



Federal Energy
Regulatory
Commission

Office of
Energy
Projects
July 2017

FERC/FEIS-0275F

**FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR**

**Columbia Gas Transmission, LLC – Mountaineer XPress Project
Columbia Gulf Transmission, LLC – Gulf XPress Project**

Docket Nos. CP16-357-000 and CP16-361-000



Volume II

Federal Energy Regulatory Commission
Office of Energy Projects
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U.S. Army Corps
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Final Environmental Impact Statement

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APPENDIX A
Final EIS Distribution List

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Bernice & James Barr, New Milton, WV
Bertha A. Scott, Elizabeth, WV
Beth A. Holley, Ripley, WV
Beth Gilliam, Antioch, TN
Betty Casto, Leon, WV
Betty D. Reed, Culloden, WV
Betty E. Gibson, Hurricane, WV
Betty Guffey, Smyrna, TN
Betty K. & David L. Allison, Antioch, TN
Beverly Dillon, Ripley, WV
Big Tygart Farms LLC, Mineral Wells, WV
Bill & Betty Swartz, Melbourne, FL
Bill Crum, Lancaster, OH
Bill Knoblock, Madison, IN
Billy & Sue Hurt C/O Larry and Nancy Hurt, Summer Shade, KY
Billy Fouty, Reedy, WV
Billy Greer Jr. & Clara Greer, Grayson, KY
Billy J Menix, Grayson, KY
Billy J. Gregg & Lynn P. Gregg, Hurricane, WV

Billy Lowell Kouns, Grayson, KY
Bishnu & Thakur Magar, Antioch, TN
Blackstone Development Inc., Brentwood, TN
Blake G. Bohanan & Kayla E. Smith, Antioch, TN
Bobby L. Eads, Buffalo, WV
Bonnie Johnson, Hurricane, WV
Boyd H. & Loretta M. Neiswenter, Given, WV
Brad E. Hammond & Kimberly N. Marsh, Antioch, TN
Brad Maggard, Catlettsburg, KY
Bradley Crow, Morgantown, WV
Bradley Zeigler, Elkview, WV
Brandon & Kayla Jordan, Grayson, KY
Brandon Six, Oakdale, PA
Brandon Wayne Rigsby, Antioch, TN
Brant Miller, Friends of Mill Creek Greenway, Cane Ridge, TN
Braxton Collins, Assistant General Counsel, SCANA Corporation, Public Service Company of North Carolina, Inc., Cayce, SC
Brenda Joyce Gambill & Derek Michael Whittaker, Lavergne, TN
Brenda Mcmillan, Antioch, TN
Brenda Roberts, Creston, WV
Brent & Satona Cunningham, Moundsville, WV
Brent H. Clayton, Antioch, TN
Bretford W. & Jacquelyn C. Bell, Antioch, TN
Brian & Sarah Board, Ripley, WV
Brian & Stacey M. Cox, Antioch, TN
Brian Anderson & Kari Reed, Ripley, WV
Brian Arrington, Winfield, WV
Brian Cox, Antioch, TN
Brian Douglas & Shanna Marie Bauman, Antioch, TN
Brian E Flannery, Oldtown, KY
Brian Harvey, Leon, WV
Brian J. Knight, etal, Ripley, WV
Brian Keith & Anna Marie Bayes, Grayson, KY
Brian L Fields, Gas, Regulatory, Calpine Corporation, Houston, TX
Brian L. & Allicia Bellew, Hampstead, NC
Brian L. & Hollye K. Salazar-Cross, Antioch, TN
Brian M. Pulley, Antioch, TN
Briar Fork Trust, Roanoke, VA
Brice A. McMaster & Samantha Cunningham, Antioch, TN
Brient J. & Katelyn G. Barnett, Antioch, TN
Brittany Carns, Charleston, WV

Brotherton Heirs in care of J. Kay, LeRoy, WV
Bruce & Sharon Shamblin, Big Springs, WV
Bruce P. Bannerman, Culloden, WV
Brunette T. Jeanniton-Daly, Antioch, TN
Bryan & Heather Ireland, Pullman, WV
Bryan S. & Liesl C. Dunlap, Antioch, TN
BT Wayne LLC, Luka, MS
Buck Murray, Ripley, WV
Burns & McDonnell, Attn: Carrie Barton, Kansas City, MO
Burns & McDonnell, Attn: Jennifer Bell, Centennial, CO
Burns & McDonnell, Attn: Robyn Susemihl, Alpharetta, GA
Byron & Gloria McDavid, Grayson, KY
C. Eric & Candace H. Seagraves, Antioch, TN
CAD Energy Corporation, Creston, WV
Caldwell Mildred S. & Caldwell Investment Group, Charleston, WV
Calvin Burchett, Leon, WV
Campbell Lane Estates LLC, Grayson, KY
Capitol Homes Inc., Brentwood, TN
Carl & Debra Greer, Grayson, KY
Carl E. Walters, Providence, NC
Carl H. & Carolyn S. Clay, Antioch, TN
Carl Harris, Antioch, TN
Carl L. Bell, Moundsville, WV
Carl M. Thach, Jr., Greenwood, MS
Carl Reynolds, Mineral Wells, WV
Carlos Torres Lazo & Monica Delgado Gonazales, Antioch, TN
Carol A. Clark, Moundsville, WV
Carol Haught & John Haught, Mt. Sterling, KY
Carol L. Irwin & Jacqueline J. Hetzer, West Union, WV
Carol Lynn & David Liston, Wadsworth, OH
Carole Downes, Ashburn, VA
Carole M. Welling, Given, WV
Caroline C. Mgbemere, Antioch, TN
Caroline Copenhaver, Hurricane, WV
Carolyn D. McIntyre, Ripley, WV
Carolyn Kennedy, Antioch, TN
Carolyn S. Jenkins, Munday, WV
Carrie D. Mills, Antioch, TN
Carroll & Patricia Winters, Ripley, WV
Carry & Terri Ranson, Ripley, WV
Cassandra Thompson, Cain Ridge, TN

Castle Tower Corporation, McMurray, PA
Casto Cemetery, Ripley, WV
Catherine Byrd, Antioch, TN
Catherine Donahue & Diane Melton, Delaware, OH
Catherine Goddard & James Ledergerber, Reynoldsburg, OH
Cecil Radcliff, West Union, WV
Cedar Creek Farms Homeowners Association, Eleanor, WV
Cemetery Philadelphia, Waynesboro, TN
Chad Reed, Leon, WV
Chadrick G. Lowther & Jamie Bero, Winfield, WV
Charles & Barbara Welling, West Union, WV
Charles & Patsy Heaster, West Union, WV
Charles & Patsy Monk, Ripley, WV
Charles A. & Brenda K. Pierson, Ripley, WV
Charles B & Deidre Jill Yates, Grayson, KY
Charles Bedwell, Buffalo, WV
Charles Brett & Natalie Kay Valdez, Antioch, TN
Charles E & Selena R Terry, Grayson, KY
Charles E. Nesler, II, Longs, SC
Charles E., Jr & James Hetal Brownlee, Nashville, TN
Charles F. Guthrie, Hurricane, WV
Charles H. Whiting, Antioch, TN
Charles Hall, Nashville, TN
Charles Harrison & Alice M Clark, Grayson, KY
Charles L. Jr & Dorothy H. Cooper, Antioch, TN
Charles L. Morrison, Normantown, WV
Charles L. & Vickie D. Perine, Pullman, VA
Charles Matthew & Brianna Howard Griffin, Antioch, TN
Charles McCray Trust & Mark L. McCray, Mineral Wells, WV
Charles R. & Jimmy L. Carpenter, Harrisville, WV
Charles R. & Patricia Smith, Grayson, KY
Charles R. Cook, Chevron USA Inc., Houston, TX
Charles T. Box Revocable Trust, Marion, IL
Charles W. & Glenna Hennen, Elizabeth, WV
Charles W. Yeager, III, Perry Hall, MD
Charles William Hall, III & Amanda Grace Hall, Antioch, TN
Charles & Joanne Hunt, Charleston, WV
Cheryl Lynn & Carl E. Booker, Antioch, TN
Cheryl M. Ward, Milton, WV
Cheryl Meredith, Clarksburg, WV
Cheryl Miller, Grayson, KY

Chester & Imogene Caudill, Morehead, KY
Chester G. & Alesha M. Williams, Grayson, KY
Chester Skeen, Charleston, WV
Childers Farms, Inc., Hurricane, WV
Chris Campbell, Grayson, KY
Chris Capitani, Nashville, TN
Chris E. & Laura D. Harshbarger, Milton, WV
Chris M & Rebecca D Horton, Grayson, KY
Chris Strong, Cane Ridge, TN
Chrisanthi Zotos, Antioch, TN
Christian Smith, Winfield, WV
Christopher & Dennis Doyle, Wheeling, WV
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Christopher Sarver, Antioch, TN
Christopher Tuley, Keep Southeast Nashville Healthy, Cane Ridge, TN
Christopher Wiseman, Buffalo, WV
Christy C. & Jason A. Smith, Antioch, TN
Church Philadelphia, Waynesboro, TN
Cindi Croomes, Cane Ridge, TN
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Clarence Randall & Bualate G. Hudgens, Antioch, TN
Claudia Black, Antioch, TN
Clinton & Karen Harris, Reader, WV
Clyde Bradley Bennett, Antioch, TN
Clyde Frashure, Jr., Monckscorner, SC
CNX Land Resources, Inc., Canonsburg, PA

Coastal Forest Resource Company, Buckhannon, WV
Cody Wright & Sarah Merritt, Antioch, TN
Colby B. & Tara M. Shea, Antioch, TN
Columbia Gas Transmission, LLC, Charleston, WV
Comstock Irrevocable Trust & Silvestre Trust, Issaquah, WA
Cone Gathering, LLC, Canonsburg, PA
Connie F. S. Henry, Southport, NC
Connie Humes, Summer Shade, KY
Connie J. & Gary A. Tolley, Given, WV
Connie L. Knipp, Grayson, KY
Connie M. Hansom, Antioch, TN
Connie Rogucki, Grafton, WV
Connie Staggs, Nashville, TN
Consolidation Coal Company, St. Clairsville, OH
Constance Taylor, New Martinsville, WV
Corinne Unger, Antioch, TN
Cory A. & Mie Na West, Antioch, TN
Craig Harvey, Charleston, WV
Craig Real Estate Corporation, Nitro, WV
Creed & Opal Hardman, Smithville, WV
CSX Transportation Inc., Jacksonville, FL
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Cynthia Brewer, Cane Ridge, TN
Cynthia & Fred Jackson, Antioch, TN
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D&D Dismantling, Inc., Spencer, WV
Dale & Barbara Stone, Leon, WV
Dale & Melissa Keplinger, Gassaway, WV
Dallas Smith, etal, Harrisville, WV
Dallison Lumber Company Inc., Jacksonburg, WV
Dalton & Teddy Parsons, Brohard, WV
Dan & Glenda Kirby, Brentwood, TN
Dan Lekich, Nashville, TN
Dan Thomas, Brentwood, TN
Danelle J. Hughes, Antioch, TN
Daniel & Amber Rush, New Martinsville, WV
Daniel & Cindy Ellis, Piney Point, MD
Daniel & Jeanette Corey, Charleston, WV
Daniel & Jennifer A. Harris, Grayson, KY
Daniel & Kendall Call, Culloden, WV

Daniel E. II & Megan Freeman, Culloden, WV
Daniel H. Weed, Charleston, WV
Daniel Hughes, Leon, WV
Daniel J. Beyer, Antioch, TN
Daniel Jividen, Knoxville, TN
Daniel K. & Lisa A. Jozwick, Salem, WV
Daniel Mcguire & Erica Kay Hause, Antioch, TN
Daniel R. & Mary Lou Clevenger, Smithville, WV
Dannett M & Christopher R Stone, Grayson, KY
Dannie Huffman and Dervin Clay Huffman, Lewisburg, WV
Danny & Dianne Dolin, Ripley, WV
Danny & Joyce Groover, Avon, IN
Danny & Patty Sue Sergent, Grayson, KY
Danny Belcher, Ripley, WV
Danny Briggs, etal, Wileyville, WV
Danny J. & Penny E. Conner, Culloden, WV
Danny Mallett, Buffalo, WV
Danny McCormick, Liberty, WV
Danny R. & Annie F. Knight, Culloden, WV
Dara & Matthew Zarth, Antioch, TN
Darlene F. Smith, Ripley, WV
Darrell & Allene Miller, Summer Shade, KY
Darrell Brumfield, Kissimmee, FL
Darrell C. Bowers Etal, Albuquerque, NM
Darrell Taylor, Hurricane, WV
Darwin Brown, Friendly, WV
Dave Goodwin, Saint Albans, WV
David & Candy Mullan, West Union, WV
David & Christine Blythe, Summer Shade, KY
David & Jocelyn Gutekunst, Antioch, TN
David & Linda Cooper, Ripley, WV
David & Nancy Knight, Smithville, WV
David & Susanna Blumig, Palestine, WV
David & Terri Owens, Barboursville, WV
David & Victoria Bland, West Union, WV
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David Burtrand, etal, Reader, WV
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David C. Jr & Deborah L. Hardy, Antioch, TN
David Chapman, Washington, PA

David E. & Beverly Miller, Grayson, KY
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David E. & Shelly M Moore, Summer Shade, KY
David E. Bowyer, Alma, WV
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David Hastings, St. Albans, WV
David Hodge, Berea, WV
David Johnson, Red House, WV
David K. & Marilyn D. Ramey, Culloden, WV
David K. Goebel, Ashland, KY
David L. Card & Christopher M. Yount Et Al, Antioch, TN
David L. Daughtry, Fuels Procurement Administration, City of Richmond, Virginia,
Richmond, VA
David L. Hensley, Barboursville, WV
David L. & Roberta L. Morton, Culloden, WV
David Meadows, Red House, WV
David P. Warsinsky, New Hope, AL
David Potter, ERM, Minneapolis, MN
David R & Tiffany B Matthews, Summer Shade, KY
David R. Ferrebee, West Union, WV
David Roland Bayer, Antioch, TN
David Sayre, Buffalo, WV
David W. Mullins, Ripley, WV
David W. Sayre, Buffalo, WV
David Waybright, Ripley, WV
David Weekley, St. Marys, WV
David Whited & Jill Easter, Ripley, WV
David Wymond, Houston, TX
David Yoders, Moundsville, WV
Dayton Lovejoy, Red House, WV
Deanna Allen, Milton, WV
Dearld Mason, Paden City, WV
Debbie Hoffman, Mt. Alto, WV
Deborah & Gregory Suttles, Grayson, KY
Deborah S. Wilson, Antioch, TN
Deborah T. Sweeneny, Culloden, WV
Debra & Timothy Holley, Ripley, WV
Debra & Timothy Shamblen & Patricia Brown, Lockbourne, OH
Debra Cart, Red House, WV

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Deer Valley Homeowners Association Inc., Cane Ridge, TN
Delmar E. & Virginia L. Eagle, LeRoy, WV
Delmer Rhodes, Ripley, WV
Delvin Downs Homeowners Association, Inc., Brentwood, TN
Dempsey & Kathy Casto, Liberty, WV
Dennis & Carolyn Stover, Ripley, WV
Dennis & Dianne Cochran, Ripley, WV
Dennis Caveny, Antioch, TN
Dennis Cooper, Parkersburg, WV
Dennis Phengsavanh & Vanny Chhay, Antioch, TN
Dennis Weed, Charleston, WV
Denver & Mary Beth Cox, Smithburg, WV
Derek & Elaine King, Antioch, TN
Derek & Emily Lane, Ripley, WV
Derry G. & Beatrice Baltimore, Antioch, TN
Dervin Clay and Dannie L. Huffman, Lewisburg, WV
Devin L. & Cara Y. Maddox, Antioch, TN
Devon C. Horsley, Mineral Wells, WV
Diane Bedwell, Buffalo, WV
Diane Ludwig, Elizabeth, WV
Dianne McIntyre, Ripley, WV
Dimetra Mccutcheon, Antioch, TN
Dino and Rebecca Corsetti, Grayson, KY
Dominion Hope, Clarksburg, WV
Dominion Transmission, Inc., Pittsburgh, PA
Don & Carol Tangren, Cane Ridge, TN
Don Jr & Valerie Everman, Grayson, KY
Don Shipman and Divetta Shipman, Saint Marys, WV
Don Springer, Eaton Park, FL
Don Wimpelberg, Antioch, TN
Donald & Bonnie Elliott, Grayson, KY
Donald & Cora Jones, Ripley, WV
Donald & Helen Casto, Given, WV
Donald & Ilena Thomas, West Union, WV
Donald & Myrna Mason, Reader, WV
Donald A. Dunn, III & Jacqueline Ree Dunn, Antioch, TN
Donald and Opal Withrow, Grayson, KY
Donald E. & Claudia Y. Black, Antioch, TN
Donald G. & Norma Ruth Spurgeon, Antioch, TN
Donald L. Barnes, Harrisburg, PA

Donald M. Thompson, Charleston, WV
Donald McCoy, Jacksonburg, WV
Donald P. & Einleen J. Mayo, Antioch, TN
Donald P. & Dayna L. Gunn, Mt. Zion, WV
Donald Pickens, Ripley, WV
Donald R Sandidge, Edmonton, KY
Donald Radcliffe, Raleigh, NC
Donald Shull Jr. and Melissa Shull, Waynesboro, TN
Donna G. & Orman C. Johnston, Milton, WV
Donnie & Mary Kay Kimball, West Union, WV
Donnie Fisher, Eleanor, WV
Donnita Englad, Edmonton, KY
Donzel & Patona Whiting, Ripley, WV
Dora Parsons, LeRoy, WV
Doris Davis, Harrisville, WV
Doris M. Boone, Harrisville, WV
Doris Miller, Dunbar, WV
Dorothy Carney, Diven, WV
Dorothy Gola, Reynoldsville, WV
Dorothy K. Wise, Milton, WV
Dorothy Mae Davis, Nanjemoy, MD
Dorsel H. Cobb, Red House, WV
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Douglas & Susan Miller, West Union, WV
Douglas L. & Valree A. Peralta, Antioch, TN
Douglas M. Hartwell, Liberty, WV
Dremia K. Miller, Salem, WV
Dulcie F. Carroll, West Union, WV
Dunfa Peng, Antioch, TN
Dupree M. & Erika N. Pinson, Antioch, TN
Dustin & Savannah Hardbarger, Brohard, WV
Dustin A. & Sarah N. Everman, Grayson, KY
Dustin Beaver, Fraziers Bottom, WV
Dustin Eli Whiteside, New Albany, MS
Dustin L. & Kaci Whitney, Antioch, TN
Dwain Stanley, Parkersburg, WV
Dwight & Tina Moore, West Union, WV
E. Mae Rhodes, LeRoy, WV
E. Sharon Sanford, Antioch, TN
E.P. Haught Heirs, Grantsville, WV

E.S. Childers Heirs c/o John Taylor, Huntingtown, MD
Earl Sommerville, Reedy, WV
Early M. & Chander D. Cash, Antioch, TN
East West Properties, Inc., Olive Hill, KY
Ebonnie M. Figgins, Antioch, TN
Ed Jividen, Red House, WV
Edd Tate Parker Living Trust, Oxford, MS
Eddie Vinay & Anousone Thespurinton, Antioch, TN
Edgar & Audrey Duellley, Coks Mills, WV
Edgar & Shannon Atkins, etal, Ripley, WV
Edgar McCutcheon, Reedy, WV
Edith Groves, Ripley, WV
Edith Littleton, Morehead, KY
Edmond T. & Inge E. Conway, Antioch, TN
Edward & Iris Lee, Gay, WV
Edward C. & Coreen D. Jackson, Antioch, TN
Edward L. Cummings, Ripley, WV
Edwin L. & Stephanie D. Linzie, Antioch, TN
Edwin P. and Barbara J. Winters, Milwood, WV
Elaine J. Newsom, Antioch, TN
Elaine Taylor, Gallipolis Ferry, WV
Eleanore M. Fox, Glen Easton, WV
Electa J. Smith, Nitro, WV
Elenor Dyer, Nashville, TN
Elizabeth A. & Robert E. Ray, Antioch, TN
Elizabeth Garber, Nashville, TN
Ella & Roger Underwood, Salem, WV
Ella Lee & Ebony C. Beech, Antioch, TN
Elmer & Rose Thornberry, Grayson, KY
Elmer Bergum, Liberty, WV
Elmer L. Aston, Moundsville, WV
Elmer W. Pierce, West Union, WV
Elton C. & Susan H. Felts, Antioch, TN
Elwood P. & Elizabeth Rill, Glen Rock, PA
Emerson Lewis Jr., Grayson, KY
Emery Casto, Leon, WV
Emily Cobb, Red house, WV
Emma Swanson, Red House, WV
Emmitt C. & Dorothy H. Nicholas, Culloden, WV
Emory H. & Elsie C. Smith, Antioch, TN
Ereny & John Yakoub, Antioch, TN

Eric Bernhardt, TRC, West Union, WV
Eric Duvall, Grayson, KY
Eric Engle & Ashley Stover, Ripley, WV
Erick Bergman, Antioch, TN
Erik Duncan, Charleston, WV
Erin Cornell, Red House, WV
Ernest E. Lanham, Newburg, WV
Ernie E Gilkes, Antioch, TN
Ernie R. Pritt, West Union, WV
Eron & Cathy Diane Hatchett, Antioch, TN
Estate of Joe Nelson, Attn: Greg Nelson, Scott Depot, WV
Ethel Irene Barker, Morehead, KY
Eugene & Shirley Carra, Grayson, KY
Eugene Depue, Harrisburgh, NC
Eugene Testamentary Trust, Imperatore, Antioch, TN
Evans Equipment Rental, Evans, WV
Evelyn Davila, Winfield, WV
Everett Richards, Jr, Canton, OH
Evie Parke, Summer Shade, KY
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Falon Felts, Antioch, TN
Falton O. & Cornelia Mason, Oxford, MS
Family Cemetery c/o Regina Lemley, Reader, WV
Faye Rogers, Ripley, WV
Federal National Mortgage Association, Dallas, TX
Ferenc & Luz C. Andi, Antioch, TN
Fidelity Bank, Wichita, KS
Flora Conley, Red House, WV
Floyd & Daniel Melott, New Martinsville, WV
Forest Jr. & Tina Glover, Jacksonburg, WV
Foster & Terri Lyons, Ripley, WV
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Frank & Donna Race, West Union, WV
Frank C. & Paula S. Wilkens, Antioch, TN
Frank E. Larson, Creston, WV
Frank K., Jr & Mia M. Vickers, Antioch, TN
Frank Randolph, West Union, WV
Frank Simons, Sterling, VA
Franklin Cunningham, Pine Grove, WV
Franklin T. Barker, West Union, WV
Fred E. Barnes, Nashville, TN

Fred R. & Frances L. Dailey, Milton, WV
Fred Strickland, Clinton, OH
Fred W. Kirby Jr., Parkersburg, WV
Freda Casto, Given, WV
Freda E. Byrd, Berea, WV
Frederick & Barbara Hall, Ripley, WV
Frederick & Jo Ann Perry, Barboursville, WV
Frederick E. & Kimberly A. Davis, New Cumberland, WV
Fredrick & Mary Boyce, Ripley, WV
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Gail Thompson, Given, WV
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Gary & Joyce Rizer, Antioch, TN
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Gena D. Smith, LeRoy, WV
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George Cullers, Salem, WV
George Jr & Beverly Allin, Antioch, TN
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George Lagos, Moundsville, WV
George R. Gore, West Union, WV
George Stansberry, etal, West Union, WV
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Gerald & Geraldine Carra, Grayson, KY
Gerald F & Christi M Thompson, Grayson, KY

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Gholam & Sevda Kheshti, Brentwood, TN
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Glen O.Gibson, Hurricane, WV
Glenda & Norris Morris, Antioch, TN
Glenn & Ramona Cunningham, Proctor, WV
Glenn Long, et al, West Union, WV
Glenn Painter, Winfield, WV
Glenn R Mann, Ripley, WV
Glenn R. Jr & Sharon Mann, Ripley, WV
Glenn Doyle & Fay Thompson, Ripley, WV
Gloria Faye Coleman, Antioch, TN
Gloria Jean Nunn, Summer Shade, KY
Glyne A. Griffith, Antioch, TN
Goran & Marijana Kebara, Antioch, TN
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Gordon Yost, etal, Reader, WV
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Gregory & Crystal Dulaney, Pine Grove, WV
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Gwin & Robert Orr, Antioch, TN
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H3, LLC, Milton, WV
Haessley Land & Timber, LLC, Marietta, OH

Hamilton & Moore LP, Nashville, TN
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Harold & Ruth Bell, Big Springs, WV
Harold B. & Connie S. Crow, Moundsville, WV
Harold D. Villers, Elizabeth, WV
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Harry & Patricia Bradley, Big Springs, WV
Harry Allred, Fraziers Bottom, WV
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Harry G. Cooke, Jr., Pineville, WV
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Harvey Ghiz, Hurricane, WV
Haught Farms, LLC, Harrisville, WV
Hayes Living Trust, Grayson, KY
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Heartwood Forestland Fund IV, LP, Parkersburg, WV
Heather & Jason C. McGovern, Antioch, TN
Heather Hixson-McGovern, Keep Southeast Nashville Healthy, Cane Ridge, TN
Heber & Sandra Richardson, Dunbar, WV
Hector Martinez, Antioch, TN
Heirs of James Henson, Buffalo, WV
Heisel & Myrtle Ledsome, Reedy, WV
Helen & Donald Casto, Given, WV
Helen K. White, Ripley, WV
Helen R. Payne, Moundsville, WV
Helin S. Tahir, Antioch, TN
Henry Arvis & Elizabeth Riffe, Grayson, KY
Henry Caudill Jr & Teresa L. Caudill, Morehead, KY
Heran Berwary, Antioch, TN
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HG Energy, LLC, Parkersburg, WV
Hidden Creek Homeowners Assn Inc., Nashville, TN
Hindes Farm Trust, Attn: Donald & Betsy Hindes, Columbus, OH
Hneng Thang & Khaw A. Ling, Antioch, TN
Hoa Thi Nguyen & Van Huang Lich, Antioch, TN
Holly Ashby, Antioch, TN
Holly Greene, Nashville, TN

Homer & Delores Weekley, West Union, WV
Hong K. & Young M. Yang, Antioch, TN
Hope Natural Gas Company, Clarksburg, WV
Howard & Clara Bucher, Reader, WV
Howard C. Burchett, South Charleston, WV
Howard Hollow LLC, Edmonton, KY
Huey Moore, Arbuckle, WV
Hundred Resources, Inc., Fairmont, WV
Hurley-Y, Murfreesboro, TN
I. L. (Ike) Morris, Attn: Steve Holloway, Glenville, WV
I.C. Young Estate, Glen Easton, WV
Ifeoma C. Nwankwo, Antioch, TN
Illena Booher & Donald J Thomas, West Union, WV
Imelda A Reynolds, Grayson, KY
Inez Brotherton, LeRoy, WV
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Isabelle Snider, Lake Milton, OH
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Jackie R. & Carolyn S. Bailey, Red House, WV
Jaclyn & Dalaina McLaughlin, Fraziers Bottom, WV
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James & Betty McCoy, Jacksonburg, WV
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James and Jennifer Patrick, Louisa, KY
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James Booth Estate, Steubenville, OH
James C. Moore, New Martinsville, WV
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Nancy L. Stone, Given, WV
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Oak Highlands/Deer Valley Homeowners Assoc Inc., Nolensville, TN
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Stephen Shepherd, Antioch, TN
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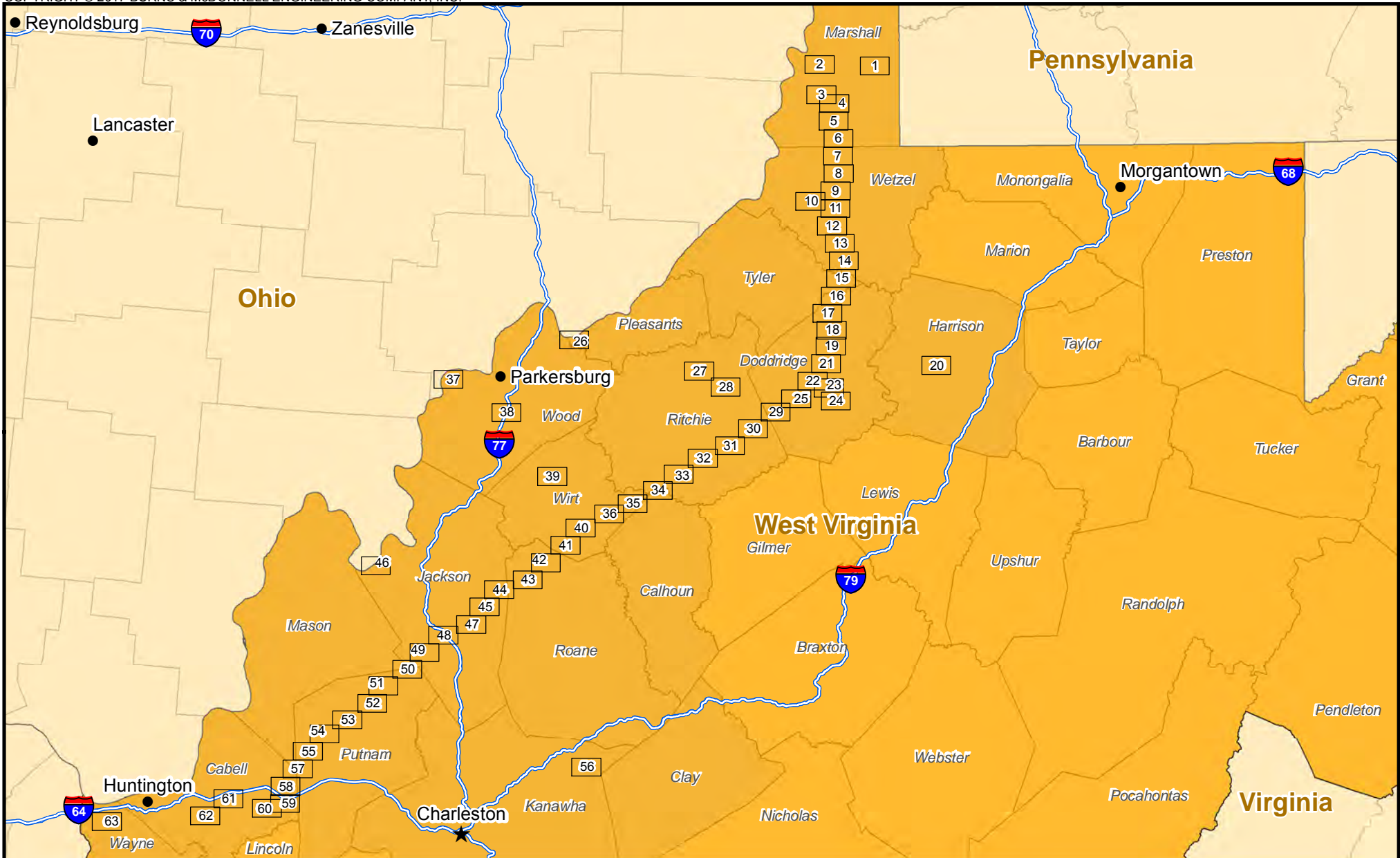
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Virginia I. Milhoan, LeRoy, WV
Viscose Athletic Association, Eleanor, WV
Vivian Irene Ferguson, Holcomb, MS
Vivian Parks, etal, Pine Grove, WV
Vivian Stockman, Ohio Valley Environmental Coalition Project Coordinator, Huntington, WV
William & Marianne Hughes, Ohio Valley Environmental Coalition, Huntington, WV
Viyam Aziz & Hawar M. Hasan, Antioch, TN
W. Bracey & Allison B. Halbrook, Antioch, TN
W. C. Tate, New Albany, MS
W. Clyde Crane, Harrisville, WV
W. Garcia, Antioch, TN
W. Williams, Nashville, TN
Walker Thompson, Given, WV
Walter and Dorisann Mullins, Grayson, KY
Walter and Loretta Jeffrey, Milwood, WV
Walter L. & Amy J. Jacques, Antioch, TN
Walter Lee & Grace Jacques, Antioch, TN
Wanda & Gary Dillon, Culloden, WV
Warren Haught, Smithville, WV
Wayne Conley, Red House, WV
Wayne Douglas & Lora Art, Paint Lick, KY
Wayne L. Goddard, New Martinsville, WV
Welby J. Sandidge, Edmonton, KY
Wendy Romine, Reedy, WV
Wesley L. Landers Sr., Given, WV
West Virginia Properties LLC, Lakewood, OH
Wheeling Jesuit University, Wheeling, WV
William & Barbara Wagner, New Martinsville, WV

