will request all necessary information to complete the caller information section of the hotline record including the caller’s name, address, phone number, and Project reference. The agent will then proceed to Steps 2 and 3 until a resolution is reached.

1.9 NON-JURISDICTIONAL FACILITIES

For all three compressor stations, a water well will be drilled locally to provide water for each facility. Any required water conditioning equipment will be provided based on the water quality from the well. The type of septic system installed will be specified by the local Public Service District responsible for issuing the septic system permit.

MVP is in the process of soliciting data from the local distribution companies along the proposed pipeline route for the availability of electric service. At this time, the electric utility companies have not

communicated availability and preliminary designs and, as such, the environmental impacts associated with them cannot be fully assessed. Both the Bradshaw and Stallworth Compressor Stations will be supplied via a 12.47 kilovolt, three-phase, line extended to the stations. The Harris Compressor Station will utilize additional microturbines for back-up due to distribution power not being available. The four interconnect sites, 31 of the MLV sites (3 sites will be supplied via compressor stations and 2 will be supplied via measurement stations) and all cathodic protection sites will be supplied via 7.2 kilovolt, single-phase line that exists near the sites.

MVP is in the process of soliciting data from the local telecommunications service providers along the proposed pipeline route. At this time, the telecommunications utility companies have not communicated availability and preliminary designs and, as such, the environmental impacts associated with them cannot be fully assessed.

Determination of the Need for FERC to Conduct an Environmental Review (Four-Factor Test)

Under certain circumstances, non-jurisdictional facilities may be subject to FERC's environmental review. In making this determination, FERC requires applicants to address four factors that indicate the need for FERC to do an environmental review of project-related non-jurisdictional facilities. These factors include:

- (1) Whether or not the regulated activity comprises "merely a link" in a corridor type project (such as a transportation or utility transmission project);
- (2) Whether there are aspects of the non-jurisdictional facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity;
- (3) The extent to which the entire project will be within the FERC's jurisdiction; and
- (4) The extent of cumulative federal control and responsibility.

The application of this procedure to the non-jurisdictional facilities follows:

- With respect to factor (1), the regulated activity is not a link in a corridor type project. Therefore, this factor does not support a review of the non-jurisdictional facilities.
- With respect to factor (2), there are no aspects of the non-jurisdictional facilities that affect the location and configuration of the proposed Project. Therefore, this factor does not support a review of the non-jurisdictional facilities.
- With respect to factor (3), the non-jurisdictional facilities are entirely outside of the FERC's jurisdiction as the construction of these facilities is under the state and/or local jurisdiction of the various regulatory agencies. This factor weighs against inclusion of the non-jurisdictional facility in a review by the FERC.
- With respect to factor (4), the cumulative level of federal control and responsibility over the Project, federal control is determined by the amount of federal financing, assistance, direction, regulation, or approval inherent in a project. The non-jurisdictional facilities will be developed by either the local entities or the MVP Project, and no federal financing or guarantees will be granted for construction of these facilities. MVP is an independent company and the non-jurisdictional facilities will be constructed by private companies under state and local regulatory jurisdiction. Some federal permits may be involved, but no federal lands are involved. Therefore, cumulative federal control is minimal and this factor does not support the FERC environmental review.

1.10 CUMULATIVE IMPACTS

The Council on Environmental Quality (CEQ) regulations that implement the National Environmental Policy Act define cumulative effects as “the impact on the environment which results from the incremental consequences of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions” (40 CFR § 1508.7). Cumulative effects include both direct and indirect, or induced, effects that would result from the Project, as well as the effects from other projects (past, present, and reasonably foreseeable future actions) not related to or caused by the Project. Cumulative impacts may result when the environmental effects associated with a Project are added to temporary (construction-related) or permanent (operations-related) impacts associated with other past, present, or reasonably foreseeable future projects. Although the individual impact of each separate project might not be significant, the additive or synergistic effects of multiple projects could be significant. The cumulative effects analysis evaluates the magnitude of cumulative effects on natural resources such as wetlands, water quality, floodplains, and threatened and endangered species, as well as cumulative effects on land use, socioeconomics, air quality, noise, and cultural resources. The CEQ regulations (40 CFR § 1508.8) also require that the cumulative effects analysis consider the indirect effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.

The purpose of the cumulative impacts analysis is to identify and describe cumulative impacts that would potentially result from implementation of the Project. Inclusion of actions within the analysis is based on identifying commonalities of impacts from other actions to potential impacts that would result from the Project. In order to avoid unnecessary discussions of insignificant impacts and projects and to adequately address and accomplish the purposes of this analysis, the cumulative impacts analysis for the Project will be conducted using the following guidelines:

- A project must impact a resource category potentially affected by the Project. For the most part, these projects are located in the same general area that would be directly affected by construction of the Project. The effects of more distant projects are in most cases not assessed, because their impacts would tend to be localized and not contribute significantly to the impacts of the Project. Potential cumulative impacts on air quality and watersheds, however, were considered on a broader, more regional basis.
- The distance into the past and future which other projects could potentially cumulatively impact the area of the Project was based on whether the impacts are short-term, long-term, or permanent. Most of the impacts related to the other Projects would occur during the construction phase, and would be short-term impacts. Timing will be evaluated based on the submittal date of the Project’s certificate application and the proposed in-service date. “Past” projects were identified as those where impacts from construction and/or operation of the completed project continue to affect resources. “Present” projects are those currently under construction. Projects will be determined to be “reasonably foreseeable” when information about the project is publicly available.

Projects meeting one or more of the criteria listed below will be considered in this cumulative analysis. These criteria define the projects’ region of influence, which were used in this analysis to describe the general area for which the Projects could potentially contribute to cumulative impacts. The region of influence varies depending on the resource being discussed. This approach was developed based on cumulative analysis conducted in recent FERC filings. Specifically, the cumulative impacts analysis for MVP will include:

- Minor projects, such as residential development, small commercial development, and small transportation projects within 0.25 mile of the Project area;

- Major projects, such as large commercial, industrial, transportation and energy development projects within a 10-mile corridor of the Project area (5 miles of the Project centerline). This includes natural gas well permitting and development projects;
- Major projects within watersheds crossed by the Project. Watershed boundaries were identified using the HUC – 10, or 5th Level Watershed; and
- Projects with potential to result in longer term impacts on air quality (for example, natural gas pipeline compressor stations) located within air quality control regions (AQCR) crossed by the other Projects. These are typically organized by county. If the other project is near the county border, the adjoining county will also be reviewed.

An assumption related to identifying projects to include in the cumulative impact analysis is that information necessary to compile the analysis is available to the public from various local, county, state, and federal sources, and is up to date and accurate. The level of information available varies considerably based on the source. For example, information is available to interested parties in a variety of formats regarding natural gas exploration and production, and current and future natural gas related projects; however, providing an informed cumulative impact analysis requires the gathering of pertinent information from a number of different sources for an individual project.

The following are sources of projects included in this evaluation:

- Federal Agencies – Information on projects pending before the FERC (either in the Pre-filing Process or with a filed certificate application) is available through FERC’s eLibrary system. USACE regional websites provide information regarding recently approved permits and pending USACE permits that are available for public comment. Available information varies by website but a brief description of the activity requiring the permit and the applicant is provided.
- State Agencies – Information on projects recently reviewed or under review for the Virginia and West Virginia state agencies. Available information varies by agency; however, projects that are publically posted will be included.
- County Agencies – County and local government websites are possible sources of information about natural gas or energy-related projects. In addition, each county has been contacted directly for information related to potential developments within 0.5 mile from the proposed pipeline corridor. In cases where individual counties do not maintain a comprehensive list for planned development, the individual townships have also been contacted.
- Private Companies – Information on projects listed by their owners and developers on their public websites is included.

It is assumed that numerous state and county road projects as well as gathering lines and other developments associated with natural gas production will occur within the vicinity of the Project during project time window as well as several other development projects that have not become public knowledge at this time. In addition, other projects in the region could be in the unannounced, initial design phase which makes it impossible to predict cumulative impacts with any certainty. The majority of cumulative impacts will likely be temporary and minor. All other projects would need to adhere to their project-specific permitting requirements, thereby minimizing cumulative impacts.

Projects in the vicinity of the Project have been identified, and all potential cumulative impacts have been analyzed as they relate to the Project. Projects considered in this cumulative impacts analysis are summarized in Table 1.10-1.

Table 1.10-1

Projects in the Vicinity of the Mountain Valley Pipeline Project

Project	Description	County/State	Shared Watershed (5 th Level)	Shared Air Quality Control Region	Distance from MVP	Direction	Status
Energy Projects							
Equitrans Expansion Project	Equitrans Expansion Project consists of the installation of approximately 7.9 miles of various diameter pipelines in Allegheny, Greene and Washington Counties, Pennsylvania, and Wetzel County, West Virginia. Installation of approximately 31,300HP of compression at a new site in Franklin Township, Greene County, Pennsylvania	Allegheny, Washington and Greene Counties, PA. and Wetzel County, WV	Fishing Creek	81.70 - Parkersburg (West Virginia)-Marietta (Ohio)	0-33 miles	NE	In the pre-filing stage
Columbia WB Express Project	Columbia is proposing to modify and construct various facilities along its existing WB natural gas pipeline system in West Virginia and Virginia.	Various	N/A	N/A	5 miles 28 miles	E W	In the pre-filing stage
Access South Pipeline	Texas Eastern is planning a natural gas pipeline project that cuts east-west across Marshall County, West Virginia, before heading south to Mississippi.	Marshall County, WV	N/A	N/A	11 miles	N	The application has been filed with FERC
Appalachian Connector Pipeline	Williams is planning the Appalachian Connector pipeline project that would connect Western Marcellus and Utica natural gas supply areas in northern West Virginia with Williams' existing Transco natural gas pipeline, which stretches about 850 miles in Virginia.	N/A	N/A	N/A	Various	E	The project is in the preliminary planning stages
Atlantic Coast Pipeline Project	An approximately 550-mile, 42-inch natural gas pipeline is proposed by four energy companies that have entered into a joint venture: Dominion, Duke Energy, Piedmont Natural Gas and AGL Resources. The capacity of the pipeline is projected to be 1.5 billion cubic feet/day.	Harrison and Lewis Counties, WV	Middle West Fork River, Upper West Fork River	81.231 Central West Virginia, 81.234 North Central West Virginia	10-15 miles	E	The application has been filed with FERC
Stonewall Gas Gathering Pipeline	The 55-mile gathering line, consisting of both 24 and 30 inch pipe, will connect to the Momentum Midstream's Appalachian Gathering System.	Doddridge, Harrison, Lewis and Braxton Counties, WV	Headwaters Middle Island Creek, Middle West Fork River, Upper West Fork River, Sand Fork, Upper Little Kanawha River	81.231 Central West Virginia, 81.234 North Central West Virginia	Varies	Varies	Construction is underway

Table 1.10-1

Projects in the Vicinity of the Mountain Valley Pipeline Project

Project	Description	County/State	Shared Watershed (5 th Level)	Shared Air Quality Control Region	Distance from MVP	Direction	Status
Sunrise Pipeline Project and Jefferson Expansion	The new facilities—44.4 miles of natural gas pipeline varying from 16 to 24-inch diameter, replacement of 2.6 miles of pipeline, and retesting and uprating 4.8 miles of pipeline; one new compressor station; and ancillary facilities	Wetzel County, WV and Green County, PA	Fishing Creek	81.231 Central West Virginia	<1 mile	NE-E	Operational
Supply Header Project	This proposed project would include about 39 miles of new 36-inch natural gas pipeline and would modify existing compression facilities on Dominion's system in West Virginia. The compressor station in Mockingbird Hill is approximately 7 miles west of MVP mile marker 1.	Wetzel and Harrison Counties, WV	Fishing Creek, Ten Mile Creek	81.231 Central West Virginia, 81.70 - Parkersburg (West Virginia)-Marietta (Ohio)	4-7 miles	W	The application has been filed with FERC
Rover Pipeline Project	Rover Pipeline LLC, a subsidiary of Energy Transfer, has proposed to construct the Rover Pipeline Project, which would carry 3.25 billion cubic feet of natural gas per day through 710 miles of pipeline. The last few miles of the proposed pipeline cuts southeast through Marshall County, West Virginia (24-inch pipe) and Wetzel and Tyler counties (36-inch pipe) before terminating in Doddridge County.	Marshall, Wetzel, Tyler, and Doddridge Counties, WV	Ten Mile Creek, Headwaters Middle Island Creek, Fishing Creek	81.231 Central West Virginia, 81.70 - Parkersburg (West Virginia)-Marietta (Ohio)	5 miles	W	The application has been filed with FERC
Ohio Valley Connector	The proposed project includes approximately 36 miles of 30-inch-diameter pipeline, two compressor stations, and associated facilities. The project is designed to transport natural gas from northern West Virginia to southeastern Ohio for subsequent delivery to mid-continent and Gulf Coast markets.	Wetzel County, WV	Upper Ohio South and Dunkard Creek	81.231 Central West Virginia	<1 mile	W	The application has been filed with FERC. Construction expected to be completed in third quarter 2016.
Leach Xpress	The Leach Xpress project, proposed by Columbia Pipeline Group, would involve construction of about 160 miles of natural gas pipeline and compression facilities in West Virginia's northern panhandle.	Marshall County, WV	N/A	N/A	20 miles	N	The application has been filed with FERC
Transco Pipeline	This existing 10,000-mile natural gas pipeline, was constructed in the 1950s.	Pittsylvania County, VA	Cherrystone Creek-Banister River, Stinking River-Banister River	81.143 Central Virginia	MVP terminates at Transco Zone 5 Compressor Station	SE	Operational

Table 1.10-1

Projects in the Vicinity of the Mountain Valley Pipeline Project

Project	Description	County/State	Shared Watershed (5 th Level)	Shared Air Quality Control Region	Distance from MVP	Direction	Status
Mountaineer Xpress Transmission Line	Columbia Gas Transmission LLC plans to construct a 165-mile pipeline from Marshall County to Wayne County, WV. This project includes upgrades to three existing Columbia compressor stations in Kanawha, Wayne and Marshall Counties, West Virginia, as well as the construction of three new stations Doddridge, Jackson, and Calhoun (or Ritchie) county.	Marshall, Wetzel, Tyler, Doddridge, Ritchie, Calhoun, Wirt, Roane, Jackson, Mason, Putnam, and Cabell WV	N/A	81.143 Central Virginia	Unknown	Various	In the pre-filing stage
Columbia Smithfield III Expansion Project	Compressor station upgrade project	Washington County, PA and Gilmer County, WV	Upper Little Kanawha River	81.231 Central West Virginia	39 miles 10 miles	NE W	Operational
Virginia Southside Expansion	100 miles of new 24-inch diameter pipeline extending from the Transco mainline in Pittsylvania County, Va., and into Halifax, Charlotte, Mecklenburg, and terminating in Brunswick County, Va. Also construction of a 21,800 hp compressor station in Pittsylvania County, VA.	Pittsylvania County, VA	Cherrystone Creek-Banister River, Stinking River-Banister River	81.143 Central Virginia	Begins at Transco Zone 5 Compressor Station	E	Operational
Transportation Projects							
I-81 Bridge Replacement	This project will replace the I-81 bridges over the New River and the Route 232 bridge over I-81.	Montgomery County, VA	N/A	81.146 Valley of Virginia	7-8 miles	S	In the planning stage
Elliston/Ironto Connector	Resurfacing of route 603.	Montgomery County, VA	North Fork Roanoke River	81.146 Valley of Virginia	1	W	Under construction
U.S. Route 29 South	Replacement of structurally deficient bridge.	Pittsylvania County, VA	Stinking River-Banister River	81.143 Central Virginia	0.5	NW	Construction is planned to start early 2016
Southgate Connector	Replacement of signalized intersection at Route 460 and Southgate Drive with a diverging diamond interchange.	Montgomery County, VA	Back Creek-New River	81.146 Valley of Virginia	5	S	Under construction

Energy Projects

Equitrans Expansion Project

Equitrans, a wholly owned subsidiary of EQT Midstream Partners, LP, submitted a request to FERC for pre-filing on April 1, 2015 for the Equitrans Expansion Project (FERC Docket PF15-22). This proposed project consists of three major components. The 4,800 horsepower Pratt Compressor Station in Franklin Township, Pennsylvania would be replaced with a 31,300 horsepower facility named the Redhook Compressor Station. Additionally, approximately 4.26 miles of 20-inch-diameter pipeline between the Applegate Gathering System and Equitrans' existing H-148 pipeline in Allegheny and Washington Counties, Pennsylvania, along with approximately 2.99 miles of 30-inch diameter pipeline will be included between the Redhook Compressor Station and Equitrans' existing H-302 pipeline in Greene County, Pennsylvania. In addition, the Equitrans Expansion Project includes an interconnect with MVP and a tap for MVP's proposed Mobley Interconnect, both in Wetzel County, West Virginia. FERC has issued a notice indicating that the environmental review of the Equitrans Expansion Project will be included in the Environmental Impact Statement being prepared for the Project. Construction of this project is planned to commence December 2016 and end by 2018.

Columbia WB Xpress Project

Columbia has entered the pre-filing process for construction, modification, operation, and maintenance of various facilities along its Line WB natural gas transmission pipeline system in West Virginia and Virginia, herein referred to as the WB Xpress Project (PF15-21). The project would involve the construction and operation of approximately 28.7 miles of various diameter pipeline, modifications to seven existing compressor stations, construction of two new compressor stations, and uprating the MAOP on various segments of the existing WB and VB natural gas transmission pipeline system. The project would provide an additional 1.3 billion cubic feet per day of capacity for bidirectional firm transportation service to markets in western West Virginia and northern Virginia.

Though the MVP Project does cross Columbia's WB pipeline system, work proposed as part of Columbia's WB Xpress Project is not in the immediate vicinity of the MVP Project. The closest facilities to the MVP Project are the increasing of horsepower at the existing Cleveland Compressor Station in Upshur County, West Virginia, approximately 5 miles east of the MVP Project and modifications at the Dink valve site in Clay County, West Virginia, approximately 28 miles west of the MVP Project.

Access South Pipeline

The Texas Eastern Transmission, LP Access South Pipeline Project (CP16-3), 11 miles from MVP, is a proposed pipeline expansion that will transport natural gas from the Appalachian region to markets in the Southeast United States with a target in-service date of November 2017. The proposed route is located to the north of the MVP route, and will traverse Pennsylvania, West Virginia, Ohio, Kentucky, Tennessee, Alabama, and Mississippi.

Appalachian Connector Pipeline

Williams' has announced the Appalachian Connector Pipeline that would connect Western Marcellus and Utica natural gas supply areas in northern West Virginia to the existing Transco Natural gas pipeline (also owned by Williams). The project is in the preliminary planning stages. Right now the route has not been disclosed publicly, so resulting cumulative impacts are possible but not certain.

Atlantic Coast Pipeline

Atlantic Coast Pipeline, LLC (Atlantic), a company formed by Dominion Resources, Inc., Duke Energy Corporation, Piedmont Natural Gas Co., Inc., and AGL Resources, Inc., has contracted with Dominion Transmission, a subsidiary of Dominion, to build and operate the Atlantic Coast Pipeline (FERC Docket CP15-554). This pipeline would be roughly 556 miles long, stretching from Harrison County in northern West Virginia down to a compressor station next to Emporia, Virginia close to the border with North Carolina. Here the route splits into two pipelines, with one traveling east to Chesapeake, Virginia and the other traveling southwest to Pembroke, North Carolina. This Project includes three compressor stations, located in Lewis County, Virginia, Buckingham County, Virginia; and Northampton County, North Carolina and nine new metering and regulating stations, twenty nine valve sites, and eight sets of pig launcher and/or receiver sites.

Stonewall Gas Gathering Pipeline

The Stonewall Gas Gathering pipeline, which is expected to be completed by the end of 2015, will consist of a 24-inch and 36-inch pipeline, 55 miles in length, which will connect to the Appalachian Gas Gathering System in West Virginia and Pennsylvania.

Sunrise Pipeline Project and Jefferson Expansion

The Sunrise Pipeline Project (CP11-68) consists of the following facilities:

- about 44.4 miles of pipelines varying from 16 to 24 inches in diameter; replacement of 2.6 miles of pipeline; and retesting and uprating 4.8 miles of pipeline;
- one new compressor station;
- aboveground facilities consisting of 5 interconnect sites (meter stations); 12 mainline block valves (MLVs); 4 pig launchers/receivers; 2 over pipeline protection facilities; and 1 side tap valve setting; and
- temporary and permanent access roads and temporary storage and contractor yards.

The Sunrise Pipeline Project was constructed and restoration activities were largely complete in 2012. Additional compression was added at the Jefferson Compressor Station (which was constructed as part of the Sunrise Pipeline Project) in 2014.

Supply Header Project

The Supply Header Project (FERC Docket CP15-555) is a proposed 36.7 miles of pipeline loop, accompanied by modifications to existing compressor facilities, in Pennsylvania and West Virginia. This project has two parts, the TL-635 loop and the TL-636 loop. The TL-635 is approximately 32.8 miles of 36" pipeline looping the existing TL-360 pipeline in Harrison, Doddridge, Tyler, and Wetzel Counties, West Virginia. TL-636 is roughly 3.9 miles of 30-inch pipeline looping the existing LN-25 pipeline in Westmoreland County, Pennsylvania.

Rover Pipeline Project

The Rover Pipeline Project (FERC Docket CP15-93) 710 miles of natural gas pipeline infrastructure. Eight 24-inch, 30-inch, 36-inch, and 42-inch pipeline supply laterals in Pennsylvania, West Virginia, and Ohio, totaling 199.3 miles, will be constructed. These laterals connect to the mainline, which will consist of two collocated 42-inch pipelines, Mainline A (209.5 miles) and Mainline B (202.1 miles). These pipelines cross

the state and end in Defiance, Ohio. From here the market segment, a 42-inch pipeline, would extend up into Michigan. This project includes 10 compressor stations:

- Cadiz Compressor Station in Harrison County, Ohio
- Clarington Compressor Station in Monroe County, Ohio
- Seneca Compressor Station in Noble County, Ohio
- Burgettstown Compressor Station in Washington County, Pennsylvania
- Majorsville Compressor Station in Marshall County, West Virginia
- Sherwood Compressor Station in Doddridge County, West Virginia
- Defiance Compressor Station in Defiance County, Ohio
- Mainline Compressor Station 1 in Carroll County, Ohio
- Mainline Compressor Station 2 in Wayne County, Ohio
- Mainline Compressor Station 3 in Crawford County, Ohio

Rover anticipates that the new pipeline and its related facilities will be ready for service in late 2016 and the first half of 2017.

Ohio Valley Connector Project

Equitrans LP's Ohio Valley Connector Project, which is expected to be completed in third quarter 2016, includes approximately 36 miles of 30-inch-diameter pipeline, two compressor stations, and associated facilities. The certificate application is pending in Docket No. CP15-41-000. The project is designed to transport natural gas from northern West Virginia to southeastern Ohio for subsequent delivery to mid-continent and Gulf Coast markets. The Commission has indicated that the Environmental Assessment will be issued by October 23, 2015.

Leach Xpress Project

Columbia's proposed Leach Xpress pipeline (FERC Docket CP15-514) would require the construction of 160 miles of natural gas pipeline and three compressor stations. Construction is planned to take place between early 2016 and June 2017. LEX is a proposed 130 mile, 36-inch pipeline that will start in Marshall County, West Virginia and end in Hocking County, Ohio. LEX1 is a half mile 30-inch pipeline in Fairfield Ohio, and the R-801 loop will be 27 miles of 36-inch pipeline through Fairfield, Hocking, and Vinton Counties in Ohio. BM-111 is a proposed loop of the existing BM-111 pipeline. This loop will be 3 miles of 36-inch pipeline from Lawrence County, Ohio to Wayne County, West Virginia. It will cross the Ohio River. The three compressor stations are the Lone Oak Compressor Station in Marshall County, West Virginia, Summerfield Compressor Station in Noble County, Ohio, and Oak Hill Compressor Station in Jackson County, Ohio. Additionally, the existing Ceredo Compressor Station in Wayne County, West Virginia will be upgraded. Many of Columbia's older pipelines will be upgraded as well.

Transco Pipeline

The Transco Pipeline system stretches over 10,000 miles from the Gulf Coast states up to the Northeast. It has 56 compressor stations and has been in operation since the 1950s, with periodic expansion projects. The MVP Project will terminate at Transco's Station 165 in Pittsylvania County, Virginia.

Mountaineer Xpress

Columbia's Mountaineer Xpress Project (FERC Docket PF15-31) is a proposed pipeline that would be roughly 150 miles in length located in Ohio, Pennsylvania, and West Virginia. The route is not yet finalized, but it is planned to be operational by mid-2018.

Smithfield III Expansion Project

Columbia's Smithfield III Expansion Project went into service on October 27, 2014 (CP13-477). The new Redd Farm Compressor Station was built in Washington County, Pennsylvania. Also, the existing Glenville Compressor Station in Gilmer County, West Virginia, was upgraded. The Smithfield Compressor station was also upgraded.

Virginia Southside Expansion

Transco's Virginia Southside Expansion (CP13-30), which went into service on September 1, 2015, is a 100 mile pipeline expansion that extends the Transco pipeline system from Station 165 (where MVP would connect) to Brunswick County, Virginia.

Transportation Projects**I-81 Bridge Replacement Montgomery-Pulaski County Line**

The proposed project involves replacing the northbound and southbound I-81 bridges over the New River, the replacement of the Route 232 bridge over I-81 and the associated approaches. The proposed project would start 0.733 mile south of the Montgomery/Pulaski County line and extend to 0.944 mile north of the county line, roughly 7-8 miles from the MVP route. The exact time frame is not yet known (VDOT 2015).

Elliston/Ironto Connector, Montgomery County

Two miles of Route 603 in Montgomery County, Virginia will be reconstructed to improve safety and traffic flow. The proposed MVP Project is located approximately 1 mile east (MP 223.2). The VDOT project is currently under construction and is estimated to be completed in summer 2016 (VDOT 2015).

U.S. Route 29 South, Pittsylvania County

The purpose of this project is to replace the structurally deficient bridge on U.S. Route 29 South over the Norfolk Southern Railway in Pittsylvania County, Virginia. MVP crosses U.S. Route 29 South approximately 0.5 mile northwest of the bridge location. This project is scheduled to enter the construction phase in spring 2016 (VDOT 2015).

Southgate Connector

This \$46.7 million project will replace the signalized intersection at Route 460 and Southgate Drive at the entrance to Virginia Tech with a diverging diamond interchange. This new interchange will eliminate one of the last two at-grade intersections on the Blacksburg Bypass section of U.S. Route 460. Two new bridges will be constructed over U.S. Route 460 Bypass and portions of Southgate Drive and the Huckleberry Trail will be relocated. Construction started in the spring of 2015 and is scheduled to continue until 2018 (VDOT 2015).

Coal Mining

The MVP Project corridor is in the Appalachian coal-producing region. Coal is extracted in the Project area through surface strip mining, including mountaintop mining, and underground operations, including longwall mining. Coal mining requires land to be disturbed, and can result in soil erosion, dust, noise, and

water pollution. There has been a history of coal mining in the Project area since the 1800s and future mining projects are expected.

Cumulative Impacts from Energy and Transportation

Projects Geology and Soils

The development associated with the MVP Project is expected to have a direct but temporary impact on near-surface geology and soils. Clearing activities could expose the soil to erosive elements such as precipitation and wind. The pipeline route crosses mountainous terrain, with sections of the pipeline crossing areas with slopes above 30 percent. Therefore it is expected that the route will affect soils with a relatively high erosion potential. Temporary erosion controls in accordance with the FERC Plan and Procedures will be used to minimize these impacts.

Coal mining near the Project, which in most cases involves the displacement or large amounts of soil and rock, can have significant impacts on geology and soil resources. Exposure of soils, removal of vegetation, and vehicle traffic all contribute to erosion in mining areas.

This Project's effect on geology and soils would be highly localized and primarily limited to the construction period. Cumulative impacts would only occur if other projects are constructed during the MVP Project's construction period in a shared location. The Stonewall Gas Gathering Pipeline, located very close to the MVP route, would result in minimal cumulative impacts because the construction periods would not overlap. The Atlantic Coast Pipeline could result in cumulative impacts, since it starts just over half a mile from the MVP route in Harrison County, West Virginia with an overlapping construction period. The Equitrans Expansion Project also has the potential to cumulatively impact both geology and soils, as it shares both location and construction period with MVP. The duration and effect of these projects would be minimized by the implementation of erosion control and restoration measures. Construction and restoration activities as well as operation and maintenance activities would be monitored throughout the process to ensure compliance. Should hazardous materials or contaminated soils and/or sediments be encountered during construction, they would be disposed of at fully licensed and permitted disposal facilities in accordance with applicable state and federal laws and regulations. Consequently, any potential cumulative effects on geological and soil resources would be minor.

Waterbodies, Groundwater, and Wetlands

Cumulative effects on surface water affected by the MVP Project would be limited to waterbodies that are affected by other projects located within the same major watersheds. No permanent diversions or dams are planned, so any impacts from construction on surface waters would be temporary. The greatest potential impacts of pipeline construction on surface waters would result from an increase in sediment loading to surface waters and an increase in internal sediment loading due to channel/floodplain instability as a result of a change in erosion deposition patterns. Some of the projects listed in Table 1.10-1 would be located within the same major watersheds as the MVP Project, but only a small number would affect the same waterbodies during the same time frame.

Cumulative effects on groundwater resources are expected to be temporary and limited to areas that are affected by other projects located near the MVP Project route. Impacts on groundwater could include turbidity, reduced water levels, and contamination. Construction activities such as blasting could negatively impact wells close to the Project; however, MVP will conduct pre-construction evaluations and water supply testing will be offered to residential groundwater and spring users. MVP will also adhere to the

FERC Procedures, MVP's Project-specific E&SCP, as well as BMPs to limit water quality and aquatic resource impacts during and following construction across all waterbodies. Nearby projects, such as transportation and energy projects, may expose erodible soil and release contaminants, resulting in cumulative impacts on groundwater, but will also be required to adhere to stormwater control measures identical to, or similar to, MVP.

Coal mining in particular could result in negative cumulative impacts on water. Runoff from exposed areas would be additive with runoff from exposed pipeline construction areas. Also, acid mine drainage from coal areas would have a negative impact on water quality. Such impacts on the environment are damaging and significantly greater in magnitude than predicted impacts from the MVP Project, and MVP's impact on water quality is minimal compared to these threats. Natural gas infrastructure such as the MVP Project could actually reduce the negative environmental impacts associated with mining by lowering demand for coal. Many mines are within the same watersheds as those traversed by the MVP Project. However, the MVP Project would represent a small fraction of these impacts, and it is unlikely that pipeline construction will have any result in any noticeable effects beyond those of existing mining operations.

Vegetation, Wildlife and Habitat, and Aquatic Resources

The Project traverses deciduous forest, evergreen forest, mixed deciduous-evergreen forest, scrub-shrub land, herbaceous upland, wetlands, and agricultural lands. Cumulative impacts on vegetation and wildlife in conjunction with other projects can be expected. Most will be temporary, but there will be permanent impacts. The Stonewall Gas Gathering Pipeline crosses and lies adjacent the MVP route in some areas. Right-of-way clearing and grading associated with this and other projects would result in the removal of vegetation; alteration of wildlife habitat; displacement of wildlife; and other potential secondary effects such as increased population stress, predation, and the establishment of invasive plant species. These effects would be greatest where the other projects are constructed within the same timeframe and areas as the MVP Project. However, even construction projects that do not overlap temporally can have cumulative effects, as it takes time for vegetation/habitat to return to a preconstruction state.

Edge effects, which will be permanent due to the necessity of maintaining the permanent right-of-way of various projects, will result in permanent cumulative impacts on the environment. A number of nearby projects, such as the Equitrans Expansion Project and the Virginia Southside Expansion, will contribute to these cumulative impacts. While clearing of the right-of-way might change the environment, this change could result in increased habitat for species that prefer open areas. The impacts of these projects will be minimized by implementing the FERC Plan and Procedures and by the incorporation of native grasses and wildflowers into seed mixtures during the restoration process. This will be beneficial to domestic pollinators (bees).

Land Use

The Project will result in temporary and permanent changes in land use. Vegetation in this area will be maintained in an herbaceous state, except in wetlands and areas adjacent to perennial waterbodies, where maintenance clearing of woody vegetation will be limited to a 10-foot-wide area directly above the pipeline. Although other projects exist in the area, it is likely that the cumulative impact of these projects on land use will be minimal.

Recreation and Special Interest Areas

A number of recreational or areas of special interest would be affected by the Project and cumulative impacts on recreational or special interest areas could result if other foreseeable future projects are constructed in the same area during the same timeframe. U.S. Forest Service lands (Jefferson National Forest [MVP], Washington National Forest [Atlantic Coast Pipeline] and Monongahela National Forest [Atlantic Coast Pipeline]) and the Appalachian National Scenic Trail are two such areas. However, while areas within the forest would be affected during the same timeframe, they would occur over 90 miles apart and in separate sections of the forest. In general, Project impacts on recreational and special interest areas occurring outside of forest land would be temporary and limited to the period of active construction, which typically lasts only several days to several weeks in any one area.

Visual Resources

The visual character of the existing landscape is defined by historic and current land uses such as recreation, conservation, and development. The visual qualities of the landscape are further influenced by existing linear installations such as highways, railroads, pipelines, mining operations, and electrical transmission and distribution lines. Temporary visual impacts would be evident during Project construction due to clearing, grading, and construction activities. The majority of the infrastructure associated nearby projects would be buried, with the exceptions primarily being compressor stations. The majority of the Project facilities would be buried (i.e., the pipeline) or adjacent to existing facilities of similar appearance (i.e., the aboveground facilities). Additionally, most disturbed areas would be revegetated after construction, thereby limiting permanent visual impacts on those areas where previously existing forest would not be allowed to reestablish within the new permanent right-of-way due to pipeline safety and operational requirements. The visual impact of this Project is minimal and has been designed to further reduce impacts on visual resources.

Socioeconomics

With other projects taken into account the cumulative impact will result in a significant increase in employment opportunity. Also, the combined tax revenue from the various projects will have positive cumulative impact on the economies of West Virginia and Virginia.

Public Services

The cumulative impact of the Project and the other projects considered in this analysis on infrastructure and public services would depend on the number of projects under construction at one time. The small incremental demands of several projects occurring at the same time could become difficult for police, fire, and emergency service personnel to address. This impact would be temporary, occurring only for the duration of construction, and could be mitigated by the various project sponsors providing their own personnel to augment the local capability or by providing additional funds or training for local personnel.

Traffic and Transportation

Construction of the Project would have a temporary impact on road traffic in some areas and could contribute to cumulative traffic, parking, and transit impacts if other projects are scheduled to take place at the same time and in the same area as the Project. Limited traffic impacts would occur at most other proposed railroad, highways, and major road crossings because these would be accomplished by drilling, boring, or other methods that do not affect the road or rail surface. The addition of traffic associated with construction personnel commuting to and from the Project construction work areas could also contribute to cumulative regional traffic congestion. However, any contribution of the MVP Project to cumulative traffic

impacts would be temporary and short term. If construction of other projects occurs concurrently, the cumulative impact on traffic patterns could lead to congestion. Transportation projects such as bridge construction could result in a cumulative impact on traffic patterns surrounding the construction zone, but it is unlikely that there would be a significant negative impact the overall flow of traffic. Any major impasses would be due to the traffic projects themselves and not MVP, and would occur whether or not pipeline construction was happening.

Air Quality and Noise

Construction of most of the reasonably foreseeable future projects and activities listed in Table 1.10-1 would involve the use of heavy equipment that would generate emissions of air contaminants, fugitive dust, and noise. Construction and operation of the MVP Project will contribute cumulatively to air quality impacts. The combined impact of multiple construction projects occurring in the same airshed and timeframe as the MVP Project could temporarily add to air impacts in the Project area.

Oil and gas wells within close proximity to the route could result in cumulative impacts, especially during the construction phase, due to emissions from construction vehicles. However, it is unlikely that these emissions, together with emissions from gas wells, will have a significant impact on air quality.

MVP compressor stations will be a permanent source of noise and airborne emissions. Other projects, such as the Smithfield III Expansion and Ohio Valley Connector, also involve the construction and operation of compressor stations. Together these compressor stations could have a cumulative negative impact on air quality. However, they are separated enough that impacts will not be significant. Noise impacts would be highly localized, and cumulative impacts would be minimal.

Climate Change

Climate change is the change in climate over time, whether due to natural variability or as a result of human activity, and cannot be represented by single annual events or individual anomalies.

The Intergovernmental Panel on Climate Change (IPCC) is the leading international, multi-governmental scientific body for the assessment of climate change. The United States is a member of the IPCC and participates in the IPCC working groups to develop reports. The leading United States scientific body on climate change is the United States Global Change Research Program (USGCRP). Thirteen federal departments and agencies participate in the USGCRP, which began as a presidential initiative in 1989 and was mandated by Congress in the Global Change Research Act of 1990.

The IPCC and USGCRP have recognized that:

- globally, greenhouse gases (GHGs) have been accumulating in the atmosphere since the beginning of the industrial era (circa 1750);
- combustion of fossil fuels (coal, petroleum and natural gas), combined with agriculture and clearing of forests is primarily responsible for this accumulation of GHG;
- these anthropogenic GHG emissions are the primary contributing factor to climate change; and
- impacts extend beyond atmospheric climate change alone, and include changes to water resources, transportation, agriculture, ecosystems, and human health.

MVP will have negligible direct emissions of GHGs from equipment during Project construction. During operations the MVP project will have GHG emissions at each compressor station. These projected emissions are outlined in Resource Report 9.

There is currently no standard methodology to determine how one project's contribution to GHG emissions would impact the global environment. However, a comparison to existing local GHG emissions shows that the MVP Project will make a relatively small contribution. The EPA, as part of its final Clean Power Plan for reducing GHG emissions from electric generating facilities in the U.S., has estimated current CO₂ emissions from electric generating units in each state. In 2012, the state of West Virginia had actual CO₂ emissions from electric generation of 72,318,917 tons (EPA, 2015). By comparison, annual operating emissions of GHG from the MVP Project's three West Virginia compressor stations are estimated to total 742,254 tons (expressed as CO₂ equivalents, or CO₂e), which is about 1.0 percent of West Virginia's current electric generation CO₂ emissions.

In addition to the MVP Project's relatively small contribution to existing GHG emissions, the natural gas transported by the Project pipeline can play an important role in helping to reduce overall regional, national, and global GHG emissions during the lifetime of the Project. As the IPCC notes in its Fifth Assessment Report on climate change, "GHG emissions from energy supply can be reduced significantly by replacing current world average coal-fired power plants with modern, highly efficient natural gas combined-cycle power plants or combined heat and power plants, provided that natural gas is available and the fugitive emissions associated with extraction and supply are low or mitigated." (IPCC, 2014) In West Virginia, for example, much of the state's current electric generation is supplied by coal-fired power plants, which produce far more CO₂ per unit of power output than natural gas-fired power plants. EPA's Clean Power Plan establishes a goal for West Virginia to reduce its electric generation CO₂ emissions to 51,325,342 tons per year by 2030, a reduction of almost 30 percent below the 2012 rate. Natural gas made available by the MVP Project and other projects like it will be a necessary resource for West Virginia to achieve its CO₂ reduction goal, by allowing a portion of its existing coal-fired power generation to be replaced by natural-gas fired facilities.

Conclusion

Recently completed, ongoing, and planned projects in the Project area were identified for inclusion in this cumulative impact analysis (refer to Table 1.10-1). The majority of cumulative impacts will be temporary and minor when considered in combination with past, present, and reasonably foreseeable activities. However, some long-term cumulative impacts will occur on wetland and forested and upland vegetation and associated wildlife habitats. Some long-term cumulative benefits to the community will be realized from the increased tax revenues. Short-term cumulative benefits will also be realized through jobs and wages and purchases of goods, services, and materials. Benefits from the Project are discussed in Resource Report 5. There is also the potential that the Project will contribute to a cumulative improvement in regional air quality if a portion of the natural gas associated with the Project displaces the use of other more polluting fossil fuels. In summary, due to the implementation of specialized construction techniques, the relatively short construction timeframe in any one location, and carefully developed resource protection and mitigation plans designed to minimize and control environmental impacts for the Project as a whole, minimal cumulative effects are anticipated when the impacts of the Project are added to the identified ongoing projects in the immediate area.

1.11 PROJECT DESCRIPTION WITHIN THE JEFFERSON NATIONAL FOREST

MVP will cross approximately 3.4 miles of the Jefferson National Forest (JNF) where it crosses Peters Mountain between MPs 195.3 and 196.9 (1.6 miles), Sinking Creek Mountain between MPs 217.2 and 218.0 (0.8 mile), and Brush Mountain between MPs 218.4 and 219.4 (1.0 mile). Pipeline design, construction, and operation for MVP within the JNF will be similar to the design, construction, and operation on other lands. Figures 1.11-1 and 1.11-2 identify the construction techniques that will be used on JNF lands. Table 1.11-1 identifies construction and operation impacts of the Project on JNF lands. For the crossing of the Appalachian National Scenic Trail, MVP will install the pipe via conventional bore leaving an approximate 100-foot buffer on each side of the Appalachian National Scenic Trail.

Table 1.11-1		
Land Requirements for the Mountain Valley Pipeline Project on JNF Lands		
Facility	Land Required for Construction (acres)	Land Required for Operation (acres)
Pipeline ^{a/}	52.67	20.76
Additional Temporary Workspace (ATWS)	0.48	0.0
Access Roads	27.72	17.34
^{a/} Acreage based on 125-foot construction right-of-way and 50-foot permanent right-of-way. Does not account for reduced workspace in sensitive areas.		

The JNF is managed under the 2004 Revised Land and Resource Management Plan (Forest Plan), which includes specific goals, objectives, and standards related to resources, including water resources. MVP has prepared a Forest Plan Consistency analysis for the portion of the MVP Project that crosses the JNF, including for typical construction and operational impacts. The results of that consistency analysis are included in Resource Report 8.

1.12 REFERENCES

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Mountain Valley Pipeline Project



FIGURE 1.11-1
Construction Techniques
within Jefferson National Forest

September 2015

Legend

- Proposed Pipeline Route
- Construction Method**
 - Down Slope with Winch
 - Down Slope without Winch
 - Typical Overland Construction
 - Proposed Access Road
 - Proposed Pocahontas Road 100ft Survey Corridor
 - Newly Acquired USFS Property
 - Appalachian Trail
 - Peters Mountain
- USDA Forest Service Ownership**
 - NON-Forest Service
 - USDA Forest Service



Data Sources: Appalachian Trail Conservancy, VA DCR, USDA, ESRI Streaming Data.

Document Path: P:\EQIT-EquitransMWP Project\GIS\Spatial\MXD\20150925_INF_C_Construction_Methods\Fig_1.11_1_Construction_Techniques_Crossing_1.mxd



Mountain Valley Pipeline Project






FIGURE 1.11-2
Construction Techniques
within Jefferson National Forest

September 2015



Legend

-  Proposed Access Road
-  Proposed Pipeline Route

Construction Method

-  Down Slope with Winch
-  Typical Overland Construction
-  Conserved Land

USDA Forest Service Ownership

-  NON-FOREST SERVICE
-  USDA FOREST SERVICE



Data Sources: Appalachian Trail Conservancy, VA DCR, USDA, ESRI Streaming Data.

Document Path: P:\EQ\TransMWP\Project\GIS\Spatial\MXD\20150925_INF_C_Construction_Methods\Fig_1_11_2_Construction_Techniques_Crossing_2.mxd

Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

Appendix 1-A Alignment Sheets

Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

Appendix 1-B USGS 7.5-Minute Topographic Maps

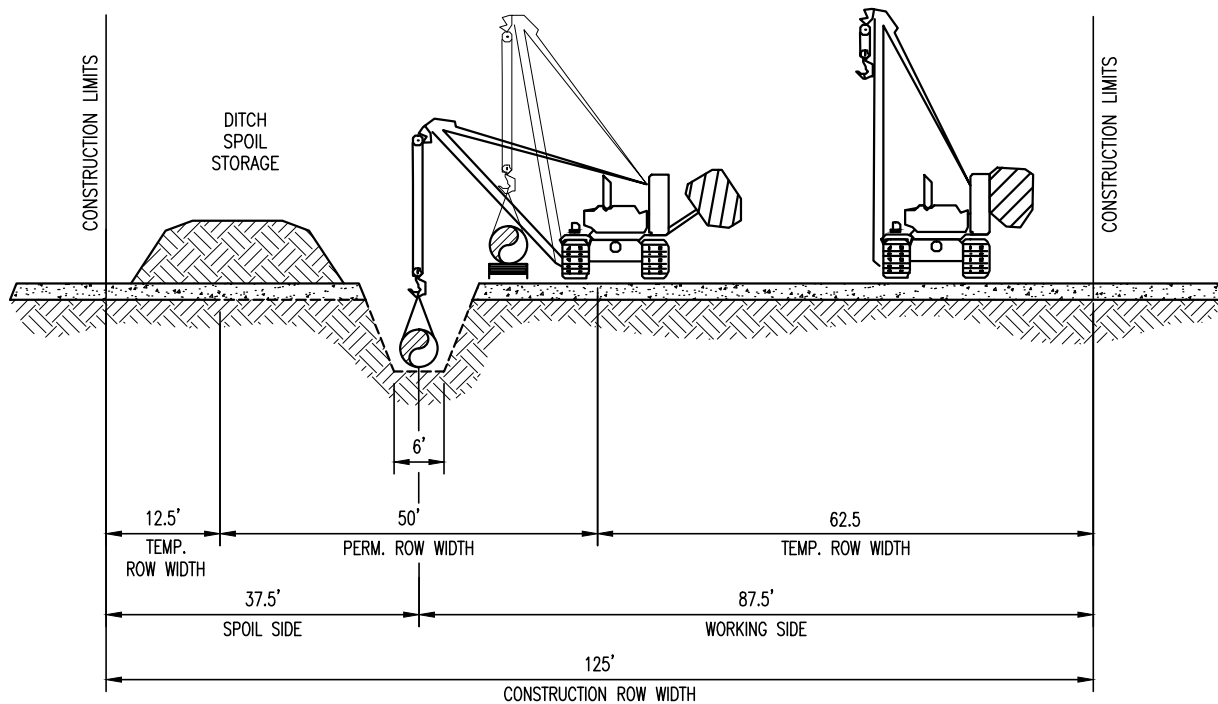
Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

Appendix 1-C1 Typical Drawings

TRAVEL AREA



THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWING ASSUMES TYPE "B" SOIL

DRAWN	JDM	DATE	11/14/14
CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			

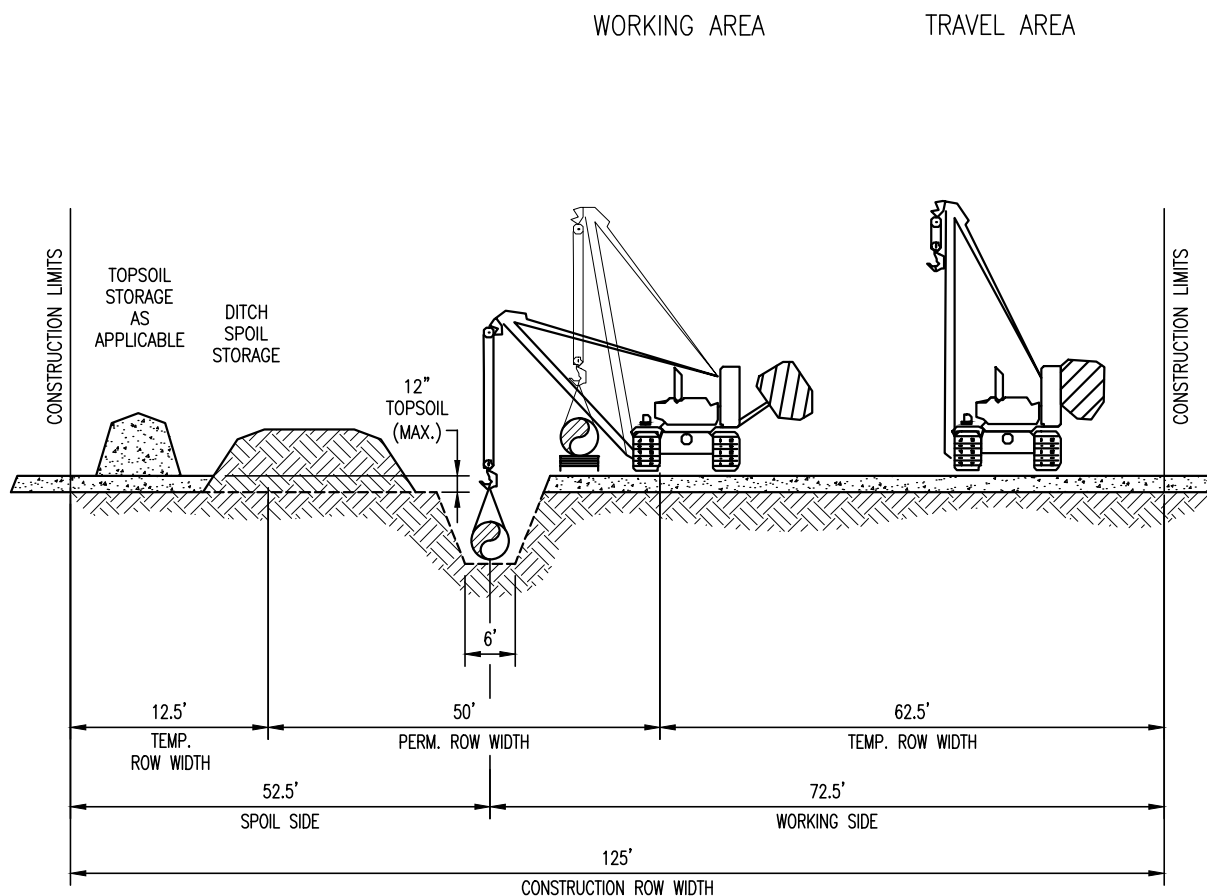


DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

MAINLINE CONSTRUCTION
NON-PARALLEL CONSTRUCTION
NO TOP SOIL SEGREGATION

DRAWING NO.	REV.
MVP-1	0



THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWING ASSUMES TYPE "B" SOIL

DRAWN	JDM	DATE	11/14/14
CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

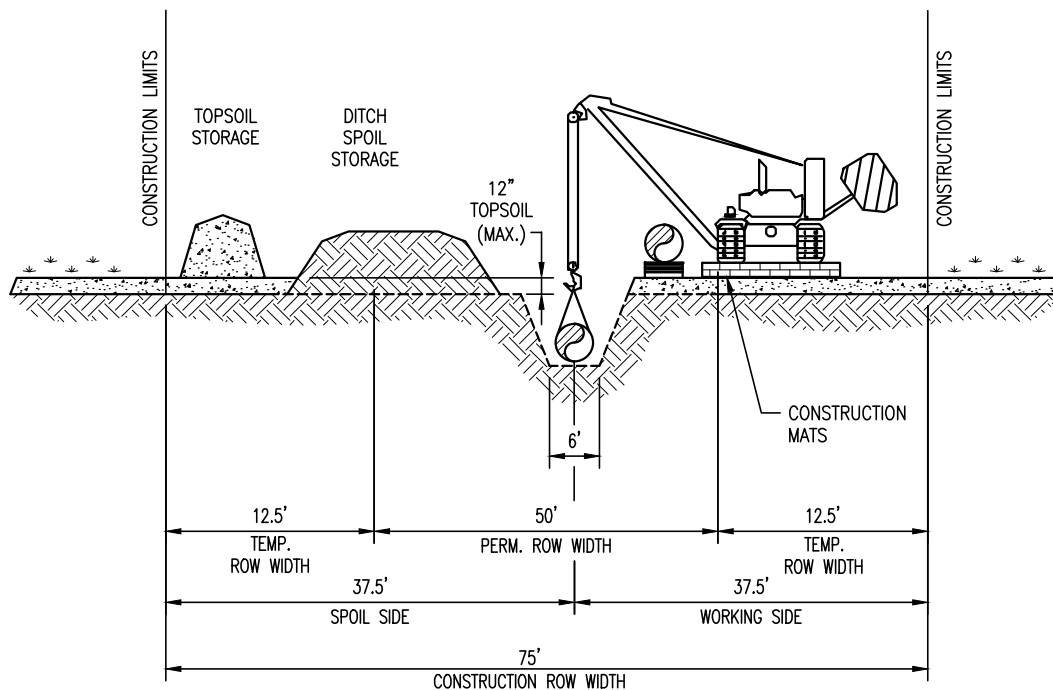
MAINLINE CONSTRUCTION
NON-PARALLEL CONSTRUCTION
WITH TOP SOIL SEGREGATION

DRAWING NO.

MVP-2

REV.

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THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWN	JDM	DATE	11/14/14
CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

MAINLINE CONSTRUCTION
NON-PARALLEL CONSTRUCTION
WORKING AREA NON-SATURATED
WETLAND

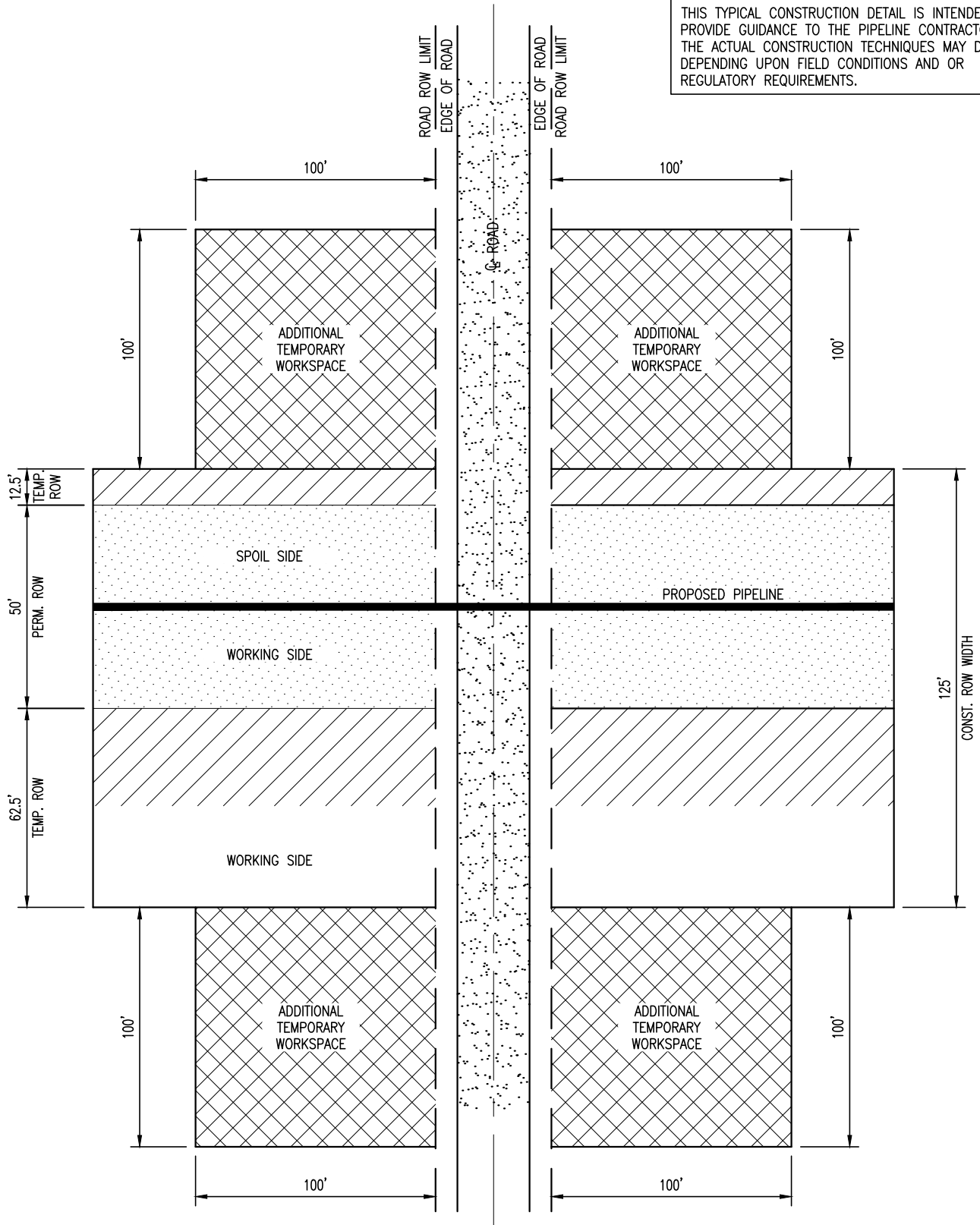
DRAWING NO.

MVP-3

REV.

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THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.



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CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

MAINLINE CONSTRUCTION
ROAD CROSSING BORED
TYPICAL

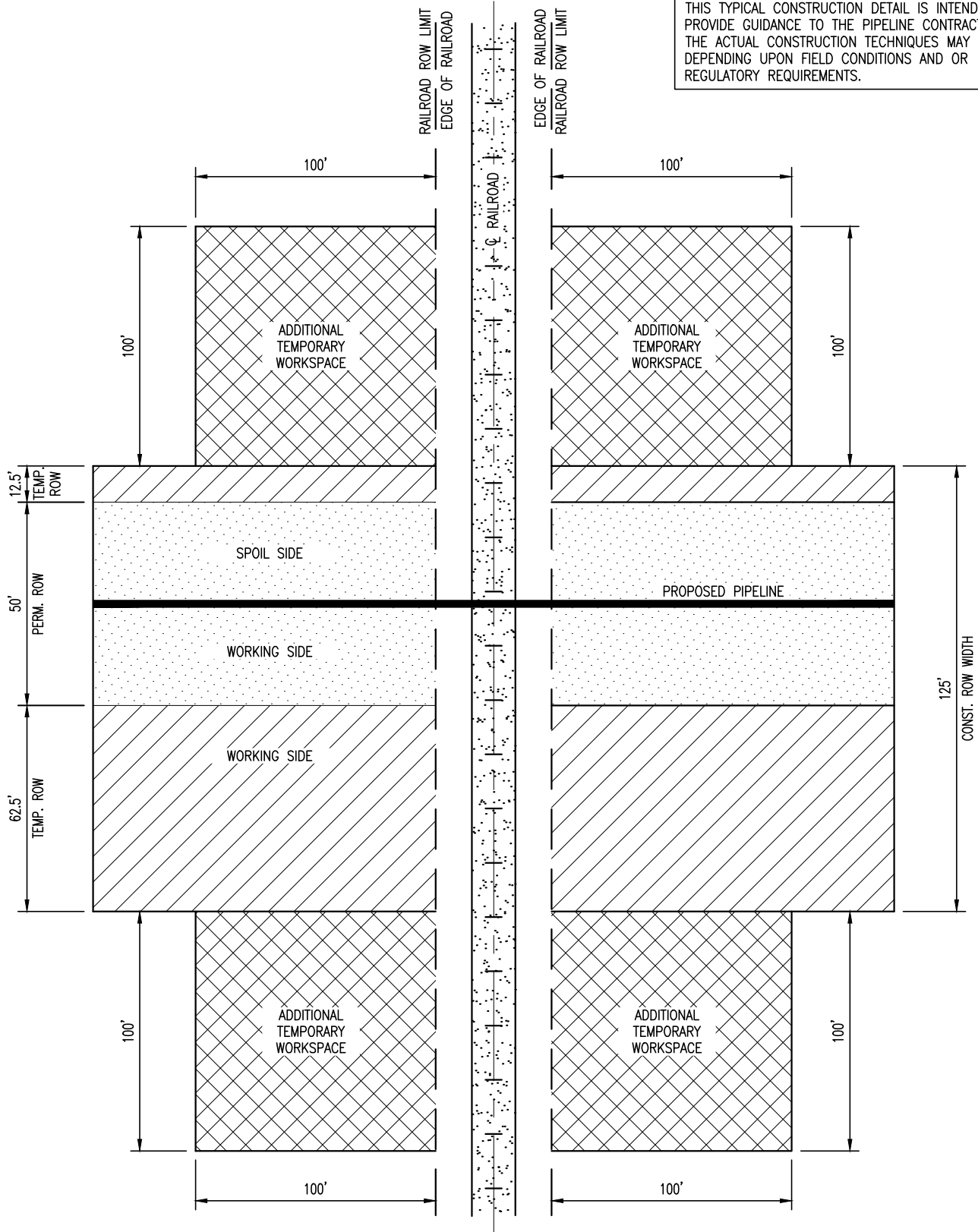
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MVP-4

REV.

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THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.



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CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

MAINLINE CONSTRUCTION
RAILROAD CROSSING BORED

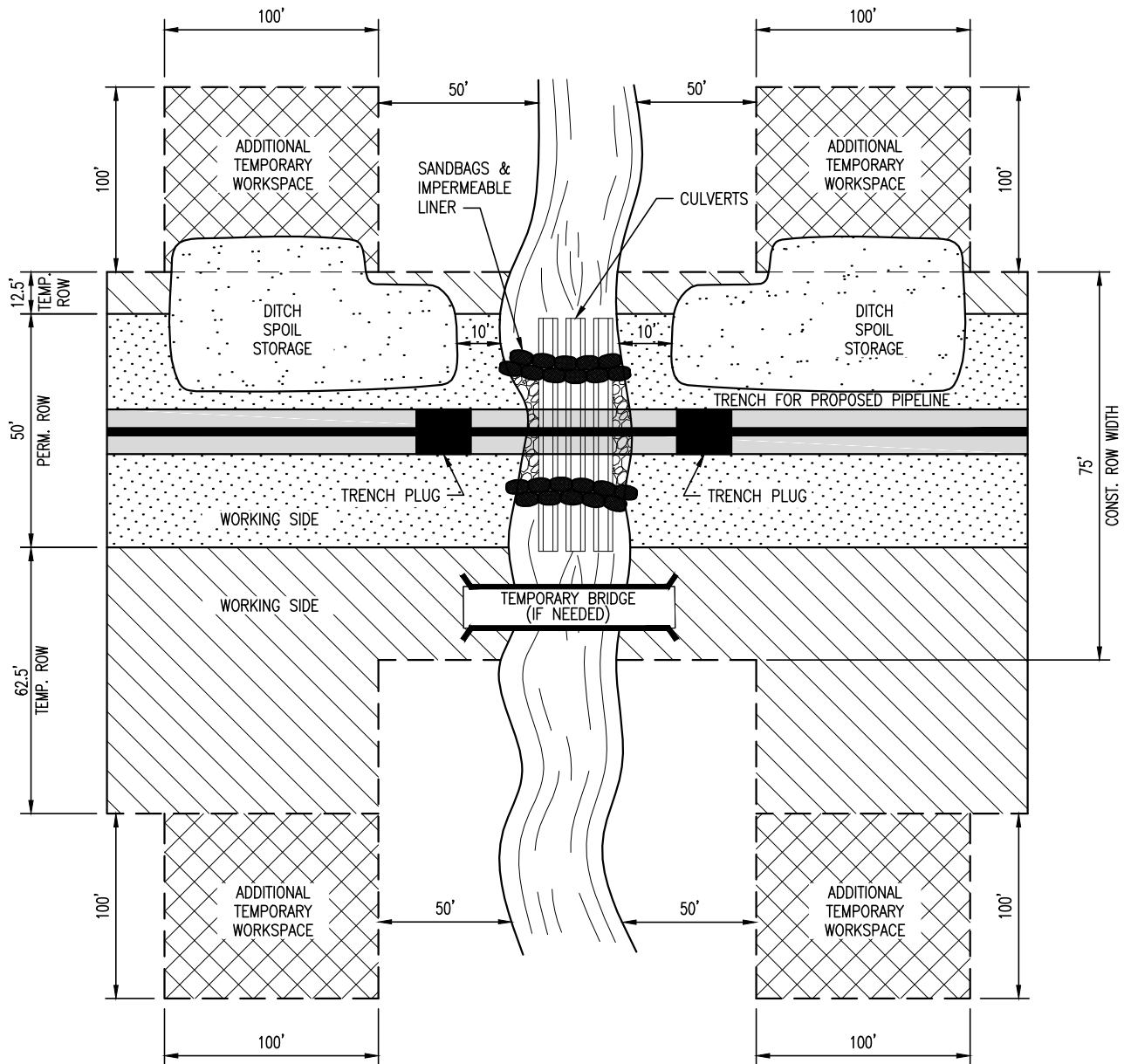
DRAWING NO.

MVP-5

REV.

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THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.



DRAWN	JDM	DATE	11/17/14
CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

MAINLINE CONSTRUCTION
WATERBODY CROSSING
OPEN CUT – FLUME

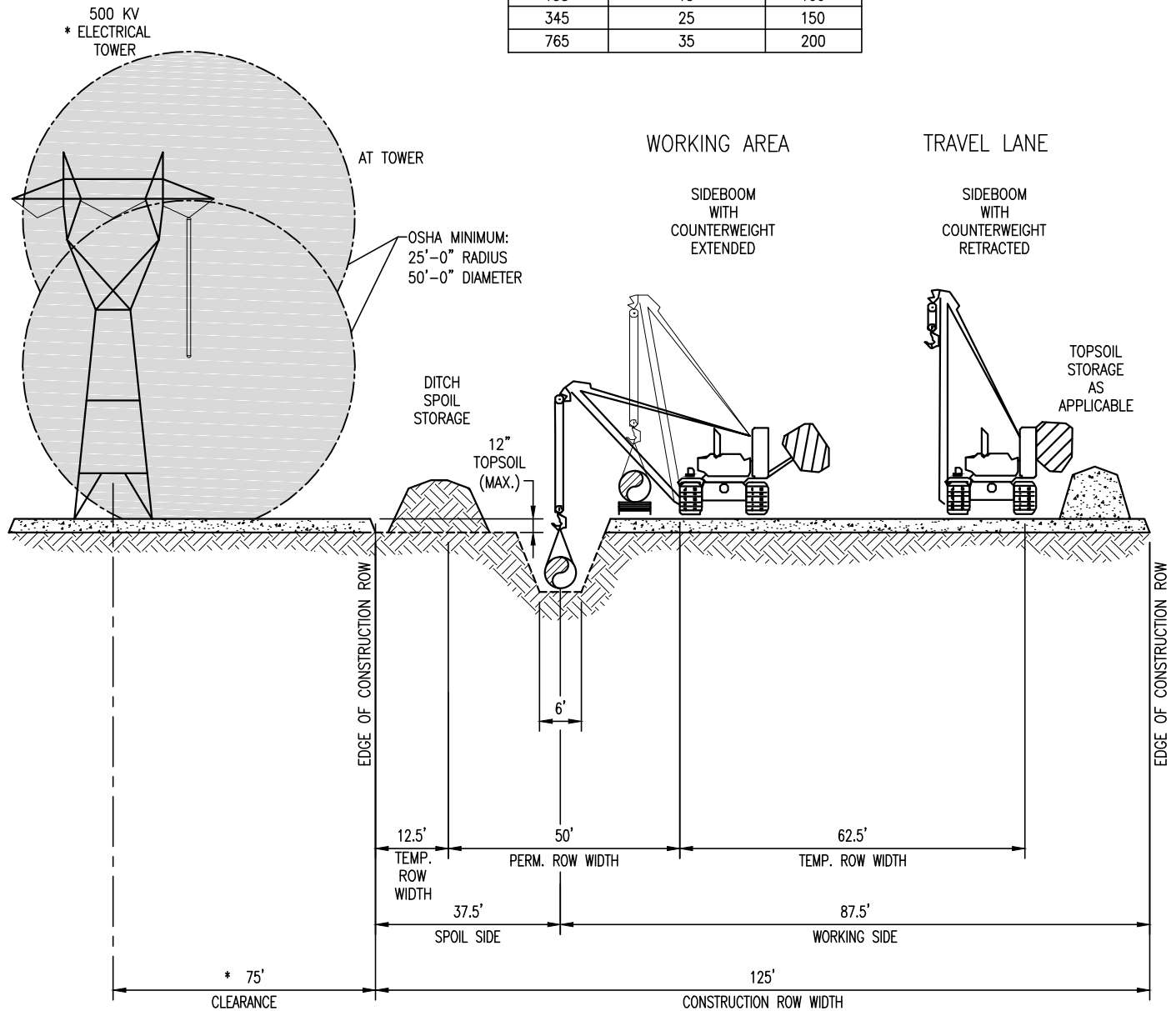
DRAWING NO.

MVP-6

REV.

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POWER LINE VOLTAGE KV	MINIMUM ALLOWABLE APPROACH DISTANCE FEET	TYPICAL ROW WIDTH FEET
34	10	50
69	12	70
138	15	100
345	25	150
765	35	200



THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

* SEE TABLE AT TOP OF PAGE

DRAWING ASSUMES TYPE "B" SOIL

DRAWN	JDM	DATE	3/17/15
CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

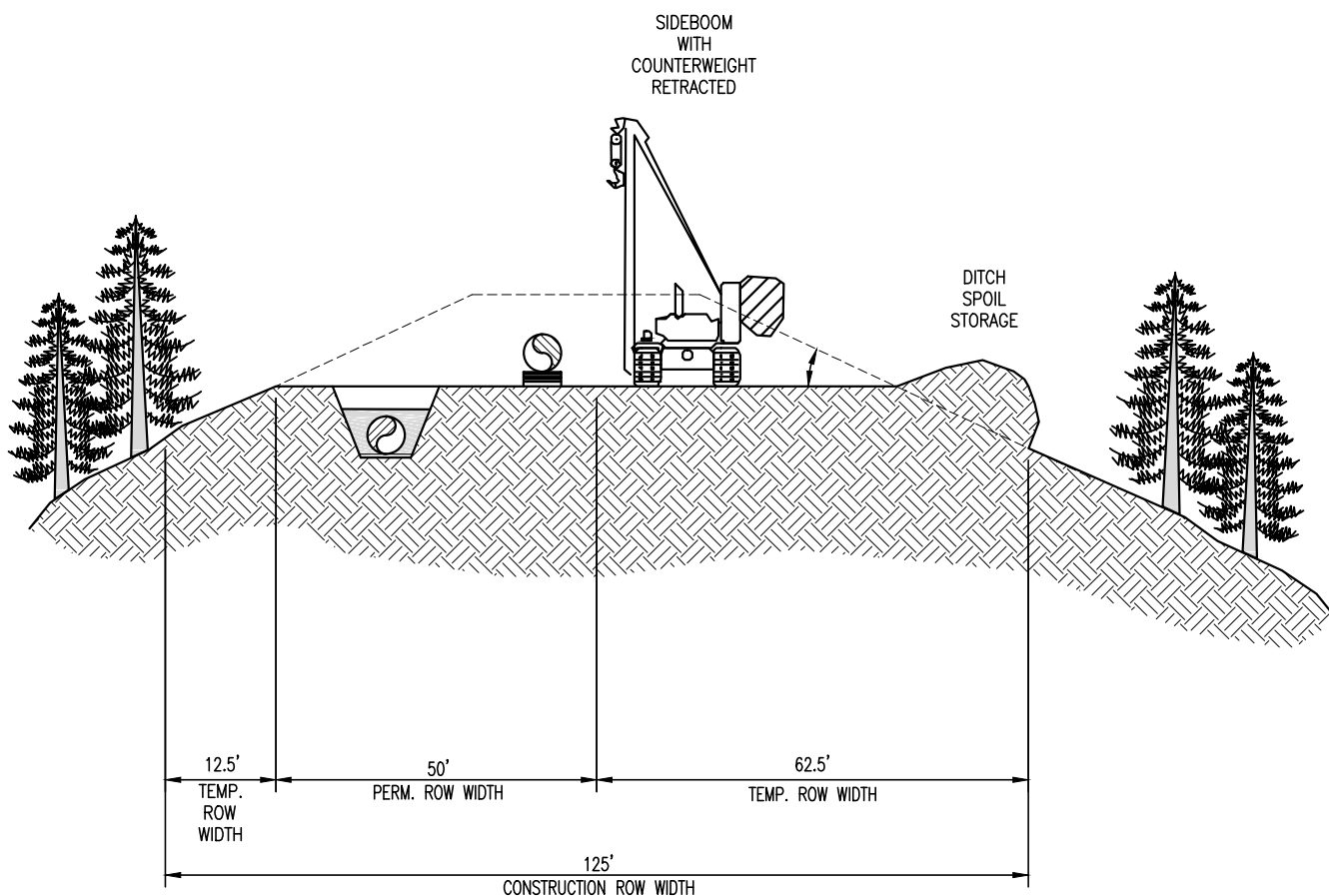
MAINLINE CONSTRUCTION
PARALLEL TO POWER LINES
RIGHT-OF-WAY

DRAWING NO.

MVP-7

REV.

0



THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWING ASSUMES TYPE "B" SOIL

DRAWN	JDM	DATE	3/17/15
CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

MAINLINE CONSTRUCTION
TYPICAL CROSS SECTION
FOR LARGE DIAMETER PIPE
RIDGE

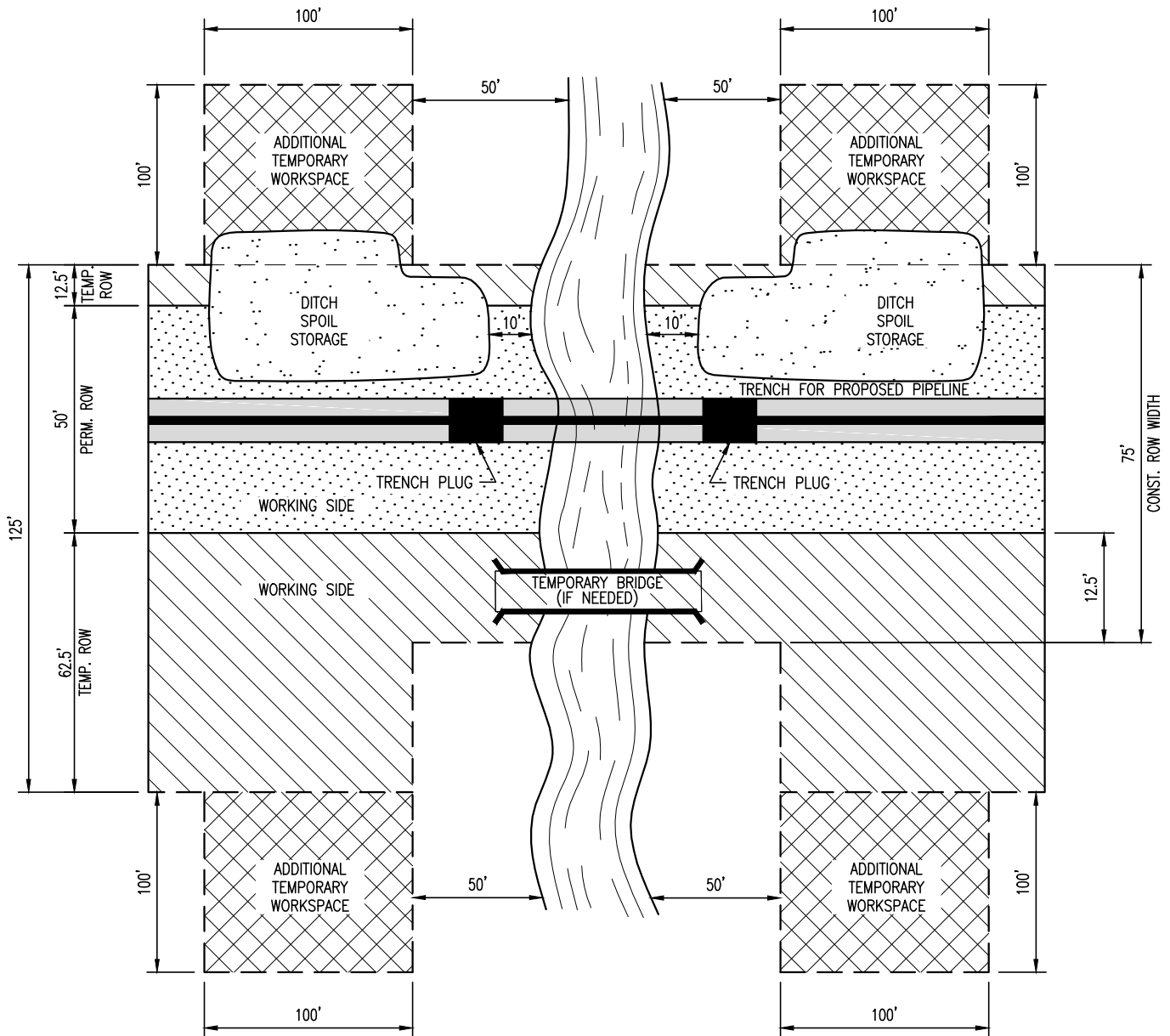
DRAWING NO.

MVP-8

REV.

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THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.



DRAWN	JDM	DATE	3/17/15
CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

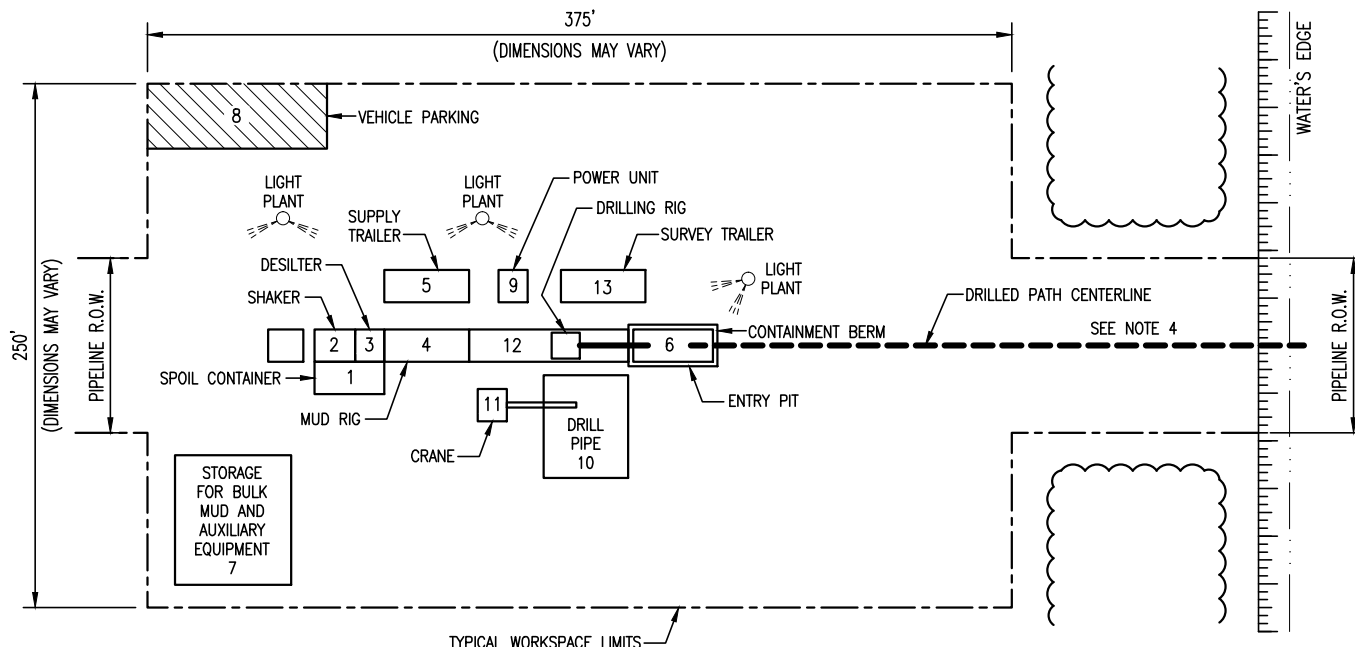
MAINLINE CONSTRUCTION
WATERBODY CROSSING
OPEN CUT – WET DITCH
RIGHT-OF-WAY

DRAWING NO.

MVP-9

REV.

0



EQUIPMENT:

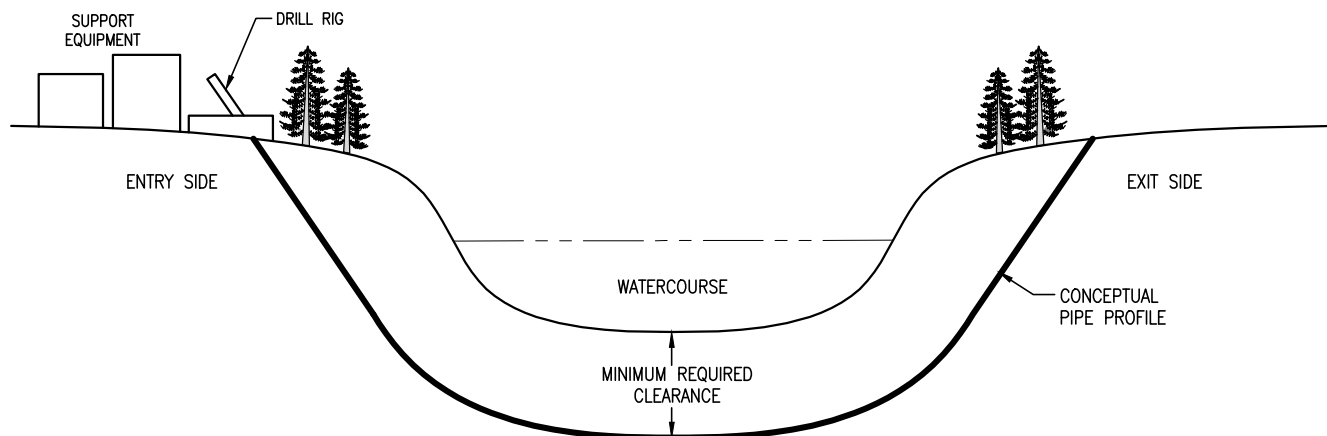
1. SPOIL CONTAINER: 8' X 20'
2. SHAKER: 8' X 12'
3. DESILTER: 8' X 8'
4. MUD RIG: 8' X 25'
5. SUPPLY TRAILER: 8' X 25'
6. ENTRY PIT: 8' X 20'
7. STORAGE: 30' X 30'
8. VEHICLE PARKING: 15' X 50'
9. POWER UNIT: 8' X 10'
10. DRILL PIPE: 30' X 30'
11. CRANE: 8' X 8'
12. DRILLING RIG: 8' X 45'
13. SURVEY TRAILER: 8' X 25'

NOTES:

1. EQUIPMENT ORIENTATION MAY VARY DEPENDING ON CONTRACTOR OR SITE CONDITIONS.
2. EQUIPMENT TO BE SUPPORTED ON THE GROUND SURFACE OR TIMBER MATS AS CONDITIONS DICTATE.
3. SILT FENCE, BERMS AND/OR STRAW BALE BARRIER TO BE USED AS REQUIRED TO PREVENT IMPACTS FROM OCCURRING OUTSIDE OF PROJECT LIMITS.
4. HAND CLEARED ACCESS PATH WILL BE USED TO OBTAIN WATER FROM SOURCE WHERE PERMITTED.