William & Georgette Healy, Smithville, WV
William & Geraldine Hensley, etal, Williamson, WV
William & Kara Casto, Ripley, WV
William & Kathy Johnson, Given, WV
William & Linda Hamilton, West Union, WV
William & Melissa Sheets, Ripley, WV
William & Pamela Heis, LeRoy, WV
William A. Sala, Jr., Sr. Counsel, TransCanada, Houston, TX
William and Rosemary Kartune, Grayson, KY
William B. Meador, Iuka, MS
William DePaulo, Director & Counsel, Keeper of the Mountains Foundation, Charleston, WV
William E. Walden, Antioch, TN
William Glenn Brannen, Antioch, TN
William J. & Ann M. Woods, Grenada, MS
William K. Stern, Glen Easton, WV
William L. Young, Et Ux, New Albany, MS
William P. Hatton, III, Antioch, TN
William Potter, Poca, WV
William R Milton, Culloden, WV
William R. & Janet B. Huffman, Antioch, TN
William R. Hardbarger, Harrisville, WV
William R. Milton, Culloden, WV
William Robert Helton Etux, Antioch, TN
William Trent, Elgin, IL
Williams Ohio Valley Midstream LLC, Attn: Amy DiMaria, Tulsa, OK
Willie S. Swanson, Et Ux, Antioch, TN
Young & Young Lumber Company, Inc., Nitro, WV
Yousef Khallilollahi & Heather Pham, Union City, CA
Yves J. Bourgeois, Manager Regulatory Affairs, Anadarko Energy Services Company, The Woodlands, TX
Zachary M. Blair, Glen Dale, WV
Zachary Raynes, Eleanor, WV
Zachery Shamblin, Ravenswood, WV

APPENDIX B-1
Mapping and Construction Drawings for the Mountaineer XPress Project

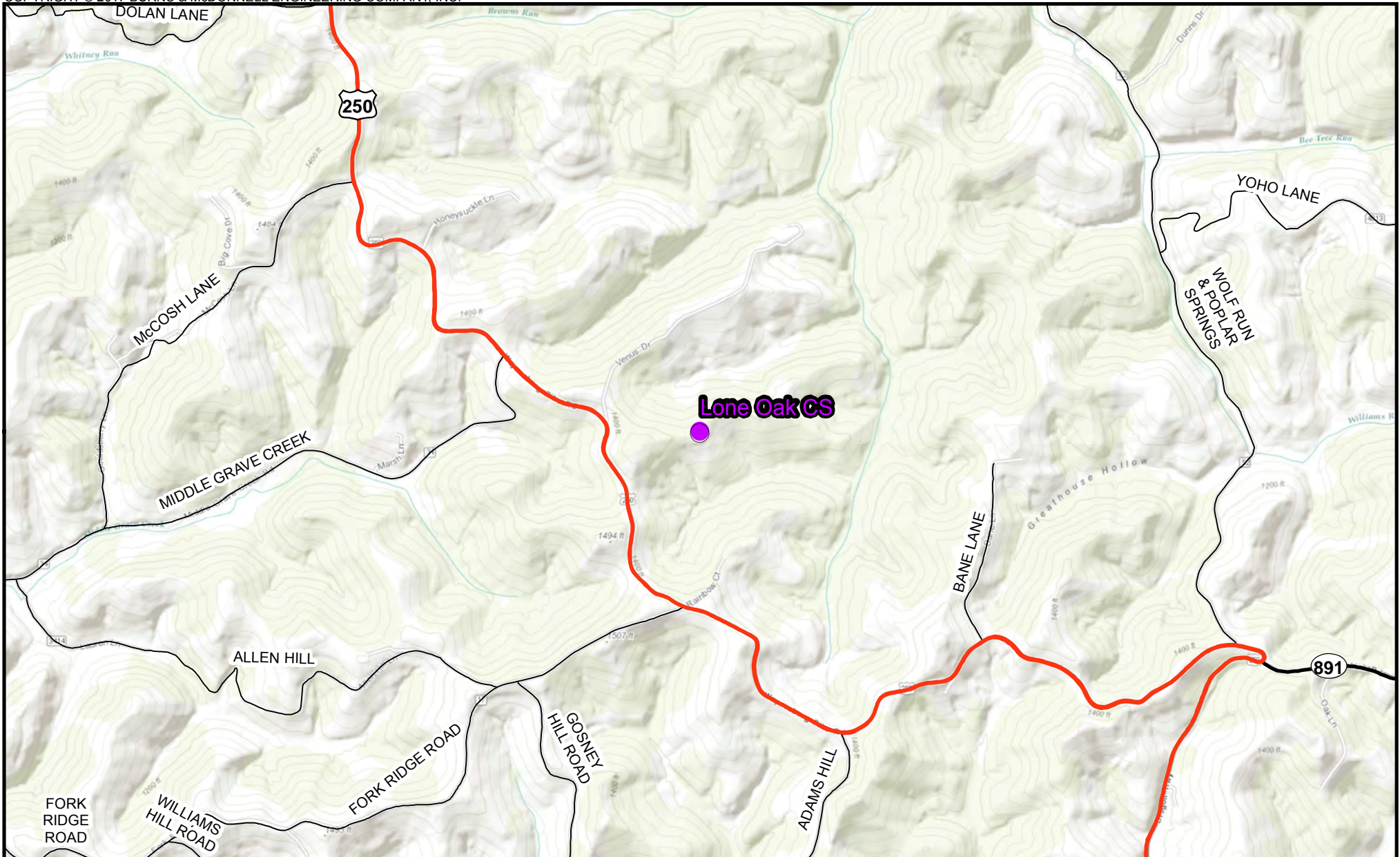
**Mountaineer XPress Project
Project Overview Mapping**



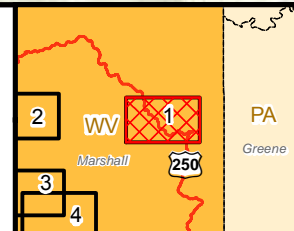
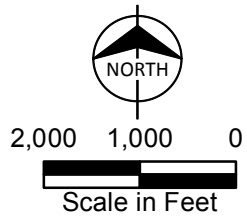
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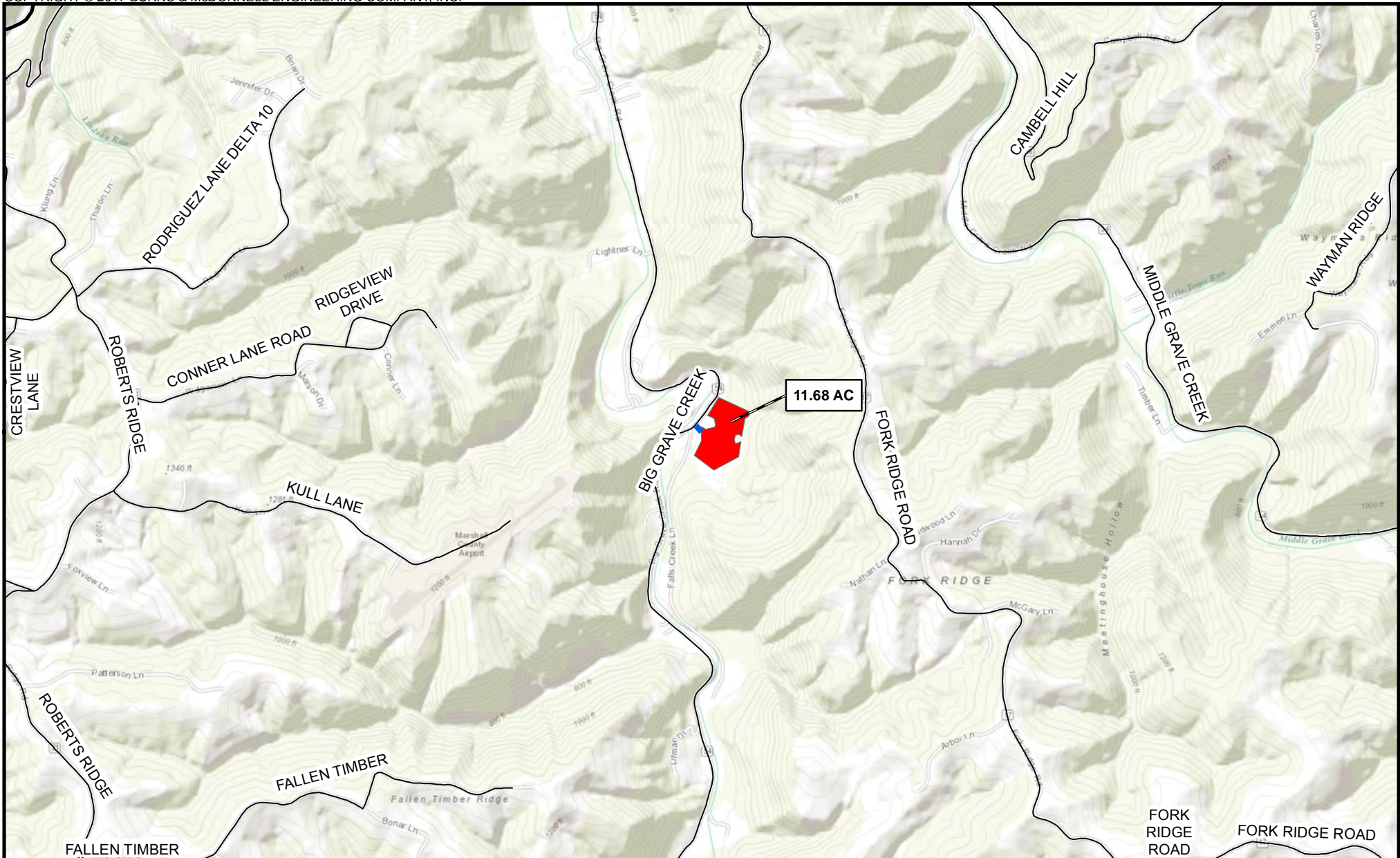
Appendix B-1
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Project Overview Map
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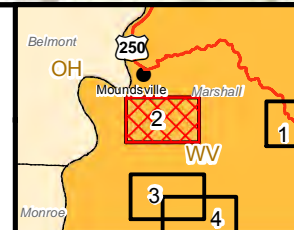
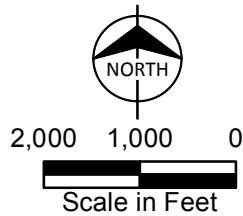
● Compressor Station



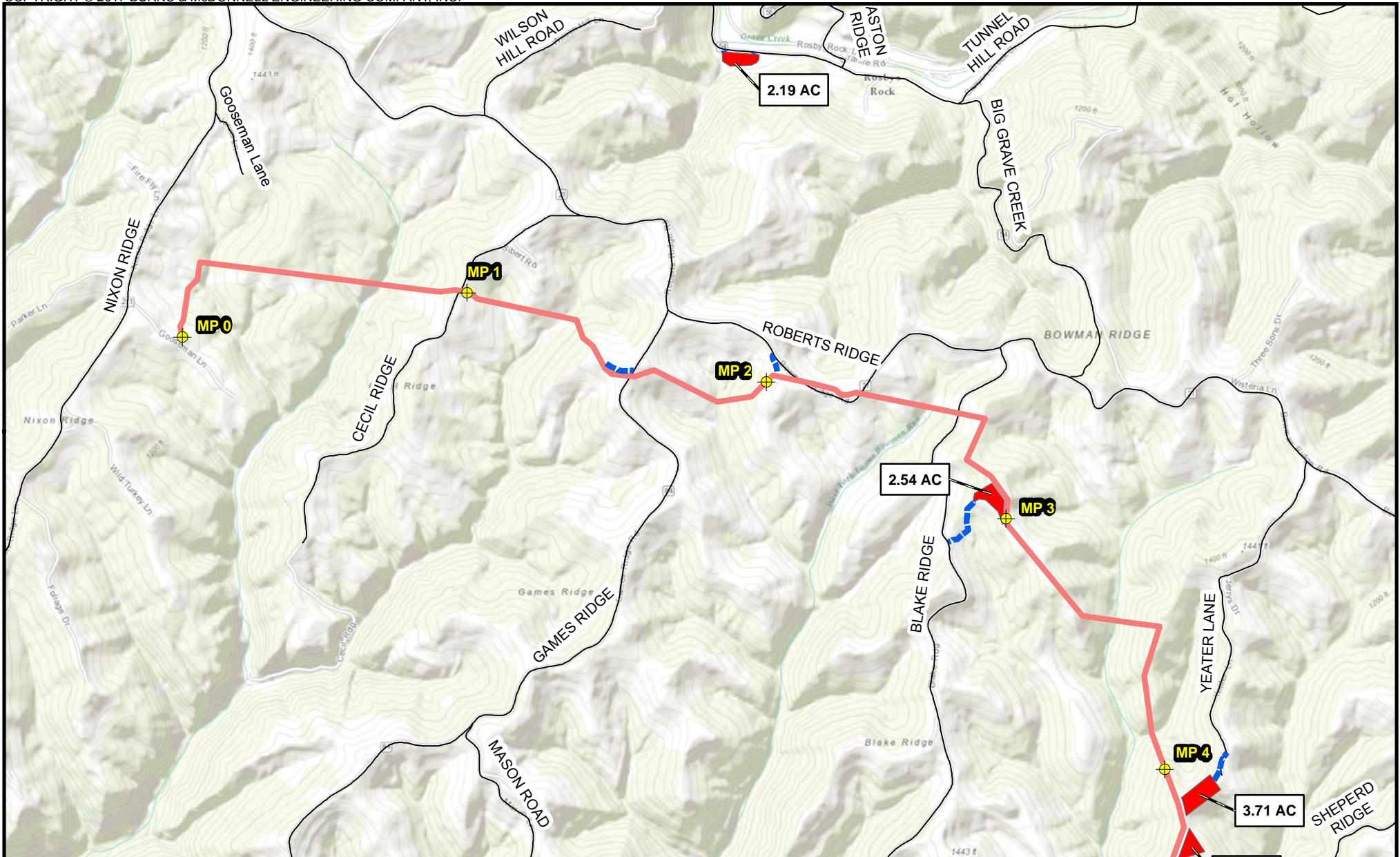
Appendix B-1
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Project Overview Map
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-  Access Road
-  Pipe\Contractor Yard, Staging Area

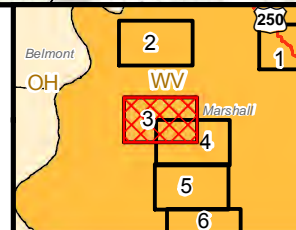
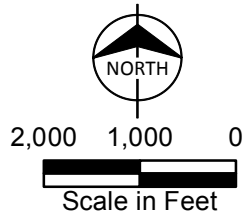


Appendix B-1
 Mountaineer XPress Project
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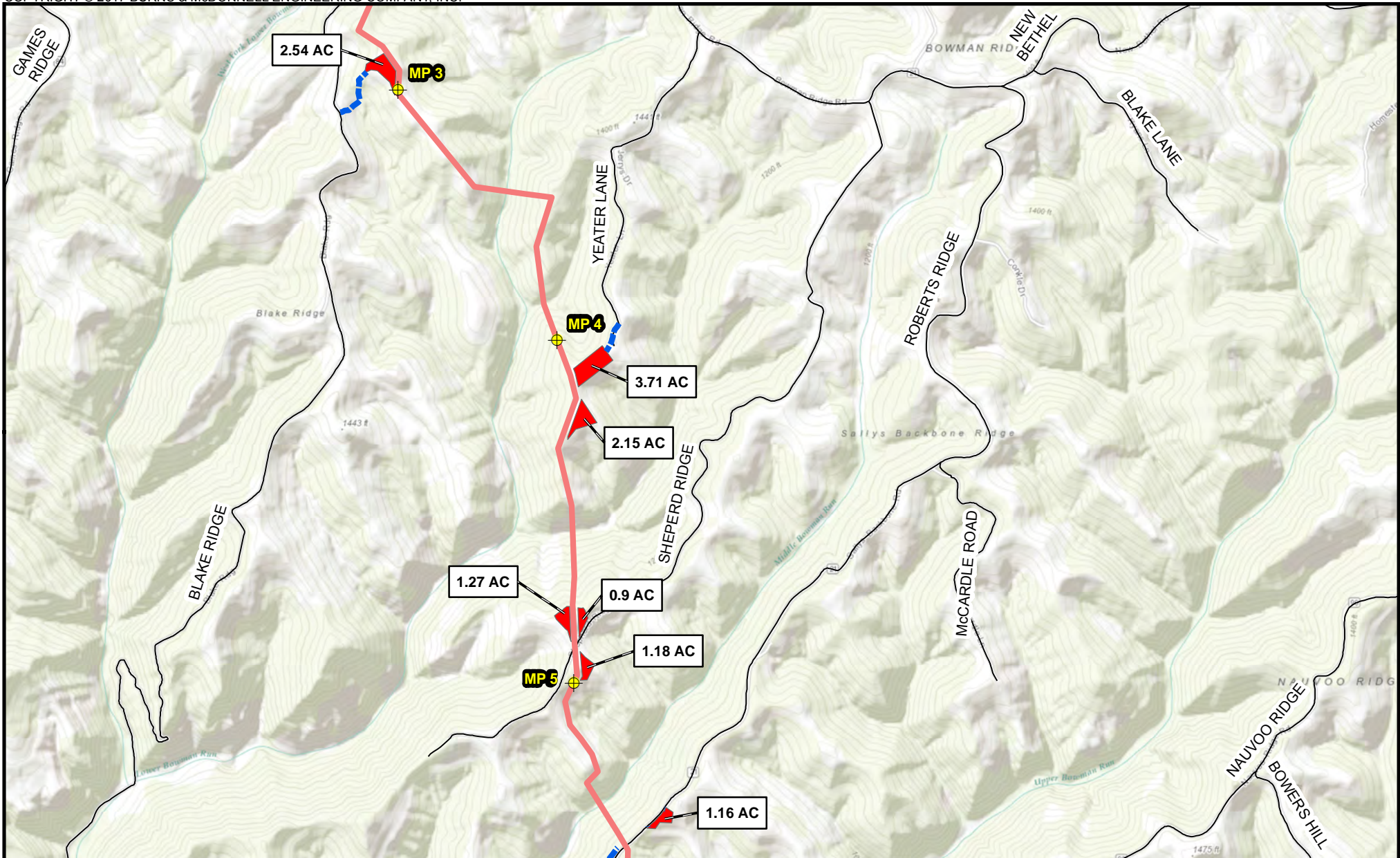


- Milepost
- Access Road
- Pipe/Contractor Yard, Staging Area

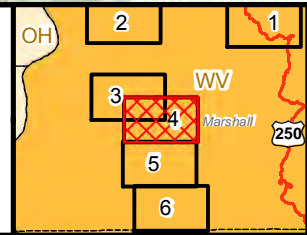
Proposed Pipeline
 MXP-100



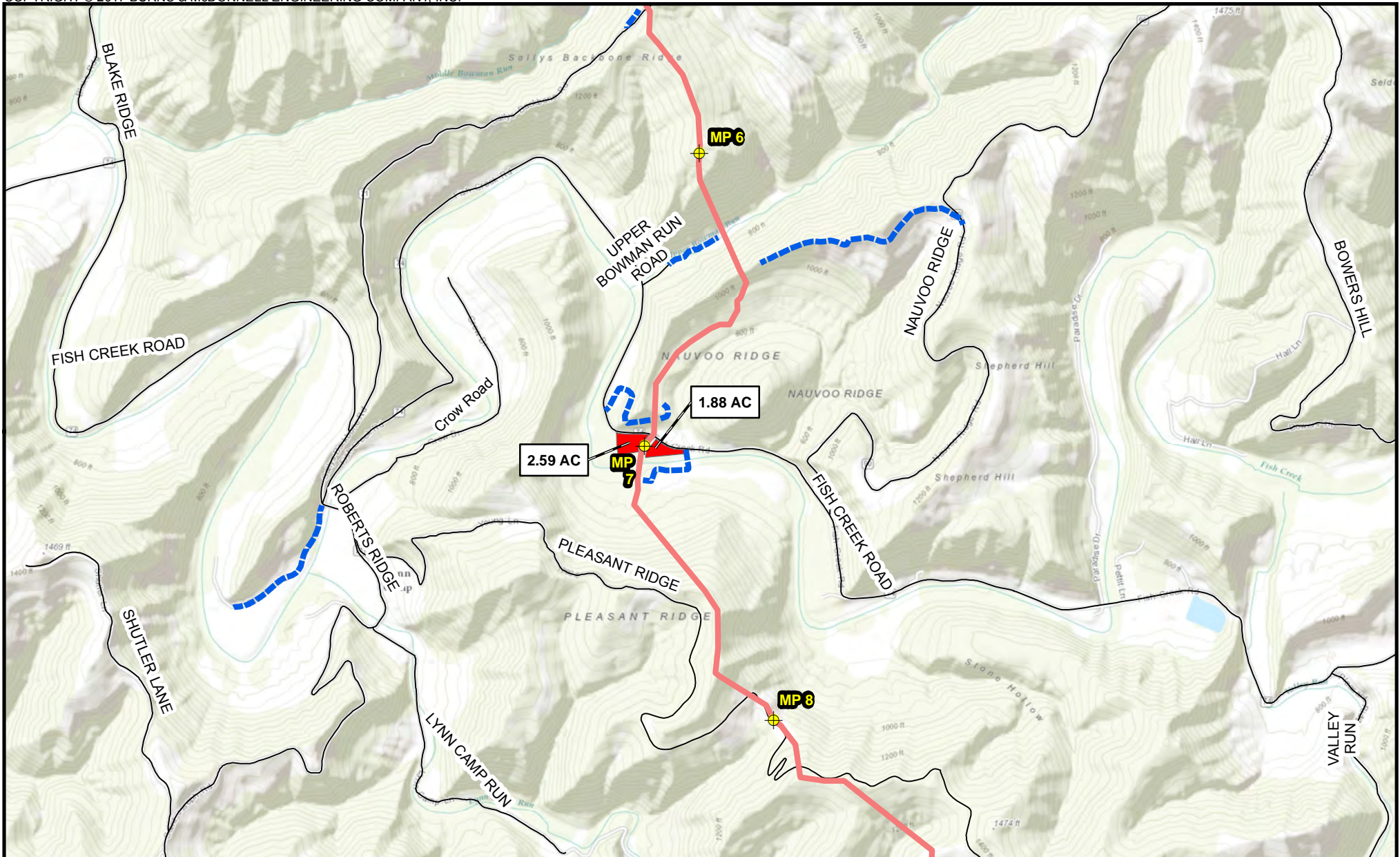
Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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Milepost	Proposed Pipeline	
Access Road	MXP-100	
Pipe/Contractor Yard, Staging Area		<p>Scale in Feet</p>

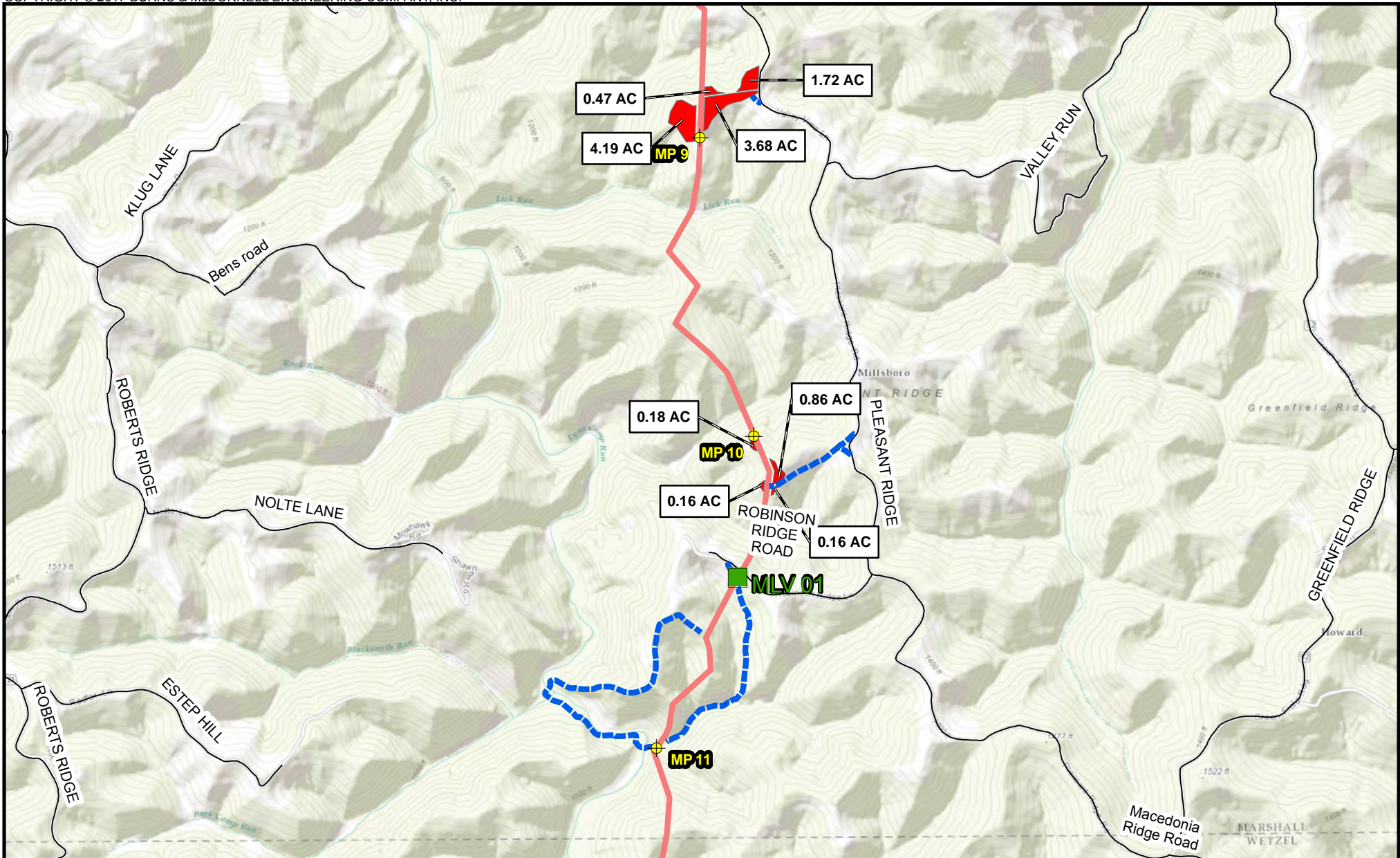




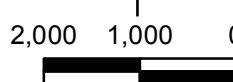
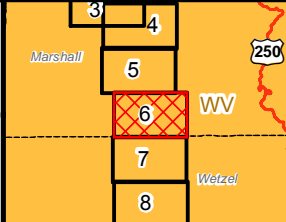




Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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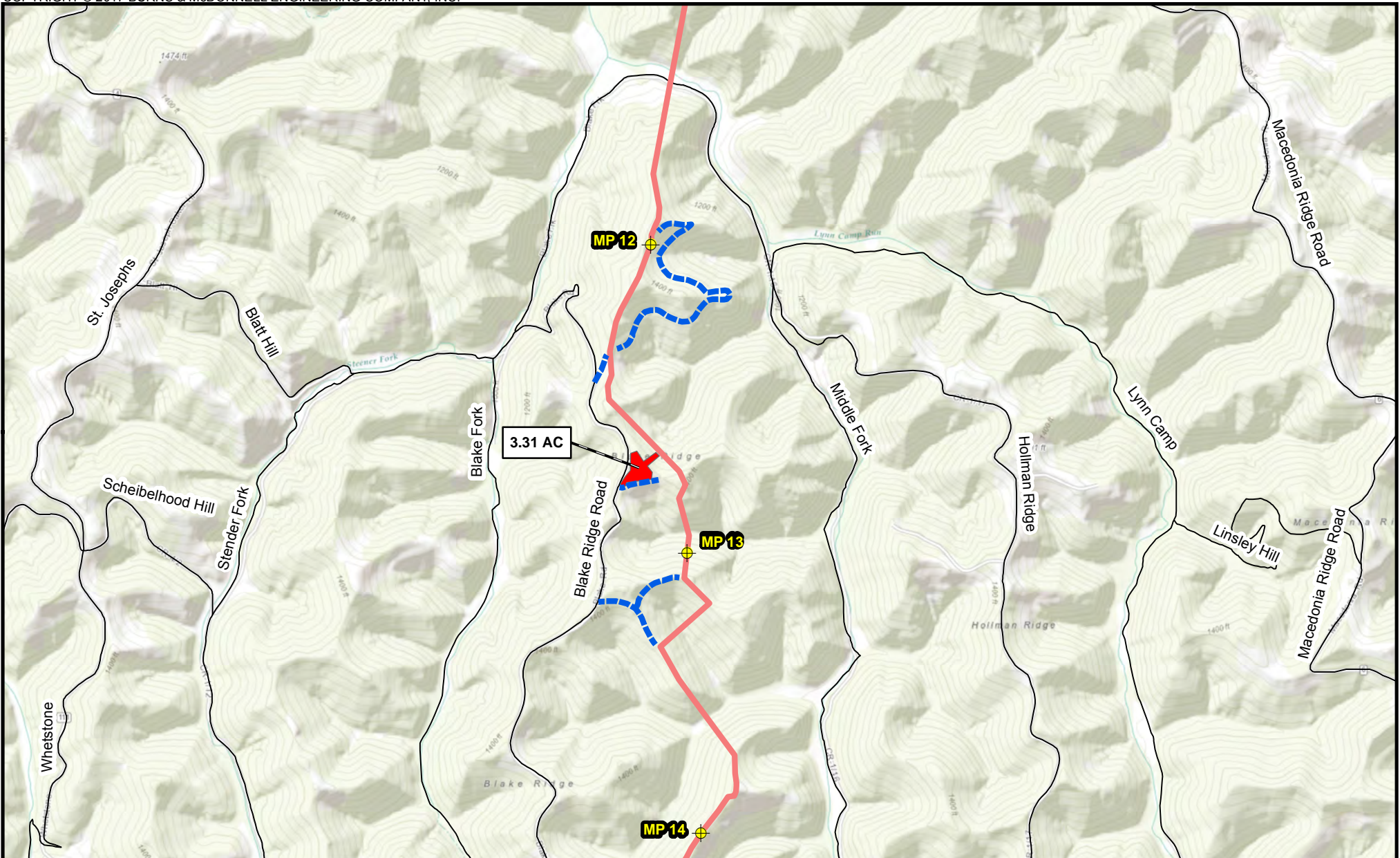
Milepost	Proposed Pipeline	
Access Road	MXP-100	
Pipe/Contractor Yard, Staging Area		

Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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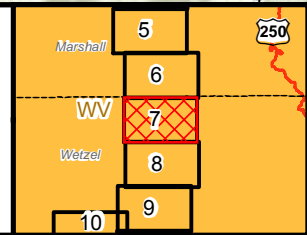


 Milepost	Proposed Pipeline	  Scale in Feet	
 Mainline Valve	 MXP-100		
 Access Road			
 Pipe/Contractor Yard, Staging Area			

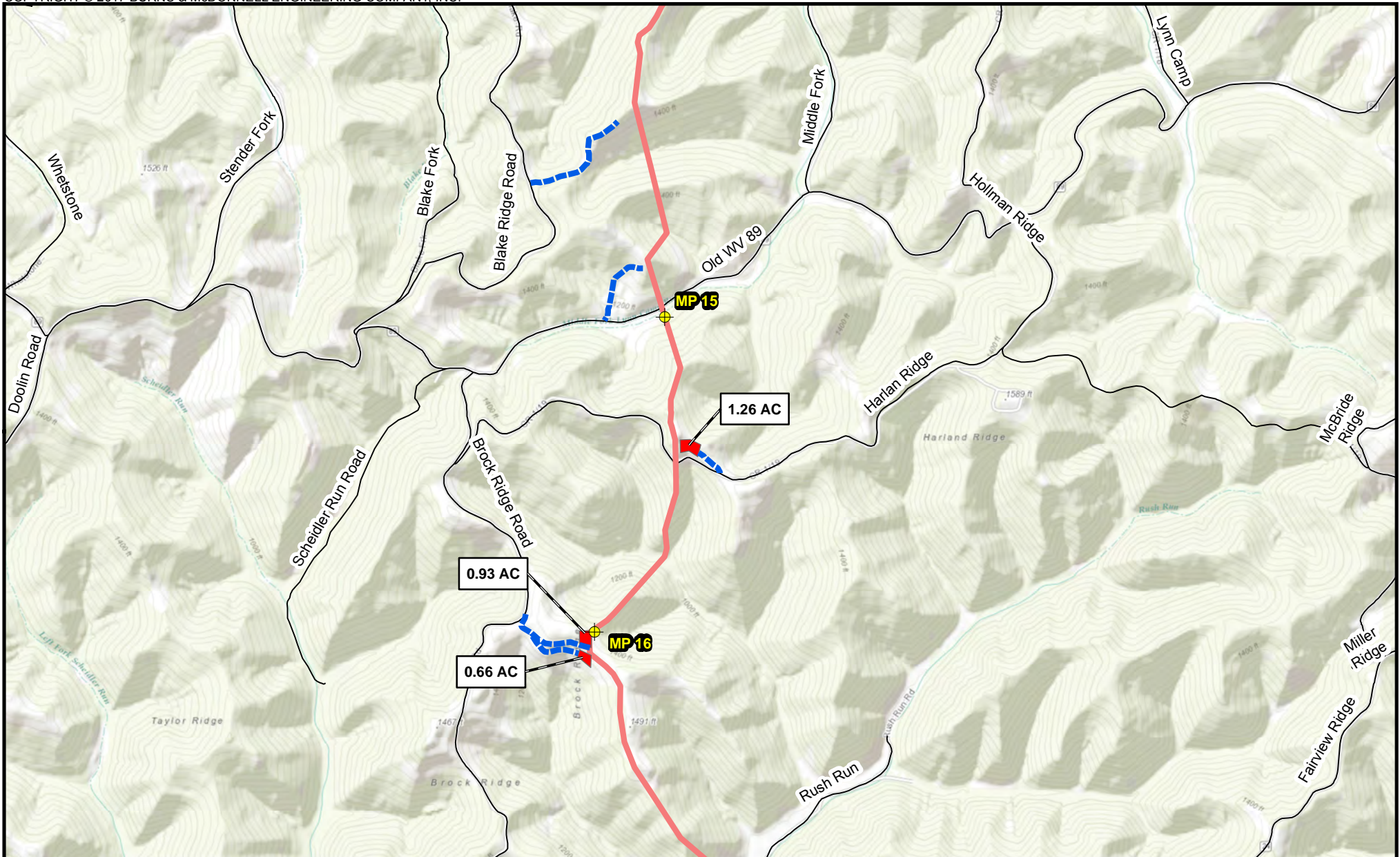
Appendix B-1
Mountaineer XPress Project
Project Overview Map
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Milepost	Proposed Pipeline	
Access Road	MXP-100	
Pipe/Contractor Yard, Staging Area		<p>Scale in Feet</p>



Appendix B-1
Mountaineer XPress Project
Project Overview Map
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⊕ Milepost

--- Access Road

■ Pipe/Contractor Yard,
Staging Area

Proposed Pipeline

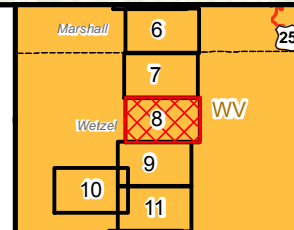
— MXP-100



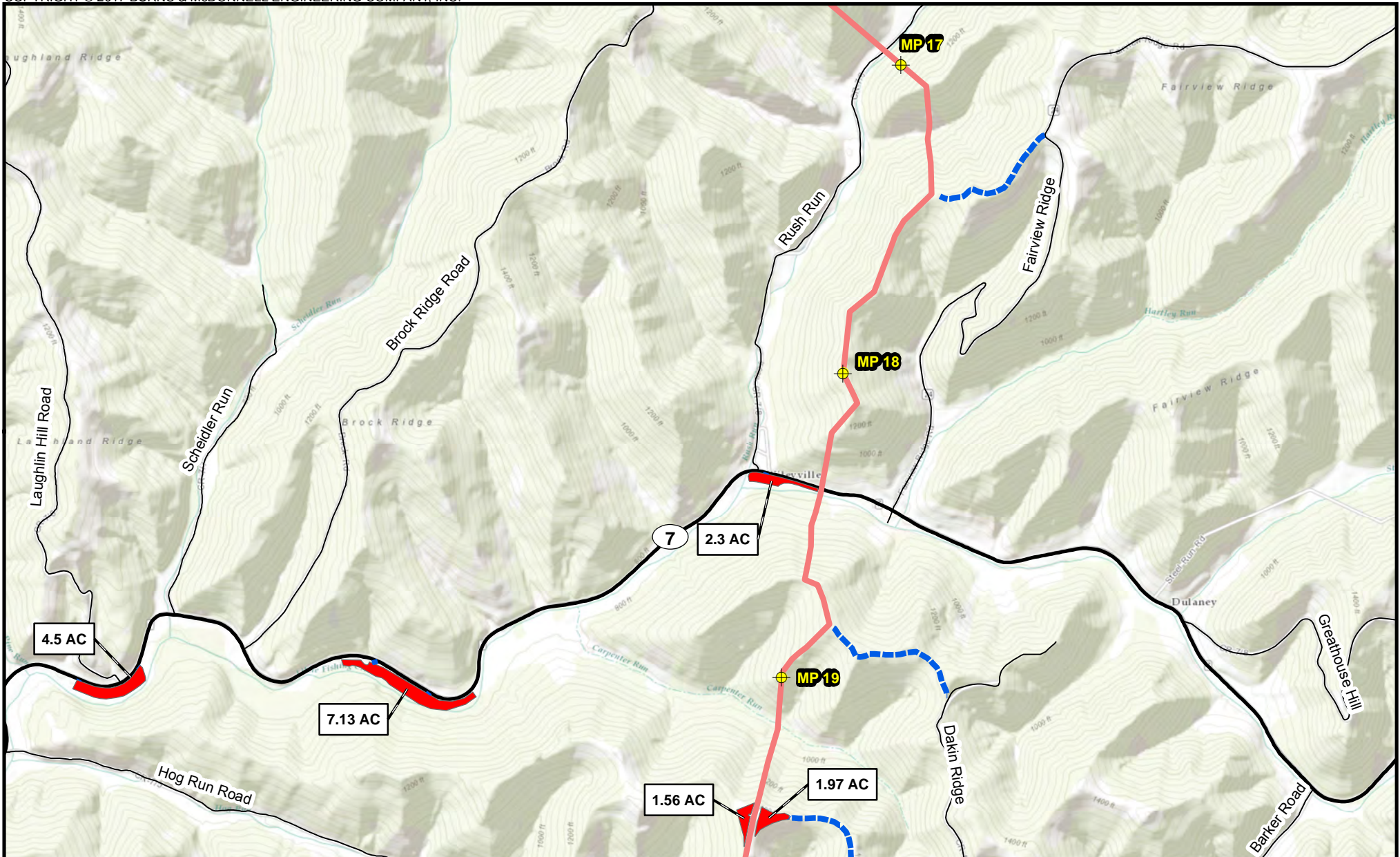
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Scale in Feet

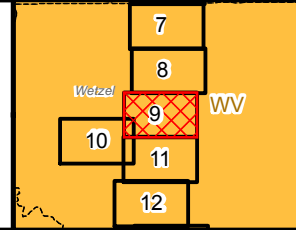
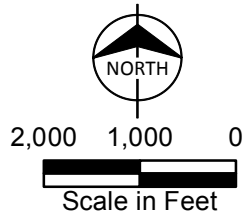


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 Mountaineer XPress Project
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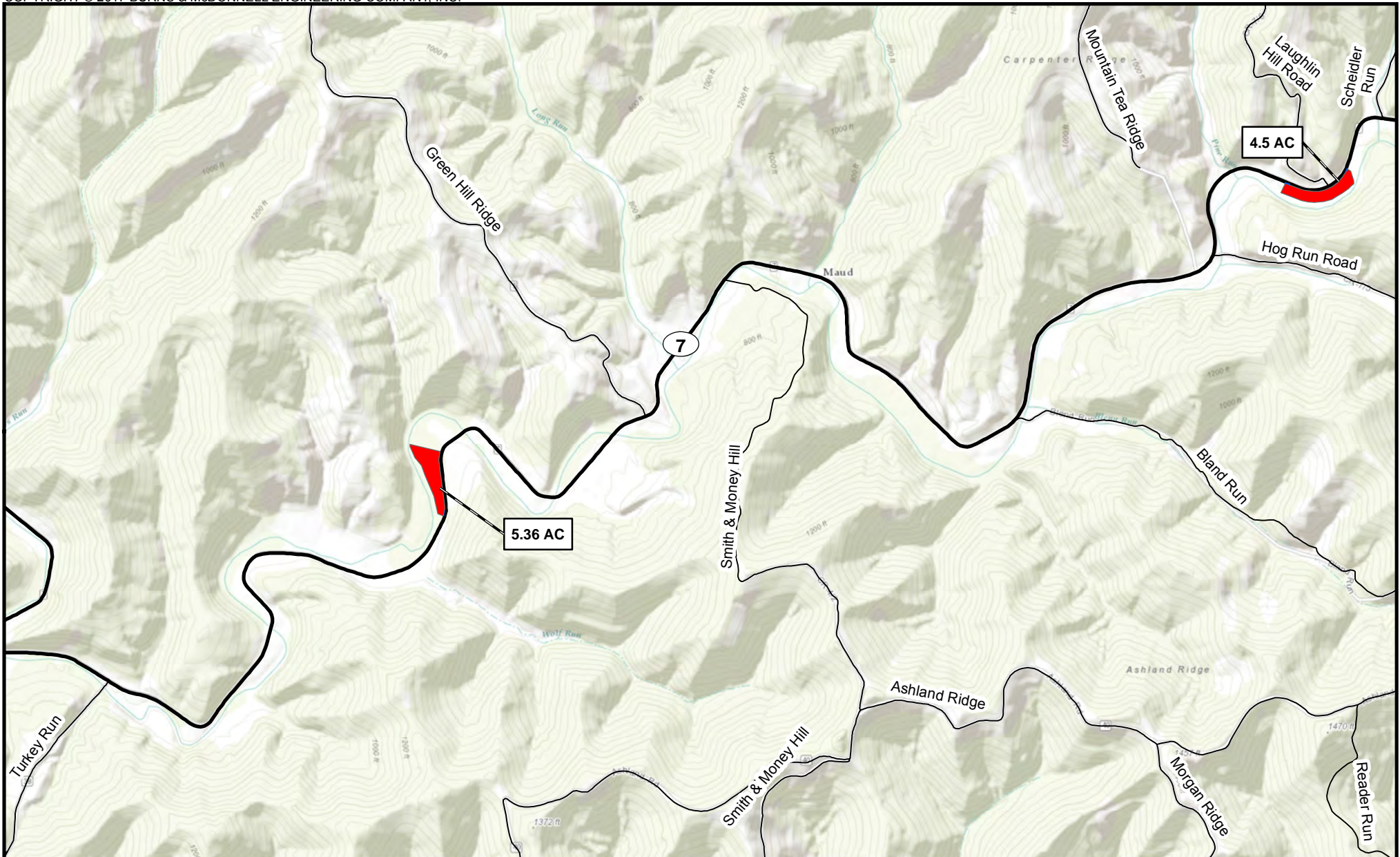


- Milepost
- Access Road
- Pipe/Contractor Yard, Staging Area

Proposed Pipeline
 MXP-100



Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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Access Road

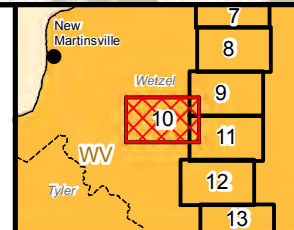
Pipe/Contractor Yard,
Staging Area



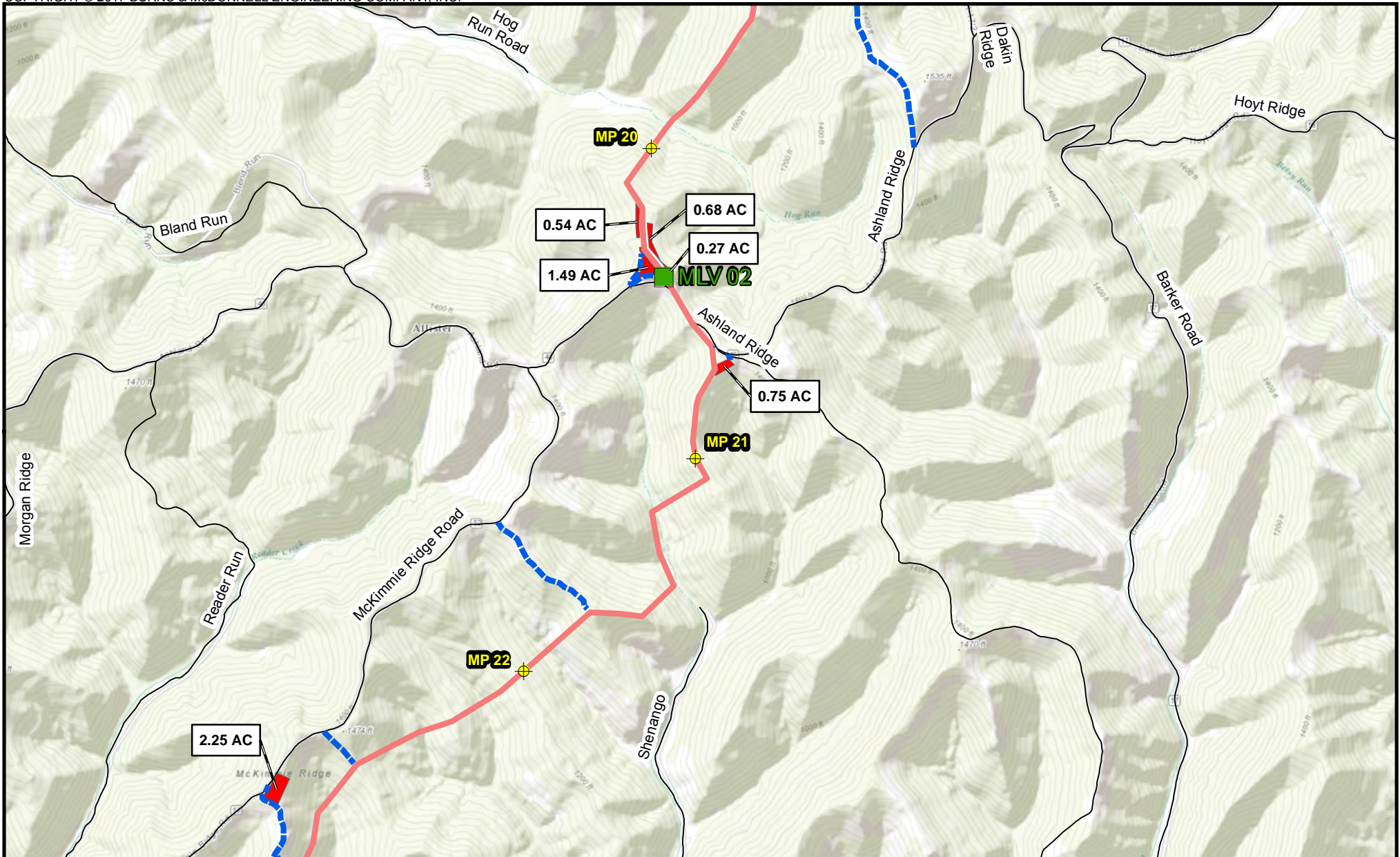
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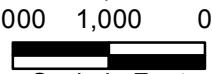
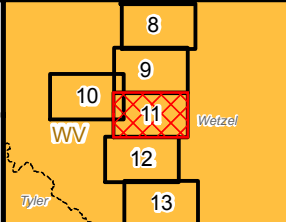


Scale in Feet

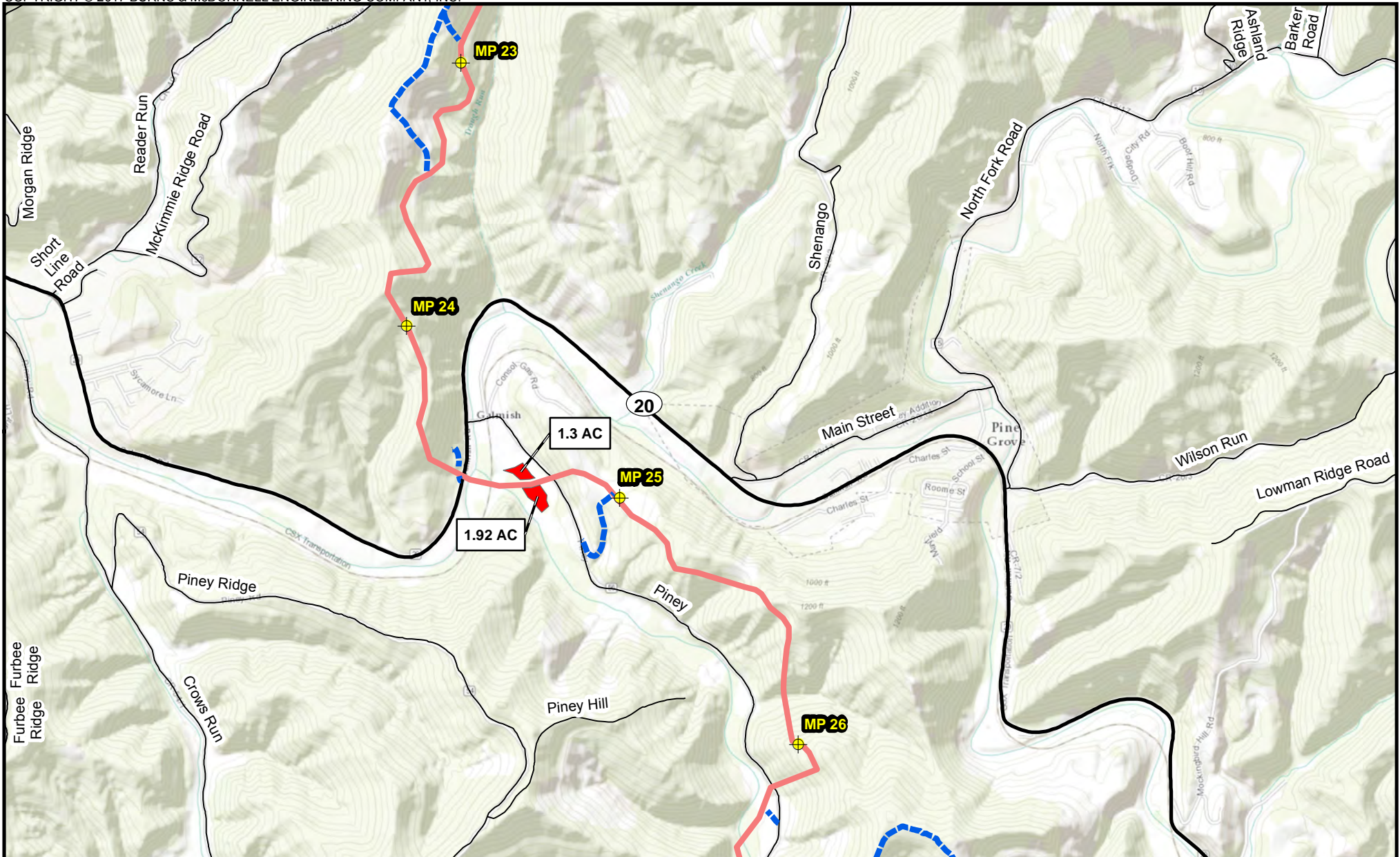


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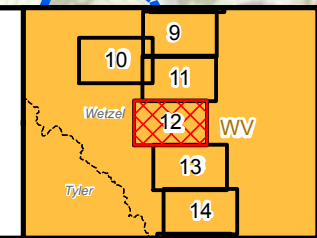
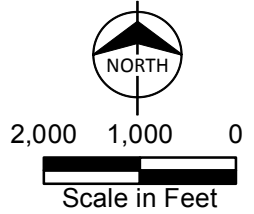


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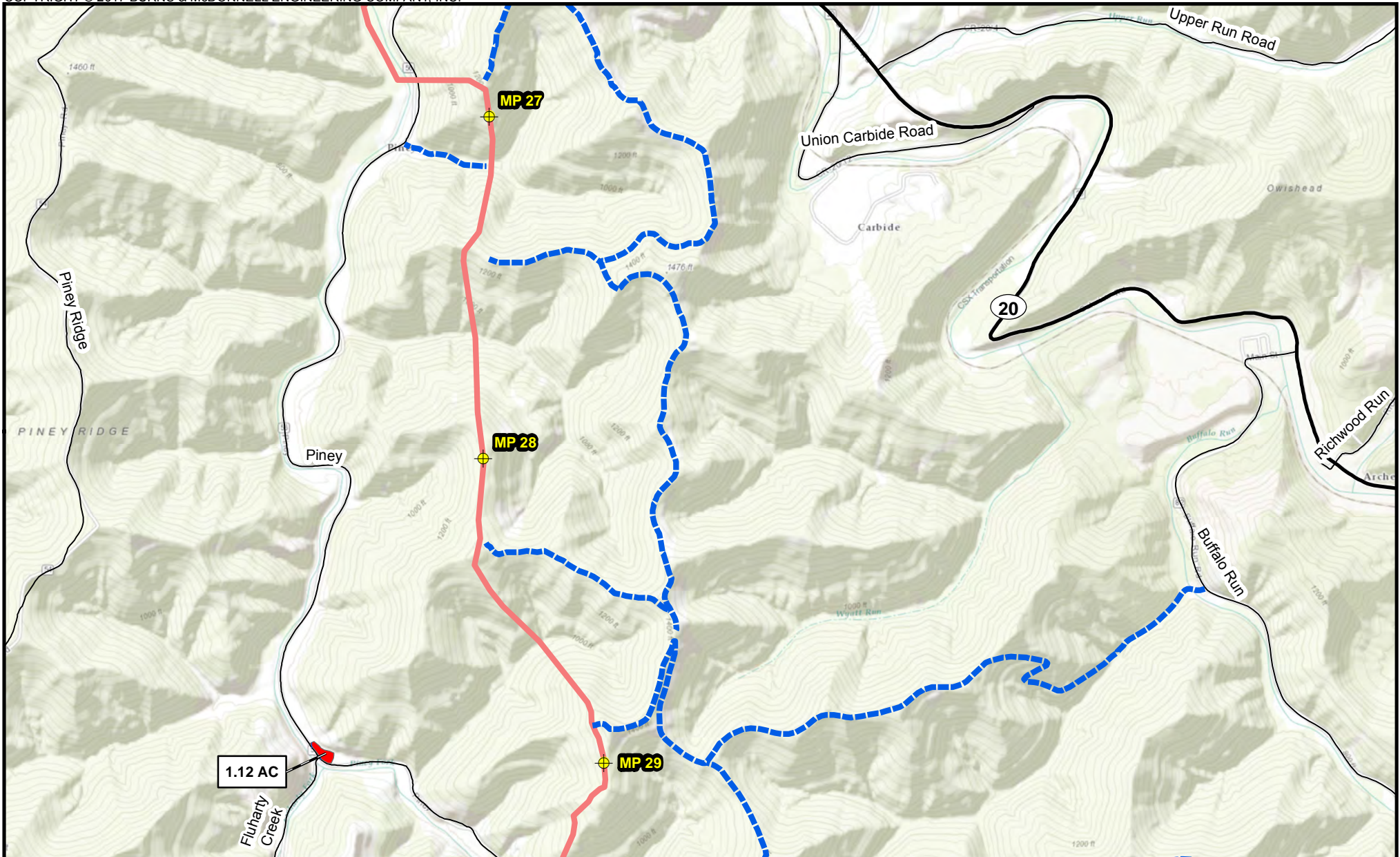
Appendix B-1
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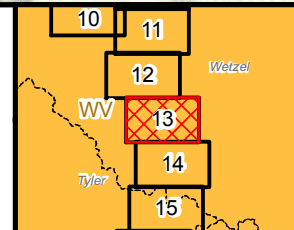
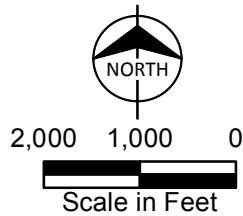
- Milepost
 - Access Road
 - Pipe/Contractor Yard, Staging Area
- Proposed Pipeline**
- MXP-100



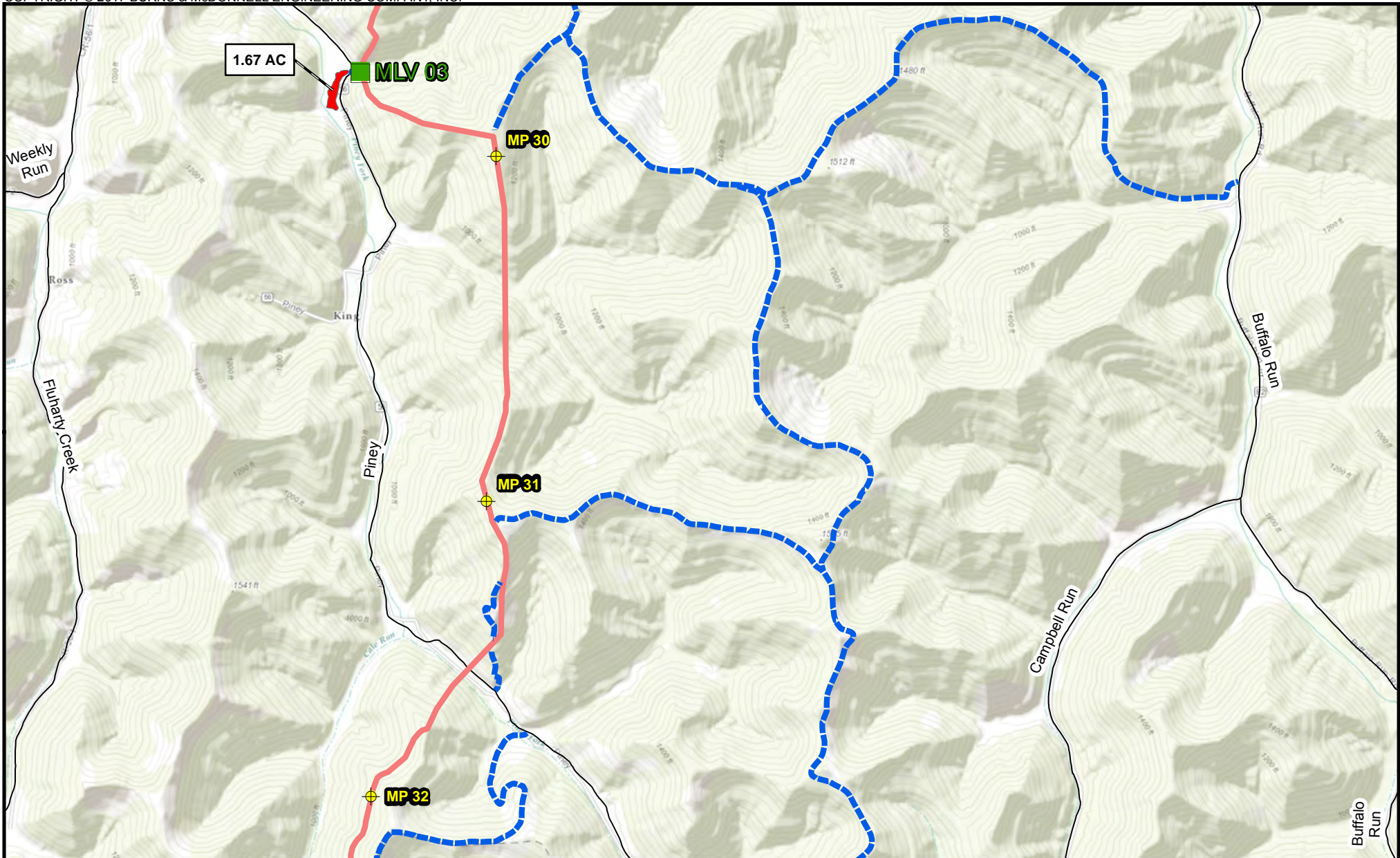
Appendix B-1
 Mountaineer XPress Project
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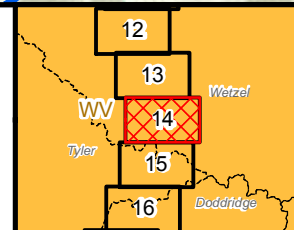
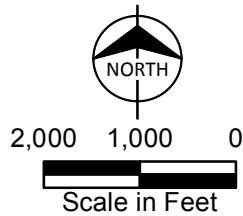
-  Milepost
 -  Access Road
 -  Pipe/Contractor Yard, Staging Area
- Proposed Pipeline**
-  MXP-100



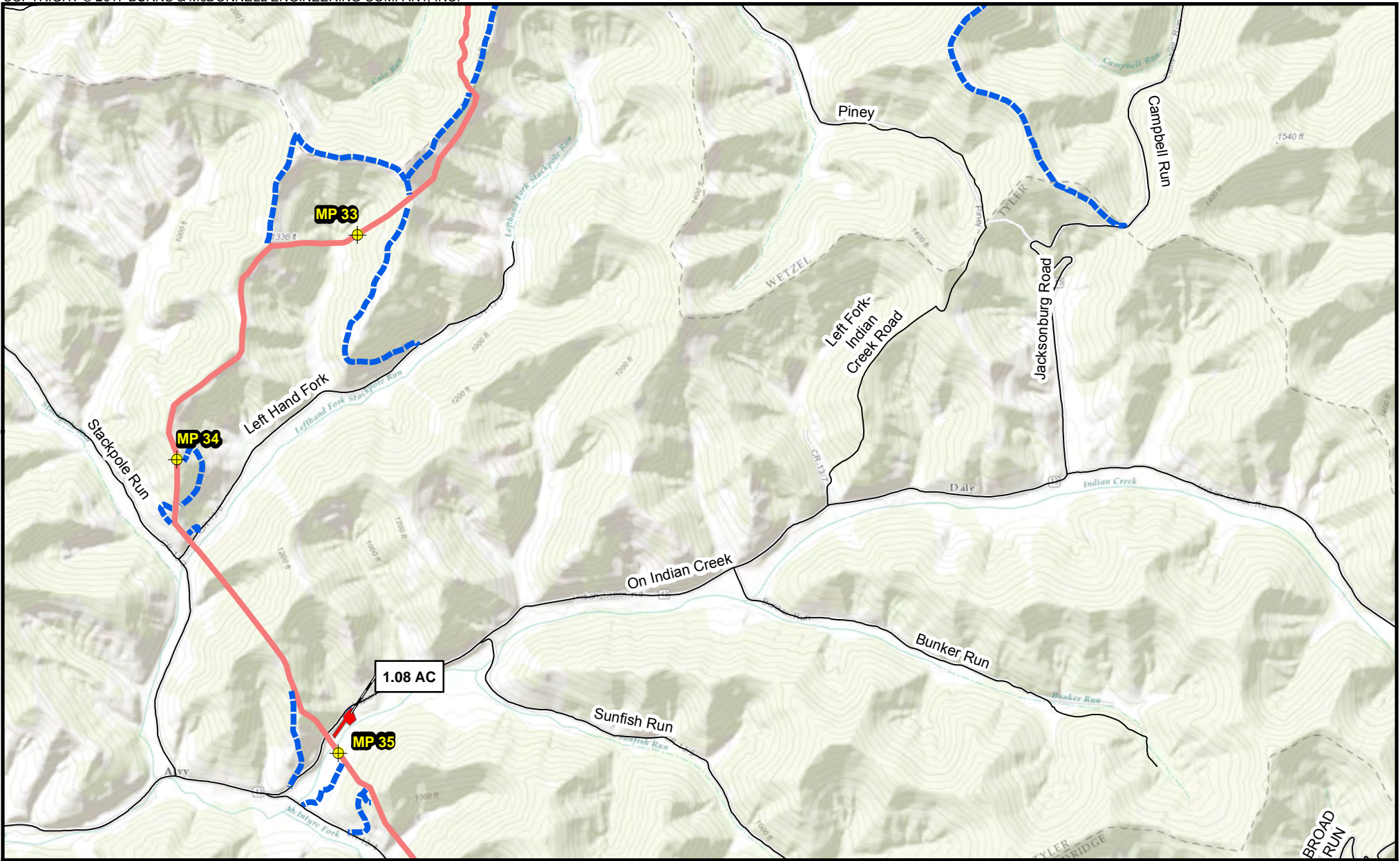
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 Mountaineer XPress Project
 Project Overview Map
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- Milepost
 - Mainline Valve
 - Access Road
 - Pipe\Contractor Yard, Staging Area
- Proposed Pipeline**
- MXP-100



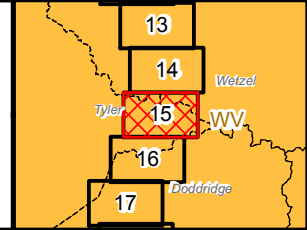
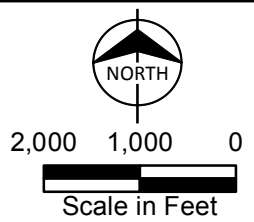
Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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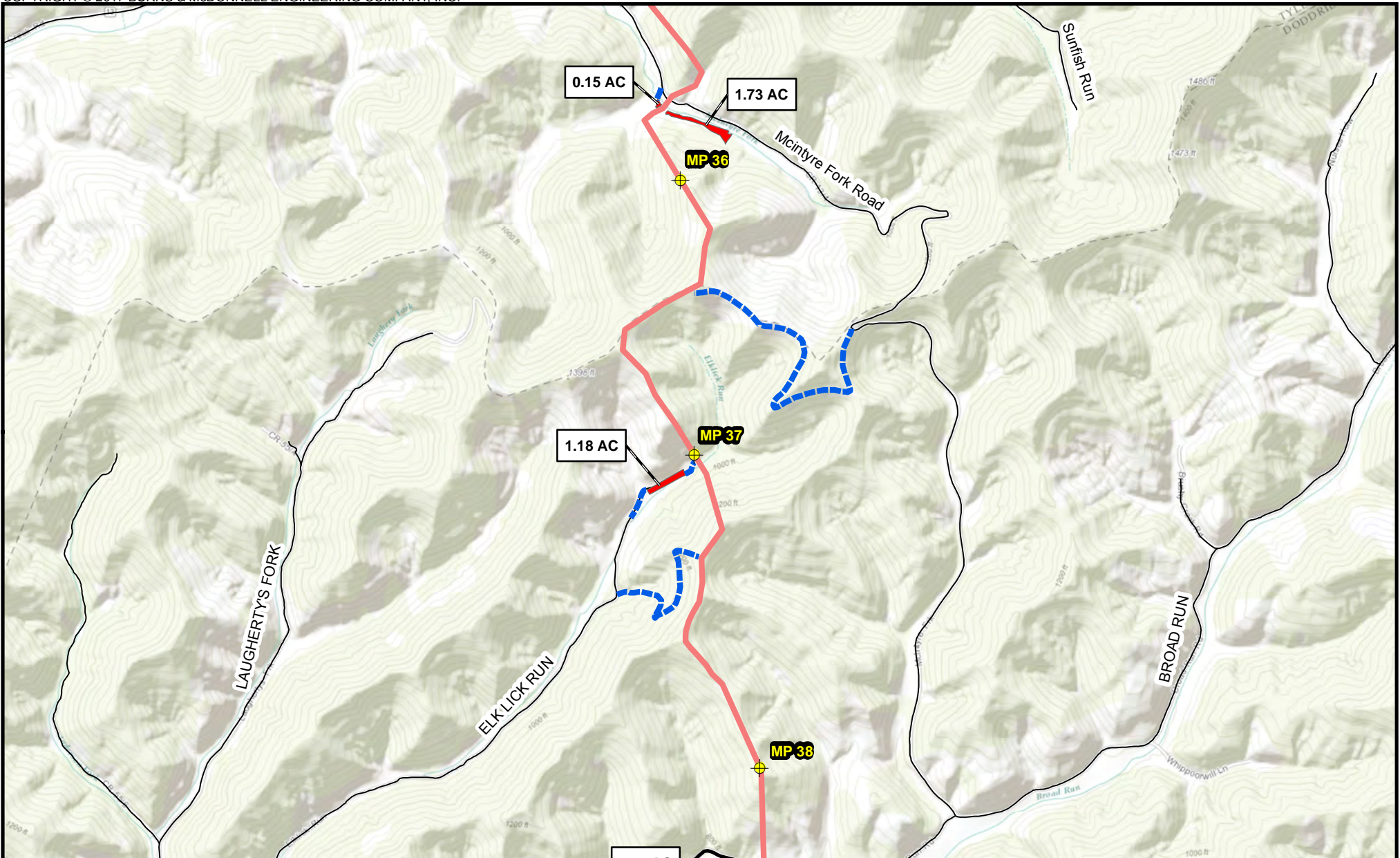
- Milepost
- Access Road
- Pipe\Contractor Yard, Staging Area

Proposed Pipeline
 MXP-100

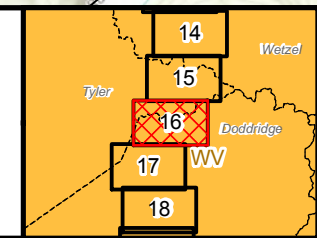
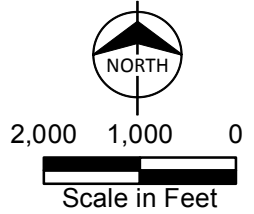
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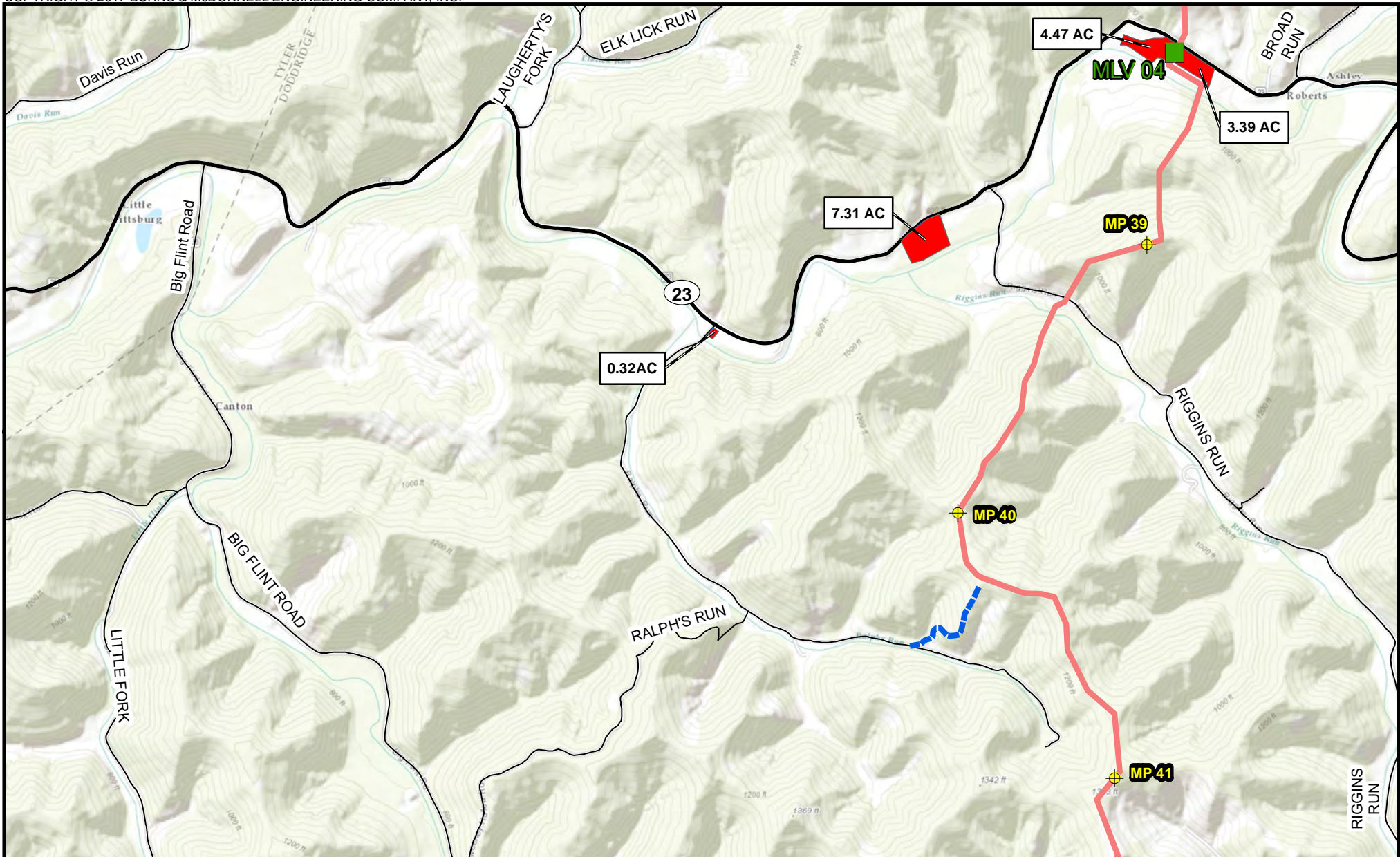
Appendix B-1
 Mountaineer XPress Project
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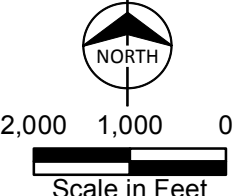
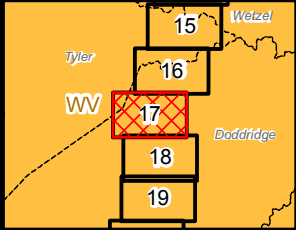


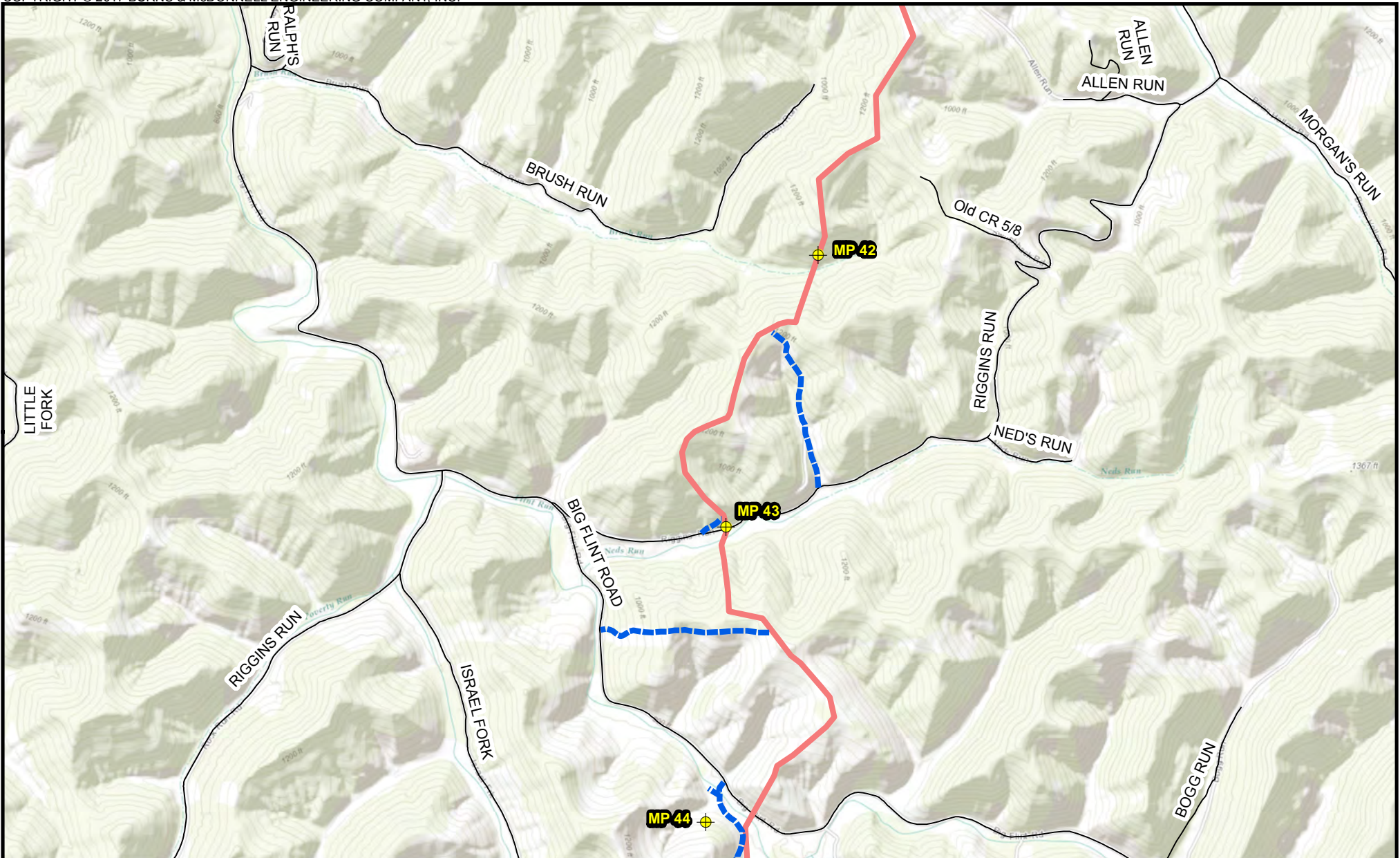
- Milepost
 - Access Road
 - Pipe/Contractor Yard, Staging Area
- Proposed Pipeline**
- MXP-100



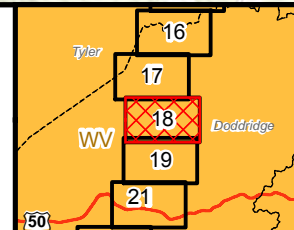
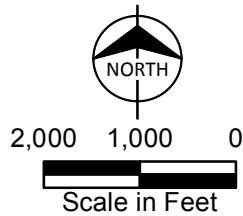
Appendix B-1
 Mountaineer XPress Project
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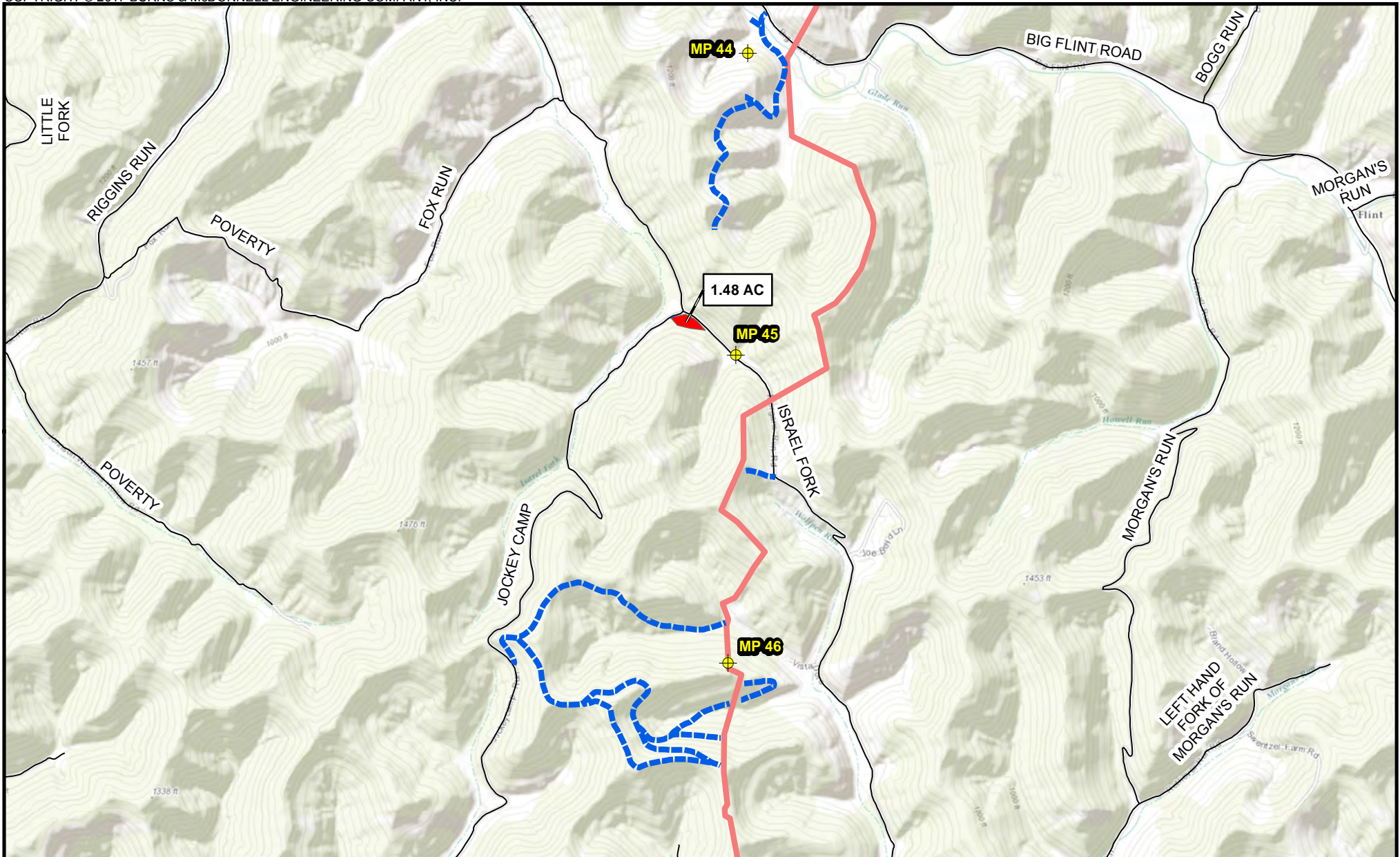
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-  Milepost
-  Access Road
- Proposed Pipeline**
-  MXP-100

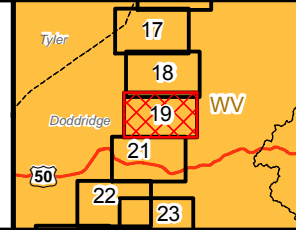
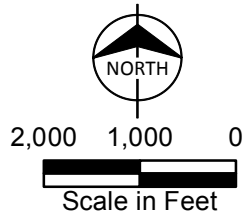


Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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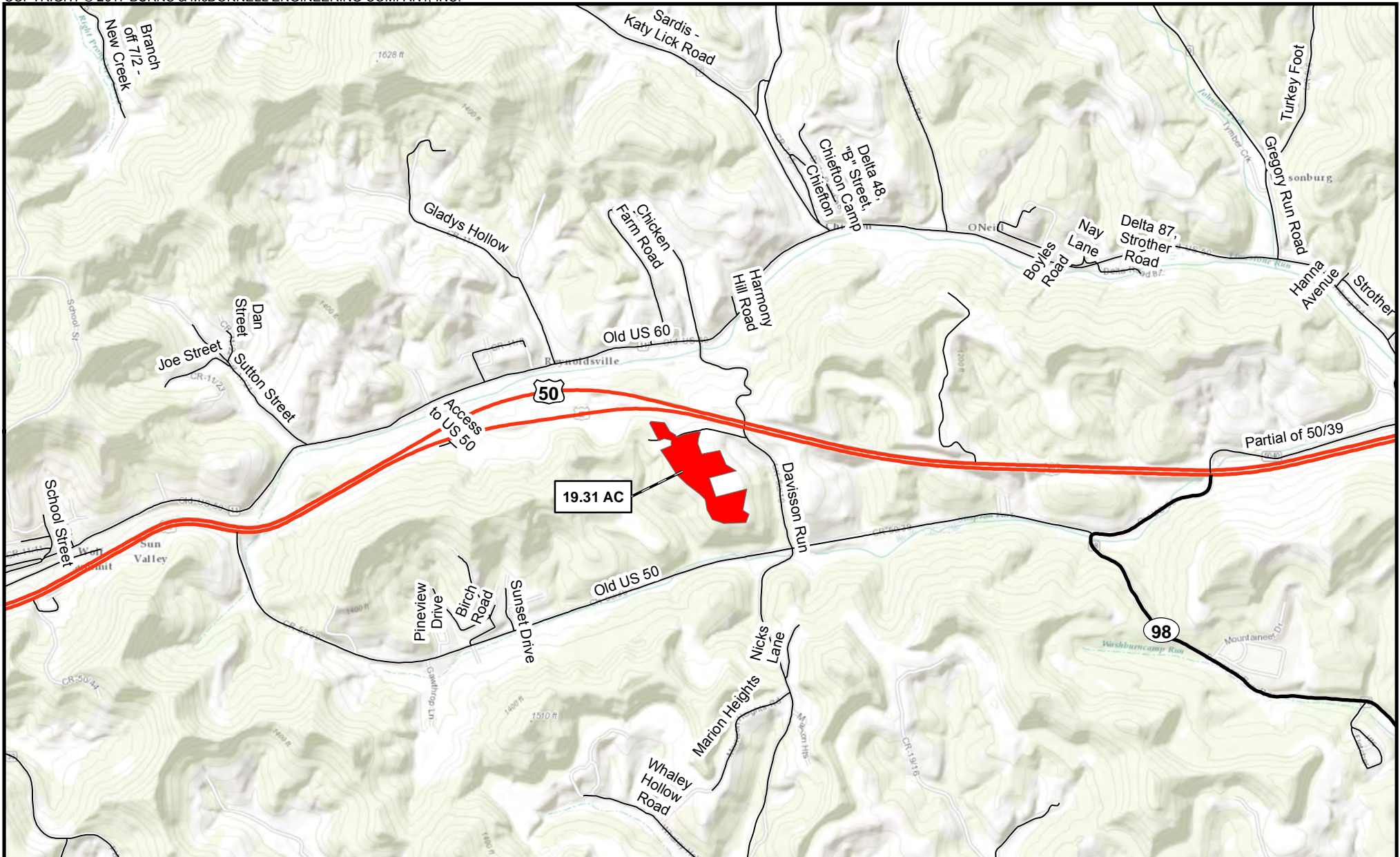


-  Milepost
-  Access Road
-  Pipe\Contractor Yard, Staging Area

Proposed Pipeline
 MXP-100



Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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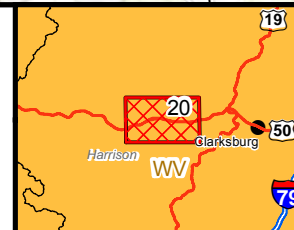
 Pipe\Contractor Yard,
Staging Area



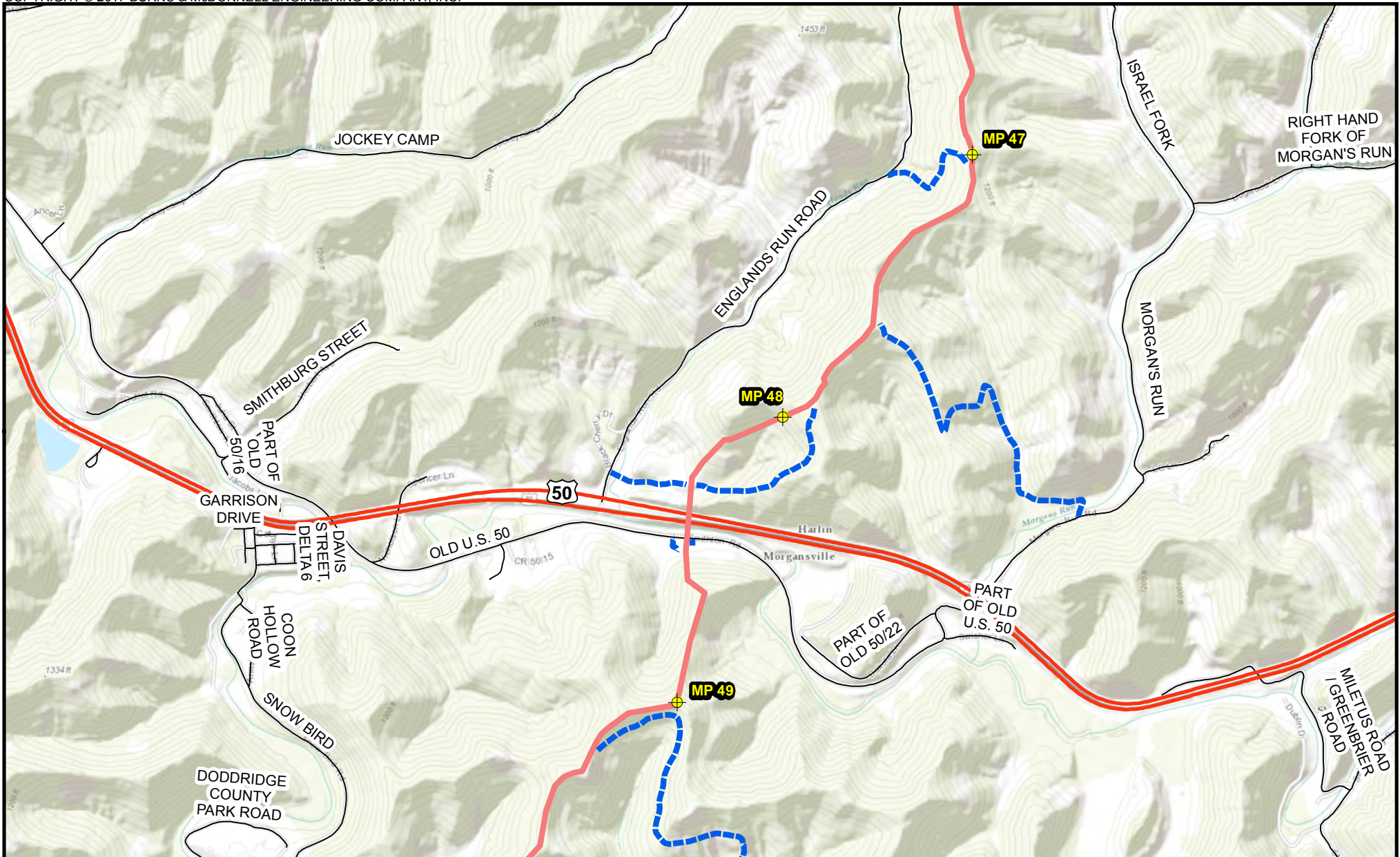
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Scale in Feet