ENTRY SITE PLAN

SCALE: N.T.S.



THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

PROFILE

SCALE: N.T.S.

GENERAL NOTES:

1. PIPE DEPTHS MAY VARY.

DRAWING ASSUMES TYPE "B" SOIL

DRAWN	JDM	DATE	3/18/15
CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

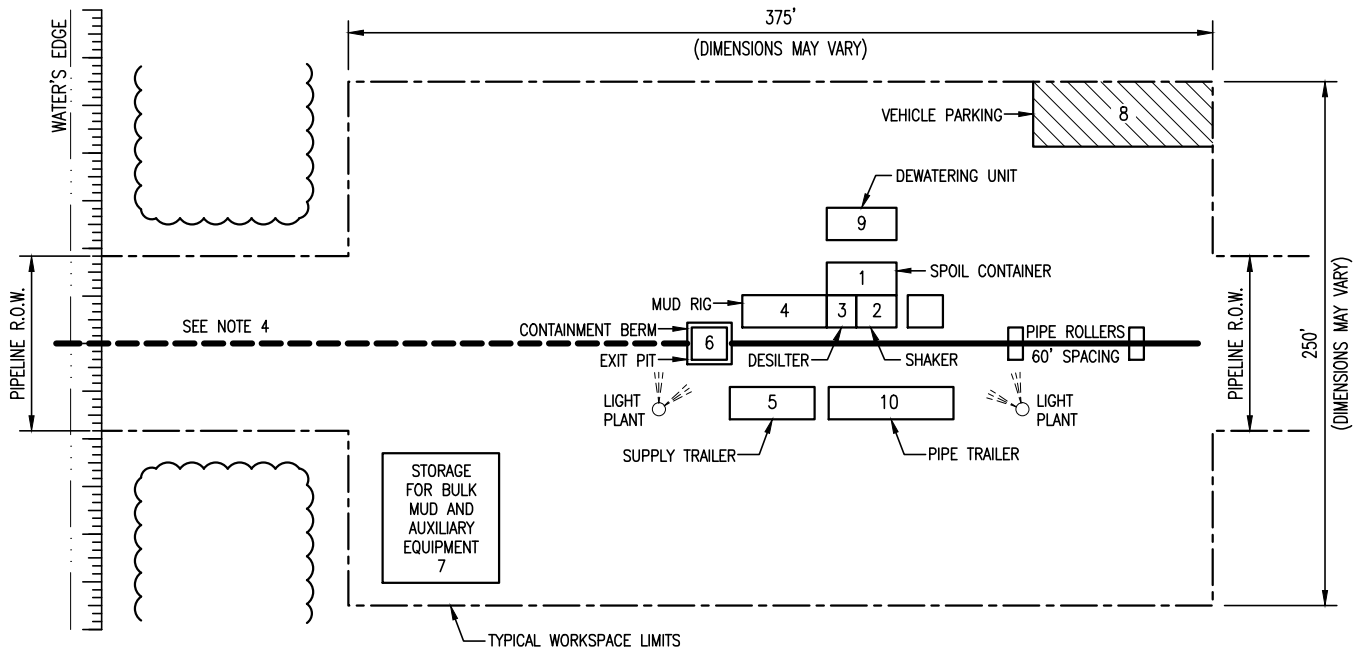
MAINLINE CONSTRUCTION
TYPICAL DIRECTIONAL DRILL
ENTRY SITE PLAN & PROFILE

DRAWING NO.

MVP-10

REV.

0



EQUIPMENT:

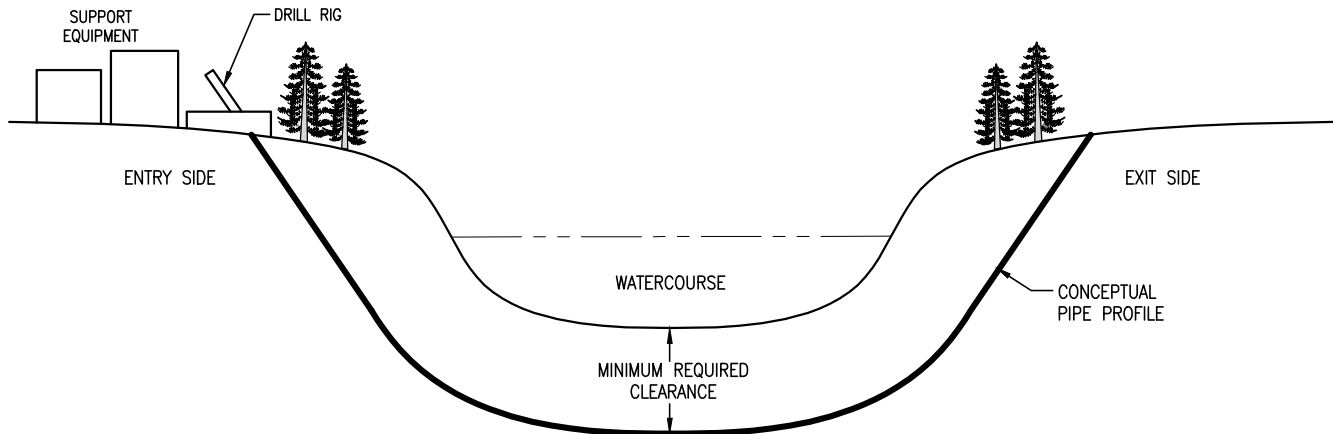
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2. SHAKER: 8' X 12'
3. DESILTER: 8' X 8'
4. MUD RIG: 8' X 25'
5. SUPPLY TRAILER: 8' X 25'
6. EXIT PIT: 8' X 10'
7. STORAGE: 30' X 30'
8. VEHICLE PARKING: 15' X 50'
9. DEWATERING UNIT: 8' X 20'
10. PIPE TRAILER: 8' X 40'

NOTES:

1. EQUIPMENT ORIENTATION MAY VARY DEPENDING ON CONTRACTOR OR SITE CONDITIONS.
2. EQUIPMENT TO BE SUPPORTED ON THE GROUND SURFACE OR TIMBER MATS AS CONDITIONS DICTATE.
3. SILT FENCE, BERMS AND/OR STRAW BALE BARRIER TO BE USED AS REQUIRED TO PREVENT IMPACTS FROM OCCURRING OUTSIDE OF PROJECT LIMITS.
4. HAND CLEARED ACCESS PATH WILL BE USED TO OBTAIN WATER FROM SOURCE WHERE PERMITTED.

EXIT SITE PLAN

SCALE: N.T.S.



THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

PROFILE

SCALE: N.T.S.

GENERAL NOTES:

1. PIPE DEPTHS MAY VARY.

DRAWING ASSUMES TYPE "B" SOIL

DRAWN	JDM	DATE	3/18/15
CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

MAINLINE CONSTRUCTION
TYPICAL DIRECTIONAL DRILL
EXIT SITE PLAN & PROFILE

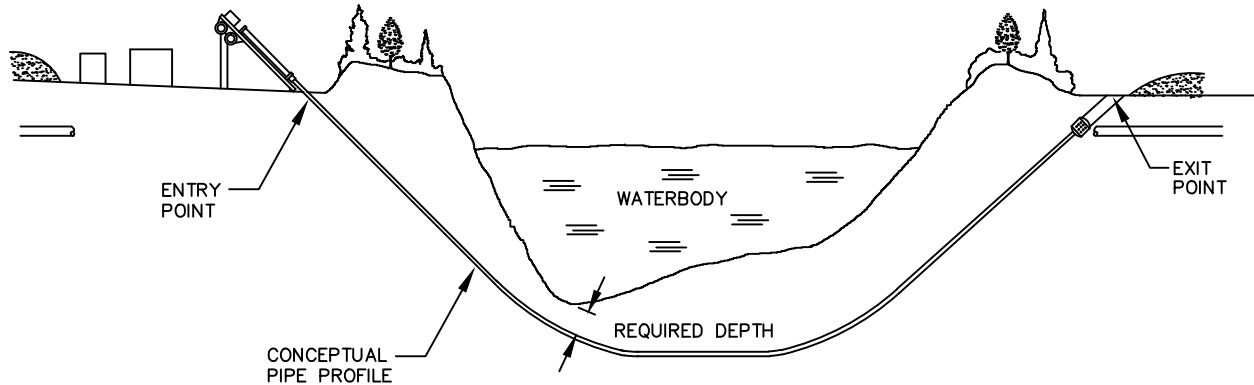
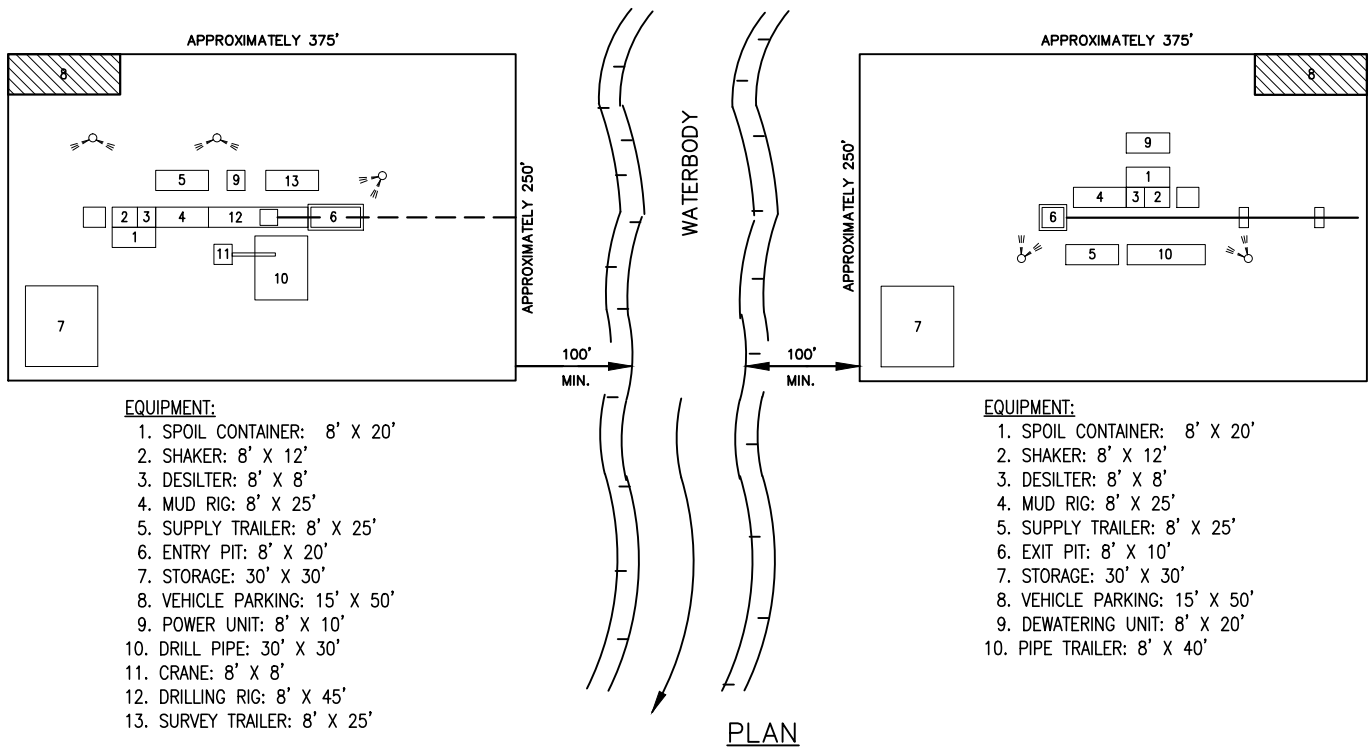
DRAWING NO.

MVP-11

REV.

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HORIZONTAL DIRECTIONAL DRILL METHOD 7



NOTES:

1. SET UP DRILLING EQUIPMENT A MINIMUM OF 100 FEET FROM THE EDGE OF THE WATERCOURSE. DO NOT CLEAR OR GRADE WITHIN THE 100 FOOT ZONE.
2. ENSURE THAT ONLY BENTONITE BASED DRILLING MUD IS USED. DO NOT ALLOW THE USE OF ANY ADDITIVES TO THE DRILLING MUD WITHOUT THE APPROVAL OF COMPANY INSPECTOR.
3. INSTALL SUITABLE DRILLING MUD TANKS OR SUMPS TO PREVENT CONTAMINATION OF WATERCOURSE.
4. INSTALL BERMS DOWNSLOPE FROM THE DRILL ENTRY AND ANTICIPATED EXIT POINTS TO CONTAIN ANY RELEASE OF DRILLING MUD.
5. DISPOSE OF DRILLING MUD IN ACCORDANCE WITH THE APPROPRIATE REGULATORY AUTHORITY REQUIREMENTS.
6. A SEDIMENT BARRIER SHALL BE PLACED ON THE DOWN SLOPE SIDE OF RIGHT-OF-WAY, PER THE PROJECT NARRATIVE.

THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWN	JDM	DATE	3/18/15
CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

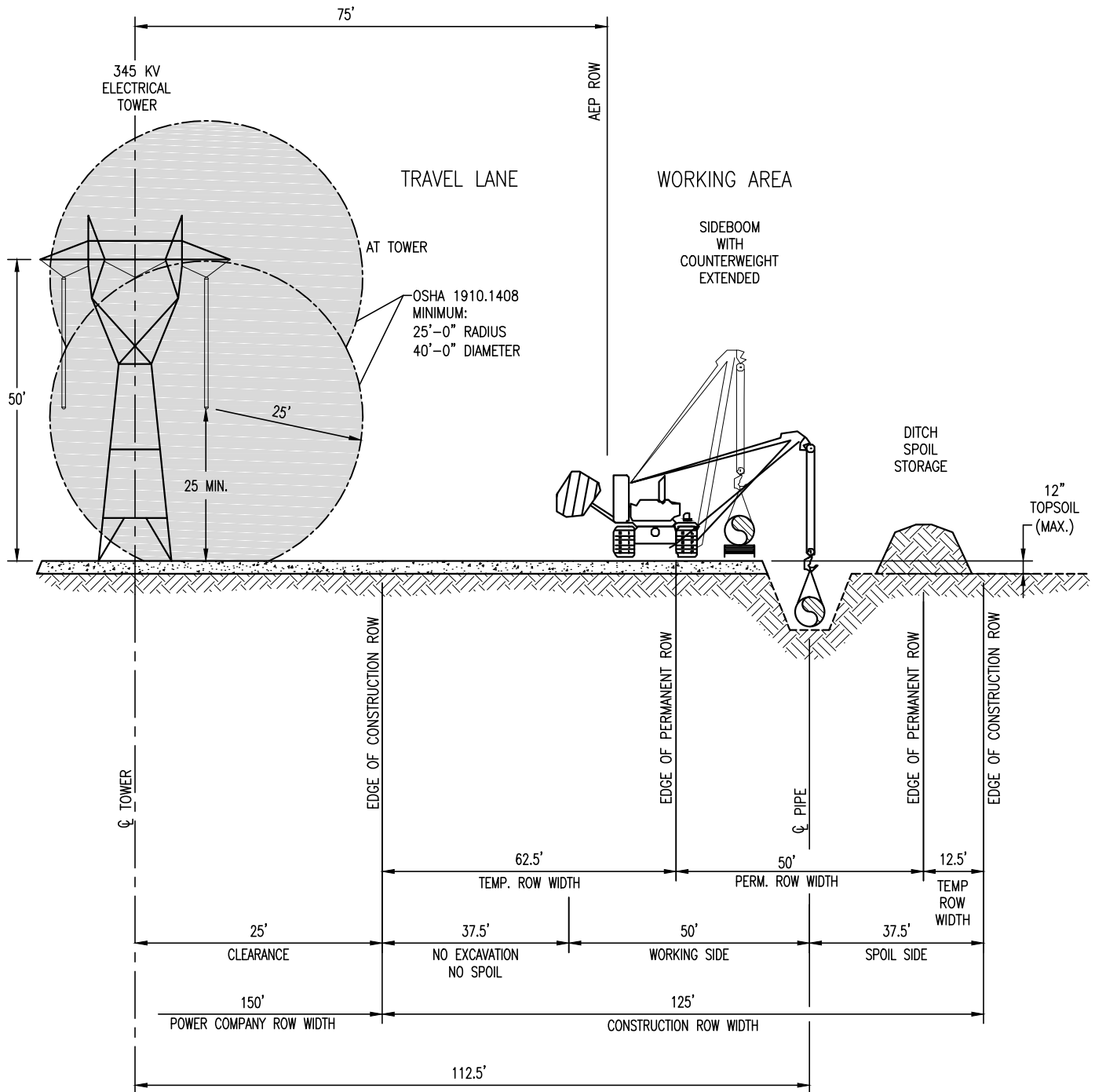
HORIZONTAL DIRECTIONAL DRILL (HDD)

DRAWING NO.

MVP-12

REV.

0



THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWN	JDM	DATE	5/27/15
CHECKED	RRR	DATE	10/01/15
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SCALE	N.T.S.	SHEET	1 OF 1
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PROJECT ID:			
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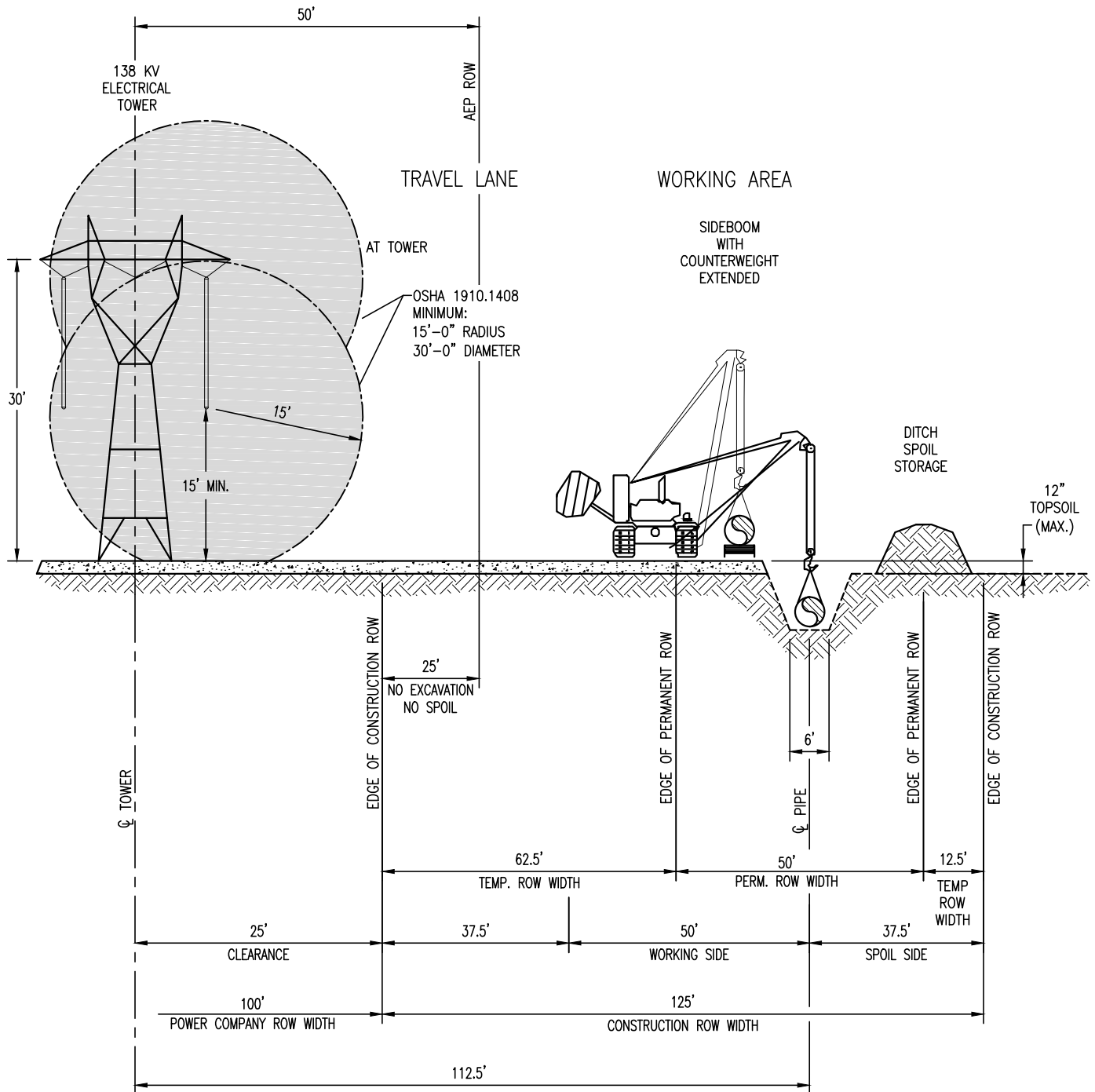


DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

MAINLINE CONSTRUCTION
PARALLEL TO POWER LINES - 345KV
RIGHT-OF-WAY

DRAWING NO.	REV.
MVP-13	0



THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWN	JDM	DATE	5/27/15
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PROJECT ID:			
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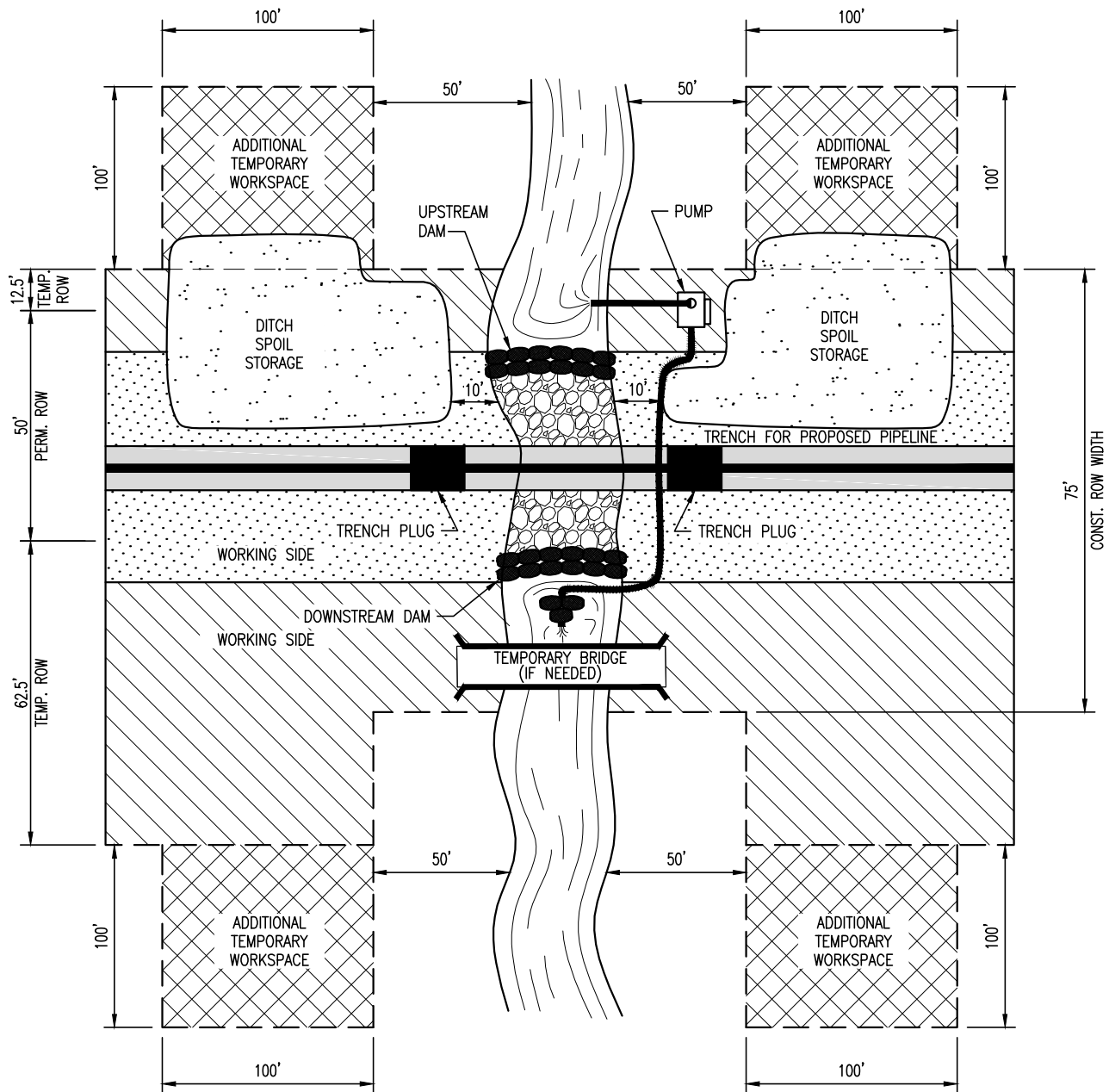


DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

MAINLINE CONSTRUCTION
PARALLEL TO POWER LINES - 138KV
RIGHT-OF-WAY

DRAWING NO.	REV.
MVP-14	0



THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

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SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

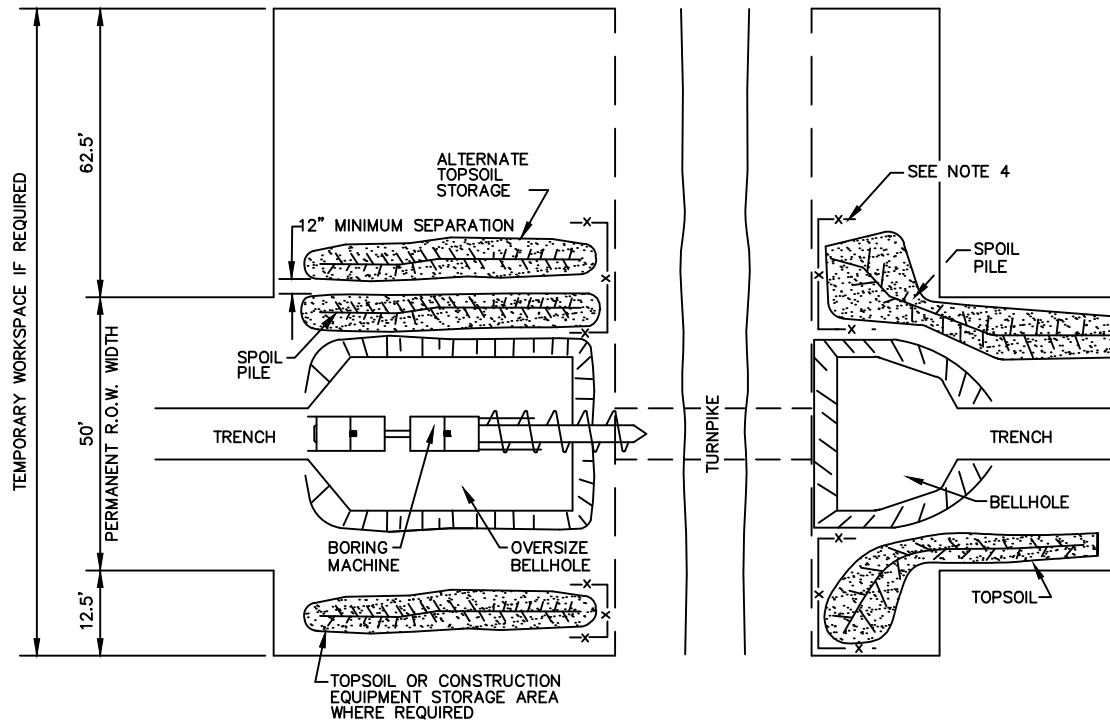
MAINLINE CONSTRUCTION
WATERBODY CROSSING
OPEN CUT – DRY/DAM AND PUMP
RIGHT-OF-WAY

DRAWING NO.

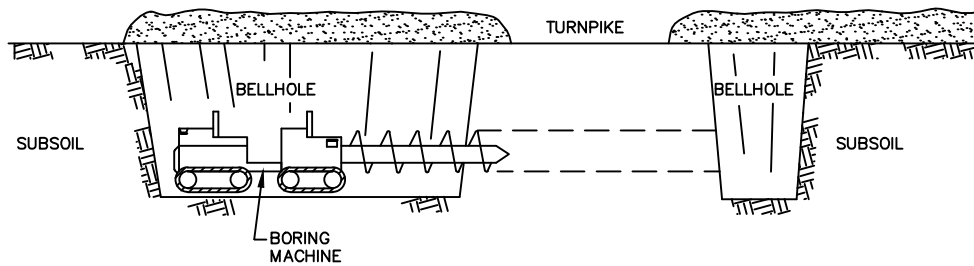
MVP-15

REV.

0



PLAN VIEW



PROFILE

NOTES:

1. STRIP TOPSOIL FROM THE BELLHOLE AREA IN UNMANAGED WOODLAND. STRIP TOPSOIL FROM THE BELLHOLE AND SPOIL STORAGE AREA ON AGRICULTURAL LAND.
2. EXCAVATE BELLHOLE, STORING SPOIL ON OPPOSITE SIDE OF R.O.W. FROM TOPSOIL OR ADJACENT TO TOPSOIL MAINTAINING A MINIMUM 12 INCHES OF SEPARATION TO AVOID MIXING TOPSOIL AND SPOIL.
3. THE SIDES OF THE BORE PITS SHALL BE SLOPED BACK TO STABLE CONFIGURATION UNLESS SUPPORTED BY SHEET PILING OR OTHER SHORING MEANS. INSTALL SAFETY FENCE AROUND BORE PITS AS NECESSARY.
4. INSTALL TEMPORARY EROSION CONTROL PROCEDURES AS SPECIFIED IN THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. DEWATER BORE PIT TO CONTROL SEEPAGE WATER FLOW. DEWATER INTO AN APPROPRIATE DEWATERING STRUCTURE.
6. UPON COMPLETION OF PIPE INSTALLATION AND TIE-INS, BACKFILL PIT SPOIL. MINIMIZE POST CONSTRUCTION SETTLEMENT BY COMPACTING BACKFILL USING STANDARD PIPELINE CONSTRUCTION EQUIPMENT AVAILABLE AT SITE. LEAVE A CROWN TO ALLOW FOR SUBSIDENCE OF THE BACKFILL. RESPREAD SALVAGED TOPSOIL AND COMPACT.

THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWN	JDM	DATE	9/1/15
CHECKED	RRR	DATE	10/01/15
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SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



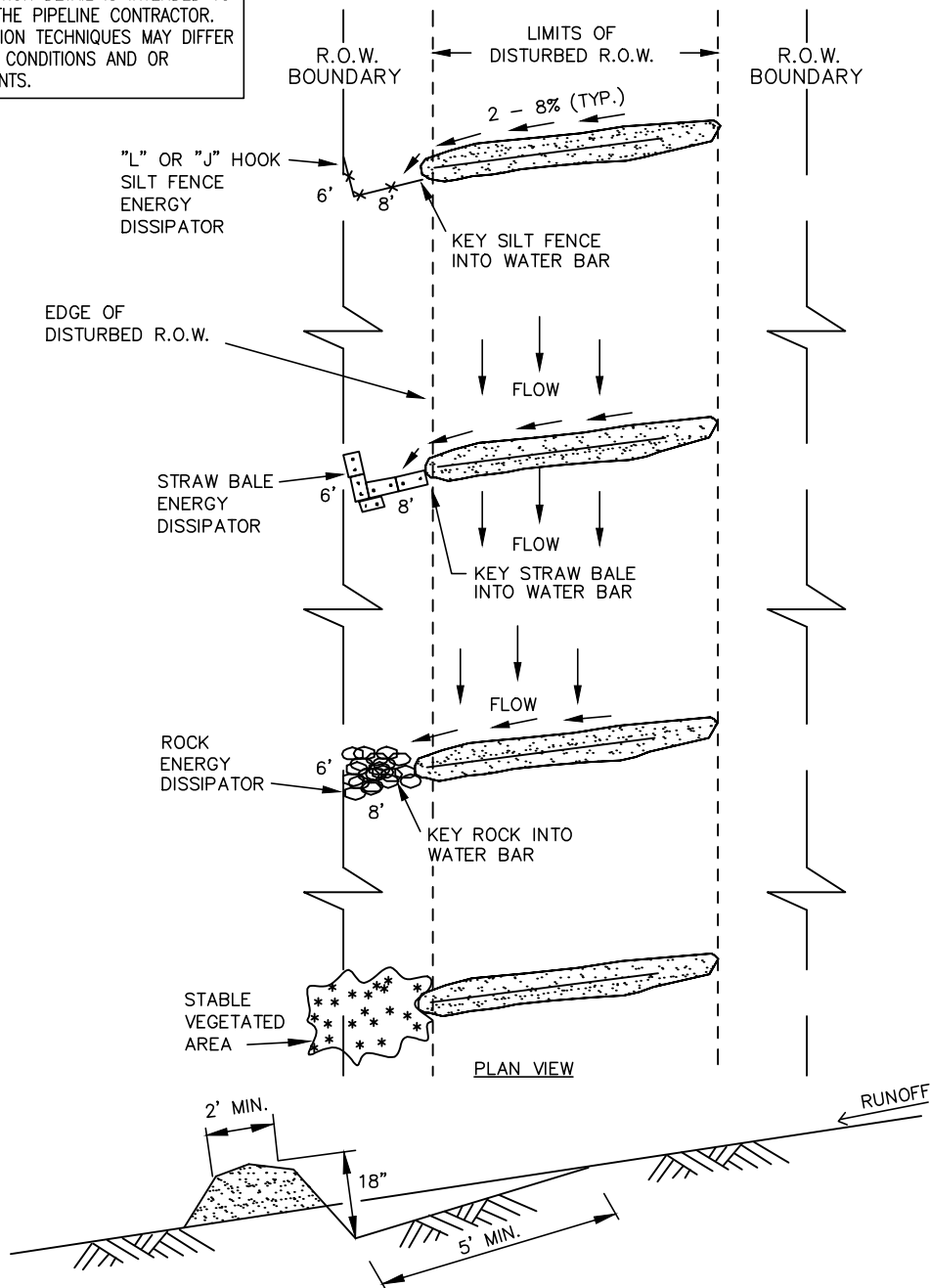
DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

WESTON-GAULEY TURNPIKE
CONVENTIONAL BORE

DRAWING NO.	REV.
MVP-16	0

THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.



NOTES:

WATER BAR CROSS SECTION DETAIL

1. SLOPE BREAKERS SHALL BE CONSTRUCTED OF COMPACTED NATIVE SOIL AND INSTALLED AT LOCATIONS AS SHOWN ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE COMPANY'S INSPECTOR.
2. SLOPE BREAKERS SHALL BE ORIENTED AS SHOWN OR OTHER PATTERN AS DIRECTED BY THE COMPANY'S INSPECTOR TO DIRECT THE WATER OFF THE R.O.W.
3. SLOPE BREAKERS SHALL BE CONSTRUCTED AT A 2-8% GRADIENT ACROSS THE SLOPE.
4. THE SLOPE BREAKERS SHALL BE 18" DEEP (AS MEASURED FROM THE TROUGH TO THE TOP OF THE SLOPE BREAKER). THE TROUGH WILL BE A MINIMUM OF 5' WIDE ACROSS THE WIDTH OF THE RIGHT-OF-WAY.

DRAWN	JDM	DATE	9/8/2015
CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1

JOB NO.

PROJECT ID:

PXXXX



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

WATER BAR
TYPICAL SLOPE BREAKER
(SB)

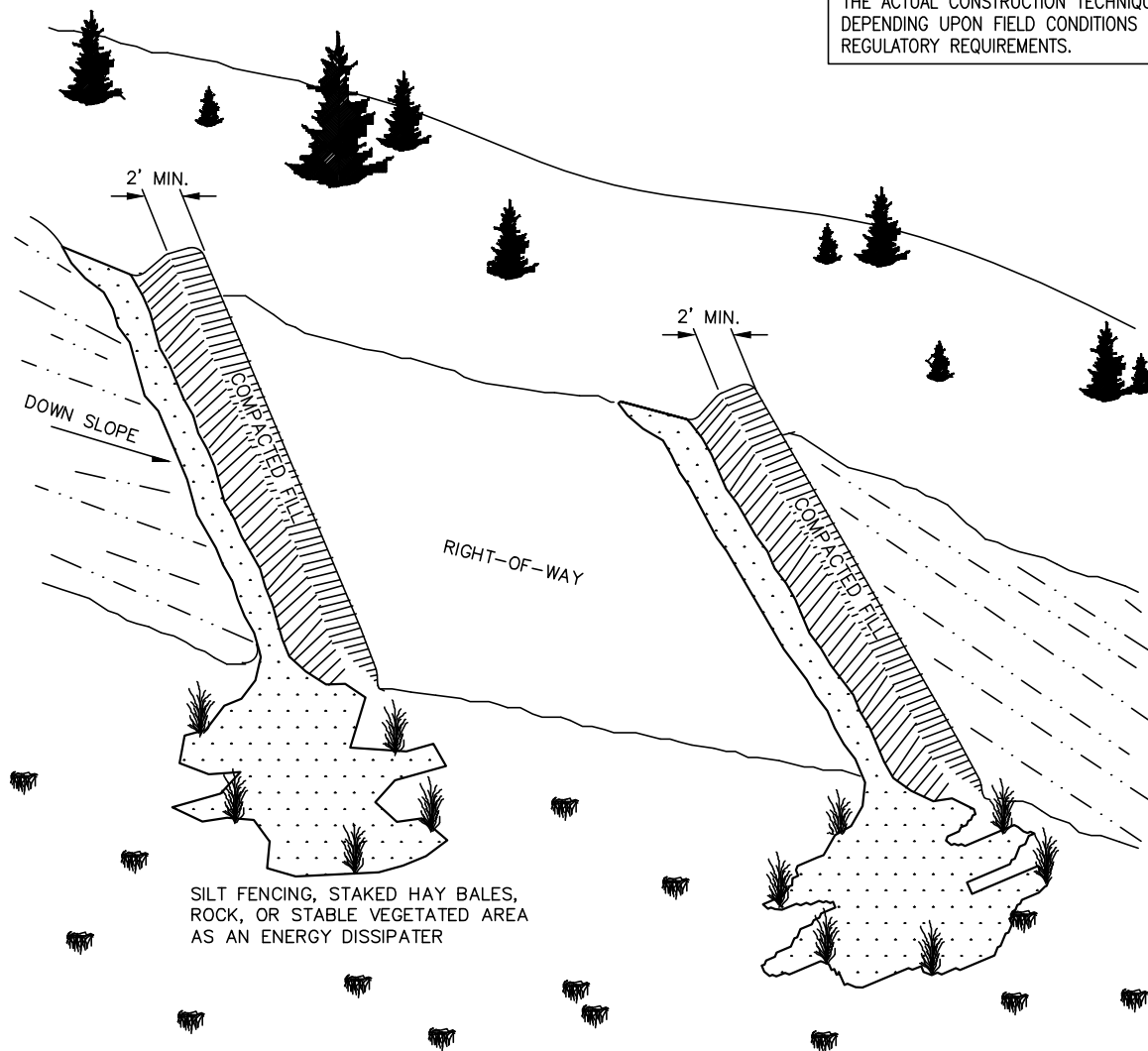
DRAWING NO.

MVP-17

REV.

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THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.



NOTES: (CONTINUED)

5. THE OUTLET OF THE SLOPE BREAKER MUST FREELY DISCHARGE ALL RUNOFF OFF THE DISTURBED RIGHT-OF-WAY INTO A STABLE, WELL VEGETATED AREA OR INTO AN ENERGY DISSIPATOR.
6. WHERE SLOPE BREAKERS EXTEND BEYOND THE EDGE OF THE CONSTRUCTION R.O.W. TO DIRECT RUNOFF INTO STABLE, WELL VEGETATED AREAS, THESE LOCATIONS MUST BE APPROVED BY THE COMPANY'S INSPECTOR.

FLOW ENERGY DISSIPATOR NOTES:

1. THE OUTLET SHALL CONTAIN AN ENERGY DISSIPATOR IF THE COMPANY'S INSPECTOR DETERMINES EXISTING VEGETATION IS NOT SUFFICIENTLY STABLE TO PREVENT EROSION. THE ENERGY DISSIPATOR SHALL BE CONSTRUCTED AS FOLLOWS:
 - OUTFALL END OF DISSIPATOR SHOULD BE LOWER THAN SLOPE BREAKER END.
 - SILT FENCE, STRAW BALE OR ROCK DISSIPATORS SHOULD BE KEYED INTO THE END OF THE SLOPE BREAKER.
 - PROVIDE ENOUGH AREA INSIDE "L" TO CAPTURE AND HOLD SEDIMENT.

DRAWN	JDM	DATE	9/8/2015
CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

WATER BAR
TYPICAL SLOPE BREAKER
(SB)

DRAWING NO.

MVP-18

REV.

0

STRAW MULCH

1. STRAW MULCH SHALL BE INSTALLED AT LOCATIONS IDENTIFIED ON THE CONSTRUCTION DRAWING AND/OR AS DIRECTED BY THE COMPANY'S INSPECTOR TO PROTECT SOIL FROM EROSION. AREAS TARGETED FOR STRAW MULCH INCLUDE THE FOLLOWING:
 - 10-40% SLOPES WITH LESS THAN 40% SURFACE COVER.
 - 0-10% SLOPES WITH SOILS RATED BY APPLICABLE COUNTY AS HIGH IN WIND ERODIBILITY AND LESS THAN 40% SURFACE COVER AND IF DIRECTED BY COMPANY'S INSPECTOR.
2. WHEAT, OAT, BARLEY, RYE OR FLAX STRAW WILL BE USED, WHERE APPROPRIATE, DEPENDING UPON AVAILABILITY.
3. ONLY CERTIFIED "NOXIOUS WEED-FREE" STRAW MULCH SHALL BE APPLIED AT A RATE OF:
 - 1,780 TO 2,225 LB/AC WHEAT, OAT, BARLEY OR RYE STRAW
 - 2,670 TO 3,560 LB/AC FLAX STRAW
4. AREAS WHERE RESPREAD TOPSOIL EXHIBITS AN ADEQUATE COVER FROM RESPREAD OF PLANT DEBRIS AND COARSE FRAGMENTS, MULCH RATES MAY BE
REDUCED OR ELIMINATED BY THE COMPANY'S INSPECTOR.

STRAW CRIMPING

1. STRAW CRIMPING WILL BE UTILIZED ON NONCULTIVATED, WIND EROSION PRONE SOILS, AND ON CULTIVATED, WATER EROSION PRONE SOILS AS IDENTIFIED ON THE ALIGNMENT SHEETS, UNLESS OTHERWISE DIRECTED BY THE COMPANY'S INSPECTOR. STRAW CRIMPING AT ADDITIONAL LOCATIONS IDENTIFIED BY THE COMPANY'S INSPECTOR MAY BE REQUIRED.
 2. EQUIPMENT SPECIFICALLY DESIGNED TO CRIMP STRAW (SUCH AS A STRAW MULCH CRIMPER MANUFACTURED BY FINN CORPORATION OR AN APPROVED EQUIVALENT) SHALL BE USED TO CRIMP STRAW FIBERS TO A DEPTH OF TWO TO THREE INCHES. STEEP SLOPES INACCESSIBLE WITH A CRIMPER SHALL BE CRIMPED BY TRACKING WITH A CRAWLER RUNNING PERPENDICULAR TO THE SLOPE. DISCS SHALL NOT BE ALLOWED FOR CRIMPING EXCEPT AS STATED IN NOTE 3.
- WHERE EXCESSIVE STONINESS IS ENCOUNTERED TO THE EXTENT THAT THE SPECIALIZED CRIMPING EQUIPMENT IS NOT
3. USEABLE, ATTEMPT TO ANCHOR THE STRAW BY INCORPORATION WITH AN AGRICULTURAL DISC OR CULTIVATOR. WHERE FROZEN GROUND CONDITIONS ARE ENCOUNTERED TO THE EXTENT THAT THE CRIMPING OPERATION IS NOT FEASIBLE, SPREAD STRAW AT DOUBLE THE NORMAL RATE.
- CRIMP OR ANCHOR STRAW INTO THE SOIL TO AN APPROXIMATE DEPTH OF 2". STRAW SHOULD STAND
4. VERTICALLY 2" TO 8" OUT OF THE GROUND IN ROWS SPACED APPROXIMATELY 6" APART.
- IN HIGHLY ERODIBLE SANDY LOCATIONS, WHERE DIRECTED BY THE COMPANY'S INSPECTOR, DOUBLE THE STRAW
5. APPLICATION RATE AND MAKE TWO PASSES TO ANCHOR THE STRAW, ONE PASS PERPENDICULAR TO THE OTHER OR CRISS-CROSSED.
- STRAW FOR CRIMPING WILL BE APPROVED BY COMPANY AND THE LANDOWNERS AND OCCUPANTS OR APPROPRIATE
6. REGULATORY AUTHORITIES WHERE APPLICABLE. CRITERIA FOR THE SELECTION OF STRAW IS AS FOLLOWS:
 - FOR EACH LOT OF BALES, TO THE EXTENT FEASIBLE, THE FIELD WHERE THE BALES WERE OBTAINED WILL BE INSPECTED BEFORE IT IS HARVESTED, OR THE STUBBLE WILL BE INSPECTED IMMEDIATELY AFTER HARVEST AND A SAMPLE OF GRAIN WILL BE INSPECTED FOR WEED SEEDS.
 - THE STRAW MUST HAVE BEEN HARVESTED WITH A CONVENTIONAL COMBINE, NOT A ROTARY COMBINE.
 - THE STRAW MUST HAVE A MINIMUM FIBRE LENGTH OF 8", 12" IS PREFERRED.
 - THE STRAW MUST BE FREE OF NOXIOUS OR RESTRICTED WEEDS AND UNDESIRABLE SPECIES WHICH WOULD HAMPER RECLAMATION EFFORTS.
 - TO THE EXTENT FEASIBLE, BALES OBTAINED FROM LOW LYING WEEDY AREAS WILL BE IDENTIFIED AND AVOIDED.

THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWN	JDM	DATE	9/8/2015
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DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

EROSION CONTROL
STRAW MULCH
(STM)

DRAWING NO.

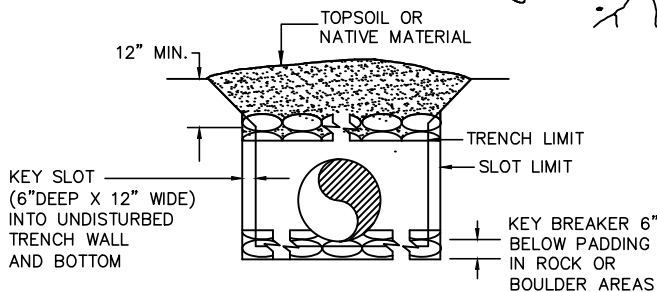
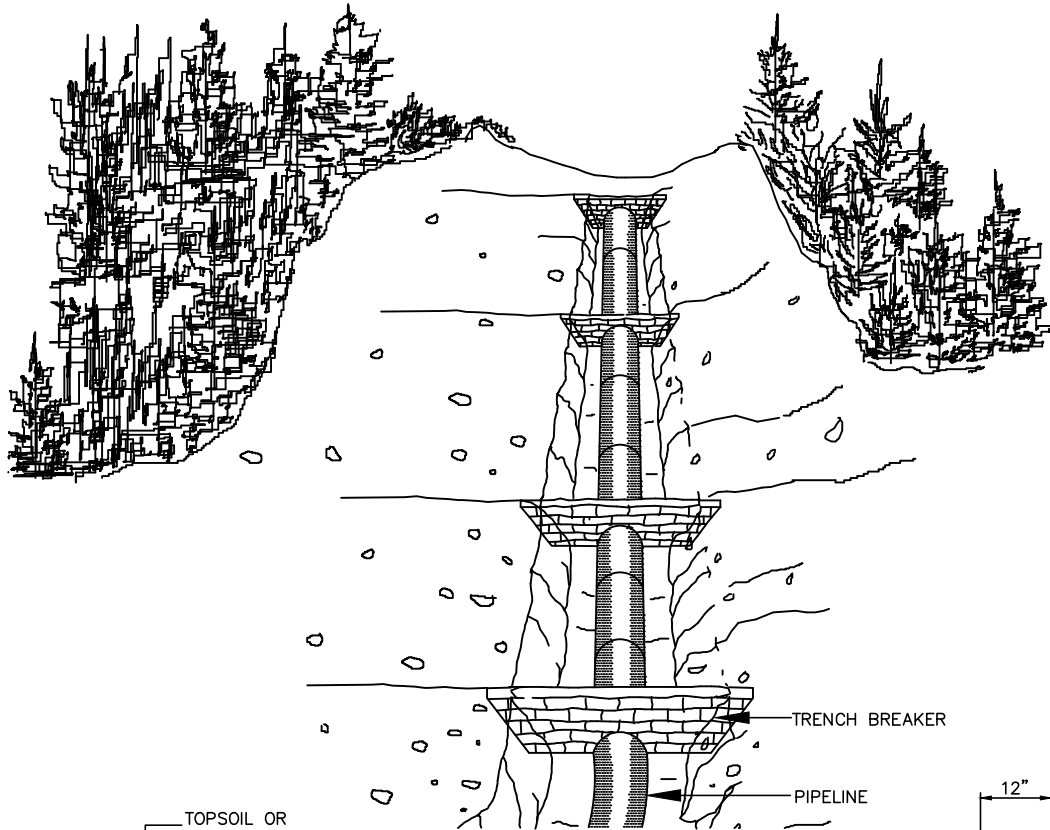
MVP-19

REV.

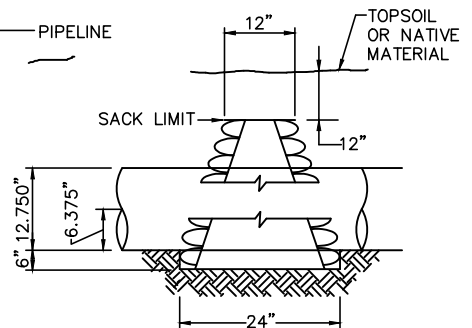
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SLOPE %	SPACING
0% - 5%	NOT REQUIRED EXCEPT AT STREAM OR WATER BODY CROSSINGS
5% - 15%	300 FT
> 15% - 30%	200 FT
>30%	100 FT

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CROSS SECTION



SIDE VIEW

NOTES

1. TRENCH BREAKERS SHALL BE INSTALLED:

- ON SLOPES ALONG THE TRENCH LINE WHERE THE NATURAL DRAINAGE PATTERN, PROFILE, AND TYPE OF BACKFILL MATERIAL MAY RESULT IN LOSS OF BACKFILL MATERIAL OR ALTERATION OF THE NATURAL PATTERN;
- AT THE BASE OF SLOPES ADJACENT TO WATERBODIES AND WETLANDS;
- WHERE NEEDED TO AVOID DRAINING A WETLAND;
- ON UPLAND SLOPES, AT THE SAME SPACING AS SLOPE BREAKERS AND UP SLOPE OF SLOPE BREAKERS;
- IN CULTIVATED LAND AND RESIDENTIAL AREAS WHERE PERMANENT SLOPE BREAKERS ARE NOT TYPICALLY INSTALLED, AT THE SAME SPACING AS IF PERMANENT SLOPE BREAKERS WERE REQUIRED.

2. OPEN WEAVE HEMP OR JUTE SACKS SHALL BE FILLED WITH A MINIMUM OF 55lbs. MIXTURE OF 1 PART CEMENT TO 6 PARTS SAND OR SUBSOIL SO THAT NATURAL GROUND WATER WILL PERMIT MIXTURE TO EXUDE AND BOND SACKS TOGETHER.

3. BREAKER SPACING AND CONFIGURATION MAY BE CHANGED AS DIRECTED BY COMPANY. DEPTH OF DITCH MAY VARY WITH SITE CONDITIONS.

4. ALL MATERIALS SHALL BE SUPPLIED BY CONTRACTOR.

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DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

TYPICAL TRENCH BREAKER REQUIREMENTS

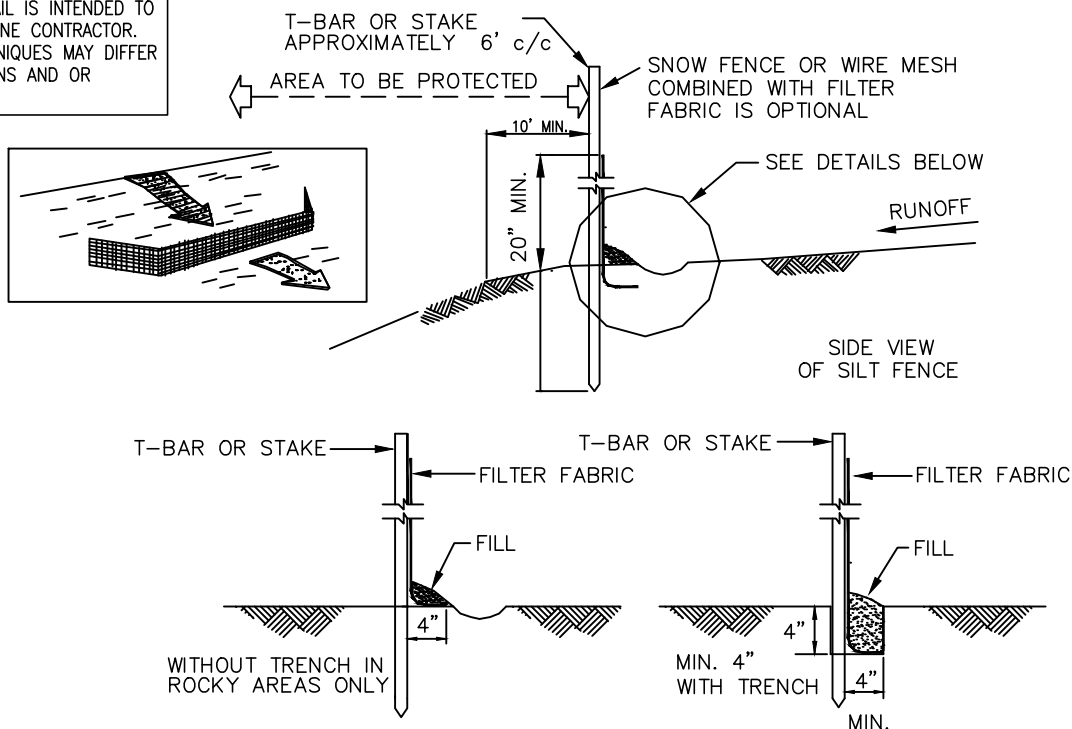
DRAWING NO.

MVP-20

REV.

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THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.



NOTE:

1. GENERALLY WHEN A LONG SEDIMENT BARRIER IS REQUIRED, SILT FENCE WILL BE UTILIZED RATHER THAN STRAW BALES AT:
 - THE BASE OF ALL SLOPES ABOVE ROADS, SPRINGS, WETLANDS, IMPOUNDMENTS AND PERENNIAL AND INTERMITTENT STREAMS.
 - THE DOWN SLOPE RIGHT-OF-WAY EDGE WHERE ANY OF THE ABOVE MENTIONED LOCATIONS ARE ADJACENT TO THE RIGHT-OF-WAY.
 - BETWEEN TOPSOIL/SPOIL STOCKPILES AND PERENNIAL OR INTERMITTENT STREAMS OR WETLANDS WHERE BUFFER ZONE REQUIREMENTS CANNOT BE MET.
 - ALONG R.O.W. BOUNDARIES OF WETLAND CONSTRUCTION.
 - AS SPECIFIED IN THE SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURE PLAN.
 - AS DIRECTED BY THE COMPANY'S INSPECTOR.
2. THE SILT FENCE SHALL BE CONSTRUCTED AS FOLLOWS:
 - FABRIC USED FOR THE SILT FENCE SHALL BE A "STANDARD STRENGTH" GEOTEXTILE, SUCH AS MIRAFI 100X OR AN APPROVED EQUIVALENT.
 - THE FABRIC SHALL BE CUT FROM A CONTINUOUS FABRIC ROLL.
 - THE HEIGHT OF THE FENCE SHALL NOT EXCEED 24".
 - SPLICES SHALL ONLY BE DONE AT POSTS AND SHALL CONSIST OF A MINIMUM OF 6" OF OVERLAP WITH BOTH ENDS SECURED TO THE POST.
 - POSTS SHALL BE POSITIONED A MAXIMUM OF 6' APART.
 - POSTS SHALL CONSIST OF 2"x2" WOODEN STAKES OF SUFFICIENT LENGTH TO EXTEND A MINIMUM OF 12" INTO THE GROUND.
 - FABRIC SHALL BE STAPLED OR WIRED TO POSTS A MAXIMUM OF EVERY 9".
3. THE SILT FENCE SHALL BE INSTALLED AS SPECIFIED BY THE MANUFACTURER OR AS FOLLOWS:
 - A TRENCH, 4" WIDE AND 4" DEEP, SHALL BE EXCAVATED ALONG THE CONTOUR. THE POST SHALL BE DRIVEN INTO THE BOTTOM OF THE TRENCH ON THE DOWNSTREAM SIDE OF THE FILTER FABRIC. THE TRENCH SHALL BE BACK FILLED AND COMPACTED, ENSURING 4" OF FENCE IS BURIED WITHIN THE TRENCH.
 - IN AREAS WHERE THE TERRAIN IS TOO ROCKY FOR TRENCHING, A 4" GROUND FLAP WITH ROCK FILL TO HOLD IT IN PLACE SHALL BE USED.

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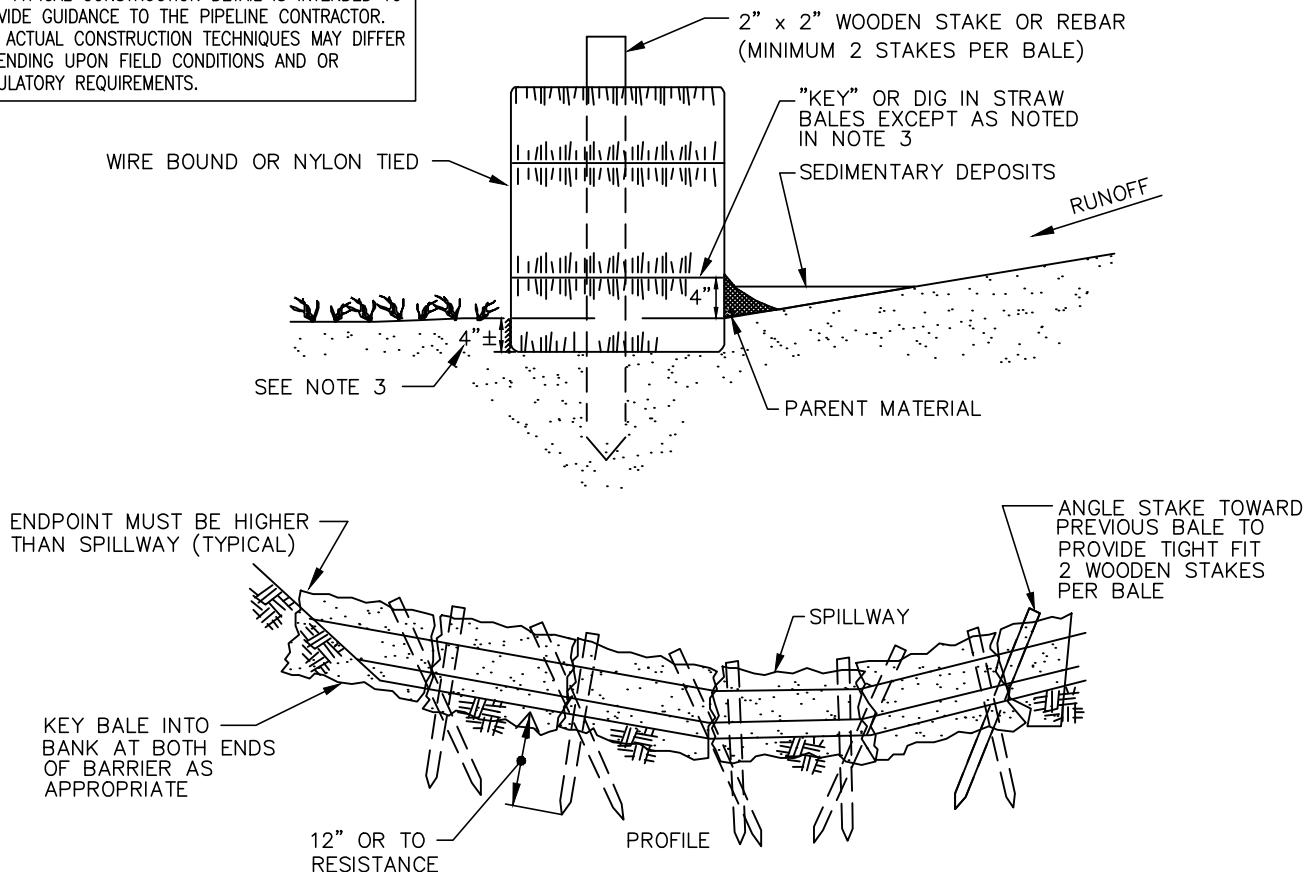
DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

EROSION CONTROL
SILT FENCE SEDIMENT BARRIER
(SFB)

DRAWING NO.	REV.
MVP-21	0

THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.



NOTES:

- STRAW BALE SEDIMENT BARRIERS SHALL BE INSTALLED AT THE FOLLOWING LOCATIONS:
 - THE BASE OF ALL SLOPES ABOVE ROADS, SPRINGS, WETLANDS, IMPOUNDMENTS AND FLOWING STREAMS.
 - THE DOWNSLOPE RIGHT-OF-WAY EDGE WHERE ANY OF THE ABOVE-MENTIONED LOCATIONS ARE ADJACENT TO THE RIGHT-OF-WAY.
 - BETWEEN TOPSOIL/SPOIL STOCKPILES AND STREAMS OR WETLANDS AS NEEDED.
 - ALONG R.O.W. BOUNDARIES IN WETLAND CONSTRUCTION.
 - AS SPECIFIED IN THE SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURE PLAN.
 - AS DIRECTED BY THE COMPANY'S INSPECTOR.
- STRAW BALE SEDIMENT BARRIERS SHALL CONSIST OF A ROW OF STRAW BALES, PLACED ON THE FIBER-CUT EDGE (TIES NOT IN CONTACT WITH THE GROUND). BALES SHALL BE TIGHTLY ABUTTED TO ONE ANOTHER. THE BARRIER SHALL BE ONE BALE HIGH. ONLY CERTIFIED "NOXIOUS WEED-FREE" STRAW SHALL BE USED WHENEVER POSSIBLE.
- ENTRENCH ("KEY") STRAW BALES INTO THE GROUND TO A DEPTH OF 4" EXCEPT IN FROZEN, SATURATED, OR EXTREMELY ROCKY SOILS. PLACE PARENT MATERIAL ON UPSTREAM SIDE OF STRAW BALES TO PREVENT UNDERMINING.
- WALK ON STRAW BALES TO INSURE ADEQUATE BALE-TO-SOIL CONTACT.
- ANCHOR STRAW BALES SECURELY IN PLACE WITH TWO WOODEN OR STEEL REBAR STAKES DRIVEN THROUGH THE TOPS OF THE BALES. THE STAKES SHALL PENETRATE THE GROUND A DISTANCE OF 12" UNLESS ROCK OR AN IMPERMEABLE LAYER IS ENCOUNTERED:
 - THE FIRST, CENTER AND END BALES OF THE BARRIER SHALL HAVE STAKES DRIVEN VERTICALLY THROUGH THE BALE.
 - BALES, OTHER THAN THOSE LOCATED AT THE ENDS OR CENTER OF THE BARRIER, SHALL HAVE THE FIRST STAKE DRIVEN THROUGH THE TOP OF THE BALE AT AN ANGLE SO THAT THE STAKE PASSES THROUGH THE PREVIOUSLY PLACED BALE, IN ORDER TO PROVIDE TIGHT CONTACT BETWEEN BALES. THE SECOND STAKE SHALL BE DRIVEN VERTICALLY THROUGH THE TOP OF THE BALE.

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DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

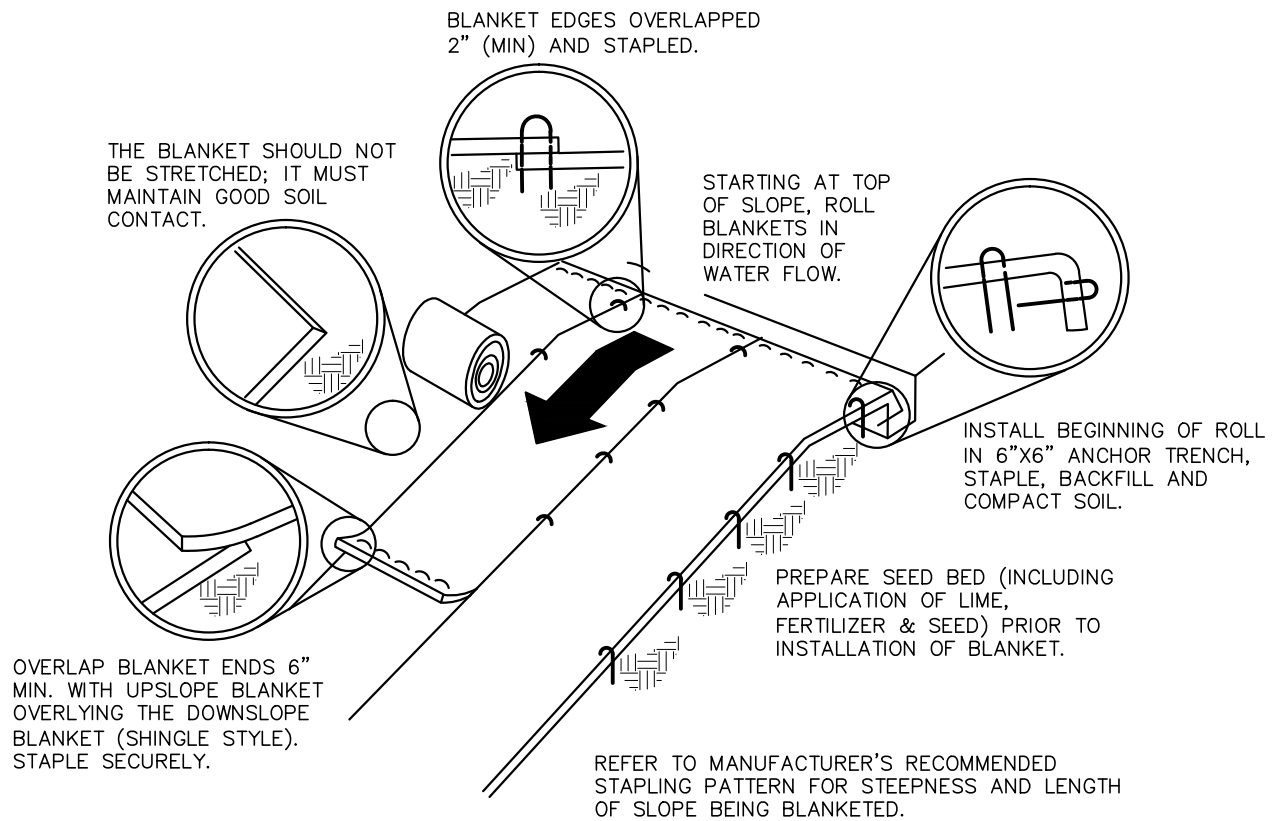
EROSION CONTROL
STRAW BALE SEDIMENT BARRIER
(SBB)

DRAWING NO.

MVP-22

REV.

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SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AT THE TOP OF SLOPE.

SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS.

BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT AND UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

BLANKET SHALL BE STAPLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

BLANKET AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

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SCALE	N.T.S.	SHEET	1 OF 1

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DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

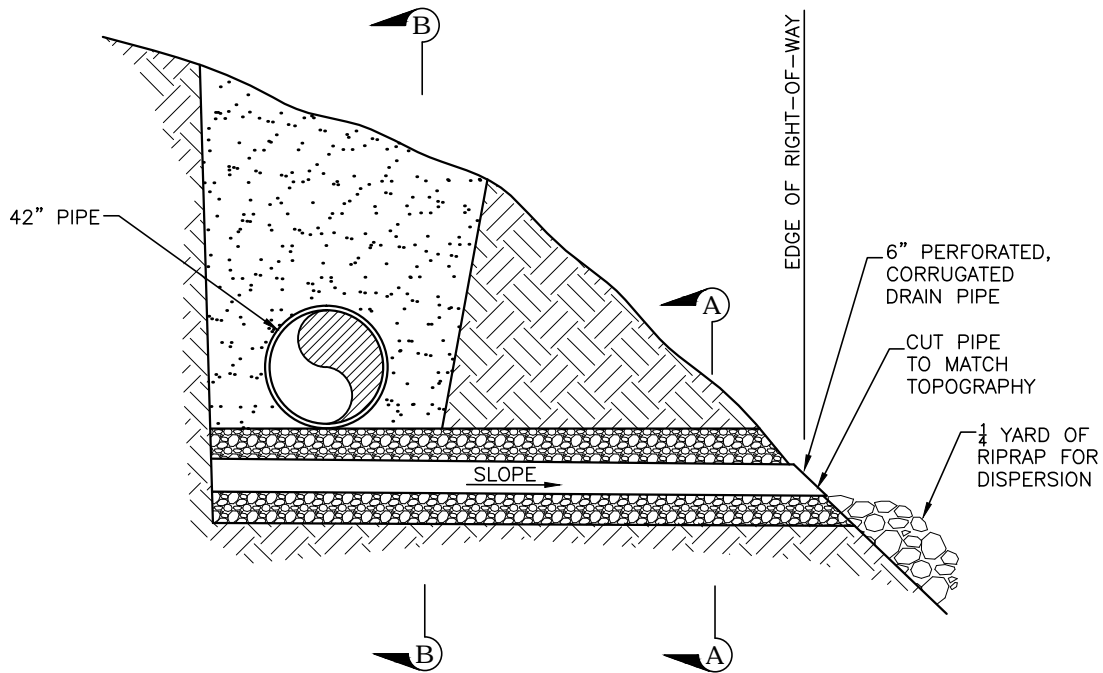
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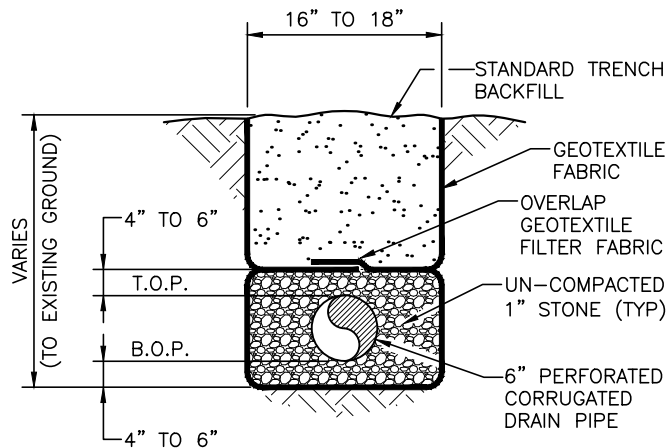
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REV.

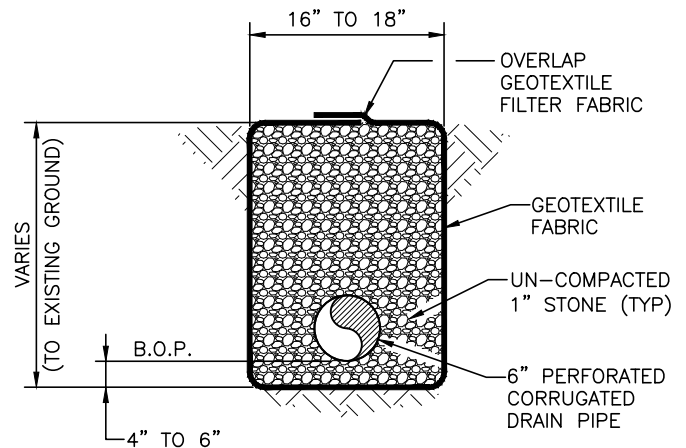
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MAINLINE CROSS SECTION



SECTION A-A



SECTION B-B

NOTES

1. LOW POINT DITCH DRAINS SHALL BE INSTALLED AT LOCATIONS SPECIFIED IN THE APPROVED EROSIONS & SEDIMENTATION CONTROL PLAN, AND AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
2. FILL STONE SHOULD BE 1" AGGREGATE WITHOUT FINES, CRUSHER RUN WITHOUT FINES, OR EQUIVALENT.
3. DRAIN PIPE TO BE CONNECTED USING STANDARD PIPE COLLARS.

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DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

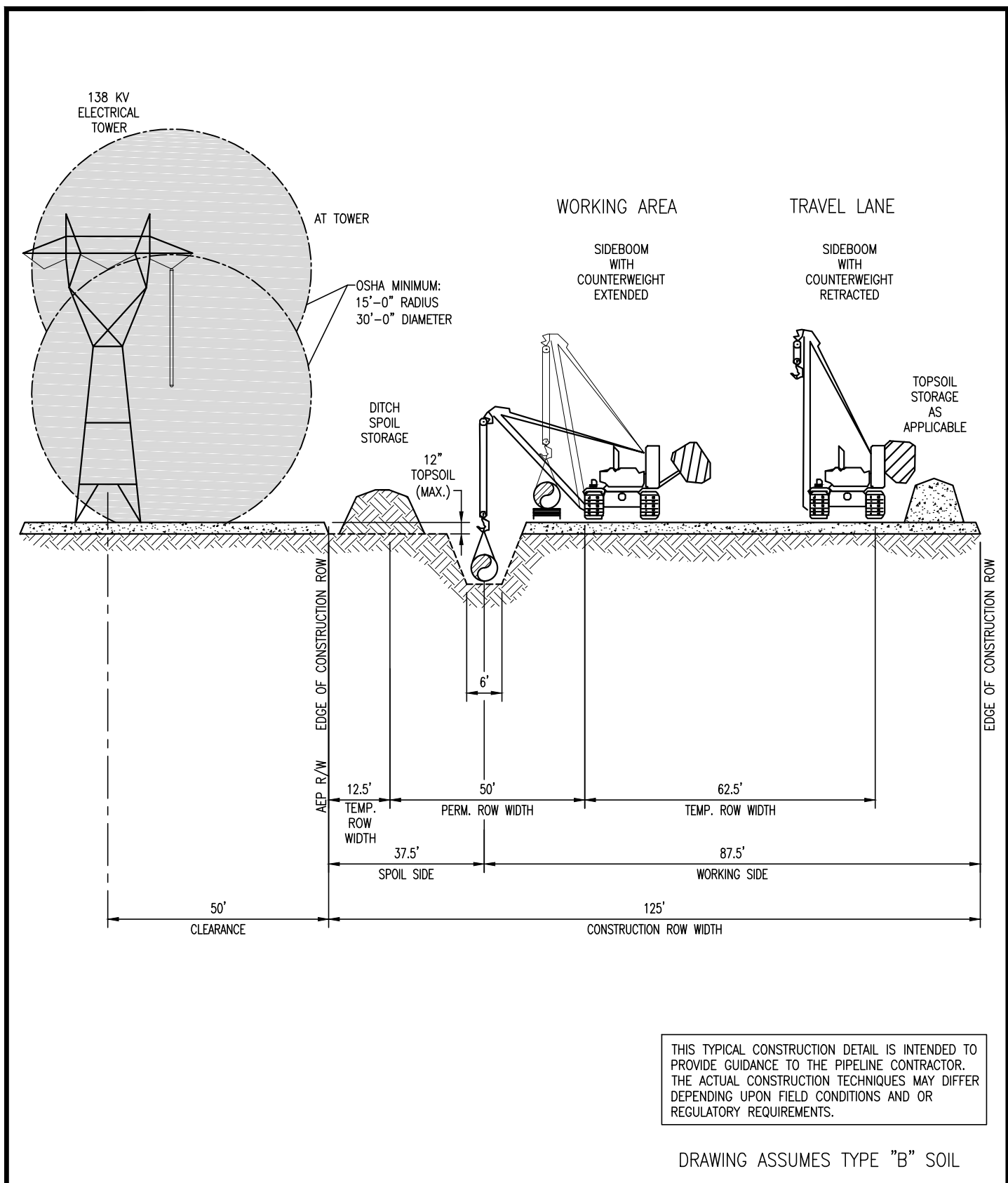
SIDEHILL LOW-POINT DRAIN
TYPICAL

DRAWING NO.

MVP-24

REV.

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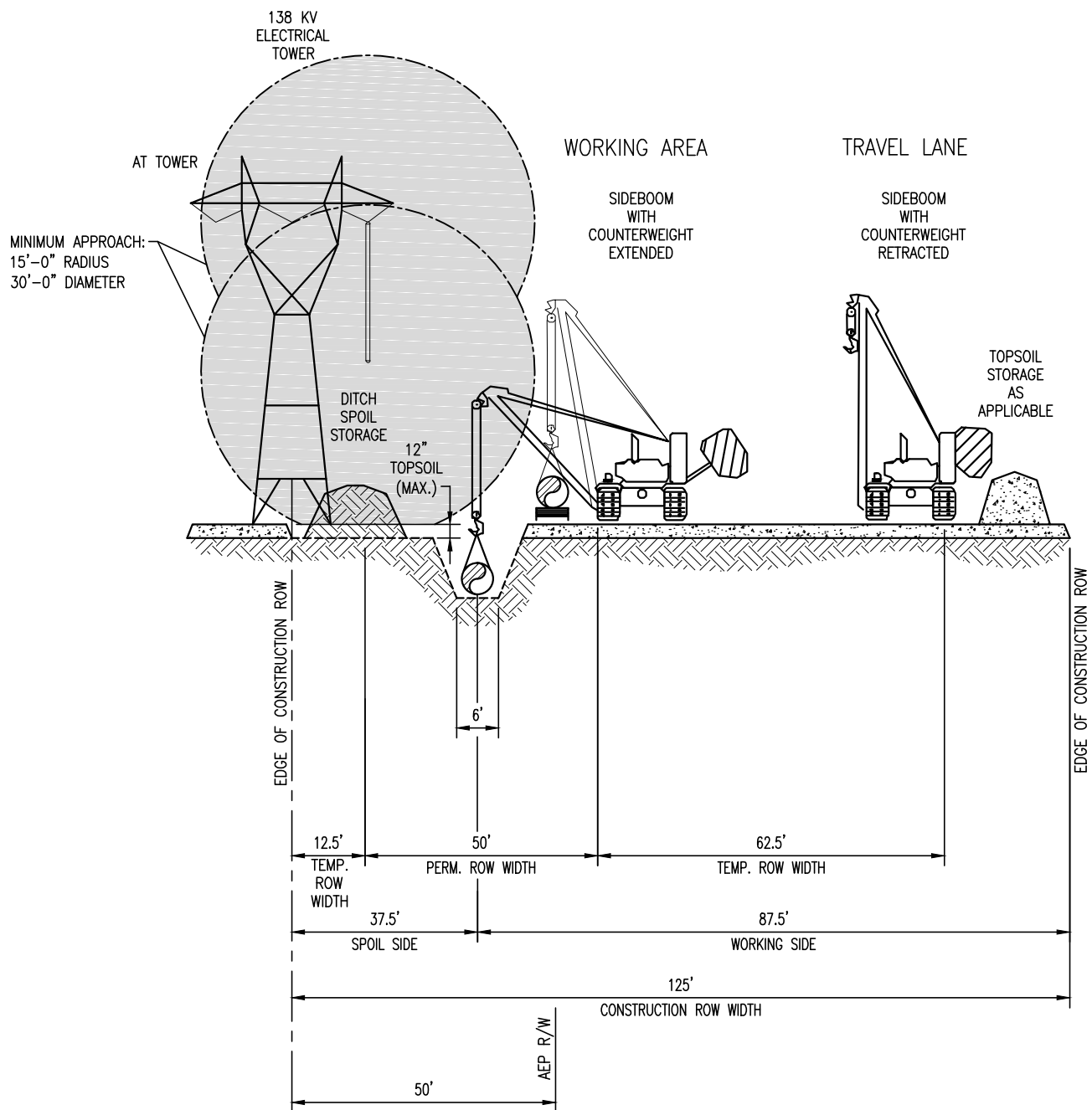


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DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL	
MAINLINE CONSTRUCTION PARALLEL TO POWER LINES RIGHT-OF-WAY	
DRAWING NO.	REV.
MVP-25	0



THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWING ASSUMES TYPE "B" SOIL

DRAWN	JDM	DATE	3/17/15
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SCALE	N.T.S.	SHEET	1 OF 1
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DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

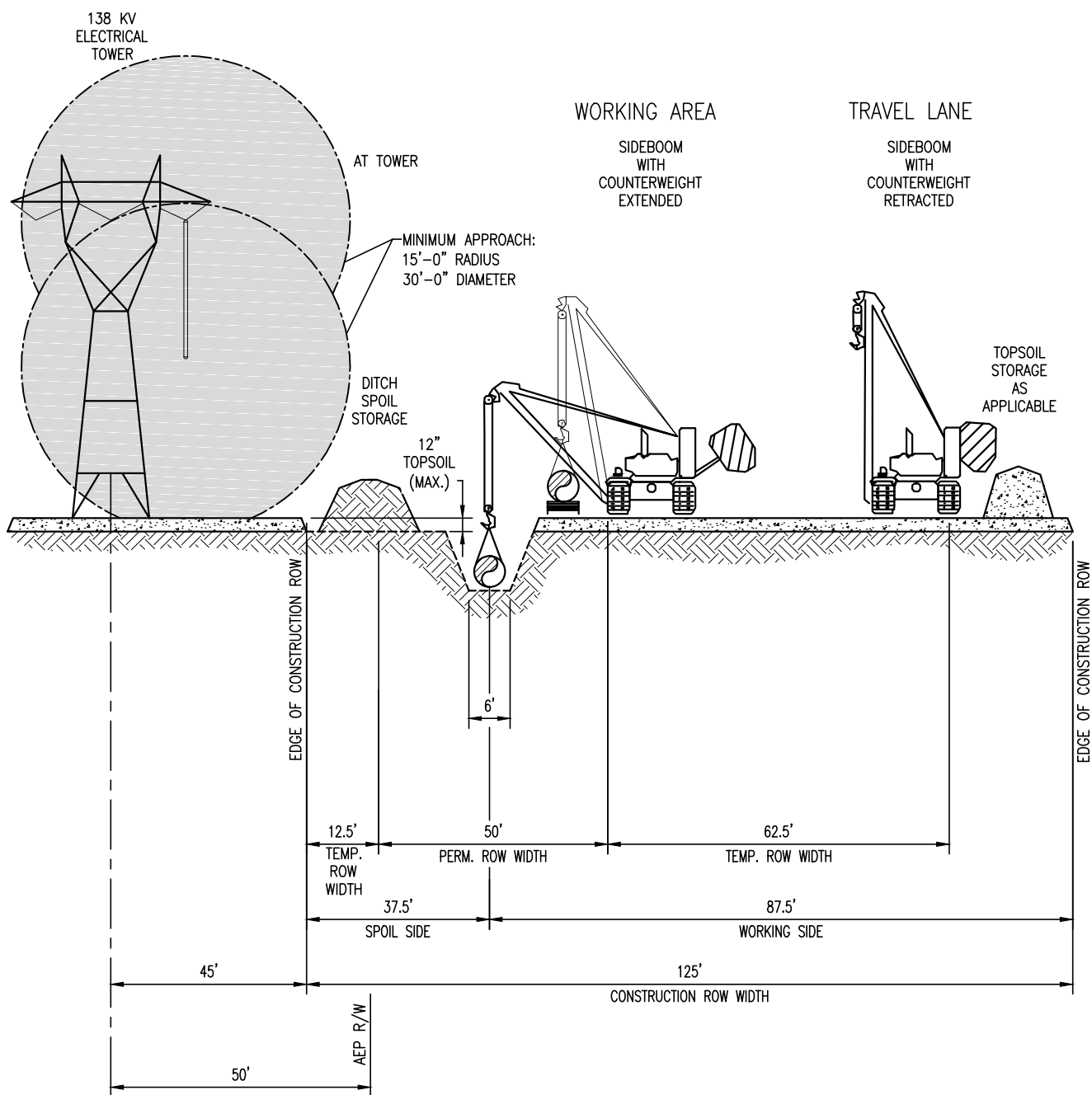
MAINLINE CONSTRUCTION
PARALLEL TO POWER LINES
RIGHT-OF-WAY

DRAWING NO.