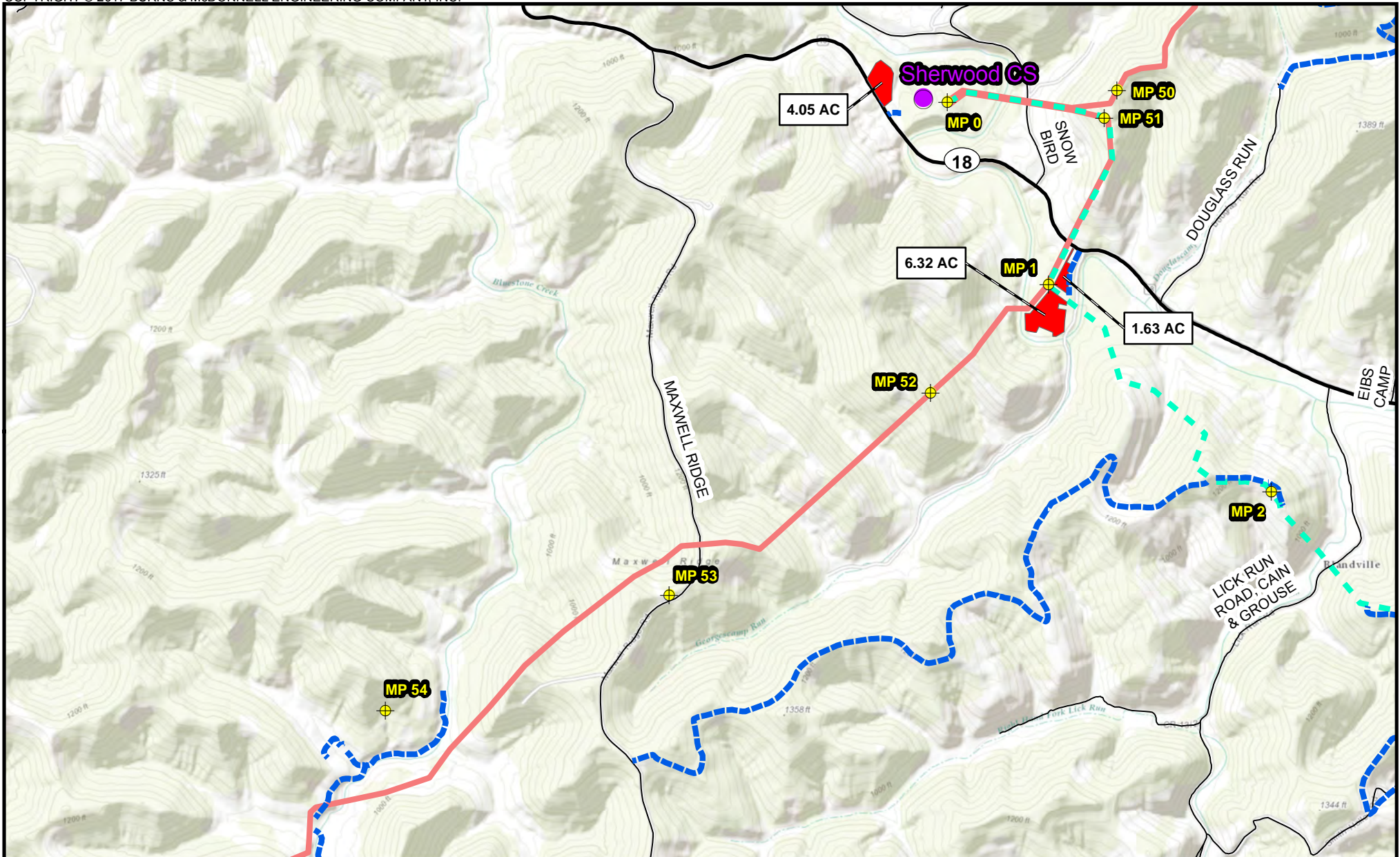
Appendix B-1
Mountaineer XPress Project
Project Overview Map
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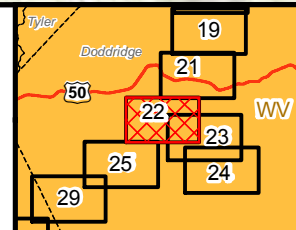
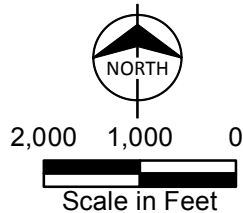
+ Milepost **Proposed Pipeline**
--- Access Road --- MXP-100

NORTH
2,000 1,000 0
Scale in Feet

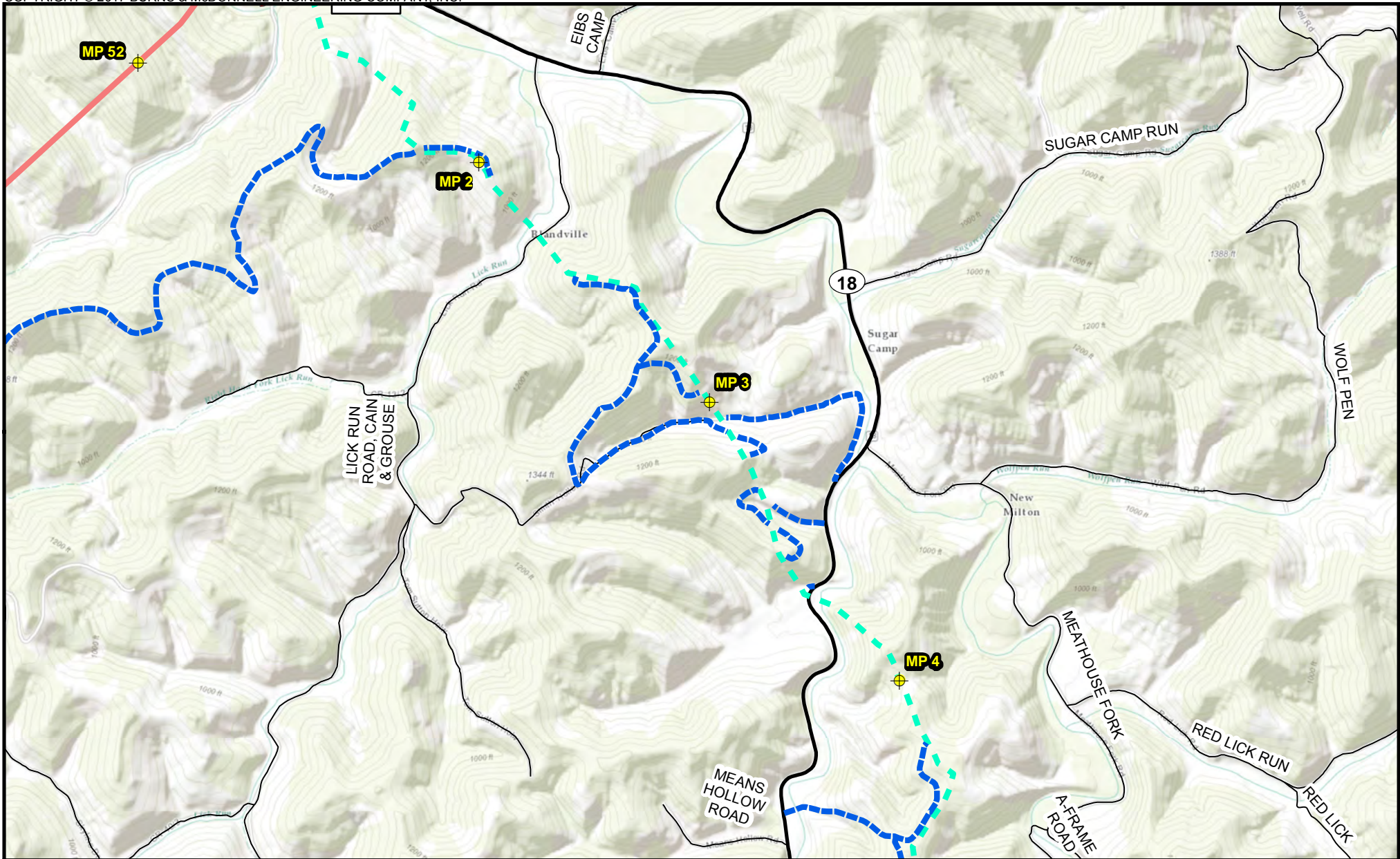
Appendix B-1
Mountaineer XPress Project
Project Overview Map
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- Milepost
 - Compressor Station
 - Access Road
 - Pipe/Contractor Yard, Staging Area
- Proposed Pipeline**
- MXP-100
 - MXP - 200

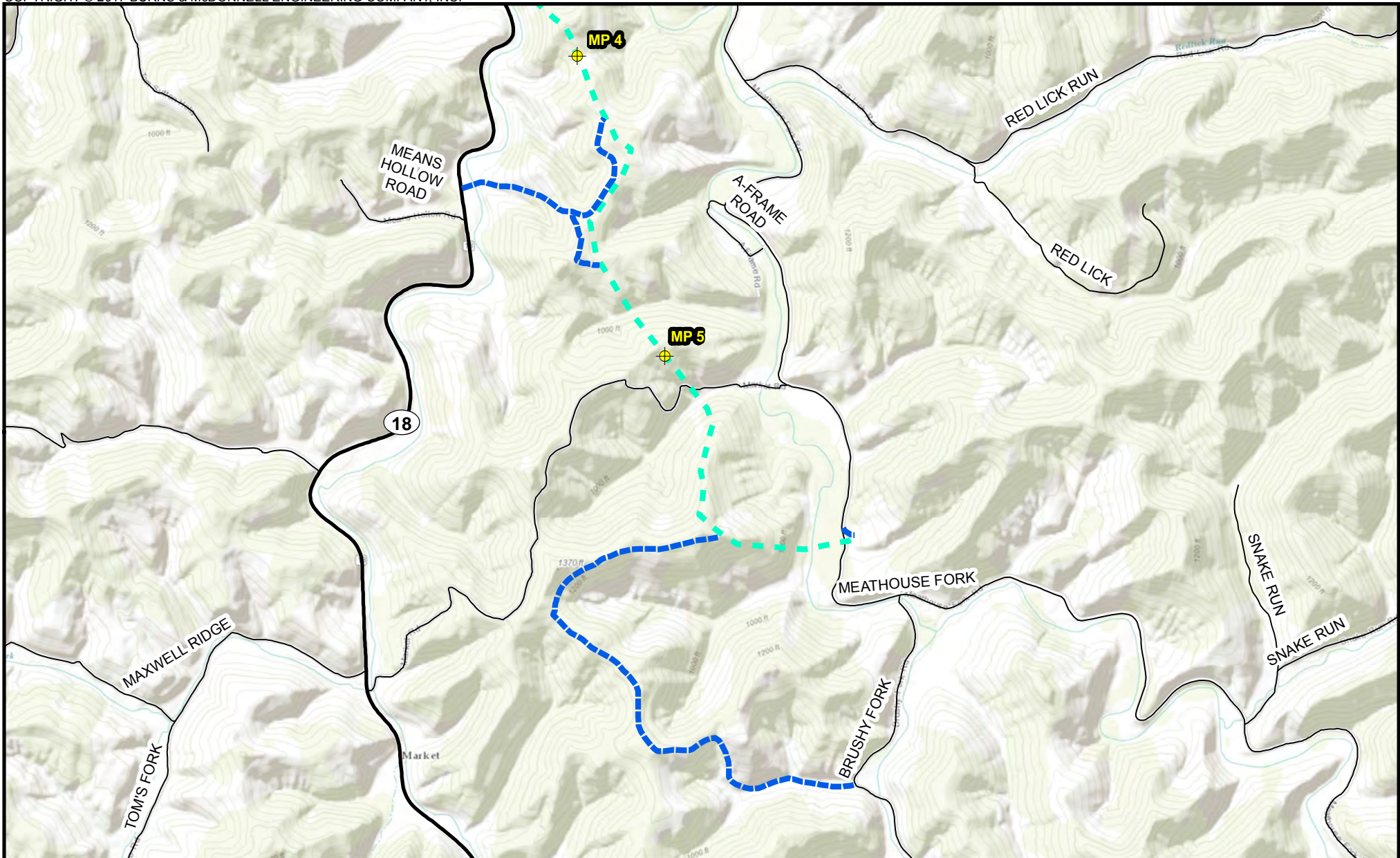


Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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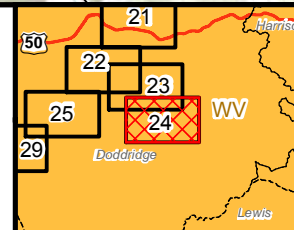
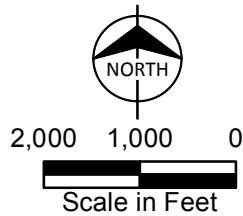


Milepost	Proposed Pipeline	<p>NORTH</p>
Access Road	MXP-100	
Pipe/Contractor Yard, Staging Area	MXP - 200	

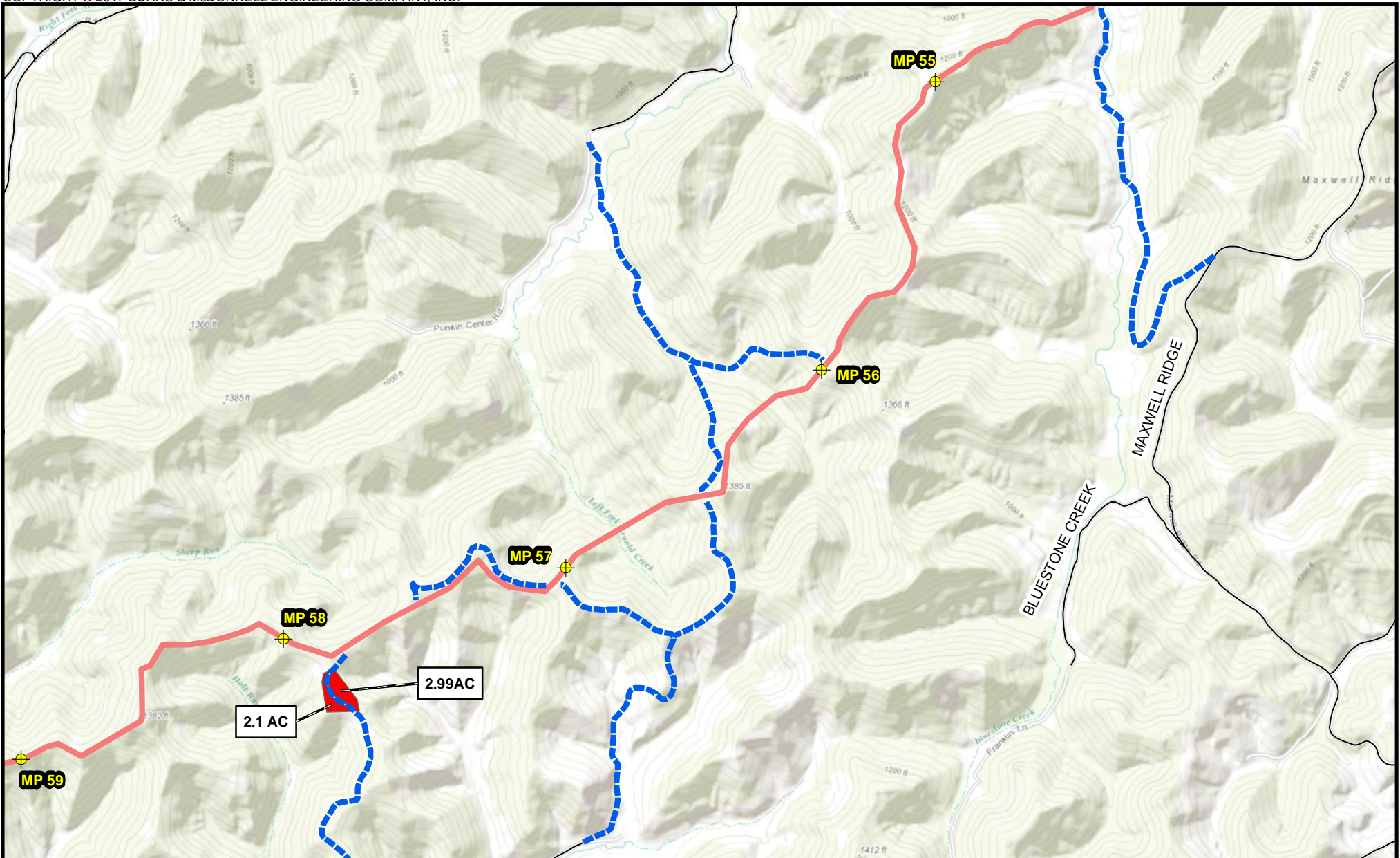
Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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- Milepost
- Access Road
- Proposed Pipeline**
- MXP - 200

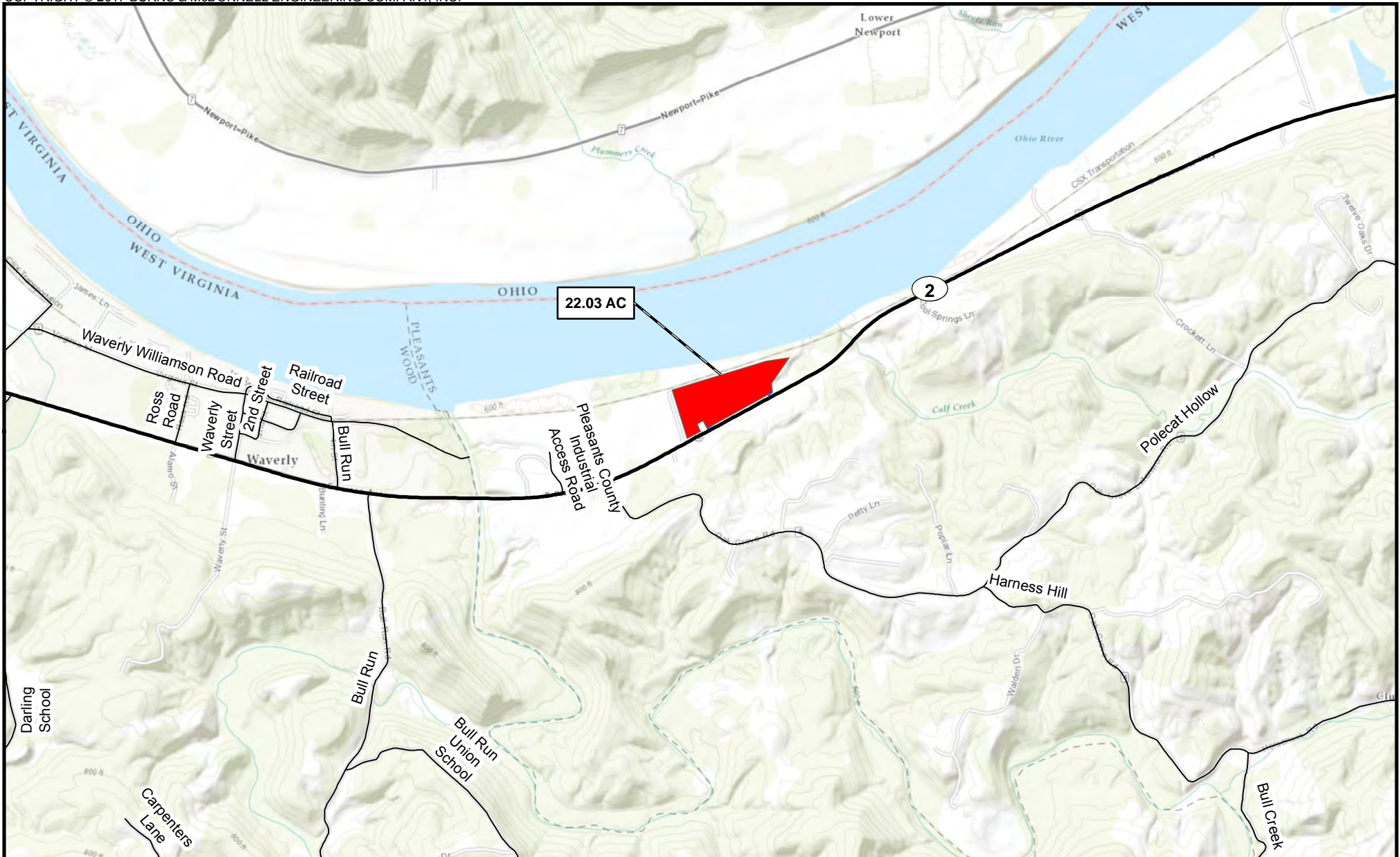




Appendix B-1
Mountaineer XPress Project
Project Overview Map
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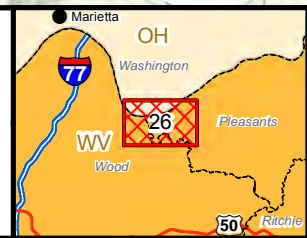
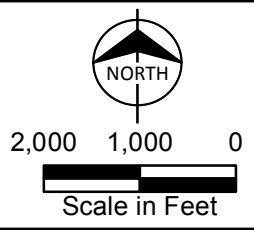


Milepost	Proposed Pipeline	 NORTH	
Access Road	MXP-100		
Pipe\Contractor Yard, Staging Area		Scale in Feet	

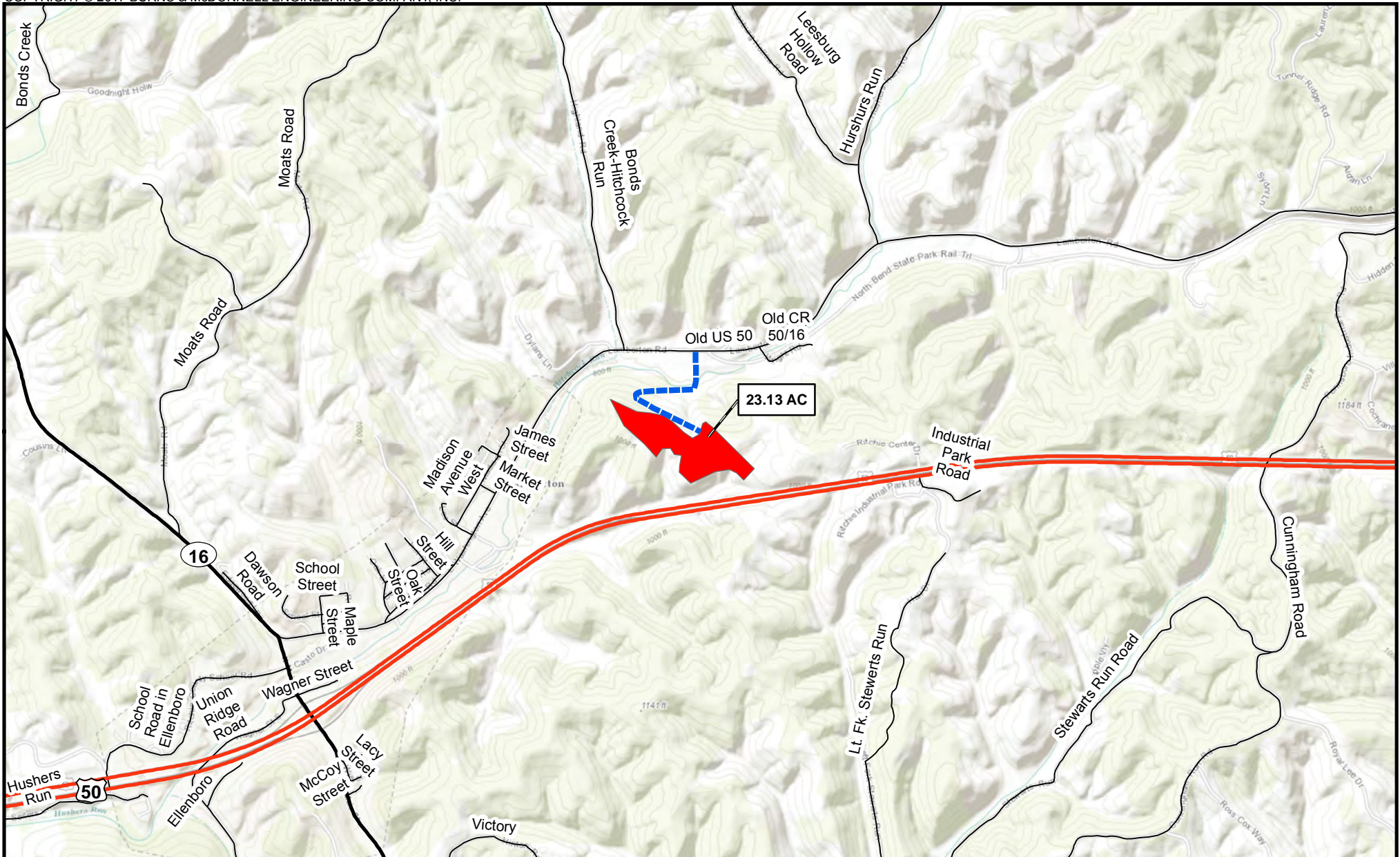
Appendix B-1
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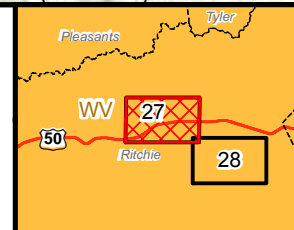
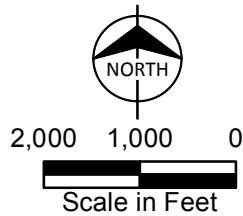
-  Access Road
-  Pipe\Contractor Yard, Staging Area



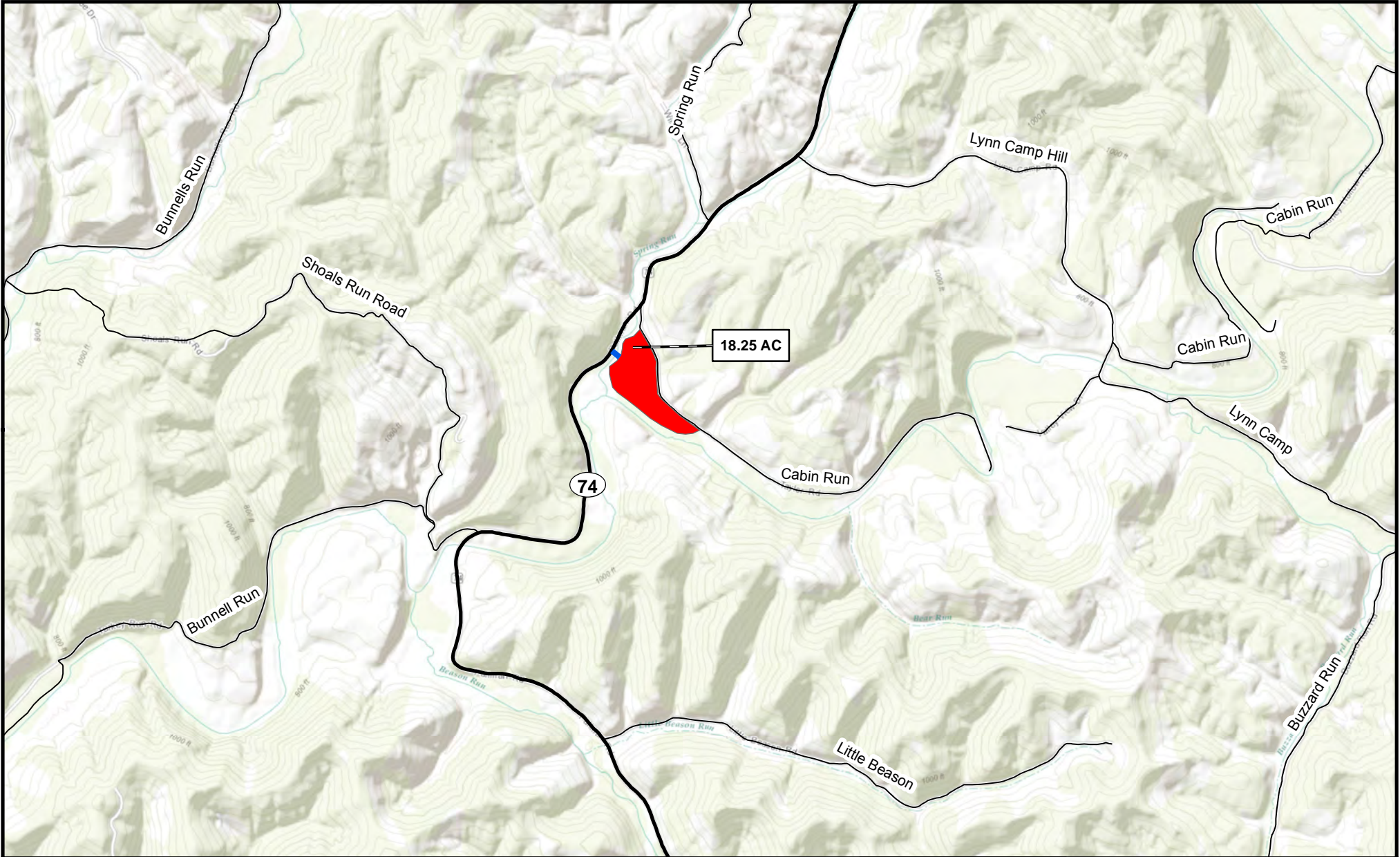
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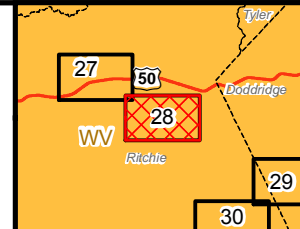
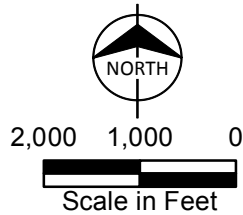
- Access Road
- Pipe/Contractor Yard, Staging Area



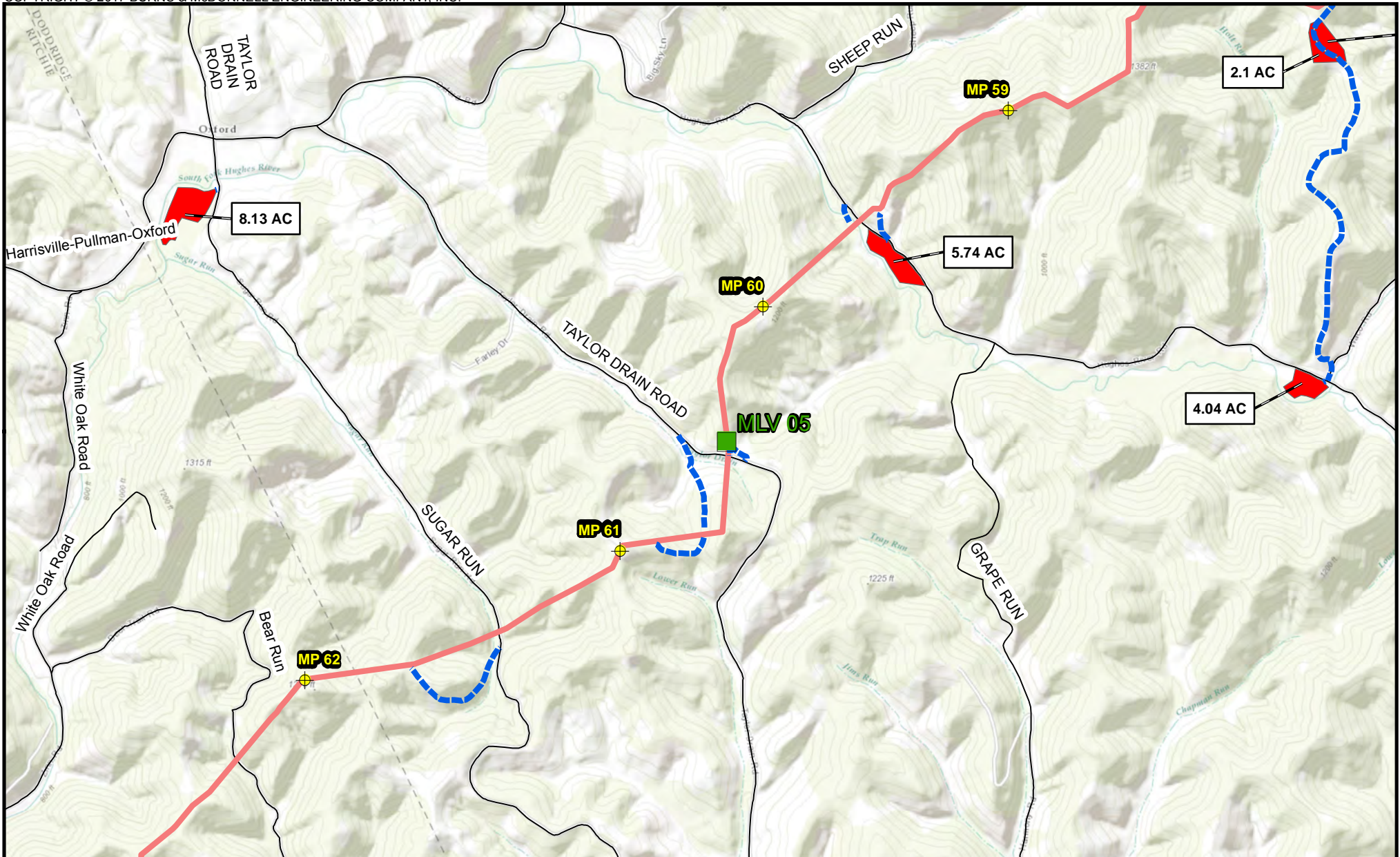
Appendix B-1
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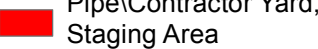


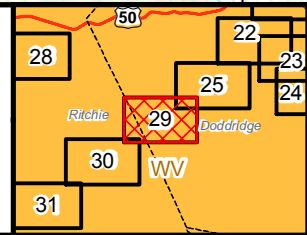
-  Access Road
-  Pipe\Contractor Yard, Staging Area



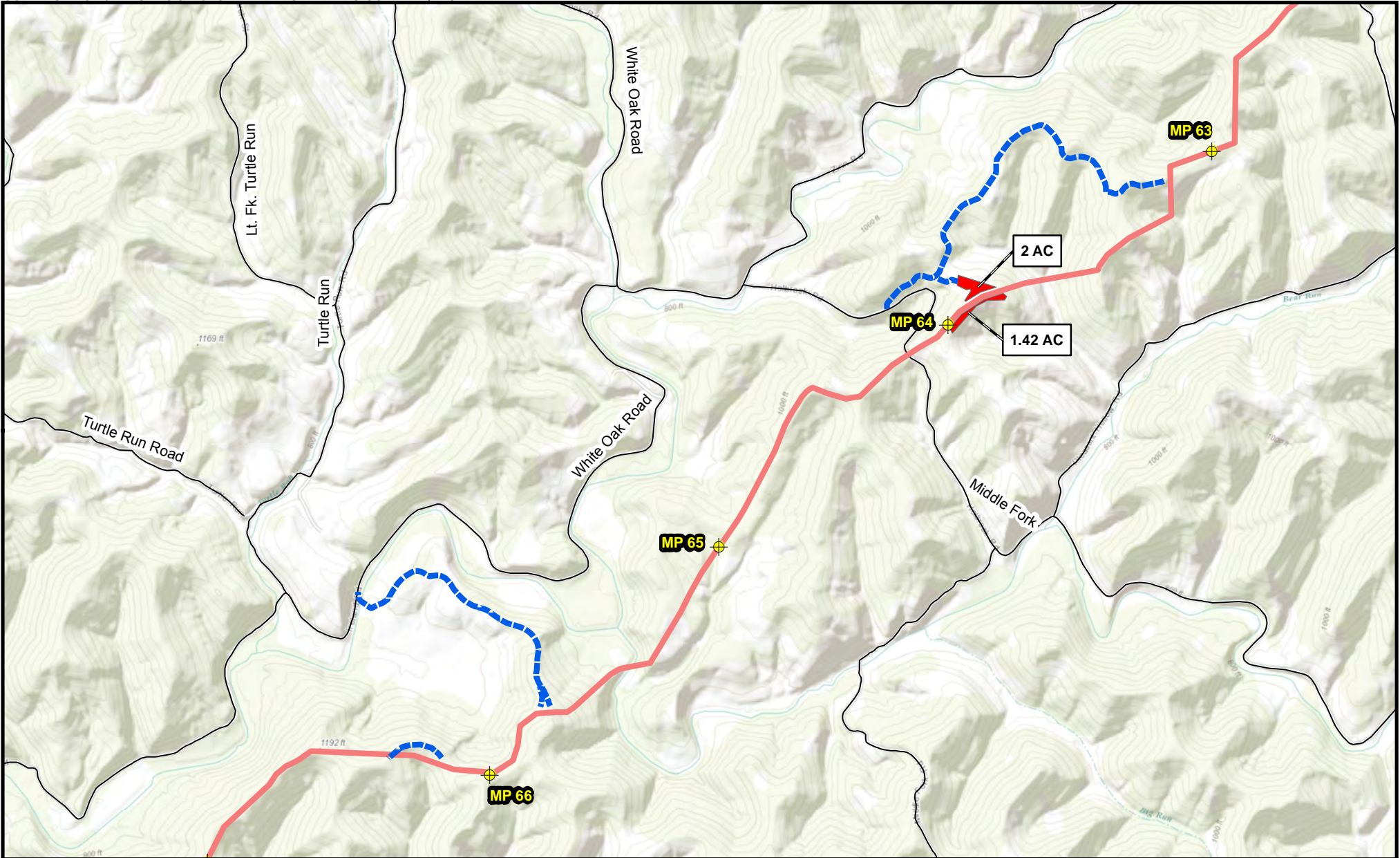
Appendix B-1
Mountaineer XPress Project
Project Overview Map
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 Milepost	Proposed Pipeline	 2,000 1,000 0 Scale in Feet
 Mainline Valve	 MXP-100	
 Access Road		
 Pipe\Contractor Yard, Staging Area		

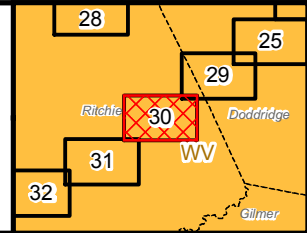
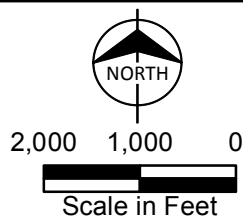


Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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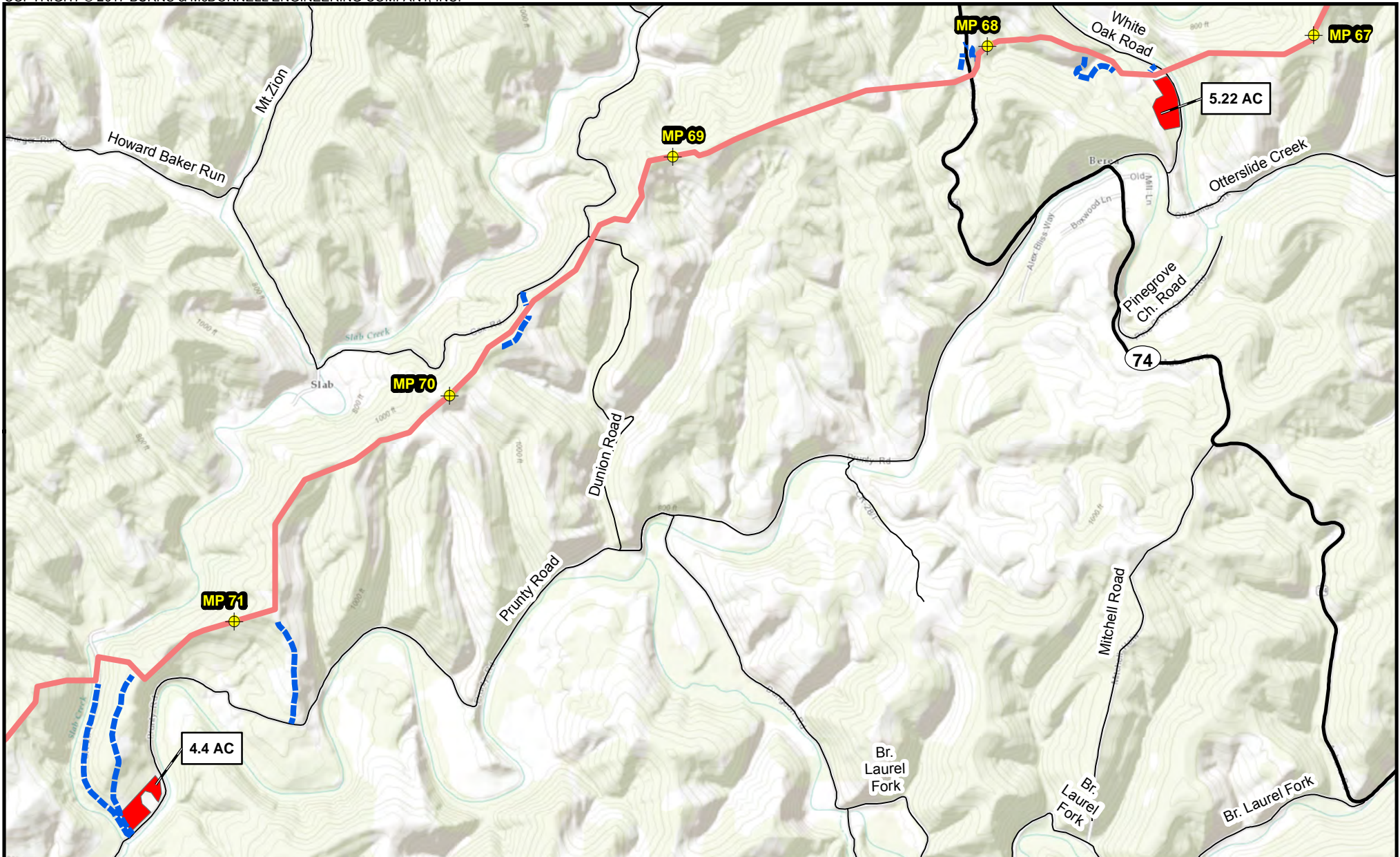


- Milepost
- Access Road
- Pipe/Contractor Yard, Staging Area

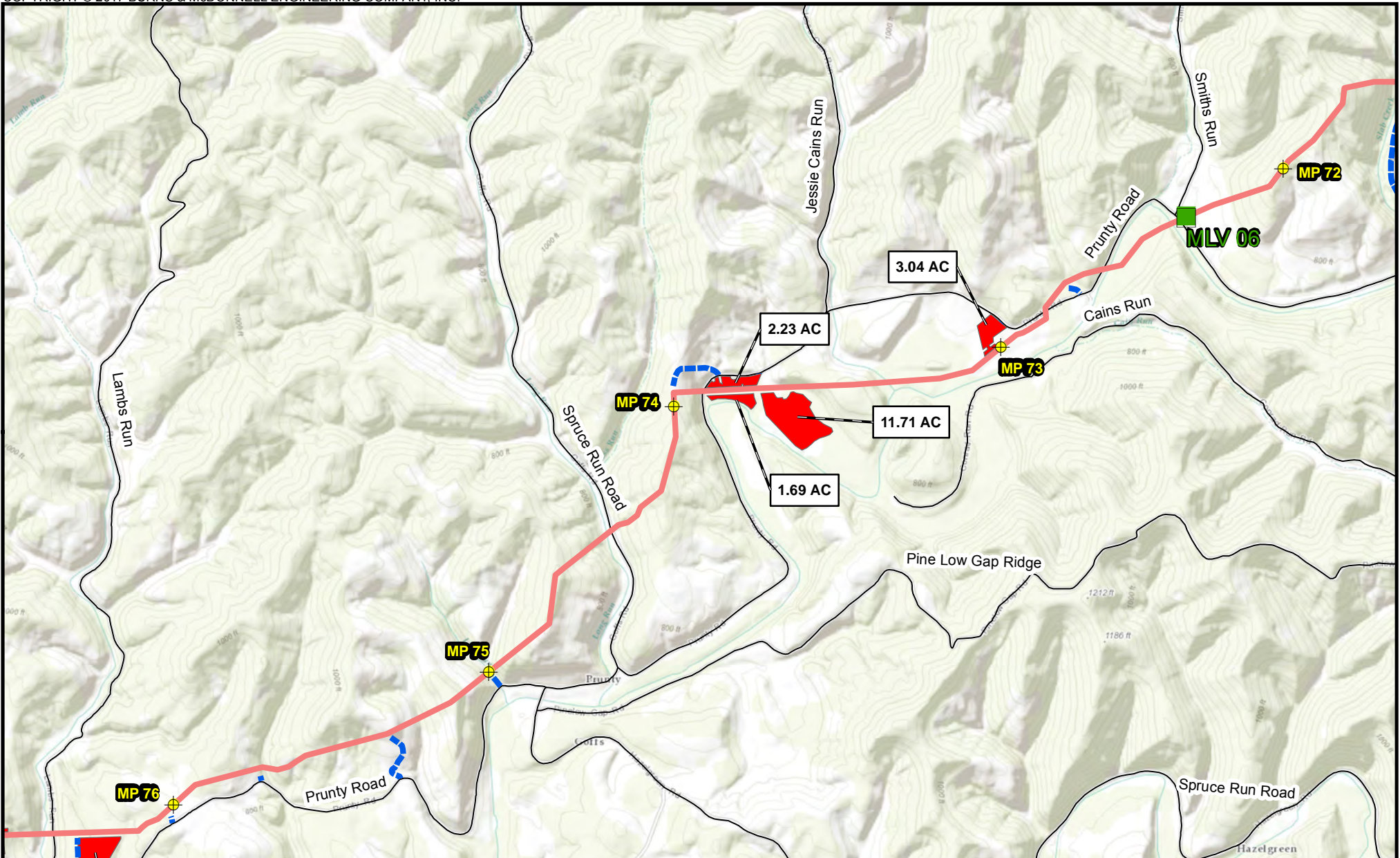
Proposed Pipeline
 MXP-100



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 Mountaineer XPress Project
 Project Overview Map
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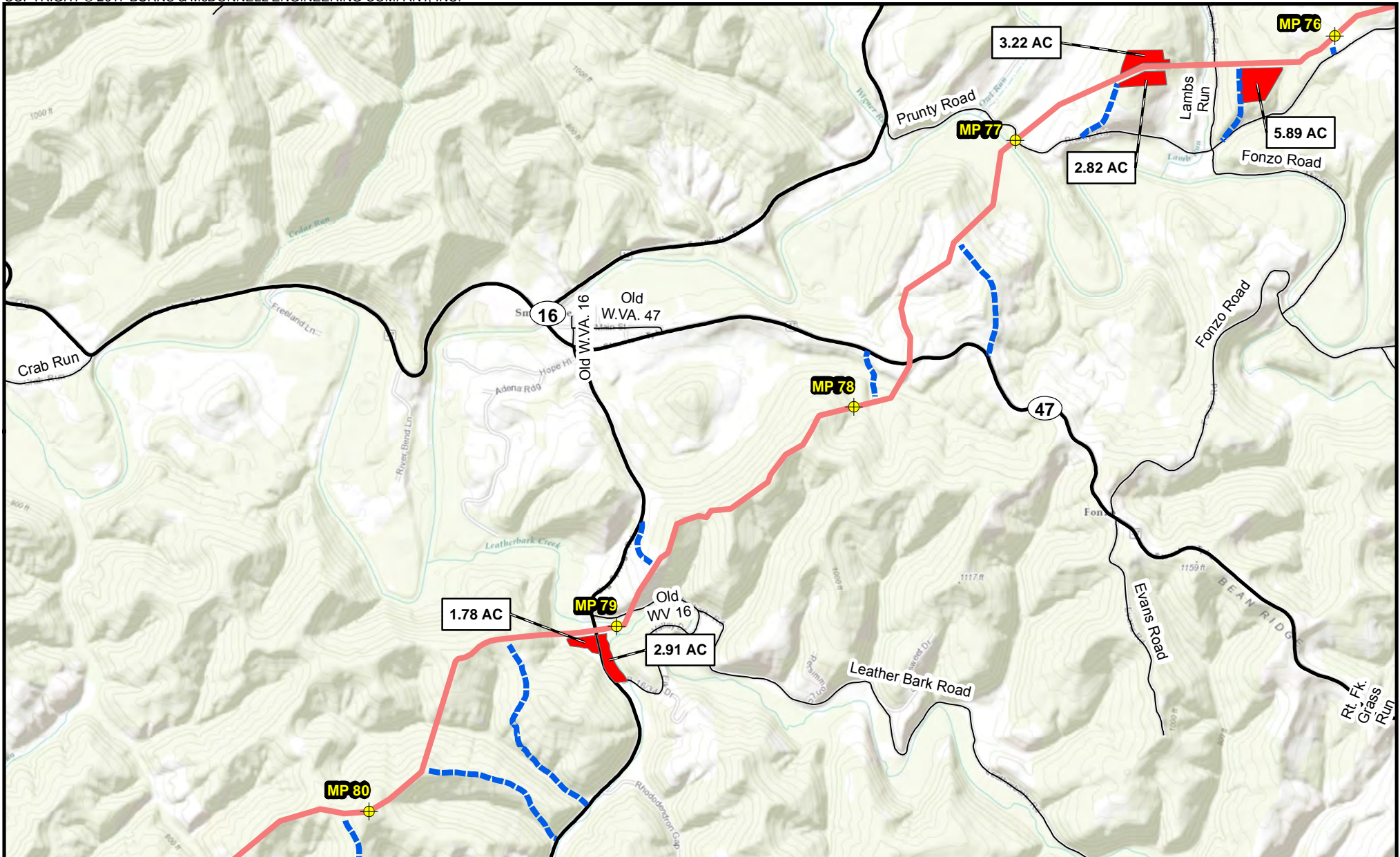






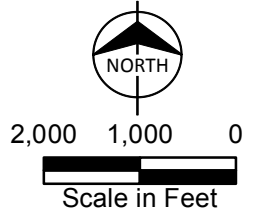
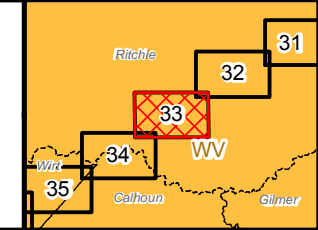
Milepost	Proposed Pipeline		
Access Road	MXP-100		
Pipe/Contractor Yard, Staging Area			<p>Appendix B-1 Mountaineer XPress Project Project Overview Map Page 31 of 63</p>

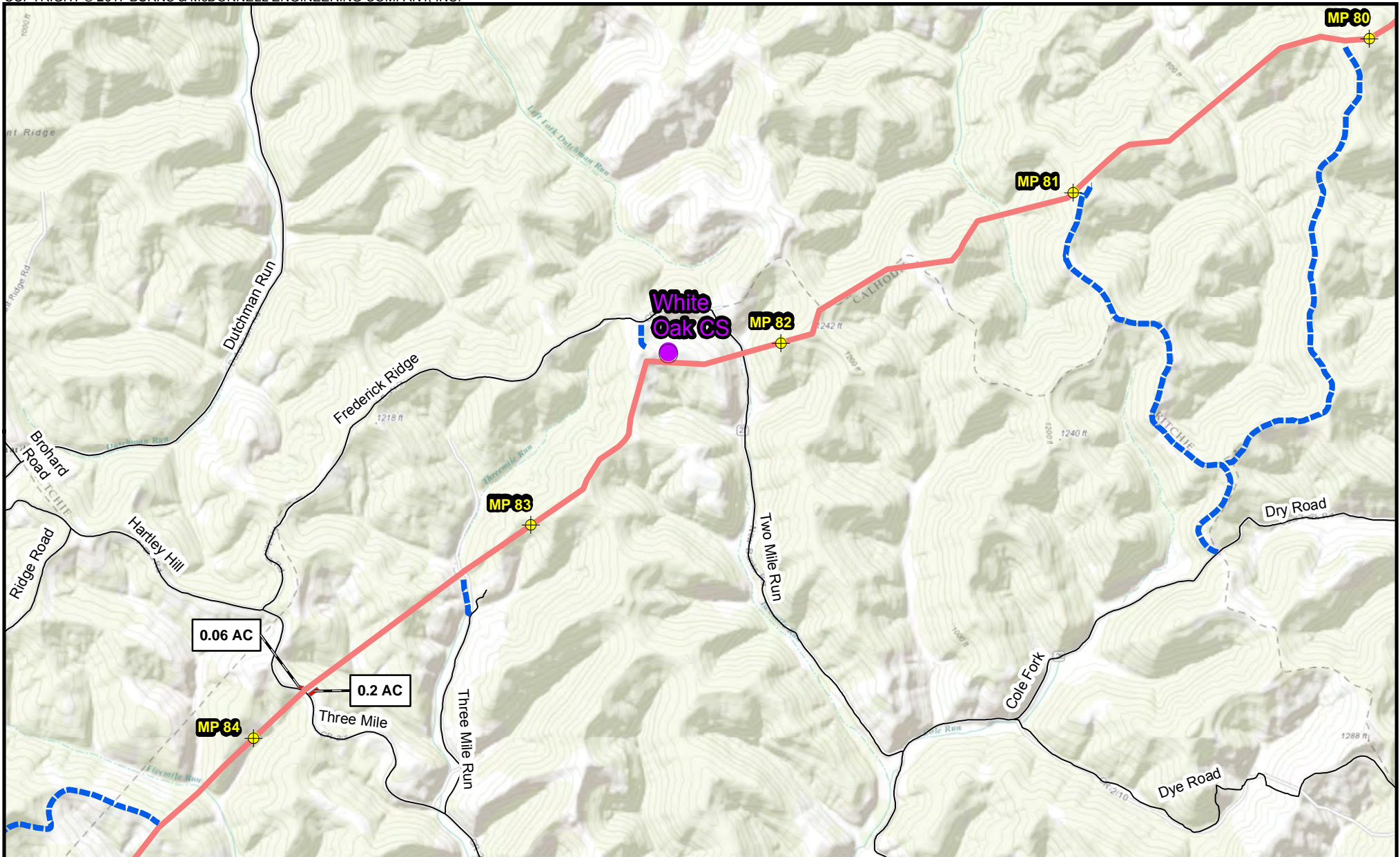








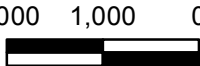
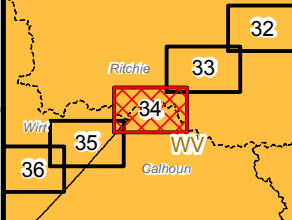
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Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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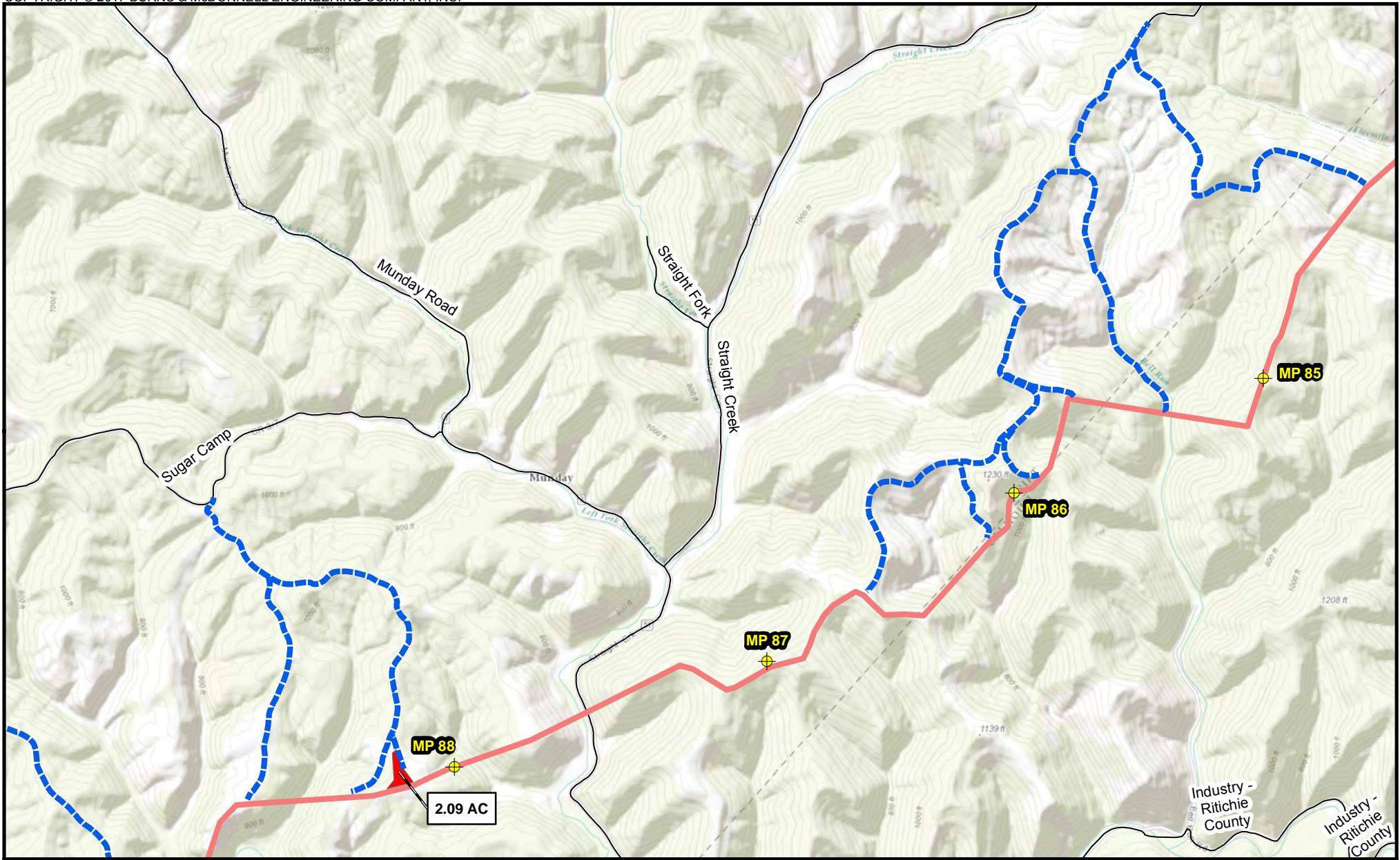


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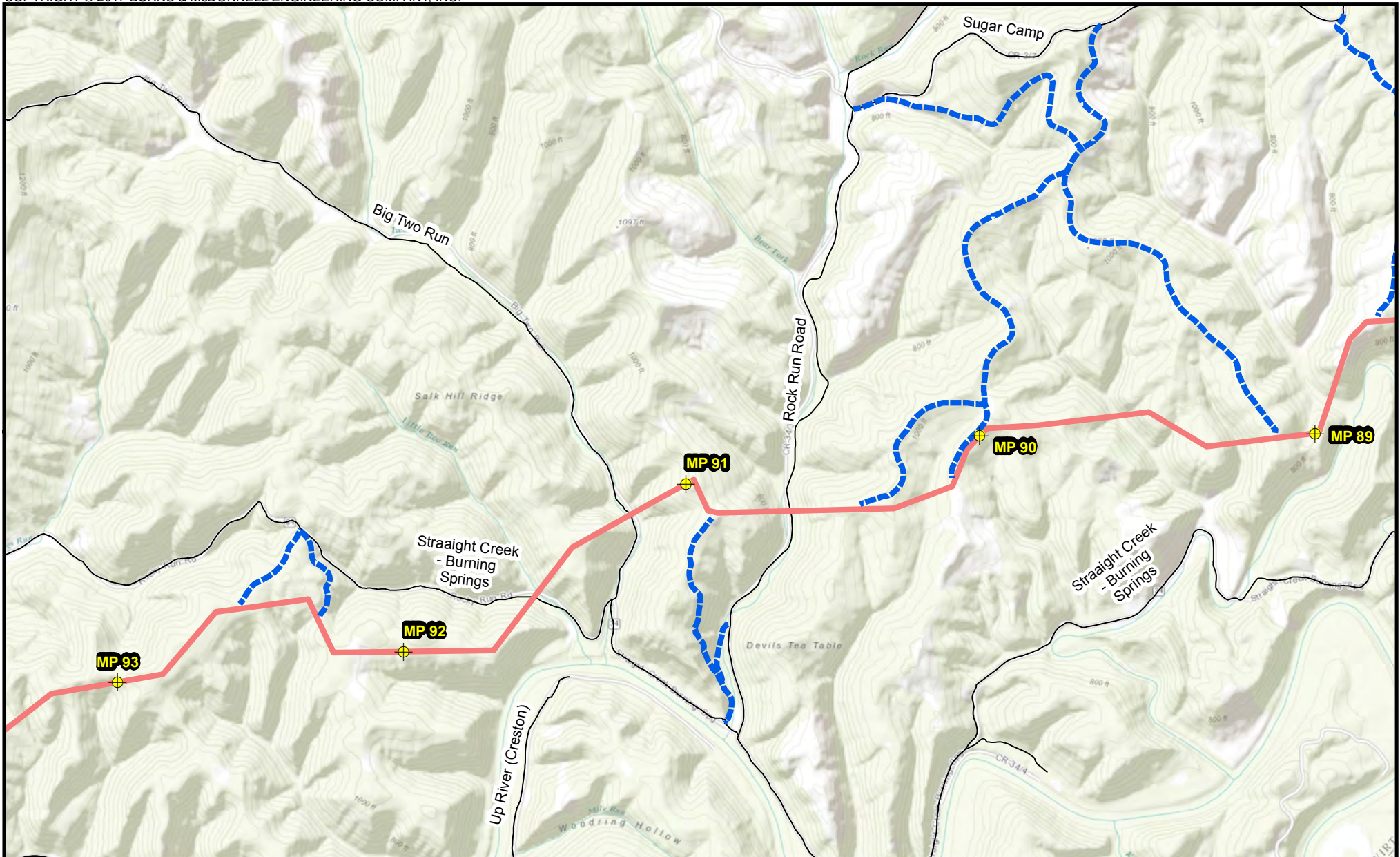
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Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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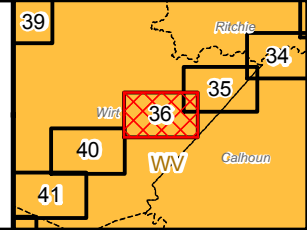
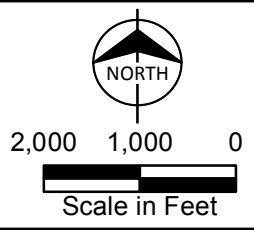