MVP-26

REV.

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THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWING ASSUMES TYPE "B" SOIL

DRAWN	JDM	DATE	3/17/15
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SCALE	N.T.S.	SHEET	1 OF 1
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PROJECT ID:			
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DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

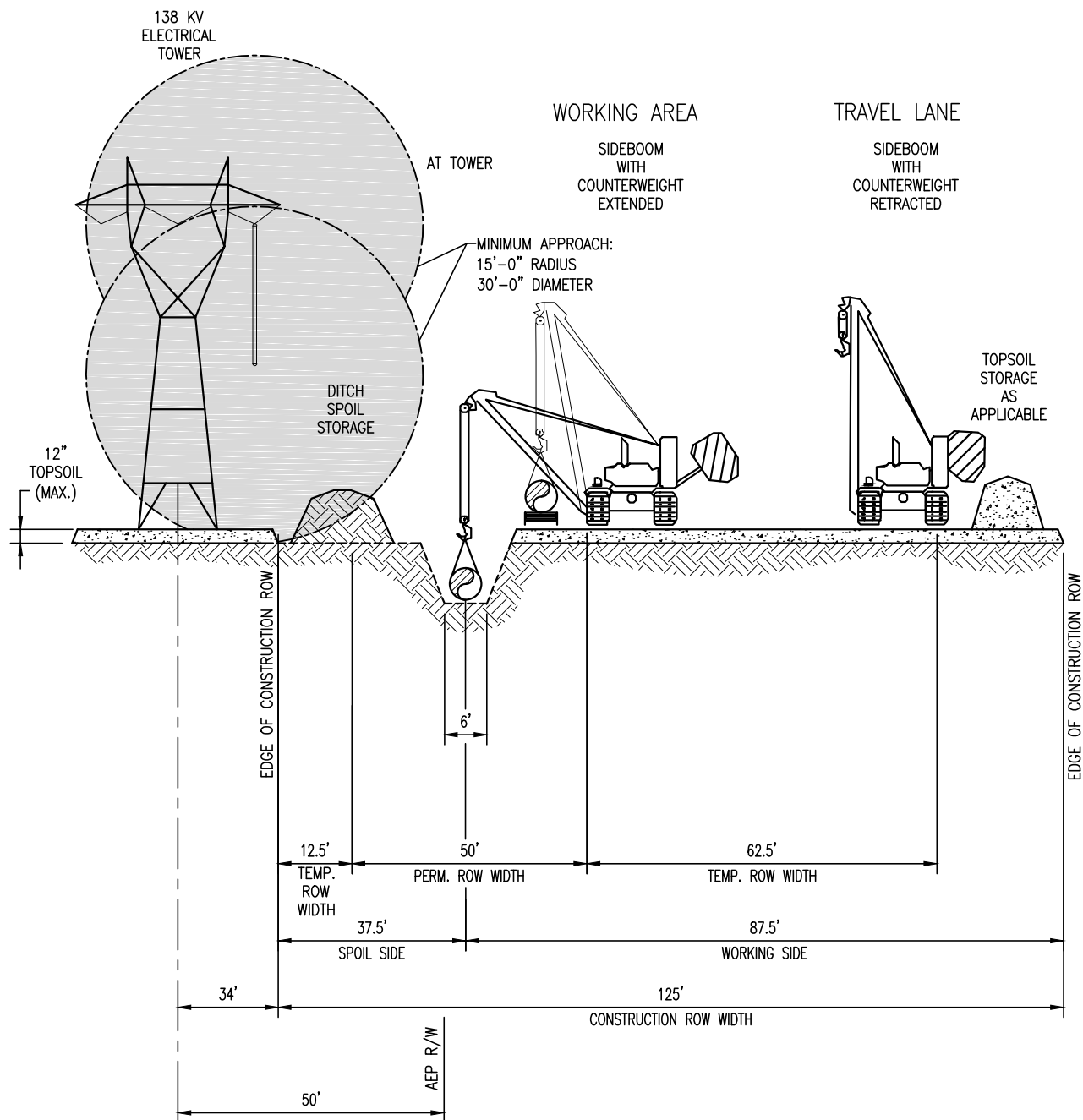
MAINLINE CONSTRUCTION
PARALLEL TO POWER LINES
RIGHT-OF-WAY

DRAWING NO.

MVP-27

REV.

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THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWING ASSUMES TYPE "B" SOIL

DRAWN	JDM	DATE	3/17/15
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DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

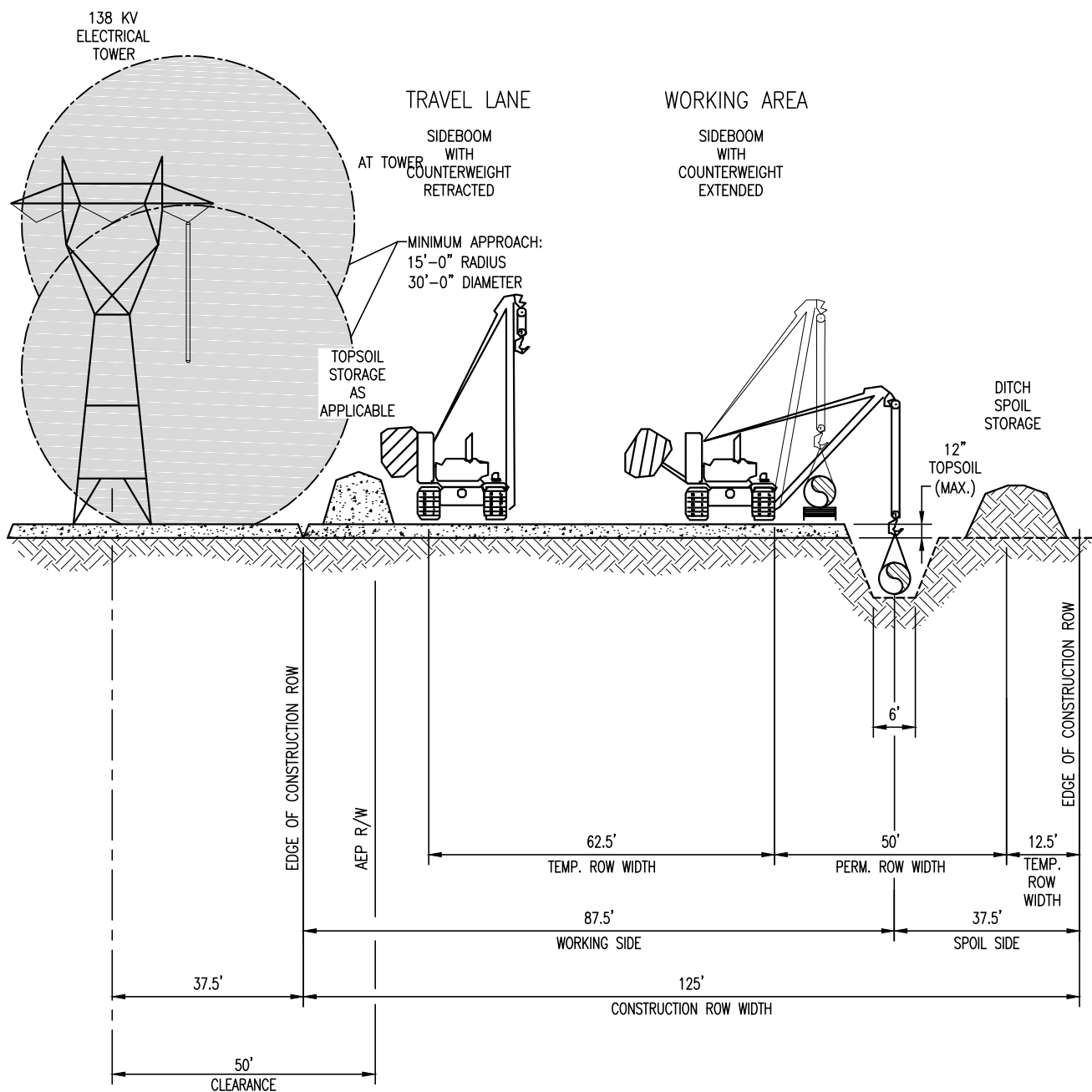
MAINLINE CONSTRUCTION
PARALLEL TO POWER LINES
RIGHT-OF-WAY

DRAWING NO.

MVP-28

REV.

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THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWING ASSUMES TYPE "B" SOIL

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DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

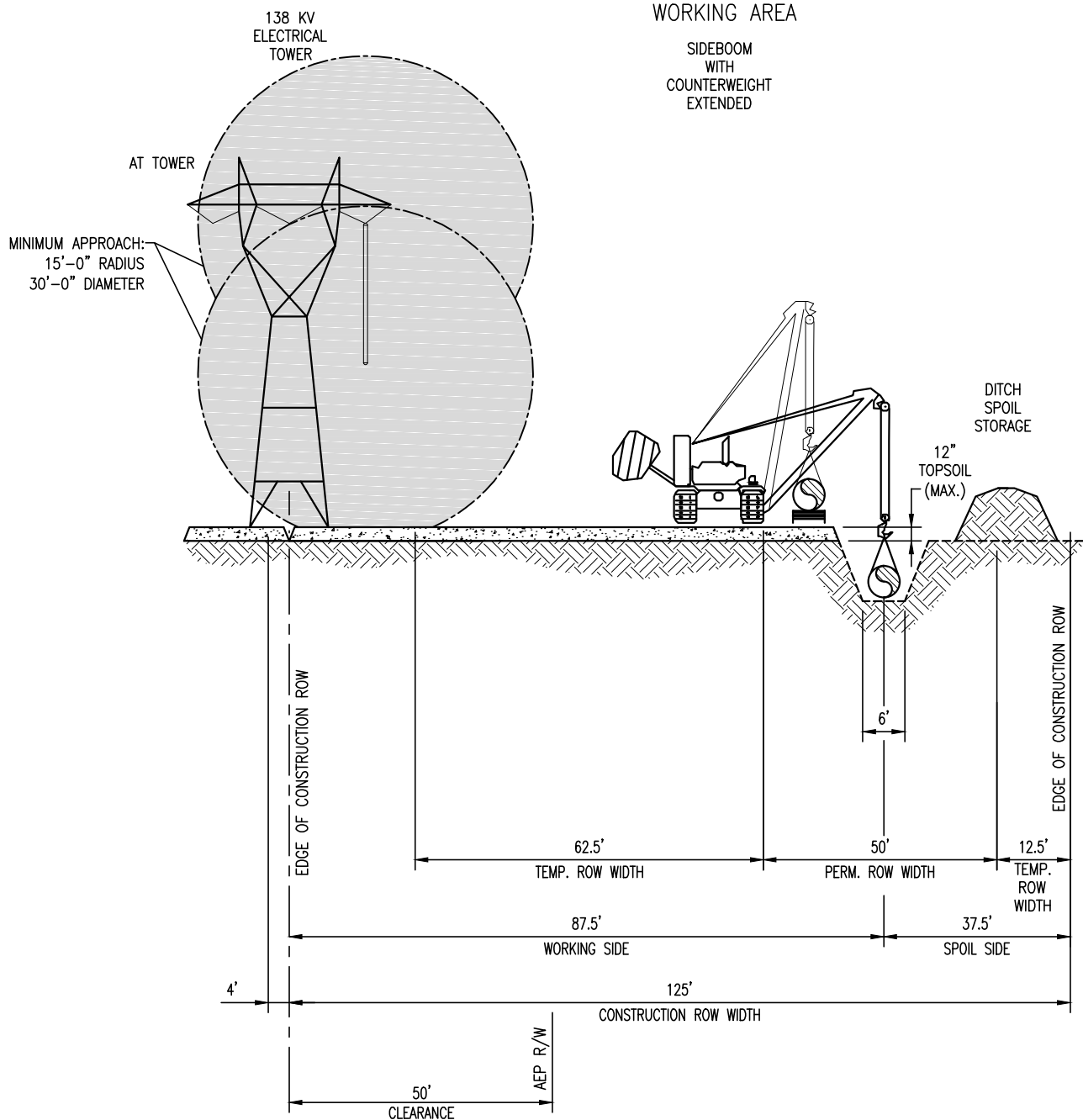
MAINLINE CONSTRUCTION
PARALLEL TO POWER LINES
RIGHT-OF-WAY

DRAWING NO.

MVP-29

REV.

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THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

DRAWING ASSUMES TYPE "B" SOIL

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DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

MAINLINE CONSTRUCTION
PARALLEL TO POWER LINES
RIGHT-OF-WAY

DRAWING NO.

MVP-30

REV.

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Mountain Valley Pipeline Project

NAD 1983 UTM 17N

1:12,000

0 250 500 Feet



Appendix 1-C
Contractor Yards for
the MVP Project

Wetzel County, West Virginia
Page 1 of 10

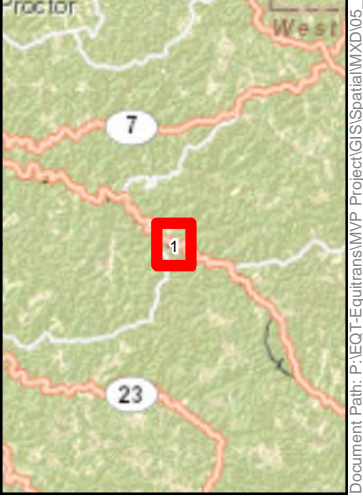
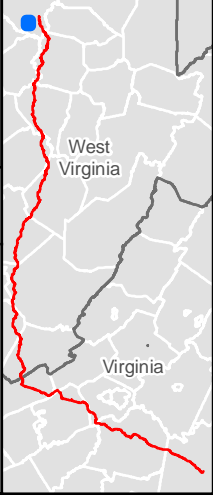
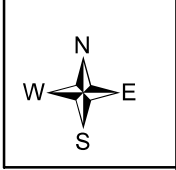
October 2015

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

Legend



Proposed Laydown Yard



Document Path: P:\EQ 1-Equitrans\MVP Project\GIS\Spatial\MXD\05_Resource_Reports\RR01\October 2015 Filing\Appendix1_C_ContractorYards_Aerial_Mapbook.mxd




Mountain Valley Pipeline Project

NAD 1983 UTM 17N

1:12,000

0 250 500 Feet




Appendix 1-C
Contractor Yards for
the MVP Project

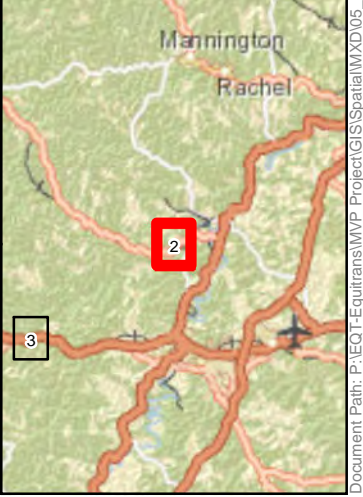
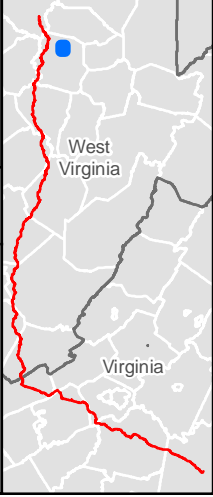
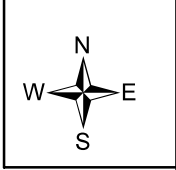
Harrison County, West Virginia
Page 2 of 10

October 2015

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

Legend

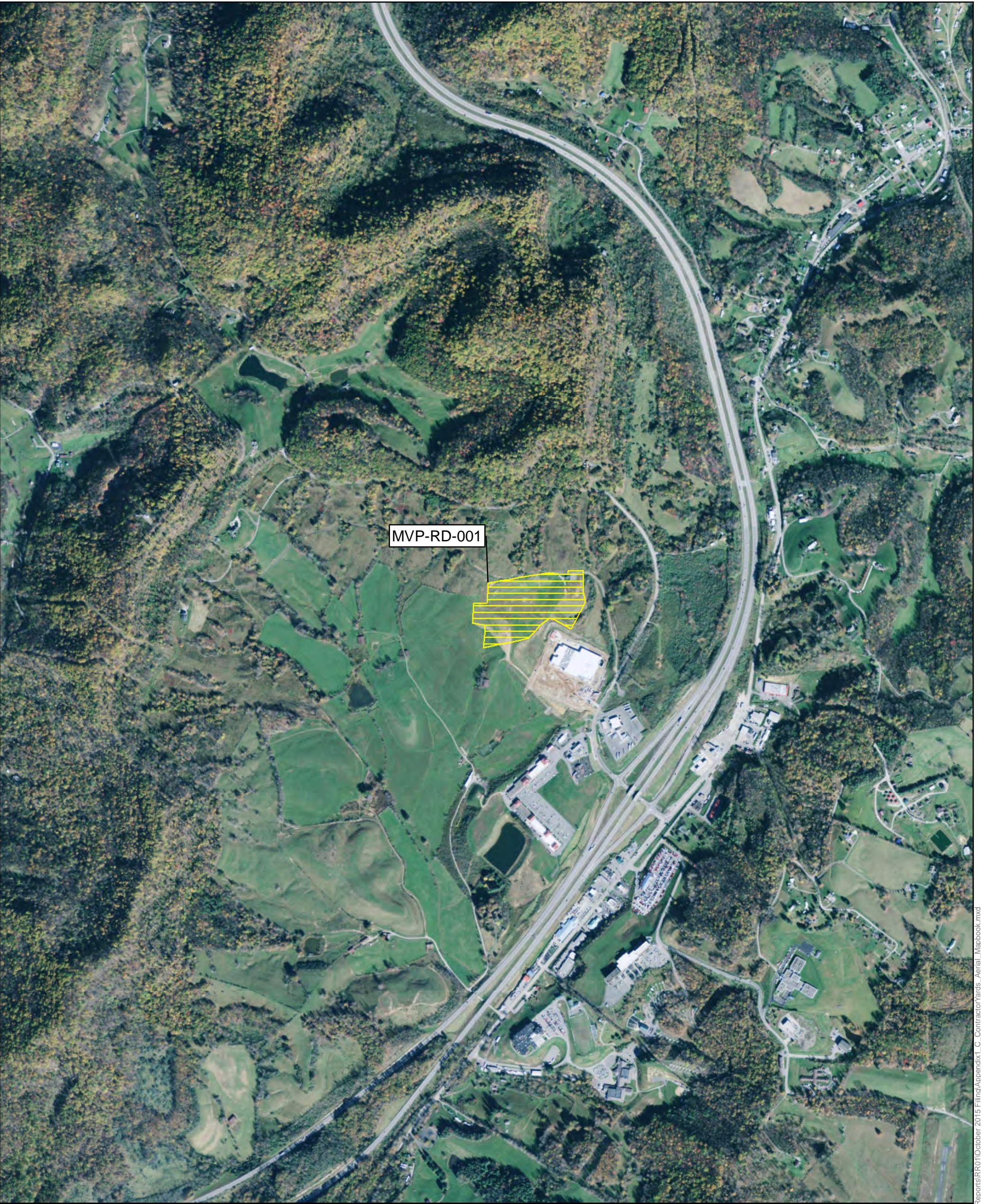
-  Proposed Laydown Yard



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Mountain Valley Pipeline Project		NAD 1983 UTM 17N	1:12,000	0 250 500 Feet
 Appendix 1-C Contractor Yards for the MVP Project Harrison County, West Virginia Page 3 of 10 October 2015	Legend Proposed Laydown Yard Milepost Tenth-Mile Proposed Route			
Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.				




Mountain Valley Pipeline Project

NAD 1983 UTM 17N

1:12,000

0 250 500 Feet




Appendix 1-C
Contractor Yards for
the MVP Project

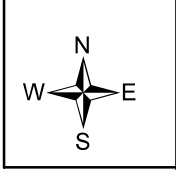
Braxton County, West Virginia
Page 4 of 10

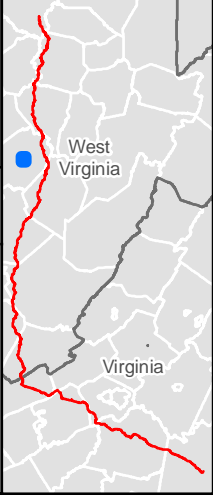
October 2015

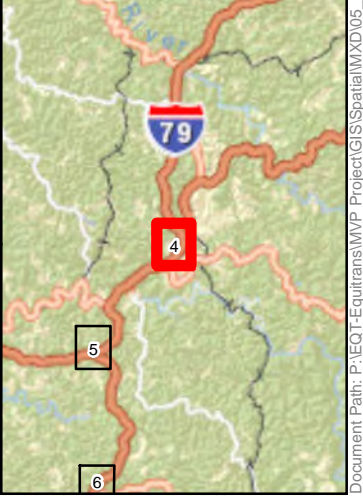
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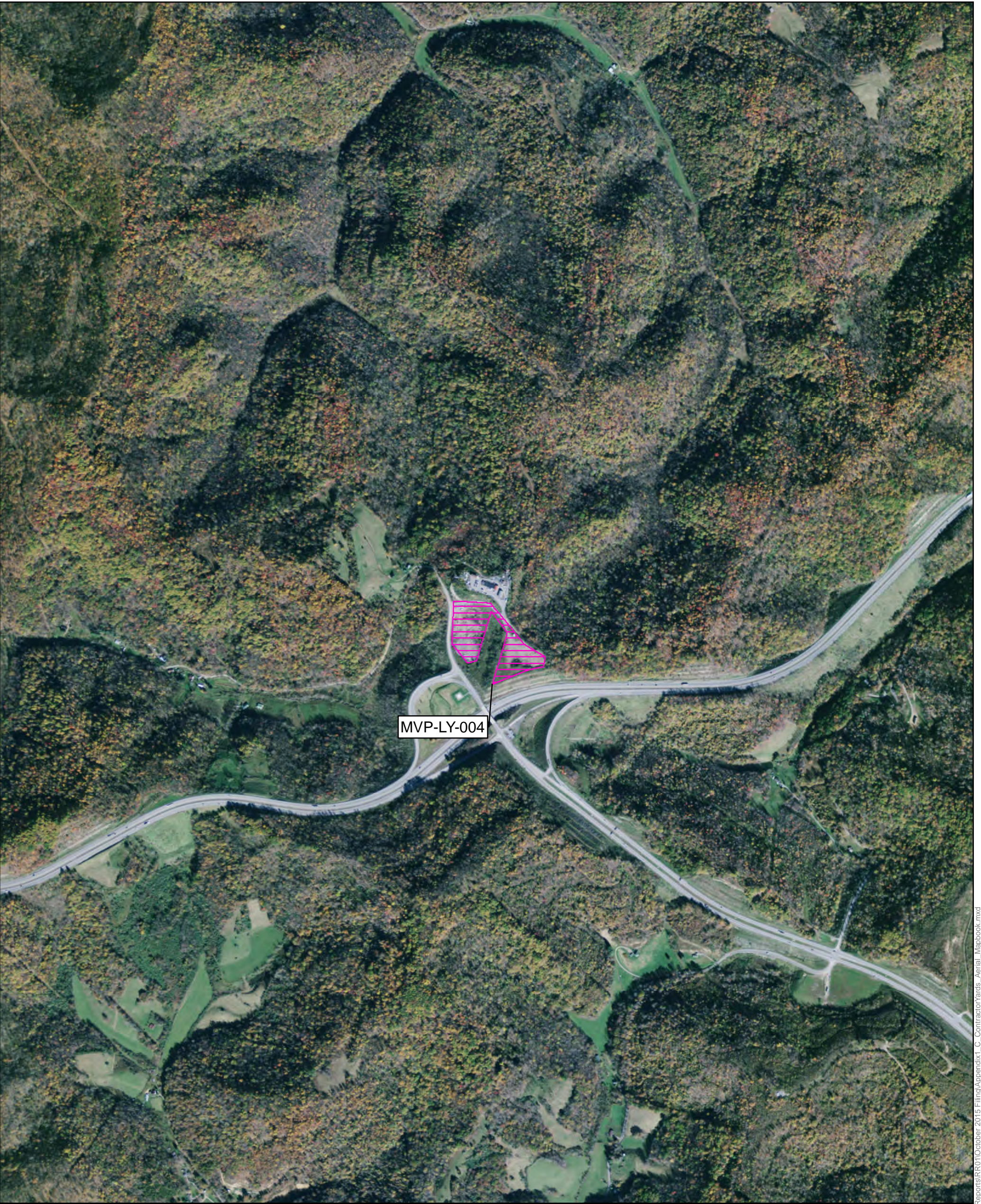
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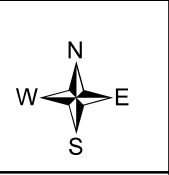
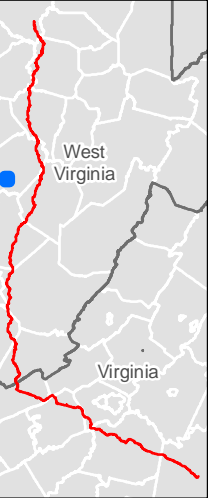
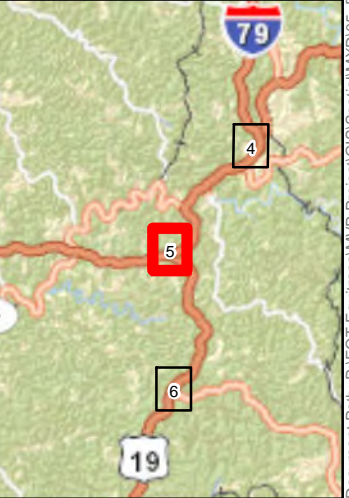
Proposed Rock Disposal









Mountain Valley Pipeline Project		NAD 1983 UTM 17N	1:12,000	0 250 500 Feet
 Appendix 1-C Contractor Yards for the MVP Project Braxton County, West Virginia Page 5 of 10 October 2015	Legend  Proposed Laydown Yard			
Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.				




Mountain Valley Pipeline Project

NAD 1983 UTM 17N

1:12,000

0 250 500 Feet




Appendix 1-C
Contractor Yards for
the MVP Project

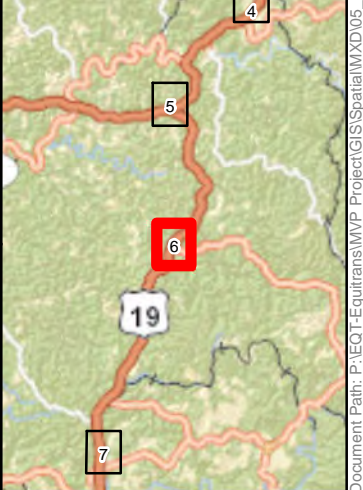
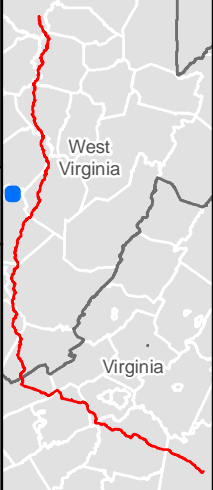
Nicholas County, West Virginia
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October 2015

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

Legend

-  Proposed Laydown Yard



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Mountain Valley Pipeline Project

NAD 1983 UTM 17N

1:12,000

0 250 500 Feet



Appendix 1-C
Contractor Yards for
the MVP Project

Nicholas County, West Virginia
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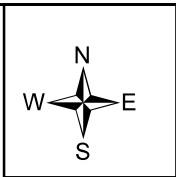
October 2015

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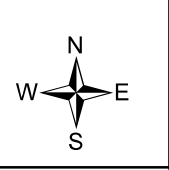




Proposed Laydown Yard

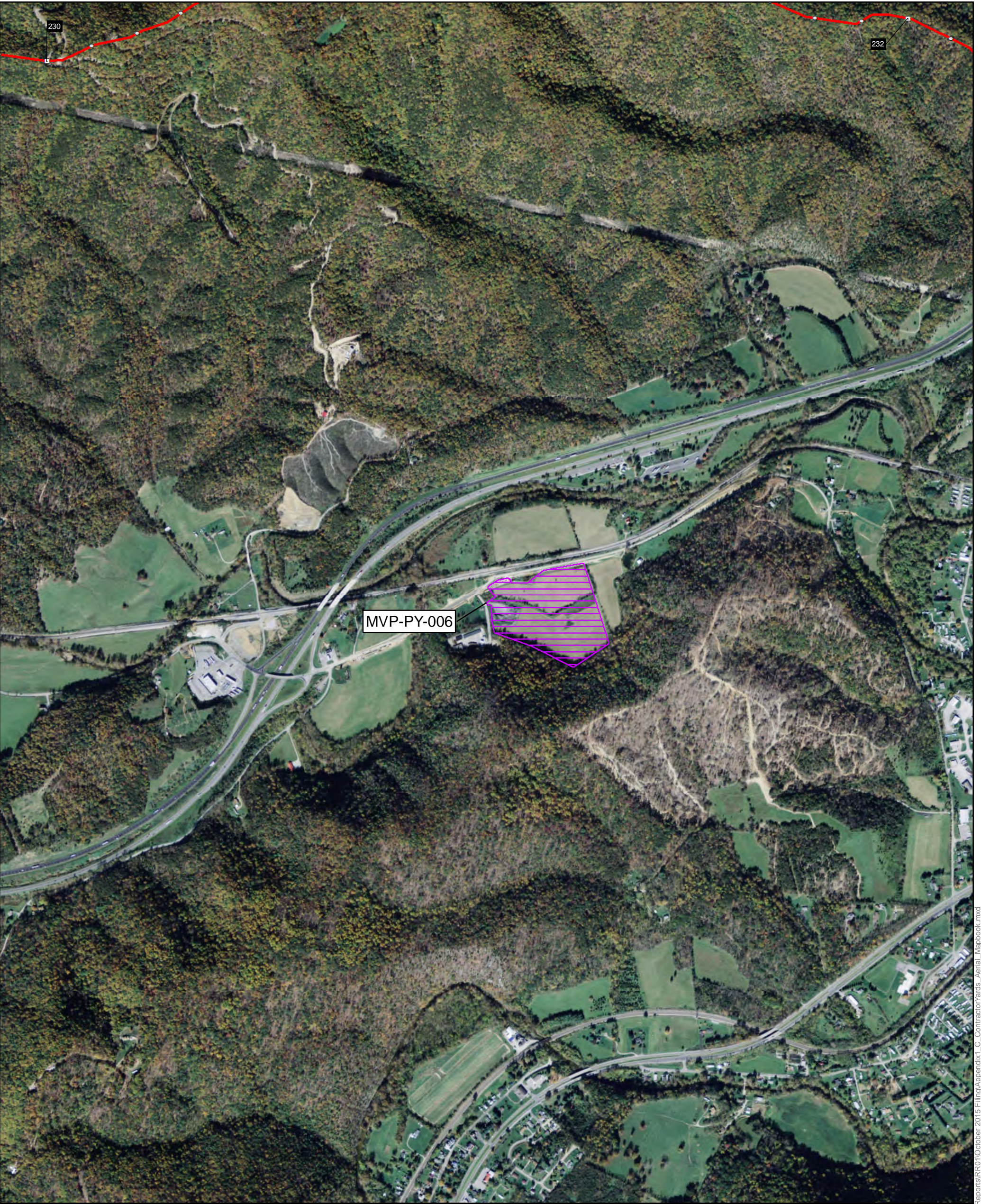


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Mountain Valley Pipeline Project		NAD 1983 UTM 17N	1:12,000	0 250 500 Feet
 Appendix 1-C Contractor Yards for the MVP Project Greenbrier County, West Virginia Page 8 of 10 October 2015	Legend  Proposed Pipe Yard			
Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.				

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Mountain Valley Pipeline Project

NAD 1983 UTM 17N

1:12,000

0 250 500 Feet







Appendix 1-C
Contractor Yards for
the MVP Project

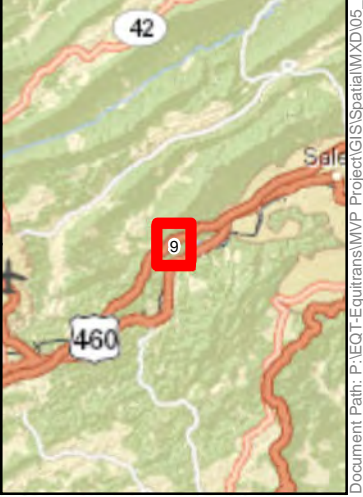
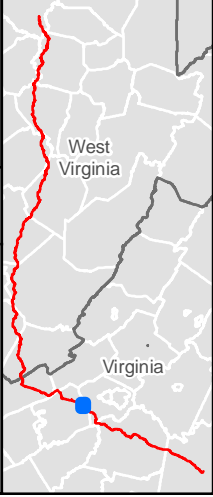
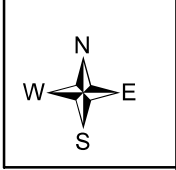
Montgomery County, Virginia
Page 9 of 10

October 2015

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

Legend

-  Proposed Pipe Yard
-  Milepost
-  Tenth-Mile
-  Proposed Route



Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

Appendix 1-C2 Plot Plans (Contains Critical Energy Infrastructure Information – Do Not Release)

Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

Appendix 1-D Additional Temporary Workspace Table

Appendix 1-D

ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
0.2	MVP-ATWS-410	Private	6,287	0.14	Forest	Wetzel	West Virginia	MVP-WE-001	Tractor trailer turn radius
0.2	MVP-ATWS-732	Private	24,894	0.57	Forest	Wetzel	West Virginia	MVP-WE-001	Tractor trailer turn radius
0.2	MVP-ATWS-733B	Private	2,107	0.05	Forest	Wetzel	West Virginia	MVP-WE-001 -002	Tractor trailer turn radius
0.2	MVP-ATWS-733A	Private	5,784	0.13	Forest	Wetzel	West Virginia	MVP-WE-001 -002	Tractor trailer turn radius
0.2	MVP-ATWS-733	Private	4,398	0.10	Forest	Wetzel	West Virginia	MVP-WE-001	Tractor trailer turn radius
0.2	MVP-ATWS-732A	Private	2,693	0.06	Forest	Wetzel	West Virginia	MVP-WE-001	Tractor trailer turn radius
0.2	MVP-ATWS-734A	Private	8,069	0.19	Forest	Wetzel	West Virginia	MVP-WE-002	Tractor trailer turn radius, parking
0.2	MVP-ATWS-734	Private	2,353	0.05	Forest	Wetzel	West Virginia	MVP-WE-002	Tractor trailer turn radius, parking
0.6	MVP-ATWS-002	Private	18,640	0.43	Forest	Wetzel	West Virginia	Mainline	Tractor trailer turn radius
0.7	MVP-ATWS-003A	Private	35,312	0.81	Field	Wetzel	West Virginia	Mainline	Storage of excess spoil at crossings, parking
0.7	MVP-ATWS-735A	Private	1,733	0.04	Field	Wetzel	West Virginia	MVP-WE-003	Storage of excess spoil at crossings, parking
0.7	MVP-ATWS-735	Private	3,801	0.09	Field	Wetzel	West Virginia	MVP-WE-003	Storage of excess spoil at crossings, parking
1.1	MVP-ATWS-743	Private	3,208	0.07	Forest	Wetzel	West Virginia	MVP-WE-005	Tractor trailer turn radius, parking
1.1	MVP-ATWS-412	Private	2,781	0.06	Forest	Wetzel	West Virginia	MVP-WE-005	Tractor trailer turn radius, parking
1.1	MVP-ATWS-736	Private	17,707	0.41	Forest	Wetzel	West Virginia	MVP-WE-005	Tractor trailer turn radius, parking
1.1	MVP-ATWS-742	Private	40,325	0.93	Field	Wetzel	West Virginia	MVP-WE-005	Material storage
1.1	MVP-ATWS-736A	Private	15,213	0.35	ROW	Wetzel	West Virginia	MVP-WE-005	Tractor trailer turn radius, parking
1.1	MVP-ATWS-743A	Private	1,639	0.04	Forest	Wetzel	West Virginia	MVP-WE-005	Tractor trailer turn radius, parking
1.3	MVP-ATWS-738	Private	4,394	0.10	Forest	Wetzel	West Virginia	MVP-WE-007	Tractor trailer turn radius, parking
1.4	MVP-ATWS-737	Private	7,742	0.18	Field	Wetzel	West Virginia	MVP-WE-007	Tractor trailer turn radius, parking
1.4	MVP-ATWS-737A	Private	6,406	0.15	Field	Wetzel	West Virginia	MVP-WE-007	Tractor trailer turn radius, parking
1.4	MVP-ATWS-739	Private	11,466	0.26	Forest	Wetzel	West Virginia	WE-AR-1.4	Storage of excess spoil at crossings, parking
1.4	MVP-ATWS-738B	Private	3,058	0.07	Forest	Wetzel	West Virginia	MVP-WE-007	Tractor trailer turn radius, parking
1.5	MVP-ATWS-740A	Private	8,941	0.21	Forest	Wetzel	West Virginia	MVP-WE-008.1	Tractor trailer turn radius, parking
1.5	MVP-ATWS-741	Private	3,694	0.08	Field	Wetzel	West Virginia	MVP-WE-008.1	Tractor trailer turn radius, parking
1.5	MVP-ATWS-740	Private	8,434	0.19	Forest	Wetzel	West Virginia	MVP-WE-008.1	Tractor trailer turn radius, parking
1.8	MVP-ATWS-004	Private	61,537	1.41	Forest	Wetzel	West Virginia	Mainline	Material storage
2.3	MVP-ATWS-005	Private	27,150	0.62	Field	Wetzel	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
2.7	MVP-ATWS-809	Private	21,227	0.49	Forest	Wetzel	West Virginia	MVP-WE-008	Tractor trailer turn radius, parking
2.7	MVP-ATWS-808	Private	14,160	0.33	Forest	Wetzel	West Virginia	MVP-WE-009	Tractor trailer turn radius, parking

Appendix 1-D

ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
2.7	MVP-ATWS-1356	Private	6,899	0.16	Forest	Wetzel	West Virginia	Mainline	Tractor trailer turn radius
4.5	MVP-ATWS-745	Private	16,790	0.39	Forest	Wetzel	West Virginia	MVP-WE-011	Tractor trailer turn radius, parking
4.5	MVP-ATWS-744	Private	24,012	0.55	Forest	Wetzel	West Virginia	MVP-WE-011	Tractor trailer turn radius, parking
4.5	MVP-ATWS-745A	Private	26,836	0.62	Forest	Wetzel	West Virginia	MVP-WE-011	Tractor trailer turn radius, parking
4.9	MVP-ATWS-747	Private	48,961	1.12	Forest	Wetzel	West Virginia	MVP-WE-012	Material storage, parking
4.9	MVP-ATWS-746	Private	13,205	0.30	Forest	Wetzel	West Virginia	MVP-WE-012	Tractor trailer turn radius, parking
5.0	MVP-ATWS-006	Private	33,209	0.76	Field	Wetzel	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
5.0	MVP-ATWS-006A	Private	15,351	0.35	Field	Wetzel	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
5.3	MVP-ATWS-008	Private	6,011	0.14	Forest	Wetzel	West Virginia	Mainline	Material storage, parking
5.3	MVP-ATWS-007	Private	13,039	0.30	Forest	Wetzel	West Virginia	Mainline	Material storage, parking
5.6	MVP-ATWS-009	Private	39,283	0.90	Field	Wetzel	West Virginia	MVP-WE-013	Material storage
6.6	MVP-ATWS-010	Private	27,092	0.62	Forest	Wetzel	West Virginia	Mainline	Material storage, parking
6.9	MVP-ATWS-786A	Private	11,427	0.26	Forest	Wetzel	West Virginia	MVP-WE-014	Tractor trailer turn radius
6.9	MVP-ATWS-786	Private	19,797	0.45	Forest	Wetzel	West Virginia	MVP-WE-014	Tractor trailer turn radius
6.9	MVP-ATWS-785	Private	50,714	1.16	Forest	Wetzel	West Virginia	MVP-WE-014	Material storage
6.9	MVP-ATWS-782	Private	12,204	0.28	Forest	Wetzel	West Virginia	MVP-WE-014	Tractor trailer turn radius
6.9	MVP-ATWS-783	Private	12,503	0.29	Forest	Wetzel	West Virginia	MVP-WE-014	Tractor trailer turn radius
6.9	MVP-ATWS-784	Private	4,707	0.11	Forest	Wetzel	West Virginia	MVP-WE-014	Tractor trailer turn radius
6.9	MVP-ATWS-011	Private	17,667	0.41	Forest	Wetzel	West Virginia	MVP-WE-014	Tractor trailer turn radius
6.9	MVP-ATWS-783A	Private	2,740	0.06	Forest	Wetzel	West Virginia	MVP-WE-014	Tractor trailer turn radius
6.9	MVP-ATWS-011A	Private	33,816	0.78	Forest	Wetzel	West Virginia	MVP-WE-014	Tractor trailer turn radius
7.4	MVP-ATWS-749	Private	22,255	0.51	Field	Wetzel	West Virginia	MVP-WE-015	Tractor trailer turn radius
7.4	MVP-ATWS-748	Private	41,014	0.94	Field	Wetzel	West Virginia	MVP-WE-015	Material storage
7.4	MVP-ATWS-750	Private	36,898	0.85	Field	Wetzel	West Virginia	MVP-WE-015	Material storage, parking
8.0	MVP-ATWS-012	Private	7,454	0.17	Field	Wetzel	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
8.0	MVP-ATWS-012A	Private	7,111	0.16	Field	Wetzel	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
8.7	MVP-ATWS-754	Private	7,066	0.16	Forest	Wetzel	West Virginia	MVP-WE-016	Material storage
8.9	MVP-ATWS-013	Private	30,959	0.71	Field	Wetzel	West Virginia	MVP-WE-016.1	Material storage

Appendix 1-D

ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
9.3	MVP-ATWS-690	Private	32,498	0.75	Forest	Harrison	West Virginia	Mainline	Material storage, parking
9.7	MVP-ATWS-014	Private	10,856	0.25	Forest	Harrison	West Virginia	MVP-HA-018	Tractor trailer turn radius
9.7	MVP-ATWS-404A	Private	7,628	0.18	Forest	Harrison	West Virginia	MVP-HA-018	Tractor trailer turn radius
9.7	MVP-ATWS-404	Private	12,136	0.28	Forest	Harrison	West Virginia	MVP-HA-018	Tractor trailer turn radius
11.2	MVP-ATWS-015	Private	13,016	0.30	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
11.3	MVP-ATWS-916	Private	14,006	0.32	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
11.3	MVP-ATWS-016	Private	7,632	0.18	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
11.9	MVP-ATWS-017	Private	4,000	0.09	Forest	Harrison	West Virginia	Mainline	Material storage, parking
12.1	MVP-ATWS-403	Private	12,359	0.28	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
12.2	MVP-ATWS-403A	Private	17,336	0.40	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
12.9	MVP-ATWS-018	Private	32,010	0.73	Forest	Harrison	West Virginia	Mainline	Material storage, parking
13.1	MVP-ATWS-405	Private	10,379	0.24	Forest	Harrison	West Virginia	Mainline	Material storage, parking
13.4	MVP-ATWS-751	Private	20,604	0.47	Forest	Harrison	West Virginia	MVP-HA-020	Tractor trailer turn radius
13.4	MVP-ATWS-788	Private	18,507	0.42	Field	Harrison	West Virginia	MVP-HA-020	Tractor trailer turn radius, parking
14.4	MVP-ATWS-019	Private	19,329	0.44	Forest	Harrison	West Virginia	Mainline	Material storage, parking
15.0	MVP-ATWS-020	Private	41,403	0.95	Forest	Harrison	West Virginia	Mainline	Material storage, parking
15.0	MVP-ATWS-020A	Private	10,704	0.25	Forest	Harrison	West Virginia	Mainline	Material storage, parking
15.4	MVP-ATWS-021	Private	4,689	0.11	Field	Harrison	West Virginia	MVP-HA-022	Storage of excess spoil at crossings, material storage, parking
15.4	MVP-ATWS-406	Private	36,610	0.84	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
15.4	MVP-ATWS-021A	Private	7,072	0.16	Field	Harrison	West Virginia	MVP-HA-022	Storage of excess spoil at crossings, material storage, parking
15.4	MVP-ATWS-458	Private	58,197	1.34	Field	Harrison	West Virginia	MVP-HA-022	Storage of excess spoil at crossings, material storage, parking
15.4	MVP-ATWS-021C	Private	6,379	0.15	Field	Harrison	West Virginia	MVP-HA-022	Storage of excess spoil at crossings, material storage, parking
15.5	MVP-ATWS-022	Private	7,991	0.18	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking

Appendix 1-D

ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
15.5	MVP-ATWS-022A	Private	94,787	2.18	Field	Harrison	West Virginia	MVP-HA-023	Storage of excess spoil at crossings, material storage, parking
15.5	MVP-ATWS-022B	Private	106,744	2.45	Field	Harrison	West Virginia	MVP-HA-023	Storage of excess spoil at crossings, material storage, parking
16.0	MVP-ATWS-753C	Private	21,322	0.49	Forest	Harrison	West Virginia	MVP-HA-024	Tractor trailer turn radius
16.0	MVP-ATWS-753B	Private	6,134	0.14	Forest	Harrison	West Virginia	MVP-HA-024	Material storage
16.0	MVP-ATWS-753A	Private	22,423	0.51	Forest	Harrison	West Virginia	MVP-HA-024	Material storage
16.0	MVP-ATWS-752A	Private	8,833	0.20	Forest	Harrison	West Virginia	MVP-HA-024	Tractor trailer turn radius
16.0	MVP-ATWS-757	Private	7,731	0.18	Forest	Harrison	West Virginia	MVP-HA-024	Tractor trailer turn radius
16.0	MVP-ATWS-756	Private	85,741	1.97	Field	Harrison	West Virginia	MVP-HA-024	Tractor trailer turn radius, material storage
16.0	MVP-ATWS-752	Private	17,930	0.41	Forest	Harrison	West Virginia	MVP-HA-024	Tractor trailer turn radius
16.0	MVP-ATWS-753	Private	7,667	0.18	Forest	Harrison	West Virginia	MVP-HA-024	Material storage
16.4	MVP-ATWS-755	Private	16,946	0.39	Forest	Harrison	West Virginia	MVP-HA-024	Material storage
17.3	MVP-ATWS-023	Private	6,449	0.15	Forest	Harrison	West Virginia	Mainline	Material storage, parking
17.8	MVP-ATWS-025	Private	8,050	0.18	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
17.8	MVP-ATWS-024	Private	23,347	0.54	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
17.8	MVP-ATWS-025A	Private	5,592	0.13	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
17.9	MVP-ATWS-025B	Private	4,696	0.11	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
17.9	MVP-ATWS-025C	Private	11,127	0.26	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
18.6	MVP-ATWS-758	Private	38,147	0.88	Forest	Harrison	West Virginia	MVP-HA-025	Tractor trailer turn radius, material storage
18.6	MVP-ATWS-026A	Private	1,999	0.05	Forest	Harrison	West Virginia	MVP-HA-025	Tractor trailer turn radius
18.6	MVP-ATWS-026	Private	7,212	0.17	Forest	Harrison	West Virginia	MVP-HA-025	Tractor trailer turn radius
18.8	MVP-ATWS-028	Private	10,625	0.24	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
18.9	MVP-ATWS-029	Private	5,832	0.13	Forest	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings
19.0	MVP-ATWS-759	Private	19,689	0.45	Field	Harrison	West Virginia	MVP-HA-026	Material storage, parking
19.0	MVP-ATWS-760	Private	86,884	1.99	Field	Harrison	West Virginia	MVP-HA-026	Material storage
19.0	MVP-ATWS-407	Private	5,048	0.12	Forest	Harrison	West Virginia	MVP-HA-026	Tractor trailer turn radius
19.0	MVP-ATWS-759A	Private	9,307	0.21	Field	Harrison	West Virginia	MVP-HA-026	Material storage, parking

Appendix 1-D

ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
19.0	MVP-ATWS-407A	Private	3,696	0.08	Forest	Harrison	West Virginia	MVP-HA-026	Tractor trailer turn radius
20.7	MVP-ATWS-030	Private	10,445	0.24	Field	Harrison	West Virginia	MVP-HA-027	Material storage
20.7	MVP-ATWS-030A	Private	22,109	0.51	Field	Harrison	West Virginia	Mainline	Material storage
20.8	MVP-ATWS-032	Private	17,419	0.40	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
20.8	MVP-ATWS-031	Private	30,100	0.69	Field	Harrison	West Virginia	MVP-HA-027	Storage of excess spoil at crossings, material storage, parking
20.8	MVP-ATWS-032A	Private	21,491	0.49	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
20.9	MVP-ATWS-033	Private	33,163	0.76	Forest	Harrison	West Virginia	Mainline	Material storage
20.9	MVP-ATWS-033A	Private	30,371	0.70	Forest	Harrison	West Virginia	Mainline	Material storage
21.6	MVP-ATWS-034	Private	30,395	0.70	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
21.6	MVP-ATWS-034A	Private	37,387	0.86	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
23.0	MVP-ATWS-035	Private	18,000	0.41	Field	Harrison	West Virginia	Mainline	Material storage
23.1	MVP-ATWS-036	Private	4,376	0.10	Forest	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
23.1	MVP-ATWS-037	Private	7,063	0.16	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
23.1	MVP-ATWS-037A	Private	3,804	0.09	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
23.1	MVP-ATWS-036A	Private	4,966	0.11	Forest	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
25.3	MVP-ATWS-041	Private	29,373	0.67	Forest	Harrison	West Virginia	Mainline	Material storage
25.3	MVP-ATWS-041A	Private	36,666	0.84	Forest	Harrison	West Virginia	Mainline	Material storage
23.7	MVP-ATWS-763	Private	734	0.02	Forest	Harrison	West Virginia	MVP-HA-031	Tractor trailer turn radius
23.7	MVP-ATWS-762	Private	1,087	0.02	Forest	Harrison	West Virginia	Mainline	Material storage, parking
23.7	MVP-ATWS-1355	Private	26,993	0.62	Forest	Harrison	West Virginia	MVP-HA-031.01	Tractor trailer turn radius
23.9	MVP-ATWS-810	Private	27,098	0.62	Forest	Harrison	West Virginia	Mainline	Material storage, parking
24.5	MVP-ATWS-038	Private	8,448	0.19	Forest	Harrison	West Virginia	Mainline	Material storage, parking
24.5	MVP-ATWS-038A	Private	3,839	0.09	Forest	Harrison	West Virginia	Mainline	Material storage, parking
24.6	MVP-ATWS-039	Private	3,118	0.07	Forest	Harrison	West Virginia	Mainline	Material storage, parking
24.6	MVP-ATWS-039A	Private	5,518	0.13	Forest	Harrison	West Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
25.0	MVP-ATWS-789A	Private	6,602	0.15	Forest	Harrison	West Virginia	MVP-HA-032	Tractor trailer turn radius
25.0	MVP-ATWS-040	Private	32,339	0.74	Forest	Harrison	West Virginia	MVP-HA-032	Tractor trailer turn radius
25.0	MVP-ATWS-040A	Private	20,211	0.46	Forest	Harrison	West Virginia	MVP-HA-032	Tractor trailer turn radius
25.0	MVP-ATWS-789	Private	4,071	0.09	Forest	Harrison	West Virginia	MVP-HA-032	Tractor trailer turn radius
25.8	MVP-ATWS-409	Private	15,023	0.34	Forest	Harrison	West Virginia	Mainline	Material storage, parking
25.9	MVP-ATWS-042	Private	27,273	0.63	PARKING	Harrison	West Virginia	Mainline	Material storage, parking
26.9	MVP-ATWS-764	Private	3,457	0.08	Forest	Harrison	West Virginia	MVP-HA-033	Tractor trailer turn radius
26.9	MVP-ATWS-765	Private	77,593	1.78	Field	Harrison	West Virginia	MVP-HA-033	Tractor trailer turn radius, material storage
26.9	MVP-ATWS-043	Private	13,879	0.32	Forest	Harrison	West Virginia	MVP-HA-033	Tractor trailer turn radius
26.9	MVP-ATWS-764A	Private	9,493	0.22	Forest	Harrison	West Virginia	MVP-HA-033	Tractor trailer turn radius
26.9	MVP-ATWS-043A	Private	15,548	0.36	Forest	Harrison	West Virginia	MVP-HA-033	Tractor trailer turn radius
28.4	MVP-ATWS-413	Private	18,137	0.42	Forest	Harrison	West Virginia	MVP-HA-034	Tractor trailer turn radius
28.4	MVP-ATWS-413A	Private	20,587	0.47	Forest	Harrison	West Virginia	MVP-HA-034	Tractor trailer turn radius
29.2	MVP-ATWS-414A	Private	36,198	0.83	Forest	Harrison	West Virginia	MVP-HA-035	Material storage, parking
29.2	MVP-ATWS-414	Private	13,958	0.32	Forest	Harrison	West Virginia	MVP-HA-035	Tractor trailer turn radius
29.5	MVP-ATWS-767	Private	85,596	1.97	Forest	Harrison	West Virginia	MVP-HA-036	Material storage
29.5	MVP-ATWS-766	Private	4,566	0.10	Forest	Harrison	West Virginia	MVP-HA-036	Tractor trailer turn radius
29.5	MVP-ATWS-415	Private	6,743	0.15	Forest	Harrison	West Virginia	MVP-HA-036	Tractor trailer turn radius
29.5	MVP-ATWS-415A	Private	9,113	0.21	Forest	Harrison	West Virginia	MVP-HA-036	Tractor trailer turn radius
30.1	MVP-ATWS-827	Private	7,043	0.16	Forest	Harrison	West Virginia	Mainline	Material storage, parking
30.2	MVP-ATWS-824	Private	7,047	0.16	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
30.2	MVP-ATWS-826	Private	7,048	0.16	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
30.5	MVP-ATWS-825	Private	7,782	0.18	Forest	Harrison	West Virginia	Mainline	Material storage, parking
30.6	MVP-ATWS-417	Private	16,851	0.39	Forest	Harrison	West Virginia	Mainline	Material storage, parking
30.9	MVP-ATWS-418	Private	19,090	0.44	Forest	Harrison	West Virginia	MVP-HA-040	Tractor trailer turn radius
31.3	MVP-ATWS-046	Private	11,345	0.26	Forest	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
31.3	MVP-ATWS-046A	Private	15,777	0.36	Forest	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
31.4	MVP-ATWS-047	Private	2,730	0.06	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
31.9	MVP-ATWS-770	Private	33,957	0.78	Field	Doddridge	West Virginia	MVP-DO-041	Material storage
31.9	MVP-ATWS-769	Private	20,402	0.47	Field	Doddridge	West Virginia	MVP-DO-041	Tractor trailer turn radius
31.9	MVP-ATWS-048	Private	10,694	0.25	Field	Doddridge	West Virginia	MVP-DO-041	Tractor trailer turn radius
31.9	MVP-ATWS-769A	Private	2,802	0.06	Field	Doddridge	West Virginia	MVP-DO-041	Tractor trailer turn radius
31.9	MVP-ATWS-048A	Private	15,524	0.36	Field	Doddridge	West Virginia	MVP-DO-041	Tractor trailer turn radius
32.1	MVP-ATWS-049	Private	17,063	0.39	Field	Doddridge	West Virginia	Mainline	Material storage, parking
32.8	MVP-ATWS-1338	Private	8,217	0.19	Field	Harrison	West Virginia	MVP-HA-041.01	Material storage
32.8	MVP-ATWS-051	Private	44,693	1.03	Field	Harrison	West Virginia	Mainline	Material storage, parking
33.2	MVP-ATWS-052	Private	22,913	0.53	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
33.5	MVP-ATWS-688	Private	18,512	0.42	Forest	Harrison	West Virginia	Mainline	Material storage, parking
33.7	MVP-ATWS-689	Private	25,953	0.60	Forest	Doddridge	West Virginia	Mainline	Material storage, parking
34.1	MVP-ATWS-771A	Private	14,330	0.33	Field	Doddridge	West Virginia	MVP-DO-044	Tractor trailer turn radius, material storage, parking
34.1	MVP-ATWS-771	Private	19,555	0.45	Forest	Doddridge	West Virginia	MVP-DO-044	Tractor trailer turn radius, material storage, parking
34.1	MVP-ATWS-772	Private	19,858	0.46	Forest	Doddridge	West Virginia	MVP-DO-044	Tractor trailer turn radius, material storage
34.1	MVP-ATWS-773	Private	23,944	0.55	Field	Doddridge	West Virginia	MVP-DO-044	Material storage
34.4	MVP-ATWS-774	Private	32,287	0.74	Forest	Doddridge	West Virginia	MVP-DO-046	Material storage, parking
34.7	MVP-ATWS-777	Private	14,436	0.33	Field	Doddridge	West Virginia	MVP-DO-047	Material storage
34.7	MVP-ATWS-776	Private	29,478	0.68	Field	Doddridge	West Virginia	MVP-DO-047	Material storage
34.9	MVP-ATWS-053	Private	22,913	0.53	Field	Doddridge	West Virginia	MVP-DO-048	Storage of excess spoil at crossings, material storage, parking
35.9	MVP-ATWS-419A	Private	6,077	0.14	Forest	Doddridge	West Virginia	MVP-DO-049	Tractor trailer turn radius
35.9	MVP-ATWS-778	Private	18,790	0.43	Forest	Doddridge	West Virginia	MVP-DO-049	Tractor trailer turn radius
35.9	MVP-ATWS-779	Private	37,391	0.86	Forest	Doddridge	West Virginia	MVP-DO-049	Material storage
35.9	MVP-ATWS-778A	Private	12,205	0.28	Forest	Doddridge	West Virginia	MVP-DO-049	Tractor trailer turn radius
36.0	MVP-ATWS-419	Private	24,161	0.55	Forest	Doddridge	West Virginia	MVP-DO-049	Tractor trailer turn radius
36.1	MVP-ATWS-420	Private	25,699	0.59	Field	Harrison	West Virginia	Mainline	Material storage, parking
36.7	MVP-ATWS-685	Private	16,594	0.38	Forest	Harrison	West Virginia	Mainline	Material storage, parking
37.3	MVP-ATWS-1064	Private	1,263	0.03	Forest	Harrison	West Virginia	MVP-HA-050.01	Tractor trailer turn radius
37.3	MVP-ATWS-1065	Private	1,087	0.02	Forest	Harrison	West Virginia	MVP-HA-050.01	Tractor trailer turn radius
37.3	MVP-ATWS-1063	Private	6,314	0.14	Forest	Harrison	West Virginia	MVP-HA-050 - 050.01	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
37.3	MVP-ATWS-781	Private	2,289	0.05	Field	Harrison	West Virginia	MVP-HA-050	Tractor trailer turn radius, material storage, parking
37.3	MVP-ATWS-781A	Private	3,982	0.09	Field	Harrison	West Virginia	MVP-HA-050	Tractor trailer turn radius, material storage, parking
37.9	MVP-ATWS-818	Private	18,995	0.44	Forest	Harrison	West Virginia	Mainline	Material storage, parking
38.1	MVP-ATWS-056	Private	16,606	0.38	Forest	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
38.1	MVP-ATWS-056A	Private	12,242	0.28	Field	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
38.1	MVP-ATWS-057	Private	3,850	0.09	Forest	Harrison	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
39.5	MVP-ATWS-830	Private	7,644	0.18	Forest	Lewis	West Virginia	MVP-LE-052	Tractor trailer turn radius
39.5	MVP-ATWS-829	Private	6,551	0.15	Forest	Lewis	West Virginia	MVP-LE-052	Tractor trailer turn radius
40.0	MVP-ATWS-421	Private	7,739	0.18	Forest	Lewis	West Virginia	MVP-LE-054	Tractor trailer turn radius
40.0	MVP-ATWS-421A	Private	25,718	0.59	Forest	Lewis	West Virginia	MVP-LE-054	Tractor trailer turn radius
40.0	MVP-ATWS-831	Private	12,320	0.28	Forest	Lewis	West Virginia	MVP-LE-054	Material storage
40.0	MVP-ATWS-832	Private	22,623	0.52	Forest	Lewis	West Virginia	MVP-LE-054	Material storage
40.5	MVP-ATWS-058	Private	13,000	0.30	Forest	Lewis	West Virginia	Mainline	Material storage, parking
41.3	MVP-ATWS-059	Private	39,348	0.90	Field	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
41.3	MVP-ATWS-059A	Private	17,170	0.39	Forest	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
42.0	MVP-ATWS-060	Private	12,147	0.28	Field	Lewis	West Virginia	MVP-LE-055	Tractor trailer turn radius
42.0	MVP-ATWS-422	Private	4,735	0.11	Forest	Lewis	West Virginia	MVP-LE-055	Tractor trailer turn radius
42.0	MVP-ATWS-060A	Private	3,897	0.09	Field	Lewis	West Virginia	MVP-LE-055	Tractor trailer turn radius
42.0	MVP-ATWS-422A	Private	3,291	0.08	Forest	Lewis	West Virginia	MVP-LE-055	Tractor trailer turn radius
42.0	MVP-ATWS-837	Private	22,489	0.52	Field	Lewis	West Virginia	MVP-LE-055	Material storage
42.0	MVP-ATWS-835	Private	10,970	0.25	Field	Lewis	West Virginia	MVP-LE-055	Material storage
42.0	MVP-ATWS-836	Private	8,622	0.20	Field	Lewis	West Virginia	MVP-LE-055	Material storage
42.6	MVP-ATWS-686	Private	3,494	0.08	Forest	Lewis	West Virginia	MVP-LE-056	Tractor trailer turn radius
42.6	MVP-ATWS-686A	Private	2,604	0.06	Forest	Lewis	West Virginia	MVP-LE-056	Tractor trailer turn radius
42.7	MVP-ATWS-062	Private	2,540	0.06	Forest	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
42.7	MVP-ATWS-061	Private	11,476	0.26	Forest	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
42.7	MVP-ATWS-062A	Private	8,946	0.21	Forest	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
42.7	MVP-ATWS-061A	Private	2,865	0.07	Forest	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
43.1	MVP-ATWS-845	Private	4,447	0.10	Forest	Lewis	West Virginia	MVP-LE-057	Tractor trailer turn radius
43.1	MVP-ATWS-844	Private	2,899	0.07	Forest	Lewis	West Virginia	MVP-LE-057	Tractor trailer turn radius
43.3	MVP-ATWS-838	Private	8,243	0.19	Forest	Lewis	West Virginia	MVP-LE-057	Tractor trailer turn radius
43.3	MVP-ATWS-839	Private	8,752	0.20	Forest	Lewis	West Virginia	MVP-LE-057	Tractor trailer turn radius
43.3	MVP-ATWS-840	Private	7,042	0.16	Forest	Lewis	West Virginia	MVP-LE-057.1	Tractor trailer turn radius
43.3	MVP-ATWS-841	Private	8,398	0.19	Forest	Lewis	West Virginia	MVP-LE-057	Tractor trailer turn radius
43.4	MVP-ATWS-842	Private	8,134	0.19	Forest	Lewis	West Virginia	MVP-LE-057.2	Tractor trailer turn radius
43.4	MVP-ATWS-843	Private	5,140	0.12	Forest	Lewis	West Virginia	MVP-LE-057.2	Tractor trailer turn radius
44.1	MVP-ATWS-460	Private	5,567	0.13	Field	Lewis	West Virginia	Mainline	Material storage, parking
44.2	MVP-ATWS-691	Private	8,338	0.19	Field	Lewis	West Virginia	Mainline	Material storage, parking
44.6	MVP-ATWS-063	Private	20,964	0.48	Field	Lewis	West Virginia	Mainline	Material storage, parking
44.6	MVP-ATWS-063A	Private	107,991	2.48	Field	Lewis	West Virginia	MVP-LE-060	Material storage
44.6	MVP-ATWS-851	Private	8,223	0.19	Field	Lewis	West Virginia	MVP-LE-060	Tractor trailer turn radius
44.6	MVP-ATWS-852	Private	4,597	0.11	Field	Lewis	West Virginia	MVP-LE-060	Tractor trailer turn radius
44.6	MVP-ATWS-853	Private	1,296	0.03	Field	Lewis	West Virginia	MVP-LE-060	Tractor trailer turn radius
44.8	MVP-ATWS-064	Private	65,992	1.51	Field	Lewis	West Virginia	Mainline	Material storage, parking
44.9	MVP-ATWS-065	Private	3,929	0.09	Field	Lewis	West Virginia	MVP-LE-061	Tractor trailer turn radius
44.9	MVP-ATWS-065A	Private	1,325	0.03	Field	Lewis	West Virginia	MVP-LE-061	Tractor trailer turn radius
45.3	MVP-ATWS-423A	Private	10,498	0.24	Field	Lewis	West Virginia	MVP-LE-062	Tractor trailer turn radius
45.3	MVP-ATWS-461	Private	27,294	0.63	Field	Lewis	West Virginia	MVP-LE-062	Material storage
45.3	MVP-ATWS-423	Private	2,852	0.07	Field	Lewis	West Virginia	MVP-LE-062	Tractor trailer turn radius
45.5	MVP-ATWS-066B	Private	3,094	0.07	Field	Lewis	West Virginia	MVP-LE-063	Tractor trailer turn radius
45.5	MVP-ATWS-066A	Private	6,634	0.15	Field	Lewis	West Virginia	MVP-LE-063	Tractor trailer turn radius
45.5	MVP-ATWS-068	Private	2,942	0.07	Field	Lewis	West Virginia	MVP-LE-063	Material storage
45.5	MVP-ATWS-066	Private	6,014	0.14	Field	Lewis	West Virginia	Mainline	Material storage, parking
45.6	MVP-ATWS-067	Private	14,509	0.33	Field	Lewis	West Virginia	Mainline	Material storage, parking
45.6	MVP-ATWS-067A	Private	76,106	1.75	Field	Lewis	West Virginia	Mainline	Material storage, parking
45.8	MVP-ATWS-069	Private	80,495	1.85	Field	Lewis	West Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
45.9	MVP-ATWS-1341	Private	15,674	0.36	Field	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
45.9	MVP-ATWS-070A	Private	13,316	0.31	Field	Lewis	West Virginia	MVP-LE-064	Storage of excess spoil at crossings, material storage, parking
46.0	MVP-ATWS-071A	Private	4,903	0.11	Field	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
46.0	MVP-ATWS-071	Private	980	0.02	Field	Lewis	West Virginia	MVP-LE-065	Storage of excess spoil at crossings, material storage, parking
46.1	MVP-ATWS-072A	Private	4,814	0.11	Field	Lewis	West Virginia	Mainline	Material storage, parking
46.1	MVP-ATWS-072	Private	47,750	1.10	Field	Lewis	West Virginia	Mainline	Material storage, parking
46.1	MVP-ATWS-072C	Private	6,172	0.14	Field	Lewis	West Virginia	MVP-LE-065	Material storage
46.1	MVP-ATWS-072B	Private	35,121	0.81	Field	Lewis	West Virginia	MVP-LE-065	Material storage
46.3	MVP-ATWS-073	Private	4,854	0.11	Field	Lewis	West Virginia	MVP-LE-066	Material storage
46.3	MVP-ATWS-823	Private	6,929	0.16	Field	Lewis	West Virginia	MVP-LE-066	Material storage
47.5	MVP-ATWS-476	Private	47,949	1.10	Field	Lewis	West Virginia	Mainline	Material storage, parking
48.0	MVP-ATWS-074	Private	2,282	0.05	Field	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
48.0	MVP-ATWS-074A	Private	6,528	0.15	Field	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
48.0	MVP-ATWS-477A	Private	8,901	0.20	Forest	Lewis	West Virginia	MVP-LE-067	Tractor trailer turn radius
48.0	MVP-ATWS-477	Private	9,137	0.21	Forest	Lewis	West Virginia	MVP-LE-067	Tractor trailer turn radius
48.1	MVP-ATWS-075	Private	6,510	0.15	Field	Lewis	West Virginia	MVP-LE-068	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
48.1	MVP-ATWS-075A	Private	12,436	0.29	Field	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, hydrotest equipment
48.1	MVP-ATWS-075B	Private	3,800	0.09	Field	Lewis	West Virginia	MVP-LE-068	Material storage, hydrotest equipment
48.5	MVP-ATWS-076	Private	24,026	0.55	Forest	Lewis	West Virginia	MVP-LE-068	Material storage
48.5	MVP-ATWS-076A	Private	7,577	0.17	Forest	Lewis	West Virginia	MVP-LE-068	Material storage
50.9	MVP-ATWS-804	Private	7,379	0.17	Forest	Lewis	West Virginia	Mainline	Material storage, parking
50.9	MVP-ATWS-806	Private	1,761	0.04	Forest	Lewis	West Virginia	MVP-LE-069	Tractor trailer turn radius
51.0	MVP-ATWS-805	Private	10,183	0.23	Forest	Lewis	West Virginia	MVP-LE-069	Material storage
51.5	MVP-ATWS-801	Private	16,107	0.37	Forest	Lewis	West Virginia	Mainline	Material storage, parking
51.8	MVP-ATWS-078	Private	3,463	0.08	Field	Lewis	West Virginia	MVP-LE-070	Tractor trailer turn radius
51.8	MVP-ATWS-078A	Private	28,968	0.67	Field	Lewis	West Virginia	MVP-LE-070	Material storage