Milepost	Proposed Pipeline	
Access Road	MXP-100	
Pipe/Contractor Yard, Staging Area		

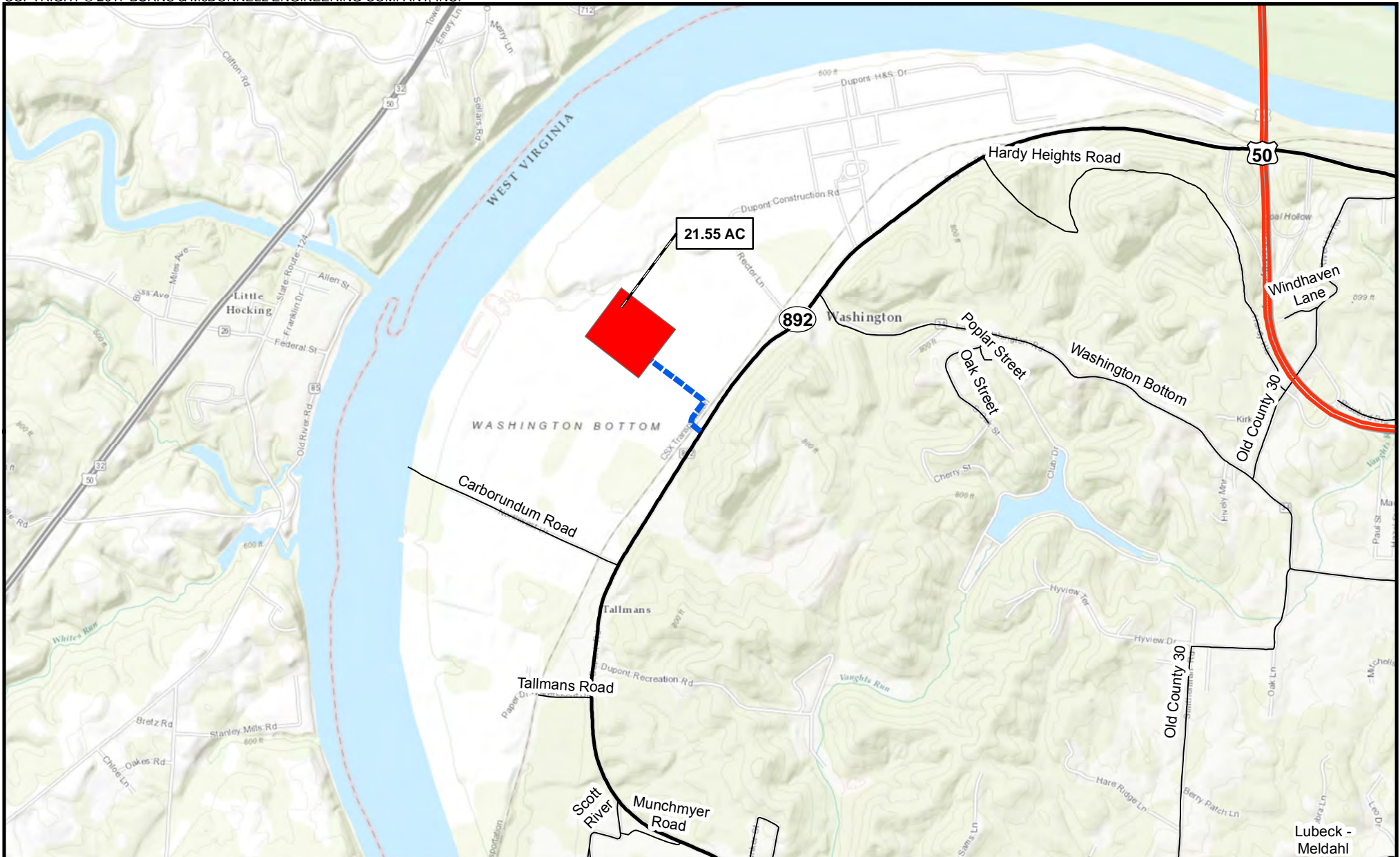
Appendix B-1
Mountaineer XPress Project
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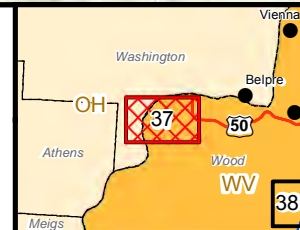
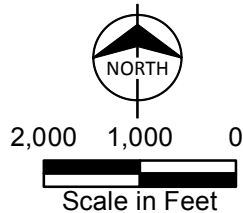
- Milepost
- Access Road
- Proposed Pipeline**
- MXP-100



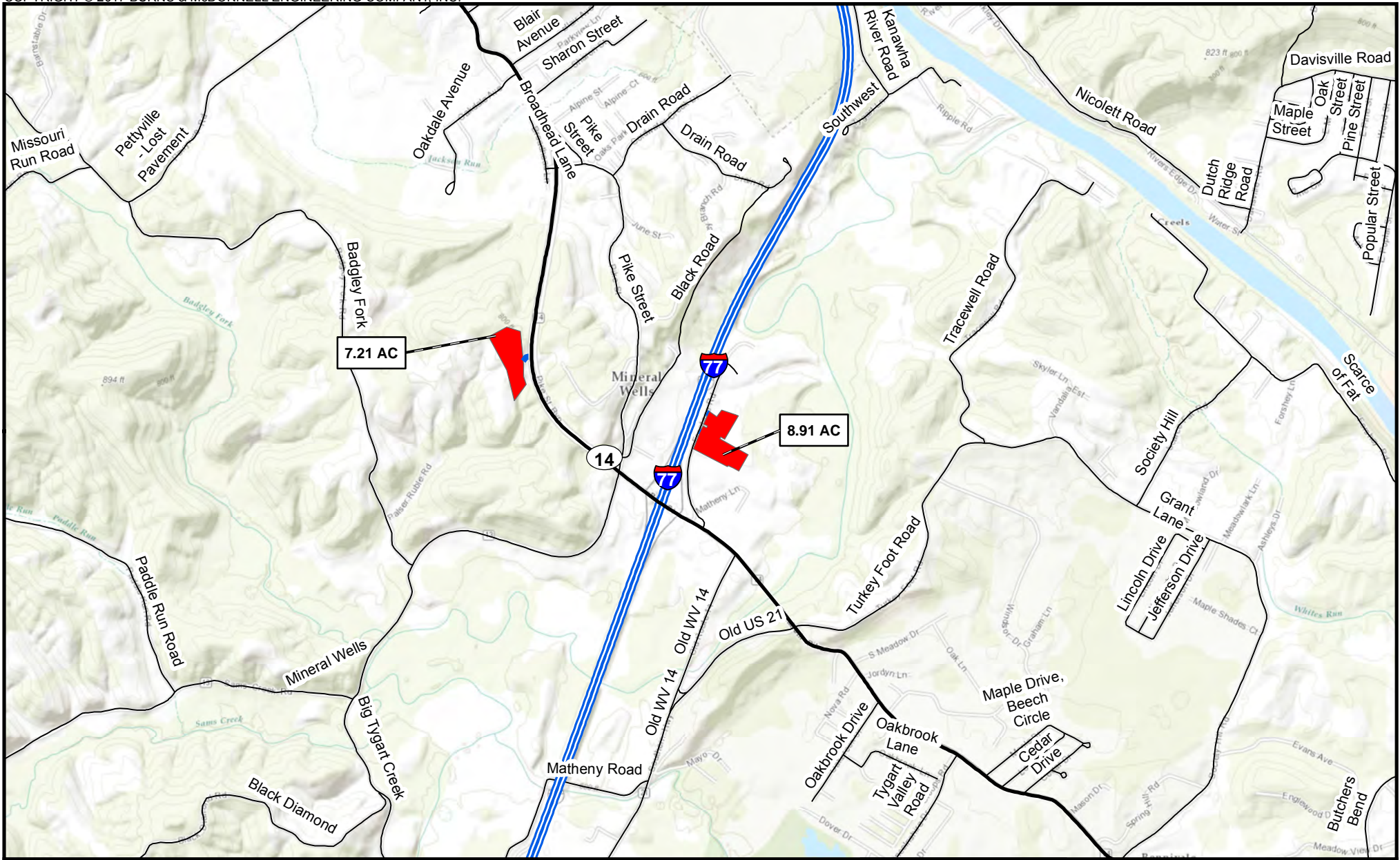
Appendix B-1
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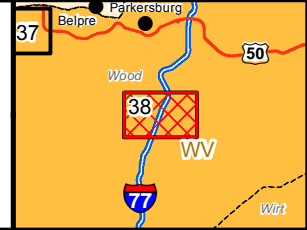
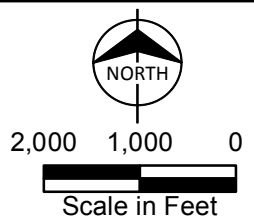
- Access Road
- Pipe/Contractor Yard, Staging Area



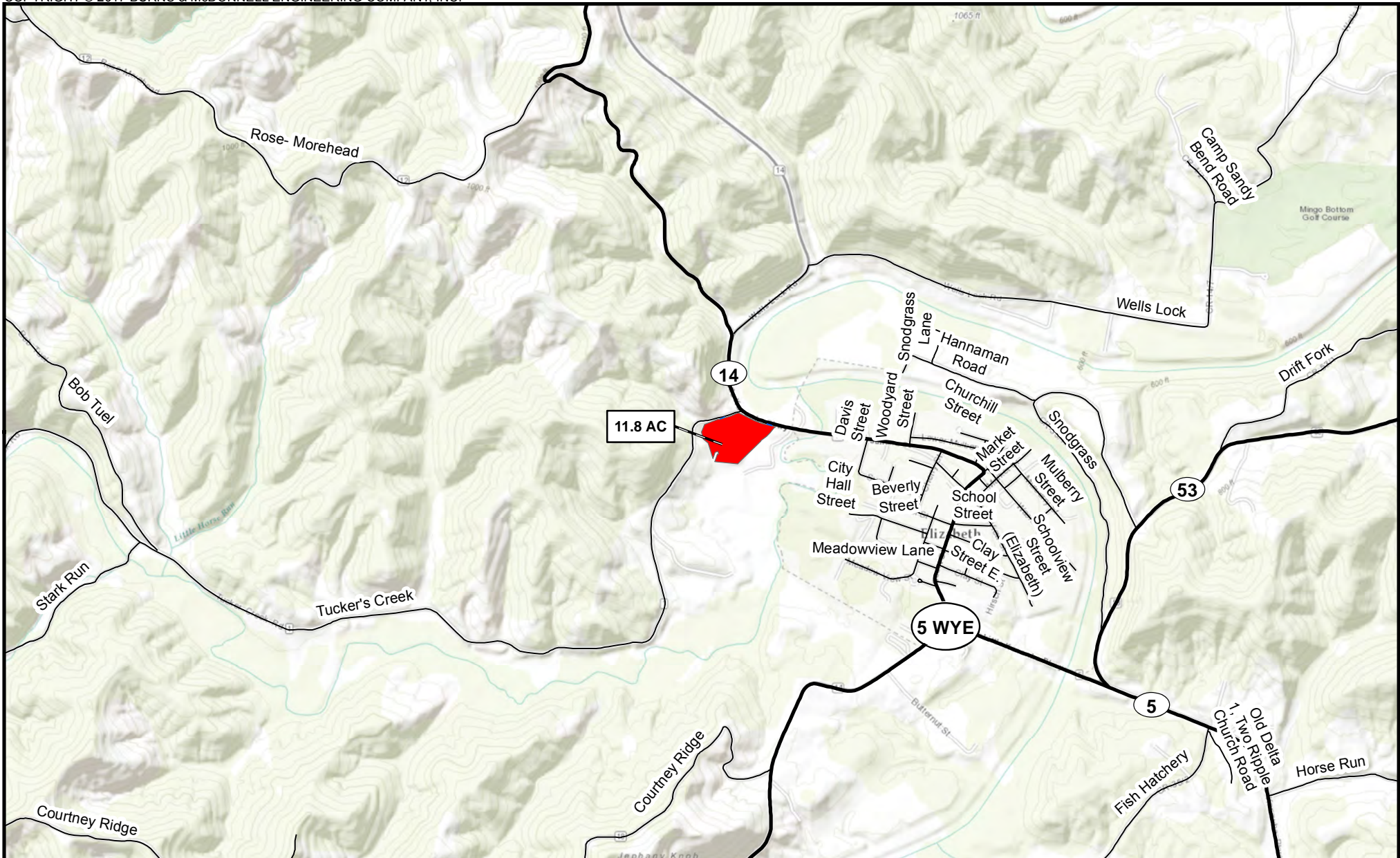
Appendix B-1 Mountaineer XPress Project Project Overview Map Page 37 of 63



- == Access Road
- Pipe\Contractor Yard, Staging Area



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Mountaineer XPress Project
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— Access Road

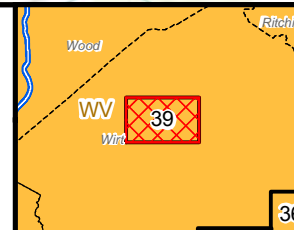
■ Pipe\Contractor Yard,
Staging Area



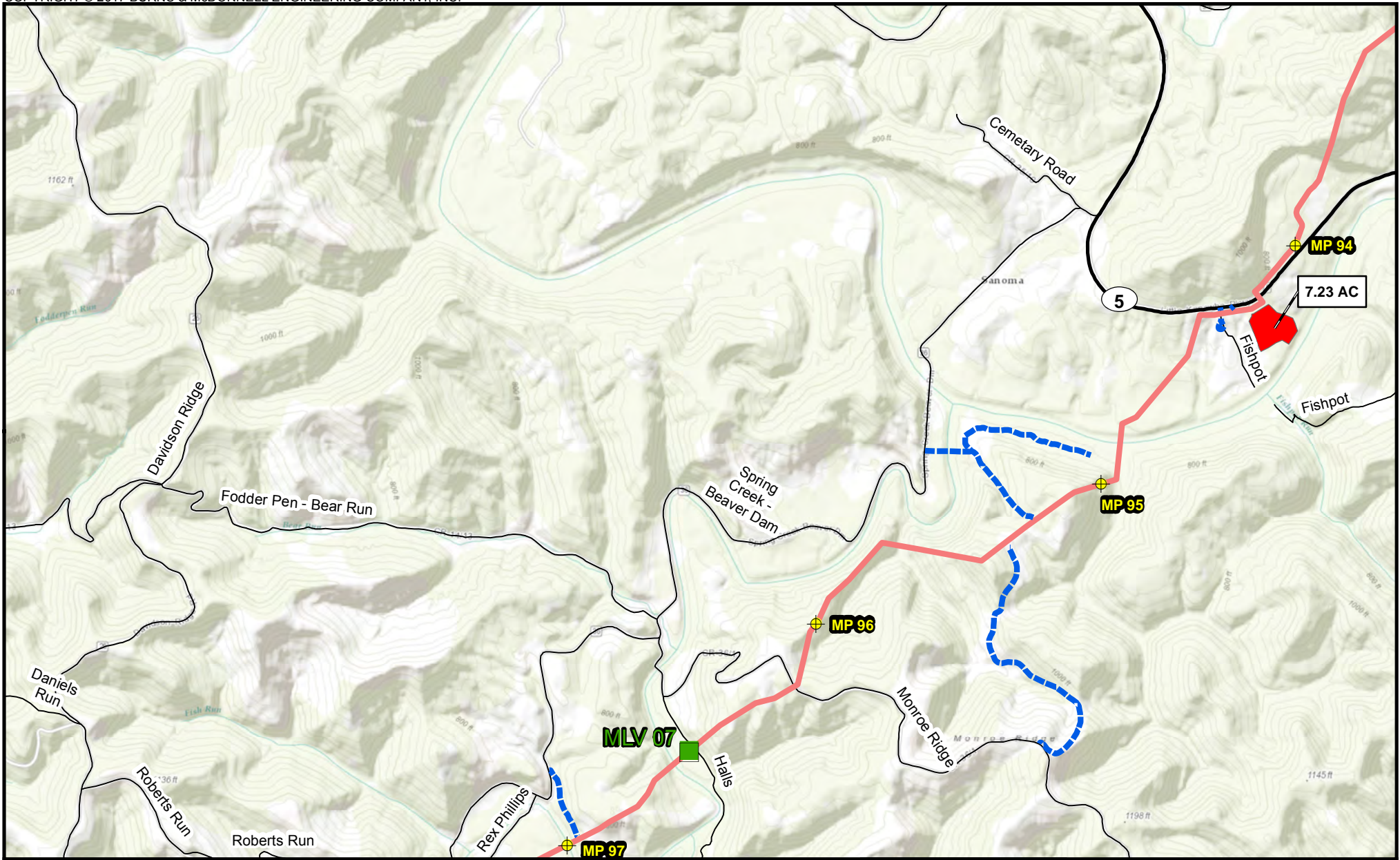
2,000 1,000 0



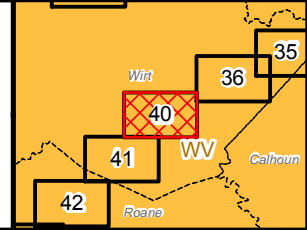
Scale in Feet



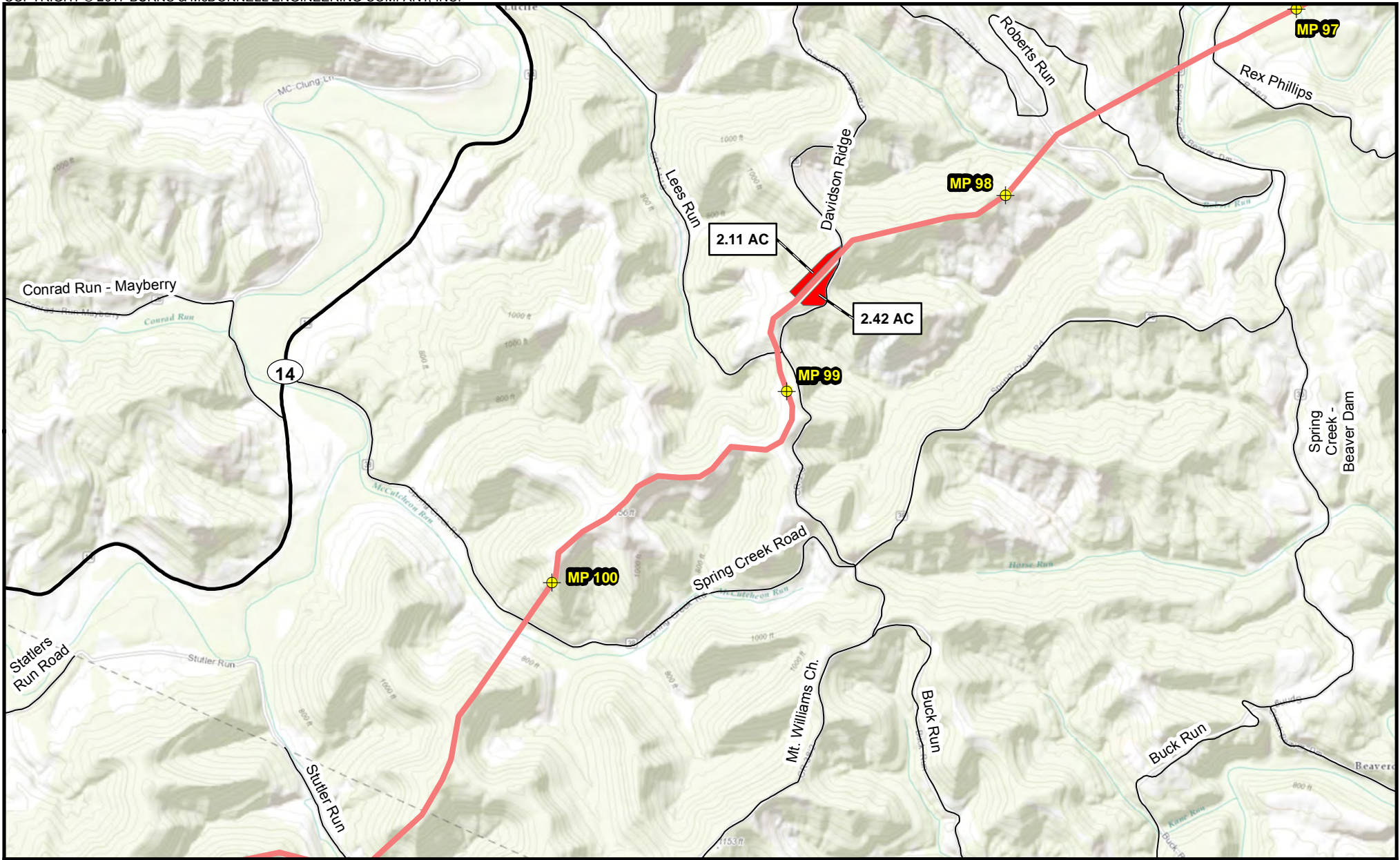
Appendix B-1
 Mountaineer XPress Project
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 Milepost	Proposed Pipeline	  Scale in Feet
 Mainline Valve	 MXP-100	
 Access Road		
 Pipe/Contractor Yard, Staging Area		

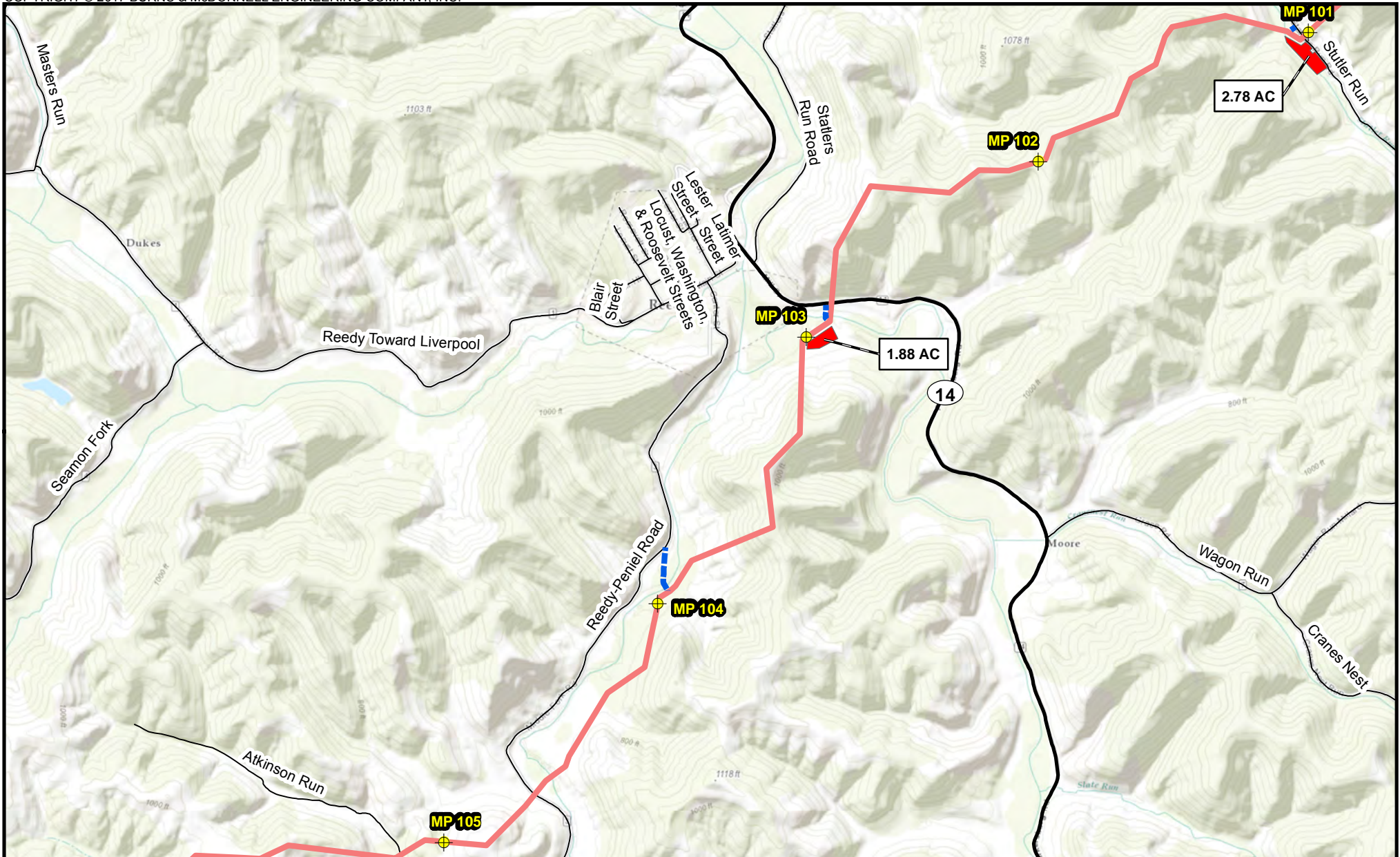


Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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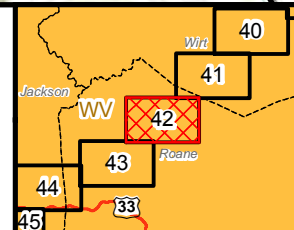
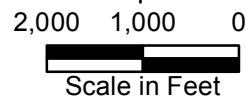
Milepost	Proposed Pipeline		
Pipe\Contractor Yard, Staging Area	MXP-100		

Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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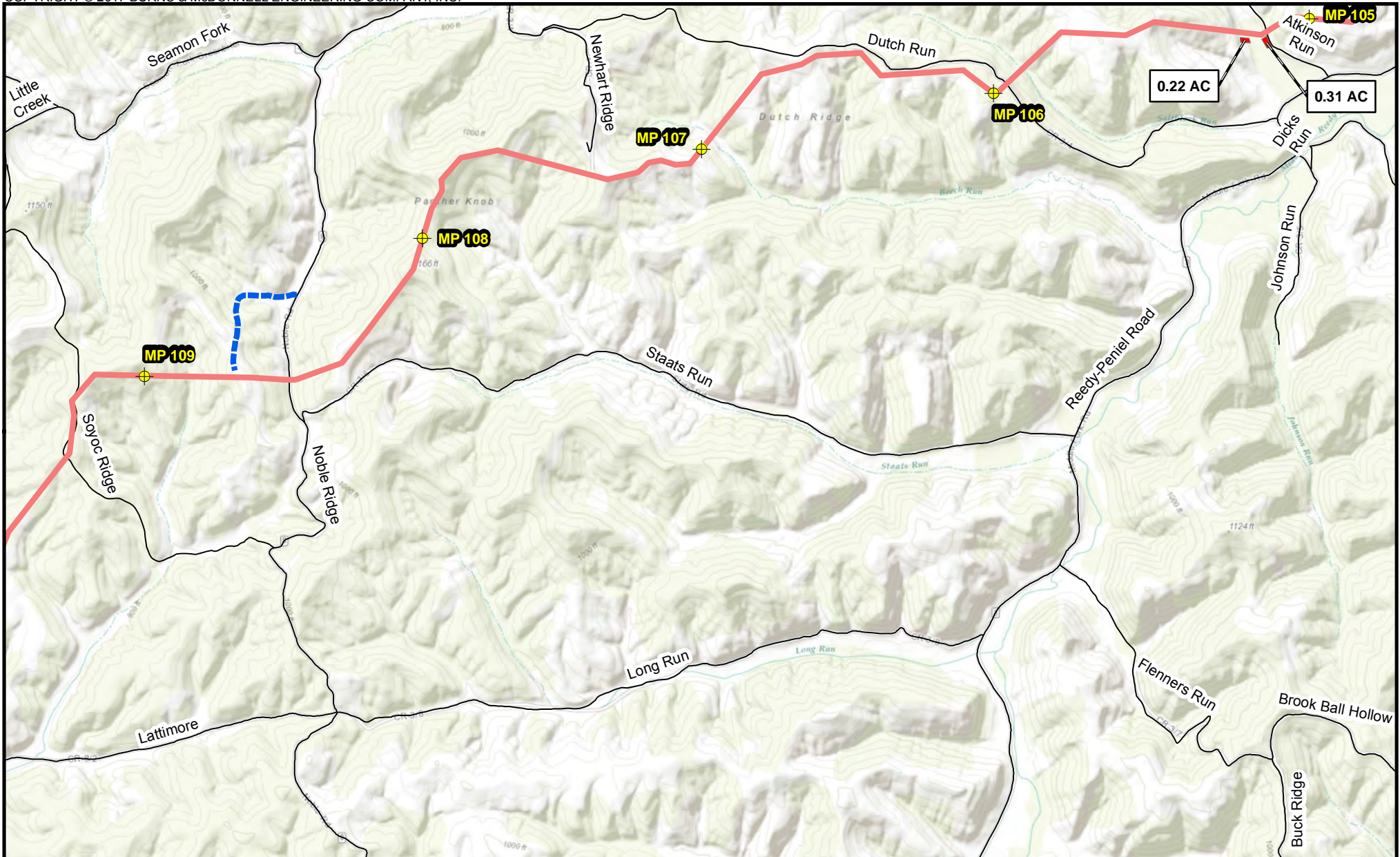