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
53.9	MVP-ATWS-462	Private	2,557	0.06	Field	Lewis	West Virginia	MVP-LE-072	Tractor trailer turn radius
52.4	MVP-ATWS-079	Private	67,321	1.55	Field	Lewis	West Virginia	MVP-LE-070	Material storage, parking
52.4	MVP-ATWS-857	Private	28,394	0.65	Forest	Lewis	West Virginia	MVP-LE-070	Tractor trailer turn radius
52.4	MVP-ATWS-856	Private	18,738	0.43	Forest	Lewis	West Virginia	MVP-LE-070	Tractor trailer turn radius
52.9	MVP-ATWS-080	Private	10,441	0.24	Forest	Lewis	West Virginia	Mainline	Material storage, parking
52.9	MVP-ATWS-478	Private	9,135	0.21	Forest	Lewis	West Virginia	Mainline	Material storage, parking
53.2	MVP-ATWS-425A	Private	1,773	0.04	Field	Lewis	West Virginia	MVP-LE-071	Tractor trailer turn radius
53.8	MVP-ATWS-917	Private	39,902	0.92	Forest	Lewis	West Virginia	MVP-LE-072	Material storage, parking
53.8	MVP-ATWS-858	Private	21,600	0.50	Forest	Lewis	West Virginia	MVP-LE-072	Tractor trailer turn radius
54.2	MVP-ATWS-426	Private	6,233	0.14	Forest	Lewis	West Virginia	Mainline	Material storage, parking
55.1	MVP-ATWS-081	Private	10,465	0.24	Forest	Lewis	West Virginia	MVP-LE-073	Material storage
55.1	MVP-ATWS-859	Private	6,235	0.14	Forest	Lewis	West Virginia	MVP-LE-073	Tractor trailer turn radius
55.1	MVP-ATWS-860	Private	4,079	0.09	Forest	Lewis	West Virginia	MVP-LE-073	Tractor trailer turn radius
55.1	MVP-ATWS-861	Private	1,065	0.02	Field	Lewis	West Virginia	MVP-LE-073	Tractor trailer turn radius
55.2	MVP-ATWS-862	Private	5,833	0.13	Field	Lewis	West Virginia	MVP-LE-073.1	Storage of excess spoil at crossings
55.2	MVP-ATWS-863	Private	5,048	0.12	Field	Lewis	West Virginia	MVP-LE-073.1	Storage of excess spoil at crossings
55.3	MVP-ATWS-864	Private	9,204	0.21	Forest	Lewis	West Virginia	MVP-LE-073.1	Tractor trailer turn radius
55.3	MVP-ATWS-865	Private	9,817	0.23	Forest	Lewis	West Virginia	MVP-LE-073.1	Tractor trailer turn radius
56.8	MVP-ATWS-083	Private	11,798	0.27	Forest	Lewis	West Virginia	Mainline	Material storage, parking
58.3	MVP-ATWS-084	Private	43,739	1.00	Forest	Lewis	West Virginia	Mainline	Material storage, parking
58.6	MVP-ATWS-085A	Private	5,774	0.13	Field	Lewis	West Virginia	Mainline	Material storage, parking
58.6	MVP-ATWS-085	Private	14,607	0.34	Field	Lewis	West Virginia	Mainline	Material storage, parking
58.7	MVP-ATWS-086A	Private	21,175	0.49	Field	Lewis	West Virginia	Mainline	Material storage, parking
58.9	MVP-ATWS-475	Private	15,959	0.37	Forest	Lewis	West Virginia	Mainline	Material storage, parking
59.0	MVP-ATWS-692	Private	11,147	0.26	Field	Lewis	West Virginia	Mainline	Material storage, parking
59.3	MVP-ATWS-427	Private	17,340	0.40	Field	Lewis	West Virginia	MVP-LE-074	Tractor trailer turn radius
59.3	MVP-ATWS-918	Private	6,139	0.14	Field	Lewis	West Virginia	MVP-LE-074	Material storage
59.3	MVP-ATWS-088	Private	26,490	0.61	Field	Lewis	West Virginia	MVP-LE-074	Tractor trailer turn radius
59.3	MVP-ATWS-087	Private	15,557	0.36	Field	Lewis	West Virginia	MVP-LE-074	Material storage
59.3	MVP-ATWS-866	Private	13,324	0.31	Field	Lewis	West Virginia	MVP-LE-074	Material storage
59.6	MVP-ATWS-089	Private	25,623	0.59	Forest	Lewis	West Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
59.6	MVP-ATWS-428	Private	25,953	0.60	Forest	Lewis	West Virginia	Mainline	Material storage, parking
59.7	MVP-ATWS-873	Private	8,861	0.20	Field	Lewis	West Virginia	MVP-LE-075	Tractor trailer turn radius
59.7	MVP-ATWS-872	Private	4,622	0.11	Forest	Lewis	West Virginia	MVP-LE-075	Tractor trailer turn radius
59.7	MVP-ATWS-871	Private	9,103	0.21	Forest	Lewis	West Virginia	MVP-LE-075	Tractor trailer turn radius
59.7	MVP-ATWS-868	Private	7,296	0.17	Forest	Lewis	West Virginia	MVP-LE-075	Tractor trailer turn radius
59.7	MVP-ATWS-867	Private	7,806	0.18	Forest	Lewis	West Virginia	MVP-LE-075	Tractor trailer turn radius
59.7	MVP-ATWS-870	Private	3,112	0.07	Forest	Lewis	West Virginia	MVP-LE-075	Tractor trailer turn radius
59.7	MVP-ATWS-869	Private	10,998	0.25	Forest	Lewis	West Virginia	MVP-LE-075	Tractor trailer turn radius
59.8	MVP-ATWS-429	Private	10,825	0.25	Forest	Lewis	West Virginia	Mainline	Material storage, parking
59.8	MVP-ATWS-874	Private	8,546	0.20	Forest	Lewis	West Virginia	MVP-LE-076	Tractor trailer turn radius
59.8	MVP-ATWS-875	Private	4,545	0.10	Forest	Lewis	West Virginia	MVP-LE-076	Tractor trailer turn radius
60.0	MVP-ATWS-430	Private	3,834	0.09	Forest	Lewis	West Virginia	Mainline	Material storage, parking
60.0	MVP-ATWS-430A	Private	1,797	0.04	Field	Lewis	West Virginia	MVP-LE-076	Material storage
60.0	MVP-ATWS-430B	Private	6,701	0.15	Field	Lewis	West Virginia	MVP-LE-076	Material storage
60.0	MVP-ATWS-879	Private	1,639	0.04	Forest	Lewis	West Virginia	MVP-LE-076	Tractor trailer turn radius
60.0	MVP-ATWS-878	Private	2,133	0.05	Forest	Lewis	West Virginia	MVP-LE-076	Tractor trailer turn radius
60.0	MVP-ATWS-881	Private	4,635	0.11	Field	Lewis	West Virginia	MVP-LE-076	Tractor trailer turn radius
60.0	MVP-ATWS-880	Private	12,058	0.28	Field	Lewis	West Virginia	MVP-LE-076	Tractor trailer turn radius
60.1	MVP-ATWS-431	Private	16,676	0.38	Forest	Lewis	West Virginia	Mainline	Material storage, parking
60.2	MVP-ATWS-432	Private	12,782	0.29	Forest	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, parking
60.2	MVP-ATWS-463A	Private	2,525	0.06	Forest	Lewis	West Virginia	MVP-LE-077	Tractor trailer turn radius
60.2	MVP-ATWS-463	Private	8,976	0.21	Forest	Lewis	West Virginia	MVP-LE-077	Tractor trailer turn radius
60.2	MVP-ATWS-877	Private	7,420	0.17	Forest	Lewis	West Virginia	MVP-LE-076	Tractor trailer turn radius
60.2	MVP-ATWS-876	Private	8,157	0.19	Forest	Lewis	West Virginia	MVP-LE-076	Tractor trailer turn radius
60.3	MVP-ATWS-433	Private	11,738	0.27	Forest	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, material storage
60.3	MVP-ATWS-433A	Private	18,178	0.42	Forest	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
60.4	MVP-ATWS-479	Private	15,054	0.35	Field	Lewis	West Virginia	Mainline	Material storage, parking
60.8	MVP-ATWS-480	Private	20,453	0.47	Field	Lewis	West Virginia	MVP-LE-077.01	Tractor trailer turn radius
61.3	MVP-ATWS-795	Private	5,701	0.13	Field	Lewis	West Virginia	Mainline	Material storage, parking
61.4	MVP-ATWS-796	Private	3,425	0.08	Forest	Lewis	West Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
62.1	MVP-ATWS-797	Private	15,939	0.37	Forest	Lewis	West Virginia	Mainline	Material storage, parking
62.5	MVP-ATWS-793	Private	32,951	0.76	Forest	Lewis	West Virginia	Mainline	Material storage, parking
63.9	MVP-ATWS-093	Private	13,303	0.31	Forest	Lewis	West Virginia	Mainline	Material storage, parking
63.9	MVP-ATWS-093A	Private	10,866	0.25	Forest	Lewis	West Virginia	Mainline	Material storage, parking
64.4	MVP-ATWS-095	Private	11,699	0.27	Forest	Lewis	West Virginia	Mainline	Material storage, parking
64.7	MVP-ATWS-096A	Private	15,641	0.36	Forest	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, parking
64.7	MVP-ATWS-096	Private	32,940	0.76	Field	Lewis	West Virginia	Mainline	Tractor trailer turn radius
65.3	MVP-ATWS-817	Private	13,945	0.32	Forest	Lewis	West Virginia	Mainline	Material storage, parking
65.5	MVP-ATWS-435	Private	18,176	0.42	Forest	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
65.5	MVP-ATWS-436	Private	43,647	1.00	Field	Lewis	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
65.6	MVP-ATWS-438	Private	7,522	0.17	Forest	Lewis	West Virginia	Mainline	Material storage, parking
67.5	MVP-ATWS-883	Private	9,377	0.22	Forest	Braxton	West Virginia	MVP-BR-085	Tractor trailer turn radius
67.5	MVP-ATWS-100	Private	11,229	0.26	Field	Braxton	West Virginia	MVP-BR-086	Tractor trailer turn radius
67.5	MVP-ATWS-101	Private	29,024	0.67	Forest	Braxton	West Virginia	Mainline	Material storage, parking
67.5	MVP-ATWS-100A	Private	5,166	0.12	Field	Braxton	West Virginia	MVP-BR-086	Tractor trailer turn radius
67.8	MVP-ATWS-884	Private	4,709	0.11	Field	Braxton	West Virginia	MVP-BR-087	Tractor trailer turn radius
67.8	MVP-ATWS-102	Private	78,962	1.81	Forest	Braxton	West Virginia	MVP-BR-087	Material storage
67.8	MVP-ATWS-103	Private	29,455	0.68	Field	Braxton	West Virginia	MVP-BR-087	Material storage
67.8	MVP-ATWS-103A	Private	13,029	0.30	Field	Braxton	West Virginia	MVP-BR-087	Material storage
68.6	MVP-ATWS-887	Private	6,907	0.16	Forest	Braxton	West Virginia	MVP-BR-088	Tractor trailer turn radius
68.6	MVP-ATWS-888	Private	1,939	0.04	Forest	Braxton	West Virginia	MVP-BR-088	Tractor trailer turn radius
68.6	MVP-ATWS-886	Private	18,251	0.42	Forest	Braxton	West Virginia	MVP-BR-088	Tractor trailer turn radius
68.6	MVP-ATWS-885	Private	12,278	0.28	Forest	Braxton	West Virginia	MVP-BR-088	Tractor trailer turn radius
68.6	MVP-ATWS-105	Private	11,251	0.26	Forest	Braxton	West Virginia	MVP-BR-088	Material storage
68.8	MVP-ATWS-106	Private	26,908	0.62	Field	Braxton	West Virginia	MVP-BR-089.01	Storage of excess spoil at crossings, material storage, parking
68.8	MVP-ATWS-439	Private	3,328	0.08	Forest	Braxton	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
70.5	MVP-ATWS-822	Private	7,576	0.17	Forest	Braxton	West Virginia	Mainline	Material storage, parking
72.0	MVP-ATWS-890	Private	2,303	0.05	Forest	Braxton	West Virginia	MVP-BR-093	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
72.0	MVP-ATWS-889	Private	14,047	0.32	Forest	Braxton	West Virginia	MVP-BR-093	Tractor trailer turn radius
72.1	MVP-ATWS-109A	Private	327,000	7.51	Field	Braxton	West Virginia	MVP-BR-093 -094	Tractor trailer turn radius
72.2	MVP-ATWS-891	Private	10,439	0.24	Forest	Braxton	West Virginia	MVP-BR-093	Tractor trailer turn radius
72.2	MVP-ATWS-892	Private	5,637	0.13	Forest	Braxton	West Virginia	MVP-BR-093	Tractor trailer turn radius
72.2	MVP-ATWS-893	Private	25,935	0.60	Forest	Braxton	West Virginia	MVP-BR-094	Material storage, parking
72.3	MVP-ATWS-894	Private	3,594	0.08	Forest	Braxton	West Virginia	MVP-BR-093 -094	Tractor trailer turn radius
72.3	MVP-ATWS-895	Private	4,769	0.11	Forest	Braxton	West Virginia	MVP-BR-093 -094	Tractor trailer turn radius
72.3	MVP-ATWS-896	Private	2,885	0.07	Forest	Braxton	West Virginia	MVP-BR-095	Tractor trailer turn radius
72.3	MVP-ATWS-897	Private	828	0.02	Forest	Braxton	West Virginia	MVP-BR-095	Tractor trailer turn radius
72.4	MVP-ATWS-110	Private	34,004	0.78	Forest	Braxton	West Virginia	MVP-BR-095	Material storage, parking
72.5	MVP-ATWS-111	Private	6,935	0.16	Forest	Braxton	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
72.5	MVP-ATWS-111A	Private	1,402	0.03	Forest	Braxton	West Virginia	MVP-BR-096	Storage of excess spoil at crossings, material storage, parking
72.5	MVP-ATWS-440	Private	7,131	0.16	Forest	Braxton	West Virginia	MVP-BR-095	Storage of excess spoil at crossings, material storage, parking
72.5	MVP-ATWS-440A	Private	17,461	0.40	Forest	Braxton	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
72.5	MVP-ATWS-898	Private	1,172	0.03	Field	Braxton	West Virginia	MVP-BR-096	Tractor trailer turn radius
72.5	MVP-ATWS-899	Private	4,571	0.10	Field	Braxton	West Virginia	MVP-BR-096 -097	Tractor trailer turn radius
72.6	MVP-ATWS-900	Private	3,869	0.09	Forest	Braxton	West Virginia	MVP-BR-097	Tractor trailer turn radius
72.6	MVP-ATWS-901	Private	5,090	0.12	Forest	Braxton	West Virginia	MVP-BR-097	Tractor trailer turn radius
72.7	MVP-ATWS-112A	Private	51,801	1.19	Forest	Braxton	West Virginia	Mainline	Material storage, parking
72.7	MVP-ATWS-112	Private	24,918	0.57	Forest	Braxton	West Virginia	MVP-BR-097	Material storage
73.4	MVP-ATWS-902	Private	7,876	0.18	Forest	Braxton	West Virginia	MVP-BR-098	Tractor trailer turn radius
73.4	MVP-ATWS-903	Private	6,471	0.15	Forest	Braxton	West Virginia	MVP-BR-098	Tractor trailer turn radius
73.4	MVP-ATWS-904	Private	4,885	0.11	Forest	Braxton	West Virginia	MVP-BR-098	Tractor trailer turn radius
73.4	MVP-ATWS-800	Private	9,393	0.22	Field	Braxton	West Virginia	MVP-BR-098	Tractor trailer turn radius, material storage
73.4	MVP-ATWS-114A	Private	7,498	0.17	Forest	Braxton	West Virginia	MVP-BR-098	Tractor trailer turn radius, material storage
73.4	MVP-ATWS-114	Private	126,800	2.91	Field	Braxton	West Virginia	MVP-BR-098	Tractor trailer turn radius, material storage
73.6	MVP-ATWS-115	Private	6,281	0.14	Forest	Braxton	West Virginia	Mainline	Material storage, parking
73.7	MVP-ATWS-116	Private	40,055	0.92	Forest	Braxton	West Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
73.7	MVP-ATWS-116A	Private	15,842	0.36	Forest	Braxton	West Virginia	Mainline	Material storage, parking
73.8	MVP-ATWS-441	Private	2,556	0.06	Forest	Braxton	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
73.8	MVP-ATWS-441A	Private	2,874	0.07	Forest	Braxton	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
73.8	MVP-ATWS-608	Private	21,590	0.50	Forest	Braxton	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
73.8	MVP-ATWS-608A	Private	29,929	0.69	Forest	Braxton	West Virginia	MVP-BR-099	Storage of excess spoil at crossings, material storage, parking
73.9	MVP-ATWS-608B	Private	12,765	0.29	Field	Braxton	West Virginia	MVP-BR-099	Tractor trailer turn radius, material storage
74.1	MVP-ATWS-907	Private	23,455	0.54	Forest	Braxton	West Virginia	MVP-BR-100	Material storage
74.1	MVP-ATWS-906	Private	6,839	0.16	Forest	Braxton	West Virginia	MVP-BR-100	Tractor trailer turn radius
74.1	MVP-ATWS-905	Private	7,955	0.18	Forest	Braxton	West Virginia	MVP-BR-100	Tractor trailer turn radius
74.5	MVP-ATWS-117	Private	29,059	0.67	Forest	Braxton	West Virginia	MVP-BR-101	Tractor trailer turn radius, material storage
74.5	MVP-ATWS-117A	Private	13,590	0.31	Forest	Braxton	West Virginia	MVP-BR-101	Tractor trailer turn radius, material storage
74.8	MVP-ATWS-911	Private	3,260	0.07	Forest	Braxton	West Virginia	MVP-BR-103	Tractor trailer turn radius
74.8	MVP-ATWS-910	Private	4,715	0.11	Forest	Braxton	West Virginia	MVP-BR-103	Tractor trailer turn radius
74.8	MVP-ATWS-909	Private	1,808	0.04	Forest	Braxton	West Virginia	MVP-BR-103	Tractor trailer turn radius
74.8	MVP-ATWS-908	Private	8,782	0.20	Forest	Braxton	West Virginia	MVP-BR-103	Tractor trailer turn radius
74.8	MVP-ATWS-118A	Private	1,003	0.02	Forest	Braxton	West Virginia	MVP-BR-103	Tractor trailer turn radius
74.8	MVP-ATWS-118	Private	4,726	0.11	Forest	Braxton	West Virginia	MVP-BR-103	Tractor trailer turn radius
74.9	MVP-ATWS-912	Private	3,973	0.09	Forest	Braxton	West Virginia	MVP-BR-103	Tractor trailer turn radius
75.0	MVP-ATWS-119	Private	119,417	2.74	Field	Braxton	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
75.3	MVP-ATWS-120	Private	29,030	0.67	Forest	Braxton	West Virginia	Mainline	Material storage, parking
76.3	MVP-ATWS-122	Private	50,385	1.16	Field	Braxton	West Virginia	MVP-BR-104	Tractor trailer turn radius, material storage
76.3	MVP-ATWS-122A	Private	273,578	6.28	Field	Braxton	West Virginia	MVP-BR-104	Tractor trailer turn radius, material storage
76.6	MVP-ATWS-123	Private	48,410	1.11	Forest	Braxton	West Virginia	Mainline	Material storage, parking
76.9	MVP-ATWS-124	Private	42,906	0.98	Forest	Braxton	West Virginia	Mainline	Material storage, parking
77.3	MVP-ATWS-126	Private	1,949	0.04	Field	Braxton	West Virginia	MVP-BR-105	Tractor trailer turn radius, material storage
77.7	MVP-ATWS-128	Private	9,525	0.22	Forest	Braxton	West Virginia	Mainline	Material storage, parking
77.8	MVP-ATWS-129	Private	31,689	0.73	Forest	Braxton	West Virginia	Mainline	Material storage, parking
78.0	MVP-ATWS-915	Private	7,209	0.17	Field	Braxton	West Virginia	MVP-BR-106	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
78.0	MVP-ATWS-914	Private	10,677	0.25	Field	Braxton	West Virginia	MVP-BR-106	Tractor trailer turn radius
78.0	MVP-ATWS-913	Private	14,053	0.32	Field	Braxton	West Virginia	MVP-BR-106	Tractor trailer turn radius, material storage
78.0	MVP-ATWS-130	Private	43,723	1.00	Field	Braxton	West Virginia	Mainline	Material storage, parking
78.0	MVP-ATWS-130B	Private	41,535	0.95	Field	Braxton	West Virginia	MVP-BR-106	Tractor trailer turn radius, material storage
78.0	MVP-ATWS-130A	Private	22,649	0.52	Field	Braxton	West Virginia	MVP-BR-106	Tractor trailer turn radius, material storage
78.2	MVP-ATWS-131	Private	36,115	0.83	Forest	Braxton	West Virginia	Mainline	Material storage, parking
78.2	MVP-ATWS-132A	Private	21,607	0.50	Forest	Braxton	West Virginia	Mainline	Material storage, parking
78.2	MVP-ATWS-131A	Private	22,124	0.51	Forest	Braxton	West Virginia	Mainline	Material storage, parking
78.4	MVP-ATWS-133	Private	39,170	0.90	Forest	Braxton	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
78.5	MVP-ATWS-134	Private	19,473	0.45	Field	Braxton	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
79.5	MVP-ATWS-442	Private	51,696	1.19	Forest	Braxton	West Virginia	Mainline	Material storage, parking
79.9	MVP-ATWS-137	Private	46,533	1.07	Forest	Braxton	West Virginia	Mainline	Material storage, parking
80.1	MVP-ATWS-138	Private	12,595	0.29	Forest	Braxton	West Virginia	Mainline	Material storage, parking
80.4	MVP-ATWS-919	Private	7,826	0.18	Forest	Webster	West Virginia	MVP-WB-107	Tractor trailer turn radius
80.4	MVP-ATWS-730	Private	11,657	0.27	Forest	Webster	West Virginia	MVP-WB-107	Tractor trailer turn radius
80.4	MVP-ATWS-139	Private	14,668	0.34	Forest	Webster	West Virginia	MVP-WB-107	Tractor trailer turn radius
80.6	MVP-ATWS-731	Private	12,112	0.28	Forest	Webster	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
81.6	MVP-ATWS-792	Private	4,639	0.11	Forest	Webster	West Virginia	Mainline	Storage of excess spoil at crossings
81.8	MVP-ATWS-716A	Private	39,012	0.90	Field	Webster	West Virginia	MVP-WB-111	Material storage, parking
81.8	MVP-ATWS-716	Private	54,100	1.24	Field	Webster	West Virginia	MVP-WB-111	Storage of excess spoil at crossings, material storage, parking
82.4	MVP-ATWS-717A	Private	17,761	0.41	Field	Webster	West Virginia	Mainline	Material storage, parking
83.2	MVP-ATWS-1035	Private	589	0.01	Forest	Webster	West Virginia	MVP-WB-116	Tractor trailer turn radius
83.2	MVP-ATWS-1036	Private	4,633	0.11	Forest	Webster	West Virginia	MVP-WB-116	Tractor trailer turn radius
83.2	MVP-ATWS-141	Private	34,559	0.79	Forest	Webster	West Virginia	MVP-WB-116	Tractor trailer turn radius
83.2	MVP-ATWS-141A	Private	77,814	1.79	Forest	Webster	West Virginia	MVP-WB-116	Tractor trailer turn radius
83.7	MVP-ATWS-926	Private	1,516	0.03	Forest	Webster	West Virginia	MVP-WB-117	Tractor trailer turn radius
83.8	MVP-ATWS-923	Private	11,349	0.26	Forest	Webster	West Virginia	MVP-WB-117	Tractor trailer turn radius
83.8	MVP-ATWS-921	Private	4,623	0.11	Forest	Webster	West Virginia	MVP-WB-117	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
83.8	MVP-ATWS-920	Private	10,251	0.24	Forest	Webster	West Virginia	MVP-WB-117	Tractor trailer turn radius
83.8	MVP-ATWS-922	Private	24,029	0.55	Forest	Webster	West Virginia	MVP-WB-117	Tractor trailer turn radius
83.8	MVP-ATWS-925	Private	14,142	0.32	Forest	Webster	West Virginia	MVP-WB-117	Tractor trailer turn radius
83.8	MVP-ATWS-924	Private	3,748	0.09	Forest	Webster	West Virginia	MVP-WB-117	Tractor trailer turn radius
83.8	MVP-ATWS-142	Private	11,285	0.26	Forest	Webster	West Virginia	MVP-WB-117	Tractor trailer turn radius
83.8	MVP-ATWS-443A	Private	4,807	0.11	Forest	Webster	West Virginia	MVP-WB-117	Tractor trailer turn radius
83.8	MVP-ATWS-443	Private	5,400	0.12	Forest	Webster	West Virginia	MVP-WB-117	Tractor trailer turn radius
84.0	MVP-ATWS-973	Private	2,570	0.06	Field	Webster	West Virginia	MVP-WB-117.01	Tractor trailer turn radius
84.0	MVP-ATWS-972	Private	1,940	0.04	Field	Webster	West Virginia	MVP-WB-117.01	Tractor trailer turn radius
84.1	MVP-ATWS-445	Private	10,253	0.24	Forest	Webster	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
84.8	MVP-ATWS-143	Private	8,301	0.19	Forest	Webster	West Virginia	Mainline	Material storage, parking
85.3	MVP-ATWS-144	Private	55,578	1.28	Forest	Webster	West Virginia	Mainline	Material storage, parking
85.7	MVP-ATWS-145	Private	14,416	0.33	Forest	Webster	West Virginia	Mainline	Material storage, parking
85.8	MVP-ATWS-706	Private	60,211	1.38	Forest	Webster	West Virginia	MVP-WB-119	Tractor trailer turn radius
86.2	MVP-ATWS-927	Private	7,798	0.18	Forest	Webster	West Virginia	MVP-WB-119	Tractor trailer turn radius
86.3	MVP-ATWS-928	Private	9,422	0.22	Forest	Webster	West Virginia	MVP-WB-119	Tractor trailer turn radius
86.3	MVP-ATWS-929	Private	53,060	1.22	Forest	Webster	West Virginia	MVP-WB-119	Tractor trailer turn radius
86.3	MVP-ATWS-930	Private	29,109	0.67	Forest	Webster	West Virginia	MVP-WB-119	Tractor trailer turn radius
86.3	MVP-ATWS-705	Private	4,693	0.11	Forest	Webster	West Virginia	MVP-WB-119	Material storage, parking
86.3	MVP-ATWS-705A	Private	27,708	0.64	Forest	Webster	West Virginia	MVP-WB-119	Material storage, parking
86.6	MVP-ATWS-447	Private	14,395	0.33	Forest	Webster	West Virginia	Mainline	Material storage, parking
87.4	MVP-ATWS-146	Private	68,550	1.57	Forest	Webster	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
88.5	MVP-ATWS-931	Private	70,475	1.62	Forest	Webster	West Virginia	Mainline	Material storage, parking
88.5	MVP-ATWS-932	Private	44,608	1.02	Forest	Webster	West Virginia	Mainline	Material storage, parking
88.8	MVP-ATWS-933	Private	99,500	2.28	Forest	Webster	West Virginia	MVP-WB-120	Tractor trailer turn radius
88.8	MVP-ATWS-935	Private	25,354	0.58	Forest	Webster	West Virginia	MVP-WB-120	Tractor trailer turn radius
88.8	MVP-ATWS-934	Private	38,429	0.88	Forest	Webster	West Virginia	MVP-WB-120	Tractor trailer turn radius
89.1	MVP-ATWS-729	Private	5,000	0.11	Forest	Webster	West Virginia	MVP-WB-120.01	Tractor trailer turn radius
89.6	MVP-ATWS-149	Private	7,989	0.18	Forest	Webster	West Virginia	Mainline	Material storage, parking
90.0	MVP-ATWS-936	Private	30,957	0.71	Forest	Webster	West Virginia	MVP-WB-120.1	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
90.1	MVP-ATWS-940	Private	13,829	0.32	Forest	Webster	West Virginia	MVP-WB-120.1	Tractor trailer turn radius
90.1	MVP-ATWS-150	Private	56,446	1.30	Forest	Webster	West Virginia	MVP-WB-120.01	Tractor trailer turn radius
90.3	MVP-ATWS-941	Private	14,060	0.32	Forest	Webster	West Virginia	MVP-WB-120.1 - 121	Tractor trailer turn radius
90.3	MVP-ATWS-943	Private	11,174	0.26	Forest	Webster	West Virginia	MVP-WB-121 -122	Tractor trailer turn radius
90.3	MVP-ATWS-942	Private	23,205	0.53	Forest	Webster	West Virginia	MVP-WB-121	Tractor trailer turn radius
90.6	MVP-ATWS-937	Private	12,276	0.28	Forest	Webster	West Virginia	MVP-WB-121	Tractor trailer turn radius
90.7	MVP-ATWS-151	Private	13,281	0.30	Forest	Webster	West Virginia	Mainline	Material storage, parking
90.7	MVP-ATWS-151A	Private	4,233	0.10	Forest	Webster	West Virginia	Mainline	Material storage, parking
90.8	MVP-ATWS-938	Private	6,152	0.14	Forest	Webster	West Virginia	MVP-WB-122	Tractor trailer turn radius
90.8	MVP-ATWS-939	Private	6,639	0.15	Forest	Webster	West Virginia	MVP-WB-122	Tractor trailer turn radius
90.8	MVP-ATWS-482	Private	9,701	0.22	Forest	Webster	West Virginia	Mainline	Material storage, parking
91.2	MVP-ATWS-449	Private	23,946	0.55	Forest	Webster	West Virginia	Mainline	Material storage, parking
91.9	MVP-ATWS-949	Private	22,923	0.53	Forest	Webster	West Virginia	MVP-WB-123	Tractor trailer turn radius
91.9	MVP-ATWS-950	Private	14,984	0.34	Forest	Webster	West Virginia	MVP-WB-123	Tractor trailer turn radius
91.9	MVP-ATWS-951	Private	3,925	0.09	Forest	Webster	West Virginia	MVP-WB-123	Tractor trailer turn radius
91.9	MVP-ATWS-952	Private	4,460	0.10	Forest	Webster	West Virginia	MVP-WB-123	Tractor trailer turn radius
91.9	MVP-ATWS-953	Private	11,209	0.26	Forest	Webster	West Virginia	MVP-WB-123	Tractor trailer turn radius
91.9	MVP-ATWS-947	Private	48,205	1.11	Forest	Webster	West Virginia	MVP-WB-123	Tractor trailer turn radius
91.9	MVP-ATWS-948	Private	12,217	0.28	Forest	Webster	West Virginia	MVP-WB-123	Tractor trailer turn radius
91.9	MVP-ATWS-945	Private	39,680	0.91	Field	Webster	West Virginia	MVP-WB-123 -125	Tractor trailer turn radius
91.9	MVP-ATWS-946	Private	31,639	0.73	Forest	Webster	West Virginia	MVP-WB-123	Tractor trailer turn radius
91.9	MVP-ATWS-483	Private	652	0.01	Forest	Webster	West Virginia	MVP-WB-123	Tractor trailer turn radius
91.9	MVP-ATWS-483A	Private	3,108	0.07	Forest	Webster	West Virginia	MVP-WB-123	Tractor trailer turn radius
92.0	MVP-ATWS-156	Private	16,639	0.38	Forest	Webster	West Virginia	Mainline	Material storage, parking
92.5	MVP-ATWS-157A	Private	8,009	0.18	Forest	Webster	West Virginia	Mainline	Material storage, parking
92.5	MVP-ATWS-157	Private	5,459	0.13	Forest	Webster	West Virginia	Mainline	Material storage, parking
92.7	MVP-ATWS-944	Private	18,946	0.43	Forest	Webster	West Virginia	MVP-WB-125	Tractor trailer turn radius
92.7	MVP-ATWS-450	Private	17,500	0.40	Forest	Webster	West Virginia	MVP-WB-125	Tractor trailer turn radius
93.1	MVP-ATWS-678	Private	2,234	0.05	Forest	Webster	West Virginia	MVP-WB-126	Tractor trailer turn radius
93.2	MVP-ATWS-1344	Private	5,280	0.12	Field	Webster	West Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
93.2	MVP-ATWS-161	Private	8,150	0.19	Field	Webster	West Virginia	Mainline	Material storage, parking
93.7	MVP-ATWS-162	Private	16,846	0.39	Forest	Webster	West Virginia	Mainline	Material storage, parking
94.1	MVP-ATWS-163	Private	16,854	0.39	Forest	Webster	West Virginia	Mainline	Material storage, parking
95.4	MVP-ATWS-168	Private	52,398	1.20	Forest	Webster	West Virginia	MVP-WB-126.01	Material storage
95.4	MVP-ATWS-167	Private	1,645	0.04	Forest	Webster	West Virginia	Mainline	Material storage, parking
95.4	MVP-ATWS-165	Private	2,587	0.06	ROAD	Webster	West Virginia	MVP-WB-123	Tractor trailer turn radius
95.4	MVP-ATWS-164	Private	13,761	0.32	Forest	Webster	West Virginia	MVP-WB-126.01	Tractor trailer turn radius
95.4	MVP-ATWS-165A	Private	4,531	0.10	ROAD	Webster	West Virginia	MVP-WB-123	Tractor trailer turn radius
96.8	MVP-ATWS-170	Private	56,932	1.31	Forest	Webster	West Virginia	Mainline	Material storage, parking
97.7	MVP-ATWS-171C	Private	24,126	0.55	Field	Webster	West Virginia	Mainline	Material storage, parking
97.7	MVP-ATWS-171B	Private	44,868	1.03	Forest	Webster	West Virginia	Mainline	Material storage, parking
97.7	MVP-ATWS-171	Private	39,956	0.92	Forest	Webster	West Virginia	MVP-WB-127	Material storage
97.7	MVP-ATWS-171A	Private	39,328	0.90	Forest	Webster	West Virginia	MVP-WB-127	Material storage
98.1	MVP-ATWS-451	Private	28,167	0.65	Forest	Webster	West Virginia	Mainline	Material storage, parking
98.2	MVP-ATWS-956	Private	10,532	0.24	Field	Webster	West Virginia	MVP-WB-128	Tractor trailer turn radius
98.2	MVP-ATWS-957	Private	32,017	0.74	Field	Webster	West Virginia	MVP-WB-128	Tractor trailer turn radius
98.2	MVP-ATWS-485A	Private	22,188	0.51	Forest	Webster	West Virginia	MVP-WB-128	Tractor trailer turn radius
98.2	MVP-ATWS-485	Private	673	0.02	Forest	Webster	West Virginia	MVP-WB-128	Tractor trailer turn radius
98.7	MVP-ATWS-452	Private	23,886	0.55	Field	Webster	West Virginia	Mainline	Material storage, parking
98.9	MVP-ATWS-454	Private	2,555	0.06	Forest	Webster	West Virginia	MVP-WB-129	Storage of excess spoil at crossings, material storage, parking
98.9	MVP-ATWS-454A	Private	3,183	0.07	Forest	Webster	West Virginia	MVP-WB-129	Storage of excess spoil at crossings, material storage, parking
98.9	MVP-ATWS-453	Private	6,175	0.14	Forest	Webster	West Virginia	MVP-WB-129	Storage of excess spoil at crossings, material storage, parking
101.7	MVP-ATWS-173	Private	24,882	0.57	Forest	Webster	West Virginia	Mainline	Material storage, parking
102.9	MVP-ATWS-175	Private	16,515	0.38	Forest	Webster	West Virginia	Mainline	Material storage, parking
103.2	MVP-ATWS-176	Private	3,458	0.08	Forest	Webster	West Virginia	Mainline	Material storage, parking
103.2	MVP-ATWS-176A	Private	11,739	0.27	Forest	Webster	West Virginia	MVP-WB-131	Tractor trailer turn radius
103.3	MVP-ATWS-455	Private	31,694	0.73	Forest	Webster	West Virginia	MVP-WB-131	Tractor trailer turn radius
104.1	MVP-ATWS-178	Private	29,854	0.69	Forest	Webster	West Virginia	MVP-WB-132	Tractor trailer turn radius
104.1	MVP-ATWS-178B	Private	17,840	0.41	Forest	Webster	West Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
104.1	MVP-ATWS-178A	Private	5,067	0.12	Forest	Webster	West Virginia	MVP-WB-132	Tractor trailer turn radius
104.2	MVP-ATWS-179	Private	31,810	0.73	Field	Webster	West Virginia	Mainline	Material storage, parking
104.2	MVP-ATWS-179A	Private	97,203	2.23	Field	Webster	West Virginia	Mainline	Material storage, parking
104.6	MVP-ATWS-180A	Private	419,837	9.64	Field	Webster	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
104.8	MVP-ATWS-181	Private	105,064	2.41	Field	Webster	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
105.1	MVP-ATWS-182	Private	33,848	0.78	Forest	Webster	West Virginia	Mainline	Material storage, parking
105.8	MVP-ATWS-184	Private	2,989	0.07	Forest	Webster	West Virginia	Mainline	Material storage, parking
105.9	MVP-ATWS-185	Private	18,170	0.42	Field	Webster	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
106.1	MVP-ATWS-186	Private	18,171	0.42	Field	Webster	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
107.3	MVP-ATWS-958	Private	17,265	0.40	Forest	Webster	West Virginia	Mainline	Tractor trailer turn radius
107.3	MVP-ATWS-959	Private	6,345	0.15	Forest	Webster	West Virginia	Mainline	Tractor trailer turn radius
107.3	MVP-ATWS-962	Private	9,071	0.21	Forest	Webster	West Virginia	Mainline	Tractor trailer turn radius
107.3	MVP-ATWS-961	Private	13,231	0.30	Forest	Webster	West Virginia	Mainline	Tractor trailer turn radius
107.3	MVP-ATWS-960	Private	14,813	0.34	Forest	Webster	West Virginia	Mainline	Material storage, parking
109.4	MVP-ATWS-188	Private	25,031	0.57	Field	Webster	West Virginia	MVP-WB-134	Tractor trailer turn radius, material storage
109.4	MVP-ATWS-967	Private	7,325	0.17	Field	Webster	West Virginia	MVP-WB-134	Tractor trailer turn radius
109.7	MVP-ATWS-457	Private	6,828	0.16	Forest	Nicholas	West Virginia	MVP-NI-136	Storage of excess spoil at crossings, material storage, parking
109.7	MVP-ATWS-456	Private	8,896	0.20	Forest	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
109.7	MVP-ATWS-964	Private	392	0.01	Forest	Nicholas	West Virginia	MVP-NI-136	Storage of excess spoil at crossings, material storage, parking
109.8	MVP-ATWS-190	Private	5,357	0.12	Forest	Nicholas	West Virginia	MVP-NI-136	Material storage
109.8	MVP-ATWS-965	Private	1,499	0.03	Forest	Nicholas	West Virginia	MVP-NI-136	Tractor trailer turn radius
109.9	MVP-ATWS-966	Private	12,079	0.28	Forest	Nicholas	West Virginia	MVP-NI-136	Material storage
111.0	MVP-ATWS-193A	Private	33,553	0.77	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
111.1	MVP-ATWS-195	Private	33,553	0.77	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
111.1	MVP-ATWS-194	Private	20,644	0.47	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
111.4	MVP-ATWS-977	Private	4,935	0.11	Forest	Nicholas	West Virginia	MVP-NI-137	Tractor trailer turn radius
111.4	MVP-ATWS-976	Private	6,109	0.14	Forest	Nicholas	West Virginia	MVP-NI-137	Tractor trailer turn radius
111.9	MVP-ATWS-1049	Private	3,583	0.08	Forest	Nicholas	West Virginia	MVP-NI-139	Tractor trailer turn radius
111.9	MVP-ATWS-1048	Private	1,504	0.03	Field	Nicholas	West Virginia	MVP-NI-139	Tractor trailer turn radius
111.9	MVP-ATWS-1046	Private	2,840	0.07	Field	Nicholas	West Virginia	MVP-NI-139	Tractor trailer turn radius
111.9	MVP-ATWS-1047	Private	3,183	0.07	Field	Nicholas	West Virginia	MVP-NI-139	Tractor trailer turn radius
112.2	MVP-ATWS-982	Private	8,795	0.20	Forest	Nicholas	West Virginia	MVP-NI-140	Tractor trailer turn radius
112.3	MVP-ATWS-983	Private	9,720	0.22	Forest	Nicholas	West Virginia	MVP-NI-140	Tractor trailer turn radius
112.3	MVP-ATWS-981	Private	9,503	0.22	Field	Nicholas	West Virginia	MVP-NI-140	Tractor trailer turn radius
112.7	MVP-ATWS-984	Private	7,037	0.16	Forest	Nicholas	West Virginia	MVP-NI-141	Tractor trailer turn radius
112.7	MVP-ATWS-196	Private	36,611	0.84	Field	Nicholas	West Virginia	MVP-NI-141	Material storage
112.9	MVP-ATWS-197	Private	36,900	0.85	Field	Nicholas	West Virginia	Mainline	Material storage, parking
113.4	MVP-ATWS-970	Private	32,197	0.74	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
113.5	MVP-ATWS-971	Private	18,346	0.42	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
114.3	MVP-ATWS-550	Private	44,273	1.02	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
114.4	MVP-ATWS-200	Private	35,201	0.81	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
114.7	MVP-ATWS-201	Private	104,633	2.40	Field	Nicholas	West Virginia	Mainline	Material storage, parking
114.8	MVP-ATWS-1314	Private	9,539	0.22	Field	Nicholas	West Virginia	Mainline	Material storage, parking
114.9	MVP-ATWS-202	Private	159,114	3.65	Field	Nicholas	West Virginia	Mainline	Material storage, parking
115.3	MVP-ATWS-985	Private	10,898	0.25	Forest	Nicholas	West Virginia	MVP-NI-145	Tractor trailer turn radius
115.3	MVP-ATWS-986	Private	7,028	0.16	Field	Nicholas	West Virginia	MVP-NI-145	Tractor trailer turn radius
115.3	MVP-ATWS-987	Private	5,139	0.12	Field	Nicholas	West Virginia	MVP-NI-145	Tractor trailer turn radius
115.6	MVP-ATWS-203	Private	15,758	0.36	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
115.7	MVP-ATWS-993	Private	641	0.01	Forest	Nicholas	West Virginia	MVP-NI-146	Tractor trailer turn radius
115.7	MVP-ATWS-992	Private	3,671	0.08	Forest	Nicholas	West Virginia	MVP-NI-146	Tractor trailer turn radius
115.7	MVP-ATWS-995	Private	1,386	0.03	Forest	Nicholas	West Virginia	MVP-NI-146	Tractor trailer turn radius
115.7	MVP-ATWS-994	Private	2,209	0.05	Forest	Nicholas	West Virginia	MVP-NI-146	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
115.7	MVP-AWTS-988	Private	12,726	0.29	Forest	Nicholas	West Virginia	MVP-NI-146	Tractor trailer turn radius
115.7	MVP-AWTS-989	Private	3,219	0.07	Forest	Nicholas	West Virginia	MVP-NI-146	Tractor trailer turn radius
115.7	MVP-AWTS-990	Private	3,333	0.08	Forest	Nicholas	West Virginia	MVP-NI-146	Tractor trailer turn radius
115.7	MVP-AWTS-991	Private	4,213	0.10	Forest	Nicholas	West Virginia	MVP-NI-146	Tractor trailer turn radius
115.8	MVP-ATWS-585A	Private	25,454	0.58	Forest	Nicholas	West Virginia	MVP-NI-146	Material storage
115.8	MVP-ATWS-585	Private	20,749	0.48	Forest	Nicholas	West Virginia	MVP-NI-146	Material storage
115.8	MVP-ATWS-585B	Private	9,217	0.21	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
116.0	MVP-ATWS-204	Private	25,019	0.57	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
116.2	MVP-ATWS-1050	Private	9,774	0.22	Field	Nicholas	West Virginia	MVP-NI-147	Tractor trailer turn radius
116.2	MVP-ATWS-206	Private	57,245	1.31	Field	Nicholas	West Virginia	MVP-NI-147	Material storage
116.3	MVP-ATWS-206A	Private	24,407	0.56	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
116.4	MVP-ATWS-1052	Private	4,112	0.09	Field	Nicholas	West Virginia	MVP-NI-148	Tractor trailer turn radius
116.4	MVP-ATWS-207	Private	10,873	0.25	Forest	Nicholas	West Virginia	MVP-NI-148	Tractor trailer turn radius
116.5	MVP-ATWS-1051	Private	1,006	0.02	Field	Nicholas	West Virginia	MVP-NI-148	Tractor trailer turn radius
116.6	MVP-ATWS-208	Private	26,992	0.62	Field	Nicholas	West Virginia	Mainline	Material storage, parking
116.9	MVP-ATWS-210	Private	47,603	1.09	Forest	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
116.9	MVP-ATWS-209	Private	75,484	1.73	Forest	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
116.9	MVP-ATWS-210A	Private	57,541	1.32	Forest	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
117.1	MVP-ATWS-211	Private	23,001	0.53	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
117.1	MVP-ATWS-211A	Private	8,732	0.20	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
117.2	MVP-ATWS-212	Private	22,054	0.51	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
117.2	MVP-ATWS-212A	Private	10,719	0.25	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
117.3	MVP-ATWS-588	Private	4,900	0.11	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
117.3	MVP-ATWS-591	Private	10,746	0.25	Forest	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
117.3	MVP-ATWS-590	Private	4,585	0.11	Forest	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
117.9	MVP-ATWS-997	Private	5,103	0.12	Forest	Nicholas	West Virginia	MVP-NI-149	Tractor trailer turn radius
117.9	MVP-ATWS-996	Private	8,242	0.19	Forest	Nicholas	West Virginia	MVP-NI-149	Tractor trailer turn radius
117.9	MVP-ATWS-214	Private	25,145	0.58	Forest	Nicholas	West Virginia	MVP-NI-149	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
118.1	MVP-ATWS-215	Private	1,580	0.04	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
118.2	MVP-ATWS-216	Private	36,288	0.83	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
118.2	MVP-ATWS-216A	Private	15,646	0.36	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
118.5	MVP-ATWS-217	Private	140,674	3.23	Forest	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
118.5	MVP-ATWS-217A	Private	256,914	5.90	Forest	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
118.7	MVP-ATWS-218	Private	27,163	0.62	Forest	Nicholas	West Virginia	MVP-NI-151	Storage of excess spoil at crossings, material storage, parking
118.7	MVP-ATWS-218A	Private	39,330	0.90	Forest	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
118.7	MVP-ATWS-998	Private	4,609	0.11	Forest	Nicholas	West Virginia	MVP-NI-151	Tractor trailer turn radius
119.0	MVP-ATWS-219	Private	91,801	2.11	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
119.1	MVP-ATWS-221	Private	3,816	0.09	Field	Nicholas	West Virginia	MVP-NI-152	Tractor trailer turn radius
119.1	MVP-ATWS-220	Private	76,836	1.76	Forest	Nicholas	West Virginia	MVP-NI-152	Material storage
119.1	MVP-ATWS-221A	Private	10,439	0.24	Field	Nicholas	West Virginia	MVP-NI-152	Tractor trailer turn radius
119.2	MVP-ATWS-220A	Private	24,320	0.56	Forest	Nicholas	West Virginia	MVP-NI-152	Material storage
119.4	MVP-ATWS-222	Private	12,812	0.29	Field	Nicholas	West Virginia	MVP-NI-153	Tractor trailer turn radius
119.4	MVP-ATWS-1001	Private	5,297	0.12	Field	Nicholas	West Virginia	MVP-NI-153	Tractor trailer turn radius
119.4	MVP-ATWS-1000	Private	5,871	0.13	Field	Nicholas	West Virginia	MVP-NI-153	Tractor trailer turn radius
119.8	MVP-ATWS-223A	Private	88,319	2.03	Field	Nicholas	West Virginia	Mainline	Material storage, parking
119.9	MVP-ATWS-1345	Private	620	0.01	Forest	Nicholas	West Virginia	MVP-MLV-AR-14	Tractor trailer turn radius
119.9	MVP-ATWS-1007	Private	2,926	0.07	Forest	Nicholas	West Virginia	MVP-MLV-AR-14	Tractor trailer turn radius
119.9	MVP-ATWS-1006	Private	5,889	0.14	Forest	Nicholas	West Virginia	MVP-MLV-AR-14	Tractor trailer turn radius
119.9	MVP-ATWS-1005	Private	6,919	0.16	Forest	Nicholas	West Virginia	MVP-MLV-AR-14	Tractor trailer turn radius
119.9	MVP-ATWS-1002	Private	40,851	0.94	Forest	Nicholas	West Virginia	MVP-MLV-AR-14	Tractor trailer turn radius
119.9	MVP-ATWS-223	Private	106,503	2.44	Field	Nicholas	West Virginia	MVP-NI-153	Material storage
119.9	MVP-ATWS-1004	Private	16,141	0.37	Forest	Nicholas	West Virginia	MVP-MLV-AR-14	Tractor trailer turn radius
119.9	MVP-ATWS-1358	Private	73,501	1.69	Field	Nicholas	West Virginia	MVP-NI-153	Material storage
120.0	MVP-ATWS-1003	Private	4,433	0.10	Forest	Nicholas	West Virginia	MVP-NI-154 -154.1	Tractor trailer turn radius
120.0	MVP-ATWS-1359	Private	61,512	1.41	Forest	Nicholas	West Virginia	MVP-MLV-AR-14	Tractor trailer turn radius
120.3	MVP-ATWS-224	Private	6,986	0.16	Forest	Nicholas	West Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
120.7	MVP-ATWS-225	Private	12,788	0.29	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
122.1	MVP-ATWS-598	Private	21,834	0.50	Forest	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
122.1	MVP-ATWS-599	Private	77,892	1.79	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
122.1	MVP-ATWS-600	Private	31,911	0.73	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
122.7	MVP-ATWS-226A	Private	30,232	0.69	Forest	Nicholas	West Virginia	MVP-NI-155	Storage of excess spoil at crossings, material storage, parking
122.7	MVP-ATWS-226	Private	1,518	0.03	Forest	Nicholas	West Virginia	MVP-NI-155A	Storage of excess spoil at crossings, material storage, parking
122.8	MVP-ATWS-1013	Private	3,787	0.09	Field	Nicholas	West Virginia	MVP-NI-155	Tractor trailer turn radius
122.8	MVP-ATWS-1012	Private	4,364	0.10	Field	Nicholas	West Virginia	MVP-NI-155	Tractor trailer turn radius
122.8	MVP-ATWS-227	Private	28,511	0.65	Field	Nicholas	West Virginia	MVP-NI-155	Material storage
122.8	MVP-ATWS-227A	Private	10,115	0.23	Field	Nicholas	West Virginia	MVP-NI-155	Material storage
123.0	MVP-ATWS-1014	Private	2,994	0.07	Forest	Nicholas	West Virginia	MVP-NI-156	Tractor trailer turn radius
123.0	MVP-ATWS-1015	Private	3,705	0.09	Forest	Nicholas	West Virginia	MVP-NI-156	Tractor trailer turn radius
123.0	MVP-ATWS-1009	Private	5,503	0.13	Forest	Nicholas	West Virginia	MVP-NI-156	Tractor trailer turn radius
123.0	MVP-ATWS-1008	Private	10,318	0.24	Forest	Nicholas	West Virginia	MVP-NI-156	Tractor trailer turn radius
123.0	MVP-ATWS-1010	Private	45,870	1.05	Forest	Nicholas	West Virginia	MVP-NI-156	Tractor trailer turn radius
123.0	MVP-ATWS-1011	Private	39,510	0.91	Forest	Nicholas	West Virginia	MVP-NI-156	Tractor trailer turn radius
123.7	MVP-ATWS-1045	Private	4,126	0.09	Field	Nicholas	West Virginia	MVP-NI-157	Tractor trailer turn radius
123.7	MVP-ATWS-1053	Private	7,298	0.17	Field	Nicholas	West Virginia	MVP-NI-157	Tractor trailer turn radius
124.3	MVP-ATWS-1017	Private	3,624	0.08	Forest	Nicholas	West Virginia	MVP-NI-158	Tractor trailer turn radius
124.3	MVP-ATWS-1016	Private	3,102	0.07	Forest	Nicholas	West Virginia	MVP-NI-158	Tractor trailer turn radius
124.3	MVP-ATWS-592	Private	163,962	3.76	Field	Nicholas	West Virginia	Mainline	Material storage, parking
124.6	MVP-ATWS-230	Private	10,454	0.24	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
124.6	MVP-ATWS-229	Private	6,978	0.16	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
124.7	MVP-ATWS-232	Private	7,416	0.17	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
124.7	MVP-ATWS-231	Private	12,824	0.29	Forest	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
124.7	MVP-ATWS-232A	Private	16,654	0.38	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
124.7	MVP-ATWS-231A	Private	46,914	1.08	Forest	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
125.0	MVP-ATWS-1018	Private	4,118	0.09	Field	Nicholas	West Virginia	MVP-NI-158.1	Tractor trailer turn radius
125.0	MVP-ATWS-1019	Private	4,282	0.10	Field	Nicholas	West Virginia	MVP-NI-158.1	Tractor trailer turn radius
125.0	MVP-ATWS-699A	Private	9,169	0.21	Field	Nicholas	West Virginia	MVP-NI-158.1	Material storage
125.0	MVP-ATWS-699	Private	59,702	1.37	Field	Nicholas	West Virginia	MVP-NI-158.1	Material storage
125.1	MVP-ATWS-233A	Private	7,854	0.18	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
125.1	MVP-ATWS-233	Private	9,048	0.21	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
125.2	MVP-ATWS-234A	Private	7,347	0.17	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
125.2	MVP-ATWS-234	Private	7,735	0.18	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
125.5	MVP-ATWS-235	Private	17,106	0.39	Forest	Nicholas	West Virginia	MVP-NI-159	Tractor trailer turn radius
125.5	MVP-ATWS-235A	Private	57,273	1.31	Field	Nicholas	West Virginia	Mainline	Material storage, parking
125.7	MVP-ATWS-236	Private	24,813	0.57	Field	Nicholas	West Virginia	Mainline	Material storage, parking
125.7	MVP-ATWS-236A	Private	30,318	0.70	Field	Nicholas	West Virginia	Mainline	Material storage, parking
125.8	MVP-ATWS-237A	Private	7,669	0.18	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
125.8	MVP-ATWS-237	Private	28,621	0.66	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
126.3	MVP-ATWS-239	Private	40,985	0.94	Forest	Nicholas	West Virginia	MVP-NI-160	Storage of excess spoil at crossings, material storage, parking
126.3	MVP-ATWS-238	Private	10,955	0.25	Field	Nicholas	West Virginia	MVP-NI-160	Material storage
126.3	MVP-ATWS-239A	Private	16,412	0.38	Forest	Nicholas	West Virginia	MVP-NI-160	Storage of excess spoil at crossings, material storage, parking
126.5	MVP-ATWS-240	Private	8,350	0.19	Field	Nicholas	West Virginia	MVP-NI-160.01	Tractor trailer turn radius
126.5	MVP-ATWS-240B	Private	22,587	0.52	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
126.6	MVP-ATWS-241	Private	15,266	0.35	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
126.6	MVP-ATWS-241A	Private	18,832	0.43	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
126.7	MVP-ATWS-242	Private	6,351	0.15	Field	Nicholas	West Virginia	MVP-NI-161	Material storage
127.3	MVP-ATWS-243	Private	69,036	1.58	Field	Nicholas	West Virginia	Mainline	Material storage, parking
127.9	MVP-ATWS-593	Private	87,372	2.01	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
127.9	MVP-ATWS-593A	Private	134,748	3.09	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
128.0	MVP-ATWS-594	Private	197,194	4.53	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
128.1	MVP-ATWS-244	Private	2,971	0.07	Forest	Nicholas	West Virginia	MVP-NI-163	Tractor trailer turn radius, material storage
128.1	MVP-ATWS-244A	Private	28,529	0.65	Forest	Nicholas	West Virginia	MVP-NI-163	Tractor trailer turn radius, material storage
128.2	MVP-ATWS-244B	Private	21,379	0.49	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
129.3	MVP-ATWS-595	Private	4,406	0.10	Field	Nicholas	West Virginia	MVP-NI-164	Storage of excess spoil at crossings, material storage, parking
129.4	MVP-ATWS-596	Private	29,104	0.67	Forest	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
129.5	MVP-ATWS-246	Private	18,822	0.43	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
129.7	MVP-ATWS-707	Private	33,727	0.77	Field	Nicholas	West Virginia	Mainline	Material storage, parking
130.1	MVP-AWTS-1021	Private	4,781	0.11	Field	Nicholas	West Virginia	MVP-NI-166	Tractor trailer turn radius
130.1	MVP-AWTS-1020	Private	3,099	0.07	Field	Nicholas	West Virginia	MVP-NI-166	Tractor trailer turn radius
130.1	MVP-ATWS-247	Private	20,268	0.47	Field	Nicholas	West Virginia	Mainline	Material storage, parking
130.1	MVP-ATWS-247B	Private	18,831	0.43	Field	Nicholas	West Virginia	Mainline	Material storage, parking
130.6	MVP-ATWS-1022	Private	6,491	0.15	Forest	Nicholas	West Virginia	MVP-NI-167	Tractor trailer turn radius
130.6	MVP-ATWS-248	Private	29,826	0.68	Forest	Nicholas	West Virginia	MVP-NI-167	Tractor trailer turn radius
131.0	MVP-ATWS-1026	Private	9,636	0.22	Forest	Nicholas	West Virginia	MVP-NI-168	Tractor trailer turn radius
131.0	MVP-ATWS-1025	Private	1,334	0.03	Forest	Nicholas	West Virginia	MVP-NI-168	Tractor trailer turn radius
131.0	MVP-ATWS-1023	Private	4,092	0.09	Forest	Nicholas	West Virginia	MVP-NI-167 -168	Tractor trailer turn radius
131.0	MVP-ATWS-1024	Private	3,844	0.09	Forest	Nicholas	West Virginia	MVP-NI-167 -168	Tractor trailer turn radius
131.1	MVP-ATWS-249	Private	14,208	0.33	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
131.1	MVP-ATWS-249A	Private	11,933	0.27	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
131.3	MVP-ATWS-250A	Private	33,649	0.77	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
131.3	MVP-ATWS-250	Private	8,693	0.20	Forest	Nicholas	West Virginia	Mainline	Material storage, parking
131.6	MVP-ATWS-251	Private	40,735	0.94	Field	Nicholas	West Virginia	Mainline	Material storage, parking
131.7	MVP-ATWS-1029	Private	5,209	0.12	Forest	Nicholas	West Virginia	MVP-NI-170	Tractor trailer turn radius
131.7	MVP-ATWS-1030	Private	2,334	0.05	Forest	Nicholas	West Virginia	MVP-NI-170	Tractor trailer turn radius
131.7	MVP-ATWS-1027	Private	5,538	0.13	Forest	Nicholas	West Virginia	MVP-NI-170	Tractor trailer turn radius
131.7	MVP-ATWS-1028	Private	6,747	0.15	Forest	Nicholas	West Virginia	MVP-NI-170	Tractor trailer turn radius
132.0	MVP-ATWS-252	Private	25,557	0.59	Field	Nicholas	West Virginia	Mainline	Material storage, parking
132.1	MVP-ATWS-253	Private	31,279	0.72	Field	Nicholas	West Virginia	Mainline	Material storage, parking
132.5	MVP-ATWS-254	Private	12,404	0.28	Field	Nicholas	West Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
132.6	MVP-ATWS-255B	Private	14,741	0.34	Field	Nicholas	West Virginia	MVP-NI-171	Storage of excess spoil at crossings, material storage, parking
132.6	MVP-ATWS-255A	Private	5,244	0.12	Field	Nicholas	West Virginia	MVP-NI-171	Storage of excess spoil at crossings, material storage, parking
132.6	MVP-ATWS-255C	Private	295,264	6.78	Field	Nicholas	West Virginia	MVP-NI-171	Storage of excess spoil at crossings, material storage, parking
132.7	MVP-ATWS-255	Private	49,656	1.14	Field	Nicholas	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
133.1	MVP-ATWS-257A	Private	4,618	0.11	Field	Nicholas	West Virginia	Mainline	Material storage, parking
133.1	MVP-ATWS-1339	Private	40,640	0.93	Field	Nicholas	West Virginia	Mainline	Material storage, parking
133.1	MVP-ATWS-257	Private	3,215	0.07	Field	Nicholas	West Virginia	Mainline	Material storage, parking
136.0	MVP-ATWS-672	Private	14,188	0.33	Forest	Greenbrier	West Virginia	MVP-GB-174.01	Tractor trailer turn radius
136.4	MVP-ATWS-258	Private	51,759	1.19	Forest	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
136.4	MVP-ATWS-258A	Private	6,690	0.15	Forest	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
136.8	MVP-ATWS-259A	Private	327	0.01	Forest	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
136.8	MVP-ATWS-259	Private	29,835	0.68	Forest	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
137.2	MVP-ATWS-260	Private	14,335	0.33	Forest	Greenbrier	West Virginia	MVP-GB-176	Tractor trailer turn radius
137.2	MVP-ATWS-260A	Private	7,646	0.18	Forest	Greenbrier	West Virginia	MVP-GB-176	Tractor trailer turn radius
137.4	MVP-ATWS-1032	Private	6,780	0.16	Forest	Greenbrier	West Virginia	MVP-GB-176	Tractor trailer turn radius
137.4	MVP-ATWS-1031	Private	5,165	0.12	Forest	Greenbrier	West Virginia	MVP-GB-176	Tractor trailer turn radius
137.5	MVP-ATWS-261	Private	19,828	0.46	Field	Greenbrier	West Virginia	Mainline	Material storage, parking
138.3	MVP-ATWS-1180	Private	2,808	0.06	Forest	Greenbrier	West Virginia	MVP-GB-177	Tractor trailer turn radius
138.3	MVP-ATWS-1181	Private	3,899	0.09	Forest	Greenbrier	West Virginia	MVP-GB-177	Tractor trailer turn radius
138.3	MVP-ATWS-1182	Private	5,697	0.13	Forest	Greenbrier	West Virginia	MVP-GB-177	Tractor trailer turn radius
138.3	MVP-ATWS-1183	Private	8,693	0.20	Forest	Greenbrier	West Virginia	MVP-GB-177	Tractor trailer turn radius
138.3	MVP-ATWS-1184	Private	12,554	0.29	Forest	Greenbrier	West Virginia	MVP-GB-178	Tractor trailer turn radius
138.3	MVP-ATWS-1185	Private	3,780	0.09	Forest	Greenbrier	West Virginia	MVP-GB-178	Tractor trailer turn radius
138.3	MVP-ATWS-1186	Private	8,076	0.19	Forest	Greenbrier	West Virginia	MVP-GB-178	Tractor trailer turn radius
138.3	MVP-ATWS-264	Private	17,762	0.41	Forest	Greenbrier	West Virginia	MVP-GB-177	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
139.5	MVP-ATWS-1189	Private	11,002	0.25	Forest	Greenbrier	West Virginia	MVP-GB-178 -179	Storage of excess spoil at crossings, material storage, parking
139.5	MVP-ATWS-1188	Private	810	0.02	Forest	Greenbrier	West Virginia	MVP-GB-178 -179	Storage of excess spoil at crossings, material storage, parking
139.5	MVP-ATWS-1187	Private	10,056	0.23	Forest	Greenbrier	West Virginia	MVP-GB-178	Storage of excess spoil at crossings, material storage, parking
139.5	MVP-ATWS-267	Private	36,321	0.83	Field	Greenbrier	West Virginia	MVP-GB-178	Storage of excess spoil at crossings, material storage, parking
139.9	MVP-ATWS-268	Private	29,445	0.68	Forest	Greenbrier	West Virginia	Mainline	Material storage, parking
140.1	MVP-ATWS-601	Private	7,754	0.18	Forest	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
140.1	MVP-ATWS-269	Private	12,219	0.28	Forest	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
140.4	MVP-ATWS-270	Private	20,698	0.48	Forest	Greenbrier	West Virginia	Mainline	Material storage, parking
140.5	MVP-ATWS-1354	Private	5,372	0.12	Forest	Greenbrier	West Virginia	MVP-MLV-AR-16	Tractor trailer turn radius
142.8	MVP-ATWS-1190	Private	14,158	0.33	Forest	Greenbrier	West Virginia	MVP-GB-182	Tractor trailer turn radius
142.9	MVP-ATWS-1191	Private	10,013	0.23	Forest	Greenbrier	West Virginia	MVP-GB-182	Tractor trailer turn radius
143.0	MVP-ATWS-642	Private	31,153	0.72	Forest	Greenbrier	West Virginia	Mainline	Material storage, parking
143.0	MVP-ATWS-674	Private	10,289	0.24	Field	Greenbrier	West Virginia	MVP-GB-182	Tractor trailer turn radius
143.3	MVP-ATWS-1311	Private	7,660	0.18	Field	Greenbrier	West Virginia	MVP-GB-182	Tractor trailer turn radius
143.3	MVP-ATWS-1192	Private	1,777	0.04	Forest	Greenbrier	West Virginia	MVP-GB-182	Tractor trailer turn radius
143.3	MVP-ATWS-1195	Private	3,595	0.08	Forest	Greenbrier	West Virginia	MVP-GB-182	Tractor trailer turn radius
143.3	MVP-ATWS-1194	Private	2,968	0.07	Forest	Greenbrier	West Virginia	MVP-GB-182	Tractor trailer turn radius
143.3	MVP-ATWS-643	Private	17,409	0.40	Field	Greenbrier	West Virginia	MVP-GB-182	Tractor trailer turn radius
143.3	MVP-ATWS-1193	Private	11,618	0.27	Forest	Greenbrier	West Virginia	MVP-GB-182	Tractor trailer turn radius
143.5	MVP-ATWS-271	Private	5,383	0.12	Forest	Greenbrier	West Virginia	Mainline	Material storage, parking
143.5	MVP-ATWS-272	Private	11,736	0.27	Forest	Greenbrier	West Virginia	Mainline	Material storage, parking
143.5	MVP-ATWS-271A	Private	15,085	0.35	Forest	Greenbrier	West Virginia	Mainline	Material storage, parking
143.5	MVP-ATWS-272A	Private	8,285	0.19	Forest	Greenbrier	West Virginia	Mainline	Material storage, parking
143.7	MVP-ATWS-273A	Private	78,394	1.80	Forest	Greenbrier	West Virginia	Mainline	Material storage, parking
143.8	MVP-ATWS-274A	Private	13,699	0.31	Field	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
143.8	MVP-ATWS-274	Private	27,250	0.63	Forest	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
145.7	MVP-ATWS-603	Private	15,604	0.36	Forest	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
145.7	MVP-ATWS-603A	Private	7,577	0.17	Forest	Greenbrier	West Virginia	Mainline	Tractor trailer turn radius
145.8	MVP-ATWS-275	Private	86,330	1.98	Field	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
146.3	MVP-ATWS-277	Private	17,347	0.40	Forest	Greenbrier	West Virginia	Mainline	Material storage, parking
146.7	MVP-ATWS-1350	Private	20,066	0.46	Forest	Greenbrier	West Virginia	MVP-GB-185	Material storage, parking
146.7	MVP-ATWS-278A	Private	45,552	1.05	Forest	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
146.8	MVP-ATWS-280	Private	12,601	0.29	Field	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
146.8	MVP-ATWS-280A	Private	4,691	0.11	Forest	Greenbrier	West Virginia	MVP-GB-186	Storage of excess spoil at crossings, material storage, parking
146.8	MVP-ATWS-673	Private	3,661	0.08	ROAD	Greenbrier	West Virginia	MVP-GB-186	Tractor trailer turn radius
146.8	MVP-ATWS-280B	Private	3,660	0.08	Field	Greenbrier	West Virginia	MVP-GB-186	Storage of excess spoil at crossings, material storage, parking
147.3	MVP-ATWS-281A	Private	49,791	1.14	Forest	Greenbrier	West Virginia	Mainline	Material storage, parking
147.8	MVP-ATWS-1336	Private	10,018	0.23	Field	Greenbrier	West Virginia	MVP-GB-187.01 & .02	Tractor trailer turn radius
147.8	MVP-ATWS-1337	Private	10,348	0.24	Field	Greenbrier	West Virginia	MVP-GB-187.01 & .03	Tractor trailer turn radius
147.8	MVP-ATWS-282A	Private	35,935	0.82	Field	Greenbrier	West Virginia	Mainline	Material storage, parking
147.9	MVP-ATWS-283	Private	4,336	0.10	Field	Greenbrier	West Virginia	MVP-GB-187.03	Tractor trailer turn radius
147.9	MVP-ATWS-283A	Private	3,573	0.08	Field	Greenbrier	West Virginia	MVP-GB-187.03	Tractor trailer turn radius
147.9	MVP-ATWS-283B	Private	20,837	0.48	Field	Greenbrier	West Virginia	Mainline	Material storage, parking
148.5	MVP-ATWS-1196	Private	38,084	0.87	Field	Greenbrier	West Virginia	MVP-GB-187 -188	Tractor trailer turn radius
149.0	MVP-ATWS-680	Private	16,500	0.38	Forest	Greenbrier	West Virginia	Mainline	Material storage, parking
149.1	MVP-ATWS-1033	Private	9,506	0.22	Field	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
149.1	MVP-ATWS-1034	Private	31,406	0.72	Forest	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
149.3	MVP-ATWS-285	Private	31,648	0.73	Field	Greenbrier	West Virginia	Mainline	Material storage, parking
149.6	MVP-ATWS-286	Private	16,178	0.37	Forest	Greenbrier	West Virginia	MVP-GB-189	Storage of excess spoil at crossings, material storage, parking

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Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
149.6	MVP-ATWS-286A	Private	1,318	0.03	Forest	Greenbrier	West Virginia	MVP-GB-189	Storage of excess spoil at crossings, material storage, parking
150.3	MVP-ATWS-1199	Private	11,515	0.26	Forest	Greenbrier	West Virginia	MVP-GB-190	Tractor trailer turn radius
150.3	MVP-ATWS-1197	Private	8,476	0.19	Forest	Greenbrier	West Virginia	MVP-GB-190	Tractor trailer turn radius
150.3	MVP-ATWS-1201	Private	6,009	0.14	Field	Greenbrier	West Virginia	MVP-GB-190	Tractor trailer turn radius
150.3	MVP-ATWS-1200	Private	3,342	0.08	Field	Greenbrier	West Virginia	MVP-GB-190	Tractor trailer turn radius
150.3	MVP-ATWS-1198	Private	3,785	0.09	Forest	Greenbrier	West Virginia	MVP-GB-190	Tractor trailer turn radius
150.3	MVP-ATWS-682	Private	5,146	0.12	Forest	Greenbrier	West Virginia	MVP-GB-190	Tractor trailer turn radius
150.3	MVP-ATWS-684	Private	16,079	0.37	Field	Greenbrier	West Virginia	MVP-GB-190	Tractor trailer turn radius
150.3	MVP-ATWS-684A	Private	30,780	0.71	Field	Greenbrier	West Virginia	MVP-GB-190	Tractor trailer turn radius
150.8	MVP-ATWS-681	Private	49,141	1.13	Field	Greenbrier	West Virginia	Mainline	Material storage, parking
151.1	MVP-ATWS-287A	Private	9,591	0.22	Field	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
151.1	MVP-ATWS-287	Private	37,210	0.85	Field	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
153.1	MVP-ATWS-604	Private	78,496	1.80	Field	Greenbrier	West Virginia	Mainline	Material storage, parking
154.1	MVP-ATWS-1054	Private	2,038	0.05	Field	Fayette	West Virginia	MVP-GB-190.01	Tractor trailer turn radius
154.5	MVP-ATWS-291A	Private	21,411	0.49	Field	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
154.5	MVP-ATWS-605	Private	311,214	7.14	Field	Greenbrier	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
155.2	MVP-ATWS-1202	Private	2,822	0.06	Field	Greenbrier	West Virginia	MVP-GB-193	Tractor trailer turn radius
155.2	MVP-ATWS-1203	Private	3,429	0.08	Field	Greenbrier	West Virginia	MVP-GB-193	Tractor trailer turn radius
156.1	MVP-ATWS-1204	Private	4,972	0.11	Field	Greenbrier	West Virginia	MVP-GB-194	Tractor trailer turn radius
156.2	MVP-ATWS-606A	Private	24,491	0.56	Forest	Greenbrier	West Virginia	Mainline	Material storage, parking
156.2	MVP-ATWS-606	Private	27,419	0.63	Forest	Greenbrier	West Virginia	Mainline	Material storage, parking
156.6	MVP-ATWS-1205	Private	3,364	0.08	Forest	Greenbrier	West Virginia	MVP-SU-195 -196	Tractor trailer turn radius
156.6	MVP-ATWS-292A	Private	3,434	0.08	Forest	Greenbrier	West Virginia	MVP-GB-196	Tractor trailer turn radius
156.6	MVP-ATWS-292	Private	7,002	0.16	Forest	Greenbrier	West Virginia	MVP-GB-196	Tractor trailer turn radius
158.4	MVP-ATWS-676	Private	13,791	0.32	Forest	Summers	West Virginia	MVP-SU-197	Material storage
158.9	MVP-ATWS-293	Private	50,061	1.15	Field	Summers	West Virginia	Mainline	Material storage, parking
158.9	MVP-ATWS-293A	Private	9,531	0.22	Field	Summers	West Virginia	Mainline	Material storage, parking
159.1	MVP-ATWS-294	Private	15,969	0.37	Field	Summers	West Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
159.1	MVP-ATWS-294A	Private	26,247	0.60	Field	Summers	West Virginia	Mainline	Material storage, parking
160.0	MVP-ATWS-296	Private	70,446	1.62	Field	Summers	West Virginia	Mainline	Material storage, parking
160.2	MVP-ATWS-297	Private	15,986	0.37	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
160.4	MVP-ATWS-298	Private	23,963	0.55	Forest	Summers	West Virginia	Mainline	Material storage, parking
160.8	MVP-ATWS-1206	Private	12,616	0.29	Forest	Summers	West Virginia	MVP-SU-198	Tractor trailer turn radius
160.8	MVP-ATWS-1208	Private	8,295	0.19	Forest	Summers	West Virginia	MVP-SU-198	Tractor trailer turn radius
160.8	MVP-ATWS-1207	Private	4,645	0.11	Forest	Summers	West Virginia	MVP-SU-198	Tractor trailer turn radius
160.8	MVP-ATWS-1209	Private	8,812	0.20	Forest	Summers	West Virginia	MVP-SU-198	Tractor trailer turn radius
160.8	MVP-ATWS-1210	Private	7,784	0.18	Forest	Summers	West Virginia	MVP-SU-198	Tractor trailer turn radius
160.8	MVP-ATWS-712	Private	11,557	0.27	Forest	Summers	West Virginia	Mainline	Material storage, parking
161.3	MVP-ATWS-1211	Private	12,841	0.29	Forest	Summers	West Virginia	MVP-SU-199	Tractor trailer turn radius
161.3	MVP-ATWS-1212	Private	3,865	0.09	Forest	Summers	West Virginia	MVP-SU-199	Tractor trailer turn radius
161.3	MVP-ATWS-713	Private	96,592	2.22	Forest	Summers	West Virginia	MVP-SU-199	Tractor trailer turn radius
161.8	MVP-ATWS-299	Private	86,030	1.97	Forest	Summers	West Virginia	Mainline	Material storage, parking
162.3	MVP-ATWS-300	Private	40,829	0.94	Forest	Summers	West Virginia	Mainline	Material storage, parking
162.5	MVP-ATWS-301	Private	3,624	0.08	Forest	Summers	West Virginia	Mainline	Material storage, parking
163.5	MVP-ATWS-302	Private	42,379	0.97	Forest	Summers	West Virginia	Mainline	Material storage, parking
165.0	MVP-ATWS-1179	Private	8,495	0.20	Forest	Summers	West Virginia	MVP-SU-201	Tractor trailer turn radius
165.0	MVP-ATWS-1178	Private	4,260	0.10	Forest	Summers	West Virginia	MVP-SU-201	Tractor trailer turn radius
165.0	MVP-ATWS-1177	Private	5,134	0.12	Forest	Summers	West Virginia	MVP-SU-201	Tractor trailer turn radius
165.0	MVP-ATWS-1176	Private	19,668	0.45	Forest	Summers	West Virginia	MVP-SU-201	Tractor trailer turn radius
165.0	MVP-ATWS-1175	Private	12,841	0.29	Forest	Summers	West Virginia	MVP-SU-201	Tractor trailer turn radius
165.0	MVP-ATWS-711	Private	155,798	3.58	Forest	Summers	West Virginia	MVP-SU-201	Material storage
165.6	MVP-ATWS-1174	Private	7,914	0.18	Forest	Summers	West Virginia	MVP-SU-202	Tractor trailer turn radius
165.6	MVP-ATWS-1173	Private	7,462	0.17	Forest	Summers	West Virginia	MVP-SU-202	Tractor trailer turn radius
165.6	MVP-ATWS-1172	Private	9,938	0.23	Field	Summers	West Virginia	MVP-SU-202	Tractor trailer turn radius
165.6	MVP-ATWS-304A	Private	57,464	1.32	Field	Summers	West Virginia	MVP-SU-202	Tractor trailer turn radius
166.5	MVP-ATWS-306	Private	17,977	0.41	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
166.5	MVP-ATWS-307	Private	25,349	0.58	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
166.7	MVP-ATWS-309	Private	32,701	0.75	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
166.7	MVP-ATWS-308	Private	80,506	1.85	Forest	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
166.7	MVP-ATWS-554	Private	7,213	0.17	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
169.3	MVP-ATWS-551	Private	44,032	1.01	Field	Summers	West Virginia	Mainline	Material storage, parking
169.3	MVP-ATWS-552	Private	16,302	0.37	Field	Summers	West Virginia	Mainline	Material storage, parking
169.8	MVP-ATWS-310A	Private	92,633	2.13	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
169.8	MVP-ATWS-310	Private	327,790	7.53	Field	Summers	West Virginia	Mainline	Material storage, parking
169.9	MVP-ATWS-555	Private	7,243	0.17	Forest	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
170.0	MVP-ATWS-556	Private	5,934	0.14	Forest	Summers	West Virginia	Mainline	Material storage, parking
170.3	MVP-ATWS-557	Private	32,981	0.76	Forest	Summers	West Virginia	Mainline	Material storage, parking
170.3	MVP-ATWS-557A	Private	17,723	0.41	Forest	Summers	West Virginia	Mainline	Material storage, parking
170.5	MVP-ATWS-558	Private	137,921	3.17	Forest	Summers	West Virginia	MVP-SU-205	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
170.5	MVP-ATWS-558A	Private	19,047	0.44	Field	Summers	West Virginia	MVP-SU-205	Material storage, parking
170.8	MVP-ATWS-559	Private	201,481	4.63	Field	Summers	West Virginia	MVP-SU-207	Storage of excess spoil at crossings, material storage, parking
170.8	MVP-ATWS-559A	Private	324,539	7.45	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
170.9	MVP-ATWS-559B	Private	3,900	0.09	Field	Summers	West Virginia	MVP-SU-207	Storage of excess spoil at crossings, material storage, parking
171.0	MVP-ATWS-312	Private	87,773	2.01	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
171.0	MVP-ATWS-312A	Private	275,925	6.33	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
171.1	MVP-ATWS-313	Private	90,612	2.08	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
171.2	MVP-ATWS-314A	Private	33,685	0.77	Field	Summers	West Virginia	Mainline	Material storage, parking
171.3	MVP-ATWS-1170	Private	3,992	0.09	Field	Summers	West Virginia	MVP-SU-208	Tractor trailer turn radius
171.3	MVP-ATWS-1171	Private	3,382	0.08	Field	Summers	West Virginia	MVP-SU-208	Tractor trailer turn radius
171.3	MVP-ATWS-1169	Private	11,084	0.25	Field	Summers	West Virginia	MVP-SU-208	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
171.8	MVP-ATWS-315A	Private	7,428	0.17	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, parking
171.9	MVP-ATWS-316	Private	47,593	1.09	Forest	Summers	West Virginia	Mainline	Material storage, parking
172.4	MVP-ATWS-317	Private	121,603	2.79	Field	Summers	West Virginia	Mainline	Material storage, parking
172.8	MVP-ATWS-318	Private	33,084	0.76	Field	Summers	West Virginia	Mainline	Material storage, parking
172.8	MVP-ATWS-318A	Private	29,559	0.68	Field	Summers	West Virginia	Mainline	Material storage, parking
173.2	MVP-ATWS-319	Private	89,701	2.06	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
173.2	MVP-ATWS-319A	Private	15,253	0.35	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
173.3	MVP-ATWS-1070	Private	11,376	0.26	Field	Giles	West Virginia	MVP-MO-210	Tractor trailer turn radius
173.3	MVP-ATWS-1071	Private	15,837	0.36	Forest	Giles	West Virginia	MVP-MO-210	Tractor trailer turn radius
173.3	MVP-ATWS-320	Private	24,629	0.57	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
173.3	MVP-ATWS-320A	Private	13,598	0.31	Field	Summers	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
173.7	MVP-ATWS-1072	Private	7,312	0.17	Forest	Monroe	West Virginia	MVP-MO-210	Tractor trailer turn radius
173.7	MVP-ATWS-1073	Private	5,780	0.13	Field	Monroe	West Virginia	MVP-MO-210	Tractor trailer turn radius
173.8	MVP-ATWS-321	Private	8,500	0.20	Field	Monroe	West Virginia	Mainline	Material storage, parking
175.0	MVP-ATWS-322	Private	18,877	0.43	Field	Monroe	West Virginia	Mainline	Material storage, parking
175.2	MVP-ATWS-1074	Private	2,751	0.06	Field	Monroe	West Virginia	MVP-MO-211	Material storage, parking
175.2	MVP-ATWS-ALT-001	Private	202,561	4.65	Field	Monroe	West Virginia	MVP-MO-211	Material storage, parking
175.5	MVP-ATWS-323	Private	19,148	0.44	Field	Monroe	West Virginia	Mainline	Material storage, parking
175.5	MVP-ATWS-323A	Private	15,745	0.36	Field	Monroe	West Virginia	Mainline	Material storage, parking
175.9	MVP-ATWS-1083	Private	6,893	0.16	Forest	Monroe	West Virginia	MVP-MO-212	Tractor trailer turn radius
175.9	MVP-ATWS-1084	Private	8,024	0.18	Forest	Monroe	West Virginia	MVP-MO-212	Tractor trailer turn radius
175.9	MVP-ATWS-1081	Private	7,659	0.18	Forest	Monroe	West Virginia	MVP-MO-212	Tractor trailer turn radius
175.9	MVP-ATWS-1082	Private	722	0.02	Forest	Monroe	West Virginia	MVP-MO-212	Tractor trailer turn radius
175.9	MVP-ATWS-324	Private	9,399	0.22	Forest	Monroe	West Virginia	MVP-MO-212	Tractor trailer turn radius
175.9	MVP-ATWS-1080	Private	10,000	0.23	Forest	Monroe	West Virginia	Mainline	Material storage, parking
175.9	MVP-ATWS-1086	Private	40,357	0.93	Field	Monroe	West Virginia	MVP-MO-212	Tractor trailer turn radius
175.9	MVP-ATWS-1085	Private	3,388	0.08	Forest	Monroe	West Virginia	MVP-MO-212	Tractor trailer turn radius
176.1	MVP-ATWS-325	Private	41,149	0.94	Field	Monroe	West Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
176.2	MVP-ATWS-1079	Private	4,606	0.11	Field	Monroe	West Virginia	MVP-MO-213	Tractor trailer turn radius
176.2	MVP-ATWS-1079A	Private	1,126	0.03	Field	Monroe	West Virginia	MVP-MO-213	Tractor trailer turn radius
176.2	MVP-ATWS-1078	Private	4,738	0.11	Field	Monroe	West Virginia	MVP-MO-213	Tractor trailer turn radius
176.2	MVP-ATWS-1075	Private	5,721	0.13	Field	Monroe	West Virginia	MVP-MO-213	Tractor trailer turn radius
176.2	MVP-ATWS-325A	Private	34,678	0.80	Field	Monroe	West Virginia	MVP-MO-213	Tractor trailer turn radius
176.4	MVP-ATWS-326	Private	23,277	0.53	Field	Monroe	West Virginia	Mainline	Material storage, parking
176.5	MVP-ATWS-1087	Private	10,477	0.24	Forest	Monroe	West Virginia	MVP-MO-214	Tractor trailer turn radius
176.5	MVP-ATWS-327	Private	15,103	0.35	Forest	Monroe	West Virginia	Mainline	Material storage, parking
176.5	MVP-ATWS-327A	Private	11,122	0.26	Forest	Monroe	West Virginia	MVP-MO-214	Tractor trailer turn radius
176.6	MVP-ATWS-1088	Private	2,441	0.06	Forest	Monroe	West Virginia	MVP-MO-214	Tractor trailer turn radius
176.9	MVP-ATWS-1090	Private	5,246	0.12	Forest	Monroe	West Virginia	MVP-MO-215	Tractor trailer turn radius
176.9	MVP-ATWS-1091	Private	9,560	0.22	Forest	Monroe	West Virginia	MVP-MO-215	Tractor trailer turn radius
176.9	MVP-ATWS-1089	Private	11,085	0.25	Forest	Monroe	West Virginia	MVP-MO-215	Tractor trailer turn radius
177.3	MVP-ATWS-328	Private	53,724	1.23	Forest	Monroe	West Virginia	Mainline	Material storage, parking
177.3	MVP-ATWS-328A	Private	151,322	3.47	Forest	Monroe	West Virginia	Mainline	Material storage, parking
178.8	MVP-ATWS-700	Private	7,852	0.18	Forest	Monroe	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
178.9	MVP-ATWS-330	Private	7,005	0.16	Forest	Monroe	West Virginia	Mainline	Material storage, parking
181.7	MVP-ATWS-331	Private	68,940	1.58	Field	Monroe	West Virginia	Mainline	Material storage, parking
181.9	MVP-ATWS-332	Private	20,170	0.46	Field	Monroe	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
182.1	MVP-ATWS-1098	Private	10,215	0.23	Forest	Monroe	West Virginia	MVP-MO-219	Tractor trailer turn radius
182.1	MVP-ATWS-1099	Private	10,934	0.25	Forest	Monroe	West Virginia	MVP-MO-219	Tractor trailer turn radius
182.1	MVP-ATWS-1092	Private	7,023	0.16	Forest	Monroe	West Virginia	MVP-MO-219	Tractor trailer turn radius
182.1	MVP-ATWS-1093	Private	7,879	0.18	Forest	Monroe	West Virginia	MVP-MO-219	Tractor trailer turn radius
182.1	MVP-ATWS-1094	Private	1,524	0.03	Forest	Monroe	West Virginia	MVP-MO-219	Tractor trailer turn radius
182.1	MVP-ATWS-1095	Private	5,469	0.13	Forest	Monroe	West Virginia	MVP-MO-219	Tractor trailer turn radius
182.1	MVP-ATWS-1097	Private	5,078	0.12	Forest	Monroe	West Virginia	MVP-MO-219	Tractor trailer turn radius
182.1	MVP-ATWS-1096	Private	3,550	0.08	Forest	Monroe	West Virginia	MVP-MO-219	Tractor trailer turn radius
183.2	MVP-ATWS-1315	Private	62,219	1.43	Field	Monroe	West Virginia	Mainline	Material storage, parking
183.3	MVP-ATWS-1101	Private	8,136	0.19	Field	Monroe	West Virginia	MVP-MO-220	Tractor trailer turn radius, material storage

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
183.7	MVP-ATWS-334	Private	10,229	0.23	Forest	Monroe	West Virginia	Mainline	Material storage, parking
183.8	MVP-ATWS-1100	Private	20,499	0.47	Field	Monroe	West Virginia	MVP-MO-220	Tractor trailer turn radius, material storage
184.3	MVP-ATWS-1102	Private	4,053	0.09	Forest	Monroe	West Virginia	MVP-MO-221	Tractor trailer turn radius
184.3	MVP-ATWS-1103	Private	5,893	0.14	Forest	Monroe	West Virginia	MVP-MO-221	Tractor trailer turn radius
184.3	MVP-ATWS-1104	Private	5,061	0.12	Forest	Monroe	West Virginia	MVP-MO-221	Tractor trailer turn radius
184.4	MVP-ATWS-336	Private	23,322	0.54	Field	Monroe	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
184.6	MVP-ATWS-1105	Private	5,050	0.12	Field	Monroe	West Virginia	MVP-MO-222	Tractor trailer turn radius, material storage
184.6	MVP-ATWS-1106	Private	8,255	0.19	Field	Monroe	West Virginia	MVP-MO-222	Tractor trailer turn radius, material storage
184.6	MVP-ATWS-1109	Private	24,660	0.57	Field	Monroe	West Virginia	MVP-MO-222 -223	Tractor trailer turn radius, material storage
184.6	MVP-ATWS-1108	Private	4,251	0.10	Field	Monroe	West Virginia	MVP-MO-222	Tractor trailer turn radius, material storage
184.8	MVP-ATWS-1107	Private	23,910	0.55	Field	Monroe	West Virginia	MVP-MO-223	Tractor trailer turn radius, material storage
184.8	MVP-ATWS-1109A	Private	1,752	0.04	Field	Monroe	West Virginia	MVP-MO-222 -223	Tractor trailer turn radius, material storage
185.2	MVP-ATWS-337	Private	23,322	0.54	Field	Monroe	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
185.5	MVP-ATWS-1110	Private	43,742	1.00	Field	Monroe	West Virginia	MVP-MO-224	Tractor trailer turn radius, material storage
185.5	MVP-ATWS-338	Private	31,891	0.73	Field	Monroe	West Virginia	MVP-MO-224	Tractor trailer turn radius, material storage
185.5	MVP-ATWS-338A	Private	10,988	0.25	Field	Monroe	West Virginia	MVP-MO-224	Tractor trailer turn radius, material storage
186.2	MVP-ATWS-1112	Private	4,416	0.10	Forest	Monroe	West Virginia	MVP-MO-225	Tractor trailer turn radius
186.2	MVP-ATWS-1111	Private	5,381	0.12	Forest	Monroe	West Virginia	MVP-MO-225	Tractor trailer turn radius
186.7	MVP-ATWS-1113	Private	10,748	0.25	Field	Monroe	West Virginia	MVP-MO-226	Tractor trailer turn radius
187.4	MVP-ATWS-1114	Private	5,255	0.12	Forest	Monroe	West Virginia	MVP-MO-227	Tractor trailer turn radius
190.5	MVP-ATWS-647A	Private	14,122	0.32	Field	Monroe	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
190.5	MVP-ATWS-647	Private	31,717	0.73	Field	Monroe	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
191.0	MVP-ATWS-648	Private	6,725	0.15	Field	Monroe	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
191.0	MVP-ATWS-710	Private	13,929	0.32	Field	Monroe	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
191.0	MVP-ATWS-710A	Private	11,944	0.27	Field	Monroe	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
191.0	MVP-ATWS-648A	Private	2,290	0.05	Field	Monroe	West Virginia	MVP-MO-230	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
193.2	MVP-ATWS-657	Private	27,236	0.63	Forest	Monroe	West Virginia	Mainline	Material storage, parking
193.5	MVP-ATWS-658	Private	22,587	0.52	Field	Monroe	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
193.5	MVP-ATWS-658A	Private	5,197	0.12	Forest	Monroe	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
193.8	MVP-ATWS-1069	Private	1,608	0.04	Field	Monroe	West Virginia	WV-MO-231.01	Tractor trailer turn radius
193.8	MVP-ATWS-1068	Private	3,186	0.07	Field	Monroe	West Virginia	WV-MO-231.01	Tractor trailer turn radius
194.1	MVP-ATWS-1059	Private	31,838	0.73	Field	Monroe	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
194.2	MVP-ATWS-1060	Private	37,009	0.85	Field	Monroe	West Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
196.9	MVP-ATWS-1119	Private	11,361	0.26	Field	Giles	Virginia	MVP-GI-232	Tractor trailer turn radius
196.9	MVP-ATWS-1120	Private	14,119	0.32	Field	Giles	Virginia	MVP-GI-232	Tractor trailer turn radius
196.9	MVP-ATWS-1115	Private	3,936	0.09	Forest	Giles	Virginia	MVP-GI-232	Tractor trailer turn radius
196.9	MVP-ATWS-1116	Private	6,155	0.14	Forest	Giles	Virginia	MVP-GI-232	Tractor trailer turn radius
196.9	MVP-ATWS-1117	Private	4,133	0.09	Forest	Giles	Virginia	MVP-GI-232	Tractor trailer turn radius
196.9	MVP-ATWS-1118	Private	6,714	0.15	Forest	Giles	Virginia	MVP-GI-232	Tractor trailer turn radius
197.5	MVP-ATWS-1121	Private	42,256	0.97	Forest	Giles	Virginia	MVP-GI-233	Tractor trailer turn radius
197.5	MVP-ATWS-1123	Private	8,947	0.21	Forest	Giles	Virginia	MVP-GI-233	Tractor trailer turn radius
197.5	MVP-ATWS-1122	Private	12,094	0.28	Forest	Giles	Virginia	MVP-GI-233	Tractor trailer turn radius
197.8	MVP-ATWS-610	Private	158,139	3.63	Field	Giles	Virginia	MVP-GI-234	Tractor trailer turn radius, material storage
197.9	MVP-ATWS-610A	Private	15,873	0.36	Field	Giles	Virginia	MVP-GI-234	Tractor trailer turn radius, material storage
198.2	MVP-ATWS-1125	Private	15,584	0.36	Field	Giles	Virginia	MVP-GI-235	Tractor trailer turn radius
198.2	MVP-ATWS-1124	Private	11,680	0.27	Field	Giles	Virginia	MVP-GI-235	Tractor trailer turn radius
198.2	MVP-ATWS-814	Private	10,732	0.25	Field	Giles	Virginia	Mainline	Material storage, parking
198.3	MVP-ATWS-1128	Private	6,157	0.14	Field	Giles	Virginia	MVP-GI-235 -236	Tractor trailer turn radius
198.3	MVP-ATWS-1127	Private	3,886	0.09	Field	Giles	Virginia	MVP-GI-235	Tractor trailer turn radius
198.3	MVP-ATWS-1126	Private	6,808	0.16	Field	Giles	Virginia	MVP-GI-235 -236	Tractor trailer turn radius
198.3	MVP-ATWS-1130	Private	10,067	0.23	Field	Giles	Virginia	MVP-GI-236	Tractor trailer turn radius
198.3	MVP-ATWS-1129	Private	7,823	0.18	Field	Giles	Virginia	MVP-GI-235	Tractor trailer turn radius
198.3	MVP-ATWS-815	Private	13,477	0.31	Field	Giles	Virginia	MVP-GI-236	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
198.8	MVP-ATWS-1131	Private	6,858	0.16	Field	Giles	Virginia	MVP-GI-237	Tractor trailer turn radius
198.8	MVP-ATWS-1132	Private	933	0.02	Field	Giles	Virginia	MVP-GI-237	Tractor trailer turn radius
199.6	MVP-ATWS-340	Private	33,458	0.77	Field	Giles	Virginia	MVP-GI-238	Storage of excess spoil at crossings, material storage, parking
199.6	MVP-ATWS-339A	Private	13,419	0.31	Field	Giles	Virginia	MVP-GI-238	Storage of excess spoil at crossings, material storage, parking
200.5	MVP-ATWS-1135	Private	8,377	0.19	Field	Giles	Virginia	MVP-GI-239	Tractor trailer turn radius
200.5	MVP-ATWS-1136	Private	8,677	0.20	Field	Giles	Virginia	MVP-GI-239	Tractor trailer turn radius
200.5	MVP-ATWS-1133	Private	9,196	0.21	Field	Giles	Virginia	MVP-GI-239	Tractor trailer turn radius
200.5	MVP-ATWS-1134	Private	7,857	0.18	Field	Giles	Virginia	MVP-GI-239	Tractor trailer turn radius
201.0	MVP-ATWS-1335	Private	10,304	0.24	Forest	Giles	Virginia	Mainline	Material storage, parking
201.3	MVP-ATWS-816	Private	8,135	0.19	Field	Giles	Virginia	MVP-GI-241	Tractor trailer turn radius
201.9	MVP-ATWS-341	Private	33,191	0.76	Field	Giles	Virginia	Mainline	Material storage, parking
202.6	MVP-ATWS-1056	Private	17,142	0.39	Forest	Giles	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
203.3	MVP-ATWS-469	Private	11,074	0.25	Field	Giles	Virginia	Mainline	Material storage, parking
203.3	MVP-ATWS-1334	Private	17,951	0.41	Field	Giles	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
203.4	MVP-ATWS-464	Private	38,535	0.88	Field	Giles	Virginia	Mainline	Material storage, parking
203.9	MVP-ATWS-465	Private	32,844	0.75	Field	Giles	Virginia	Mainline	Material storage, parking
204.4	MVP-ATWS-466	Private	40,554	0.93	Forest	Giles	Virginia	Mainline	Material storage, parking
204.7	MVP-ATWS-1332	Private	5,208	0.12	POWER LINE ROW	Giles	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
204.7	MVP-ATWS-1360	Private	54,409	1.25	Field	Giles	Virginia	Mainline	Material storage, parking
204.8	MVP-ATWS-1333	Private	4,968	0.11	POWER LINE ROW	Giles	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
205.3	MVP-ATWS-470	Private	123,932	2.85	Field	Giles	Virginia	Mainline	Material storage, parking
205.6	MVP-ATWS-471	Private	24,742	0.57	Forest	Giles	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
205.7	MVP-ATWS-1331	Private	27,434	0.63	Field	Giles	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
206.0	MVP-ATWS-467	Private	20,377	0.47	Field	Giles	Virginia	Mainline	Material storage, parking
206.8	MVP-ATWS-1137	Private	2,580	0.06	Forest	Giles	Virginia	MVP-GI-242	Tractor trailer turn radius
206.8	MVP-ATWS-1138	Private	6,182	0.14	Forest	Giles	Virginia	MVP-GI-242	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
207.2	MVP-ATWS-974	Private	15,260	0.35	Forest	Giles	Virginia	MVP-GI-243.01	Material storage
207.5	MVP-ATWS-1145	Private	9,361	0.21	ROW	Giles	Virginia	MVP-GI-244	Tractor trailer turn radius
207.5	MVP-ATWS-1146	Private	12,019	0.28	ROW	Giles	Virginia	MVP-GI-244	Tractor trailer turn radius
207.5	MVP-ATWS-1143	Private	8,639	0.20	Field	Giles	Virginia	MVP-GI-244	Tractor trailer turn radius
207.5	MVP-ATWS-1144	Private	3,796	0.09	Field	Giles	Virginia	MVP-GI-244	Tractor trailer turn radius
211.1	MVP-ATWS-1347	Private	44,417	1.02	Field	Giles	Virginia	MVP-MLV-AR-25	Tractor trailer turn radius, material storage
213.1	MVP-ATWS-633A	Private	87,756	2.01	Field	Giles	Virginia	MVP-GI-256	Tractor trailer turn radius, material storage, parking
213.1	MVP-ATWS-633	Private	125,840	2.89	Field	Giles	Virginia	Mainline	Material storage, parking
213.5	MVP-ATWS-1147	Private	4,381	0.10	Field	Giles	Virginia	MVP-GI-256	Tractor trailer turn radius
218.3	MVP-ATWS-1057	Private	22,725	0.52	Field	Montgomery	Virginia	MVP-GI-258.04 - .05	Tractor trailer turn radius, material storage, parking, hydrostatic test equipment
221.7	MVP-ATWS-1148	Private	9,338	0.21	Field	Montgomery	Virginia	MVP-MN-262	Tractor trailer turn radius, material storage, parking
221.7	MVP-ATWS-1149	Private	13,659	0.31	Field	Montgomery	Virginia	MVP-MN-261	Tractor trailer turn radius
222.1	MVP-ATWS-1151	Private	1,888	0.04	Field	Montgomery	Virginia	MVP-MLV-AR-26	Tractor trailer turn radius
222.1	MVP-ATWS-1150	Private	2,350	0.05	Field	Montgomery	Virginia	MVP-MLV-AR-26	Tractor trailer turn radius
223.4	MVP-ATWS-1152	Private	10,163	0.23	Forest	Montgomery	Virginia	MVP-MN-263	Tractor trailer turn radius
223.4	MVP-ATWS-1154	Private	9,799	0.22	Forest	Montgomery	Virginia	MVP-MN-263	Tractor trailer turn radius
223.4	MVP-ATWS-1153	Private	3,074	0.07	Forest	Montgomery	Virginia	MVP-MN-263	Tractor trailer turn radius
223.8	MVP-ATWS-1155	Private	3,709	0.09	Forest	Montgomery	Virginia	MVP-MN-264	Tractor trailer turn radius
223.8	MVP-ATWS-669	Private	53,937	1.24	Field	Montgomery	Virginia	MVP-MN-264	Storage of excess spoil at crossings, material storage, parking
223.9	MVP-ATWS-670	Private	19,682	0.45	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
223.9	MVP-ATWS-670A	Private	48,753	1.12	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
224.3	MVP-ATWS-1156	Private	3,008	0.07	Forest	Montgomery	Virginia	MVP-MN-266	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
224.3	MVP-ATWS-671	Private	30,114	0.69	Forest	Montgomery	Virginia	MVP-MN-266	Tractor trailer turn radius
225.2	MVP-ATWS-1330	Private	3,103	0.07	Forest	Montgomery	Virginia	MVP-MN-267	Tractor trailer turn radius
225.2	MVP-ATWS-472A	Private	20,788	0.48	Field	Montgomery	Virginia	Mainline	Material storage, parking
225.2	MVP-ATWS-1353	Private	1,768	0.04	Field	Montgomery	Virginia	MVP-MN-266.01	Tractor trailer turn radius
225.2	MVP-ATWS-1353A	Private	657	0.02	Field	Montgomery	Virginia	MVP-MN-266.01	Tractor trailer turn radius
225.3	MVP-ATWS-1157	Private	9,547	0.22	Field	Montgomery	Virginia	MVP-MN-266	Tractor trailer turn radius
225.3	MVP-ATWS-1158	Private	7,585	0.17	Field	Montgomery	Virginia	MVP-MN-266	Tractor trailer turn radius
225.3	MVP-ATWS-472	Private	25,738	0.59	Field	Montgomery	Virginia	MVP-MN-267	Material storage
225.7	MVP-ATWS-473A	Private	26,389	0.61	Field	Montgomery	Virginia	Mainline	Material storage, parking
225.7	MVP-ATWS-473	Private	190,729	4.38	Field	Montgomery	Virginia	MVP-MN-268	Tractor trailer turn radius
225.9	MVP-ATWS-1160	Private	7,309	0.17	Field	Montgomery	Virginia	MVP-MN-268	Tractor trailer turn radius
225.9	MVP-ATWS-1159	Private	8,869	0.20	Field	Montgomery	Virginia	MVP-MN-268	Tractor trailer turn radius
225.9	MVP-ATWS-474	Private	59,378	1.36	Field	Montgomery	Virginia	MVP-MN-268	Material storage
226.2	MVP-ATWS-1161	Private	15,189	0.35	Forest	Montgomery	Virginia	MVP-MN-269	Tractor trailer turn radius
227.0	MVP-ATWS-1163	Private	2,198	0.05	Forest	Montgomery	Virginia	MVP-MN-270	Tractor trailer turn radius
227.0	MVP-ATWS-1162	Private	2,220	0.05	Forest	Montgomery	Virginia	MVP-MN-270	Tractor trailer turn radius
227.0	MVP-ATWS-1164	Private	2,308	0.05	Forest	Montgomery	Virginia	MVP-MN-270	Tractor trailer turn radius
227.0	MVP-ATWS-1165	Private	10,219	0.23	Forest	Montgomery	Virginia	MVP-MN-270	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
228.2	MVP-ATWS-701	Private	55,981	1.29	Field	Montgomery	Virginia	MVP-MN-272	Material storage
228.3	MVP-ATWS-1166	Private	5,408	0.12	Field	Montgomery	Virginia	MVP-MN-272	Tractor trailer turn radius
228.5	MVP-ATWS-1167	Private	3,506	0.08	ROW	Montgomery	Virginia	MVP-MN-273	Tractor trailer turn radius
228.5	MVP-ATWS-1168	Private	4,214	0.10	ROW	Montgomery	Virginia	MVP-MN-273	Tractor trailer turn radius
229.2	MVP-ATWS-704A	Private	226	0.01	Field	Montgomery	Virginia	MVP-MN-275	Material storage
229.2	MVP-ATWS-1061	Private	2,559	0.06	Field	Montgomery	Virginia	MVP-MN-275	Storage of excess spoil at crossings, material storage, parking
229.2	MVP-ATWS-1213	Private	25,167	0.58	Field	Montgomery	Virginia	MVP-MN-274 - 274.01	Storage of excess spoil at crossings, material storage, parking
229.2	MVP-ATWS-703	Private	21,705	0.50	Field	Montgomery	Virginia	MVP-MN-274	Storage of excess spoil at crossings, material storage, parking
229.2	MVP-ATWS-704	Private	21,591	0.50	Field	Montgomery	Virginia	MVP-MN-275	Storage of excess spoil at crossings, material storage, parking
229.3	MVP-ATWS-1062	Private	11,104	0.25	Field	Montgomery	Virginia	MVP-MN-275	Storage of excess spoil at crossings, material storage, parking
230.0	MVP-ATWS-1220	Private	12,317	0.28	Forest	Montgomery	Virginia	MVP-MN-276	Tractor trailer turn radius
230.0	MVP-ATWS-1221	Private	9,392	0.22	Forest	Montgomery	Virginia	MVP-MN-276	Tractor trailer turn radius
230.0	MVP-ATWS-1217	Private	4,434	0.10	Forest	Montgomery	Virginia	MVP-MN-276	Tractor trailer turn radius
230.0	MVP-ATWS-1216	Private	6,920	0.16	Forest	Montgomery	Virginia	MVP-MN-276	Tractor trailer turn radius
230.0	MVP-ATWS-1218	Private	1,932	0.04	Forest	Montgomery	Virginia	MVP-MN-276	Tractor trailer turn radius
230.0	MVP-ATWS-1219	Private	7,773	0.18	Forest	Montgomery	Virginia	MVP-MN-276	Tractor trailer turn radius
233.3	MVP-ATWS-1222	Private	12,325	0.28	Field	Montgomery	Virginia	MVP-MN-278 -279	Tractor trailer turn radius
233.3	MVP-ATWS-1223	Private	3,440	0.08	Field	Montgomery	Virginia	MVP-MN-279	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
233.3	MVP-ATWS-724	Private	6,284	0.14	Field	Montgomery	Virginia	MVP-MN-279	Tractor trailer turn radius
233.3	MVP-ATWS-724A	Private	15,568	0.36	Field	Montgomery	Virginia	MVP-MN-279	Tractor trailer turn radius
233.6	MVP-ATWS-725	Private	221,310	5.08	Field	Montgomery	Virginia	MVP-MN-278	Storage of excess spoil at crossings, material storage, parking
233.8	MVP-ATWS-726	Private	29,212	0.67	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
233.9	MVP-ATWS-727	Private	132,481	3.04	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
234.0	MVP-ATWS-645	Private	87,569	2.01	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
234.0	MVP-ATWS-645A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
237.3	MVP-ATWS-1329	Private	14,259	0.33	Forest	Roanoke	Virginia	MVP-RO-279.01	Tractor trailer turn radius
237.3	MVP-ATWS-968	Private	24,708	0.57	Forest	Roanoke	Virginia	MVP-RO-279.01	Tractor trailer turn radius
237.6	MVP-ATWS-1328	Private	35,118	0.81	Field	Roanoke	Virginia	Mainline	Material storage, parking
238.5	MVP-ATWS-1225	Private	14,364	0.33	Forest	Roanoke	Virginia	MVP-RO-280	Tractor trailer turn radius
238.5	MVP-ATWS-1224	Private	17,230	0.40	Forest	Roanoke	Virginia	MVP-RO-280	Tractor trailer turn radius
238.5	MVP-ATWS-955	Private	5,928	0.14	Field	Roanoke	Virginia	Mainline	Material storage, parking
238.5	MVP-ATWS-955A	Private	8,819	0.20	Forest	Roanoke	Virginia	MVP-RO-280	Tractor trailer turn radius
239.2	MVP-ATWS-1227	Private	7,774	0.18	Forest	Roanoke	Virginia	MVP-RO-281	Tractor trailer turn radius
239.2	MVP-ATWS-1226	Private	6,906	0.16	Forest	Roanoke	Virginia	MVP-RO-281	Tractor trailer turn radius
239.6	MVP-ATWS-1228	Private	3,390	0.08	Forest	Roanoke	Virginia	MVP-RO-281	Tractor trailer turn radius
239.6	MVP-ATWS-1229	Private	3,644	0.08	Forest	Roanoke	Virginia	MVP-RO-281	Tractor trailer turn radius
240.5	MVP-ATWS-1302	Private	9,273	0.21	Field	Roanoke	Virginia	MVP-RO-283	Tractor trailer turn radius
240.5	MVP-ATWS-1303	Private	15,822	0.36	Field	Roanoke	Virginia	MVP-RO-283	Tractor trailer turn radius
240.5	MVP-ATWS-1304	Private	14,970	0.34	Field	Roanoke	Virginia	MVP-RO-283	Tractor trailer turn radius
241.6	MVP-ATWS-1326	Private	20,168	0.46	Field	Roanoke	Virginia	Mainline	Material storage, parking
242.2	MVP-ATWS-1237	Private	9,365	0.21	Field	Roanoke	Virginia	MVP-RO-285	Tractor trailer turn radius
242.2	MVP-ATWS-1236	Private	13,923	0.32	Field	Roanoke	Virginia	MVP-RO-285	Tractor trailer turn radius
242.4	MVP-ATWS-1239	Private	4,007	0.09	Field	Roanoke	Virginia	MVP-RO-286	Tractor trailer turn radius
242.4	MVP-ATWS-1238	Private	3,840	0.09	Field	Roanoke	Virginia	MVP-RO-286	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
207.0	MVP-ATWS-1139	Private	14,791	0.34	Forest	Giles	Virginia	MVP-GI-243	Material storage, parking
207.0	MVP-ATWS-1140	Private	19,239	0.44	Forest	Giles	Virginia	MVP-GI-243	Material storage, parking
207.0	MVP-ATWS-1142	Private	2,098	0.05	Field	Giles	Virginia	MVP-GI-243	Material storage, parking
207.0	MVP-ATWS-1141	Private	8,265	0.19	Field	Giles	Virginia	MVP-GI-243	Material storage, parking
243.3	MVP-ATWS-1305	Private	7,485	0.17	Forest	Roanoke	Virginia	MVP-RO-287	Tractor trailer turn radius
243.3	MVP-ATWS-1306	Private	6,509	0.15	Forest	Roanoke	Virginia	MVP-RO-287	Tractor trailer turn radius
243.6	MVP-ATWS-1308	Private	9,863	0.23	Field	Roanoke	Virginia	MVP-RO-288	Tractor trailer turn radius
243.6	MVP-ATWS-1307	Private	12,951	0.30	Field	Roanoke	Virginia	MVP-RO-288	Tractor trailer turn radius
243.6	MVP-ATWS-1310	Private	14,997	0.34	Forest	Roanoke	Virginia	MVP-RO-288	Tractor trailer turn radius
243.6	MVP-ATWS-1309	Private	9,062	0.21	Field	Roanoke	Virginia	MVP-RO-288	Tractor trailer turn radius
244.0	MVP-ATWS-954	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
244.4	MVP-ATWS-507	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
244.4	MVP-ATWS-507A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
244.7	MVP-ATWS-1247	Private	1,460	0.03	Field	Franklin	Virginia	MVP-FR-290	Tractor trailer turn radius
244.7	MVP-ATWS-1246	Private	905	0.02	Field	Franklin	Virginia	MVP-FR-289 -290	Tractor trailer turn radius
244.7	MVP-ATWS-1037	Private	16,001	0.37	Field	Franklin	Virginia	MVP-FR-289	Tractor trailer turn radius
244.8	MVP-ATWS-343	Private	7,834	0.18	Forest	Franklin	Virginia	Mainline	Material storage, parking
245.1	MVP-ATWS-1039	Private	4,697	0.11	Field	Franklin	Virginia	MVP-FR-290	Material storage
245.1	MVP-ATWS-1038	Private	22,686	0.52	Field	Franklin	Virginia	MVP-FR-290	Material storage
245.2	MVP-ATWS-344	Private	37,518	0.86	Field	Franklin	Virginia	Mainline	Material storage, parking
246.2	MVP-ATWS-1249	Private	7,772	0.18	Forest	Roanoke	Virginia	MVP-FR-291	Tractor trailer turn radius
246.2	MVP-ATWS-1250	Private	20,310	0.47	Forest	Roanoke	Virginia	MVP-FR-291	Tractor trailer turn radius
246.2	MVP-ATWS-1248	Private	6,561	0.15	Forest	Roanoke	Virginia	MVP-FR-291	Tractor trailer turn radius
246.7	MVP-ATWS-1251	Private	6,429	0.15	Field	Roanoke	Virginia	MVP-FR-292	Tractor trailer turn radius
247.1	MVP-ATWS-1340A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Material storage, parking, hydrotest equipment
247.1	MVP-ATWS-345	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Material storage, parking, hydrotest equipment
247.1	MVP-ATWS-345A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Material storage, parking, hydrotest equipment

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
247.4	MVP-ATWS-1317	Private	6,577	0.15	Field	Franklin	Virginia	Mainline	Material storage, parking
247.4	MVP-ATWS-1318	Private	7,453	0.17	Field	Franklin	Virginia	Mainline	Material storage, parking
248.6	MVP-ATWS-1055	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Material storage, parking
251.4	MVP-ATWS-1352	Private	5,000	0.11	Forest	Franklin	Virginia	Mainline	Material storage, parking
251.5	MVP-ATWS-1351	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
251.8	MVP-ATWS-1343	Private	27,968	0.64	Forest	Franklin	Virginia	MVP-FR-293.02	Tractor trailer turn radius, material storage, parking
251.8	MVP-ATWS-1342	Private	36,906	0.85	Forest	Franklin	Virginia	MVP-FR-293.02	Tractor trailer turn radius, material storage, parking
253.5	MVP-ATWS-1253	Private	10,344	0.24	Field	Franklin	Virginia	MVP-FR-294	Tractor trailer turn radius
253.5	MVP-ATWS-1252	Private	7,746	0.18	Field	Franklin	Virginia	MVP-FR-294	Tractor trailer turn radius
253.5	MVP-ATWS-1254	Private	7,184	0.16	Field	Franklin	Virginia	MVP-FR-294	Tractor trailer turn radius
253.5	MVP-ATWS-1255	Private	7,157	0.16	Field	Franklin	Virginia	MVP-FR-294	Tractor trailer turn radius
253.8	MVP-ATWS-1066	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Material storage, parking
255.3	MVP-ATWS-1258	Private	6,913	0.16	Field	Franklin	Virginia	MVP-FR-295	Tractor trailer turn radius
255.3	MVP-ATWS-1256	Private	2,454	0.06	Field	Franklin	Virginia	MVP-FR-295	Tractor trailer turn radius
255.3	MVP-ATWS-1257	Private	1,831	0.04	Field	Franklin	Virginia	MVP-FR-295	Tractor trailer turn radius
255.8	MVP-ATWS-1067	Private	17,075	0.39	Field	Franklin	Virginia	Mainline	Material storage, parking
256.3	MVP-ATWS-613	Private	12,759	0.29	Field	Franklin	Virginia	MVP-FR-296	Tractor trailer turn radius
256.4	MVP-ATWS-614	Private	31,652	0.73	Field	Franklin	Virginia	Mainline	Material storage, parking
256.4	MVP-ATWS-613B	Private	2,767	0.06	Field	Franklin	Virginia	MVP-FR-296	Tractor trailer turn radius
256.6	MVP-ATWS-562	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Material storage, parking
256.7	MVP-ATWS-616	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Material storage, parking, hydrotest equipment
256.9	MVP-ATWS-1259	Private	6,092	0.14	Field	Franklin	Virginia	MVP-FR-297	Tractor trailer turn radius
256.9	MVP-ATWS-1260	Private	6,234	0.14	Field	Franklin	Virginia	MVP-FR-297	Tractor trailer turn radius
256.9	MVP-ATWS-564A	Private	1,443	0.03	Field	Franklin	Virginia	MVP-FR-297	Tractor trailer turn radius
256.9	MVP-ATWS-564	Private	10,937	0.25	Field	Franklin	Virginia	MVP-FR-297	Tractor trailer turn radius
257.0	MVP-ATWS-1362	Private	57,572	1.32	Forest	Franklin	Virginia	Mainline	Material storage, parking
257.7	MVP-ATWS-566	Private	8,997	0.21	Field	Franklin	Virginia	Mainline	Material storage, parking
257.9	MVP-ATWS-568	Private	77,134	1.77	Field	Franklin	Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
258.4	MVP-ATWS-1261	Private	6,377	0.15	Field	Franklin	Virginia	MVP-FR-300	Tractor trailer turn radius
258.4	MVP-ATWS-1262	Private	2,374	0.05	Field	Franklin	Virginia	MVP-FR-300	Tractor trailer turn radius
258.4	MVP-ATWS-569A	Private	132,723	3.05	Field	Franklin	Virginia	MVP-FR-300	Material storage
258.9	MVP-ATWS-516A	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
258.9	MVP-ATWS-515A	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
258.9	MVP-ATWS-515	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
258.9	MVP-ATWS-516	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
259.1	MVP-ATWS-346	Private	40,204	0.92	Field	Franklin	Virginia	Mainline	Material storage, parking
259.4	MVP-ATWS-347	Private	30,927	0.71	Forest	Franklin	Virginia	Mainline	Material storage, parking
259.7	MVP-ATWS-1040	Private	42,697	0.98	Field	Franklin	Virginia	MVP-FR-303.01	Material storage
259.7	MVP-ATWS-1041	Private	21,263	0.49	Field	Franklin	Virginia	MVP-FR-303.01	Material storage
259.8	MVP-ATWS-518	Private	10,482	0.24	Forest	Franklin	Virginia	Mainline	Material storage, parking
259.9	MVP-ATWS-519	Private	7,500	0.17	Field	Franklin	Virginia	Mainline	Material storage, parking
260.4	MVP-ATWS-696	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
260.5	MVP-ATWS-697	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
260.8	MVP-ATWS-698A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage
260.8	MVP-ATWS-571	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage
261.2	MVP-ATWS-1264	Private	25,751	0.59	Field	Franklin	Virginia	MVP-FR-305	Material storage
261.2	MVP-ATWS-1263	Private	30,658	0.70	Field	Franklin	Virginia	MVP-FR-305	Material storage
261.6	MVP-ATWS-1299	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
262.4	MVP-ATWS-1349	Private	1,753	0.04	Field	Franklin	Virginia	MVP-MLV-AR-31	Tractor trailer turn radius
262.4	MVP-ATWS-1348	Private	8,981	0.21	Field	Franklin	Virginia	MVP-MLV-AR-31	Tractor trailer turn radius
262.7	MVP-ATWS-1365	Private	20,056	0.46	Field	Franklin	Virginia	Mainline	Material storage, parking, hydrotest equipment
262.7	MVP-ATWS-1363	Private	143,918	3.30	Field	Franklin	Virginia	Mainline	Material storage, parking, hydrotest equipment

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
263.0	MVP-ATWS-1316	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
263.3	MVP-ATWS-574	Private	13,608	0.31	Field	Franklin	Virginia	MVP-FR-307	Material storage
263.3	MVP-ATWS-575	Private	15,405	0.35	Field	Franklin	Virginia	Mainline	Material storage, parking
263.3	MVP-ATWS-576	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
263.3	MVP-ATWS-576A	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
263.4	MVP-ATWS-577A	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
263.4	MVP-ATWS-577	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
263.8	MVP-ATWS-578	Private	9,172	0.21	Field	Franklin	Virginia	Mainline	Material storage, parking
263.9	MVP-ATWS-617	Private	7,397	0.17	Forest	Franklin	Virginia	Mainline	Material storage, parking
264.5	MVP-ATWS-1042	Private	13,910	0.32	Field	Franklin	Virginia	MVP-FR-308	Material storage
264.8	MVP-ATWS-714	Private	43,970	1.01	Forest	Franklin	Virginia	MVP-FR-309	Tractor trailer turn radius
265.2	MVP-ATWS-348	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
265.3	MVP-ATWS-583	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
265.7	MVP-ATWS-349	Private	106,624	2.45	Field	Franklin	Virginia	Mainline	Material storage, parking
265.9	MVP-ATWS-1266	Private	15,106	0.35	Forest	Franklin	Virginia	MVP-FR-310	Tractor trailer turn radius
265.9	MVP-ATWS-1265	Private	9,278	0.21	Forest	Franklin	Virginia	MVP-FR-310	Tractor trailer turn radius
265.9	MVP-ATWS-521	Private	4,973	0.11	Field	Franklin	Virginia	MVP-FR-310	Tractor trailer turn radius
265.9	MVP-ATWS-521A	Private	843	0.02	Field	Franklin	Virginia	MVP-FR-310	Tractor trailer turn radius
266.2	MVP-ATWS-523	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
266.3	MVP-ATWS-1267	Private	6,492	0.15	Forest	Franklin	Virginia	MVP-FR-311	Tractor trailer turn radius
266.3	MVP-ATWS-1268	Private	4,279	0.10	Forest	Franklin	Virginia	MVP-FR-311	Tractor trailer turn radius
266.3	MVP-ATWS-524	Private	5,427	0.12	Forest	Franklin	Virginia	MVP-FR-311	Tractor trailer turn radius
266.3	MVP-ATWS-524A	Private	3,983	0.09	Forest	Franklin	Virginia	MVP-FR-311	Tractor trailer turn radius
266.6	MVP-ATWS-350	Private	1,540	0.04	Field	Franklin	Virginia	MVP-FR-312 MVP-MVL-AR-32	Material storage
266.6	MVP-ATWS-693	Private	46,005	1.06	Field	Franklin	Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
266.8	MVP-ATWS-351	Private	26,034	0.60	Field	Franklin	Virginia	Mainline	Material storage, parking
266.8	MVP-ATWS-351A	Private	29,415	0.68	Field	Franklin	Virginia	Mainline	Material storage, parking
267.3	MVP-ATWS-1270	Private	12,593	0.29	Field	Franklin	Virginia	MVP-FR-313	Tractor trailer turn radius, material storage, parking
267.3	MVP-ATWS-1269	Private	10,733	0.25	Field	Franklin	Virginia	MVP-FR-313	Tractor trailer turn radius, material storage, parking
267.3	MVP-ATWS-525	Private	22,597	0.52	Field	Franklin	Virginia	MVP-FR-313	Tractor trailer turn radius, material storage, parking
267.4	MVP-ATWS-352	Private	22,984	0.53	Field	Franklin	Virginia	Mainline	Material storage, parking
268.1	MVP-ATWS-353	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
268.1	MVP-ATWS-354	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
269.1	MVP-ATWS-1271	Private	8,884	0.20	Field	Franklin	Virginia	MVP-FR-314	Tractor trailer turn radius, material storage, parking
269.1	MVP-ATWS-1272	Private	21,119	0.48	Field	Franklin	Virginia	MVP-FR-314	Tractor trailer turn radius, material storage, parking
269.1	MVP-ATWS-526A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
269.1	MVP-ATWS-526	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
269.1	MVP-ATWS-526B	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
269.5	MVP-ATWS-622	Private	13,859	0.32	Field	Franklin	Virginia	Mainline	Material storage, parking
269.6	MVP-ATWS-623	Private	10,472	0.24	Forest	Franklin	Virginia	Mainline	Material storage, parking
269.9	MVP-ATWS-1273	Private	24,489	0.56	Field	Franklin	Virginia	MVP-FR-315	Material storage
269.9	MVP-ATWS-356	Private	46,433	1.07	Field	Franklin	Virginia	MVP-FR-315	Material storage
270.4	MVP-ATWS-545	Private	6,488	0.15	Forest	Franklin	Virginia	Mainline	Material storage, parking
270.7	MVP-ATWS-358A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
270.7	MVP-ATWS-358	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
270.8	MVP-ATWS-527	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
270.8	MVP-ATWS-659	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Material storage, parking
271.2	MVP-ATWS-359	Private	40,238	0.92	Field	Franklin	Virginia	Mainline	Material storage, parking
271.5	MVP-ATWS-1340	Private	53,870	1.24	Field	Franklin	Virginia	Mainline	Material storage, parking
271.7	MVP-ATWS-360	Private	41,283	0.95	Field	Franklin	Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
272.0	MVP-ATWS-528	Private	8,098	0.19	Forest	Franklin	Virginia	Mainline	Material storage, parking
272.1	MVP-ATWS-361	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
272.1	MVP-ATWS-529	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
272.5	MVP-ATWS-362	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
272.9	MVP-ATWS-363	Private	13,508	0.31	Field	Franklin	Virginia	Mainline	Material storage, parking
273.2	MVP-ATWS-1043	Private	25,187	0.58	Field	Franklin	Virginia	MVP-FR-318	Material storage
273.2	MVP-ATWS-1044	Private	1,144	0.03	Field	Franklin	Virginia	MVP-FR-318	Material storage
273.2	MVP-ATWS-530	Private	17,181	0.39	Field	Franklin	Virginia	Mainline	Material storage, parking
273.5	MVP-ATWS-531A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
273.5	MVP-ATWS-531	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
273.7	MVP-ATWS-532	Private	13,795	0.32	Field	Franklin	Virginia	Mainline	Material storage, parking
274.1	MVP-ATWS-661	Private	4,637	0.11	Forest	Franklin	Virginia	MVP-AR-319A	Tractor trailer turn radius
274.4	MVP-ATWS-366	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
274.4	MVP-ATWS-365	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
274.5	MVP-ATWS-367	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
274.6	MVP-ATWS-533	Private	5,735	0.13	Forest	Franklin	Virginia	Mainline	Material storage, parking
275.0	MVP-ATWS-1301	Private	18,437	0.42	Field	Franklin	Virginia	MVP-FR-320	Material storage
275.0	MVP-ATWS-1275	Private	10,963	0.25	Forest	Franklin	Virginia	MVP-FR-320	Tractor trailer turn radius
275.0	MVP-ATWS-1274	Private	16,560	0.38	Forest	Franklin	Virginia	MVP-FR-320	Tractor trailer turn radius
275.0	MVP-ATWS-368	Private	24,233	0.56	Field	Franklin	Virginia	Mainline	Material storage, parking
275.0	MVP-ATWS-534	Private	22,844	0.52	Field	Franklin	Virginia	MVP-FR-320	Material storage
275.3	MVP-ATWS-536A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
275.3	MVP-ATWS-536	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
275.4	MVP-ATWS-369	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
275.7	MVP-ATWS-370	Private	40,772	0.94	Field	Franklin	Virginia	Mainline	Material storage, parking
275.8	MVP-ATWS-1276	Private	3,232	0.07	Forest	Franklin	Virginia	MVP-FR-321	Tractor trailer turn radius
275.8	MVP-ATWS-1277	Private	6,819	0.16	Forest	Franklin	Virginia	MVP-FR-321	Tractor trailer turn radius
275.8	MVP-ATWS-1278	Private	6,188	0.14	Forest	Franklin	Virginia	MVP-FR-321	Tractor trailer turn radius
275.8	MVP-ATWS-1279	Private	7,389	0.17	Forest	Franklin	Virginia	MVP-FR-321	Tractor trailer turn radius
275.9	MVP-ATWS-371	Private	12,331	0.28	Forest	Franklin	Virginia	Mainline	Material storage, parking
276.5	MVP-ATWS-372	Private	22,074	0.51	Field	Franklin	Virginia	Mainline	Material storage, parking
276.6	MVP-ATWS-373	Private	46,583	1.07	Field	Franklin	Virginia	Mainline	Material storage, parking
276.8	MVP-ATWS-1280	Private	41,304	0.95	Field	Franklin	Virginia	MVP-FR-322	Tractor trailer turn radius
276.8	MVP-ATWS-715A	Private	34,633	0.80	Field	Franklin	Virginia	MVP-FR-322	Tractor trailer turn radius
276.8	MVP-ATWS-715	Private	27,207	0.62	Field	Franklin	Virginia	MVP-FR-322	Tractor trailer turn radius
277.3	MVP-ATWS-1281	Private	10,280	0.24	Field	Franklin	Virginia	MVP-FR-323	Tractor trailer turn radius
277.3	MVP-ATWS-1282	Private	116,391	2.67	Field	Franklin	Virginia	MVP-FR-323	Tractor trailer turn radius
277.7	MVP-ATWS-374	Private	5,000	0.11	Forest	Franklin	Virginia	Mainline	Material storage, parking
278.1	MVP-ATWS-539	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
278.2	MVP-ATWS-375	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
278.5	MVP-ATWS-376	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
279.3	MVP-ATWS-540	Private	8,830	0.20	ROW	Franklin	Virginia	Mainline	Material storage, parking
279.3	MVP-ATWS-541	Private	12,534	0.29	Forest	Franklin	Virginia	Mainline	Material storage, parking
279.5	MVP-ATWS-377	Private	12,493	0.29	Forest	Franklin	Virginia	Mainline	Material storage, parking
279.8	MVP-ATWS-378	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
279.9	MVP-ATWS-1364	Private	89,995	2.07	Field	Franklin	Virginia	Mainline	Material storage, parking, hydrotest equipment
280.1	MVP-ATWS-379	Private	4,526	0.10	Field	Franklin	Virginia	Mainline	Material storage, parking
280.7	MVP-ATWS-380	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
281.0	MVP-ATWS-1283	Private	13,212	0.30	Field	Pittsylvania	Virginia	MVP-PI-324	Tractor trailer turn radius
281.0	MVP-ATWS-1284	Private	11,406	0.26	Forest	Pittsylvania	Virginia	MVP-PI-324	Tractor trailer turn radius
281.0	MVP-ATWS-650	Private	9,022	0.21	Forest	Franklin	Virginia	MVP-PI-324	Tractor trailer turn radius
281.6	MVP-ATWS-486	Private	32,812	0.75	Forest	Pittsylvania	Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
281.9	MVP-ATWS-487	Private	44,448	1.02	Forest	Pittsylvania	Virginia	Mainline	Material storage, parking
282.3	MVP-ATWS-382A	Private	23,787	0.55	Field	Pittsylvania	Virginia	Mainline	Material storage, parking
282.4	MVP-ATWS-382	Private	63,530	1.46	Field	Pittsylvania	Virginia	Mainline	Material storage, parking
282.6	MVP-ATWS-1285	Private	25,894	0.59	Field	Pittsylvania	Virginia	MVP-PI-325	Tractor trailer turn radius
282.6	MVP-ATWS-1286	Private	22,792	0.52	Field	Pittsylvania	Virginia	MVP-PI-325	Tractor trailer turn radius
282.6	MVP-ATWS-1288	Private	17,202	0.39	Field	Pittsylvania	Virginia	MVP-PI-325	Tractor trailer turn radius
282.6	MVP-ATWS-1287	Private	17,506	0.40	Field	Pittsylvania	Virginia	MVP-PI-325	Tractor trailer turn radius
283.2	MVP-ATWS-383	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
283.2	MVP-ATWS-383A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
283.3	MVP-ATWS-384	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
283.3	MVP-ATWS-384A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
283.8	MVP-ATWS-546	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
283.9	MVP-ATWS-651	Private	2,958	0.07	Forest	Pittsylvania	Virginia	MVP-PI-326	Tractor trailer turn radius
283.9	MVP-ATWS-652	Private	7,148	0.16	Field	Pittsylvania	Virginia	MVP-PI-326	Tractor trailer turn radius
283.9	MVP-ATWS-651A	Private	2,691	0.06	Field	Pittsylvania	Virginia	MVP-PI-326	Tractor trailer turn radius
284.3	MVP-ATWS-385	Private	6,147	0.14	Forest	Pittsylvania	Virginia	Mainline	Material storage, parking
284.7	MVP-ATWS-386	Private	72,588	1.67	Field	Pittsylvania	Virginia	Mainline	Material storage, parking
285.1	MVP-ATWS-488	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
286.2	MVP-ATWS-653	Private	118,516	2.72	Field	Pittsylvania	Virginia	MVP-PI-328	Material storage
286.4	MVP-ATWS-388A	Private	46,349	1.06	Forest	Pittsylvania	Virginia	Mainline	Material storage, parking
286.5	MVP-ATWS-1291	Private	9,853	0.23	Forest	Pittsylvania	Virginia	MVP-PI-330	Tractor trailer turn radius
286.5	MVP-ATWS-1289	Private	8,844	0.20	Forest	Pittsylvania	Virginia	MVP-PI-330	Tractor trailer turn radius
286.5	MVP-ATWS-1290	Private	89	0.00	Forest	Pittsylvania	Virginia	MVP-PI-330	Tractor trailer turn radius
286.6	MVP-ATWS-1292	Private	2,084	0.05	Forest	Pittsylvania	Virginia	MVP-PI-331	Tractor trailer turn radius
286.6	MVP-ATWS-1293	Private	2,849	0.07	Forest	Pittsylvania	Virginia	MVP-PI-331	Tractor trailer turn radius
286.6	MVP-ATWS-1295	Private	4,802	0.11	Forest	Pittsylvania	Virginia	MVP-PI-329 -331	Tractor trailer turn radius
286.6	MVP-ATWS-1294	Private	5,300	0.12	Forest	Pittsylvania	Virginia	MVP-PI-329 -331	Tractor trailer turn radius

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
286.6	MVP-ATWS-1296	Private	3,281	0.08	Forest	Pittsylvania	Virginia	MVP-PI-330 -331	Tractor trailer turn radius
286.6	MVP-ATWS-1297	Private	6,990	0.16	Forest	Pittsylvania	Virginia	MVP-PI-330	Tractor trailer turn radius
286.6	MVP-ATWS-654	Private	9,315	0.21	Forest	Pittsylvania	Virginia	MVP-PI-330	Tractor trailer turn radius
286.7	MVP-ATWS-969	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
286.7	MVP-ATWS-489A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
286.8	MVP-ATWS-389	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
286.8	MVP-ATWS-389A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
287.2	MVP-ATWS-391	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
287.3	MVP-ATWS-392	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
287.8	MVP-ATWS-547	Private	924	0.02	Forest	Pittsylvania	Virginia	MVP-PI-332	Tractor trailer turn radius
287.8	MVP-ATWS-547A	Private	1,003	0.02	Forest	Pittsylvania	Virginia	MVP-PI-332	Tractor trailer turn radius
287.8	MVP-ATWS-655	Private	3,232	0.07	Forest	Pittsylvania	Virginia	MVP-PI-332	Tractor trailer turn radius
287.8	MVP-ATWS-655A	Private	3,277	0.08	Forest	Pittsylvania	Virginia	MVP-PI-332	Tractor trailer turn radius
287.9	MVP-ATWS-547B	Private	11,305	0.26	Field	Pittsylvania	Virginia	MVP-PI-332	Tractor trailer turn radius
288.1	MVP-ATWS-492	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
288.1	MVP-ATWS-492A	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
288.4	MVP-ATWS-493	Private	20,415	0.47	Forest	Pittsylvania	Virginia	Mainline	Material storage, parking
289.1	MVP-ATWS-548	Private	33,184	0.76	Forest	Pittsylvania	Virginia	Mainline	Material storage, parking
289.2	MVP-ATWS-549	Private	9,857	0.23	Field	Pittsylvania	Virginia	Mainline	Material storage, parking
289.4	MVP-ATWS-494	Private	20,414	0.47	Forest	Pittsylvania	Virginia	Mainline	Material storage, parking
290.6	MVP-ATWS-819	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
290.6	MVP-ATWS-820	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
292.2	MVP-ATWS-813	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking, hydrotest equipment
293.7	MVP-ATWS-634	Private	7,030	0.16	Forest	Pittsylvania	Virginia	Mainline	Material storage, parking

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ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
293.8	MVP-ATWS-635	Private	27,307	0.63	Field	Pittsylvania	Virginia	Mainline	Material storage, parking
293.8	MVP-ATWS-821	Private	85,353	1.96	Field	Pittsylvania	Virginia	MVP-PI-336	Material storage
294.2	MVP-ATWS-497	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
294.3	MVP-ATWS-498	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
294.3	MVP-ATWS-625	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
294.4	MVP-ATWS-627	Private	4,231	0.10	Forest	Pittsylvania	Virginia	Mainline	Material storage, parking
294.4	MVP-ATWS-626	Private	3,381	0.08	Forest	Pittsylvania	Virginia	Mainline	Material storage, parking
294.5	MVP-ATWS-628	Private	4,296	0.10	Forest	Pittsylvania	Virginia	Mainline	Material storage, parking
294.6	MVP-ATWS-630	Private	1,976	0.05	Forest	Pittsylvania	Virginia	Mainline	Material storage, parking
294.6	MVP-ATWS-629	Private	4,145	0.10	Forest	Pittsylvania	Virginia	Mainline	Material storage, parking
295.1	MVP-ATWS-499A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
295.1	MVP-ATWS-631	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
295.2	MVP-ATWS-500A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
295.2	MVP-ATWS-500	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage
295.5	MVP-ATWS-794	Private	38,788	0.89	Field	Pittsylvania	Virginia	Mainline	Material storage, parking
295.8	MVP-ATWS-504	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
296.1	MVP-ATWS-398	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
296.7	MVP-ATWS-399	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
296.7	MVP-ATWS-399A	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
296.8	MVP-ATWS-400	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
296.8	MVP-ATWS-400A	Private	33,208	0.76	Forest	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
296.9	MVP-ATWS-1313	Private	3,673	0.08	Field	Pittsylvania	Virginia	MVP-PI-339	Tractor trailer turn radius

Appendix 1-D

ATWS Required for the MVP Project

Milepost	Name	Ownership	Area (Sq. Feet)	Area (Acres)	Current Land Use	County	State	Associated Access Road	Purpose
296.9	MVP-ATWS-1312	Private	3,895	0.09	Field	Pittsylvania	Virginia	MVP-PI-339	Tractor trailer turn radius
296.9	MVP-ATWS-505A	Private	7,950	0.18	Field	Pittsylvania	Virginia	MVP-PI-339	Tractor trailer turn radius
296.9	MVP-ATWS-505	Private	19,121	0.44	Field	Pittsylvania	Virginia	MVP-PI-339	Tractor trailer turn radius
297.2	MVP-ATWS-1319	Private	16,834	0.39	Field	Pittsylvania	Virginia	Mainline	Material storage, parking
297.3	MVP-ATWS-1321	Private	6,926	0.16	Field	Pittsylvania	Virginia	Mainline	Material storage, parking
297.3	MVP-ATWS-1320	Private	11,808	0.27	Field	Pittsylvania	Virginia	Mainline	Material storage, parking
297.3	MVP-ATWS-1298	Private	10,295	0.24	Forest	Pittsylvania	Virginia	MVP-PI-340	Material storage
297.3	MVP-ATWS-506	Private	20,649	0.47	Forest	Pittsylvania	Virginia	MVP-PI-340	Material storage
298.6	MVP-ATWS-1322	Private	4,308	0.10	Field	Pittsylvania	Virginia	Mainline	Material storage, parking
298.7	MVP-ATWS-1323	Private	9,639	0.22	Field	Pittsylvania	Virginia	Mainline	Material storage, parking
298.7	MVP-ATWS-611	Private	154,403	3.54	Field	Pittsylvania	Virginia	Mainline	Material storage, parking
299.0	MVP-ATWS-612	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
299.1	MVP-ATWS-401A	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
299.1	MVP-ATWS-401	Private	33,208	0.76	Field	Montgomery	Virginia	Mainline	Storage of excess spoil at crossings, material storage, parking
299.6	MVP-ATWS-1324	Private	5,000	0.11	Field	Pittsylvania	Virginia	Mainline	Material storage, parking
299.7	MVP-ATWS-1325	Private	4,878	0.11	Field	Pittsylvania	Virginia	Mainline	Material storage, parking
300.97	MVP-ATWS-1357	Private	177,430	4.07	Forest	Pittsylvania	Virginia	MVP-PI-342 & 342.01	Material storage, parking

Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

Appendix 1-E Co-Location Table

Appendix 1-E						
Existing Corridors Adjacent to the Proposed Project						
Name	Type	MP Begin	MP End	Distance	Off-Set between Pipe and Edge of ROW	Construction ROW Overlap
Unknown	Pipeline	0.9	1.05	800	Unknown	Unknown
Field Road	Field Road Row	0.2	0.35	800	Varies	Varies
First Energy	Overhead Power Line	1.7	1.85	800	Varies	Varies
Co Rte 7/6 - Richwood Run Road	County Road Row	1.75	1.85	500	Varies	Varies
Co Rte 7/8 - Fallen Timber Run Road	County Road Row	2.3	2.36	300	Varies	Varies
Co Rte 21/1 - Bear Run Road	County Road Row	3	3.5	2600	Varies	Varies
Mountaineer Gas	Pipeline	3.3	3.5	1100	25	Unknown
Columbia Gas Transmission	Pipeline	3.9	4	500	67	0
Unknown	Pipeline	4.2	4.6	2100	25	Unknown
Field Road	Field Road Row	6.1	6.4	1600	0	Varies
Field Road	Field Road Row	12.5	12.7	1100	Varies	Varies
Unknown	Pipeline	12.7	12.85	800	0	Unknown
Unknown	Pipeline	13.25	13.35	500	0	Unknown
Unknown	Pipeline	14	14.1	500	0	Unknown
Field Trail	Field Trail Row	14.1	14.4	1600	0	Varies
Dominion Transmission Inc.	Pipeline	14.85	16	6100	25	38
Field Road	Field Road Row	16	16.65	3400	0	Varies
Unknown	Pipeline	16.25	16.35	500	25	Unknown
Unknown	Pipeline	16.45	16.65	1100	25	Unknown
Unknown	Pipeline	20.2	20.25	300	12	Unknown
Field Trail	Field Trail Row	21	21.2	1100	0	Varies
Cnx - 2"	Pipeline	22.1	22.6	2600	Varies	Unknown
Field Trail	Field Trail Row	23.4	24	3200	Varies	Varies
Unknown	Fiber optic	24.85	24.95	500	0	Unknown
Dominion Transmission Inc.	Pipeline	25.65	25.7	300	Varies	Unknown
Field Road	Field Road Row	28.25	28.5	1300	0	Varies
Dominion Transmission Inc.	Pipeline	29.2	29.4	1100	0	50
Field Trail	Field Trail Row	29.4	29.7	1600	Varies	Varies
Field Trail	Field Trail Row	29.55	29.72	900	Varies	Varies
Field Trail	Field Trail Row	30.5	30.7	1100	0	Varies
Dominion Transmission Inc.	Pipeline	31	31.5	2600	114	0
Dominion Transmission Inc.	Pipeline	31.7	31.8	500	12	50
First Energy	Overhead Power Line	32.7	33.1	2100	20	Unknown
Unknown	Pipeline	32.7	32.9	1100	48	Unknown
Consol	Pipeline	32.9	33	500	Varies	Unknown
Unknown	Pipeline	32.9	33	500	Varies	Unknown
Frontier communications	Underground Telephone Line	32.9	33	500	Varies	Unknown
Field Road	Field Road Row	33.82	34.5	3600	Varies	Varies
Service Road	Field Road Row	34.4	34.48	400	Varies	Varies

Appendix 1-E

Existing Corridors Adjacent to the Proposed Project

Name	Type	MP Begin	MP End	Distance	Off-Set between Pipe and Edge of ROW	Construction ROW Overlap
Momentum - Proposed	Pipeline	35.15	35.3	800	25	25
Field Road	Field Road Row	35.3	35.7	2100	Varies	Varies
Field Road	Field Road Row	35.98	36.08	500	Varies	Varies
Unknown	Pipeline	36	36.1	500	0	Unknown
Field Road	Field Road Row	36.9	37.6	3700	Varies	Varies
Field Road	Field Road Row	39.3	39.95	3400	Varies	Varies
Dominion Transmission Inc.	Pipeline	39.98	40.03	300	16	47
Dominion Transmission Inc.	Pipeline	42.2	42.4	1100	Varies	Varies
Dominion Transmission Inc.	Pipeline	42.85	44	6100	Varies	Varies
Dominion Transmission Inc.	Pipeline	42.95	43.5	2900	Varies	Varies
Dominion Transmission Inc.	Pipeline	43.8	43.95	800	25	25
Field Road	Field Road Row	43.95	44.6	3400	Varies	Varies
Dominion Transmission Inc.	Pipeline	44.9	44.95	300	53	50
First Energy	Underground electric	45.5	45.85	1800	Varies	Unknown
Dominion Transmission Inc.	Pipeline	46.44	46.46	100	Varies	Unknown
Field Road	Field Road Row	46.6	47.5	4800	Varies	Varies
Consol	Pipeline	47.1	47.3	1100	Varies	Unknown
Field Road	Field Road Row	48.03	48.05	100	Varies	Varies
Field Trail	Field Trail Row	51.3	51.45	800	0	Varies
Unknown	Pipeline	51.8	52.3	2600	Varies	Unknown
Unknown	Pipeline	52.4	52.6	1100	Varies	Unknown
Dominion Transmission Inc.	Pipeline	52.8	53.1	1600	96	25
Co Rte 17/2 - Rock Run	County Road Row	52.9	53.1	1100	Varies	Varies
Co Rte 20/6 - Loveberry Ridge	County Road Row	53.1	53.25	800	Varies	Varies
Field Trail	Field Trail Row	53.25	54.4	6100	0	Varies
First Energy	Overhead Power Line	53.2	53.3	500	Varies	Unknown
Unknown	Pipeline	53.2	53.3	500	Varies	Unknown
Cnx	Pipeline	54.8	54.85	300	25	Unknown
Dominion Transmission Inc.	Pipeline	55.45	55.55	500	Varies	Varies
Field Trail	Field Trail Row	55.95	55.99	200	Varies	Varies
Eqt	Pipeline	56.3	56.5	1100	0	50
East America	Pipeline	56.5	56.55	300	25	Unknown
Field Road	Field Road Row	56.6	56.73	700	Varies	Varies
Field Road	Field Road Row	57.3	58.1	4200	0	Varies
Field Road	Field Road Row	59.7	59.8	500	Varies	Varies
Dominion Transmission Inc.	Pipeline	60.6	60.7	500	Varies	Varies
Field Road	Field Road Row	60.85	61.35	2600	Varies	Varies
Dominion Transmission Inc.	Pipeline	60.9	60.95	300	Varies	Varies
Field Road	Field Road Row	61.9	62.15	1300	0	Varies
Unknown	Pipeline	63.1	63.35	1300	55	Unknown

Appendix 1-E						
Existing Corridors Adjacent to the Proposed Project						
Name	Type	MP Begin	MP End	Distance	Off-Set between Pipe and Edge of ROW	Construction ROW Overlap
Field Road	Field Road Row	64.45	64.68	1200	Varies	Varies
Field Trail	Field Trail Row	64.95	65.15	1100	0	Varies
Field Trail	Field Trail Row	66.2	66.4	1100	0	Varies
Field Trail	Field Trail Row	67	67.05	300	0	Varies
Field Trail	Field Trail Row	67.15	67.3	800	0	Varies
Field Trail	Field Trail Row	68	68.6	3200	0	Varies
Unknown	Pipeline	69	69.1	500	Varies	Unknown
Field Trail	Field Trail Row	69	69.12	600	0	Unknown
Field Road	Field Road Row	71.85	71.9	300	0	Unknown
Field Road	Field Road Row	72	72.05	300	0	Varies
Unknown	Pipeline	72.6	73.5	4800	Varies	Unknown
Field Road	Field Road Row	72.62	73.4	4100	Varies	Varies
Field Road	Field Road Row	74.3	74.5	1100	0	Varies
First Energy	Overhead Power Line	73.65	73.85	1100	Varies	Unknown
Field Road	Field Road Row	75	75.15	800	0	Varies
Field Trail	Field Trail Row	75.35	76.2	4500	0	Varies
Momentum - Proposed	Pipeline	76.05	76.3	1300	Varies	Varies
Momentum - Proposed	Pipeline	76.4	76.5	500	25	Unknown
Vernon Road 23 and Field Road	County Road Row	78.4	78.5	500	Varies	Varies
Field Trail	Field Trail Row	81.45	81.6	800	Varies	Varies
First Energy	Overhead Power Line	82.1	82.4	1600	Varies	Unknown
Field Trail	Field Trail Row	82.15	82.25	500	0	Varies
Cowger Hill Rd 3/8	County Road Row	82.28	82.5	1200	Varies	Varies
Field Trail	Field Trail Row	83.9	84.05	800	0	Varies
Field Trail	Field Trail Row	86.27	86.6	1700	0	Varies
Field Road	Field Road Row	88.55	90.04	7900	Varies	Varies
Field Road	Field Road Row	91.2	92.1	4800	Varies	Varies
Field Road	Field Road Row	93.6	97	18000	0	Varies
Co Rte 9 - Laurel Creek Road	County Road Row	98.65	98.9	1300	Varies	Varies
First Energy	Overhead Power Line	98.75	98.85	500	Varies	Unknown
Field Trail	Field Trail Row	103.6	103.75	800	0	Unknown
First Energy	Overhead Power Line	105.9	106.1	1100	Varies	Unknown
Field Trail	Field Trail Row	107.1	107.3	1100	0	Varies
Field Road	Field Road Row	108.3	108.65	1800	Varies	Varies
Field Road	Field Road Row	109.25	109.45	1100	Varies	Varies
Driveway	Local Road Row	109.75	109.8	300	Varies	Varies
Field Road	Field Road Row	110.5	110.78	1500	Varies	Varies
Field Road	Field Road Row	110.9	110.95	300	Varies	Varies
Unknown	Pipeline	113.45	113.65	1100	94	Unknown
Unknown	Pipeline	113.7	113.8	500	20	Unknown

Appendix 1-E						
Existing Corridors Adjacent to the Proposed Project						
Name	Type	MP Begin	MP End	Distance	Off-Set between Pipe and Edge of ROW	Construction ROW Overlap
Field Road	Field Road Row	118.95	119.15	1100	0	Varies
Field Road	Field Road Row	122.5	122.6	500	0	Varies
AEP	Overhead Power Line	122.8	122.85	300	Varies	Unknown
Field Road	Field Road Row	127.8	127.83	200	0	Varies
AEP	Overhead Power Line	129.38	129.42	200	Varies	Unknown
Co Rte 13 - Old Nicholas Road	County Road Row	129.38	129.46	400	Varies	Varies
Field Road	Field Road Row	131.65	131.82	900	0	Varies
AEP	Overhead Power Line	132.85	133	800	Varies	Unknown
Co Rte 17/4 - Bamboo School Road	County Road Row	133.14	133.7	3000	Varies	Varies
Co Rte 17/4 - Bamboo School Road	County Road Row	134.4	135.3	4800	Varies	Varies
AEP	Overhead Power Line	134.6	134.7	500	Varies	Unknown
AEP	Overhead Power Line	135.85	136.4	2900	73	Unknown
Bamboo School rd 17/4	County Road Row	136.04	136.05	100	78	Varies
Anglins Creek Road And Bamboo School Rd 17/4	State Route Row	136.35	136.65	1600	Varies	Varies
Field Road	Field Road Row	136.7	136.8	500	0	Varies
Field Road	Field Road Row	137.25	137.35	500	Varies	Varies
Field Road	Field Road Row	137.97	139.35	7300	Varies	Varies
AEP	Overhead Power Line	138.15	138.25	500	Varies	Unknown
AEP	Overhead Power Line	140.45	140.55	500	Varies	Unknown
Co Rte 4 - Bingham Road	County Road Row	140.45	140.6	800	Varies	Varies
Field Road	Field Road Row	140.98	141.3	1700	0	Varies
FIELD ROAD	Field Road Row	141.55	142.45	4800	0	Varies
AEP	Overhead Power Line	143.8	143.85	300	Varies	Unknown
Field Road	Field Road Row	145.75	146	1300	Varies	Varies
Field Trail	Field Trail Row	151.35	151.55	1100	0	Varies
AEP	Overhead Power Line	152.15	152.25	500	Varies	Unknown
Field Road	Field Road Row	152.3	152.65	1800	0	Varies
Co Rte 24/2 - Coal Hollow	County Road Row	152.9	153.3	2100	Varies	Varies
Field Road	Field Road Row	153.8	153.95	800	0	Varies
Frontier Communications	Underground Telephone Line	158.8	158.85	300	Varies	Unknown
Field Trail	Field Trail Row	159.3	159.5	1100	Varies	Varies
Field Trail	Field Trail Row	160.3	160.5	1100	0	Varies
Field Trail	Field Trail Row	162.85	162.97	600	0	Varies
Field Trail	Field Trail Row	163.25	164.2	5000	Varies	Varies
Co Rte 17/7 - Keeney Knob Fire Tower	County Road Row	163.3	163.5	1100	Varies	Varies
Frontier Communications	Underground Telephone Line	166.8	167.05	1300	Varies	Unknown
AEP	Overhead Power Line	166.8	167.05	1300	Varies	Unknown
Field Trail	Field Trail Row	167.75	168.35	3200	0	Varies
Field Road	Field Road Row	170.05	170.15	500	Varies	Varies

Appendix 1-E						
Existing Corridors Adjacent to the Proposed Project						
Name	Type	MP Begin	MP End	Distance	Off-Set between Pipe and Edge of ROW	Construction ROW Overlap
AEP	Overhead Power Line	170.4	170.45	300	Varies	Unknown
Field Trail	Field Trail Row	171.3	171.55	1300	Varies	Varies
AEP	Overhead Power Line	173.2	173.5	1600	Varies	Unknown
Field rOAD	Field Road Row	173.6	174.4	4200	0	Varies
Creamery Rd 7/7 Huffman Road	Local Public Road Row	175.2	175.6	2100	Varies	Varies
Field Road	Field Road Row	176.75	177.3	2900	0	Varies
AEP	Overhead Power Line	179.1	179.35	1300	Varies	Unknown
Field Road	Field Road Row	179.1	179.8	3700	Varies	Varies
AEP	Overhead Power Line	184	184.15	800	Varies	Unknown
Field Road	Field Road Row	181.4	181.5	500	Varies	Varies
Field Road	Field Road Row	182.25	183.55	6900	Varies	Varies
Co Rte 25/5 - Blue Lick	County Road Row	187.29	187.58	1500	Varies	Varies
Field Trail	Field Trail Row	191.1	192	4800	0	Varies
Appalachian Trl	National Trail	195.39	195.47	400	Varies	Varies
Field Trail	Field Trail Row	195.9	197.85	10300	Varies	Varies
AEP - Lurich - Cloverdale	Overhead Power Line	199.1	199.4	1600	116	0
AEP - Lurich - Cloverdale	Overhead Power Line	199.4	199.8	2100	Varies	0
AEP - Lurich - Cloverdale	Overhead Power Line	199.8	200.1	1600	80	7
AEP - Lurich - Cloverdale	Overhead Power Line	201.1	201.5	2100	86	0
AEP - Glen Lyn - Hancock	Overhead Power Line	201.95	202.3	1800	77	0
Field Trail	Field Trail Row	201.9	201.98	400	0	Varies
AEP - Glen Lyn - Hancock	Overhead Power Line	202.3	202.55	1300	Varies	0
St Rte 688 - Hendricks Road	State Route Row	202.35	202.43	400	Varies	Varies
Field Road	Field Road Row	202.82	203	1000	0	Varies
AEP - Glen Lyn - Hancock	Overhead Power Line	202.55	202.9	1800	82	6
AEP - Glen Lyn - Hancock	Overhead Power Line	203.15	203.45	1600	79	8
AEP - Glen Lyn - Hancock	Overhead Power Line	203.45	203.9	2400	83	0
AEP - Glen Lyn - Hancock	Overhead Power Line	203.9	204.1	1100	84	4
AEP - Glen Lyn - Hancock	Overhead Power Line	204.1	204.95	4500	84	4
AEP - Glen Lyn - Hancock	Overhead Power Line	204.95	205.65	3700	Varies	0
AEP - Glen Lyn - Hancock	Overhead Power Line	205.65	206.8	6100	69	0
AEP - Glen Lyn - Hancock	Overhead Power Line	206.8	207	1100	Varies	0
Field Road	Field Road Row	206.9	207	500	0	Varies
AEP - Glen Lyn - Hancock	Overhead Power Line	207	207.55	2900	96	0
AEP - Glen Lyn - Hancock	Overhead Power Line	209.6	209.9	1600	22	16
Gristmill In	Local Public Road Row	209.02	209.15	700	Varies	Varies
Virginia Ave - State Highway 460	State Route Row	210.79	210.81	100	83	4
AEP - North Blacksburg - Mount View	Overhead Power Line	221.4	221.75	1800	82	5
AEP - Glen Lyn - Hancock	Overhead Power Line	221.75	222.5	4000	Varies	0

Appendix 1-E

Existing Corridors Adjacent to the Proposed Project

Name	Type	MP Begin	MP End	Distance	Off-Set between Pipe and Edge of ROW	Construction ROW Overlap
AEP - Glen Lyn - Hancock	Overhead Power Line	222.5	222.8	1600	89	1
AEP - Glen Lyn - Hancock	Overhead Power Line	222.8	223.4	3200	Varies	0
Horse Farm Road	State Route Row	222.89	222.92	200	Varies	Varies
AEP - Glen Lyn - Hancock	Overhead Power Line	223.4	223.75	1800	Varies	0
AEP - Glen Lyn - Hancock	Overhead Power Line	223.75	224	1300	Varies	0
Mill Creek Road	Local Public Road Row	223.89	223.95	300	0	Varies
AEP - Glen Lyn - Hancock	Overhead Power Line	224	225.4	7400	75	13
Service Road	Local Private Road Row	224.3	224.4	500	Varies	Varies
Field Trail	Field Trail Row	224.7	224.82	600	0	Varies
AEP - Glen Lyn - Hancock	Electric Transmission Line	226.6	226.75	800	76	9
AEP - Glen Lyn - Hancock	Electric Transmission Line	226.75	227.55	4200	Varies	0
AEP - Glen Lyn - Hancock	Electric Transmission Line	227.55	229.05	7900	70	18
AEP - Glen Lyn - Hancock	Electric Transmission Line	229.05	229.35	1600	Varies	0
Field Road	Field Road Row	229.2	229.35	800	Varies	Varies
Reese Mountain Rd	State Route Row	231	231.2	1100	Varies	Varies
Reese Mountain Rd	State Route Row	230.1	230.12	100	Varies	Varies
AEP - Glen Lyn - Hancock	Electric Transmission Line	232.85	233.05	1100	74	13
Field Trail	Field Trail Row	236.6	237.15	2900	Varies	Varies
Field Road	Field Road Row	238.5	238.65	800	Varies	Varies
Field Road	Field Road Row	246.5	246.65	800	Varies	Varies
AEP	Overhead Power Line	247.1	247.35	1300	Varies	0
St Rte 643 - Adney Gap Road	State Route Row	247.19	247.31	600	Varies	Varies
St Rte 643 - Adney Gap Road	State Route Row	247.2	247.31	600	50	13
Labellevue Dr - Service Road	Local private Road Row	254.85	255.3	2400	Varies	Varies
St Rte 919 - Grassy Hill Road	State Route Row	256.58	256.64	300	Varies	Varies
St Rte 697 - Brick Church Road	State Route Row	258.92	258.93	100	Varies	Varies
AEP - Roanoke - Carolina	Electric Transmission Line	259.05	259.4	1800	33	55
AEP - Roanoke - Carolina	Electric Transmission Line	259.4	259.7	1600	41	0
AEP - Blaine Loop	Electric Transmission Line	262.1	262.25	800	Varies	Varies
AEP	Overhead Power Line	263.1	263.6	2600	Varies	Varies
Field Road	Field Road Row	263.6	263.95	1800	Varies	Varies
AEP - Blaine Loop	Electric Transmission Line	263.7	264	1600	Varies	Varies
AEP - Blaine - Westlake	Electric Transmission Line	264	264.25	1300	Varies	Varies
AEP - Blaine - Westlake	Electric Transmission Line	264.25	265.3	5500	-13	50
Field Road	Field Road Row	264.45	265.45	5300	Varies	Varies
Field Road	Field Road Row	270.8	272.5	9000	Varies	Varies
Field Road	Field Road Row	273.5	273.65	800	Varies	Varies
Field Road	Field Road Row	274.14	274.16	100	Varies	Varies
AEP - Penhook - Westlake	Electric Transmission Line	274.85	275.25	2100	10	25
AEP - Penhook - Westlake	Electric Transmission Line	275.3	275.75	2400	13	25

Appendix 1-E						
Existing Corridors Adjacent to the Proposed Project						
Name	Type	MP Begin	MP End	Distance	Off-Set between Pipe and Edge of ROW	Construction ROW Overlap
Field Road	Field Road Row	275.3	275.7	2100	0	Varies
AEP - Penhook - Westlake	Electric Transmission Line	275.8	276.1	1600	25	13
AEP - Penhook - Westlake	Electric Transmission Line	276.15	276.55	2100	12	76
Field Road	Field Road Row	276.15	276.55	2100	Varies	Varies
AEP - Penhook - Westlake	Electric Transmission Line	276.55	277	2400	0	38
Field Road	Field Road Row	276.9	277.15	1300	0	Varies
AEP - Penhook - Westlake	Electric Transmission Line	277	277.2	1100	Varies	Varies
AEP - Penhook - Westlake	Electric Transmission Line	277.2	277.55	1800	38	0
AEP - Penhook - Westlake	Electric Transmission Line	277.9	278.15	1300	25	62
Field Road	Field Road Row	277.9	278.2	1600	Varies	Varies
AEP - Penhook - Westlake	Electric Transmission Line	278.08	280.15	10900	Varies	Varies
AEP - Penhook - Westlake	Electric Transmission Line	278.15	278.5	1800	20	20
AEP - Penhook - Westlake	Electric Transmission Line	278.78	280.08	6900	38	0
Field Road	Field Road Row	280.1	280.5	2100	Varies	Varies
Field Road	Field Road Row	285.4	286.1	3700	Varies	Varies
Field Road	Field Road Row	287.78	287.9	600	0	Varies
Snowberry Road	State Route Row	287.99	288.32	1700	Varies	Varies
AEP - Smith Mountain - East Danville	Electric Transmission Line	289.45	289.65	1100	96	0
Toshes Road St Rte 605	State Route Row	290.25	290.32	400	Varies	Varies
RailRoad	RailRoad Row	295.4	295.67	1400	28	Varies
Field Road	Field Road Row	295.65	295.76	600	Varies	Varies
Field Road	Field Road Row	296.6	296.7	500	Varies	Varies
Transco	Pipeline	300.55	300.8	1300	63	0

Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

**Appendix 1-F
Access Road Table**

Appendix 1F Access Roads																
MVP ID	NEW MPS	COUNTY	STATE	OWNERSHIP	TEMPORARY ACCESS	PERMANENT ACCESS	STATUS (EXISTING OR NEW ROAD) <u>a/</u>	EXISTING SURFACE TYPE <u>a/</u>	PROPOSED MODIFICATIONS <u>a/</u>	LENGTH (FEET) THIS COLUMN TO BE HIDDEN IN THE FINAL VERSION	LENGTH (MILES)	PROPOSED WIDTH OF DRIVEWAY (FEET)	PROPOSED WIDTH OF PERMANENT EASEMENT (FEET)	LAND DISTURBANCE BEYOND THE EXISTING FOOTPRINT OF AN EXISTING ROAD <u>a/</u>	SITE SPECIFIC JUSTIFICATION (PERMANENT ACCESS ROADS)	JUSTIFICATION FOR ALL NEW TEMPORARY AND PERMANENT ACCESS ROADS IN WETLANDS, OPEN WATER OR UPLAND FOREST <u>a/</u>
MVP-WE-001	0	WETZEL	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	3,751	0.71	25	40	15.00	OPERATIONS MAINTENANCE	N/A
MVP-WE-002	0.2	WETZEL	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,198	0.42	25	40	15.00	N/A	N/A
MVP-WE-003	0.7	WETZEL	WV	Private	X		NEW	DIRT	TBD	171	0.03	25	40	40.00	N/A	TBD
MVP-WE-004	0.8	WETZEL	WV	Private	X		NEW	DIRT	TBD	220	0.04	25	40	40.00	N/A	TBD
MVP-WE-005	1.1	WETZEL	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	3,528	0.67	25	40	15.00	OPERATIONS MAINTENANCE	N/A
MVP-WE-006	1.4	WETZEL	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	530	0.10	25	40	15.00	N/A	N/A
MVP-WE-007	1.4	WETZEL	WV	Private	X		NEW	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	563	0.11	25	40	40.00	N/A	N/A
MVP-WE-008	1.4	WETZEL	WV	Private		X	NEW	DIRT	NEW CONSTRUCTION	246	0.05	25	40	40.00	OPERATIONS MAINTENANCE	TBD
MVP-WE-008.1	1.5	WETZEL	WV	Private	X		TBD	TBD	TBD	932	0.18	25	40	TBD	N/A	TBD
MVP-WE-008.2	2.7	WETZEL	WV	State		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	4,190	0.79	25	40	32.00	MLV2 BRADSHAW CS	N/A
MVP-WE-011	4.5	WETZEL	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,536	0.48	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-WE-012	4.8	WETZEL	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,458	0.28	25	40	28.00	N/A	N/A
MVP-WE-013	5.5	WETZEL	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,071	0.39	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-WE-014	6.9	WETZEL	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	10,653	2.02	25	40	15.00	N/A	N/A
MVP-WE-015	7.4	WETZEL	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	6,388	1.21	25	40	30.00	N/A	N/A
MVP-WE-016	8.7	WETZEL	WV	Private		X	EXISTING	DIRT/GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	4,674	0.89	25	40	32.00	OPERATIONS MAINTENANCE	N/A
MVP-HA-018	9.7	HARRISON	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	4,748	0.90	25	40	15.00	OPERATIONS MAINTENANCE	N/A
MVP-HA-019	12.1	HARRISON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,500	0.28	25	40	28.00	N/A	N/A
MVP-HA-020	13.4	HARRISON	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,447	0.46	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-MLV-AR-03.01	15.4	HARRISON	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	89	0.02	25	40	32.00	MLV 3	permanent access to MLV 3
MVP-HA-022	15.4	HARRISON	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,612	0.31	25	40	25.00	N/A	N/A
MVP-MLV-AR-04	15.5	HARRISON	WV	Private		X	NEW	DIRT	NEW CONSTRUCTION	63	0.01	25	40	40.00	MLV4	MLV4
MVP-HA-024	16	HARRISON	WV	State/Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	6,229	1.18	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-HA-025	18.6	HARRISON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,812	0.34	25	40	15.00	N/A	N/A
MVP-HA-026	19	HARRISON	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,152	0.41	25	40	15.00	OPERATIONS MAINTENANCE	N/A
MVP-HA-027	20.7	HARRISON	WV	Private	X		NEW	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	743	0.14	25	40	40.00	N/A	N/A
MVP-HA-028	21.3	HARRISON	WV	Private	X		TBD	TBD	TBD	1,535	0.29	25	40	TBD	N/A	TBD
MVP-HA-029	22.3	HARRISON	WV	Private	X		TBD	TBD	ROADWAY WIDENING, GRADING, STABILIZATION	2,490	0.47	25	40	TBD	OPERATIONS MAINTENANCE	N/A
MVP-HA-029.01	22.6	HARRISON	WV	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	729	0.14	25	40	28.00	N/A	N/A
MVP-HA-031	23.7	HARRISON	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	574	0.11	25	40	30.00	Sherwood inerconnect	N/A
MVP-HA-031.1	23.7	HARRISON	WV	Private		X	NEW	DIRT	NEW CONSTRUCTION	1,002	0.19	25	40	40.00	SHERWOOD INT.	SHERWOOD INT.
MVP-HA-032	25	HARRISON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	5,125	0.97	25	40	32.00	N/A	N/A
MVP-HA-033	26.9	HARRISON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,207	0.42	25	40	28.00	N/A	N/A
MVP-HA-034	28.4	HARRISON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,312	0.25	25	40	15.00	N/A	N/A
MVP-HA-035	29.2	HARRISON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,641	0.31	25	40	15.00	N/A	N/A
MVP-HA-036	29.5	HARRISON	WV	Private	X		TBD	TBD	TBD	385	0.07	25	40	TBD	N/A	TBD
MVP-HA-040	30.9	HARRISON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,023	0.19	25	40	30	N/A	N/A
MVP-DO-041	31.9	DODDRIDGE	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,888	0.36	25	40	15.00	OPERATIONS MAINTENANCE	N/A
MVP-HA-041.1	32.8	HARRISON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	189	0.04	25	40	15.00	N/A	N/A
MVP-HA-042	33	HARRISON	WV	Private	X		EXISTING	Gravel	ROADWAY WIDENING, GRADING, STABILIZATION	149	0.03	25	40	30.00	N/A	N/A

Appendix 1F Access Roads																
MVP ID	NEW MPS	COUNTY	STATE	OWNERSHIP	TEMPORARY ACCESS	PERMANENT ACCESS	STATUS (EXISTING OR NEW ROAD) <u>a/</u>	EXISTING SURFACE TYPE <u>a/</u>	PROPOSED MODIFICATIONS <u>a/</u>	LENGTH (FEET) THIS COLUMN TO BE HIDDEN IN THE FINAL VERSION	LENGTH (MILES)	PROPOSED WIDTH OF DRIVEWAY (FEET)	PROPOSED WIDTH OF PERMANENT EASEMENT (FEET)	LAND DISTURBANCE BEYOND THE EXISTING FOOTPRINT OF AN EXISTING ROAD <u>a/</u>	SITE SPECIFIC JUSTIFICATION (PERMANENT ACCESS ROADS)	JUSTIFICATION FOR ALL NEW TEMPORARY AND PERMANENT ACCESS ROADS IN WETLANDS, OPEN WATER OR UPLAND FOREST <u>a/</u>
MVP-HA-043	33.2	HARRISON	WV	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	715	0.14	25	40	30.00	OPERATIONS MAINTENANCE	N/A
MVP-DO-044	34.1	DODDRIDGE	WV	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	1,685	0.32	25	40	15.00	N/A	N/A
MVP-DO-046	34.4	DODDRIDGE	WV	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	1,080	0.20	25	40	25.00	N/A	N/A
MVP-MLV-AR-05	34.51	DODDRIDGE	WV	Private		X	NEW	DIRT	NEW CONSTRUCTION	214	0.04	25	40	40.00	MLV5	permanent access to MLV 5
MVP-DO-047	34.7	DODDRIDGE	WV	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	991	0.19	25	40	15.00	N/A	N/A
MVP-DO-048	34.9	DODDRIDGE	WV	Private		X	NEW	DIRT	NEW CONSTRUCTION	259	0.05	25	40	15.00	N/A	Entry of construction personnel, equipment, and material. Allows for access to public areas for emergency response if necessary. Improved work area safety
MVP-DO-049	35.9	DODDRIDGE	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	749	0.14	25	40	15.00	OPERATIONS MAINTENANCE	N/A
MVP-HA-050	37.3	DODDRIDGE	WV	Private	X		NEW	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	4,627	0.88	25	40	40.00	N/A	N/A
MVP-HA-051	38.2	DODDRIDGE	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	741	0.14	25	40	32.00	N/A	N/A
MVP-LE-054	40	LEWIS	WV	Private		X	NEW	DIRT	NEW CONSTRUCTION	2,803	0.53	25	40	40.00	OPERATIONS MAINTENANCE	N/A
MVP-LE-055	42	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	3,110	0.59	25	40	15.00	N/A	N/A
MVP-LE-056	42.6	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	541	0.10	25	40	15.00	N/A	N/A
MVP-LE-057	43.1	LEWIS	WV	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	4,134	0.78	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-LE-057.1	43.6	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	949	0.18	25	40	32.00	N/A	N/A
MVP-LE-057.2	43.5	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	795	0.15	25	40	32.00	N/A	N/A
MVP-LE-057.3	43.3	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	149	0.03	25	40	32.00	N/A	N/A
MVP-LE-060	44.6	LEWIS	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,538	0.29	25	40	15.00	OPERATIONS MAINTENANCE	N/A
MVP-LE-061	44.9	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	914	0.17	25	40	15.00	N/A	N/A
MVP-LE-062	45.3	LEWIS	WV	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	4,761	0.90	25	40	30.00	N/A	N/A
MVP-LE-063	45.5	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,110	0.21	25	40	15.00	N/A	N/A
MVP-LE-064	45.9	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	622	0.12	25	40	15.00	N/A	N/A
MVP-LE-065	46	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,566	0.30	25	40	10.00	N/A	N/A
MVP-LE-066	46.3	LEWIS	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,978	0.56	25	40	15.00	OPERATIONS MAINTENANCE	N/A
MVP-LE-066.01	46.7	LEWIS	WV	Private	X		EXISTING	Gravel/Dirt	ROADWAY WIDENING, GRADING, STABILIZATION	13,548	2.57	25	40	30.00	N/A	N/A
MVP-LE-067	48	LEWIS	WV	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	816	0.15	25	40	28.00	N/A	N/A
MVP-LE-068	48.1	LEWIS	WV	Private		X	EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	3,254	0.62	25	40	32.00	OPERATIONS MAINTENANCE	N/A
MVP-LE-069	50.8	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,575	0.49	25	40	30.00	N/A	N/A
MVP-LE-069.01	50.9	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	302	0.06	25	40	30.00	N/A	N/A
MVP-LE-070	51.8	LEWIS	WV	private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	8,475	1.61	25	40	30.00	N/A	N/A
MVP-MLV-AR-006	53.06	LEWIS	WV	Private		X	TBD	TBD	TBD	89	0.02	25	40	TBD	MLV6	TBD
MVP-LE-071	53.2	LEWIS	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	165	0.03	25	40	30.00	OPERATIONS MAINTENANCE	N/A
MVP-LE-072	53.8	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	5,265	1.00	25	40	30.00	N/A	N/A
MVP-LE-073	55.1	LEWIS	WV	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	1,427	0.27	25	40	28.00	N/A	N/A
MVP-LE-073.1	55.2	LEWIS	WV	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	1,695	0.32	25	40	30.00	OPERATIONS MAINTENANCE	N/A
MVP-LE-073.2	55.3	LEWIS	WV	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	555	0.11	25	40	30.00	OPERATIONS MAINTENANCE	N/A
MVP-LE-074	59.3	LEWIS	WV	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	2,684	0.51	25	40	30.00	OPERATIONS MAINTENANCE	N/A
MVP-LE-075	59.7	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	5,837	1.11	25	40	25.00	N/A	N/A
MVP-LE-076	59.8	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	4,462	0.85	25	40	25.00	N/A	N/A

Appendix 1F Access Roads																
MVP ID	NEW MPS	COUNTY	STATE	OWNERSHIP	TEMPORARY ACCESS	PERMANENT ACCESS	STATUS (EXISTING OR NEW ROAD) <u>a/</u>	EXISTING SURFACE TYPE <u>a/</u>	PROPOSED MODIFICATIONS <u>a/</u>	LENGTH (FEET) THIS COLUMN TO BE HIDDEN IN THE FINAL VERSION	LENGTH (MILES)	PROPOSED WIDTH OF DRIVEWAY (FEET)	PROPOSED WIDTH OF PERMANENT EASEMENT (FEET)	LAND DISTURBANCE BEYOND THE EXISTING FOOTPRINT OF AN EXISTING ROAD <u>a/</u>	SITE SPECIFIC JUSTIFICATION (PERMANENT ACCESS ROADS)	JUSTIFICATION FOR ALL NEW TEMPORARY AND PERMANENT ACCESS ROADS IN WETLANDS, OPEN WATER OR UPLAND FOREST <u>a/</u>
MVP-LE-077	60.2	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	808	0.15	25	40	32.00	N/A	N/A
MVP-LE-077.01	60.8	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	8,950	1.69	25	40	28.00	N/A	N/A
MVP-LE-077.02	61.9	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	5,250	0.99	25	40	32.00	N/A	N/A
MVP-LE-077.03	62.8	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	3,326	0.63	25	40	30.00	N/A	N/A
MVP-LE-083	63	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,846	0.35	25	40	30.00	OPERATIONS MAINTENANCE	N/A
MVP-LE-084	65.4	LEWIS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	3,880	0.73	25	40	30.00	N/A	N/A
MVP-MLV-AR-07	64.68	LEWIS	WV	Private		X	TBD	TBD	TBD	114	0.02	25	40	TBD	MLV 7	TBD
MVP-MLV-AR-08	65.7	BRAXTON	WV	Private		X	TBD	TBD	TBD	65	0.01	25	40	TBD	MLV 8	TBD
MVP-BR-086		BRAXTON	WV			X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	5,926	1.12	25	40	32.00	OPERATIONS MAINTENANCE	N/A
MVP-BR-087	67.8	BRAXTON	WV	State	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,875	0.54	25	40	30.00	N/A	N/A
MVP-BR-088	68.6	BRAXTON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,398	0.45	25	40	30.00	N/A	N/A
MVP-BR-089.01	68.8	BRAXTON	WV	Private	X		TBD	TBD	TBD	98	0.02	25	40	TBD	N/A	TBD
MVP-BR-092.01	71.7	BRAXTON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	608	0.12	25	40	32.00	N/A	N/A
MVP-BR-095	72.4	BRAXTON	WV	Private	X	X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,397	0.45	25	40	25.00	OPERATIONS MAINTENANCE	N/A
MVP-BR-094	72.1	BRAXTON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,542	0.29	25	40	30.00	N/A	N/A
MVP-BR-093	72	BRAXTON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,563	0.49	25	40	30.00	N/A	N/A
MVP-BR-097	72.6	BRAXTON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,065	0.39	25	40	32.00	N/A	N/A
MVP-BR-096	72.5	BRAXTON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,109	0.21	25	40	32.00	N/A	N/A
MVP-BR-098	73.4	BRAXTON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	4,151	0.79	25	40	28.00	N/A	N/A
MVP-BR-099	73.9	BRAXTON	WV	Private		X	TBD	TBD	TBD	438	0.08	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-BR-100	74.1	BRAXTON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,501	0.28	25	40	30.00	N/A	N/A
MVP-BR-101	74.5	BRAXTON	WV	State/Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	859	0.16	25	40	30.00	OPERATIONS MAINTENANCE	N/A
MVP-BR-103	74.8	BRAXTON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	6,022	1.14	25	40	30.00	N/A	N/A
MVP-BR-104	76.3	BRAXTON	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,174	0.41	25	40	30.00	OPERATIONS MAINTENANCE	N/A
MVP-BR-104.1	76.8	BRAXTON	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	160	0.03	25	40	30.00	N/A	N/A
MVP-BR-105	77.3	BRAXTON	WV	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	522	0.10	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-BR-105.01	77.5	BRAXTON	WV	Private		X	NEW	DIRT	NEW CONSTRUCTION	1,576	0.30	25	40	40.00	MLV9 HARRIS CS	Permanent access to MLV9 HARRIS CS
MVP-BR-106	78	BRAXTON	WV	Private		X	TBD	TBD	TBD	2,750	0.52	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-ANC-001	79	BRAXTON	WV	Private	X		TBD	TBD	TBD	1,254	0.24	25	40	TBD	N/A	TBD
MVP-WB-107	80.4	WEBSTER	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,807	0.34	25	40	34.00	OPERATIONS MAINTENANCE	N/A
MVP-WB-111	81.8	WEBSTER	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,114	0.21	25	40	30.00	N/A	N/A
MVP-WB-113	82.1	WEBSTER	WV	Private		X	NEW	DIRT	NEW CONSTRUCTION	208	0.04	25	40	40.00	OPERATIONS MAINTENANCE	N/A
MVP-WB-114	82.4	WEBSTER	WV	Private	X		EXISTING	ROCK/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	4,179	0.79	25	40	30.00	N/A	N/A
MVP-WB-114.01	82.3	WEBSTER	WV	Private	X		TBD	TBD	TBD	208	0.04	25	40	TBD	N/A	N/A
MVP-WB-116	83.2	WEBSTER	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	5,360	1.02	25	40	28.00	N/A	N/A
MVP-WB-117	83.7	WEBSTER	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	8,511	1.61	25	40	32.00	OPERATIONS MAINTENANCE	N/A
MVP-WB-117.01	84	WEBSTER	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,856	0.35	25	40	25.00	N/A	N/A
MVP-WB-119	85.8	WEBSTER	WV	Private		X	EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	19,973	3.78	25	40	24.00	OPERATIONS MAINTENANCE	N/A
MVP-WB-120	88.7	WEBSTER	WV	Private		X	TBD	TBD	TBD	12,807	2.43	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-WB-121	90.6	WEBSTER	WV	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	15,782	2.99	25	40	30.00	N/A	N/A

Appendix 1F Access Roads																
MVP ID	NEW MPS	COUNTY	STATE	OWNERSHIP	TEMPORARY ACCESS	PERMANENT ACCESS	STATUS (EXISTING OR NEW ROAD) <u>a/</u>	EXISTING SURFACE TYPE <u>a/</u>	PROPOSED MODIFICATIONS <u>a/</u>	LENGTH (FEET) THIS COLUMN TO BE HIDDEN IN THE FINAL VERSION	LENGTH (MILES)	PROPOSED WIDTH OF DRIVEWAY (FEET)	PROPOSED WIDTH OF PERMANENT EASEMENT (FEET)	LAND DISTURBANCE BEYOND THE EXISTING FOOTPRINT OF AN EXISTING ROAD <u>a/</u>	SITE SPECIFIC JUSTIFICATION (PERMANENT ACCESS ROADS)	JUSTIFICATION FOR ALL NEW TEMPORARY AND PERMANENT ACCESS ROADS IN WETLANDS, OPEN WATER OR UPLAND FOREST <u>a/</u>
MVP-WB-120.1	89.1	WEBSTER	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	15,080	2.86	25	40	32.00	N/A	N/A
MVP-WB-122	90.8	WEBSTER	WV	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	6,069	1.15	25	40	30.00	N/A	N/A
MVP-WB-123	91.9	WEBSTER	WV	Private		X	EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	34,049	6.45	25	40	25.00	OPERATIONS MAINTENANCE	N/A
MVP-WB-125	92.7	WEBSTER	WV	State/Private	X		EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	5,122	0.97	25	40	25.00	N/A	N/A
MVP-WB-126	93.1	WEBSTER	WV		X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	93	0.02	25	40	30.00	N/A	
MVP-MLV-AR-10	93.1	WEBSTER	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,281	0.24	25	40	30.00	MLV10	N/A
MVP-WB-126.01	95.4	WEBSTER	WV	Private		X	TBD	TBD	TBD	2,942	0.56	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-WB-127	97.6	WEBSTER	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	600	0.11	25	40	30.00	N/A	N/A
MVP-WB-128	98.2	WEBSTER	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,939	0.56	25	40	35.00	N/A	N/A
MVP-MLV-AR-11	98.3	WEBSTER	WV	Private		x	NEW	DIRT	NEW CONSTRUCTION	71	0.01	25	40	40.00	MLV 11	N/A
MVP-WB-129	98.9	WEBSTER	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,012	0.38	25	40	30.00	N/A	N/A
MVP-MLV-AR-12	101.78	WEBSTER	WV	Priavte		X	TBD	TBD	TBD	112	0.02	25	40	TBD	MLV 12	TBD
MVP-WB-130	101.8	WEBSTER	WV	State		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	4,597	0.87	25	40	30.00	OPERATIONS MAINTENANCE	N/A
MVP-WB-131	103.2	WEBSTER	WV	Priavte	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	5,386	1.02	25	40	30.00	N/A	N/A
MVP-WB-131.01	103.2	WEBSTER	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	3,362	0.64	25	40	30.00	N/A	N/A
MVP-WB-132	104.1	WEBSTER	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	3,774	0.71	25	40	30.00	N/A	N/A
MVP-WB-133	107.3	WEBSTER	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,476	0.47	25	40	34.00	OPERATIONS MAINTENANCE	N/A
MVP-WB-134	109.4	WEBSTER	WV	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	1,072	0.20	25	40	30.00	N/A	N/A
MVP-NI-136	109.8	NICHOLAS	WV	Private	X		EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,189	0.23	25	40	30.00	N/A	N/A
MVP-MLV-AR-13	111.1	NICHOLAS	WV	Private		X	TBD	TBD	TBD	114	0.02	25	40	TBD	MLV 13	TBD
MVP-NI-137	111.4	NICHOLAS	WV	Private	X		TBD	TBD	TBD	1,785	0.34	25	40	TBD	N/A	TBD
MVP-NI-139	111.9	NICHOLAS	WV	Private		X	TBD	TBD	TBD	3,507	0.66	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-NI-140	112.2	NICHOLAS	WV	Priavte	X		TBD	TBD	TBD	2,416	0.46	25	40	TBD	N/A	TBD
MVP-NI-141	112.7	NICHOLAS	WV	Private	X		EXISTING	ASPHALT/GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	3,938	0.75	25	40	20.00	N/A	N/A
MVP-NI-145	115.3	NICHOLAS	WV	Private		X	TBD	TBD	TBD	1,861	0.35	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-NI-146	115.5	NICHOLAS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	4,633	0.88	25	40	32	N/A	N/A
MVP-NI-147	116.2	NICHOLAS	WV	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	3,132	0.59	25	40	30.00	N/A	N/A
MVP-NI-148	116.4	NICHOLAS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	800	0.15	25	40	30.00	N/A	N/A
MVP-NI-149	117.9	NICHOLAS	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,881	0.55	25	40	10.00	OPERATIONS MAINTENANCE	N/A
MVP-NI-150	118.5	NICHOLAS	WV	State	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	3,829	0.73	25	40	10.00	N/A	N/A
MVP-NI-151	118.7	NICHOLAS	WV	Private	X		TBD	TBD	TBD	7,205	1.36	25	40	TBD	N/A	TBD
MVP-NI-152	119.1	NICHOLAS	WV	Private	X		NEW	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,271	0.24	25	40	40	N/A	N/A
MVP-NI-153	119.4	NICHOLAS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,071	0.39	25	40	25.00	N/A	N/A
MVP-NI-154	119.9	NICHOLAS	WV	Private	X		EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	18	0.00	25	40	25.00	MLV14	N/A
MVP-MLV-AR-14	119.9	NICHOLAS	WV	Private		X	EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,952	0.37	25	40	28.00	MLV14	N/A
MVP-NI-154.1	120	NICHOLAS	WV		X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	1,364	0.26	25	40	25.00		
MVP-NI-154.2	119.9	NICHOLAS	WV	Private	X		TBD	TBD	TBD	13,344	2.53	25	40	TBD	N/A	TBD
MVP-NI-155	122.8	NICHOLAS	WV	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	1,237	0.23	25	40	30	OPERATIONS MAINTENANCE	N/A
MVP-NI-156	123	NICHOLAS	WV	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	30,233	5.73	25	40	25.00	N/A	N/A
MVP-NI-157	123.7	NICHOLAS	WV	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	4,370	0.83	25	40	25.00	OPERATIONS MAINTENANCE	N/A

Appendix 1F Access Roads																
MVP ID	NEW MPS	COUNTY	STATE	OWNERSHIP	TEMPORARY ACCESS	PERMANENT ACCESS	STATUS (EXISTING OR NEW ROAD) <u>a/</u>	EXISTING SURFACE TYPE <u>a/</u>	PROPOSED MODIFICATIONS <u>a/</u>	LENGTH (FEET) THIS COLUMN TO BE HIDDEN IN THE FINAL VERSION	LENGTH (MILES)	PROPOSED WIDTH OF DRIVEWAY (FEET)	PROPOSED WIDTH OF PERMANENT EASEMENT (FEET)	LAND DISTURBANCE BEYOND THE EXISTING FOOTPRINT OF AN EXISTING ROAD <u>a/</u>	SITE SPECIFIC JUSTIFICATION (PERMANENT ACCESS ROADS)	JUSTIFICATION FOR ALL NEW TEMPORARY AND PERMANENT ACCESS ROADS IN WETLANDS, OPEN WATER OR UPLAND FOREST <u>a/</u>
MVP-NI-158	124.3	NICHOLAS	WV	Private	X		EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	768	0.15	25	40	30.00	N/A	N/A
MVP-NI-158.1	125	NICHOLAS	WV	Private	X		EXISTING	ROCK/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	974	0.18	25	40	30.00	N/A	N/A
MVP-NI-160	126.3	NICHOLAS	WV	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	2,208	0.42	25	40	10.00	OPERATIONS MAINTENANCE	N/A
MVP-NI-159	126.3	NICHOLAS	WV	Private		X	EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	18,527	3.51	25	40	10.00	OPERATIONS MAINTENANCE	N/A
MVP-NI-159.01	125.5	NICHOLAS	WV	Private	X		EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	5,832	1.10	25	40	10.00	N/A	N/A
MVP-NI-160.1	126.5	NICHOLAS	WV	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	1,459	0.28	25	40	0.00	N/A	N/A
MVP-NI-161	126.7	NICHOLAS	WV	Private		X	EXISTING	ASPHALT/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	8,211	1.56	25	40	10.00	OPERATIONS MAINTENANCE	N/A
MVP-NI-163	128.1	NICHOLAS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,242	0.24	25	40	20.00	N/A	N/A
MVP-NI-164	128.6	NICHOLAS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	3,556	0.67	25	40	10.00	N/A	N/A
MVP-NI-166	130.1	NICHOLAS	WV	State/Private	X		EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,568	0.49	25	40	10.00	N/A	N/A
MVP-NI-167	130.6	NICHOLAS	WV	Private	X		TBD	TBD	TBD	3,460	0.66	25	40	TBD	N/A	TBD
MVP-NI-168	131	NICHOLAS	WV	Private		X	TBD	TBD	TBD	1,489	0.28	25	40	TBD	OPERATIONS MAINTENANCE	N/A
MVP-NI-170	131.7	NICHOLAS	WV	Private		X	EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,089	0.40	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-NI-171	132.6	NICHOLAS	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	855	0.16	25	40	28.00	N/A	N/A
MVP-NI-172	133.1	NICHOLAS	WV	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	247	0.05	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-GB-174	135.5	GREENBRIER	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	108	0.02	25	40	28.00	N/A	N/A
MVP-GB-174.01	136	GREENBRIER	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	363	0.07	25	40	28.00	N/A	N/A
MVP-GB-176	137.2	GREENBRIER	WV	Private	X		EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	3,834	0.73	25	40	28.00	N/A	N/A
MVP-GB-177	138.3	GREENBRIER	WV		X		EXISTING	TBD	TBD	1,142	0.22	25	40	TBD	N/A	TBD
MVP-MLV-AR-15	138.35	GREENBRIER	WV	State/Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	3,115	0.59	25	40	25.00	MLV15	N/A
MVP-GB-178	139.5	GREENBRIER	WV	Private	X		TBD	TBD	TBD	17,706	3.35	25	40	TBD	N/A	TBD
MVP-GB-179	140	GREENBRIER	WV	Private	X		TBD	TBD	TBD	3,680	0.70	25	40	TBD	N/A	TBD
MVP-MLV-AR-16	140.5	GREENBRIER	WV	Private		X	TBD	TBD	TBD	190	0.04	25	40	TBD	MLV 16	TBD
MVP-GB-182	142.8	GREENBRIER	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	8,926	1.69	25	40	28	N/A	N/A
MVP-GB-183	143.6	GREENBRIER	WV		X		TBD	TBD	ROADWAY WIDENING, GRADING, STABILIZATION	62	0.01	25	40	TBD	N/A	
MVP-MLV-AR-17	143.61	GREENBRIER	WV	Private		X	TBD	TBD	ROADWAY WIDENING, GRADING, STABILIZATION	62	0.01	25	40	TBD	MLV17	N/A
MVP-MLV-AR-18	143.82	GREENBRIER	WV	Private		X	Existing	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	147	0.03	25	40	20.00	MLV 18	N/A
MVP-GB-184	145	GREENBRIER	WV	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	3,748	0.71	25	40	30.00	N/A	N/A
MVP-GB-185	146.7	GREENBRIER	WV	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	785	0.15	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-GB-186	146.8	GREENBRIER	WV	Private		X	EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	480	0.09	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-GB-187	148.2	GREENBRIER	WV	Private		X	EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,192	0.23	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-GB-187.01	147.8	GREENBRIER	WV	Private	X		EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,815	0.34	25	40	30.00	N/A	N/A
MVP-GB-187.02	147.7	GREENBRIER	WV	Private	X		TBD	TBD	TBD	712	0.13	25	40	TBD	N/A	N/A
MVP-GB-187.03	147.9	GREENBRIER	WV	Private	X		TBD	TBD	TBD	844	0.16	25	40	TBD	N/A	N/A
MVP-GB-188	148.5	GREENBRIER	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,997	0.38	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-GB-189	149.6	GREENBRIER	WV	Private		X	TBD	TBD	TBD	3,248	0.62	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-GB-190	150.3	GREENBRIER	WV	Private		X	EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	3,267	0.62	25	40	30.00	OPERATIONS MAINTENANCE	N/A
MVP-GB-190.01	154.1	GREENBRIER	WV	Private		X	NEW	DIRT	NEW CONSTRUCTION	2,314	0.44	25	40	40.00	MLV19 / STALLWORTH CS	Permanent access for MLV 19 and Stallworth Compressor Station
MVP-GB-193	155.2	GREENBRIER	WV	Private	X		TBD	TBD	TBD	2,046	0.39	25	40	TBD	N/A	TBD

Appendix 1F Access Roads																
MVP ID	NEW MPS	COUNTY	STATE	OWNERSHIP	TEMPORARY ACCESS	PERMANENT ACCESS	STATUS (EXISTING OR NEW ROAD) <u>a/</u>	EXISTING SURFACE TYPE <u>a/</u>	PROPOSED MODIFICATIONS <u>a/</u>	LENGTH (FEET) THIS COLUMN TO BE HIDDEN IN THE FINAL VERSION	LENGTH (MILES)	PROPOSED WIDTH OF DRIVEWAY (FEET)	PROPOSED WIDTH OF PERMANENT EASEMENT (FEET)	LAND DISTURBANCE BEYOND THE EXISTING FOOTPRINT OF AN EXISTING ROAD <u>a/</u>	SITE SPECIFIC JUSTIFICATION (PERMANENT ACCESS ROADS)	JUSTIFICATION FOR ALL NEW TEMPORARY AND PERMANENT ACCESS ROADS IN WETLANDS, OPEN WATER OR UPLAND FOREST <u>a/</u>
MVP-GB-194	156.1	GREENBRIER	WV	State/Private		X	TBD	TBD	TBD	2,402	0.45	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-GB-196	156.6	GREENBRIER	WV	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	454	0.09	25	40	28.00	N/A	N/A
MVP-SU-195	156.9	SUMMERS	WV	State/Private		X	EXISTING	ASPHALT	ROADWAY WIDENING, GRADING, STABILIZATION	2,544	0.48	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-SU-197	158.4	SUMMERS	WV	Private		X	NEW	DIRT	NEW CONSTRUCTION	364	0.07	25	40	40.00	OPERATIONS MAINTENANCE	N/A
MVP-SU-198	160.8	SUMMERS	WV	Private	X		EXISTING	ROCK/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	7,953	1.51	25	40	28.00	N/A	N/A
MVP-SU-199	161.3	SUMMERS	WV	State/Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	10,327	1.96	25	40	20.00	OPERATIONS MAINTENANCE	N/A
MVP-SU-200	162.5	SUMMERS	WV	Private	X		TBD	TBD	TBD	8,752	1.66	25	40	TBD	N/A	TBD
MVP-SU-201	165	SUMMERS	WV	Private	X		EXISTING	ROCK/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	6,472	1.23	25	40	30.00	N/A	N/A
MVP-SU-202	165.6	SUMMERS	WV	Private		X	TBD	TBD	TBD	4,308	0.82	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-SU-203	169.9	SUMMERS	WV	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	945	0.18	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-SU-205	170.5	SUMMERS	WV	Private	X		TBD	TBD	TBD	1,694	0.32	25	40	TBD	N/A	TBD
MVP-MLV-AR-20	170.9	SUMMERS	WV	Private		X	TBD	TBD	NEW CONSTRUCTION	35	0.01	25	40	TBD	MLV20	Permanent access to MLV20
MVP-MLV-AR-21	171.1	SUMMERS	WV	Private		X	TBD	TBD	NEW CONSTRUCTION	61	0.01	25	40	TBD	MLV 21	Permanent access to MLV21
MVP-SU-207	170.25	SUMMERS	WV		X		TBD	TBD	TBD	35	0.01	25	40	TBD		
MVP-SU-208	171.3	SUMMERS	WV	Private	X		TBD	TBD	TBD	2,230	0.42	25	40	TBD	N/A	TBD
MVP-SU-208.1	171.5	SUMMERS	WV	Private	X		TBD	TBD	TBD	1,832	0.35	25	40	TBD	N/A	TBD
MVP-MO-210	173.6	MONROE	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	7,538	1.43	25	40	30	OPERATIONS MAINTENANCE	N/A
MVP-MO-211	175.2	MONROE	WV	State	X		TBD	TBD	TBD	2,700	0.51	25	40	TBD	N/A	TBD
MVP-MO-212	175.9	MONROE	WV	Private	X		TBD	TBD	TBD	8,679	1.64	25	40	TBD	N/A	TBD
MVP-MO-213	176.2	MONROE	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	7,176	1.36	25	40	30.00	OPERATIONS MAINTENANCE	N/A
MVP-MO-214	176.5	MONROE	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,915	0.36	25	40	30.00	N/A	N/A
MVP-MO-215	176.9	MONROE	WV	Private		X	TBD	TBD	TBD	2,707	0.51	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-MO-216	178.3	MONROE	WV	Private	X		TBD	TBD	TBD	1,190	0.23	25	40	TBD	N/A	TBD
MVP-MO-217	179.1	MONROE	WV	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,912	0.36	25	40	30	OPERATIONS MAINTENANCE	N/A
MVP-MO-218	181.5	MONROE	WV	Private	X		TBD	TBD	TBD	2,366	0.45	25	40	TBD	N/A	TBD
MVP-MO-219	182.1	MONROE	WV	Private	X		TBD	TBD	TBD	7,398	1.40	25	40	TBD	N/A	TBD
MVP-MO-220	183.3	MONROE	WV	Private		X	TBD	TBD	TBD	3,038	0.58	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-MO-221	184.3	MONROE	WV	Private	X		TBD	TBD	TBD	1,166	0.22	25	40	TBD	N/A	TBD
MVP-MO-222	184.6	MONROE	WV	Private		X	TBD	TBD	TBD	1,308	0.25	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-MO-223	184.8	MONROE	WV	Private	X		TBD	TBD	TBD	1,962	0.37	25	40	TBD	N/A	TBD
MVP-MLV-AR-22	185.2	MONROE	WV	Private		X	TBD	TBD	TBD	83	0.02	25	40	TBD	MLV-22	TBD
MVP-MO-224	185.4	MONROE	WV	Private		X	TBD	TBD	TBD	2,455	0.46	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-MO-225	186.2	MONROE	WV	Private	X		TBD	TBD	TBD	2,117	0.40	25	40	TBD	N/A	TBD
MVP-MO-226	186.7	MONROE	WV	Private	X		TBD	TBD	TBD	1,814	0.34	25	40	TBD	N/A	TBD
MVP-MO-227	187.4	MONROE	WV	State		X	TBD	TBD	TBD	3,692	0.70	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-MO-228	189.7	MONROE	WV	Private		X	TBD	TBD	TBD	4,860	0.92	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-MO-230	191.1	MONROE	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,029	0.19	25	40	28.00	N/A	N/A
MVP-MO-231.01	193.8	MONROE	WV	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,095	0.21	25	40	32.00	N/A	N/A
MVP-GI-232	196.9	GILES	VA	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	33,019	6.25	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-GI-233	197.5	GILES	VA	Private	X		EXISTING	ROCK	ROADWAY WIDENING, GRADING, STABILIZATION	3,965	0.75	25	40	32.00	N/A	N/A

Appendix 1F Access Roads																
MVP ID	NEW MPS	COUNTY	STATE	OWNERSHIP	TEMPORARY ACCESS	PERMANENT ACCESS	STATUS (EXISTING OR NEW ROAD) <u>a/</u>	EXISTING SURFACE TYPE <u>a/</u>	PROPOSED MODIFICATIONS <u>a/</u>	LENGTH (FEET) THIS COLUMN TO BE HIDDEN IN THE FINAL VERSION	LENGTH (MILES)	PROPOSED WIDTH OF DRIVEWAY (FEET)	PROPOSED WIDTH OF PERMANENT EASEMENT (FEET)	LAND DISTURBANCE BEYOND THE EXISTING FOOTPRINT OF AN EXISTING ROAD <u>a/</u>	SITE SPECIFIC JUSTIFICATION (PERMANENT ACCESS ROADS)	JUSTIFICATION FOR ALL NEW TEMPORARY AND PERMANENT ACCESS ROADS IN WETLANDS, OPEN WATER OR UPLAND FOREST <u>a/</u>
MVP-GI-234	197.8	GILES	VA	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	2,549	0.48	25	40	29.00	OPERATIONS MAINTENANCE	N/A
MVP-GI-235	198.2	GILES	VA	Private	X		EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,344	0.44	25	40	29.00	N/A	N/A
MVP-GI-236	198.3	GILES	VA	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,216	0.23	25	40	29.00	N/A	N/A
MVP-MLV-AR-23	198.46	GILES	VA	Private		X	TBD	TBD	TBD	198	0.04	25	40	TBD	MLV-23	TBD
MVP-GI-237	198.8	GILES	VA	Private	X		EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,903	0.55	25	40	28	N/A	N/A
MVP-GI-238	199.6	GILES	VA	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	4,225	0.80	25	40	25	OPERATIONS MAINTENANCE	N/A
MVP-MLV-AR-24	200.5	GILES	VA	Private		X	TBD	TBD	TBD	2,687	0.51	25	40	TBD	MLV-24	TBD
MVP-GI-239	200.5	GILES	VA	Private	X		TBD	TBD	TBD	109	0.02	25	40	TBD	N/A	TBD
MVP-GI-240	200.8	GILES	VA	Private	X		TBD	TBD	TBD	457	0.09	25	40	TBD	N/A	TBD
MVP-GI-241	201.3	GILES	VA	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	505	0.10	25	40	30	N/A	N/A
MVP-GI-242	206.8	GILES	VA	Private	X		TBD	TBD	TBD	2,215	0.42	25	40	TBD	N/A	TBD
MVP-GI-243	207	GILES	VA	Private		X	TBD	TBD	TBD	2,030	0.38	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-243.01	207.2	GILES	VA	Private	X		EXISTING	GRAVEL/DIRT	TBD	3,276	0.62	25	40	30	N/A	TBD
MVP-GI-244	207.5	GILES	VA	Private	X		TBD	TBD	TBD	2,427	0.46	25	40	TBD	N/A	TBD
MVP-GI-245.01	208.2	GILES	VA	Private	X		TBD	TBD	TBD	1,297	0.25	25	40	TBD	N/A	TBD
MVP-GI-245.02	208.9	GILES	VA	Private	X		TBD	TBD	TBD	6,084	1.15	25	40	TBD	N/A	TBD
MVP-GI-245.03	209	GILES	VA	Private	X		TBD	TBD	TBD	1,132	0.21	25	40	TBD	N/A	TBD
MVP-GI-249	209.9	GILES	VA	Private		X	TBD	TBD	TBD	273	0.05	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-GI-249.01	210	GILES	VA	Private	X		TBD	TBD	TBD	234	0.04	25	40	TBD	N/A	TBD
MVP-GI-249.02	210.3	GILES	VA	Private	X		TBD	TBD	TBD	345	0.07	25	40	TBD	N/A	TBD
MVP-MLV-AR-25	211.11	GILES	VA	Private		X	TBD	TBD	TBD	140	0.03	25	40	TBD	MLV25	N/A
MVP-GI-253.01	211.7	GILES	VA	Private	X		TBD	TBD	TBD	3,344	0.63	25	40	TBD	N/A	TBD
MVP-GI-253.02	212.4	GILES	VA	Private	X		TBD	TBD	TBD	802	0.15	25	40	TBD	N/A	TBD
MVP-GI-256	213.1	GILES	VA	Private		X	TBD	TBD	TBD	4,975	0.94	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-CR-258.01	215.6	CRAIG	VA	Private	X		TBD	TBD	TBD	1,546	0.29	25	40	TBD	N/A	TBD
MVP-CR-258.02	216.6	CRAIG	VA	Private	X		TBD	TBD	TBD	4,105	0.78	25	40	TBD	N/A	TBD
MVP-MN-258.03	218.2	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	281	0.05	25	40	TBD	N/A	TBD
MVP-MN-258.04	218.3	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	552	0.10	25	40	TBD	N/A	TBD
MVP-MN-258.05	218.3	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	262	0.05	25	40	TBD	N/A	TBD
MVP-MN-260	221.2	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	129	0.02	25	40	TBD	N/A	TBD
MVP-MN-261	221.7	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	1,416	0.27	25	40	TBD	N/A	TBD
MVP-MN-262	221.46	MONTGOMERY	VA		X		TBD	TBD	TBD	47	0.01	25	40	TBD	N/A	
MVP-MLV-AR-26	222.11	MONTGOMERY	VA	Private		X	TBD	TBD	TBD	3,517	0.67	25	40	TBD	MLV26	Permanent access to MLV26
MVP-MN-263	223.4	MONTGOMERY	VA	Private		X	TBD	TBD	TBD	2,292	0.43	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-MN-264	223.8	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	2,031	0.38	25	40	TBD	N/A	TBD
MVP-MN-265	224	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	446	0.08	25	40	TBD	N/A	TBD
MVP-MN-266	224.3	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	9,322	1.77	25	40	TBD	N/A	TBD
MVP-MN-266.01	225.2	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	192	0.04	25	40	TBD	N/A	TBD
MVP-MN-267	225.2	MONTGOMERY	VA	Private		X	EXISTING	GRAVEL/DIRT	TBD	235	0.04	25	40	30	OPERATIONS MAINTENANCE	TBD
MVP-MN-268	225.9	MONTGOMERY	VA	Private		X	TBD	TBD	TBD	2,033	0.38	25	40	TBD	OPERATIONS MAINTENANCE	TBD

Appendix 1F Access Roads																
MVP ID	NEW MPS	COUNTY	STATE	OWNERSHIP	TEMPORARY ACCESS	PERMANENT ACCESS	STATUS (EXISTING OR NEW ROAD) <u>a/</u>	EXISTING SURFACE TYPE <u>a/</u>	PROPOSED MODIFICATIONS <u>a/</u>	LENGTH (FEET) THIS COLUMN TO BE HIDDEN IN THE FINAL VERSION	LENGTH (MILES)	PROPOSED WIDTH OF DRIVEWAY (FEET)	PROPOSED WIDTH OF PERMANENT EASEMENT (FEET)	LAND DISTURBANCE BEYOND THE EXISTING FOOTPRINT OF AN EXISTING ROAD <u>a/</u>	SITE SPECIFIC JUSTIFICATION (PERMANENT ACCESS ROADS)	JUSTIFICATION FOR ALL NEW TEMPORARY AND PERMANENT ACCESS ROADS IN WETLANDS, OPEN WATER OR UPLAND FOREST <u>a/</u>
MVP-MN-269	226.2	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	1,780	0.34	25	40	TBD	N/A	TBD
MVP-MN-270	227	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	2,663	0.50	25	40	TBD	N/A	TBD
MVP-MN-271	227.7	MONTGOMERY	VA	Private		X	TBD	TBD	TBD	727	0.14	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-MN-272	228.3	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	2,669	0.51	25	40	TBD	N/A	TBD
MVP-MN-273	228.5	MONTGOMERY	VA	Private		X	TBD	TBD	TBD	1,623	0.31	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-MN-274	229.2	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	464	0.09	25	40	TBD	N/A	TBD
MVP-MN-274.01	229.1	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	514	0.10	25	40	TBD	N/A	TBD
MVP-MN-275	229.3	MONTGOMERY	VA	Private		X	TBD	TBD	TBD	617	0.12	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-MN-276	230	MONTGOMERY	VA	Private		X	TBD	TBD	TBD	12,143	2.30	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-MN-276.01	230	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	11,198	2.12	25	40	TBD	N/A	TBD
MVP-ANC-002	231.3	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	177	0.03	25	40	TBD	N/A	TBD
MVP-MN-277	232.4	MONTGOMERY	VA	Private		X	TBD	TBD	TBD	5,354	1.01	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-MN-278	233.5	MONTGOMERY	VA		X		TBD	TBD	TBD	102	0.02	25	40	TBD	N/A	
MVP-MN-279	233.3	MONTGOMERY	VA	Private		X	TBD	TBD	TBD	2,680	0.51	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-MLV-AR-27	233.55	MONTGOMERY	VA	Private		X	TBD	TBD	TBD	3,315	0.63	25	40	TBD	MLV27	N/A
MVP-MLV-AR-28	234.5	MONTGOMERY	VA	Private		X	TBD	TBD	TBD	5,046	0.96	25	40	TBD	MLV-28	TBD
MVP-MN-278.01	235.5	MONTGOMERY	VA	Private	X		TBD	TBD	TBD	3,544	0.67	25	40	TBD	N/A	TBD
MVP-RO-279.01	237.3	ROANOKE	VA	Private	X		EXISTING	DIRT	TBD	2,170	0.41	25	40	30	N/A	TBD
MVP-RO-280	238.5	ROANOKE	VA	Private		X	EXISTING	GRAVEL/DIRT	TBD	3,831	0.73	25	40	22	N/A	TBD
MVP-RO-281	239.1	ROANOKE	VA	Private	X	X	TBD	TBD	TBD	3,533	0.67	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-RO-282	239.6	ROANOKE	VA	Private	X		TBD	TBD	TBD	277	0.05	25	40	TBD	N/A	TBD
MVP-RO-283	240.5	ROANOKE	VA	Private		X	TBD	TBD	TBD	4,722	0.89	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-RO-285	242.2	ROANOKE	VA	Private	X		TBD	TBD	TBD	1,419	0.27	25	40	TBD	N/A	TBD
MVP-RO-286	242.4	ROANOKE	VA	Private		X	TBD	TBD	TBD	504	0.10	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-RO-287	243.3	ROANOKE	VA	Private		X	TBD	TBD	TBD	2,948	0.56	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-RO-288	243.6	ROANOKE	VA	Private	X		TBD	TBD	TBD	2,213	0.42	25	40	TBD	N/A	TBD
MVP-FR-289	244.7	FRANKLIN	VA	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,985	0.38	25	40	20.00	N/A	N/A
MVP-FR-290	245.1	FRANKLIN	VA	Private		X	EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	3,705	0.70	25	40	30.00	OPERATIONS MAINTENANCE	N/A
MVP-FR-291	246.2	FRANKLIN	VA	Private	X		TBD	TBD	TBD	3,173	0.60	25	40	TBD	N/A	TBD
MVP-FR-292	246.7	FRANKLIN	VA	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,089	0.21	25	40	32.00	N/A	N/A
MVP-FR-293	247.1	FRANKLIN	VA	private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	331	0.06	25	40	30.00	N/A	N/A
MVP-MLV-AR-29	247.13	FRANKLIN	VA	Private		X	EXISTING/NEW	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	164	164.30	25	40	25.00	MLV29	Permanent access to MLV29
MVP-FR-293.01	248.6	FRANKLIN	VA	State		X	TBD	TBD	TBD	1,044	0.20	25	40	TBD	N/A	TBD
MVP-FR-293.02	251.8	FRANKLIN	VA	Private		X	TBD	TBD	TBD	2,530	0.48	25	40	TBD	N/A	TBD
MVP-FR-294	253.5	FRANKLIN	VA	Private	X		TBD	TBD	TBD	1,932	0.37	25	40	TBD	N/A	TBD
MVP-FR-295	255.3	FRANKLIN	VA	State/Private	X		TBD	TBD	TBD	5,159	0.98	25	40	TBD	N/A	TBD
MVP-FR-296	256.4	FRANKLIN	VA	Private		X	TBD	TBD	TBD	664	0.13	25	40	TBD	OPERATIONS MAINTENANCE	TBD
MVP-MLV-AR-30	256.7	FRANKLIN	VA	Private		X	TBD	TBD	TBD	122	0.02	25	40	TBD	MLV 30	TBD
MVP-FR-297	256.9	FRANKLIN	VA	Private	X		TBD	TBD	TBD	1,505	0.29	25	40	TBD	N/A	TBD
MVP-FR-299	257.9	FRANKLIN	VA	Private	X		TBD	TBD	TBD	409	0.08	25	40	TBD	N/A	TBD

Appendix 1F Access Roads																
MVP ID	NEW MPS	COUNTY	STATE	OWNERSHIP	TEMPORARY ACCESS	PERMANENT ACCESS	STATUS (EXISTING OR NEW ROAD) <u>a/</u>	EXISTING SURFACE TYPE <u>a/</u>	PROPOSED MODIFICATIONS <u>a/</u>	LENGTH (FEET) THIS COLUMN TO BE HIDDEN IN THE FINAL VERSION	LENGTH (MILES)	PROPOSED WIDTH OF DRIVEWAY (FEET)	PROPOSED WIDTH OF PERMANENT EASEMENT (FEET)	LAND DISTURBANCE BEYOND THE EXISTING FOOTPRINT OF AN EXISTING ROAD <u>a/</u>	SITE SPECIFIC JUSTIFICATION (PERMANENT ACCESS ROADS)	JUSTIFICATION FOR ALL NEW TEMPORARY AND PERMANENT ACCESS ROADS IN WETLANDS, OPEN WATER OR UPLAND FOREST <u>a/</u>
MVP-FR-300	258.4	FRANKLIN	VA	Private	X		EXISTING	GRAVEL/DIRT	TBD	1,603	0.30	25	40	40.00	N/A	TBD
MVP-FR-301	258.9	FRANKLIN	VA	Private	X		TBD	TBD	TBD	74	0.01	25	40	TBD	N/A	TBD
MVP-FR-302	259.2	FRANKLIN	VA	Private		X	NEW	DIRT	NEW CONSTRUCTION	199	0.04	25	40	40.00	OPERATIONS MAINTENANCE	TBD
MVP-FR-303	259.4	FRANKLIN	VA	Private	X		TBD	TBD	TBD	571	0.11	25	40	TBD	N/A	TBD
MVP-FR-303.01	259.7	FRANKLIN	VA	Private	X		EXISTING	DIRT	TBD	3,374	0.64	25	40	20	N/A	TBD
MVP-FR-305	261.2	FRANKLIN	VA	Private	X		TBD	TBD	TBD	450	0.09	25	40	TBD	N/A	TBD
MVP-FR-306	261.9	FRANKLIN	VA	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	745	0.14	25	40	30	N/A	N/A
MVP-MLV-AR-31	262.4	FRANKLIN	VA	Private		X	TBD	TBD	TBD	2,339	0.44	25	40	TBD	MLV 31	TBD
MVP-FR-307	263.3	FRANKLIN	VA	Private		X	EXISTING	ASPHALT/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	974	0.18	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-FR-308	264.5	FRANKLIN	VA	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	1,270	0.24	25	40	28.00	N/A	N/A
MVP-FR-308.01	264.5	FRANKLIN	VA	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	2,448	0.46	25	40	28.00	N/A	N/A
MVP-FR-309A (same as 309.02)	264.5	FRANKLIN	VA	Private	X		EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	807	0.15	25	40	30.00	N/A	N/A
MVP-FR-309	264.8	FRANKLIN	VA	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	1,702	0.32	25	40	28.00	N/A	N/A
MVP-FR-309.01	264.6	FRANKLIN	VA	Private	X		EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,280	0.24	25	40	28.00	N/A	N/A
MVP-FR-310	265.9	FRANKLIN	VA	Private		X	EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,668	0.32	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-FR-311	266.3	FRANKLIN	VA	Private	X		EXISTING	ASPHALT	ROADWAY WIDENING, GRADING, STABILIZATION	1,071	0.20	25	40	28.00	N/A	N/A
MVP-MLV-AR-32	266.62	FRANKLIN	VA	Private		X	NEW	DIRT	NEW CONSTRUCTION	333	0.06	25	40	28.00	MLV32	Permanent access to MLV32
MVP-FR-313	267.3	FRANKLIN	VA	State/Private		X	EXISTING	ASPHALT/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	3,772	0.71	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-FR-314	269.1	FRANKLIN	VA	Private	X		EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,484	0.28	25	40	28.00	N/A	N/A
MVP-FR-315	269.9	FRANKLIN	VA	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,316	0.25	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-FR-316	270.8	FRANKLIN	VA	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	429	0.08	25	40	28.00	N/A	N/A
MVP-FR-317	272	FRANKLIN	VA	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	691	0.13	25	40	28.00	N/A	N/A
MVP-FR-318	273.2	FRANKLIN	VA	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	1,777	0.34	25	40	28.00	N/A	N/A
MVP-FR-319	274.1	FRANKLIN	VA	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	935	0.18	25	40	28.00	N/A	N/A
MVP-AR-319.01	273.8	FRANKLIN	VA	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	1,528	0.29	25	40	30.00	N/A	N/A
MVP-FR-320	275	FRANKLIN	VA	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	2,160	0.41	25	40	30.00	N/A	N/A
MVP-FR-321	275.8	FRANKLIN	VA	Private		X	EXISTING	GRAVEL/DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,775	0.34	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-FR-322	276.8	FRANKLIN	VA	State	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	2,578	0.49	25	40	28.00	N/A	N/A
MVP-FR-323	277.3	FRANKLIN	VA	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	2,619	0.50	25	40	28.00	N/A	N/A
MVP-MLV-AR-33	280.8	FRANKLIN	VA	Private		X	TBD	TBD	TBD	148	0.03	25	40	TBD	MLV 33	TBD
MVP-FR-324	281	FRANKLIN	VA	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	976	0.18	25	40	30.00	OPERATIONS MAINTENANCE	N/A
MVP-PI-325	282.6	PITTSYLVANIA	VA	Private	X		EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	1,475	0.28	25	40	26.00	N/A	N/A
MVP-PI-326	283.9	PITTSYLVANIA	VA	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	607	0.11	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-PI-328	285.5	PITTSYLVANIA	VA	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	4,831	0.92	25	40	28.00	N/A	N/A
MVP-PI-331	286.6	PITTSYLVANIA	VA	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	274	0.05	25	40	28.00	N/A	N/A
MVP-PI-330	286.5	PITTSYLVANIA	VA	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,589	0.49	25	40	28.00	N/A	N/A
MVP-PI-329	286.5	PITTSYLVANIA	VA	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	2,020	0.38	25	40	30.00	N/A	N/A
MVP-PI-332	287.8	PITTSYLVANIA	VA	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	774	0.15	25	40	28.00	OPERATIONS MAINTENANCE	N/A
MVP-MLV-AR-34	293.4	PITTSYLVANIA	VA	Private		X	TBD	TBD	ROADWAY WIDENING, GRADING, STABILIZATION	141	0.03	25	40	TBD	MLV34	N/A
MVP-PI-336	293.8	PITTSYLVANIA	VA	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	1,026	0.19	25	40	30.00	OPERATIONS MAINTENANCE	N/A

Appendix 1F Access Roads																
MVP ID	NEW MPS	COUNTY	STATE	OWNERSHIP	TEMPORARY ACCESS	PERMANENT ACCESS	STATUS (EXISTING OR NEW ROAD) <u>a/</u>	EXISTING SURFACE TYPE <u>a/</u>	PROPOSED MODIFICATIONS <u>a/</u>	LENGTH (FEET) THIS COLUMN TO BE HIDDEN IN THE FINAL VERSION	LENGTH (MILES)	PROPOSED WIDTH OF DRIVEWAY (FEET)	PROPOSED WIDTH OF PERMANENT EASEMENT (FEET)	LAND DISTURBANCE BEYOND THE EXISTING FOOTPRINT OF AN EXISTING ROAD <u>a/</u>	SITE SPECIFIC JUSTIFICATION (PERMANENT ACCESS ROADS)	JUSTIFICATION FOR ALL NEW TEMPORARY AND PERMANENT ACCESS ROADS IN WETLANDS, OPEN WATER OR UPLAND FOREST <u>a/</u>
MVP-PI-337	295	PITTSYLVANIA	VA	Private		X	EXISTING	ASPHALT/GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	751	0.14	25	40	26.00	OPERATIONS MAINTENANCE	N/A
MVP-PI-338	295.4	PITTSYLVANIA	VA	Private		X	EXISTING	GRAVEL	ROADWAY WIDENING, GRADING, STABILIZATION	1,728	0.33	25	40	32.00	OPERATIONS MAINTENANCE	N/A
MVP-MLV-AR-35	296.8	PITTSYLVANIA	VA	Private		X	TBD	TBD	TBD	83	0.02	25	40	TBD	MLV35	TBD
MVP-PI-339	296.9	PITTSYLVANIA	VA	Private	X		EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	990	0.19	25	40	26.00	N/A	N/A
MVP-PI-340	297.3	PITTSYLVANIA	VA	Private		X	EXISTING	DIRT	ROADWAY WIDENING, GRADING, STABILIZATION	927	0.18	25	40	26.00	OPERATIONS MAINTENANCE	N/A
MVP-PI-342	300.8	PITTSYLVANIA	VA	Private		X	EXISTING	GRAVEL/DIRT	TBD	1740.6	0.33	25	40	22.00	Tranco Interconnect	TBD
MVP-PI-342.01	301	PITTSYLVANIA	VA	Private		X	EXISTING	GRAVEL/DIRT	TBD	294.8	0.06	25	40	30.00	Transco Interconnect/MLV 36	TBD
<u>a/</u> Roads have been identified for potetnial use; however, surveys have not been able to be performmed due to landowner access restrictions. Information on these roads will be provided when available.																

Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

Appendix 1-G Project-Specific Erosion and Sediment Control Plan (Pending)

Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

Appendix 1-H Fire Prevention and Suppression Plan



Mountain Valley Pipeline Project

Docket No. CP16-__-000

Fire Prevention and Suppression Plan

October 2015

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Attachment A U.S. Forest Service Standards and Guidelines Pertaining to Fire Prevention and Suppression

1.0 Introduction

The purpose of this Fire Prevention and Suppression Plan is to prevent a fire from occurring during and after the installation of the Mountain Valley Pipeline's facilities. It will describe the hazardous fuel sources and material that could initiate or contribute to the spread of a fire, as well as the communication plan and procedures to suppress the spread of fire.

Mountain Valley Pipeline, LLC (MVP) recognizes the potential for fire from hot work operations and developed a program to protect the public, employees, property, and the environment from fire resulting from hot work operations.

2.0 Purpose

The purpose of this *Fire Prevention and Suppression Plan* (Fire Plan) is to identify best management practices for preventing fires and responding to inadvertent fires that occur during construction of MVP. The Fire Plan identifies responsibilities and procedures for suppressing fire ignitions, responding to and reporting fire emergencies, and working with emergency response agencies in the event of fire, regardless of cause. The Fire Plan is designed to be consistent with applicable Federal and State/Commonwealth laws, regulations, plans, and policies, including Chapter 14 of the 2003 International Fire Code (Combustible Dust-Producing Operations) and Section A104 of the International Wildland-Urban Interface Code (Ignition Source Control).

The Fire Plan provides an implementation strategy to ensure immediate and aggressive action to suppress inadvertent fires that occur during construction of the Projects and establishes protocols and lines of communication for reporting fires that occur. Implementation of the Fire Plan will ensure that proper types and quantities of safety and fire extinguishing equipment are available in construction areas to suppress fires, and that construction workers are adequately trained for response to fires. The Plan will be used to familiarize MVP personnel with basic fire emergency planning, response, and evacuation procedures, and their individual roles in fire prevention and suppression. Planning and training will help MVP personnel respond effectively in the event of a fire, thereby avoiding or minimizing injuries and/or damage to property or the environment.

3.0 Training

Prior to the start of construction, MVP will conduct environmental and safety training for Company and Contractor personnel. The training program will focus on the Federal Energy Regulatory Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan* and *Wetland and Waterbody Construction and Mitigation Procedures*; other construction, restoration, and mitigation plans, including this Fire Plan; and applicable permit conditions. In addition, MVP will provide large-group training sessions before each work crew begins construction with periodic follow-up training for groups of newly assigned personnel.

Training for fire suppression and response will include:

- the chain of command and fire reporting process;
- emergency contacts and numbers;
- basic fire prevention behavior controls;
- basic uses of hand tools, water backpacks, and other fire suppression equipment;
- fire suppression procedures and precautions; and
- emergency response and evacuation procedures.

Contractor Safe Work Rules will also provide a general overview of specific MVP policies and procedures and highlights of relevant OSHA standards for General Industry and Construction. This document does not include all of the standards or procedures that may be applicable to a job or task, nor is it inclusive of all of the information that may be necessary to be in compliance.

Fire prevention is extremely important at MVP. Aside from natural gas, there are additional fire hazards posed by hydrocarbons, liquids, crude oil and condensate. Also, there may be flammable compressed gases and ordinary combustibles depending on the work site and the jobs being performed. Contractors must comply with OSHA 29 CFR 1910.39, Fire Prevention and Suppression Plan, and 1926.151, Fire Prevention. Contractors must take appropriate steps and preventive measures to minimize the potential for a fire. These steps include, but are not limited to, the following:

- Only smoke in designated areas.
- Do not allow trash or flammable materials to accumulate.
- Identify and protect or eliminate potential sources of fuel, if possible.
- Recognize and eliminate potential ignition sources, including static electricity.
- Keep flammable liquids in approved, self-closing containers.
- Learn the location of firefighting equipment, emergency shutdowns and alarms.
- Each piece of construction equipment will be equipped with a fire extinguisher. All inspectors and managers on-site will have fire extinguishers with their vehicles.

4.0 Coordination

MVP and their Contractors will be responsible for fire prevention during construction. MVP, along with the appropriate emergency response or jurisdictional agencies, will be responsible for fire suppression and investigation. All MVP personnel, including contractors, will be responsible for complying with applicable laws and regulations for fire prevention and suppression as well as the measures described in this Fire Plan.

4.1 Public Lands

The MVP crosses forested public lands under the jurisdiction of the U.S. Forest Service (USFS) and National Park Service (NPS), as well as private timbered areas.

The National Forest crossed by MVP, the George Washington National Forest (GWNF) in Virginia, has standards and guidelines applicable to fire management. This Fire Plan is consistent with the applicable standards and guidelines identified within the Land and Resource Management Plans of the National Forest (see Attachment A). Fire prevention and suppression on the GWNF will also be addressed in a Plan of Development or Construction, Operations, and Maintenance Plan to be prepared for the MVP. The MVP crosses NPS lands at the Blue Ridge Parkway. MVP will consult with each of these agencies regarding applicable standards and guidelines for fire prevention and suppression on these public lands.

4.2 Interagency Coordination

Interagency coordination of wildfire management in the southeastern United States is overseen by the Southern Area Multi-Agency Coordination Group (SAMACG), which includes representation from Federal land managing agencies and State/Commonwealth forestry agencies. The SAMACG and an adjunct organization, the Southern Area Coordination Center (SACC) includes Virginia. Virginia also has a center for coordination of wildfire management. Interagency coordination of wildfire management in

the northeastern United States is overseen by the Eastern Area Coordination Group (EACG), which includes representation from Federal land managing agencies and State/Commonwealth forestry agencies. The EACG and an adjunct organization, the Eastern Area Coordination Center (EACC), encompass Pennsylvania and West Virginia. Each of the two States/Commonwealths crossed by MVP has fire prevention and suppression laws, regulations, and programs. Responsible agencies include the West Virginia Division of Forestry and Virginia Department of Forestry. Each of these agencies participates in the appropriate SAMACG and EACG for coordination of wildfire management. When a fire is initially reported, local and partner firefighting agencies initially respond to the emergency. A local agency can ask for support from the appropriate State/Commonwealth or a regional coordination center if a fire could or does exceed the response capabilities of the local agency. The State/Commonwealth or regional coordination center may in turn request support from the National Interagency Coordination Center (NICC) if a regional center exhausts its fire suppression resources. During a fire emergency, coordination is implemented through the Incident Command System (ICS), which is part of the National Incident Management System (NIMS). ICS is a standard incident management system used by firefighters and emergency medical teams to establish an organizational structure for management. A chain of command initially is established by the local response agencies to direct the response. As an incident progresses, personnel with higher authority and training assume responsibility for directing the response. ICS and NIMS provide a framework that assists agencies, non-governmental organizations, and the private sector in preventing, responding to, and mitigating the effects of incidents and ensuring an appropriate response based on the capabilities of response agencies.

5.0 Responsibilities

The construction contractors working on MVP will be required to implement the provisions of this Fire Plan. Additionally, each contractor will be required to prepare and implement an individual fire control plan, which will identify responsibilities and describe actions to be implemented by the contractor in the event of an inadvertent fire. Copies of each fire control plan will be appended to this Fire Plan. The key persons responsible for fire prevention and suppression during construction of the Projects are Chief Inspectors, Spread Superintendents, Field Safety Officers (FSOs), Facility Superintendents, Environmental Inspectors (EIs), and Authorized Officers (AOs). Contact information for these persons will be appended to the “issued-for-construction” Fire Plan prior to the start of construction. At a minimum, each construction spread for the pipeline and each aboveground facility site will have one FSO trained in accordance with National Fire Protection Standards (NFPS) 1521, Chapter 4, Responsibilities for a Health and Safety Officer.

5.1 Chief Inspector

The Chief Inspector will be responsible for oversight of all activities along the pipeline, including fire prevention and suppression.

5.2 Spread Superintendents

Spread Superintendents will be responsible for general construction operations associated with their individual spreads including compliance with this Fire Plan. Spread Superintendents will be in communication with Chief Inspectors, FSOs, EIs, AOs, and local emergency response, as necessary, to ensure that construction personnel are aware of fire hazards and prevention methods. Spread Superintendents will coordinate with Federal, State/Commonwealth, and local emergency responders

during periods of high or severe fire conditions to ensure that appropriate preventive measures are in place during construction. Spread Superintendents also will be responsible for:

- monitoring construction areas to identify fire hazards and risks;
- developing and implementing fire protection strategies;
- ensuring adequate firefighting equipment is deployed to high risk areas and that equipment is visible and accessible; and
- ensuring that all firefighting equipment is inspected on a regular basis and maintained in good condition.

5.3 Field Safety Officers

The FSOs will be responsible for managing on-site fire suppression documentation, ensuring that fire suppression equipment is available and maintained, ensuring that construction personnel are trained to use equipment properly, and communicating fire hazards and threat levels to construction personnel. Additional responsibilities of the FSOs include:

- reporting all uncontrolled fires within or in the vicinity of the construction area, regardless of source, to the Spread Superintendent, emergency responders, and nearest fire dispatch;
- conducting weekly inspection of tools, equipment, personal protective equipment, and first aid kits;
- developing and maintaining a register of emergency equipment;
- conducting weekly inspections of flammable materials; posting “No Smoking” and “Designated Smoking Area” signs and fire rules at appropriate locations within the construction area;
- providing initial response support in the event of a fire and supervising fire suppression activities until relieved;
- providing and gaining approval of site-specific burn and smoke management plans for pre-planned controlled fires that will be implemented in accordance with Federal, State/Commonwealth, and Local requirements;
- providing written burning and blasting schedules, as required, to the appropriate Federal, State/Commonwealth, and Local fire control jurisdiction;
- monitoring construction areas where activities may present safety issues, such as blasting;
- complying with regulatory requirements in the storage and handling of flammable substances and maintaining a registry of flammable substances;
- establishing facilities for on-site chemical management and maintaining Safety Data Sheets (formally known as Material Safety Data Sheets) for flammable materials;
- establishing controls that minimize exposure to flammable materials;
- ensuring that flammable substances are removed from the construction area when not in use or when the location is unattended;
- training and instructing workers in the use, handling, and storage of flammable materials;
- ensuring that construction personnel have been trained in the requirements of this Fire Plan; and
- monitoring compliance with applicable Federal, State/Commonwealth, and Local laws, ordinances, and regulations regarding fire prevention and suppression.

5.4 Facility Superintendents

Facility Superintendents at aboveground facility sites will have the same responsibilities as the Spread Superintendents as described above.

5.5 Environmental Inspectors

EIs provide environmental regulatory guidance and oversight. This oversight includes fire prevention and suppression within and in the vicinity of construction areas. EIs will be familiar with Federal, State/Commonwealth, and Local rules and regulations pertaining to fire prevention and response. In the event of a fire emergency, EIs will assist with fire suppression.

5.6 Authorized Officers (AO)

AOs are representatives from Federal land managing or other agencies who supply information or provide direction regarding potential hazard conditions or changes in prevention methods. AO's may include Interagency Dispatch Centers or staff from land managing agencies. AO's will provide information on current fire danger ratings, the presence of other fires in the vicinity of construction areas, natural disaster warnings, and temporary restrictions on construction activities due to fire or other emergencies. If extreme fire danger is identified by a land managing agency, the AO may direct the Chief Inspector or Spread Superintendents to increase the level of fire monitoring, install additional fire prevention or suppression equipment, or stop work, if necessary. The Chief Inspector, Spread Superintendents, FSOs, EIs, AOs, and local fire authorities have the authority to stop or reduce construction activities or operations that pose a fire hazard until appropriate measures are implemented to minimize risk. The FSOs will accompany Spread Superintendents, AOs, or third-party compliance monitors on fire inspections and take corrective action when observing or having been notified that fire protection measures have not been properly installed or maintained.

6.0 Emergency Notification

In the event of a fire or other emergency, construction personnel on the scene will notify the appropriate Spread Superintendent and FSO immediately. The Spread Superintendent will be responsible for immediately notifying the appropriate fire dispatch center and AO or land managing agency, where appropriate. In the case of a serious injury, first aid treatment will be provided onsite. The FSO or another supervisor will coordinate with local emergency responders if additional support is required. In the event of a fire emergency, personnel will contact 911 or the nearest emergency response center. Contact information for emergency responders will be appended to the "issued-for-construction" version of this Fire Plan. A fire emergency is defined as an incident requiring a coordinated response from one or more agencies. When a response is required, the Spread Superintendent or person in charge will communicate the location and extent of the fire and steps underway to control or suppress the fire.

7.0 Fire Danger Ratings

Fire danger ratings based on standard vegetation fuel models will be used by land managing agencies or local fire authorities to determine required fire prevention, control, and monitoring efforts. Based on the fire danger ratings, certain activities such as blasting, welding, or grinding may be restricted at the discretion of a land managing agency or local fire authority. Additionally, the land managing agency or local fire authority may modify or change requirements based on changes in fire restriction notices or localized hazards or risks. Standard practice Industrial Fire Protection Levels are:

- Closed Season, when fire season requirements are in effect;
- Partial Shutdown, which prohibits activities except as indicated by the State/Commonwealth; and
- General Shutdown, when all operations are prohibited.

For Federal Lands, fire danger ratings and associated precautions relevant to the Projects include:

- No Fire Restrictions – normal fire precautions.
- Stage 1 Fire Restrictions – normal fire precautions, except that designated smoking areas and permits for burning are required.
- Stage 2 Red Flag Warning – special fire precautions including:
 - Extra precautions such as designating a fire watch, using a spark shield, or wetting work areas down prior to active construction.
 - Machine treatment of slash, skidding, yarding, blasting, welding, metal cutting, and offloading are subject to land managing agency requirements.
 - No slash burning is allowed.
 - Power saws must be shut down from 1:00 p.m. to 8:00 p.m. local time.
 - Hauling trucking must stay on the right-of-way or surfaced roads after 6:00 p.m. local time.
 - Additional personnel, equipment, and prevention measures are required.
- Stage 3 Fire Restrictions – special fire precautions including:
 - All restrictions listed above.
 - Shutdown of all construction activities except operations on soil or graded areas, watering, grading, trench excavation, padding, backfilling, and clean-up.
 - Activities such as blasting and welding require an exemption from the AO unless these activities are completed on the graded portions of the right-of-way.

State/Commonwealth and local fire agencies may authorize their own restrictions within jurisdictions for private lands. Requirements identified in agency-issued fire restrictions will be followed at all times.

The FSOs will contact the appropriate Federal, State/Commonwealth, or local fire management office to obtain information on fire danger ratings. Contacts will be daily when conditions are favorable for fires and weekly at other times. The FSOs will communicate the fire danger ratings to the Chief Inspector, Spread Superintendents, Facility Superintendents, EIs, and construction crews.

8.0 Fire Prevention

8.1 Blasting

Procedures for blasting are discussed in MVP's *Blasting Plan*. Additional measures to be implemented in blasting areas are described below. When fire danger is high, a two-person fire watch will patrol the blast area for a period of one hour after the completion of blasting. If blasting occurs when the fire danger rating is Stage 1, an FSO will be on site during the operation and remain on site for one hour after the completion of blasting. At least one Size 0 or larger shovel and one water-filled backpack pump or fire extinguisher will be on site. In addition, a fire watch will be assigned to each crew utilizing blasting equipment. When the fire danger rating is Stage 2 or 3, blasting will be prohibited unless an exemption is granted by the local fire authority. If an exemption is granted, additional fire prevention equipment and personnel will be on site prior to blasting. Equipment may include water trucks, fire tankers, shovels,

backpack pumps, bulldozers, etc. A fire watch will remain on site for at least two hours after the completion of blasting activities.

8.2 Welding

During fire season, welding, cutting, or drilling of metal components of the MVP will require the approval of the Spread Superintendent and the Chief Inspector. In areas where approval has been granted, vegetation will be cleared at a minimum diameter of 30 feet around the center of the work area unless the area has been watered to eliminate the fire danger. Each welding crew will be outfitted with at least one Size 0 or larger shovel, one water-filled backpack pump, and one five-pound dry powder ABC fire extinguisher.

When the fire danger rating is Stage 1, a fire watch will be assigned to each crew utilizing cutting and welding equipment. The fire watch will remain on site for one hour after the completion of welding activities.

When the fire danger rating is Stage 2, an exemption by the AO will be required prior to welding activities unless the activities are performed within the graded portions of the right-of-way or other work areas. If an exemption is granted, all Stage 1 measures will be implemented. In addition, a water tanker and bulldozer will be required to be on site during welding operations, and a fire watch will remain on site for at least two hours after the completion of welding activities.

When the fire danger rating is Stage 3, welding activities will require approval from the AO. If an approval is granted, all Stage 1 and 2 measures will be implemented. Fire restriction measures also apply to welding operations performed for equipment maintenance. All welding activities require a permit from the jurisdictional agency as per 29 CFR 1910 Subpart Q (welding) and 29 CFR 1910 Subpart I (personal protective equipment).

8.3 Equipment

The construction contractor will develop a list of equipment to be used during construction. Equipment used in the construction area may be inspected by the AO or other third-party compliance monitor prior to use on the Projects. The equipment may be used only while in good operating order.

8.4 Fire Extinguishers

The FSAs will inspect fire extinguishers on a monthly basis to verify that:

- each extinguisher is in its designated place, clearly visible, and not blocked by equipment or other objects that could interfere with access to the fire extinguisher during an emergency;
- the nameplate with operating instructions is legible and facing outwards;
- the pressure gauge is showing that the extinguisher is fully charged;
- the pin and tamper seal are intact; and
- the extinguisher is in good condition, showing no signs of physical damage, corrosion or leakage.

The FSO performing the monthly inspection will initial and date each extinguisher inspection tag. Defective units will be taken out of service and replaced immediately. Fire extinguishers will be used in accordance with 29 CFR 1910.157. Use of fire extinguishers by construction personnel to suppress fires will only be undertaken if:

- the fire is small and is not spreading to other areas;
- escaping the area is possible;
- the fire extinguisher is in working condition and the individual understands how to use it; and
- the fire extinguisher has been professionally inspected and tagged annually;

8.5 Spark Arrestors

Spark arresters used for portable equipment, such as chainsaws, will be in good working condition. Light trucks and cars with factory installed or equivalent mufflers, in good condition, may be used on roads where the roadway is cleared of vegetation. Vehicles equipped with catalytic converters are potential fire hazards. These vehicles will be inspected and cleaned, as necessary, and parked on areas cleared of vegetation. All vehicles operating in vegetation-covered areas will maintain clean and clear undercarriage and exhaust systems, with no chaff, grass, or brush lodged in the exhaust system and skid plates. Cross-country driving outside designated work areas will be prohibited.

8.6 Equipment Parking and Storage

Equipment parking areas and small stationary engine sites will be cleared of all extraneous flammable materials. Gas and oil storage areas will be cleared of extraneous flammable material and “No Smoking” signs will be posted within these areas. All used and discarded oil, oil filters, oily rags, or other waste will be disposed of in approved and marked containers. Containers will be stored in approved locations and removed from the site by licensed contractors or approved personnel and disposed of or recycled at approved facilities. Glass containers will not be used to hold gasoline or other flammable materials.

8.7 Power Saws

All gasoline-powered saws will be provided with approved spark arresters/mufflers and maintained in good operating condition. Chainsaw operation will comply with the following:

- the arrester/muffler will contain a 0.023-inch mesh, stainless steel screen;
- chainsaw operators will have a fire extinguisher or water backpack and shovel available;
- chainsaws will be moved at least 10 feet from the place of fueling before starting; and
- chainsaw fuel and oil will be carried in safety cans designed for that purpose.

8.8 Warning Devices

Highway flares or other devices with open flames will not be allowed in the construction area because of the danger for fire. Contractors will only use electric or battery-operated warning devices within the construction area. Smoke detectors will be provided in all buildings constructed for the Projects. These detectors will provide a distinctive and recognizable signal to ensure timely evacuation from the area of fire or to perform actions designated by this plan or by the FSO. The FSO will test smoke detectors to ensure their safe operation.

8.9 Warming and Cooking Fires

Warming and cooking fires will be prohibited on the right-of-way.

8.10 Smoking

Smoking is allowed only in areas designated by the FSO. Smoking signs visible to all personnel will be posted at designated areas. The supervisory personnel will be responsible for enforcing smoking restrictions. “No Smoking” signs will be posted in all refueling areas and in areas where flammable materials are used, stored, or discarded.

8.11 Refueling

All fuel trucks will be equipped with a 35-pound minimum ABC fire extinguisher. If required, helicopter refueling trucks will be electrically grounded to the helicopter during refueling. Storage areas will be cleared of all extraneous flammable materials. All discarded oil, oil filters, oily rags, or other potentially flammable wastes will be disposed of or as described in Section 6.5 above. Only approved and properly maintained containers will be used to store or transport flammable liquids.

9.0 Burning

Prior to burning brush, MVP will apply for and adhere to all local ordinances in addition to acquiring all applicable permits from the proper agencies. Notifications will be given to local fire departments about the locations and durations that burning activities will be taking place. All burning activities will be supervised by a qualified fire watch, equipped with a fire extinguisher, and other applicable suppression equipment and materials such as sand or water. The fire watch will monitor all burning activities until all fire or smoldering debris is extinguished. All debris will be extinguished prior to leaving the work area each day. All brush that will be burned will be started using a propane torch only. There will not be any additives used to enhance the start of the fire or to maintain the fire.

10.0 Fire and Emergency Response Equipment

10.1 Construction Vehicles

All foreman vehicles and crew buses assigned to the construction area will be equipped with one 10-pound ABC fire extinguisher, one shovel, and an operable backpack water pump of four-gallon capacity. One water truck per construction spread during blasting “red flag warnings” and a fire danger rating of Stage 2 will be outfitted with a pressure pump, adjustable nozzle, threaded rubber-lined hose with a minimum of 300 feet of 1½-inch cotton jacket, and have a minimum water storage capacity of 1,500 gallons. Water trucks on the right-of-way will be able to help with wildfire fighting in the vicinity of the Projects. The construction companies use water trucks that typically have a 4,000-gallon capacity and 150 feet of 1½-inch water hose that would support fire suppression activities. Many of these vehicles have water cannons mounted on the roof. All vehicles and auxiliary equipment will be equipped with properly functioning and baffled exhaust systems.

10.2 Fire Fighting Tools

At least three 10-person tool caches will be maintained per spread. One cache will be placed in an EI’s vehicle. The second cache will be located with the Spread Superintendent, or Facility Superintendent. The third cache will be assigned to the FSO. Tool boxes will be red in color, sealed with metal box-car-type seals, and labeled “For Fire Fighting Only.” The tool caches will contain the following:

- 10 electric headlamps with batteries;
- one first aid kit, 10-person unit;

- two knapsacks;
- five pulaskis with sheaths;
- five long-handled, round-point, Size 0 shovels; five fire rakes; and
- 10 one-gallon canteens, filled with water.

The Spread Superintendent will expedite delivery of the tool caches upon request of the FSO or AO or when alerted to an emergency requiring the tools. In case a tool cache or first aid kit has been used, it will be immediately replenished. All replenished tool caches or first aid boxes will be inspected by the FSO. These will then be resealed before being returned to the construction site.

11.0 Evacuation

During an emergency evacuation, MVP will depend upon response teams, consisting of trained personnel, to attend to injured and/or trapped victims. Construction workers providing medical attention will not help beyond their capability. MVP will establish a site specific emergency communications system utilizing cell phones, hand-held radios, and/or satellite phones to notify workers of emergencies and contact local law enforcement and fire departments. If an immediate evacuation of a construction work area is required, the Chief Inspector, Spread Supervisor, FSO, EI, or other supervisor will direct the evacuation via the nearest escape route to a “safe area.” Otherwise, evacuations will be directed by local emergency responders. Designated evacuation wardens will be assigned to each spread or station to account for all personnel present before, during, and after the evacuation. Construction workers will not return to an evacuated work area until emergency responders have deemed it safe and the Chief Inspector, Spread Supervisor, or Facility Superintendent has given an “all clear” signal.

Attachment A

U.S. FOREST SERVICE STANDARDS AND GUIDELINES PERTAINING TO FIRE PREVENTION AND SUPPRESSION

The Fire Prevention and Suppression Plan is consistent with the George Washington National Forest standards and guidelines associated with wildfire prevention and suppression.

George Washington National Forest

The George Washington National Forest's 2014 "*Revised Land and Resource Management Plan*" contains the following standards and guidelines regarding fire management:

Wildland Fire Management:

FW-147 When used for control lines, trails (including tread, structures and improvements) will be restored to pre-burn conditions as soon as practicable.

FW-148 Fire control lines (whether constructed by hand or mechanically) that tie into travel ways (trails, roads, etc.), will be obliterated and the topography restored to original contour as soon as possible following the fire.

Wildfires:

FW-149 Ensure firefighter and public safety as the first priority. Secondly, protect property and natural and cultural resources based on the relative values to be protected.

FW-150 Suppress human-caused wildfires (either accidental or arson).

FW-151 The full range of suppression tactics (from full suppression to monitoring) may be used, consistent with forest and management prescription area direction.

FW-152 Suppress wildfires at minimum cost, considering firefighter and public safety, benefits, and values to be protected, consistent with resource objectives.

FW-153 Where needed to prevent erosion, fire lines are revegetated and water-barred promptly after the fire is controlled.

FW-154 Lightning-caused fires are allowed to play their natural ecological role as long as they occur within prescribed weather and fuel conditions and do not pose unmitigated threats to life and/or private property, particularly to that property within the wildland/urban interface zone.

Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

Appendix 1-I Foreign Pipeline Crossings Table

Appendix 1-I						
Foreign Lines Crossed by the Project <u>a/</u>						
Milepost	State	County	Type	Name	Owner	Size(in)
0	WV	Wetzel	Gas	Mobley	EQT	16
0.03	WV	Wetzel	Gas	PEG63	EQT	4
0.08	WV	Wetzel	Gas	Eureka Wetzel Lateral	Magnum Hunter Resources, Corp.	20
0.65	WV	Wetzel	Gas	H13	EQT	10
0.66	WV	Wetzel	Gas	NA	Unknown	NA
0.67	WV	Wetzel	Water	NA	Unknown	NA
0.69	WV	Wetzel	Gas	GSF912	EQT	12
0.69	WV	Wetzel	Gas	MOMES004 - Proposed	EQT	NA
0.69	WV	Wetzel	Gas	H306	EQT	16
0.69	WV	Wetzel	Gas	GSF912:L03	EQT	8
0.71	WV	Wetzel	Gas	PWL513825	EQT	8
0.71	WV	Wetzel	Gas	PWL511391	EQT	8
0.71	WV	Wetzel	Gas	PWL513825	EQT	6
0.74	WV	Wetzel	Gas	NA	Unknown	NA
0.75	WV	Wetzel	Gas	PWL513825	EQT	6
1.03	WV	Wetzel	Gas	NA	Unknown	NA
1.06	WV	Wetzel	Gas	Dominion	DTI	16
1.19	WV	Wetzel	Gas	Dominion	DTI	16
1.84	WV	Wetzel	Gas	Dominion	DTI	16
2.15	WV	Wetzel	Gas	Dominion	DTI	16
2.55	WV	Wetzel	Gas	Dominion	DTI	16
3.06	WV	Wetzel	Gas	Dominion	DTI	16
4	WV	Wetzel	Gas	TCO	Columbia	18
4.47	WV	Wetzel	Gas	NA	Unknown	NA
4.49	WV	Wetzel	Gas	NA	Unknown	NA
5.00	WV	Wetzel	Gas	NA	Unknown	NA
5.05	WV	Wetzel	Gas	NA	Columbia	NA
5.06	WV	Wetzel	Gas	NA	DTI	NA
5.06	WV	Wetzel	Gas	H412	EQT	4
5.06	WV	Wetzel	Gas	TCO	Columbia	20
5.06	WV	Wetzel	Gas	NA	Unknown	NA
5.06	WV	Wetzel	Gas	NA	Unknown	NA
5.37	WV	Wetzel	Gas	TCO	Columbia	14
6.21	WV	Wetzel	Gas	Dominion	DTI	16
6.29	WV	Wetzel	Gas	NA	Columbia	16
6.41	WV	Wetzel	Gas	Non-Surveyed	Columbia	NA
6.42	WV	Wetzel	Gas	Dominion	DTI	16

Appendix 1-I						
Foreign Lines Crossed by the Project <u>a/</u>						
Milepost	State	County	Type	Name	Owner	Size(in)
6.44	WV	Wetzel	Gas	Dominion	DTI	16
6.58	WV	Wetzel	Gas	NA	Columbia	24
6.67	WV	Wetzel	Gas	NA	Columbia	24
6.70	WV	Wetzel	Gas	NA	East Resources	NA
6.75	WV	Wetzel	Gas	NA	Columbia	24
6.83	WV	Wetzel	Gas	TCO	Columbia	24
8.06	WV	Wetzel	Gas	NA	East Resources	NA
8.35	WV	Wetzel	Gas	M44	EQT	10
8.87	WV	Wetzel	Gas	NA	DTI	NA
11.26	WV	Harrison	Gas	NA	Carnegie Interstate	12
12.18	WV	Harrison	Gas	NA	Unknown	NA
12.64	WV	Harrison	Gas	M66	EQT	12
12.71	WV	Harrison	Gas	NA	Unknown	NA
12.83	WV	Harrison	Gas	NA	Unknown	NA
12.98	WV	Harrison	Gas	NA	Unknown	NA
13.99	WV	Harrison	Gas	NA	Unknown	NA
14.86	WV	Harrison	Gas	NA	DTI	NA
15.42	WV	Harrison	Gas	NA	DTI	NA
15.47	WV	Harrison	Gas	NA	Unknown	NA
15.48	WV	Harrison	Gas	NA	Unknown	NA
17.03	WV	Harrison	Gas	Non-Surveyed	DTI	NA
17.04	WV	Harrison	Gas	Dominion	DTI	NA
17.34	WV	Harrison	Gas	NA	Unknown	NA
17.85	WV	Harrison	Gas	NA	Unknown	NA
17.87	WV	Harrison	Gas	NA	Unknown	NA
18.75	WV	Harrison	Gas	Dominion	DTI	NA
18.76	WV	Harrison	Gas	Non-Surveyed	DTI	NA
18.84	WV	Harrison	Gas	NA	Unknown	NA
20.84	WV	Harrison	Gas	F1157	EQT	12
20.85	WV	Harrison	Telephone	NA	Unknown	NA
20.86	WV	Harrison	Gas	NA	DTI	NA
20.9	WV	Harrison	Gas	Dominion	DTI	NA
21.64	WV	Harrison	Gas	TL-283A/1	DTI	16
21.70	WV	Harrison	Gas	NA	Unknown	NA
22.18	WV	Harrison	Gas	NA	CNX	2
22.29	WV	Harrison	Gas	NA	Markwest Liberty Midstream	NA
22.34	WV	Harrison	Gas	NA	Unknown	NA
22.37	WV	Harrison	Gas	NA	CNX	2
22.40	WV	Harrison	Gas	NA	CNX	2

Appendix 1-I						
Foreign Lines Crossed by the Project <u>a/</u>						
Milepost	State	County	Type	Name	Owner	Size(in)
22.52	WV	Harrison	Gas	NA	CNX	2
22.61	WV	Harrison	Gas	NA	CNX	2
22.71	WV	Harrison	Gas	NA	Unknown	NA
23.18	WV	Harrison	Gas	NA	WACO	NA
23.28	WV	Harrison	Gas	NA	WACO	NA
23.96	WV	Harrison	Gas	Dominion	DTI	16
24.41	WV	Harrison	Gas	NA	Unknown	NA
24.85	WV	Harrison	Gas	TL-419/1	DTI	NA
24.85	WV	Harrison	Fiber Optic	NA	DTI	NA
24.86	WV	Harrison	Fiber Optic	NA	Unknown	NA
24.88	WV	Harrison	Fiber Optic	NA	Unknown	NA
24.88	WV	Harrison	Fiber Optic	NA	Unknown	NA
24.92	WV	Harrison	Fiber Optic	NA	Unknown	NA
25.01	WV	Harrison	Fiber Optic	NA	Unknown	NA
25.63	WV	Harrison	Gas	NA	DTI	NA
25.92	WV	Harrison	Gas	NA	DTI	NA
25.98	WV	Harrison	Unknown	NA	Unknown	NA
27.47	WV	Harrison	Gas	NA	Crestwood Midstream Partners, LP	NA
27.56	WV	Harrison	Gas	NA	Crestwood Midstream Partners, LP	NA
27.73	WV	Harrison	Gas	NA	Crestwood Midstream Partners, LP	NA
27.83	WV	Harrison	Gas	NA	Crestwood Midstream Partners, LP	NA
28	WV	Harrison	Gas	NA	Crestwood Midstream Partners, LP	NA
28.17	WV	Harrison	Gas	NA	Crestwood Midstream Partners, LP	NA
28.19	WV	Harrison	Gas	NA	Unknown	NA
28.23	WV	Harrison	Gas	NA	Unknown	NA
28.35	WV	Harrison	Gas	Dominion	DTI	NA
28.43	WV	Harrison	Gas	NA	DTI	NA
28.96	WV	Harrison	Gas	NA	Crestwood Midstream Partners, LP	NA
29.18	WV	Harrison	Gas	Dominion	DTI	NA
29.21	WV	Harrison	Gas	Dominion	DTI	NA
29.22	WV	Harrison	Gas	NA	Unknown	NA
29.25	WV	Harrison	Gas	NA	DTI	NA
29.27	WV	Harrison	Gas	NA	Crestwood Midstream Partners, LP	NA
29.34	WV	Harrison	Gas	Dominion	DTI	NA

Appendix 1-I						
Foreign Lines Crossed by the Project <u>a/</u>						
Milepost	State	County	Type	Name	Owner	Size(in)
29.35	WV	Harrison	Gas	NA	Crestwood Midstream Partners, LP	NA
29.36	WV	Harrison	Gas	NA	DTI	NA
29.45	WV	Harrison	Gas	NA	Crestwood Midstream Partners, LP	NA
29.49	WV	Harrison	Gas	Dominion	DTI	NA
29.54	WV	Harrison	Gas	NA	DTI	NA
29.86	WV	Harrison	Gas	Non-Surveyed	DTI	NA
29.86	WV	Harrison	Gas	Dominion	DTI	NA
30.14	WV	Harrison	Gas	NA	Unknown	NA
30.21	WV	Harrison	Gas	NA	DTI	NA
30.24	WV	Harrison	Gas	NA	Unknown	NA
30.66	WV	Harrison	Gas	Non-Surveyed	DTI	NA
30.66	WV	Harrison	Gas	Dominion	DTI	NA
31.38	WV	Harrison	Gas	NA	DTI	NA
31.38	WV	Harrison	Gas	NA	DTI	NA
31.39	WV	Harrison	Gas	Dominion	DTI	NA
31.42	WV	Harrison	Gas	TL-413	DTI	20
31.57	WV	Harrison	Gas	Dominion	DTI	NA
31.80	WV	Doddridge	Gas	NA	DTI	NA
32.11	WV	Doddridge	Gas	Non-Surveyed	DTI	NA
32.14	WV	Doddridge	Gas	Dominion	DTI	NA
32.66	WV	Doddridge	Gas	NA	CNX	NA
32.88	WV	Harrison	Gas	NA	Unknown	NA
32.91	WV	Harrison	Gas	NA	Unknown	NA
32.92	WV	Harrison	Gas	NA	Consol	NA
32.92	WV	Harrison	Telephone	NA	Unknown	NA
32.92	WV	Harrison	Unknown	NA	Unknown	NA
32.95	WV	Harrison	Telephone	NA	Unknown	NA
32.96	WV	Harrison	Telephone	NA	Unknown	NA
32.97	WV	Harrison	Telephone	NA	Unknown	NA
33.52	WV	Harrison	Gas	Dominion	DTI	30
33.67	WV	Harrison	Gas	Mountaineer	Summit Midstream Partners, LLC	NA
33.68	WV	Harrison	Gas	NA	Markwest Liberty Midstream	NA
33.68	WV	Harrison	Gas	NA	Crestwood Midstream Partners, LP	NA
33.69	WV	Harrison	Gas	NA	Eastern America Energy Corp	NA
33.70	WV	Harrison	Gas	NA	Unknown	NA
33.71	WV	Harrison	Gas	NA	Unknown	NA

Appendix 1-I						
Foreign Lines Crossed by the Project <u>a/</u>						
Milepost	State	County	Type	Name	Owner	Size(in)
33.77	WV	Doddridge	Gas	NA	Crestwood Midstream Partners, LP	NA
34.06	WV	Doddridge	Gas	NA	Crestwood Midstream Partners, LP	NA
34.92	WV	Doddridge	Gas	Dominion	DTI	NA
35.16	WV	Doddridge	Gas	Proposed	Momentum	NA
35.6	WV	Doddridge	Gas	F1155	EQT	16
36.01	WV	Doddridge	Gas	NA	Unknown	NA
36.03	WV	Doddridge	Gas	NA	Unknown	NA
36.06	WV	Doddridge	Gas	NA	Unknown	NA
36.08	WV	Doddridge	Gas	NA	Unknown	NA
36.81	WV	Doddridge	Gas	Non-Surveyed	DTI	NA
36.81	WV	Doddridge	Gas	Dominion	DTI	NA
37.15	WV	Doddridge	Gas	NA	DTI	NA
37.16	WV	Doddridge	Gas	TL-360/1	DTI	30
37.25	WV	Doddridge	Gas	NA	DTI	NA
37.26	WV	Doddridge	Gas	Dominion	DTI	NA
37.34	WV	Doddridge	Gas	Non-Surveyed	Chesapeake Energy Corp.	NA
37.34	WV	Doddridge	Gas	NA	Chesapeake Energy Corp.	NA
37.93	WV	Harrison	Gas	NA	Pipeline - Foreign - Dominion	NA
38.06	WV	Lewis	Gas	Dominion	DTI	NA
38.35	WV	Lewis	Gas	Dominion	DTI	30
39.88	WV	Lewis	Gas	Dominion	DTI	NA
39.89	WV	Lewis	Gas	Non-Surveyed	DTI	NA
39.89	WV	Lewis	Gas	NA	CNG	NA
39.96	WV	Lewis	Gas	TL-361/1	DTI	NA
40.04	WV	Lewis	Gas	NA	DTI	NA
42.03	WV	Lewis	Gas	NA	DTI	NA
42.04	WV	Lewis	Gas	TL-296/1	DTI	NA
42.2	WV	Lewis	Gas	H-19456/1	DTI	NA
42.20	WV	Lewis	Gas	NA	DTI	NA
42.3	WV	Lewis	Gas	H-19847/1	DTI	NA
42.84	WV	Lewis	Gas	Dominion	DTI	NA
42.86	WV	Lewis	Gas	H-18354/1	DTI	NA
42.92	WV	Lewis	Gas	H-18354/1	DTI	NA
42.98	WV	Lewis	Gas	NA	DTI	NA
42.99	WV	Lewis	Gas	NA	DTI	NA
43.03	WV	Lewis	Gas	NA	DTI	NA
43.04	WV	Lewis	Gas	NA	DTI	NA
43.04	WV	Lewis	Gas	NA	DTI	NA

Appendix 1-I						
Foreign Lines Crossed by the Project <u>a/</u>						
Milepost	State	County	Type	Name	Owner	Size(in)
43.10	WV	Lewis	Gas	NA	DTI	NA
43.11	WV	Lewis	Gas	NA	DTI	NA
43.11	WV	Lewis	Gas	NA	DTI	NA
43.4	WV	Lewis	Gas	H-17098/1	DTI	NA
43.51	WV	Lewis	Gas	NA	DTI	NA
43.53	WV	Lewis	Gas	TL-292/1	DTI	NA
43.79	WV	Lewis	Gas	TL-344/1	DTI	20
43.79	WV	Lewis	Gas	H-18224/1	DTI	NA
43.80	WV	Lewis	Gas	NA	DTI	NA
43.81	WV	Lewis	Gas	NA	DTI	NA
43.96	WV	Lewis	Gas	NA	DTI	NA
44.64	WV	Lewis	Gas	Non-Surveyed	DTI	NA
44.64	WV	Lewis	Gas	Dominion	DTI	NA
44.88	WV	Lewis	Gas	NA	DTI	NA
45.75	WV	Lewis	Electric	NA	Unknown	NA
45.79	WV	Lewis	Electric	NA	Unknown	NA
45.84	WV	Lewis	Electric	NA	Unknown	NA
45.93	WV	Lewis	Gas	NA	Unknown	NA
46.31	WV	Lewis	Gas	Dominion	DTI	8
46.38	WV	Lewis	Gas	NA	Unknown	NA
46.39	WV	Lewis	Gas	NA	CONSOL	NA
46.44	WV	Lewis	Gas	Non-Surveyed	DTI	NA
46.45	WV	Lewis	Gas	Dominion	DTI	NA
46.45	WV	Lewis	Gas	Dominion	DTI	NA
46.45	WV	Lewis	Gas	NA	DTI	NA
47.04	WV	Lewis	Gas	NA	Unknown	NA
47.05	WV	Lewis	Gas	NA	DTI	NA
47.07	WV	Lewis	Gas	TL-427	DTI	10
47.29	WV	Lewis	Gas	NA	Consol	NA
47.43	WV	Lewis	Gas	F1151	EQT	10
48.00	WV	Lewis	Gas	NA	Unknown	NA
48.1	WV	Lewis	Gas	Dominion	DTI	NA
48.10	WV	Lewis	Gas	Non-Surveyed	DTI	NA
48.20	WV	Lewis	Gas	NA	Unknown	NA
48.55	WV	Lewis	Gas	NA	Unknown	NA
51.12	WV	Lewis	Gas	Non-Surveyed	DTI	NA
51.13	WV	Lewis	Gas	Dominion	DTI	NA
51.18	WV	Lewis	Gas	NA	Consol	NA
51.85	WV	Lewis	Gas	NA	Unknown	NA
52.16	WV	Lewis	Gas	NA	Unknown	NA

Appendix 1-I						
Foreign Lines Crossed by the Project <u>a/</u>						
Milepost	State	County	Type	Name	Owner	Size(in)
52.17	WV	Lewis	Gas	NA	Unknown	NA
52.28	WV	Lewis	Gas	NA	Unknown	NA
52.40	WV	Lewis	Gas	NA	Unknown	NA
52.43	WV	Lewis	Gas	NA	Unknown	NA
52.55	WV	Lewis	Gas	NA	Unknown	NA
52.88	WV	Lewis	Gas	NA	DTI	NA
52.93	WV	Lewis	Gas	Dominion	DTI	NA
52.95	WV	Lewis	Gas	NA	Consol	NA
52.96	WV	Lewis	Gas	W1901	EQT	8
53.17	WV	Lewis	Gas	NA	Unknown	NA
53.22	WV	Lewis	Gas	NA	Unknown	NA
53.23	WV	Lewis	Gas	NA	Unknown	NA
53.29	WV	Lewis	Gas	NA	Unknown	NA
54.23	WV	Lewis	Gas	Dominion	DTI	NA
54.27	WV	Lewis	Gas	NA	DTI	NA
54.64	WV	Lewis	Gas	NA	Unknown	NA
54.79	WV	Lewis	Gas	NA	CNX	NA
54.87	WV	Lewis	Gas	Non-Surveyed	DTI	NA
55.12	WV	Lewis	Gas	NA	Consol	NA
55.19	WV	Lewis	Gas	NA	Unknown	NA
55.19	WV	Lewis	Gas	NA	Consol	NA
55.44	WV	Lewis	Gas	NA	DTI	NA
55.53	WV	Lewis	Gas	NA	DTI	NA
55.55	WV	Lewis	Gas	Dominion	DTI	NA
56.35	WV	Lewis	Gas	F1147	EQT	12
56.37	WV	Lewis	Gas	F1147	EQT	12
56.38	WV	Lewis	Gas	F1147	EQT	12
56.45	WV	Lewis	Gas	F1147	EQT	12
56.55	WV	Lewis	Gas	NA	Unknown	NA
56.78	WV	Lewis	Gas	NA	Eastern America Energy Corp	NA
57.09	WV	Lewis	Gas	NA	Unknown	NA
57.28	WV	Lewis	Gas	NA	Unknown	NA
58.64	WV	Lewis	Gas	Dominion	DTI	NA
58.64	WV	Lewis	Gas	Non-Surveyed	DTI	NA
58.86	WV	Lewis	Gas	F707	EQT	6
58.86	WV	Lewis	Gas	E1040	EQT	6
59.28	WV	Lewis	Gas	W7011	EQT	3
59.83	WV	Lewis	Gas	H503	EQT	16
59.95	WV	Lewis	Gas	W7295	EQT	2

Appendix 1-I						
Foreign Lines Crossed by the Project <u>a/</u>						
Milepost	State	County	Type	Name	Owner	Size(in)
60.02	WV	Lewis	Gas	W7295	EQT	2
60.38	WV	Lewis	Gas	Non-Surveyed	DTI	NA
60.39	WV	Lewis	Gas	Dominion	DTI	NA
60.64	WV	Lewis	Gas	NA	DTI	NA
60.73	WV	Lewis	Gas	NA	DTI	NA
60.91	WV	Lewis	Gas	Non-Surveyed	DTI	NA
60.92	WV	Lewis	Gas	Dominion	DTI	NA
60.92	WV	Lewis	Gas	Non-Surveyed	DTI	NA
61.34	WV	Lewis	Gas	Dominion	DTI	NA
61.36	WV	Lewis	Gas	NA	DTI	NA
61.55	WV	Lewis	Gas	Non-Surveyed	DTI	NA
61.59	WV	Lewis	Gas	Dominion	DTI	NA
62.26	WV	Lewis	Gas	NA	Unknown	NA
62.94	WV	Lewis	Gas	NA	Unknown	NA
63.33	WV	Lewis	Gas	NA	Unknown	NA
68.78	WV	Braxton	Telephone	NA	Unknown	NA
69.13	WV	Braxton	Gas	NA	Unknown	NA
71.66	WV	Braxton	Gas	NA	Unknown	NA
72.55	WV	Braxton	Gas	NA	Unknown	NA
72.70	WV	Braxton	Gas	NA	Unknown	NA
72.88	WV	Braxton	Gas	NA	Unknown	NA
73.55	WV	Braxton	Gas	NA	Unknown	NA
76.12	WV	Braxton	Gas	Proposed	Momentum	NA
76.20	WV	Braxton	Gas	Proposed	Momentum	NA
76.20	WV	Braxton	Gas	Proposed	Momentum	NA
76.43	WV	Braxton	Gas	Proposed	Momentum	NA
77.3	WV	Braxton	Gas	NA	Columbia	30
77.37	WV	Braxton	Gas	TCO	Columbia	26
77.38	WV	Braxton	Gas	TCO	Columbia	26
77.39	WV	Braxton	Gas	NA	Columbia	NA
77.39	WV	Braxton	Gas	NA	Columbia	30
77.39	WV	Braxton	Gas	NA	Columbia	NA
104.91	WV	Webster	Telephone	NA	Unknown	NA
113.64	WV	Nicholas	Gas	NA	Unknown	NA
116.66	WV	Nicholas	Gas	Dominion	DTI	NA
116.66	WV	Nicholas	Gas	Non-Surveyed	DTI	NA
116.89	WV	Nicholas	Telephone	NA	Unknown	NA
118.6	WV	Nicholas	Gas	NA	Hope Gas, Inc.	6
154.42	WV	Greenbrier	Telephone	NA	Unknown	NA
154.49	WV	Greenbrier	Telephone	NA	Unknown	NA

Appendix 1-I

Foreign Lines Crossed by the Project a/

Milepost	State	County	Type	Name	Owner	Size(in)
158.79	WV	Summers	Telephone	NA	Unknown	NA
166.82	WV	Summers	Telephone	NA	Unknown	NA
169.28	WV	Summers	Telephone	NA	Unknown	NA
170.93	WV	Summers	Telephone	NA	Unknown	NA
171.22	WV	Summers	Electric	NA	Unknown	NA
179.82	WV	Monroe	Gas	NA	Columbia	NA
179.82	WV	Monroe	Gas	TCO	Columbia	20
179.82	WV	Monroe	Gas	NA	Columbia	NA
179.83	WV	Monroe	Gas	TCO	Columbia	24
234.95	VA	Montgomery	Gas	RURA-EOLN	Spectra Energy Corp	8
234.95	VA	Montgomery	Gas	Non-Surveyed	Spectra Energy Corp	NA
262.93	VA	Franklin	Fiber Optic	NA	Unknown	NA
264.23	VA	Franklin	Unknown	NA	Unknown	NA
264.23	VA	Franklin	TV	NA	Unknown	NA
300.65	VA	Pittsylvania	Gas	Transco	Williams Companies	NA
300.65	VA	Pittsylvania	Gas	Transco	Williams Companies	30

a/ NA=Unknown; The region where the MVP Project will be constructed has numerous gathering lines that are unregulated by FERC. Therefore, information on these lines is not available. Many of the lines are 2-inch low pressurePVC lines. MVP has extensive experience in this area working with companies to install pipe in a safe manner.

Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

Appendix 1-J Vertical and Lateral Slope Tables

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
1.95	1.97	-20.70%	-15.35%	-11.7°	-8.7°	✓	
2.72	27.24	-29.52%	-16.93%	-16.4°	-9.6°	✓	
2.74	2.78	25.49%	17.76%	14.3°	10.1°	✓	
2.91	2.92	-29.23%	-15.10%	-16.3°	-8.6°	✓	
3.05	3.08	23.55%	16.68%	13.3°	9.5°	✓	
3.19	3.21	20.12%	16.81%	11.4°	9.5°	✓	
3.25	3.30	-23.95%	-16.65%	-13.5°	-9.5°	✓	
4.47	4.51	-24.15%	-19.86%	-13.6°	-11.2°	✓	
5.06	5.08	27.16%	-16.04%	15.2°	-9.1°	✓	
6.43	6.50	-24.64%	16.56%	-13.8°	9.4°	✓	
6.99	7.04	-29.03%	-15.51%	-16.2°	-8.8°	✓	
7.74	7.77	-26.25%	-15.37%	-14.7°	-8.7°	✓	
8.50	8.53	-29.56%	-15.19%	-16.5°	-8.6°	✓	
8.70	8.72	-22.58%	-37.57%	-12.7°	-20.6°	✓	
9.20	9.21	19.53%	15.84%	11.1°	9.0°	✓	
9.35	9.38	-24.86%	-17.33%	-14.0°	-9.8°	✓	
9.40	9.41	-18.13%	-15.47%	-10.3°	-8.8°	✓	
9.66	9.68	-23.12%	-17.19%	-13.0°	-9.8°	✓	
9.81	9.86	-26.96%	-17.17%	-15.1°	-9.7°	✓	
9.94	9.99	28.69%	18.19%	16.0°	10.3°	✓	
10.22	10.25	27.90%	15.05%	15.6°	8.6°	✓	
10.58	10.59	19.14%	16.16%	10.8°	9.2°	✓	
10.62	10.65	-19.34%	-17.44%	-10.9°	-9.9°	✓	
10.66	10.67	-26.14%	-16.14%	-14.6°	-9.2°	✓	
13.52	13.55	-21.51%	-17.07%	-12.1°	-9.7°	✓	
13.70	13.72	25.31%	15.92%	14.2°	9.0°	✓	
13.96	13.99	-25.00%	-16.78%	-14.0°	-9.5°	✓	
14.16	14.22	28.93%	17.12%	16.1°	9.7°	✓	
14.40	14.43	-21.05%	-15.80%	-11.9°	-9.0°	✓	
14.65	14.69	-23.82%	-16.42%	-13.4°	-9.3°	✓	
14.91	14.93	-20.07%	-15.64%	-11.3°	-8.9°	✓	
15.08	15.16	-29.76%	-15.53%	-16.6°	-8.8°	✓	
16.30	16.32	19.24%	16.03%	10.9°	9.1°	✓	
16.50	16.53	-26.75%	-17.95%	-15.0°	-10.2°	✓	
16.65	16.72	29.14%	16.97%	16.2°	9.6°	✓	
17.02	17.05	-28.44%	-17.39%	-15.9°	-9.9°	✓	
17.30	17.33	-24.65%	-17.26%	-13.8°	-9.8°	✓	
17.52	17.54	-25.33%	-17.14%	-14.2°	-9.7°	✓	
17.70	17.72	-17.05%	-15.62%	-9.7°	-8.9°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
18.16	18.22	17.30%	31.63%	9.8°	17.6°	✓	
18.34	18.36	-22.40%	-16.05%	-12.6°	-9.1°	✓	
19.16	19.22	25.32%	16.27%	14.2°	9.2°	✓	
19.76	19.78	27.00%	18.91%	15.1°	10.7°	✓	
21.06	21.12	29.98%	17.33%	16.7°	9.8°	✓	
21.38	21.42	-25.34%	-16.41%	-14.2°	-9.3°	✓	
22.12	22.14	22.93%	16.51%	12.9°	9.4°	✓	
22.32	22.33	-26.23%	-20.68%	-14.7°	-11.7°	✓	
22.58	22.65	-29.91%	-15.74%	-16.7°	-8.9°	✓	
22.79	22.81	25.43%	16.44%	14.3°	9.3°	✓	
23.30	23.31	-25.49%	-20.97%	-14.3°	-11.8°	✓	
23.66	23.68	29.06%	18.94%	16.2°	10.7°	✓	
23.94	23.97	-19.85%	-15.21%	-11.2°	-8.6°	✓	
24.02	24.03	21.54%	16.16%	12.2°	9.2°	✓	
26.45	26.47	20.23%	15.58%	11.4°	8.9°	✓	
27.68	27.70	-25.11%	-15.06%	-14.1°	-8.6°	✓	
28.39	28.45	25.15%	16.88%	14.1°	9.6°	✓	
28.67	28.70	-26.87%	-17.06%	-15.0°	-9.7°	✓	
30.35	30.40	22.28%	15.18%	12.6°	8.6°	✓	
30.46	30.49	24.32%	15.21%	13.7°	8.6°	✓	
30.50	30.53	-24.77%	-18.15%	-13.9°	-10.3°	✓	
30.90	30.96	23.35%	15.06%	13.1°	8.6°	✓	
31.07	31.14	-23.81%	-15.59%	-13.4°	-8.9°	✓	
31.67	31.68	18.84%	16.08%	10.7°	9.1°	✓	
32.08	32.10	25.20%	16.94%	14.1°	9.6°	✓	
32.56	32.64	19.2%	27.5%	10.9°	15.4°	✓	
32.56	32.64	19.2%	27.5%	10.9°	15.4°		✓
32.56	32.64	19.2%	27.5%	10.9°	15.4°		✓
33.35	33.37	25.16%	16.31%	14.1°	9.3°	✓	
33.54	33.55	-23.21%	-20.05%	-13.1°	-11.3°	✓	
33.63	33.66	24.97%	17.14%	14.0°	9.7°	✓	
33.95	33.99	-26.42%	-17.03%	-14.8°	-9.7°	✓	
34.02	34.05	-25.72%	-16.17%	-14.4°	-9.2°	✓	
34.75	34.76	-16.99%	-15.76%	-9.6°	-9.0°	✓	
34.78	34.81	27.78%	17.53%	15.5°	9.9°	✓	
35.26	35.28	23.43%	33.73%	13.2°	18.6°	✓	
35.29	35.31	-19.85%	-15.95%	-11.2°	-9.1°	✓	
35.40	35.48	28.88%	16.82%	16.1°	9.5°	✓	
35.72	35.74	21.33%	15.67%	12.0°	8.9°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
35.76	35.78	16.07%	15.88%	9.1°	9.0°	✓	
35.89	35.91	-17.92%	-15.90%	-10.2°	-9.0°	✓	
36.92	36.94	24.82%	15.01%	13.9°	8.5°	✓	
38.41	38.43	20.95%	15.17%	11.8°	8.6°	✓	
38.55	38.58	20.74%	15.40%	11.7°	8.8°	✓	
38.79	38.82	18.64%	15.18%	10.6°	8.6°	✓	
38.83	38.85	-29.06%	-21.51%	-16.2°	-12.1°	✓	
39.64	39.65	-25.55%	-16.57%	-14.3°	-9.4°	✓	
39.72	39.75	-28.32%	-15.96%	-15.8°	-9.1°	✓	
39.79	39.82	26.46%	16.43%	14.8°	9.3°	✓	
39.90	39.91	22.38%	27.64%	12.6°	15.5°	✓	
40.00	40.04	29.51%	15.35%	16.4°	8.7°	✓	
40.35	40.38	-23.03%	-15.63%	-13.0°	-8.9°	✓	
40.43	40.46	27.06%	15.71%	15.1°	8.9°	✓	
40.91	40.94	-27.63%	-21.22%	-15.4°	-12.0°	✓	
41.02	41.05	29.41%	16.20%	16.4°	9.2°	✓	
41.60	41.67	27.33%	17.64%	15.3°	10.0°	✓	
41.79	41.80	27.44%	15.89%	15.3°	9.0°	✓	
41.95	41.98	20.17%	32.39%	11.4°	17.9°	✓	
42.06	42.10	24.87%	17.95%	14.0°	10.2°	✓	
42.27	42.30	22.20%	18.64%	12.5°	10.6°	✓	
42.36	42.36	-22.77%	-16.52%	-12.8°	-9.4°	✓	
42.41	42.43	21.58%	16.73%	12.2°	9.5°	✓	
43.97	44.00	-26.08%	-17.89%	-14.6°	-10.1°	✓	
44.19	44.23	21.31%	15.08%	12.0°	8.6°	✓	
44.41	44.46	-21.37%	-15.16%	-12.1°	-8.6°	✓	
44.54	44.57	-28.48%	-21.58%	-15.9°	-12.2°	✓	
45.32	45.34	-29.16%	-16.26%	-16.3°	-9.2°	✓	
45.36	45.38	-23.85%	-17.71%	-13.4°	-10.0°	✓	
45.42	45.45	-26.66%	-15.39%	-14.9°	-8.7°	✓	
45.47	45.49	-18.13%	-15.62%	-10.3°	-8.9°	✓	
45.61	45.63	19.32%	15.64%	10.9°	8.9°	✓	
45.83	45.86	-22.09%	-16.52%	-12.5°	-9.4°	✓	
46.33	46.38	23.78%	16.86%	13.4°	9.6°	✓	
46.89	46.90	-23.05%	-21.23%	-13.0°	-12.0°	✓	
47.01	47.04	-27.37%	-18.54%	-15.3°	-10.5°	✓	
48.55	48.56	28.12%	19.62%	15.7°	11.1°	✓	
48.61	48.66	23.17%	15.03%	13.0°	8.5°	✓	
48.69	48.71	24.16%	-16.85%	13.6°	-9.6°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
48.94	48.96	-27.42%	-15.65%	-15.3°	-8.9°	✓	
49.84	49.86	17.85%	16.35%	10.1°	9.3°	✓	
49.96	50.01	25.90%	20.29%	14.5°	11.5°	✓	
50.13	50.17	-24.68%	-15.91%	-13.9°	-9.0°	✓	
50.84	50.89	-24.28%	-16.09%	-13.6°	-9.1°	✓	
51.95	51.96	-18.45%	-16.56%	-10.5°	-9.4°	✓	
53.07	53.09	21.92%	17.80%	12.4°	10.1°	✓	
53.17	53.25	29.7%	21.9%	16.5°	12.4°	✓	
53.17	53.25	29.7%	21.9%	16.5°	12.4°		✓
53.17	53.25	29.7%	21.9%	16.5°	12.4°		✓
53.43	53.46	27.99%	20.16%	15.6°	11.4°	✓	
53.54	53.57	17.34%	38.62%	9.8°	21.1°	✓	
53.58	53.58	-18.04%	-15.61%	-10.2°	-8.9°	✓	
53.82	53.84	29.12%	16.32%	16.2°	9.3°	✓	
53.89	53.93	-29.90%	-16.47%	-16.6°	-9.4°	✓	
53.95	53.96	-21.72%	-15.32%	-12.3°	-8.7°	✓	
54.05	54.07	-17.51%	-15.04%	-9.9°	-8.6°	✓	
54.16	54.20	26.40%	15.37%	14.8°	8.7°	✓	
54.42	54.44	25.60%	18.76%	14.4°	10.6°	✓	
54.69	54.71	-26.45%	-18.04%	-14.8°	-10.2°	✓	
54.74	54.76	19.79%	15.94%	11.2°	9.1°	✓	
54.81	54.86	-22.48%	-15.23%	-12.7°	-8.7°	✓	
55.68	55.71	27.99%	19.85%	15.6°	11.2°	✓	
56.67	56.68	28.87%	19.66%	16.1°	11.1°	✓	
57.21	57.23	-19.77%	-15.14%	-11.2°	-8.6°	✓	
57.97	58.00	-15.07%	-20.11%	-8.6°	-11.4°	✓	
58.23	58.24	21.13%	18.39%	11.9°	10.4°	✓	
58.86	58.90	27.54%	16.02%	15.4°	9.1°	✓	
59.20	59.25	-26.49%	-15.53%	-14.8°	-8.8°	✓	
59.64	59.67	24.14%	17.73%	13.6°	10.1°	✓	
59.77	59.79	22.57%	15.39%	12.7°	8.7°	✓	
61.25	61.27	-22.31%	-15.21%	-12.6°	-8.6°	✓	
62.79	62.83	25.10%	18.18%	14.1°	10.3°	✓	
63.58	63.59	-21.99%	-17.58%	-12.4°	-10.0°	✓	
63.68	63.71	-23.81%	-16.57%	-13.4°	-9.4°	✓	
64.45	64.49	-29.57%	-15.37%	-16.5°	-8.7°	✓	
64.50	64.55	-25.86%	-20.08%	-14.5°	-11.4°	✓	
64.88	64.92	29.68%	20.48%	16.5°	11.6°	✓	
64.94	64.95	-20.44%	-15.67%	-11.6°	-8.9°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
65.21	65.24	24.71%	15.18%	13.9°	8.6°	✓	
65.77	65.79	18.75%	15.89%	10.6°	9.0°	✓	
66.90	66.95	-22.44%	-15.87%	-12.6°	-9.0°	✓	
67.09	67.12	-21.66%	-16.28%	-12.2°	-9.2°	✓	
68.45	68.47	-25.67%	-18.67%	-14.4°	-10.6°	✓	
68.93	68.96	22.62%	17.52%	12.7°	9.9°	✓	
69.28	69.30	28.49%	19.09%	15.9°	10.8°	✓	
69.55	69.63	-27.00%	-17.81%	-15.1°	-10.1°	✓	
69.68	69.74	23.80%	15.07%	13.4°	8.6°	✓	
69.86	69.88	-22.96%	-17.30%	-12.9°	-9.8°	✓	
70.27	70.29	21.23%	16.44%	12.0°	9.3°	✓	
70.30	703.27	25.86%	15.65%	14.5°	8.9°	✓	
70.74	70.76	20.60%	15.98%	11.6°	9.1°	✓	
70.80	70.82	22.60%	16.53%	12.7°	9.4°	✓	
71.63	71.67	-18.99%	-16.36%	-10.8°	-9.3°	✓	
73.21	73.23	-28.48%	-15.74%	-15.9°	-8.9°	✓	
73.89	73.91	-28.82%	-16.26%	-16.1°	-9.2°	✓	
75.90	75.92	19.21%	16.67%	10.9°	9.5°	✓	
77.01	77.04	20.11%	15.72%	11.4°	8.9°	✓	
77.24	77.26	26.72%	21.63%	15.0°	12.2°	✓	
77.42	77.44	-21.70%	-15.02%	-12.2°	-8.5°	✓	
77.49	77.52	-24.29%	-18.61%	-13.7°	-10.5°	✓	
78.63	78.67	21.23%	17.67%	12.0°	10.0°	✓	
78.82	78.85	23.30%	20.62%	13.1°	11.7°	✓	
79.35	79.39	28.26%	17.96%	15.8°	10.2°	✓	
80.30	80.32	29.27%	16.38%	16.3°	9.3°	✓	
80.58	80.65	-29.28%	-16.53%	-16.3°	-9.4°	✓	
81.11	81.18	-28.58%	-15.08%	-15.9°	-8.6°	✓	
82.17	82.19	-24.09%	-16.18%	-13.5°	-9.2°	✓	
83.46	83.47	19.36%	17.81%	11.0°	10.1°	✓	
84.68	84.72	29.76%	17.41%	16.6°	9.9°	✓	
85.34	85.36	-23.83%	-20.43%	-13.4°	-11.5°	✓	
85.48	85.51	25.03%	18.05%	14.1°	10.2°	✓	
85.99	86.01	-29.30%	-16.05%	-16.3°	-9.1°	✓	
87.75	87.97	15.02%	48.72%	8.5°	26.0°	✓	
88.34	88.35	23.74%	35.38%	13.4°	19.5°	✓	
88.91	88.93	21.70%	15.67%	12.2°	8.9°	✓	
89.15	89.19	29.24%	15.59%	16.3°	8.9°	✓	
90.30	90.32	-23.76%	-15.54%	-13.4°	-8.8°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
91.18	91.22	27.76%	16.58%	15.5°	9.4°	✓	
91.85	91.88	29.45%	17.20%	16.4°	9.8°	✓	
92.11	92.12	-18.71%	-15.01%	-10.6°	-8.5°	✓	
92.73	92.77	-23.72%	-15.50%	-13.3°	-8.8°	✓	
93.41	93.42	25.26%	15.03%	14.2°	8.5°	✓	
94.51	94.53	29.43%	18.78%	16.4°	10.6°	✓	
94.82	94.83	21.15%	15.23%	11.9°	8.7°	✓	
95.96	95.98	25.23%	15.41%	14.2°	8.8°	✓	
96.53	96.54	-27.07%	-19.34%	-15.1°	-10.9°	✓	
96.88	96.90	-22.27%	-18.44%	-12.6°	-10.4°	✓	
97.11	97.13	-29.25%	-17.97%	-16.3°	-10.2°	✓	
97.27	97.28	-23.06%	-15.57%	-13.0°	-8.8°	✓	
99.32	99.37	29.43%	16.03%	16.4°	9.1°	✓	
99.49	99.51	-22.02%	-15.61%	-12.4°	-8.9°	✓	
99.70	99.72	26.33%	18.03%	14.8°	10.2°	✓	
101.25	101.26	-26.63%	-18.87%	-14.9°	-10.7°	✓	
101.41	101.44	-21.62%	-16.37%	-12.2°	-9.3°	✓	
101.80	101.81	21.82%	15.01%	12.3°	8.5°	✓	
102.05	102.07	25.85%	16.68%	14.5°	9.5°	✓	
102.09	102.12	-26.03%	-15.71%	-14.6°	-8.9°	✓	
102.32	102.35	-29.49%	-15.64%	-16.4°	-8.9°	✓	
102.73	102.77	28.43%	18.94%	15.9°	10.7°	✓	
103.50	103.52	28.64%	22.25%	16.0°	12.5°	✓	
103.82	103.87	-25.53%	-16.06%	-14.3°	-9.1°	✓	
103.94	103.98	-26.99%	-16.17%	-15.1°	-9.2°	✓	
104.01	104.10	-29.03%	-15.62%	-16.2°	-8.9°	✓	
104.65	104.67	-26.16%	-17.84%	-14.7°	-10.1°	✓	
104.87	104.90	24.47%	18.15%	13.8°	10.3°	✓	
105.00	105.03	26.60%	16.32%	14.9°	9.3°	✓	
105.25	105.26	-26.75%	-17.10%	-15.0°	-9.7°	✓	
106.48	106.49	26.81%	16.76%	15.0°	9.5°	✓	
106.51	106.53	-21.31%	-15.39%	-12.0°	-8.7°	✓	
106.64	106.66	27.82%	19.51%	15.5°	11.0°	✓	
106.97	107.02	28.60%	17.24%	16.0°	9.8°	✓	
107.08	107.11	28.74%	19.01%	16.0°	10.8°	✓	
107.64	107.67	-23.24%	-15.19%	-13.1°	-8.6°	✓	
107.87	107.88	-17.63%	-15.50%	-10.0°	-8.8°	✓	
108.14	108.22	29.07%	15.30%	16.2°	8.7°	✓	
108.37	108.39	-26.32%	-18.77%	-14.7°	-10.6°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
108.60	108.62	-21.42%	-16.45%	-12.1°	-9.3°	✓	
108.77	108.81	-21.57%	-16.65%	-12.2°	-9.5°	✓	
108.84	108.87	-25.89%	-18.59%	-14.5°	-10.5°	✓	
108.92	108.95	23.55%	20.90%	13.3°	11.8°	✓	
109.05	109.11	-27.12%	-17.39%	-15.2°	-9.9°	✓	
109.13	109.15	21.70%	18.79%	12.2°	10.6°	✓	
109.57	109.60	-27.03%	-17.11%	-15.1°	-9.7°	✓	
110.37	110.40	19.24%	17.06%	10.9°	9.7°	✓	
110.67	110.72	25.21%	18.12%	14.1°	10.3°	✓	
110.74	110.75	-25.91%	-17.25%	-14.5°	-9.8°	✓	
111.22	111.23	22.28%	16.04%	12.6°	9.1°	✓	
111.27	111.32	-25.47%	-17.28%	-14.3°	-9.8°	✓	
112.05	112.07	26.37%	16.36%	14.8°	9.3°	✓	
112.11	112.12	-28.72%	-20.96%	-16.0°	-11.8°	✓	
112.80	112.83	-25.23%	-15.23%	-14.2°	-8.7°	✓	
113.40	113.41	27.74%	17.97%	15.5°	10.2°	✓	
113.52	113.54	-26.30%	-15.80%	-14.7°	-9.0°	✓	
113.66	113.68	-20.00%	-16.80%	-11.3°	-9.5°	✓	
114.81	114.82	29.10%	19.82%	16.2°	11.2°	✓	
115.43	115.47	-24.75%	-17.04%	-13.9°	-9.7°	✓	
116.06	116.25	21.1%	19.0%	11.9°	10.8°	✓	
116.06	116.25	21.1%	19.0%	11.9°	10.8°		✓
116.06	116.25	21.1%	19.0%	11.9°	10.8°		✓
116.17	116.18	20.01%	16.49%	11.3°	9.4°	✓	
116.25	116.29	-28.24%	-15.07%	-15.8°	-8.6°	✓	
116.76	116.79	23.75%	16.40%	13.4°	9.3°	✓	
117.49	117.51	-29.46%	-21.60%	-16.4°	-12.2°	✓	
117.95	117.98	-23.29%	-16.18%	-13.1°	-9.2°	✓	
118.05	118.07	-23.83%	-16.00%	-13.4°	-9.1°	✓	
119.63	119.65	19.48%	16.02%	11.0°	9.1°	✓	
122.13	122.14	-17.70%	-15.18%	-10.0°	-8.6°	✓	
122.16	122.19	-20.93%	-17.58%	-11.8°	-10.0°	✓	
122.81	122.88	25.4%	15.6%	14.3°	8.9°	✓	
122.81	122.88	25.4%	15.6%	14.3°	8.9°		✓
122.81	122.88	25.4%	15.6%	14.3°	8.9°		✓
123.31	123.33	-19.63%	-16.40%	-11.1°	-9.3°	✓	
124.22	124.25	28.85%	19.00%	16.1°	10.8°	✓	
124.32	124.34	-24.91%	-23.01%	-14.0°	-13.0°	✓	
124.41	124.42	18.09%	17.17%	10.3°	9.7°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
124.46	124.62	22.0%	8.8%	12.4°	5.0°	✓	
124.46	124.62	22.0%	8.8%	12.4°	5.0°		✓
124.46	124.62	22.0%	8.8%	12.4°	5.0°		✓
124.56	124.57	-19.36%	-17.39%	-11.0°	-9.9°	✓	
124.58	124.58	22.04%	17.93%	12.4°	10.2°	✓	
124.89	124.90	-17.00%	-15.38%	-9.6°	-8.7°	✓	
125.93	125.96	29.06%	16.05%	16.2°	9.1°	✓	
126.07	126.10	-24.58%	-18.42%	-13.8°	-10.4°	✓	
127.82	127.84	-19.87%	-15.06%	-11.2°	-8.6°	✓	
128.62	128.65	-16.18%	-15.05%	-9.2°	-8.6°	✓	
128.70	128.72	29.95%	19.69%	16.7°	11.1°	✓	
128.90	128.96	25.23%	18.52%	14.2°	10.5°	✓	
130.97	131.04	27.6%	20.0%	15.4°	11.3°	✓	
130.97	131.04	27.6%	20.0%	15.4°	11.3°		✓
130.97	131.04	27.6%	20.0%	15.4°	11.3°		✓
131.45	131.48	27.37%	15.24%	15.3°	8.7°	✓	
131.5	131.79	26.9%	19.7%	15.1°	11.1°	✓	
131.5	131.79	26.9%	19.7%	15.1°	11.1°		✓
131.5	131.79	26.9%	19.7%	15.1°	11.1°		✓
131.89	131.93	-29.43%	-15.94%	-16.4°	-9.1°	✓	
131.94	131.99	-28.10%	-15.60%	-15.7°	-8.9°	✓	
132.83	132.85	25.19%	17.22%	14.1°	9.8°	✓	
134.10	134.12	23.28%	15.45%	13.1°	8.8°	✓	
134.98	135.01	-27.89%	-16.44%	-15.6°	-9.3°	✓	
136.32	136.35	-18.85%	-15.46%	-10.7°	-8.8°	✓	
138.40	138.42	-24.49%	-17.67%	-13.8°	-10.0°	✓	
138.55	138.56	28.24%	20.79%	15.8°	11.7°	✓	
140.60	140.63	29.67%	17.80%	16.5°	10.1°	✓	
140.71	140.73	-25.17%	-16.32%	-14.1°	-9.3°	✓	
140.74	140.76	29.07%	17.16%	16.2°	9.7°	✓	
142.13	142.16	29.46%	17.04%	16.4°	9.7°	✓	
145.17	145.19	-20.40%	-16.80%	-11.5°	-9.5°	✓	
145.20	145.22	-22.55%	-15.82%	-12.7°	-9.0°	✓	
147.19	147.21	17.51%	16.94%	9.9°	9.6°	✓	
147.77	147.78	22.22%	18.33%	12.5°	10.4°	✓	
147.86	147.91	-28.45%	-15.82%	-15.9°	-9.0°	✓	
148.39	148.42	-19.69%	-15.05%	-11.1°	-8.6°	✓	
148.66	148.67	-21.10%	-17.44%	-11.9°	-9.9°	✓	
148.92	148.94	26.99%	15.53%	15.1°	8.8°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
149.37	149.41	-27.08%	-15.58%	-15.2°	-8.9°	✓	
149.99	150.03	24.95%	16.48%	14.0°	9.4°	✓	
151.04	151.08	-28.21%	-21.52%	-15.8°	-12.1°	✓	
152.35	152.37	27.75%	19.84%	15.5°	11.2°	✓	
152.70	152.73	25.67%	17.12%	14.4°	9.7°	✓	
152.93	152.94	-30.00%	-17.73%	-16.7°	-10.1°	✓	
153.08	153.11	-22.69%	-18.93%	-12.8°	-10.7°	✓	
153.19	153.26	-27.71%	-15.21%	-15.5°	-8.6°	✓	
153.33	153.35	22.76%	17.62%	12.8°	10.0°	✓	
153.47	153.50	-25.36%	-16.33%	-14.2°	-9.3°	✓	
153.52	153.54	-26.94%	-23.10%	-15.1°	-13.0°	✓	
153.72	153.74	-23.37%	-15.88%	-13.2°	-9.0°	✓	
153.98	154.01	29.29%	15.48%	16.3°	8.8°	✓	
155.60	155.61	23.93%	16.37%	13.5°	9.3°	✓	
156.31	156.32	19.74%	16.64%	11.2°	9.4°	✓	
156.42	156.43	25.00%	16.24%	14.0°	9.2°	✓	
156.93	156.95	23.39%	16.45%	13.2°	9.3°	✓	
157.01	157.03	27.54%	15.14%	15.4°	8.6°	✓	
157.48	157.52	29.63%	15.72%	16.5°	8.9°	✓	
158.07	158.08	-22.48%	-16.24%	-12.7°	-9.2°	✓	
158.52	158.54	19.41%	15.02%	11.0°	8.5°	✓	
159.48	159.49	20.94%	15.34%	11.8°	8.7°	✓	
160.61	160.64	24.05%	17.39%	13.5°	9.9°	✓	
162.77	162.79	25.02%	16.16%	14.0°	9.2°	✓	
163.36	163.42	26.67%	15.24%	14.9°	8.7°	✓	
164.49	164.50	-26.78%	-16.07%	-15.0°	-9.1°	✓	
165.15	165.17	-25.23%	-20.87%	-14.2°	-11.8°	✓	
165.38	165.43	-27.03%	-15.53%	-15.1°	-8.8°	✓	
165.68	165.69	-20.17%	-17.51%	-11.4°	-9.9°	✓	
166.33	166.39	-27.94%	-15.62%	-15.6°	-8.9°	✓	
168.03	168.05	-17.68%	-15.03%	-10.0°	-8.5°	✓	
168.19	168.20	15.50%	15.12%	8.8°	8.6°	✓	
168.41	168.44	-23.07%	-16.46%	-13.0°	-9.3°	✓	
170.01	170.03	22.33%	16.70%	12.6°	9.5°	✓	
170.07	170.10	22.33%	16.70%	12.6°	9.5°	✓	
171.28	171.29	20.25%	17.05%	11.4°	9.7°	✓	
171.89	171.93	25.55%	19.34%	14.3°	10.9°	✓	
172.45	172.48	-26.21%	-20.63%	-14.7°	-11.7°	✓	
172.50	172.51	24.55%	17.19%	13.8°	9.8°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
172.86	172.89	23.76%	18.18%	13.4°	10.3°	✓	
174.43	174.53	26.92%	15.17%	15.1°	8.6°	✓	
174.61	174.63	-18.93%	-16.21%	-10.7°	-9.2°	✓	
174.66	174.68	22.76%	17.78%	12.8°	10.1°	✓	
176.55	176.56	-23.59%	-17.17%	-13.3°	-9.7°	✓	
178.19	178.22	-27.17%	-15.31%	-15.2°	-8.7°	✓	
179.10	179.11	20.80%	15.05%	11.7°	8.6°	✓	
179.71	179.73	-18.52%	-16.21%	-10.5°	-9.2°	✓	
179.85	179.87	18.85%	16.03%	10.7°	9.1°	✓	
179.93	179.95	28.43%	15.31%	15.9°	8.7°	✓	
181.03	181.05	-19.18%	-15.41%	-10.9°	-8.8°	✓	
181.65	181.78	21.9%	16.0%	12.4°	9.1°	✓	
181.65	181.78	21.9%	16.0%	12.4°	9.1°		✓
181.65	181.78	21.9%	16.0%	12.4°	9.1°		✓
182.72	182.73	16.93%	15.12%	9.6°	8.6°	✓	
183.38	183.40	22.17%	17.30%	12.5°	9.8°	✓	
183.73	183.75	-18.82%	-16.07%	-10.7°	-9.1°	✓	
184.10	184.12	23.30%	17.40%	13.1°	9.9°	✓	
184.52	184.57	29.81%	19.70%	16.6°	11.1°	✓	
185.06	185.14	29.98%	17.68%	16.7°	10.0°	✓	
187.04	187.05	25.34%	16.21%	14.2°	9.2°	✓	
187.77	187.79	-16.91%	-15.41%	-9.6°	-8.8°	✓	
187.99	188.03	26.89%	16.81%	15.1°	9.5°	✓	
188.13	188.14	20.24%	16.37%	11.4°	9.3°	✓	
189.33	189.35	18.93%	16.29%	10.7°	9.3°	✓	
189.39	189.42	-21.14%	-15.56%	-11.9°	-8.8°	✓	
189.68	189.72	27.46%	16.03%	15.4°	9.1°	✓	
189.78	189.80	-25.31%	-18.64%	-14.2°	-10.6°	✓	
190.18	190.20	-25.39%	-19.33%	-14.2°	-10.9°	✓	
190.23	190.25	-21.62%	-18.92%	-12.2°	-10.7°	✓	
190.74	190.79	27.22%	21.93%	15.2°	12.4°	✓	
190.82	1327.22	-17.34%	-15.44%	-9.8°	-8.8°	✓	
191.77	191.79	18.76%	15.35%	10.6°	8.7°	✓	
192.33	192.36	-19.24%	-15.11%	-10.9°	-8.6°	✓	
192.94	192.96	29.32%	16.11%	16.3°	9.2°	✓	
193.08	193.10	-18.24%	-15.06%	-10.3°	-8.6°	✓	
193.28	193.34	-27.74%	-16.63%	-15.5°	-9.4°	✓	
193.72	193.74	19.15%	15.53%	10.8°	8.8°	✓	
193.78	193.81	-25.57%	-21.19%	-14.3°	-12.0°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
193.86	193.87	18.45%	15.20%	10.5°	8.6°	✓	
193.93	193.94	20.91%	17.92%	11.8°	10.2°	✓	
194.42	194.45	20.83%	15.34%	11.8°	8.7°	✓	
194.61	194.63	29.11%	19.33%	16.2°	10.9°	✓	
195.97	196.01	21.21%	15.29%	12.0°	8.7°	✓	
196.57	196.59	-25.39%	-17.40%	-14.2°	-9.9°	✓	
197.69	197.71	-18.91%	-16.49%	-10.7°	-9.4°	✓	
197.76	197.83	-21.16%	-15.25%	-11.9°	-8.7°	✓	
198.07	198.11	29.36%	22.70%	16.4°	12.8°	✓	
198.08	198.13	24.8%	22.9%	13.9°	12.9°	✓	
198.08	198.13	24.8%	22.9%	13.9°	12.9°		✓
198.08	198.13	24.8%	22.9%	13.9°	12.9°		✓
198.13	198.15	25.29%	22.92%	14.2°	12.9°	✓	
198.22	198.26	-27.70%	-18.89%	-15.5°	-10.7°	✓	
200.05	200.08	-26.95%	-16.41%	-15.1°	-9.3°	✓	
200.30	200.33	25.32%	17.58%	14.2°	10.0°	✓	
200.68	200.74	-25.36%	-15.06%	-14.2°	-8.6°	✓	
200.76	200.78	20.05%	17.44%	11.3°	9.9°	✓	
201.19	201.22	-23.41%	-15.07%	-13.2°	-8.6°	✓	
201.61	201.65	-18.27%	-15.14%	-10.4°	-8.6°	✓	
201.79	201.81	17.51%	15.70%	9.9°	8.9°	✓	
202.06	202.14	28.45%	15.62%	15.9°	8.9°	✓	
203.04	203.08	-22.62%	-16.38%	-12.7°	-9.3°	✓	
203.16	203.17	-24.71%	-17.06%	-13.9°	-9.7°	✓	
205.69	205.73	20.45%	15.16%	11.6°	8.6°	✓	
205.75	205.79	26.37%	16.55%	14.8°	9.4°	✓	
205.89	205.92	-18.64%	-15.29%	-10.6°	-8.7°	✓	
206.11	206.13	24.86%	17.34%	14.0°	9.8°	✓	
206.50	206.52	-25.45%	-19.09%	-14.3°	-10.8°	✓	
206.67	206.69	-22.74%	-15.92%	-12.8°	-9.0°	✓	
207.54	207.57	-22.21%	-15.98%	-12.5°	-9.1°	✓	
207.63	207.69	-26.95%	-17.03%	-15.1°	-9.7°	✓	
207.72	207.76	23.27%	17.10%	13.1°	9.7°	✓	
208.65	208.68	26.25%	19.05%	14.7°	10.8°	✓	
208.73	208.75	-24.92%	-15.79%	-14.0°	-9.0°	✓	
208.80	208.88	-26.23%	-19.99%	-14.7°	-11.3°	✓	
209.00	209.02	23.88%	15.78%	13.4°	9.0°	✓	
209.14	209.19	-21.70%	-15.98%	-12.2°	-9.1°	✓	
210.14	210.24	27.13%	18.70%	15.2°	10.6°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
210.25	210.43	23.6%	14.9%	13.3°	8.5°	✓	
210.25	210.43	23.6%	14.9%	13.3°	8.5°		✓
210.25	210.43	23.6%	14.9%	13.3°	8.5°		✓
210.26	210.29	-26.86%	-16.86%	-15.0°	-9.6°	✓	
210.40	210.42	-18.73%	-17.28%	-10.6°	-9.8°	✓	
210.67	210.70	-25.57%	-17.74%	-14.3°	-10.1°	✓	
210.74	210.79	22.15%	16.30%	12.5°	9.3°	✓	
211.23	211.30	29.71%	15.47%	16.5°	8.8°	✓	
211.52	211.54	-24.28%	-16.62%	-13.6°	-9.4°	✓	
212.63	212.67	27.06%	16.94%	15.1°	9.6°	✓	
212.79	212.82	-17.45%	-15.21%	-9.9°	-8.6°	✓	
213.06	213.09	28.35%	15.25%	15.8°	8.7°	✓	
213.31	213.49	-29.11%	-15.04%	-16.2°	-8.6°	✓	
213.51	213.53	29.93%	17.62%	16.7°	10.0°	✓	
215.29	215.36	27.80%	17.29%	15.5°	9.8°	✓	
215.87	215.90	-23.03%	-16.02%	-13.0°	-9.1°	✓	
216.04	216.09	29.23%	18.54%	16.3°	10.5°	✓	
216.47	216.49	-20.84%	-16.70%	-11.8°	-9.5°	✓	
216.87	216.92	27.62%	18.69%	15.4°	10.6°	✓	
217.26	217.27	-17.18%	-16.06%	-9.7°	-9.1°	✓	
217.94	217.94	-17.11%	-15.00%	-9.7°	-8.5°	✓	
218.49	218.53	-24.46%	-15.10%	-13.7°	-8.6°	✓	
218.84	218.89	21.95%	16.48%	12.4°	9.4°	✓	
218.97	219.04	21.62%	16.46%	12.2°	9.3°	✓	
220.31	220.35	-27.41%	-18.49%	-15.3°	-10.5°	✓	
220.50	220.52	-29.95%	-18.75%	-16.7°	-10.6°	✓	
220.55	220.60	-22.62%	-15.37%	-12.7°	-8.7°	✓	
220.64	220.65	-29.64%	-15.40%	-16.5°	-8.8°	✓	
220.68	220.75	23.1%	5.8%	13.0°	3.3°	✓	
220.68	220.75	23.1%	5.8%	13.0°	3.3°		✓
220.70	220.71	20.39%	15.39%	11.5°	8.7°	✓	
220.77	220.79	-29.05%	-16.58%	-16.2°	-9.4°	✓	
220.92	220.95	-24.73%	-16.93%	-13.9°	-9.6°	✓	
221.7	221.8	15.0%	4.5%	7.5°	2.6°	✓	
221.7	221.8	15.0%	4.5%	7.5°	2.6°		✓
222.01	222.03	-20.21%	-15.22%	-11.4°	-8.7°	✓	
222.15	222.16	-17.47%	-15.86%	-9.9°	-9.0°	✓	
222.17	222.18	25.11%	17.98%	14.1°	10.2°	✓	
222.53	222.54	-24.53%	-19.37%	-13.8°	-11.0°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
222.56	222.60	-19.83%	-15.79%	-11.2°	-9.0°	✓	
222.76	222.79	-23.33%	-16.04%	-13.1°	-9.1°	✓	
222.92	222.94	20.73%	16.48%	11.7°	9.4°	✓	
223.00	223.02	-19.36%	-15.20%	-11.0°	-8.6°	✓	
223.06	223.10	19.22%	16.46%	10.9°	9.3°	✓	
223.19	223.29	20.39%	15.04%	11.5°	8.6°	✓	
223.49	223.53	27.06%	15.75%	15.1°	9.0°	✓	
224.39	224.60	-29.22%	-15.72%	-16.3°	-8.9°	✓	
224.64	224.68	-24.76%	-18.45%	-13.9°	-10.5°	✓	
224.86	224.90	-23.97%	-16.80%	-13.5°	-9.5°	✓	
226.27	226.29	17.67%	16.05%	10.0°	9.1°	✓	
227.05	227.07	25.41%	18.13%	14.3°	10.3°	✓	
228.13	228.18	20.02%	16.54%	11.3°	9.4°	✓	
228.34	228.37	20.77%	16.65%	11.7°	9.5°	✓	
228.50	228.55	-29.03%	-19.88%	-16.2°	-11.2°	✓	
230.95	231.00	-27.21%	-15.07%	-15.2°	-8.6°	✓	
232.11	232.13	-23.49%	-15.27%	-13.2°	-8.7°	✓	
232.43	232.45	29.56%	19.35%	16.5°	11.0°	✓	
232.79	232.79	-24.07%	-18.51%	-13.5°	-10.5°	✓	
232.86	232.90	27.19%	16.56%	15.2°	9.4°	✓	
233.29	233.33	-21.65%	-18.21%	-12.2°	-10.3°	✓	
233.87	233.89	17.40%	15.30%	9.9°	8.7°	✓	
234.3	234.49	24.4%	16.4%	13.7°	9.3°	✓	
234.3	234.49	24.4%	16.4%	13.7°	9.3°		✓
235.36	235.38	23.23%	16.92%	13.1°	9.6°	✓	
236.80	236.80	-16.29%	-15.18%	-9.3°	-8.6°	✓	
237.23	237.26	20.92%	15.38%	11.8°	8.7°	✓	
238.64	238.66	-26.97%	-20.40%	-15.1°	-11.5°	✓	
239.83	239.85	-19.76%	-17.02%	-11.2°	-9.7°	✓	
240.01	240.07	-29.11%	-17.70%	-16.2°	-10.0°	✓	
240.19	240.21	-18.78%	-17.20%	-10.6°	-9.8°	✓	
240.79	240.81	27.74%	19.14%	15.5°	10.8°	✓	
242.69	242.70	-27.17%	-15.59%	-15.2°	-8.9°	✓	
243.17	243.19	-22.61%	-16.54%	-12.7°	-9.4°	✓	
244.01	244.03	24.81%	15.09%	13.9°	8.6°	✓	
244.64	244.65	16.99%	15.86%	9.6°	9.0°	✓	
244.68	244.72	25.58%	16.19%	14.3°	9.2°	✓	
245.78	245.81	26.14%	16.23%	14.6°	9.2°	✓	
247.85	247.90	-27.66%	-18.92%	-15.5°	-10.7°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
247.97	247.99	21.32%	15.42%	12.0°	8.8°	✓	
248.18	248.23	-20.89%	-15.86%	-11.8°	-9.0°	✓	
248.74	248.80	29.85%	17.46%	16.6°	9.9°	✓	
248.87	248.89	-21.67%	-15.46%	-12.2°	-8.8°	✓	
249.67	249.69	28.05%	22.94%	15.7°	12.9°	✓	
249.94	249.95	-26.34%	-16.54%	-14.8°	-9.4°	✓	
250.01	250.06	20.24%	15.76%	11.4°	9.0°	✓	
250.53	250.58	25.99%	17.72%	14.6°	10.0°	✓	
251.10	251.12	23.07%	15.78%	13.0°	9.0°	✓	
251.45	251.47	25.29%	16.58%	14.2°	9.4°	✓	
252.16	252.23	24.92%	15.32%	14.0°	8.7°	✓	
252.34	252.36	-20.93%	-15.85%	-11.8°	-9.0°	✓	
252.63	252.70	-26.60%	-16.86%	-14.9°	-9.6°	✓	
252.89	252.92	-21.91%	-16.19%	-12.4°	-9.2°	✓	
252.94	253.00	-25.52%	-16.01%	-14.3°	-9.1°	✓	
253.05	253.08	24.21%	15.74%	13.6°	8.9°	✓	
253.38	253.48	-25.43%	-15.57%	-14.3°	-8.8°	✓	
253.53	253.56	21.75%	15.83%	12.3°	9.0°	✓	
253.74	253.76	-24.06%	-17.78%	-13.5°	-10.1°	✓	
254.02	254.05	22.29%	15.16%	12.6°	8.6°	✓	
254.42	254.47	19.61%	17.46%	11.1°	9.9°	✓	
254.52	254.54	-27.91%	-21.59%	-15.6°	-12.2°	✓	
254.56	254.70	23.01%	15.42%	13.0°	8.8°	✓	
254.86	254.87	18.43%	16.98%	10.4°	9.6°	✓	
255.06	255.08	-18.38%	-15.08%	-10.4°	-8.6°	✓	
255.29	255.33	-29.28%	-16.68%	-16.3°	-9.5°	✓	
255.35	255.37	25.06%	17.20%	14.1°	9.8°	✓	
256.92	256.97	23.94%	15.18%	13.5°	8.6°	✓	
257.29	257.31	-24.17%	-15.71%	-13.6°	-8.9°	✓	
258.14	258.16	23.19%	19.09%	13.1°	10.8°	✓	
258.21	258.24	-19.71%	-16.28%	-11.2°	-9.2°	✓	
258.63	258.65	29.57%	16.11%	16.5°	9.2°	✓	
258.94	258.96	-25.94%	-21.96%	-14.5°	-12.4°	✓	
259.65	259.67	18.12%	15.54%	10.3°	8.8°	✓	
259.79	259.82	-17.45%	-15.41%	-9.9°	-8.8°	✓	
259.83	259.85	-18.78%	-16.28%	-10.6°	-9.2°	✓	
260.90	260.92	28.35%	22.57%	15.8°	12.7°	✓	
261.33	261.35	-25.26%	-18.47%	-14.2°	-10.5°	✓	
261.70	261.72	19.73%	16.68%	11.2°	9.5°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
263.2	263.2	15.4%	9.2%	8.8°	5.3°	✓	
263.2	263.2	15.4%	9.2%	8.8°	5.3°		✓
263.32	263.35	28.81%	19.83%	16.1°	11.2°	✓	
264.45	264.49	-28.34%	-15.36%	-15.8°	-8.7°	✓	
264.61	264.64	29.02%	19.28%	16.2°	10.9°	✓	
264.69	264.70	-22.45%	-16.99%	-12.7°	-9.6°	✓	
264.91	264.93	21.91%	18.14%	12.4°	10.3°	✓	
265.46	265.48	-25.64%	-16.74%	-14.4°	-9.5°	✓	
265.53	265.56	-27.19%	-17.05%	-15.2°	-9.7°	✓	
266.06	266.10	-29.49%	-15.63%	-16.4°	-8.9°	✓	
266.22	266.25	22.94%	15.47%	12.9°	8.8°	✓	
266.31	266.33	22.67%	15.45%	12.8°	8.8°	✓	
267.59	267.8	18.5%	13.6%	10.5°	7.7°	✓	
267.59	267.8	18.5%	13.6%	10.5°	7.7°		✓
268.80	268.83	-18.09%	-15.53%	-10.3°	-8.8°	✓	
270.16	270.19	26.93%	15.55%	15.1°	8.8°	✓	
270.33	270.36	-19.41%	-15.23%	-11.0°	-8.7°	✓	
270.96	270.97	-20.75%	-16.96%	-11.7°	-9.6°	✓	
271.34	271.36	-28.09%	-16.00%	-15.7°	-9.1°	✓	
271.49	271.53	-28.32%	-21.18%	-15.8°	-12.0°	✓	
271.93	271.95	20.79%	15.33%	11.7°	8.7°	✓	
272.02	272.04	20.36%	17.02%	11.5°	9.7°	✓	
272.47	272.49	-22.22%	-15.19%	-12.5°	-8.6°	✓	
273.21	273.23	26.43%	19.38%	14.8°	11.0°	✓	
273.69	273.70	-16.73%	-15.57%	-9.5°	-8.8°	✓	
273.74	273.76	22.89%	16.67%	12.9°	9.5°	✓	
273.82	273.84	19.36%	16.84%	11.0°	9.6°	✓	
274.42	274.44	-21.68%	-15.29%	-12.2°	-8.7°	✓	
274.52	274.54	-25.96%	-19.03%	-14.6°	-10.8°	✓	
274.66	274.71	20.23%	16.69%	11.4°	9.5°	✓	
274.86	274.89	-29.26%	-15.12%	-16.3°	-8.6°	✓	
275.00	275.03	-29.81%	-17.78%	-16.6°	-10.1°	✓	
275.06	275.09	26.43%	15.63%	14.8°	8.9°	✓	
275.15	275.19	-24.92%	-15.60%	-14.0°	-8.9°	✓	
275.22	275.25	28.38%	18.69%	15.8°	10.6°	✓	
275.45	275.47	20.71%	15.28%	11.7°	8.7°	✓	
275.70	275.72	-29.71%	-15.78%	-16.5°	-9.0°	✓	
275.79	275.81	-24.28%	-15.04%	-13.6°	-8.6°	✓	
276.34	276.35	-25.95%	-16.38%	-14.5°	-9.3°	✓	

Appendix 1-J

Vertical/Lateral Slopes between 15-30% Grade

MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
276.41	276.42	17.91%	16.04%	10.2°	9.1°	✓	
276.95	276.97	-23.93%	-18.58%	-13.5°	-10.5°	✓	
277.07	277.08	-22.60%	-16.00%	-12.7°	-9.1°	✓	
277.16	277.18	-28.26%	-20.55%	-15.8°	-11.6°	✓	
277.41	277.44	24.16%	15.04%	13.6°	8.6°	✓	
277.77	277.81	18.01%	16.02%	10.2°	9.1°	✓	
278.35	278.38	21.82%	16.95%	12.3°	9.6°	✓	
278.65	278.68	23.82%	16.88%	13.4°	9.6°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
0.02	0.20	64.52%	19.05%	32.8°	10.8°	✓	
0.43	0.45	-36.34%	-18.54%	-20.0°	-10.5°	✓	
0.47	0.65	-83.53%	-17.87%	-39.9°	-10.1°	✓	
0.73	0.75	31.41%	17.67%	17.4°	10.0°	✓	
0.82	1.06	64.25%	18.90%	32.7°	10.7°	✓	
1.08	1.13	37.29%	22.56%	20.5°	12.7°	✓	
1.14	1.32	-67.23%	-17.82%	-33.9°	-10.1°	✓	
1.34	1.56	67.39%	17.37%	34.0°	9.9°	✓	
1.63	1.68	40.08%	13.50%	21.8°	7.7°	✓	
2.03	2.11	-32.38%	-17.51%	-17.9°	-9.9°	✓	
2.14	2.30	-55.45%	-18.77%	-29.0°	-10.6°	✓	
2.36	2.50	72.03%	20.91%	35.8°	11.8°	✓	
2.57	2.67	41.42%	19.01%	22.5°	10.8°	✓	
3.35	3.80	54.0%	19.0%	28.4°	10.8°		✓
3.35	3.80	54.0%	19.0%	28.4°	10.8°		✓
3.52	3.59	-37.87%	-15.29%	-20.7°	-8.7°	✓	
3.77	3.85	50.48%	16.29%	26.8°	9.3°	✓	
4.59	4.66	-34.40%	-15.08%	-19.0°	-8.6°	✓	
4.68	4.69	-32.38%	-22.26%	-17.9°	-12.5°	✓	
4.82	4.93	-63.71%	-16.86%	-32.5°	-9.6°	✓	
4.95	4.99	-62.67%	-20.52%	-32.1°	-11.6°	✓	
5.09	5.35	62.03%	21.82%	31.8°	12.3°	✓	
5.36	5.60	-63.71%	15.86%	-32.5°	9.0°	✓	
5.63	5.86	55.50%	19.70%	29.0°	11.1°	✓	
5.93	6.02	30.51%	16.30%	17.0°	9.3°	✓	
6.51	6.63	-77.54%	-25.09%	-37.8°	-14.1°	✓	
6.67	6.85	66.59%	16.90%	33.7°	9.6°	✓	
6.91	6.98	39.45%	19.34%	21.5°	10.9°	✓	
7.23	7.40	-37.01%	-15.14%	-20.3°	-8.6°	✓	
7.78	7.94	-59.85%	-15.13%	-30.9°	-8.6°	✓	
7.97	8.09	68.08%	15.67%	34.2°	8.9°	✓	
8.14	8.26	43.07%	15.87%	23.3°	9.0°	✓	
8.45	8.49	-30.18%	16.61%	-16.8°	9.4°	✓	
8.74	8.88	-62.17%	-16.32%	-31.9°	-9.3°	✓	
8.89	9.04	69.34%	16.00%	34.7°	9.1°	✓	
9.23	9.31	31.72%	16.26%	17.6°	9.2°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
9.52	9.62	37.15%	17.26%	20.4°	9.8°	✓	
9.79	9.80	-35.95%	-17.73%	-19.8°	-10.1°	✓	
10.01	10.10	-38.50%	-15.09%	-21.1°	-8.6°	✓	
11.08	11.22	-54.24%	-15.72%	-28.5°	-8.9°	✓	
11.29	11.41	43.46%	18.02%	23.5°	10.2°	✓	
11.48	11.52	38.18%	15.02%	20.9°	8.5°	✓	
11.55	11.58	36.98%	16.91%	20.3°	9.6°	✓	
11.98	12.14	-61.68%	-17.18%	-31.7°	-9.7°	✓	
12.19	12.36	55.73%	21.05%	29.1°	11.9°	✓	
14.60	14.63	35.55%	28.24%	19.6°	15.8°	✓	
15.18	15.39	-36.16%	-16.88%	-19.9°	-9.6°	✓	
15.50	15.63	67.77%	16.63%	34.1°	9.4°	✓	
15.98	16.01	35.33%	15.50%	19.5°	8.8°	✓	
16.42	16.46	-31.77%	-16.17%	-17.6°	-9.2°	✓	
16.74	16.79	34.63%	19.48%	19.1°	11.0°	✓	
17.59	17.68	-42.22%	-15.26%	-22.9°	-8.7°	✓	
17.74	17.83	-40.77%	-18.44%	-22.2°	-10.4°	✓	
17.91	18.04	52.44%	16.00%	27.7°	9.1°	✓	
18.64	18.81	-55.07%	-17.31%	-28.8°	-9.8°	✓	
18.85	18.98	68.23%	15.67%	34.3°	8.9°	✓	
19.80	19.84	-33.84%	-15.89%	-18.7°	-9.0°	✓	
20.38	20.43	-30.47%	-21.51%	-16.9°	-12.1°	✓	
20.69	20.83	-52.28%	-15.33%	-27.6°	-8.7°	✓	
20.86	21.01	48.31%	17.78%	25.8°	10.1°	✓	
21.49	21.64	-42.64%	-16.39%	-23.1°	-9.3°	✓	
21.71	21.83	66.70%	15.28%	33.7°	8.7°	✓	
22.94	22.96	-32.04%	-21.82%	-17.8°	-12.3°	✓	
23.00	23.06	-58.63%	-30.20%	-30.4°	-16.8°	✓	
23.10	23.25	61.45%	15.29%	31.6°	8.7°	✓	
24.05	24.08	-38.23%	-18.87%	-20.9°	-10.7°	✓	
24.20	24.24	30.21%	18.11%	16.8°	10.3°	✓	
24.56	24.59	-33.91%	-16.97%	-18.7°	-9.6°	✓	
24.69	24.74	45.63%	15.53%	24.5°	8.8°	✓	
24.80	24.85	-40.57%	-18.21%	-22.1°	-10.3°	✓	
24.95	24.97	32.00%	21.18%	17.7°	12.0°	✓	
24.99	25.01	-38.16%	-24.36%	-20.9°	-13.7°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
25.80	25.91	-57.58%	-17.13%	-29.9°	-9.7°	✓	
26.04	26.22	52.80%	15.71%	27.8°	8.9°	✓	
28.20	28.30	32.0%	15.0%	17.7°	8.5°		✓
28.20	28.30	32.0%	15.0%	17.7°	8.5°		✓
29.49	29.56	-35.16%	-15.69%	-19.4°	-8.9°	✓	
30.08	30.20	-46.13%	-18.50%	-24.8°	-10.5°	✓	
30.23	30.33	49.83%	17.91%	26.5°	10.2°	✓	
31.25	31.36	-44.48%	-18.14%	-24.0°	-10.3°	✓	
31.41	31.52	54.12%	17.02%	28.4°	9.7°	✓	
32.42	32.53	-53.71%	-21.38%	-28.2°	-12.1°	✓	
32.55	32.57	36.91%	16.99%	20.3°	9.6°	✓	
33.19	33.34	46.00%	16.38%	24.7°	9.3°	✓	
33.48	33.52	37.01%	17.45%	20.3°	9.9°	✓	
33.68	33.73	34.1%	26.3%	18.8°	14.7°		✓
33.68	33.73	34.1%	26.3%	18.8°	14.7°		✓
33.75	33.83	-34.14%	-17.01%	-18.8°	-9.7°	✓	
34.08	34.25	-63.09%	-15.02%	-32.2°	-8.5°	✓	
34.31	34.34	48.29%	26.85%	25.8°	15.0°	✓	
34.36	34.45	32.3%	16.7%	17.9°	9.5°		✓
34.36	34.45	32.3%	16.7%	17.9°	9.5°		✓
34.44	34.49	-41.51%	-15.56%	-22.5°	-8.8°	✓	
34.49	34.56	57.84%	17.55%	30.0°	10.0°	✓	
34.56	34.84	44.6%	21.4%	24.0°	12.1°		✓
34.56	34.84	44.6%	21.4%	24.0°	12.1°		✓
34.83	34.92	-56.99%	-22.03%	-29.7°	-12.4°	✓	
34.99	35.10	66.65%	18.23%	33.7°	10.3°	✓	
35.19	35.24	41.14%	16.03%	22.4°	9.1°	✓	
36.63	36.72	41.03%	16.98%	22.3°	9.6°	✓	
36.75	36.83	-31.79%	-16.54%	-17.6°	-9.4°	✓	
37.26	37.33	38.28%	16.61%	20.9°	9.4°	✓	
37.91	151.59	-33.65%	-16.03%	-18.6°	-9.1°	✓	
37.98	38.12	-50.52%	-20.44%	-26.8°	-11.6°	✓	
38.18	38.20	34.35%	25.66%	19.0°	14.4°	✓	
38.21	38.24	59.05%	19.72%	30.6°	11.2°	✓	
38.26	38.34	66.06%	21.68%	33.4°	12.2°	✓	
38.59	38.61	30.29%	18.25%	16.9°	10.3°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
39.10	39.13	32.96%	25.44%	18.2°	14.3°	✓	
39.29	39.31	-30.36%	-25.11%	-16.9°	-14.1°	✓	
40.08	40.12	-33.26%	-18.46%	-18.4°	-10.5°	✓	
41.12	41.17	-38.49%	-16.31%	-21.1°	-9.3°	✓	
41.19	41.34	-45.96%	-16.99%	-24.7°	-9.6°	✓	
41.39	41.51	61.04%	25.32%	31.4°	14.2°	✓	
41.86	41.90	-30.07%	-18.12%	-16.7°	-10.3°	✓	
42.01	42.02	-33.56%	-21.08%	-18.6°	-11.9°	✓	
42.17	42.22	-41.84%	-16.34%	-22.7°	-9.3°	✓	
42.44	42.54	-38.44%	-16.56%	-21.0°	-9.4°	✓	
42.56	42.67	-43.72%	-21.72%	-23.6°	-12.3°	✓	
42.70	42.85	66.05%	21.46%	33.4°	12.1°	✓	
42.95	43.02	30.96%	17.68%	17.2°	10.0°	✓	
43.03	43.09	-51.44%	-21.73%	-27.2°	-12.3°	✓	
43.13	43.22	-43.32%	24.59%	-23.4°	13.8°	✓	
43.22	43.37	65.87%	19.48%	33.4°	11.0°	✓	
43.41	43.44	-50.18%	-33.84%	-26.6°	-18.7°	✓	
43.42	43.59	52.6%	36.2%	27.7°	19.9°		✓
43.42	43.59	52.6%	36.2%	27.7°	19.9°		✓
43.68	43.72	45.11%	21.40%	24.3°	12.1°	✓	
43.72	43.78	-35.92%	-15.98%	-19.8°	-9.1°	✓	
44.69	44.78	-62.07%	-25.52%	-31.8°	-14.3°	✓	
44.91	44.92	57.93%	22.44%	30.1°	12.6°	✓	
44.95	45.01	62.78%	16.89%	32.1°	9.6°	✓	
45.07	45.13	41.36%	16.45%	22.5°	9.3°	✓	
45.18	45.28	53.40%	17.82%	28.1°	10.1°	✓	
45.88	45.91	-59.30%	-33.15%	-30.7°	-18.3°	✓	
46.02	46.04	42.37%	26.82%	23.0°	15.0°	✓	
46.10	459.04	44.58%	16.96%	24.0°	9.6°	✓	
46.45	46.47	40.43%	20.46%	22.0°	11.6°	✓	
46.48	46.50	-30.23%	-24.52%	-16.8°	-13.8°	✓	
46.52	47.00	37.0%	21.7%	20.3°	12.2°		✓
46.52	47.00	37.0%	21.7%	20.3°	12.2°		✓
46.55	46.58	-31.78%	-21.22%	-17.6°	-12.0°	✓	
46.82	46.83	32.21%	16.12%	17.9°	9.2°	✓	
46.88	46.88	33.28%	28.68%	18.4°	16.0°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
47.52	47.53	30.48%	18.59%	17.0°	10.5°	✓	
47.55	47.65	-34.05%	-15.90%	-18.8°	-9.0°	✓	
47.85	47.92	-46.97%	-17.61%	-25.2°	-10.0°	✓	
47.94	48.02	-51.38%	-16.74%	-27.2°	-9.5°	✓	
48.08	48.18	51.67%	18.20%	27.3°	10.3°	✓	
48.20	48.30	59.35%	17.45%	30.7°	9.9°	✓	
48.33	48.40	41.32%	15.23%	22.5°	8.7°	✓	
48.45	48.46	20.58	-15.55%	87.2°	-8.8°	✓	
48.85	48.90	30.83%	17.11%	17.1°	9.7°	✓	
49.15	49.21	-31.48%	-16.17%	-17.5°	-9.2°	✓	
49.28	49.30	-30.10%	-18.29%	-16.8°	-10.4°	✓	
49.37	49.49	41.45%	16.72%	22.5°	9.5°	✓	
49.55	49.66	-32.91%	-16.31%	-18.2°	-9.3°	✓	
50.03	50.10	-33.85%	-15.26%	-18.7°	-8.7°	✓	
50.91	51.04	-66.51%	-15.73%	-33.6°	-8.9°	✓	
51.06	51.16	-57.93%	-16.93%	-30.1°	-9.6°	✓	
51.21	51.25	52.27%	32.72%	27.6°	18.1°	✓	
51.27	51.38	51.49%	15.59%	27.2°	8.9°	✓	
51.40	51.49	51.33%	15.91%	27.2°	9.0°	✓	
51.54	51.57	38.60%	18.02%	21.1°	10.2°	✓	
51.69	51.79	-50.10%	-15.09%	-26.6°	-8.6°	✓	
52.13	52.17	-34.38%	-17.24%	-19.0°	-9.8°	✓	
52.23	52.30	-55.22%	-15.89%	-28.9°	-9.0°	✓	
52.32	52.36	-33.98%	-23.10%	-18.8°	-13.0°	✓	
52.40	52.41	32.11%	19.25%	17.8°	10.9°	✓	
52.46	52.61	56.78%	18.70%	29.6°	10.6°	✓	
53.00	53.03	-31.46%	-21.71%	-17.5°	-12.2°	✓	
53.11	53.17	-30.62%	-15.97%	-17.0°	-9.1°	✓	
54.65	54.67	30.51%	19.65%	17.0°	11.1°	✓	
54.93	55.00	-35.24%	-16.08%	-19.4°	-9.1°	✓	
55.04	55.20	-64.59%	-17.62%	-32.9°	-10.0°	✓	
55.23	55.29	80.03%	23.29%	38.7°	13.1°	✓	
55.31	55.36	60.94%	22.03%	31.4°	12.4°	✓	
55.40	55.49	34.85%	15.23%	19.2°	8.7°	✓	
55.81	55.86	30.56%	16.61%	17.0°	9.4°	✓	
55.86	55.92	-30.50%	-15.31%	-17.0°	-8.7°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
56.00	56.04	32.62%	17.91%	18.1°	10.2°	✓	
56.23	56.25	30.81%	22.25%	17.1°	12.5°	✓	
56.49	56.65	-37.18%	-15.32%	-20.4°	-8.7°	✓	
56.71	56.75	39.46%	21.20%	21.5°	12.0°	✓	
57.08	57.60	42.9%	24.0%	23.2°	13.5°		✓
57.08	57.60	42.9%	24.0%	23.2°	13.5°		✓
58.06	58.13	38.62%	15.95%	21.1°	9.1°	✓	
58.25	58.42	-43.26%	-15.61%	-23.4°	-8.9°	✓	
58.47	58.61	-62.03%	-17.73%	-31.8°	-10.1°	✓	
58.67	58.83	76.29%	15.04%	37.3°	8.6°	✓	
59.39	59.50	-105.90%	-16.39%	-46.6°	-9.3°	✓	
59.52	59.62	56.94%	17.94%	29.7°	10.2°	✓	
59.83	60.00	-77.07%	-17.30%	-37.6°	-9.8°	✓	
60.03	60.14	64.20%	17.31%	32.7°	9.8°	✓	
60.15	60.20	-35.31%	-17.87%	-19.4°	-10.1°	✓	
60.30	60.39	-55.22%	-15.47%	-28.9°	-8.8°	✓	
60.47	60.70	65.19%	15.11%	33.1°	8.6°	✓	
60.71	60.73	-32.29%	-18.38%	-17.9°	-10.4°	✓	
60.81	60.92	-30.68%	-18.57%	-17.1°	-10.5°	✓	
61.04	61.14	52.82%	-16.28%	27.8°	-9.2°	✓	
61.16	61.20	-53.24%	-24.64%	-28.0°	-13.8°	✓	
61.39	61.59	61.81%	18.07%	31.7°	10.2°	✓	
61.61	61.66	54.68%	21.06%	28.7°	11.9°	✓	
61.86	61.88	-37.34%	-17.93%	-20.5°	-10.2°	✓	
61.98	62.24	-84.11%	-15.88%	-40.1°	-9.0°	✓	
62.30	62.43	82.40%	28.29%	39.5°	15.8°	✓	
62.89	62.92	33.17%	18.47%	18.4°	10.5°	✓	
63.03	63.09	34.28%	17.07%	18.9°	9.7°	✓	
63.11	63.16	-40.81%	-17.94%	-22.2°	-10.2°	✓	
64.08	64.13	36.80%	15.09%	20.2°	8.6°	✓	
64.25	64.30	52.28%	18.43%	27.6°	10.4°	✓	
64.32	64.34	-40.20%	-15.41%	-21.9°	-8.8°	✓	
64.60	64.66	-41.35%	-16.15%	-22.5°	-9.2°	✓	
64.72	64.84	42.12%	17.05%	22.8°	9.7°	✓	
65.27	65.41	-60.23%	-16.57%	-31.1°	-9.4°	✓	
65.42	65.47	-34.11%	-17.86%	-18.8°	-10.1°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
65.48	65.51	-59.14%	-22.93%	-30.6°	-12.9°	✓	
65.59	65.70	48.20%	16.39%	25.7°	9.3°	✓	
65.72	65.75	41.24%	22.76%	22.4°	12.8°	✓	
65.99	66.03	-30.27%	-19.14%	-16.8°	-10.8°	✓	
66.51	66.55	53.90%	17.83%	28.3°	10.1°	✓	
66.57	66.62	-34.31%	-22.02%	-18.9°	-12.4°	✓	
67.29	67.32	-30.38%	-15.95%	-16.9°	-9.1°	✓	
67.37	67.46	-50.16%	-19.16%	-26.6°	-10.8°	✓	
67.51	67.64	55.99%	17.87%	29.2°	10.1°	✓	
67.67	67.68	33.43%	17.69%	18.5°	10.0°	✓	
67.72	67.79	45.67%	15.50%	24.5°	8.8°	✓	
67.94	68.02	-36.56%	-15.59%	-20.1°	-8.9°	✓	
68.59	68.77	-68.64%	-16.46%	-34.5°	-9.3°	✓	
68.83	68.91	57.36%	24.19%	29.8°	13.6°	✓	
69.15	69.21	70.72%	17.70%	35.3°	10.0°	✓	
69.23	69.25	35.44%	17.32%	19.5°	9.8°	✓	
69.30	69.75	34.8%	16.1%	19.2°	9.1°		✓
69.30	69.75	34.8%	16.1%	19.2°	9.1°		✓
70.00	70.11	-55.79%	-23.70%	-29.2°	-13.3°	✓	
70.12	70.25	57.50%	23.84%	29.9°	13.4°	✓	
70.37	70.45	37.68%	15.30%	20.6°	8.7°	✓	
70.47	70.55	38.50%	15.05%	21.1°	8.6°	✓	
70.92	70.95	-40.42%	-19.62%	-22.0°	-11.1°	✓	
71.06	71.23	-33.24%	-16.68%	-18.4°	-9.5°	✓	
71.48	71.50	-31.05%	-21.49%	-17.2°	-12.1°	✓	
71.69	71.76	-39.19%	-16.47%	-21.4°	-9.4°	✓	
71.78	71.86	54.08%	18.41%	28.4°	10.4°	✓	
71.93	71.98	47.61%	18.77%	25.5°	10.6°	✓	
72.25	72.37	-45.96%	-15.15%	-24.7°	-8.6°	✓	
72.40	72.43	39.43%	21.31%	21.5°	12.0°	✓	
72.45	72.54	-36.59%	-23.79%	-20.1°	-13.4°	✓	
72.56	72.73	57.85%	25.40%	30.0°	14.3°	✓	
73.47	73.61	-47.29%	-18.43%	-25.3°	-10.4°	✓	
73.65	73.80	53.77%	18.19%	28.3°	10.3°	✓	
73.98	74.08	-41.22%	-18.46%	-22.4°	-10.5°	✓	
74.09	74.10	43.38%	35.84%	23.5°	19.7°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
74.16	74.18	-53.11%	-20.22%	-28.0°	-11.4°	✓	
74.19	74.27	56.78%	19.59%	29.6°	11.1°	✓	
74.56	74.65	-35.97%	-15.98%	-19.8°	-9.1°	✓	
74.69	74.73	39.83%	15.09%	21.7°	8.6°	✓	
74.76	74.93	-75.91%	-15.18%	-37.2°	-8.6°	✓	
75.11	75.27	62.12%	21.91%	31.8°	12.4°	✓	
75.29	75.31	37.19%	20.81%	20.4°	11.8°	✓	
75.71	75.73	34.73%	22.94%	19.2°	12.9°	✓	
76.13	76.19	32.19%	15.14%	17.8°	8.6°	✓	
76.39	76.44	-30.58%	-15.78%	-17.0°	-9.0°	✓	
76.71	76.81	-78.65%	-15.10%	-38.2°	-8.6°	✓	
76.84	76.94	81.56%	34.88%	39.2°	19.2°	✓	
76.96	76.99	37.55%	16.26%	20.6°	9.2°	✓	
77.63	77.74	-72.64%	-25.64%	-36.0°	-14.4°	✓	
77.76	77.87	61.28%	19.86%	31.5°	11.2°	✓	
78.03	78.16	-57.17%	-18.72%	-29.8°	-10.6°	✓	
78.19	78.41	65.61%	15.37%	33.3°	8.7°	✓	
79.46	79.48	-36.39%	-15.60%	-20.0°	-8.9°	✓	
79.67	79.80	-84.30%	-20.84%	-40.1°	-11.8°	✓	
79.84	79.99	84.07%	28.96%	40.1°	16.2°	✓	
80.22	80.24	36.22%	17.77%	19.9°	10.1°	✓	
80.74	80.79	-41.62%	-19.49%	-22.6°	-11.0°	✓	
80.83	80.93	41.83%	19.84%	22.7°	11.2°	✓	
81.20	81.27	-74.24%	-16.18%	-36.6°	-9.2°	✓	
81.30	81.37	-67.19%	-22.72%	-33.9°	-12.8°	✓	
81.38	81.51	-48.29%	-17.98%	-25.8°	-10.2°	✓	
81.54	81.66	-56.42%	-15.57%	-29.4°	-8.8°	✓	
81.89	81.91	36.02%	16.32%	19.8°	9.3°	✓	
81.93	81.97	40.32%	17.92%	22.0°	10.2°	✓	
81.99	82.06	43.5%	24.4%	23.5°	13.7°		✓
81.99	82.06	43.5%	24.4%	23.5°	13.7°		✓
82.05	82.13	56.59%	16.32%	29.5°	9.3°	✓	
82.10	82.25	35.1%	21.7%	19.3°	12.2°		✓
82.22	82.35	-56.74%	-16.09%	-29.6°	-9.1°	✓	
82.46	82.56	59.58%	18.12%	30.8°	10.3°	✓	
82.57	82.69	39.1%	37.0%	21.4°	20.3°		✓

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
82.65	82.67	-36.26%	-15.31%	-19.9°	-8.7°	✓	
82.68	82.98	74.42%	22.17%	36.7°	12.5°	✓	
82.99	83.02	30.66%	17.37%	17.0°	9.9°	✓	
83.48	83.50	-56.90%	-26.13%	-29.6°	-14.6°	✓	
83.51	83.53	-32.14%	-23.63%	-17.8°	-13.3°	✓	
83.70	83.78	-79.29%	-17.18%	-38.4°	-9.7°	✓	
83.80	84.12	-59.91%	-17.58%	-30.9°	-10.0°	✓	
84.17	84.22	66.35%	33.12%	33.6°	18.3°	✓	
84.38	84.67	63.22%	15.40%	32.3°	8.8°	✓	
85.11	85.18	45.52%	16.53%	24.5°	9.4°	✓	
85.58	85.66	-44.38%	-16.41%	-23.9°	-9.3°	✓	
85.76	85.86	50.74%	20.11%	26.9°	11.4°	✓	
86.32	86.41	31.63%	17.24%	17.6°	9.8°	✓	
86.66	86.82	-56.79%	-18.44%	-29.6°	-10.4°	✓	
86.92	87.36	-56.45%	-17.11%	-29.4°	-9.7°	✓	
87.99	88.09	46.85%	17.57%	25.1°	10.0°	✓	
88.10	88.16	57.09%	17.57%	29.7°	10.0°	✓	
88.18	88.27	80.35%	16.27%	38.8°	9.2°	✓	
88.38	88.46	50.02%	18.08%	26.6°	10.2°	✓	
89.74	89.78	32.46%	15.04%	18.0°	8.6°	✓	
90.24	90.28	-41.96%	-24.82%	-22.8°	-13.9°	✓	
90.36	90.48	-75.66%	-16.48%	-37.1°	-9.4°	✓	
90.51	90.71	-63.22%	-17.58%	-32.3°	-10.0°	✓	
90.75	91.08	69.63%	16.41%	34.8°	9.3°	✓	
92.25	92.46	-95.21%	-19.66%	-43.6°	-11.1°	✓	
92.50	92.71	73.69%	24.57%	36.4°	13.8°	✓	
92.82	93.06	-72.87%	-19.20%	-36.1°	-10.9°	✓	
93.23	93.38	53.66%	16.98%	28.2°	9.6°	✓	
93.44	93.56	60.04%	27.50%	31.0°	15.4°	✓	
94.23	94.27	-39.91%	-16.39%	-21.8°	-9.3°	✓	
94.38	94.49	47.62%	15.29%	25.5°	8.7°	✓	
96.36	96.43	-36.60%	-16.82%	-20.1°	-9.5°	✓	
96.57	96.60	-30.63%	-16.73%	-17.0°	-9.5°	✓	
96.63	96.70	42.91%	15.03%	23.2°	8.5°	✓	
96.73	96.80	56.30%	17.87%	29.4°	10.1°	✓	
97.22	97.26	-72.26%	-19.79%	-35.9°	-11.2°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
97.35	97.39	-30.34%	-16.04%	-16.9°	-9.1°	✓	
97.41	97.47	-42.48%	-17.43%	-23.0°	-9.9°	✓	
97.48	97.70	-51.31%	-17.38%	-27.2°	-9.9°	✓	
97.86	98.00	48.02%	20.63%	25.7°	11.7°	✓	
98.02	98.13	79.34%	33.12%	38.4°	18.3°	✓	
98.35	98.66	-61.15%	-17.23%	-31.4°	-9.8°	✓	
98.90	99.02	60.15%	17.22%	31.0°	9.8°	✓	
99.03	99.06	46.10%	18.65%	24.7°	10.6°	✓	
99.08	99.12	30.97%	15.25%	17.2°	8.7°	✓	
99.20	99.29	55.31%	22.85%	28.9°	12.9°	✓	
99.38	99.47	86.49%	18.57%	40.9°	10.5°	✓	
99.75	99.78	34.81%	20.01%	19.2°	11.3°	✓	
99.83	99.91	-33.96%	-15.51%	-18.8°	-8.8°	✓	
100.09	100.16	58.48%	15.21%	30.3°	8.6°	✓	
100.17	100.21	-33.57%	-17.11%	-18.6°	-9.7°	✓	
100.55	100.62	-44.60%	-15.88%	-24.0°	-9.0°	✓	
100.66	100.73	47.43%	16.25%	25.4°	9.2°	✓	
100.81	100.85	52.28%	20.15%	27.6°	11.4°	✓	
100.94	100.95	-34.97%	-16.55%	-19.3°	-9.4°	✓	
101.20	101.23	32.03%	21.54%	17.8°	12.2°	✓	
101.54	101.60	-37.73%	-15.99%	-20.7°	-9.1°	✓	
101.61	101.71	-33.14%	-18.25%	-18.3°	-10.3°	✓	
101.87	101.95	49.02%	19.45%	26.1°	11.0°	✓	
102.28	102.30	-35.06%	-17.49%	-19.3°	-9.9°	✓	
102.45	102.50	57.38%	22.83%	29.8°	12.9°	✓	
102.56	102.58	-36.22%	-24.95%	-19.9°	-14.0°	✓	
102.62	102.69	-44.45%	-19.15%	-24.0°	-10.8°	✓	
102.82	102.88	42.91%	20.28%	23.2°	11.5°	✓	
103.13	103.15	-45.68%	-30.88%	-24.6°	-17.2°	✓	
103.24	103.25	-64.41%	-29.63%	-32.8°	-16.5°	✓	
103.53	103.59	32.03%	16.10%	17.8°	9.1°	✓	
103.75	103.80	-30.61%	-80.27%	-17.0°	-38.8°	✓	
104.15	104.22	41.35%	19.72%	22.5°	11.2°	✓	
104.24	104.29	-35.57%	-16.71%	-19.6°	-9.5°	✓	
104.75	104.77	30.94%	15.71%	17.2°	8.9°	✓	
105.04	105.06	-31.15%	-18.67%	-17.3°	-10.6°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
105.29	105.34	33.09%	15.41%	18.3°	8.8°	✓	
105.75	105.84	-33.12%	-19.87%	-18.3°	-11.2°	✓	
105.90	105.93	33.17%	19.11%	18.4°	10.8°	✓	
106.01	106.09	-31.49%	-16.09%	-17.5°	-9.1°	✓	
106.16	106.21	39.46%	15.82%	21.5°	9.0°	✓	
106.34	106.36	37.38%	20.24%	20.5°	11.4°	✓	
106.67	106.79	-53.18%	-17.97%	-28.0°	-10.2°	✓	
106.83	106.95	43.69%	15.16%	23.6°	8.6°	✓	
107.14	107.24	46.25%	16.02%	24.8°	9.1°	✓	
107.34	107.39	-44.00%	-22.03%	-23.7°	-12.4°	✓	
107.49	107.51	46.38%	26.61%	24.9°	14.9°	✓	
107.54	107.62	-44.79%	-17.12%	-24.1°	-9.7°	✓	
107.76	107.77	-30.18%	-21.11%	-16.8°	-11.9°	✓	
108.24	108.27	30.70%	16.25%	17.1°	9.2°	✓	
108.28	108.30	-35.83%	-19.34%	-19.7°	-10.9°	✓	
108.52	108.56	-35.82%	-15.62%	-19.7°	-8.9°	✓	
108.68	108.70	-45.72%	-20.06%	-24.6°	-11.3°	✓	
109.17	109.24	-36.35%	-18.98%	-20.0°	-10.7°	✓	
109.48	109.53	38.89%	15.08%	21.3°	8.6°	✓	
109.90	109.99	52.01%	16.88%	27.5°	9.6°	✓	
110.77	110.81	-32.10%	-18.61%	-17.8°	-10.5°	✓	
111.09	111.11	34.38%	19.88%	19.0°	11.2°	✓	
111.46	111.53	38.18%	15.89%	20.9°	9.0°	✓	
111.60	111.66	32.67%	17.40%	18.1°	9.9°	✓	
111.67	111.71	36.7%	31.5%	20.2°	17.5°		✓
111.70	111.75	-47.62%	-15.68%	-25.5°	-8.9°	✓	
111.83	111.90	-35.00%	-16.36%	-19.3°	-9.3°	✓	
111.92	112.03	50.02%	18.98%	26.6°	10.7°	✓	
112.16	112.19	-36.97%	-23.58%	-20.3°	-13.3°	✓	
112.36	112.38	-37.12%	-20.60%	-20.4°	-11.6°	✓	
112.40	112.44	37.00%	18.62%	20.3°	10.5°	✓	
113.01	113.03	35.76%	25.13%	19.7°	14.1°	✓	
113.94	113.99	-34.51%	-15.32%	-19.0°	-8.7°	✓	
114.07	114.10	33.27%	15.18%	18.4°	8.6°	✓	
114.76	114.78	-31.15%	-19.04%	-17.3°	-10.8°	✓	
115.00	115.08	-50.90%	-16.56%	-27.0°	-9.4°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
115.12	115.15	41.85%	22.32%	22.7°	12.6°	✓	
115.17	115.21	45.14%	18.58%	24.3°	10.5°	✓	
115.67	115.75	-50.57%	-15.97%	-26.8°	-9.1°	✓	
115.76	115.80	-59.67%	-41.52%	-30.8°	-22.5°	✓	
115.85	115.94	90.52%	15.57%	42.2°	8.8°	✓	
116.37	116.40	35.59%	27.08%	19.6°	15.2°	✓	
117.16	117.21	39.09%	17.51%	21.4°	9.9°	✓	
117.61	117.63	52.75%	26.36%	27.8°	14.8°	✓	
117.88	117.91	-30.09%	-16.41%	-16.7°	-9.3°	✓	
118.11	118.20	48.66%	16.17%	25.9°	9.2°	✓	
118.26	118.31	-36.57%	-15.28%	-20.1°	-8.7°	✓	
118.34	118.46	-76.65%	-20.11%	-37.5°	-11.4°	✓	
118.50	118.55	-62.99%	-22.82%	-32.2°	-12.9°	✓	
118.61	118.66	63.50%	21.45%	32.4°	12.1°	✓	
118.68	118.94	63.09%	17.18%	32.2°	9.7°	✓	
119.20	119.36	-38.29%	-18.90%	-21.0°	-10.7°	✓	
119.43	119.53	39.34%	17.34%	21.5°	9.8°	✓	
119.71	119.90	-70.21%	-16.27%	-35.1°	-9.2°	✓	
119.98	120.13	63.69%	18.71%	32.5°	10.6°	✓	
122.20	122.67	31.7%	22.4%	17.6°	12.6°		✓
122.61	122.66	35.68%	23.05%	19.6°	13.0°	✓	
122.67	122.79	-54.62%	-15.99%	-28.6°	-9.1°	✓	
122.88	123.01	-66.71%	-26.60%	-33.7°	-14.9°	✓	
123.06	123.12	79.73%	26.88%	38.6°	15.0°	✓	
123.13	123.17	61.27%	31.82%	31.5°	17.7°	✓	
124.15	124.21	-33.49%	-17.69%	-18.5°	-10.0°	✓	
124.65	124.67	32.18%	23.05%	17.8°	13.0°	✓	
124.70	124.72	39.01%	16.43%	21.3°	9.3°	✓	
124.94	124.95	-33.85%	-23.33%	-18.7°	-13.1°	✓	
125.05	125.16	-44.36%	-18.92%	-23.9°	-10.7°	✓	
125.19	125.24	46.27%	33.69%	24.8°	18.6°	✓	
125.57	125.67	-48.17%	-18.38%	-25.7°	-10.4°	✓	
125.73	125.80	51.58%	17.99%	27.3°	10.2°	✓	
125.86	125.91	38.65%	17.75%	21.1°	10.1°	✓	
126.13	126.25	-39.06%	-16.30%	-21.3°	-9.3°	✓	
126.27	126.43	-50.41%	-16.97%	-26.8°	-9.6°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
126.58	126.71	74.51%	18.58%	36.7°	10.5°	✓	
126.79	126.88	36.52%	16.55%	20.1°	9.4°	✓	
126.90	126.98	35.4%	24.0%	19.5°	13.5°		✓
126.91	126.93	-30.67%	-24.96%	-17.1°	-14.0°	✓	
126.98	127.01	47.62%	29.27%	25.5°	16.3°	✓	
127.04	127.07	32.81%	23.62%	18.2°	13.3°	✓	
127.34	127.38	38.80%	21.33%	21.2°	12.0°	✓	
127.60	127.68	38.8%	24.0%	21.2°	13.5°		✓
127.62	127.78	-45.18%	-15.06%	-24.3°	-8.6°	✓	
128.12	128.30	56.51%	20.69%	29.5°	11.7°	✓	
128.44	128.51	-37.31%	-16.87%	-20.5°	-9.6°	✓	
129.26	129.31	-39.86%	-20.04%	-21.7°	-11.3°	✓	
129.42	129.49	54.34%	15.68%	28.5°	8.9°	✓	
129.86	130.02	-45.83%	-18.76%	-24.6°	-10.6°	✓	
130.04	130.11	-35.20%	-15.62%	-19.4°	-8.9°	✓	
130.15	130.30	40.58%	15.66%	22.1°	8.9°	✓	
130.32	130.35	43.98%	32.07%	23.7°	17.8°	✓	
130.39	130.46	49.02%	20.42%	26.1°	11.5°	✓	
130.69	130.85	-58.22%	-17.42%	-30.2°	-9.9°	✓	
131.05	131.11	-41.45%	-16.19%	-22.5°	-9.2°	✓	
131.17	131.24	54.09%	18.27%	28.4°	10.4°	✓	
131.79	131.86	-42.76%	-16.27%	-23.2°	-9.2°	✓	
132.04	132.08	81.32%	15.62%	39.1°	8.9°	✓	
132.11	132.18	58.46%	19.02%	30.3°	10.8°	✓	
132.38	132.43	30.97%	17.31%	17.2°	9.8°	✓	
132.78	132.79	-31.37%	-17.67%	-17.4°	-10.0°	✓	
133.70	133.84	41.55%	17.80%	22.6°	10.1°	✓	
133.88	133.92	-52.52%	-18.85%	-27.7°	-10.7°	✓	
133.95	134.00	31.46%	17.26%	17.5°	9.8°	✓	
134.34	134.42	-40.37%	-17.54%	-22.0°	-9.9°	✓	
134.71	134.73	54.26%	16.27%	28.5°	9.2°	✓	
135.63	135.68	31.85%	16.95%	17.7°	9.6°	✓	
136.57	136.61	54.15%	15.82%	28.4°	9.0°	✓	
138.31	138.34	-42.24%	-26.49%	-22.9°	-14.8°	✓	
139.36	139.44	-48.61%	-17.42%	-25.9°	-9.9°	✓	
139.95	140.04	-61.02%	-15.96%	-31.4°	-9.1°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
140.12	140.21	65.75%	15.43%	33.3°	8.8°	✓	
141.53	141.55	30.44%	17.16%	16.9°	9.7°	✓	
143.18	143.26	-47.90%	-22.06%	-25.6°	-12.4°	✓	
143.27	143.36	-49.27%	-16.97%	-26.2°	-9.6°	✓	
143.38	143.52	-44.25%	-15.87%	-23.9°	-9.0°	✓	
143.87	144.06	58.67%	20.26%	30.4°	11.5°	✓	
144.09	144.15	67.99%	20.82%	34.2°	11.8°	✓	
144.19	144.29	37.33%	17.25%	20.5°	9.8°	✓	
144.45	144.49	43.42%	19.94%	23.5°	11.3°	✓	
145.58	145.72	-34.37%	-19.05%	-19.0°	-10.8°	✓	
146.34	146.65	-55.49%	-18.99%	-29.0°	-10.8°	✓	
146.74	146.89	52.06%	16.48%	27.5°	9.4°	✓	
146.90	147.01	49.18%	18.79%	26.2°	10.6°	✓	
147.04	147.10	57.21%	26.55%	29.8°	14.9°	✓	
147.97	148.09	36.18%	17.60%	19.9°	10.0°	✓	
148.50	148.54	-64.46%	-38.51%	-32.8°	-21.1°	✓	
148.56	148.62	-50.27%	-23.05%	-26.7°	-13.0°	✓	
148.75	148.79	-50.92%	-16.89%	-27.0°	-9.6°	✓	
149.01	149.04	-44.35%	-19.53%	-23.9°	-11.1°	✓	
149.05	149.09	-51.84%	-17.69%	-27.4°	-10.0°	✓	
149.17	149.19	44.88%	19.69%	24.2°	11.1°	✓	
149.21	149.26	68.73%	19.29%	34.5°	10.9°	✓	
149.47	149.50	-48.59%	-24.22%	-25.9°	-13.6°	✓	
149.54	149.59	-33.81%	-17.41%	-18.7°	-9.9°	✓	
149.62	149.82	50.89%	16.07%	27.0°	9.1°	✓	
150.05	150.09	32.33%	16.66%	17.9°	9.5°	✓	
150.52	150.56	-32.87%	-16.52%	-18.2°	-9.4°	✓	
150.68	150.73	-33.82%	-18.12%	-18.7°	-10.3°	✓	
151.21	151.26	55.62%	18.49%	29.1°	10.5°	✓	
151.41	151.43	33.99%	18.27%	18.8°	10.4°	✓	
151.46	151.48	30.14%	24.33%	16.8°	13.7°	✓	
152.38	152.42	-36.29%	-23.79%	-19.9°	-13.4°	✓	
152.64	152.66	38.44%	16.93%	21.0°	9.6°	✓	
152.87	152.90	-31.62%	-16.60%	-17.5°	-9.4°	✓	
153.38	153.41	38.51%	27.97%	21.1°	15.6°	✓	
153.57	153.59	-30.67%	-17.26%	-17.1°	-9.8°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
154.26	154.32	-32.75%	-19.79%	-18.1°	-11.2°	✓	
154.36	154.42	-65.40%	-22.09%	-33.2°	-12.5°	✓	
154.44	154.46	-34.69%	-19.31%	-19.1°	-10.9°	✓	
154.68	154.72	39.40%	16.51%	21.5°	9.4°	✓	
154.91	154.94	65.12%	18.45%	33.1°	10.5°	✓	
154.99	155.02	68.40%	19.73%	34.4°	11.2°	✓	
155.07	155.21	-43.62%	-15.56%	-23.6°	-8.8°	✓	
155.22	155.25	41.61%	23.12%	22.6°	13.0°	✓	
155.30	155.33	42.3%	36.4%	22.9°	20.0°		✓
155.36	155.39	-51.74%	25.01%	-27.4°	14.0°	✓	
155.46	155.47	31.86%	18.15%	17.7°	10.3°	✓	
155.49	155.54	59.15%	17.00%	30.6°	9.6°	✓	
155.79	155.81	43.89%	25.46%	23.7°	14.3°	✓	
156.07	156.12	35.86%	16.13%	19.7°	9.2°	✓	
156.13	156.17	-57.24%	-37.59%	-29.8°	-20.6°	✓	
156.22	156.30	-52.17%	-17.19%	-27.6°	-9.8°	✓	
156.36	156.38	-40.74%	-19.81%	-22.2°	-11.2°	✓	
156.47	156.53	46.93%	17.70%	25.1°	10.0°	✓	
156.64	156.70	68.39%	20.97%	34.4°	11.8°	✓	
156.80	156.82	36.05%	18.74%	19.8°	10.6°	✓	
157.56	157.58	-35.96%	-23.21%	-19.8°	-13.1°	✓	
157.88	157.96	31.34%	15.91%	17.4°	9.0°	✓	
158.21	158.30	-68.41%	-18.22%	-34.4°	-10.3°	✓	
158.61	158.63	30.13%	17.07%	16.8°	9.7°	✓	
158.73	158.75	-40.19%	-17.88%	-21.9°	-10.1°	✓	
158.94	158.96	-36.24%	-25.86%	-19.9°	-14.5°	✓	
158.98	159.00	42.27%	28.32%	22.9°	15.8°	✓	
159.25	159.29	-35.91%	-19.15%	-19.8°	-10.8°	✓	
160.20	160.32	48.55%	17.50%	25.9°	9.9°	✓	
160.70	160.75	38.35%	23.23%	21.0°	13.1°	✓	
161.91	162.21	-54.12%	-24.94%	-28.4°	-14.0°	✓	
162.27	162.53	-70.13%	-16.83%	-35.0°	-9.6°	✓	
162.56	162.59	48.76%	20.42%	26.0°	11.5°	✓	
162.61	162.74	77.41%	16.18%	37.7°	9.2°	✓	
162.93	163.07	68.73%	19.71%	34.5°	11.2°	✓	
164.20	164.33	43.61%	18.16%	23.6°	10.3°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
164.53	164.57	31.90%	23.27%	17.7°	13.1°	✓	
164.61	164.73	-38.32%	-18.87%	-21.0°	-10.7°	✓	
164.79	164.87	43.65%	17.89%	23.6°	10.1°	✓	
165.47	165.58	-36.00%	-15.31%	-19.8°	-8.7°	✓	
166.22	166.24	-43.22%	-18.97%	-23.4°	-10.7°	✓	
166.25	166.31	-52.35%	-28.95%	-27.6°	-16.1°	✓	
166.71	166.76	-32.46%	-17.80%	-18.0°	-10.1°	✓	
167.55	167.66	-38.11%	-15.51%	-20.9°	-8.8°	✓	
167.71	167.89	-42.85%	-17.33%	-23.2°	-9.8°	✓	
168.47	168.49	31.19%	15.44%	17.3°	8.8°	✓	
168.90	169.09	-35.60%	-16.15%	-19.6°	-9.2°	✓	
169.16	169.20	-41.41%	-15.14%	-22.5°	-8.6°	✓	
169.85	169.90	39.39%	15.70%	21.5°	8.9°	✓	
169.96	169.99	-47.03%	-16.57%	-25.2°	-9.4°	✓	
170.29	170.37	-53.77%	-18.71%	-28.3°	-10.6°	✓	
170.39	170.45	-62.78%	-15.63%	-32.1°	-8.9°	✓	
171.02	171.07	54.61%	15.66%	28.6°	8.9°	✓	
171.09	171.11	-34.78%	-17.06%	-19.2°	-9.7°	✓	
171.13	171.20	37.24%	19.17%	20.4°	10.9°	✓	
171.23	171.27	-37.11%	-15.47%	-20.4°	-8.8°	✓	
171.56	171.66	-46.25%	-15.02%	-24.8°	-8.5°	✓	
171.68	171.70	34.69%	17.16%	19.1°	9.7°	✓	
171.73	171.75	-46.96%	-26.60%	-25.2°	-14.9°	✓	
171.81	171.85	71.32%	24.62%	35.5°	13.8°	✓	
171.95	172.02	34.88%	17.66%	19.2°	10.0°	✓	
172.15	172.25	-47.17%	-17.43%	-25.3°	-9.9°	✓	
172.91	172.94	-30.97%	-15.77%	-17.2°	-9.0°	✓	
173.61	173.68	37.04%	15.36%	20.3°	8.7°	✓	
175.71	175.84	-51.68%	-18.24%	-27.3°	-10.3°	✓	
175.90	176.06	71.94%	20.22%	35.7°	11.4°	✓	
176.57	176.68	57.02%	22.86%	29.7°	12.9°	✓	
177.69	177.85	-43.92%	-15.23%	-23.7°	-8.7°	✓	
178.27	178.32	70.99%	25.00%	35.4°	14.0°	✓	
178.85	178.92	-45.38%	-19.63%	-24.4°	-11.1°	✓	
178.93	178.99	37.21%	15.74%	20.4°	8.9°	✓	
180.05	180.24	49.07%	15.57%	26.1°	8.8°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
180.33	180.40	-43.53%	-18.55%	-23.5°	-10.5°	✓	
180.47	180.66	-35.42%	-15.15%	-19.5°	-8.6°	✓	
180.89	180.97	-38.42%	-17.18%	-21.0°	-9.7°	✓	
181.26	181.37	-32.01%	-15.48%	-17.7°	-8.8°	✓	
181.82	181.85	-41.98%	-15.17%	-22.8°	-8.6°	✓	
181.89	182.08	59.65%	16.49%	30.8°	9.4°	✓	
182.49	182.59	-49.81%	-15.77%	-26.5°	-9.0°	✓	
183.02	183.15	-34.74%	-15.67%	-19.2°	-8.9°	✓	
183.43	183.60	37.18%	16.08%	20.4°	9.1°	✓	
183.66	183.69	35.02%	17.31%	19.3°	9.8°	✓	
183.85	183.90	-40.95%	-16.59%	-22.3°	-9.4°	✓	
183.93	183.99	38.93%	21.25%	21.3°	12.0°	✓	
184.25	184.39	-37.45%	-19.23%	-20.5°	-10.9°	✓	
184.58	184.61	54.02%	32.04%	28.4°	17.8°	✓	
184.69	184.77	-35.88%	-26.70%	-19.7°	-14.9°	✓	
184.81	184.90	54.16%	17.24%	28.4°	9.8°	✓	
185.21	185.36	43.32%	16.87%	23.4°	9.6°	✓	
185.37	185.41	37.33%	22.13%	20.5°	12.5°	✓	
186.60	186.68	-61.97%	-23.16%	-31.8°	-13.0°	✓	
186.74	186.84	61.23%	15.96%	31.5°	9.1°	✓	
187.80	187.88	-31.60%	-15.98%	-17.5°	-9.1°	✓	
187.90	187.95	61.49%	36.05%	31.6°	19.8°	✓	
188.22	188.28	50.21%	16.95%	26.7°	9.6°	✓	
188.30	188.34	-37.01%	-16.01%	-20.3°	-9.1°	✓	
188.51	188.57	32.91%	15.48%	18.2°	8.8°	✓	
188.61	188.77	-43.56%	-15.07%	-23.5°	-8.6°	✓	
189.11	189.19	45.98%	15.71%	24.7°	8.9°	✓	
189.84	189.91	-37.23%	-20.26%	-20.4°	-11.5°	✓	
190.04	190.13	32.45%	15.11%	18.0°	8.6°	✓	
190.29	190.36	-35.64%	-20.66%	-19.6°	-11.7°	✓	
190.39	190.42	37.06%	22.38%	20.3°	12.6°	✓	
190.42	190.47	-31.11%	-18.66%	-17.3°	-10.6°	✓	
190.59	190.65	47.63%	15.79%	25.5°	9.0°	✓	
190.67	190.73	-42.71%	-20.77%	-23.1°	-11.7°	✓	
191.09	191.22	39.88%	15.81%	21.7°	9.0°	✓	
191.28	191.48	55.28%	15.90%	28.9°	9.0°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
191.94	191.98	34.76%	18.14%	19.2°	10.3°	✓	
192.55	192.57	-34.67%	-21.27%	-19.1°	-12.0°	✓	
192.80	192.84	-47.34%	-18.65%	-25.3°	-10.6°	✓	
193.39	193.57	-34.78%	-19.74%	-19.2°	-11.2°	✓	
193.62	193.71	55.14%	15.59%	28.9°	8.9°	✓	
194.68	194.72	31.26%	15.61%	17.4°	8.9°	✓	
194.75	195.04	37.84%	17.80%	20.7°	10.1°	✓	
195.06	195.37	58.78%	17.39%	30.4°	9.9°	✓	
195.48	195.69	-49.26%	-15.63%	-26.2°	-8.9°	✓	
195.72	195.76	-31.74%	-15.63%	-17.6°	-8.9°	✓	
195.82	195.85	36.92%	16.88%	20.3°	9.6°	✓	
196.02	196.08	39.90%	16.48%	21.8°	9.4°	✓	
196.25	196.29	38.88%	18.42%	21.2°	10.4°	✓	
196.61	196.63	-31.66%	-16.12%	-17.6°	-9.2°	✓	
196.94	197.16	-51.07%	-15.74%	-27.1°	-8.9°	✓	
197.18	197.48	-84.36%	-15.59%	-40.2°	-8.9°	✓	
197.90	197.94	-60.47%	-15.75%	-31.2°	-9.0°	✓	
197.95	197.97	57.94%	20.62%	30.1°	11.7°	✓	
197.97	198.03	-43.18%	-23.55%	-23.4°	-13.3°	✓	
198.34	198.48	30.99%	19.26%	17.2°	10.9°	✓	
198.68	198.73	-30.78%	-18.69%	-17.1°	-10.6°	✓	
198.87	199.13	-38.32%	-15.61%	-21.0°	-8.9°	✓	
199.13	199.15	39.64%	23.09%	21.6°	13.0°	✓	
199.26	199.29	-57.99%	-15.29%	-30.1°	-8.7°	✓	
199.32	199.34	-44.43%	-22.05%	-24.0°	-12.4°	✓	
199.70	199.92	47.94%	18.98%	25.6°	10.7°	✓	
200.12	200.25	35.81%	15.26%	19.7°	8.7°	✓	
200.92	201.04	-36.42%	-18.81%	-20.0°	-10.7°	✓	
201.05	201.08	43.54%	18.83%	23.5°	10.7°	✓	
201.43	201.54	52.81%	18.22%	27.8°	10.3°	✓	
201.69	201.75	39.97%	20.56%	21.8°	11.6°	✓	
201.98	202.04	-36.67%	-18.63%	-20.1°	-10.6°	✓	
202.42	202.54	-46.73%	-20.25%	-25.0°	-11.4°	✓	
202.57	202.63	37.68%	16.50%	20.6°	9.4°	✓	
202.81	202.83	-35.10%	-22.62%	-19.3°	-12.7°	✓	
202.85	202.86	30.19%	23.28%	16.8°	13.1°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
203.11	203.15	-48.15%	-30.32%	-25.7°	-16.9°	✓	
203.42	203.78	50.25%	15.50%	26.7°	8.8°	✓	
203.50	203.70	45.5%	19.9%	24.5°	11.3°		✓
203.88	203.96	-45.43%	-22.13%	-24.4°	-12.5°	✓	
204.08	204.23	-48.12%	-18.57%	-25.7°	-10.5°	✓	
204.26	204.40	41.73%	17.01%	22.7°	9.7°	✓	
204.58	204.76	-37.20%	-22.37%	-20.4°	-12.6°	✓	
204.77	204.96	45.74%	19.16%	24.6°	10.8°	✓	
204.98	205.02	44.61%	22.20%	24.0°	12.5°	✓	
205.34	205.58	-47.57%	-15.65%	-25.4°	-8.9°	✓	
206.30	206.41	37.05%	18.57%	20.3°	10.5°	✓	
206.74	206.76	30.27%	15.31%	16.8°	8.7°	✓	
206.79	206.90	51.14%	15.77%	27.1°	9.0°	✓	
207.12	207.27	-59.13%	-18.50%	-30.6°	-10.5°	✓	
207.34	207.36	32.75%	20.10%	18.1°	11.4°	✓	
207.82	207.91	-47.75%	-28.22%	-25.5°	-15.8°	✓	
207.94	207.99	58.59%	15.53%	30.4°	8.8°	✓	
208.15	208.24	-43.78%	-17.97%	-23.6°	-10.2°	✓	
208.25	208.35	39.00%	15.24%	21.3°	8.7°	✓	
208.43	208.52	-31.43%	-18.48%	-17.4°	-10.5°	✓	
208.93	208.97	-32.52%	-17.82%	-18.0°	-10.1°	✓	
209.37	209.49	31.98%	18.55%	17.7°	10.5°	✓	
209.71	209.88	-54.88%	-15.50%	-28.8°	-8.8°	✓	
209.93	209.94	40.08%	20.47%	21.8°	11.6°	✓	
210.43	210.51	40.84%	15.04%	22.2°	8.6°	✓	
211.40	211.50	-49.11%	-15.95%	-26.2°	-9.1°	✓	
211.57	211.63	-54.53%	-22.34%	-28.6°	-12.6°	✓	
211.66	211.83	53.97%	17.49%	28.4°	9.9°	✓	
212.21	212.22	-53.84%	-22.01%	-28.3°	-12.4°	✓	
212.25	212.35	-58.71%	-16.13%	-30.4°	-9.2°	✓	
212.37	212.40	34.43%	19.24%	19.0°	10.9°	✓	
212.37	212.40	34.43%	19.24%	19.0°	10.9°	✓	
212.93	213.01	-36.96%	-15.62%	-20.3°	-8.9°	✓	
213.58	213.63	-30.58%	-15.74%	-17.0°	-8.9°	✓	
213.65	213.76	56.37%	22.06%	29.4°	12.4°	✓	
213.80	213.85	34.24%	19.14%	18.9°	10.8°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
214.15	214.18	43.51%	26.99%	23.5°	15.1°	✓	
214.37	214.42	-33.75%	-15.28%	-18.6°	-8.7°	✓	
214.50	214.56	31.41%	16.26%	17.4°	9.2°	✓	
214.84	214.92	-51.71%	-15.60%	-27.3°	-8.9°	✓	
215.50	215.53	-35.46%	-17.28%	-19.5°	-9.8°	✓	
216.19	216.23	-45.32%	-16.99%	-24.4°	-9.6°	✓	
216.66	21.64	38.81%	18.93%	21.2°	10.7°	✓	
216.81	216.86	46.48%	15.23%	24.9°	8.7°	✓	
216.97	217.17	64.96%	17.40%	33.0°	9.9°	✓	
217.29	217.34	-49.16%	-24.36%	-26.2°	-13.7°	✓	
217.36	217.49	-44.64%	-20.17%	-24.1°	-11.4°	✓	
217.51	217.57	-37.28%	-20.67%	-20.4°	-11.7°	✓	
217.58	217.61	-34.70%	-18.05%	-19.1°	-10.2°	✓	
217.63	217.76	-40.83%	-16.64%	-22.2°	-9.4°	✓	
218.07	218.09	-30.45%	-15.34%	-16.9°	-8.7°	✓	
218.65	218.69	40.02%	30.30%	21.8°	16.9°	✓	
219.09	219.39	44.51%	15.72%	24.0°	8.9°	✓	
219.47	219.64	-32.01%	-19.38%	-17.7°	-11.0°	✓	
219.94	220.03	-41.47%	-17.96%	-22.5°	-10.2°	✓	
220.05	220.10	65.63%	15.06%	33.3°	8.6°	✓	
220.81	220.83	34.32%	21.01%	18.9°	11.9°	✓	
222.42	222.49	-38.88%	-16.18%	-21.2°	-9.2°	✓	
223.64	223.85	-74.76%	-15.50%	-36.8°	-8.8°	✓	
224.03	224.28	66.34%	17.33%	33.6°	9.8°	✓	
224.94	224.97	-39.69%	-21.90%	-21.6°	-12.4°	✓	
225.17	225.19	-44.13%	-16.88%	-23.8°	-9.6°	✓	
225.79	225.81	40.75%	21.46%	22.2°	12.1°	✓	
225.90	225.93	42.09%	20.25%	22.8°	11.4°	✓	
225.96	226.09	65.25%	18.08%	33.1°	10.2°	✓	
226.11	226.18	-68.35%	-45.82%	-34.4°	-24.6°	✓	
226.20	226.22	77.94%	20.28%	37.9°	11.5°	✓	
226.23	226.26	-81.54%	-21.36%	-39.2°	-12.1°	✓	
226.30	226.62	47.64%	17.62%	25.5°	10.0°	✓	
226.65	226.75	-37.09%	-17.34%	-20.3°	-9.8°	✓	
226.77	226.94	-42.61%	-19.92%	-23.1°	-11.3°	✓	
226.98	227.04	-44.83%	-18.44%	-24.1°	-10.4°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
227.16	227.23	-36.72%	-17.09%	-20.2°	-9.7°	✓	
227.44	227.48	-35.00%	-17.20%	-19.3°	-9.8°	✓	
227.59	227.61	-44.03%	-16.53%	-23.8°	-9.4°	✓	
228.41	228.45	37.95%	19.09%	20.8°	10.8°	✓	
228.64	228.68	-41.44%	-15.21%	-22.5°	-8.6°	✓	
229.40	229.52	40.78%	23.36%	22.2°	13.1°	✓	
229.54	229.58	-79.67%	-46.55%	-38.5°	-25.0°	✓	
229.58	229.82	66.95%	22.45%	33.8°	12.7°	✓	
229.92	230.01	34.87%	20.05%	19.2°	11.3°	✓	
230.03	230.16	34.58%	15.37%	19.1°	8.7°	✓	
230.28	230.46	45.17%	15.43%	24.3°	8.8°	✓	
231.14	231.85	-35.84%	-17.90%	-19.7°	-10.1°	✓	
231.88	231.98	-35.99%	-16.63%	-19.8°	-9.4°	✓	
232.20	232.25	-32.01%	-19.66%	-17.7°	-11.1°	✓	
232.36	232.41	-31.10%	-20.65%	-17.3°	-11.7°	✓	
232.52	232.61	-41.98%	-15.90%	-22.8°	-9.0°	✓	
232.63	232.64	48.50%	19.68%	25.9°	11.1°	✓	
232.68	232.68	-48.38%	-35.32%	-25.8°	-19.5°	✓	
232.69	232.73	40.93%	22.63%	22.3°	12.8°	✓	
232.80	232.83	36.26%	19.15%	19.9°	10.8°	✓	
233.46	233.56	-54.71%	-15.24%	-28.7°	-8.7°	✓	
234.10	234.23	57.20%	16.43%	29.8°	9.3°	✓	
234.29	234.33	-48.76%	-23.93%	-26.0°	-13.5°	✓	
234.35	234.43	53.44%	28.51%	28.1°	15.9°	✓	
234.49	234.65	-45.09%	-15.82%	-24.3°	-9.0°	✓	
234.66	234.73	60.18%	22.75%	31.0°	12.8°	✓	
234.82	234.95	64.86%	16.71%	33.0°	9.5°	✓	
234.96	235.08	-52.83%	-28.16%	-27.8°	-15.7°	✓	
235.09	235.17	65.18%	32.36%	33.1°	17.9°	✓	
235.21	235.29	-31.66%	-15.23%	-17.6°	-8.7°	✓	
235.31	235.34	-47.49%	-25.90%	-25.4°	-14.5°	✓	
235.43	235.54	-45.43%	-21.86%	-24.4°	-12.3°	✓	
235.56	235.70	53.73%	18.45%	28.2°	10.5°	✓	
235.73	235.77	-32.37%	-19.05%	-17.9°	-10.8°	✓	
235.81	235.86	52.62%	22.36%	27.8°	12.6°	✓	
235.99	236.04	34.76%	25.90%	19.2°	14.5°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
236.12	236.60	76.35%	15.44%	37.4°	8.8°	✓	
236.68	236.70	47.44%	16.73%	25.4°	9.5°	✓	
236.81	236.84	69.76%	17.26%	34.9°	9.8°	✓	
237.09	237.21	40.67%	20.29%	22.1°	11.5°	✓	
237.27	237.31	-31.40%	-22.76%	-17.4°	-12.8°	✓	
237.32	237.65	-58.82%	-16.66%	-30.5°	-9.5°	✓	
237.67	238.21	70.19%	16.56%	35.1°	9.4°	✓	
238.32	238.52	-50.81%	-15.66%	-26.9°	-8.9°	✓	
238.55	238.57	-46.41%	-25.26%	-24.9°	-14.2°	✓	
238.71	238.78	-33.07%	-17.87%	-18.3°	-10.1°	✓	
238.80	238.94	60.54%	15.90%	31.2°	9.0°	✓	
239.06	239.17	-31.84%	-15.35%	-17.7°	-8.7°	✓	
239.24	239.38	-60.83%	-18.53%	-31.3°	-10.5°	✓	
239.43	239.45	-33.15%	-18.30%	-18.3°	-10.4°	✓	
239.65	239.68	36.77%	15.83%	20.2°	9.0°	✓	
239.70	239.78	33.69%	19.88%	18.6°	11.2°	✓	
239.86	239.93	-33.20%	-16.85%	-18.4°	-9.6°	✓	
240.63	240.64	31.16%	17.00%	17.3°	9.6°	✓	
240.67	240.78	40.76%	16.53%	22.2°	9.4°	✓	
240.87	240.99	-41.98%	-18.35%	-22.8°	-10.4°	✓	
242.20	242.33	39.71%	15.41%	21.7°	8.8°	✓	
242.28	242.46	38.5%	22.6%	21.1°	12.7°		✓
242.61	242.63	-31.40%	-25.84%	-17.4°	-14.5°	✓	
242.84	242.90	-39.31%	-15.45%	-21.5°	-8.8°	✓	
242.97	242.98	36.01%	16.03%	19.8°	9.1°	✓	
243.07	243.13	34.06%	16.03%	18.8°	9.1°	✓	
243.29	243.31	32.80%	15.41%	18.2°	8.8°	✓	
243.35	243.46	34.47%	15.62%	19.0°	8.9°	✓	
243.48	243.57	-30.66%	-18.85%	-17.0°	-10.7°	✓	
244.48	244.49	-53.50%	-22.09%	-28.1°	-12.5°	✓	
244.51	244.53	39.59%	21.36%	21.6°	12.1°	✓	
244.75	244.78	-51.94%	-30.64%	-27.4°	-17.0°	✓	
244.80	244.82	33.56%	24.78%	18.6°	13.9°	✓	
245.08	245.14	-57.94%	-17.83%	-30.1°	-10.1°	✓	
245.29	245.54	48.44%	15.63%	25.8°	8.9°	✓	
245.55	245.59	39.06%	18.37%	21.3°	10.4°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
245.61	245.75	-37.27%	-15.87%	-20.4°	-9.0°	✓	
245.91	245.97	-44.46%	-18.38%	-24.0°	-10.4°	✓	
246.01	246.13	-39.83%	-18.38%	-21.7°	-10.4°	✓	
246.15	246.19	-33.60%	-17.89%	-18.6°	-10.1°	✓	
246.19	246.58	-71.55%	-17.61%	-35.6°	-10.0°	✓	
246.66	246.74	-31.45%	-15.43%	-17.5°	-8.8°	✓	
247.38	247.63	72.14%	19.08%	35.8°	10.8°	✓	
247.69	247.78	47.04%	23.11%	25.2°	13.0°	✓	
248.28	248.34	-31.01%	-17.08%	-17.2°	-9.7°	✓	
248.36	248.54	-50.13%	-16.68%	-26.6°	-9.5°	✓	
248.61	248.69	44.12%	15.71%	23.8°	8.9°	✓	
249.31	249.38	-30.35%	-16.36%	-16.9°	-9.3°	✓	
249.56	249.62	40.32%	15.59%	22.0°	8.9°	✓	
249.63	249.65	-61.37%	-25.91%	-31.5°	-14.5°	✓	
249.70	249.73	-32.43%	-24.01%	-18.0°	-13.5°	✓	
249.74	249.82	48.03%	15.64%	25.7°	8.9°	✓	
249.85	249.89	-57.04%	-24.68%	-29.7°	-13.9°	✓	
249.96	249.99	49.34%	16.93%	26.3°	9.6°	✓	
250.25	250.27	-40.45%	-17.51%	-22.0°	-9.9°	✓	
250.29	250.31	30.27%	21.35%	16.8°	12.1°	✓	
250.33	250.36	-30.92%	-17.64%	-17.2°	-10.0°	✓	
250.37	250.50	36.69%	18.08%	20.1°	10.2°	✓	
251.20	251.32	-40.51%	-15.77%	-22.1°	-9.0°	✓	
251.33	251.38	-44.20%	-22.40%	-23.8°	-12.6°	✓	
251.64	251.73	40.96%	19.78%	22.3°	11.2°	✓	
251.74	251.83	36.96%	18.60%	20.3°	10.5°	✓	
252.71	252.76	-36.72%	-21.77%	-20.2°	-12.3°	✓	
253.64	253.66	-31.67%	-22.27%	-17.6°	-12.6°	✓	
254.22	254.24	-40.79%	-15.77%	-22.2°	-9.0°	✓	
255.46	255.53	-38.98%	-21.79%	-21.3°	-12.3°	✓	
257.34	257.39	46.89%	16.99%	25.1°	9.6°	✓	
257.69	257.71	-36.68%	-15.34%	-20.1°	-8.7°	✓	
258.37	258.39	31.81%	22.36%	17.6°	12.6°	✓	
258.44	258.47	-47.05%	-21.95%	-25.2°	-12.4°	✓	
258.75	258.78	-38.92%	-17.79%	-21.3°	-10.1°	✓	
258.81	258.82	40.23%	15.82%	21.9°	9.0°	✓	

Appendix 1-J							
Vertical/Lateral Slopes Greater than 30% Grade							
MP Start	MP End	Max Slope (%)	Min Slope (%)	Max Slope (°)	Min Slope (°)	Vertical Slope	Lateral Slope
258.97	259.07	43.0%	20.3%	23.3°	11.5°		✓
259.29	259.32	-36.26%	-18.55%	-19.9°	-10.5°	✓	
260.36	260.40	65.26%	17.63%	33.1°	10.0°	✓	
260.67	260.71	-51.87%	-20.08%	-27.4°	-11.4°	✓	
262.19	262.21	-30.94%	-18.74%	-17.2°	-10.6°	✓	
263.23	263.27	-47.49%	-15.05%	-25.4°	-8.6°	✓	
263.92	263.93	44.06%	21.95%	23.8°	12.4°	✓	
264.32	264.37	-31.42%	-17.18%	-17.4°	-9.7°	✓	
265.17	265.18	133.84%	-59.35%	53.2°	-30.7°	✓	
265.25	265.26	-176.02%	31.68%	-60.4°	17.6°	✓	
266.12	266.14	36.48%	16.95%	20.0°	9.6°	✓	
266.51	266.57	-51.57%	-16.91%	-27.3°	-9.6°	✓	
266.89	266.96	54.90%	15.33%	28.8°	8.7°	✓	
267.41	267.43	-32.05%	-20.08%	-17.8°	-11.4°	✓	
271.38	271.41	45.63%	19.36%	24.5°	11.0°	✓	
273.99	217.24	-62.39%	-24.17%	-32.0°	-13.6°	✓	
275.38	275.42	-34.38%	-17.68%	-19.0°	-10.0°	✓	
275.90	275.93	-37.83%	-17.80%	-20.7°	-10.1°	✓	
275.97	276.00	34.67%	16.84%	19.1°	9.6°	✓	
276.64	276.66	-33.55%	-22.59%	-18.5°	-12.7°	✓	
277.10	277.12	35.29%	16.90%	19.4°	9.6°	✓	
277.20	277.21	30.39%	16.63%	16.9°	9.4°	✓	
278.57	278.63	-30.30%	-16.83%	-16.9°	-9.6°	✓	

Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

Appendix 1-K Winter Construction Plan



Mountain Valley Pipeline Project

Docket No. CP16-__-000

Winter Construction Plan

October 2015

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1.0 Introduction

Based on the Project construction schedule, MVP anticipates that standard construction and restoration will continue into and through the 2016 – 2019 winter seasons. All winter work will be conducted in accordance with the Federal Energy Regulatory Commission's (FERC's) Plan and Procedures, as well as the Project *National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit (WV and VA)*. MVP has developed this Winter Construction Plan (WCP) to outline the special procedures and best management practices (BMPs) that will be implemented during the winter season construction period for installation of the Project facilities. These special procedures and BMPs should be considered additions to the other plans as described above, procedures, and BMPs MVP has specified for use on the Project and will be used in conjunction with those plans, procedures, and BMPs, as applicable. Final restoration and reseedling will occur the following spring.

This WCP will be considered to be in effect when any of the following conditions occur:

- The ground is frozen and plating of topsoil occurs;
- Equipment slippage occurs from operating on frozen ground or vehicles risk sliding outside established right-of-way clearing limits;
- Road crossings cannot be adequately compacted;
- Backfill material freezes to the extent that adequate compaction becomes difficult; and/or
- Topsoil stockpiles are frozen and cannot be uniformly redistributed across disturbed areas or separated from the sub-grade material.

Final restoration and reseedling will occur the following spring.

2.0 Stabilization/Winterization

- The trench will be backfilled to the extent possible using subsoil.
- Slope stabilization and stability of cuts and fills will be restored to the extent possible, and water bars will be installed crossing the right-of-way to divert surface run-off away from the construction area.
- Equipment mats will be removed from stream areas where destabilization of installed matting could potentially occur due to any unexpected increase in stream water flow caused by increased snow run-off or other natural factors.
- Breaks will be cut into spoil piles and through the berm across the ditch line to allow proper drainage across the right-of-way.
- Wetland areas where mats are removed will be restored to the extent possible.
- Disturbed soils adjacent to streams and wetlands will be mulched, where needed.
- Water bars, berms and erosion/sediment control measures will be installed to minimize erosion along the right-of-way and disposition of sediments beyond the boundaries of the right-of-way.
- In areas where final restoration has not been achieved, the right-of-way will be mulched and left in a roughened condition to reduce potential of erosion during times of snow thaw and/or significant rain accumulation.

3.0 Erosion and Sediment Control Measures

- Temporary water bars will be constructed on slopes greater than 5 percent where final clean-up and permanent erosion and sediment control devices have not been installed.
- Mulching will be applied to all slopes (actively cultivated cropland exempt) concurrent with or immediately after seeding, where necessary to stabilize the soil surface and to reduce wind and water erosion. Mulch will be uniformly dispersed over the area to cover at least seventy-five percent of the ground surface at a rate of 2 tons per acre of straw or its accepted equivalent, unless the local soil conservation authority, landowner, or land managing agency approval make formal request of any alternative action to be taken by MVP in writing.
- Temporary mulch will be applied to the right-of-way at a rate of 3 tons per acre on slopes greater than 5 percent and within 100 feet of waterbodies and wetlands where final restoration has not been established to the satisfaction of the Environmental Inspector.
- If right-of-way is snow covered, the snow will serve as suitable ground cover. If snow cover recedes, exposed right-of-way will be stabilized utilizing the measures detailed in this plan.
- The Environmental Inspector (EI) and/or Agricultural Inspector (AI) will suspend final clean-up activities and topsoil placement if topsoil cannot be evenly distributed. If the topsoil is frozen, spreading the topsoil and allowing it to thaw in the sun before spreading may occur. Frozen topsoil will not be returned to the right-of-way if it cannot be graded evenly.
- If topsoil placement is suspended due to frozen conditions, normal temporary right-of-way stabilization procedures will be applied as ground conditions permit. The final clean-up schedule will vary, depending on ground conditions and time of construction. Where final clean-up and restoration have not been completed, the right-of-way will be left in a roughened condition to reduce potential for erosion during snowmelt. In upland areas, a slight crown may be left over the pipeline to account for settling as backfilled soils thaw.
- Topsoil piles will be left in a stabilized condition and replaced when weather conditions permit proper de-compaction of the areas.
- Temporary seeding will be applied as necessary to areas where topsoil has not been restored.
- Sediment barriers (i.e., silt fence, straw bales, earthen berms) will be installed and maintained throughout the right-of-way at designated water bodies, wetlands, and paved road crossings. These structures will be inspected per the permit conditions and adequately maintained during the winter construction season to ensure there are minimal reportable control failures. Erosion and sedimentation control measures will be installed and repaired as determined by the on-site environmental inspector. Equipment will be utilized as needed to assist with installations in frozen conditions.

4.0 Access Road Usage

- Access roads will be graded where needed and approved by the assigned EI. All access roads approved for this project will remain in use during winter construction. All roads will be monitored and maintained in accordance with applicable permit and landowner requirements.
- Snow removal by equipment will not be performed beyond the road surface to prevent mixing soil with snow.

5.0 Right-of-Way Snow Removal

If a snow event is followed immediately by a period of melting and runoff, the typical erosion and sedimentation control BMPs specified in MVP's Environmental Construction Plans (ECPs) for stormwater management will apply, and no special measures will be necessary. If a significant (greater than 6 inches) snowfall event occurs and is followed by an extended period of freeze, the following procedures will be implemented:

- All snow removed from the right-of-way will be in compliance with the footprint laid out for the MVP Project. No equipment will be permitted beyond the limits of disturbance for the Project.
- MVP's contractor will work with the MVP's Lead EI to designate stockpile areas. Breaks in windrowed snow will be placed at drainage crossings and as requested by the affected landowner.
- Snow will be removed from topsoil or spoil storage areas prior to using.
- The use of snow removal equipment will be restricted to use within the limits of disturbance and approved access roads.
- Snow will only be removed from active work areas at the direction of the EI.
- All snow and ice will be removed from pipe joints prior to being mobilized to position for alignment and welding. Plowing equipment used for snow removal operations will be equipped with 6-inch shoes to ensure blades do not remove topsoil or vegetation.
- Snow removal equipment will consist mainly of plowing equipment, such as bulldozers, loaders, utility trucks, dump trucks, or any construction vehicle that can be equipped with a plow and 6-inch shoes, and may include but is not limited to other equipment, such as snow blowers and hand shovels.
- Rather than blade as low as possible, snow removal operators will blade no lower than a height sufficient for construction vehicles to safely navigate the right-of-way.
- Snow removal operators will adjust blade height in areas of slope changes to ensure that contact with the ground is minimized to the greatest extent practical.
- Pickup trucks with front mounted blades will plow all access roads. Intersections, driveways and other private roads will not be blocked by plowed or stockpiled snow. Removed snow will not mix with sidecast stored soils. Currently, no ATWS has been identified for snow storage, and will be determined on an as needed basis.

6.0 Soil Handling

- Frozen topsoil stripping activities will be limited to the equipment capable of accurately stripping variable depths of topsoil; rippers mounted on a machine may be necessary to achieve depth penetration. If segregation of subsoil and topsoil cannot be accomplished without mixing, the topsoil salvage operation will cease until soil conditions improve and segregation requirements can be met.
- MVP will minimize the amount of open trench to reduce the amount of snow that will have to be removed.

- MVP will install highly visible construction fence around any open trenches in areas where the pipeline intersects known paths used for snowmobiling, hiking or other such activities.
- The trench may be crowned to allow for more compaction and settling issues to occur in freezing and thawing conditions.

7.0 Inspection and Maintenance

- MVP will monitor and maintain erosion and sedimentation controls as specified in the FERC Plan. Erosion and sedimentation controls will be monitored daily in active construction areas and weekly in areas with no construction or equipment operation during the winter period.
- When snow melts or the ground thaws, the frequency of inspections will increase as determined necessary by the environmental inspector to an extent necessary to confirm the integrity and effectiveness of all erosion and sediment control devices.
- Contractor and MVP will continuously evaluate the condition of construction areas in an effort to determine if a need exists for additional temporary erosion and sediment control measures, and, as conditions allow, where these corrective measures should be taken.
- Contractor shall have the proper equipment available at all times to allow access to the right-of-way under soft soil conditions.

8.0 Spring and Summer Restoration

- MVP and its contractor will identify any storm or winter damage that may have occurred on the right-of-way.
- Contractor and MVP will evaluate the condition of the right-of-way and will determine if a need exists for additional temporary erosion and sediment control measures.
- Trench compaction will be facilitated by back dragging, walking in backfill material with heavy equipment, and obtaining optimum moisture for the backfill material.
- Contractor will continue final restoration, which may require disking or tilling of the right-of-way to create a seed bed for germination.
- Restoration of topsoil will occur, where practicable, after both the stockpiled topsoil and exposed subsoil have thawed, and the ground has dried following the spring melt.

Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

Appendix 1-L Agency Correspondence

Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

Appendix 1-M Landowner List (Privileged)

Mountain Valley Pipeline Project

Docket No. CP16-__-000

Resource Report 1

Appendix 1-N Public Participation Plan



Mountain Valley Pipeline Project

Docket No. CP16-__-000

Public, Stakeholder, and Agency Participation Plan

October 2015

Revised March 2015 & October 2015

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1.0 Plan Purpose

The purpose of this Public, Stakeholder and Agency Participation Plan is to identify stakeholders and potential issues related to the proposed Mountain Valley Pipeline (MVP) Project (Project), determine appropriate and effective methods of communication with stakeholders, identify responsible parties, document the public consultation process, and adhere to communication protocols. MVP is dedicated to seeking out greater involvement from the various affected groups early in the planning so that those who are interested may participate in the decision making process. Our goal is to work with stakeholders to achieve consensus and settlements on mutually acceptable Project designs. We believe an early and more collaborative approach will lead to Project designs that minimize impacts to landowners, communities and the environment, while enabling us to develop more comprehensive applications for submittal to the Federal Energy Regulatory Commission (FERC) and other agencies.

2.0 Project Scope

As proposed, the Project is a FERC-regulated natural gas pipeline system that will span approximately 300 miles from northwestern West Virginia to southern Virginia. The Project will be constructed and owned by Mountain Valley Pipeline, LLC, a joint venture between EQT Midstream Partners, LP (EQM); and affiliates of NextEra Energy, Inc (NYSE: NEE); WGL Holdings, Inc. (NYSE: WGL); Vega Energy Partners, Ltd; and RGC Resources, Inc. (NASDAQ: RGCO). EQT Midstream Partners, LP is expected to operate the proposed Project.

With a vast supply of natural gas from Marcellus and Utica shale production, the Project is expected to provide approximately two billion cubic feet per day of firm transmission capacity to markets in the, Appalachian, Mid- and South Atlantic regions of the United States. The estimated 300-mile Project will connect the existing Equitrans transmission system in Wetzel County, West Virginia, to Transcontinental Gas Pipeline Company's (Transco) Zone 5 compressor station 165 in Pittsylvania County, Virginia.

The pipeline will be governed under Section 7c of the Natural Gas Act, which requires a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission (FERC) and other relevant approvals before construction can commence. Subject to regulatory approvals, the pipeline is expected to be in-service during the fourth quarter 2018. As currently planned, the pipeline will be 36 to 42-inches in diameter and will require a 125-foot construction easement with 75 feet being maintained as a permanent easement during operation. In addition, the Project will require three to four compressor stations. The design, size, and location of these facilities will be finalized based on shippers' firm capacity commitments.

3.0 Outreach Plan Goal

Mountain Valley Pipeline, LLC (Company) knows that stakeholder outreach and public consultation are essential elements of the permitting process and will play an important role in the overall successful development of the Project.

The Company has developed a comprehensive stakeholder list and public participation plan. The plan is built around the fundamental principle that open, honest and proactive communication is simply the right thing to do and necessary for the sound development of the Project. The Company strives to be a good neighbor and a good corporate citizen, and believes that every person, organization, and institution that might be affected by the Project has the right to be informed and should have an opportunity to participate in the decisions that might affect them.

The MVP team, including land agents and survey crews participated in Public Consultation Training held November 20, 2014 in Bridgeport, WV. This training included appropriate communication, participation and documentation practices with stakeholders. Land agents and survey crews went through this training a second time in June 2015.

The project team was also trained in Project-appropriate research methods with regard to determining property ownership and legal descriptions. They received training on landowner negotiations, including effective listening skills. These skills are a fundamental part of the communication process between stakeholder and agent.

4.0 Outreach and Public Participation Plan

It is the Company's objective that all potential Federal, state and community stakeholders be informed of our intentions relative to the proposed Project in a timely manner. As outlined in this document, MVP's Public, Stakeholder, and Agency Participation Plan consists of the following objectives:

- Identify all key stakeholders along the proposed pipeline route. While landowners are the most obvious and directly affected stakeholders, many additional individuals and organizations along the proposed 300-mile route may have a stake in the Project. Identifying and engaging them is important to the success of the Project.
- Establish channels for two-way communication throughout the life of the Project. Mountain Valley Pipeline, LLC realizes that effective communication must be two-way. In addition to sharing information, the Company's outreach effort is designed to create a continuing dialogue with stakeholders, from the start of the pre-filing process through construction, restoration, and operation. It is also designed to provide stakeholders with a central point of contact to maintain ease of communication and ensure consistency of messaging.
- Ask for public input at critical stages of planning. Mountain Valley Pipeline, LLC believes that the Project is a partnership not only with the commercial partners, but with all stakeholders. With that idea in mind, for the Project, the Company will seek to gain input and ideas from stakeholders during the planning and pre-filing process. This will help identify and address areas of concern.
- Keep stakeholders informed throughout the process. Many outreach plans are designed to communicate effectively during early stages of implementation — especially during the approval stage — but then reduce communication during construction. While communication about the Project will certainly be heaviest early in the process, the Company plans to proactively communicate, via website updates and other methods, during all phases of the Project, even after all approvals have been received. The Company also retained a contractor to assist with the organization and coordination of community open houses that were held in 16 locations along the pipeline route. These events served as an initial "face-to-face" opportunity for the public to learn about the Project and for the MVP team to listen to concerns of affected stakeholders. These open house events initiated the open-dialogue process with our community members, and strengthened our relationships with various local elected officials.
- Engage local resources. To gain insight into public perceptions along the route and to improve the credibility of the Project, the Company has retained community involvement specialists, who are very familiar with and knowledgeable about the local area, to supplement the efforts of employees of the Company. These specialists will arrange community meetings and other

necessary meetings between the Company and stakeholders. Additionally, they will serve as the “eyes and ears” of the Project, helping to identify growing areas of concern, potential issues, and misinformation.

5.0 Stakeholder Identification

Mountain Valley Pipeline, LLC will focus its efforts on reaching the following audiences:

- Landowners
- Local elected officials
 - Mayors, city councils, boards of supervisors
 - County commissioners
 - County and municipal planning organizations
 - Zoning boards, etc.
- State elected officials
 - State senators (local area staff)
 - State congressmen (local area staff)
- Federal elected officials
 - U.S. senators (local area staff)
 - U.S. congressmen (local area staff)
- Federal, state, and local regulatory agencies
- Economic development agencies/chambers of commerce
- Owners of mineral rights, such as coal companies
- Local law enforcement agencies
- **Local emergency services (fire departments, ambulatory)**
- Local media outlets
- Environmental Non-governmental organization
- Community at large

The status of contacts made to-date with Federal and state agencies, local elected officials and municipal planning agencies can be found in the Project’s monthly updates to the docket, which were made during the pre-filing process with the FERC.

Agencies

In October 2014, the Company sent out letters to all permitting agencies and agencies that require consultation notifying them of the Company’s plan to use the FERC pre-filing process and invite them to participate in the pre-filing process. The Company followed-up on these letters with phone calls to seek guidance from agencies and requested meetings as appropriate.

The Company remains committed to working with Federal and state agencies. In the spirit of two-way engagement, the Company is responding, and will continue to respond, to requests for information from these agencies in a timely manner. During the initial contacts, a specific line of communication was established between the agency personnel and Project staff. This line of communication will be utilized to confirm the Company’s understanding of agency requests and to confirm agency receipt of requested information.

Other Stakeholders

Within 14 days of the Director's Notice, the Company contacted all stakeholders not already informed about the Project, including any affected landowners (as that term is defined by 18 CFR Section 157.6(d)(2)). In areas where notifying a larger group may be necessary, the Company will expand the mailing list to include landowners that may fall outside the requirements stated in 18 CFR Section 157.6(d)(2). Many of these stakeholders have already been contacted, but it is the Company's goal to provide all stakeholders – including those with who we have been in contact – the same information at the same time. This letter described the Project and provided updated information, informed stakeholders of the pre-filing process timeline, and invited them to open houses.

6.0 Stakeholder Outreach Activities

Mountain Valley Pipeline, LLC will employ the following methods to ensure successful communication and outreach, including:

Stakeholder Identification and Issues Management & Database Tracking System: After identifying stakeholders, the Company will develop and maintain an issues management system to track contact with these stakeholders in a manner that helps identify, address and resolve emerging issues and concerns.

Information Materials: The Company has messages and materials to inform stakeholders about the MVP Project and to address potential questions and areas of concern. These materials include, for example:

- A Project fact sheet that incorporates Frequently Asked Questions (FAQ)
- “Standard presentation” information posters, etc. for use at Open Houses and other meetings
- Internal project guidance concerning key messages about the MVP Project to ensure consistency in communication
- Media advisories to announce public meetings and other Project updates
- Project Newsletter to be physically mailed directly to affected landowners and other stakeholders 3-4 times per year and made available online via the Project website

Media Relations: Keeping the media appropriately informed helps minimize the potential for misunderstanding and allows the Company to inform all stakeholders while reducing inaccurate information. Messages and materials about the MVP Project will be refined throughout the development effort to contain updated information and to address stakeholder concerns that may arise. In addition, materials will contain the following information:

- Purpose and Need of the Project
- Information on Mountain Valley Pipeline, LLC.
- Information on environmental and other benefits of natural gas
- Discussion of today's energy market and the need for expanded natural gas infrastructure
- FERC background information – The role of the FERC and other regulatory agencies in the process, and an overview of the pre-filing and filing processes
- Information on construction, including the types and sizes of equipment used
- Information on environmental activities conducted throughout the project, including pre-construction environmental surveys, measures during construction to minimize impact on

environmental resources including agricultural resources, restoration, and post-construction monitoring

- Safety information – A discussion of pre- and post-construction safety, and an overview of the safety record of the interstate natural gas pipeline industry and of the Company’s affiliates.
- A Project time line – An intended time frame for completing key phases of the MVP Project

Training: A significant component of the outreach and communication team’s effort is focused on training the Project team. The goal of the training effort is to familiarize all personnel who participate in the Project - both home office and field staff, including sub-contractors - of the MVP outreach and public participation plan and to provide specific modules of training – including those developed by INGAA/IRWA for those personnel and contractors who will interface with the public. Project staff receiving training includes all Company personnel and all contractors involved in field engineering, siting and survey, permitting and environmental impact mitigation, land acquisition, operations, property-owner relations, and government affairs. The Company’s guiding principle is to train each individual shortly after retention for the Project or before the individual engages in his or her designated role.

Website: Because of its accessibility and the ability to be constantly updated, online communications will play a vital role in stakeholder dialogue. In addition to serving as an MVP Project repository for up-to-date materials and information, the MVP Project website will feature mechanisms for stakeholders to ask questions and provide input about the Project. The MVP Project website will contain:

- A narrative and graphic overview of the MVP Project
- A downloadable map of the entire proposed route
- Downloadable detailed maps of the proposed route through each of the counties
- Downloadable project fact sheet about the MVP Project
- FAQs and answers, collected during outreach meetings, arranged by topic
- FERC Information, including an overview of FERC’s role and where the MVP project is at in the FERC process.
- Information on public open houses
- Information on FERC scoping meetings
- Newsroom (Project announcements, press releases, media advisories)
- Links to partner Company websites, FERC, Office of Pipeline Safety, industry coalitions, state agencies, etc.
- Typical pipeline construction sequence
- How natural gas pipelines work
- Additional contact information/Project Hotline
- Information for suppliers interested in potential business service opportunities related to the Project
- Information on post-construction use of heavy equipment in crossing the right-of-way

Direct Contact Outreach: Mountain Valley Pipeline, LLC will utilize direct contact, either in person, by phone, or correspondence (e-mail and letter) with stakeholders throughout the Project, as appropriate. The Company will notify landowners affected by the Project as required by FERC’s regulations. For example, direct contact by Company right-of-way representatives is a necessity in communicating with affected landowners. Direct contact with agencies has already been initiated by Project environmental staff and continued with pre-filing/pre-application agency scoping meetings. The communications staff will be

responsible for contact with key elected officials (county commissioners, state and Federal senators and representatives) along the proposed route. Direct contact will allow the Company to respond in a timely fashion to all inquiries from any agency, federal, state, or local authorities. Other stakeholders, including environmental organizations, economic development councils, and the news media will be contacted directly as appropriate to inform those stakeholders of the status of the Project.

Open Houses: During December 2014, and in the months of January and April 2015, Mountain Valley Pipeline, LLC conducted sixteen community open houses at various locations along both the proposed and alternative MVP routes. MVP's community open houses were in addition to the scoping meetings that were managed by the FERC. A list of dates and locations is provided in the table below. The sites were selected based on their proximity to the Project route and meeting room capacity, with intent to be as convenient as possible to the majority of landowners along the routes. While a formal speech or presentation was not given during these open houses, attendees had direct, one-one-one access to members of the Project team who listened to stakeholder ideas and concerns, and answered questions about the Project. Land agents were also present at the open houses to review specific landowner concerns and utilized GoogleEarth as a means of highlighting the proximity of the MVP route to individual landowners' properties, businesses, farms, neighbors, etc.

Additional open houses were completed in April 2015 in Monroe County, WV and Craig County, VA as an opportunity for landowners, stakeholders, and public officials to learn about the Project and the alternative routes identified through stakeholder consultation and additional route analysis and filed with the FERC in February 2015.

The open houses were conducted using a "free-flow station" format with topic-specific stations covering different issues, including rights-of-way, environmental, construction, engineering, etc. as well as a station dedicated specifically for FERC personnel. Each station contained information pertinent to that area of project responsibility, presented both in larger visual aids and/or in handout form manned by Project team members knowledgeable of the subject presented. This allowed attendees arriving at different times to circulate among the stations and gather information in a more informal fashion.

The information provided to attendees was basic enough to allow people who are unfamiliar with a project like the MVP, to gain a solid understanding of the elements of the project, including Project Overview, Project Benefits, Environmental Stewardship, Construction Best Practices, Pipeline Safety, Route Selection, Right-of-way Corridor, Company Overview, etc. Multiple copies of the maps for the proposed routes were available for open house attendees to examine, as well as computer monitors set up with GoogleEarth to allow landowners to view their specific parcel(s) and the proposed route. The map station was staffed by several right-of-way agents knowledgeable with the route and landowners along the proposed corridor.

Stakeholders were notified and invited, both directly via invitations sent by U.S. mail, and indirectly through the media and the MVP website open house schedule, which was as follows:

Schedule of Community Open Houses		
Date	Meeting Location	Approximate Distance to Closest MP
12/15/2014	Pittsylvania County, VA Hampton Inn Gretna/AltaVista/Chatham 200 McBride Lane, Gretna, VA 24557	5 miles NE of MP 285
12/16/2014	Franklin County, VA Harvester Performance Center 450 Franklin Street, Rocky Mount, VA 24151	3 miles S of MP 257
12/17/2014	Roanoke County, VA Salem Civic Center 1001 Roanoke Blvd, Salem, VA 24153	8 miles NE of MP 232
12/18/2014	Montgomery County, VA Days Inn Blacksburg Conference Center 3503 Holiday Lane, Blacksburg, VA 24060	6 miles S of MP 217
1/12/2015	Giles County, VA Pearisburg Community Center Gym 1410 Wenonah Avenue, Pearisburg, VA 24134	3 miles SW of MP 197
1/13/2015	Monroe County, WV Lindside United Methodist Church 8764 Seneca Trail South, Lindside, WV 24951	1.5 miles NE of MP 190
1/14/2015	Summers County, WV Summers County Courthouse 120 Ballengee Street, Hinton, WV 25951	8 miles W of MP 167
1/15/2015	Greenbrier County, WV Rupert Community Center 557 Nicholas Street, Rupert, WV 25984	2 miles E of MP 146
1/20/2015	Nicholas County, WV Summersville Arena & Conference Center 3 Armory Way, Summersville, WV 26651	8 miles W of MP 119
1/21/2015	Webster County, WV Webster Springs Municipal Building 146 McGraw Avenue, Webster Springs, WV 26288	7 miles E of MP 101
1/22/2015	Braxton County, WV Burnsville Community Center 237 Kanawha Street, Burnsville, WV 26335	5 miles W of MP 62
1/26/2015	Lewis County, WV Plantation Inn & Suites 1322 Hackers Creek Rd, Jane Lew, WV 26378	10 miles E of MP 42
1/27/2015	Harrison County, WV Progressive Women's Association 305 Washington Avenue, Clarksburg, WV 26330	9 miles E of MP 26
1/28/2015	Wetzel County, WV Jacksonburg Fire Department 93 Buffalo Run Road, Jacksonburg, WV 26377	5 miles W of MP 1
4/6/2015	Monroe County, WV Union Church of God – Fellowship Center Bud Ridge Road, Union, WV 24983	2 miles E of Alt 110J

Schedule of Community Open Houses		
Date	Meeting Location	Approximate Distance to Closest MP
4/7/2015	Craig County, VA Craig County High School Gym 25239 Craig's Creek Road, New Castle, VA 24127	10 miles NE of Alt 110J

Scoping Meetings: The FERC conducted six scoping meetings in the Project area in May 2015, as shown in the schedule below. The Company participated in those scoping meetings with the public by holding “mini” open houses for an hour before each meeting and attending the formal meeting to listen to stakeholder comments/concerns.

FERC Public Scoping Meetings – MVP Project	
Date and Time	Location
Monday, May 4, 2015 7:00 pm	James Monroe High School Route 1, Lindside, WV 24951
Tuesday, May 5, 2015 7:00 pm	Eastern Montgomery High School 4695 Crozier Road, Elliston, VA 24087
Thursday, May 7, 2015 7:00 pm	Chatham High School 100 Cavalier Circle, Chatham, VA 24531
Monday, May 11, 2015 7:00 pm	Robert C. Byrd Center 992 North Fork Road, Pine Grove, WV 26419
Tuesday, May 12, 2015 7:00 pm	West Virginia University Jackson's Mill 160 WVU Jackson Mill, Weston, WV 26452
Wednesday, May 13, 2015 7:00 pm	Nicholas County High School 30 Grizzly Road, Summersville, WV 26651

Project Contact Information: The Company is operating and monitoring a toll-free phone number, e-mail address, and postal mailing address that enables stakeholders to obtain additional Project information and provide input. This information is printed on all materials and included on the Project web site, and includes a single point of contact for stakeholder inquiries.

In summary, the Company understands that Stakeholder Outreach doesn't stop at submittal of the application or possible receipt of a certificate of Public Convenience and Necessity but is an ongoing commitment to keeping the public at large, affected landowners, the market, and other interested parties informed of the Project status. The Company will seek to continue the relationships and dialogue built during these crucial early stages of public interaction.

For example, MVP has partnered with the Wildlife Habitat Council (WHC) to prepare a comprehensive plan titled “Native Restoration on the Mountain Valley Pipeline Right-Of-Way.” The WHC promotes and certifies habitat conservation and management on corporate lands through partnerships and education. WHC works with corporations and conservation groups to create solutions that balance the demands of economic growth with the requirements of a healthy, diverse, and sustainable environment. In a spirit of innovation and dedication to stewardship, MVP sought WHC's expertise to provide guidance on 1)

potential activities to enhance the environment compatible with the project, and 2) implementation recommendations.

Communications Milestones

- October 2014 to present – Initial communications with agencies and stakeholders
- October 2014 – MVP project website live and online
- November 2014 – FERC accepts MVP into Pre-filing Process
- November 2014 – Additional informational letter to stakeholders; open house invitations; print media outreach
- December 2014/January 2015 – Community open houses; meetings with emergency services personnel in each county/township/region
- March 2015 – MVP inaugural newsletter (“In The Pipeline”)
- April 2015 – Additional Community Open Houses
- May 2015 – FERC Scoping Meetings
- May 2015 – Initiation of monthly federal elected official/governors’ offices project update calls
- May-July 2015 – Published four project Advertorials (Safety, Karst, Water/Ecological, Property Rights/Use/Respect) in 14 community newspapers along the proposed route
- July 2015 – MVP second edition newsletter
- October 2015 – News release announcement regarding Roanoke Gas Company’s intent to serve communities along the route
- October 2015 – File Certificate Application

Communication Vehicles

- Briefing materials for elected officials
- Cut sheets and Project info developed to discuss with stakeholders
- Website: www.mountainvalleypipeline.info
- Toll-free hotline (844-MVP-TALK)
- Community open houses
- “Mini” open houses at the FERC scoping meetings
- Site visits
- Maps for stakeholders to view (hard copy and electronic versions)
- High level maps for general distribution
- Regular mailings to engage stakeholders without internet access and locations set up to review voluminous project info
- Newspaper advertorials
- Media interviews, including TV, radio, newspapers that produced ongoing public stories and articles regarding updates on the MVP project

- Project Newsletters that are physically mailed to affected landowners' residences, as well as offices for other stakeholders, including local elected officials and emergency services personnel. These newsletters are produced 3-4 times per year and are also made available electronically via the MVP website.

FERC Landowner Assistance

The FERC landowner helpline via telephone is toll-free at 1-877-337-2237 and via email address is LandownerHelp@FERC.gov.

MVP Landowner Resolution Process

In the early stages of the Project's planning and development, MVP established a protocol to address landowner concerns and answer questions. The protocol utilizes MVP's 24-Hour toll-free phone line (844-MVP-TALK) and/or email submission to email@mountainvalleypipeline.info and this same protocol will be utilized during the construction phase as well. These communication portals were created as a means for landowners, as well as community members, to contact Project representatives with questions, concerns, and issues. MVP also keeps a formal record of all calls and emails received in order to effectively track inquiries and resolutions. The three-step process is as follows:

Step 1: Gather Information

- MVP Project representative will request all necessary information to complete the information section of the Inquiry/Issues Tracking Log, including the individual's name, address, parcel number, phone number, and Project reference. Additionally, any details offered regarding the purpose of the call will be entered on the Tracking Log.

Step 2: Define the Inquiry/Issue

- MVP Project representative will work with the individual to help understand and address their concerns. If the representative can resolve the issue, they will record this on the Tracking Log. Otherwise, the individual will be advised that their concerns have been documented and that they can generally expect a return call within three business days from an MVP Project representative. The questions/concerns/issues as documented on the Tracking Log will then be directed to the appropriate right-of-way agent.

Step 3: Resolution

- If the issues are resolved during Step 2, the MVP representative will complete the process by documenting how a resolution was reached for the Tracking Log. If a resolution is not reached during Step 2, the Tracking Log is forwarded to the appropriate right-of-way agent who will return the call and also update the Tracking Log with the resolution. The delegation of the issue should generally follow this progression until resolution is reached. If a right-of-way agent receives a direct phone call relating to environmental, construction, or non- right-of-way issues from a landowner during pre-construction, construction, or post-construction activities, the agent will request all necessary information (as outlined in Step 1) and will initiate submission of the information on the Inquiry/Issues Tracking Log. The agent will then proceed to Steps 2 and 3 until a resolution is reached. After working with the MVP Project representative and appropriate right-of-way agent, if the landowner is still not completely satisfied with the resolution, the individual should contact the Commission's Landowner Helpline at (877) 337-2237, or by email, Landownerhelp@ferc.gov.

MVP Formal Application – Public Locations for Viewing

When the formal application from MVP is filed with the FERC, it will be sent to a public location in each county in West Virginia and Virginia. The list below identifies the locations in each county where the public can review a hard copy and/or a digital copy (depending on the preference of the library or county building).

County	Name	Address
Craig	Craig County Public Library	303 Main St. New Castle, VA 24127
Giles	Pearisburg Public Library	209 Fort Branch Road Pearisburg, VA 24134
Franklin	Franklin County Public Library	355 Franklin St. Rocky Mount, VA 24151
Montgomery	Montgomery-Floyd Regional Library-Blacksburg	200 Miller St. Blacksburg, VA 24060
Pittsylvania	Pittsylvania Public Library	24 Military Dr. Chatham, VA 24531
Roanoke	Roanoke County Administration Building	5204 Bernard Dr. Fourth Floor Roanoke, VA 24018
Braxton	Sutton Public Library	500 Main St. Sutton, WV 26601
Doddridge	Doddridge County Public Library	117 Court St. West Union, WV 26456
Fayette	Fayette County Public Library	531 Summit Street Oak Hill, WV 25901
Greenbrier	Greenbrier County Public Library	152 Robert W. McCormick Dr. Lewisburg, WV 24901
Harrison	Clarksburg-Harrison Public Library	404 West Pike Street Clarksburg, WV 26301
Lewis	Louis Bennett Public Library	148 Court Ave. Weston, WV 26452
Monroe	Monroe County Administration Building	350 Main Street PO Box 350 Union, WV 24983
Nicholas	Summersville Public Library	6201 Webster Road Summersville, WV 26651
Summers	Summer County Public Library	201 Temple St. Hinton, WV 25951
Webster	Webster-Addison Public Library	331 South Main St. Webster Springs, WV 26288
Wetzel	New Martinsville Public Library	160 Washington St. New Martinsville, WV 26155