- Milepost
- Access Road
- Pipe/Contractor Yard, Staging Area

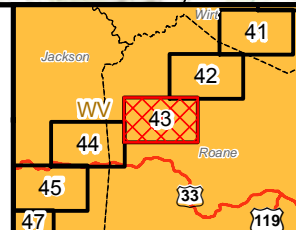
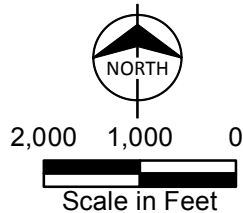
Proposed Pipeline
 MXP-100



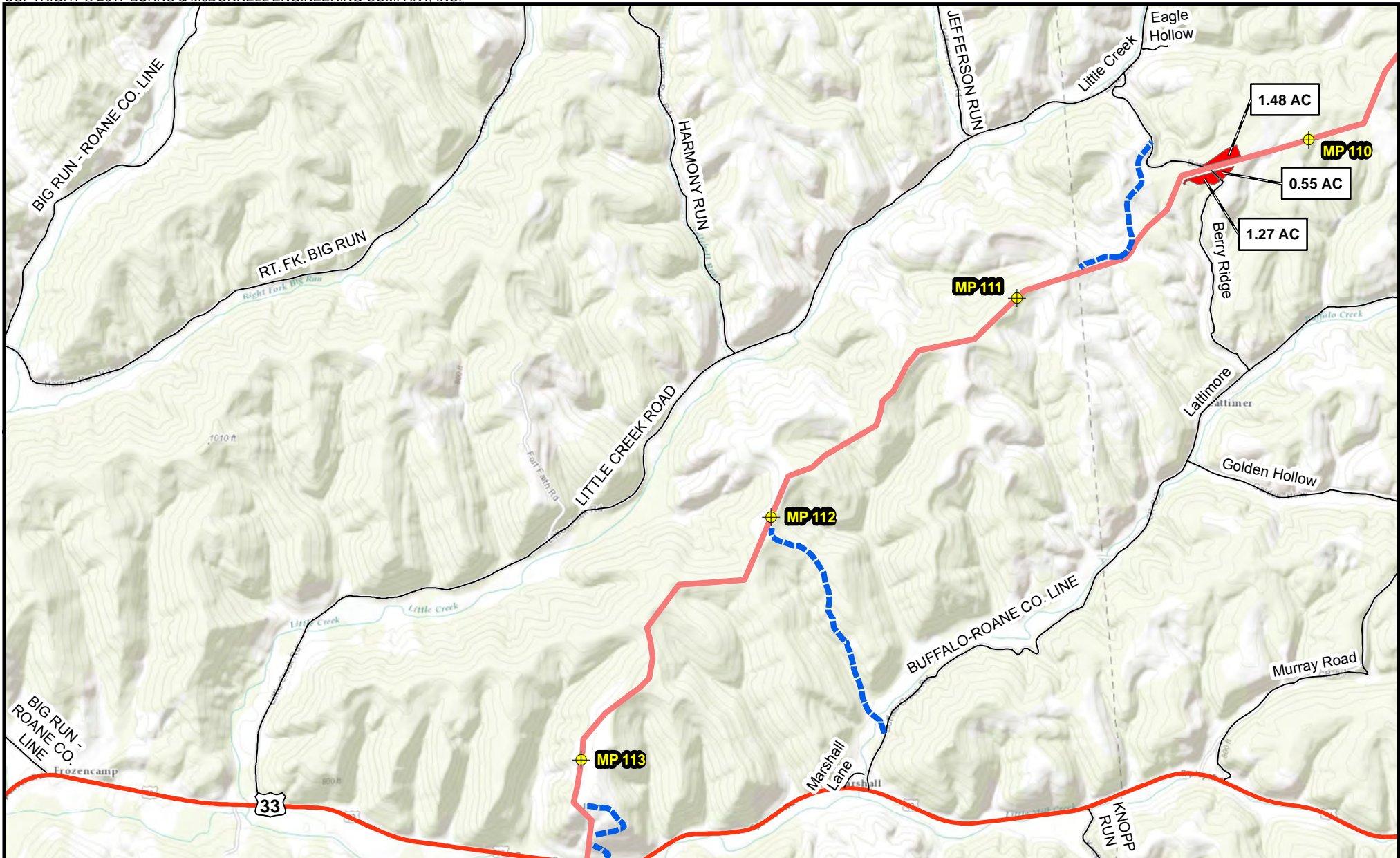
Appendix B-1
 Mountaineer XPress Project
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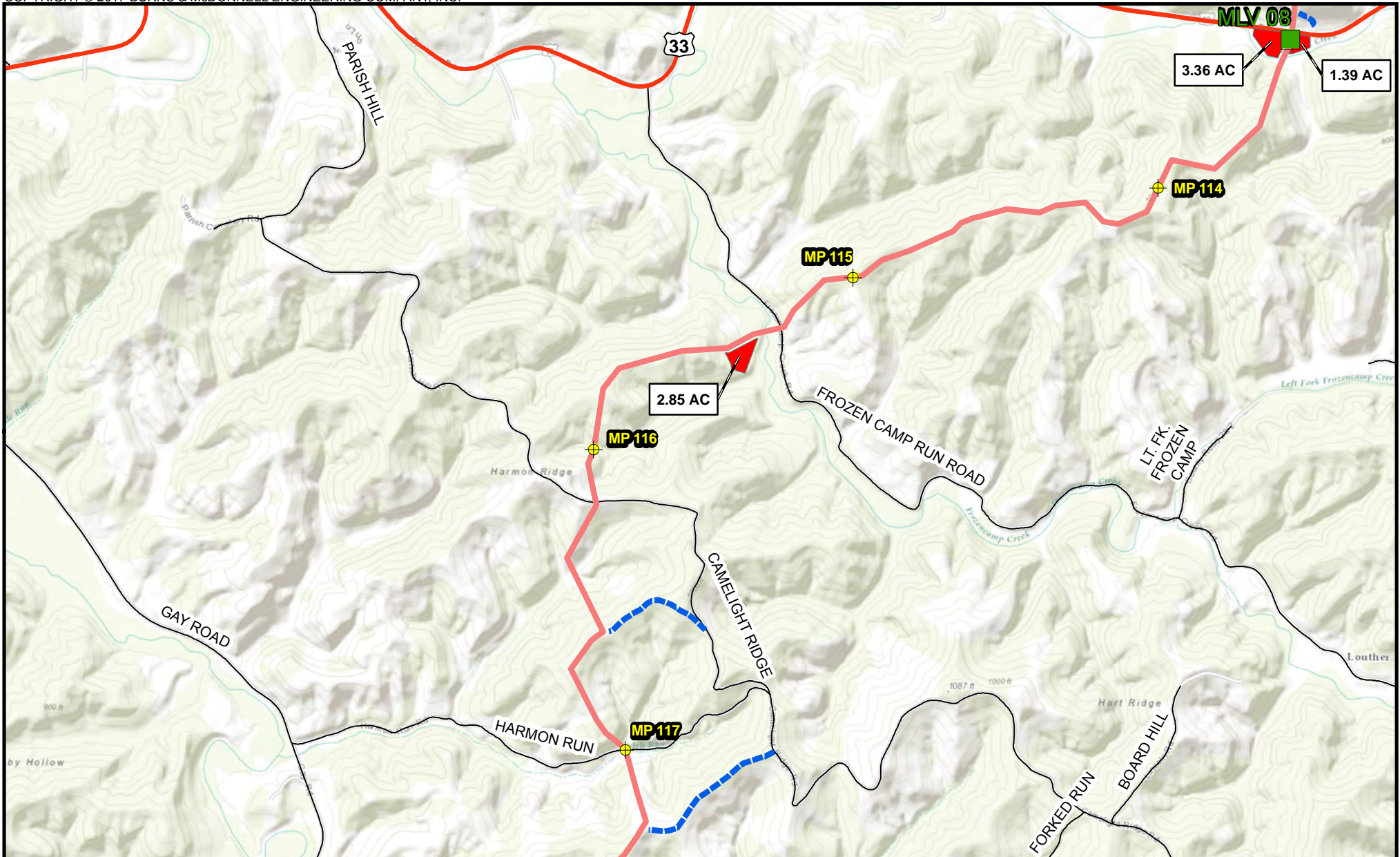
- Milepost
- Access Road
- Pipe/Contractor Yard, Staging Area
- Proposed Pipeline**
- MXP-100



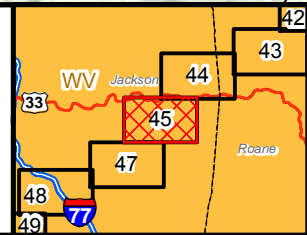
Appendix B-1
 Mountaineer XPress Project
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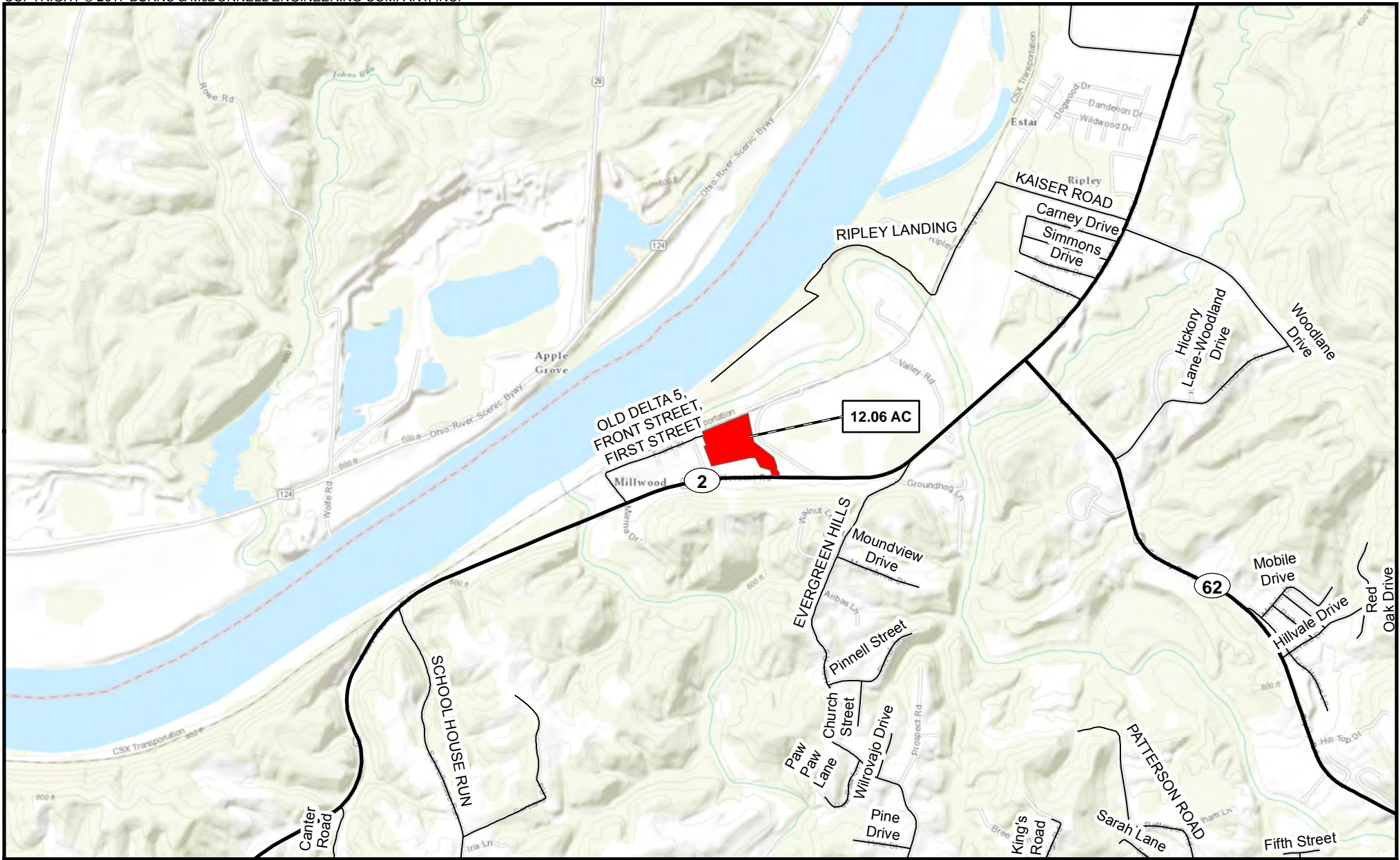
Milepost	Proposed Pipeline			<p>Appendix B-1 Mountaineer XPress Project Project Overview Map Page 44 of 63</p>
Access Road	MXP-100			
Pipe/Contractor Yard, Staging Area				



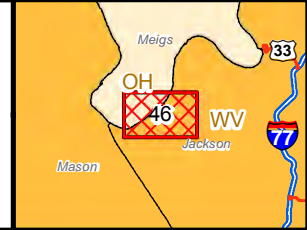
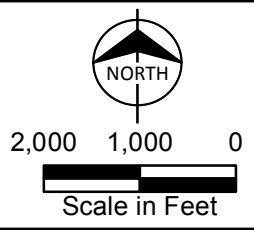
Milepost	Proposed Pipeline	 NORTH
Mainline Valve	MXP-100	
Access Road		 2,000 1,000 0
Pipe Contractor Yard, Staging Area		



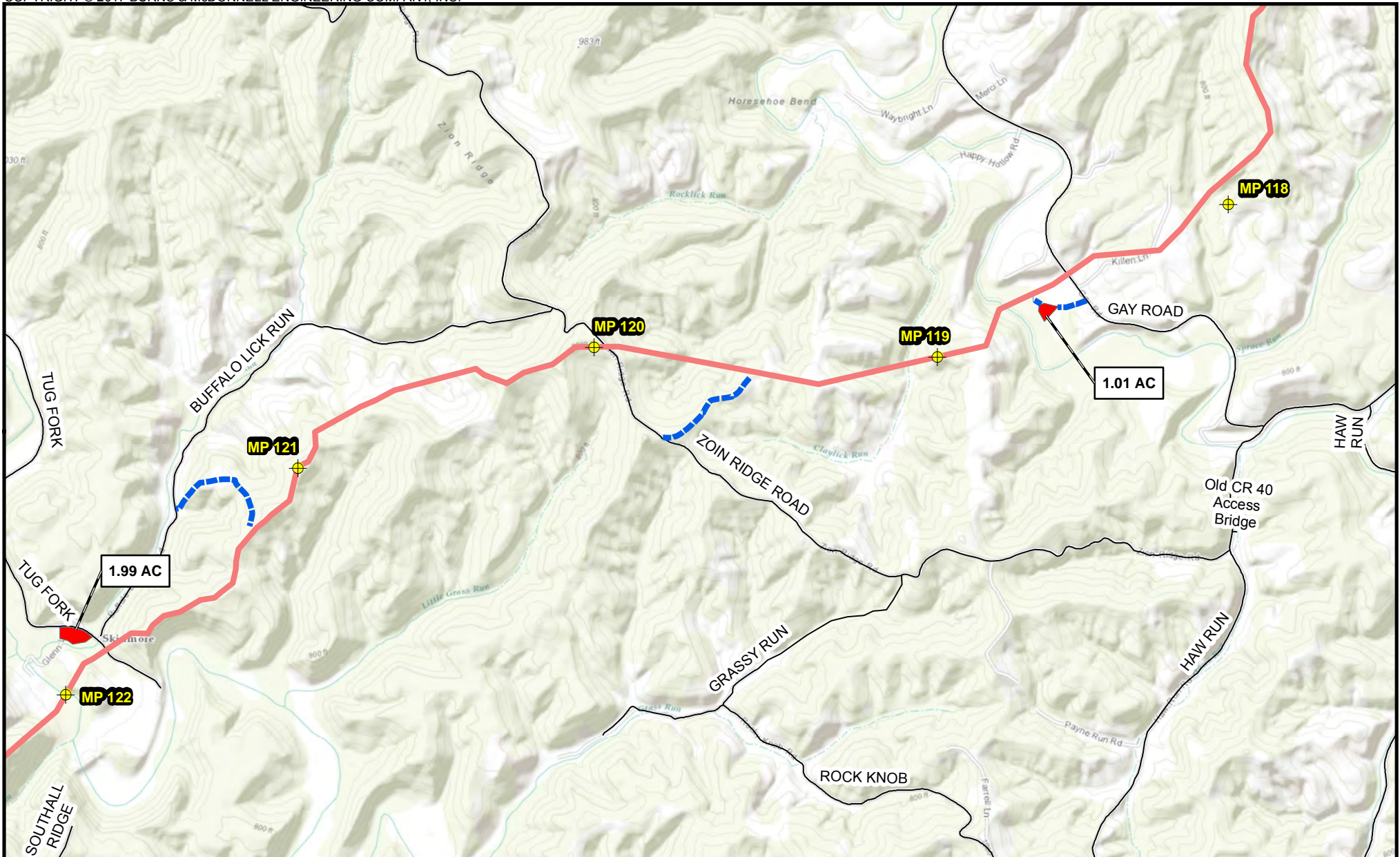
Appendix B-1
 Mountaineer XPress Project
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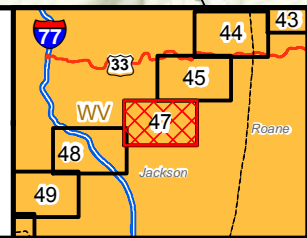
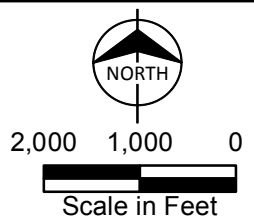
- — — Access Road
- Pipe\Contractor Yard, Staging Area



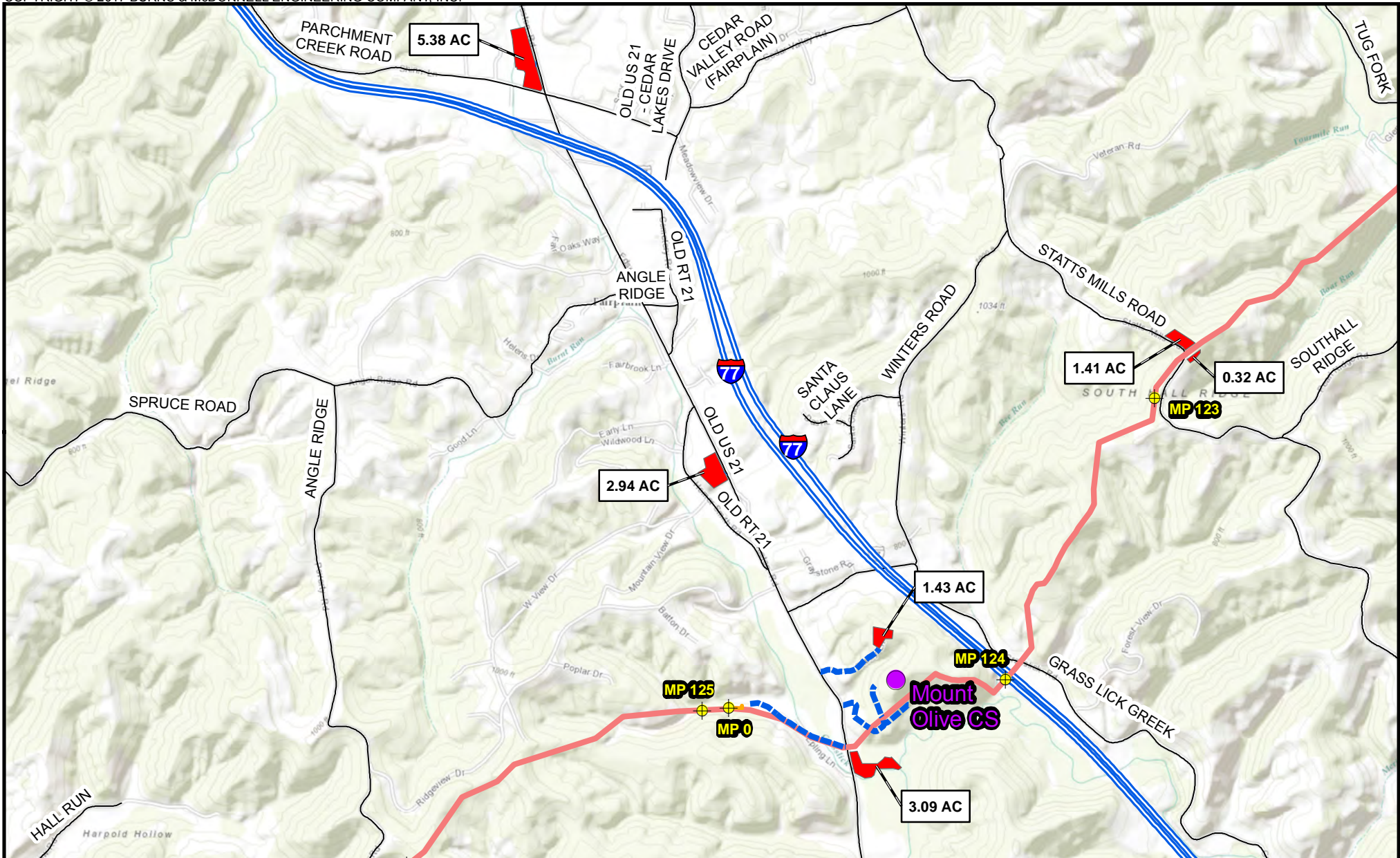
Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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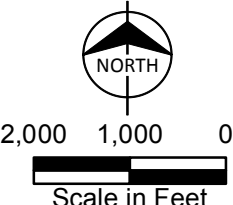
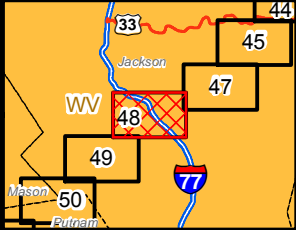


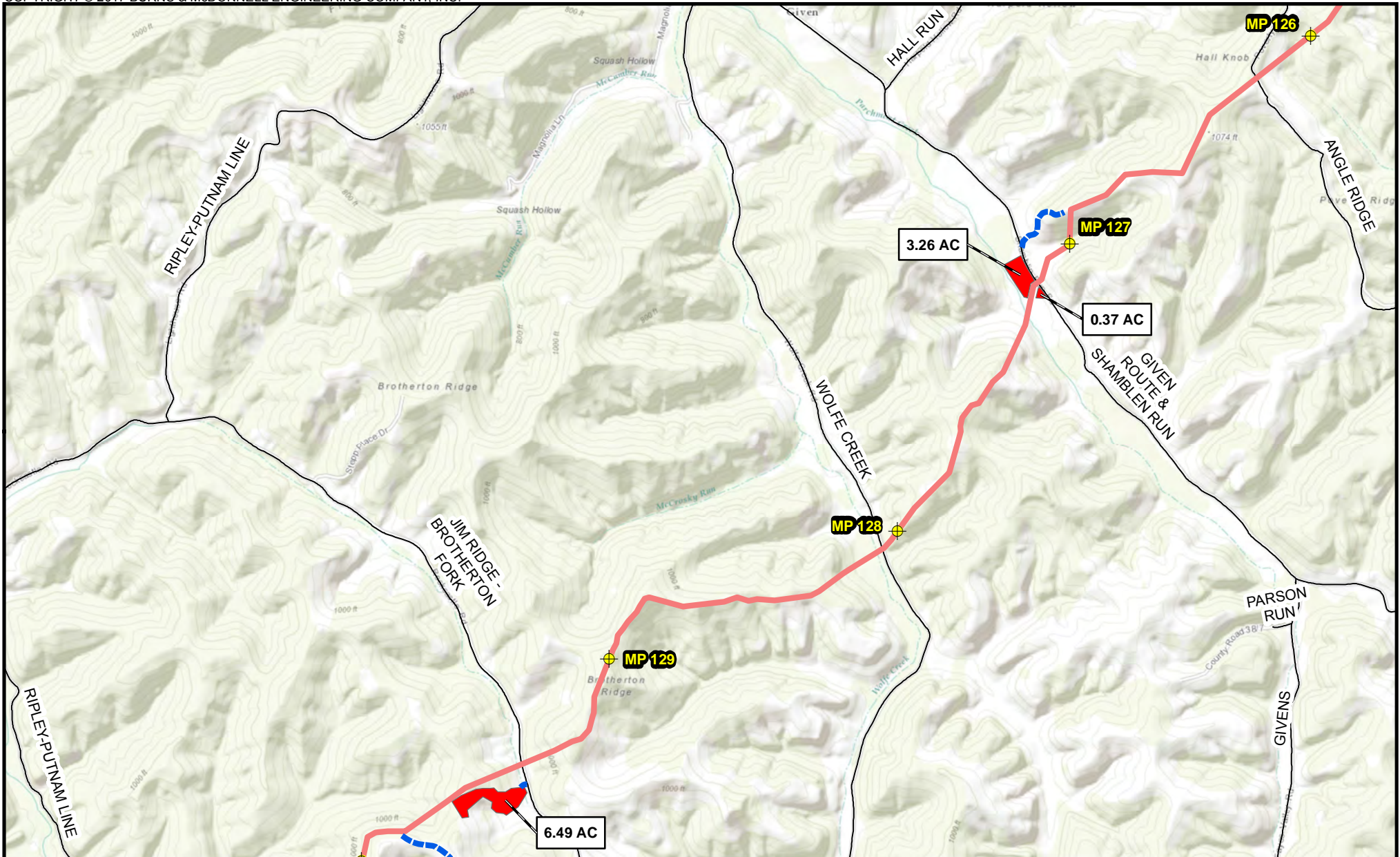
-  Milepost
 -  Access Road
 -  Pipe/Contractor Yard, Staging Area
- Proposed Pipeline**
-  MXP-100




Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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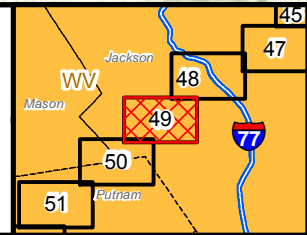
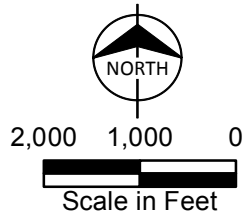


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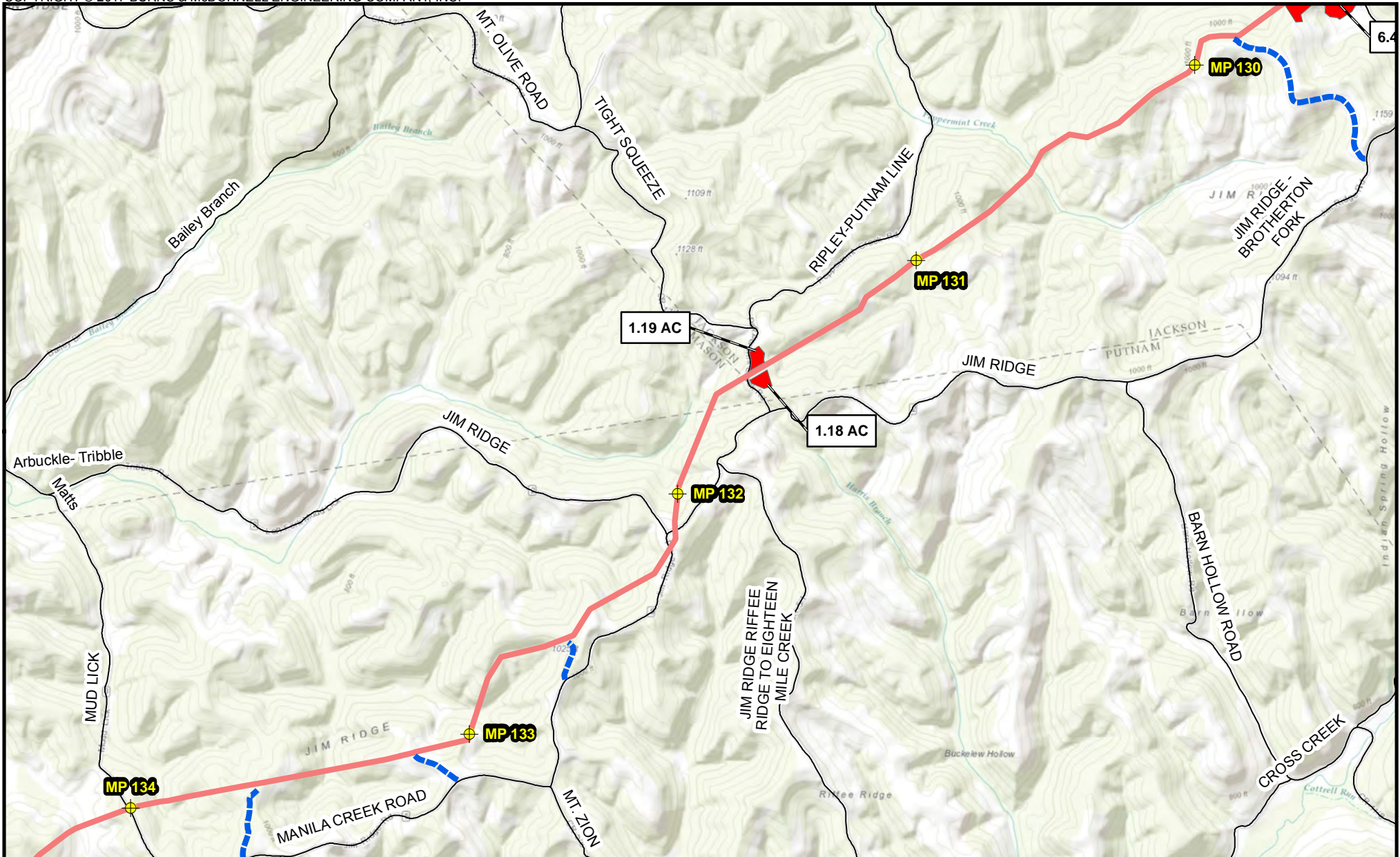


-  Milepost
-  Access Road
-  Pipe/Contractor Yard, Staging Area

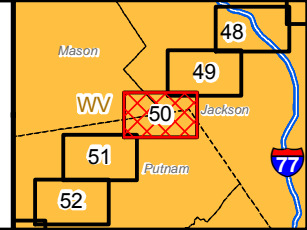
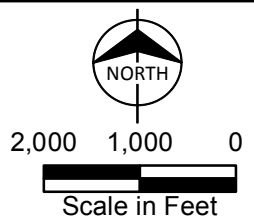
Proposed Pipeline
 MXP-100



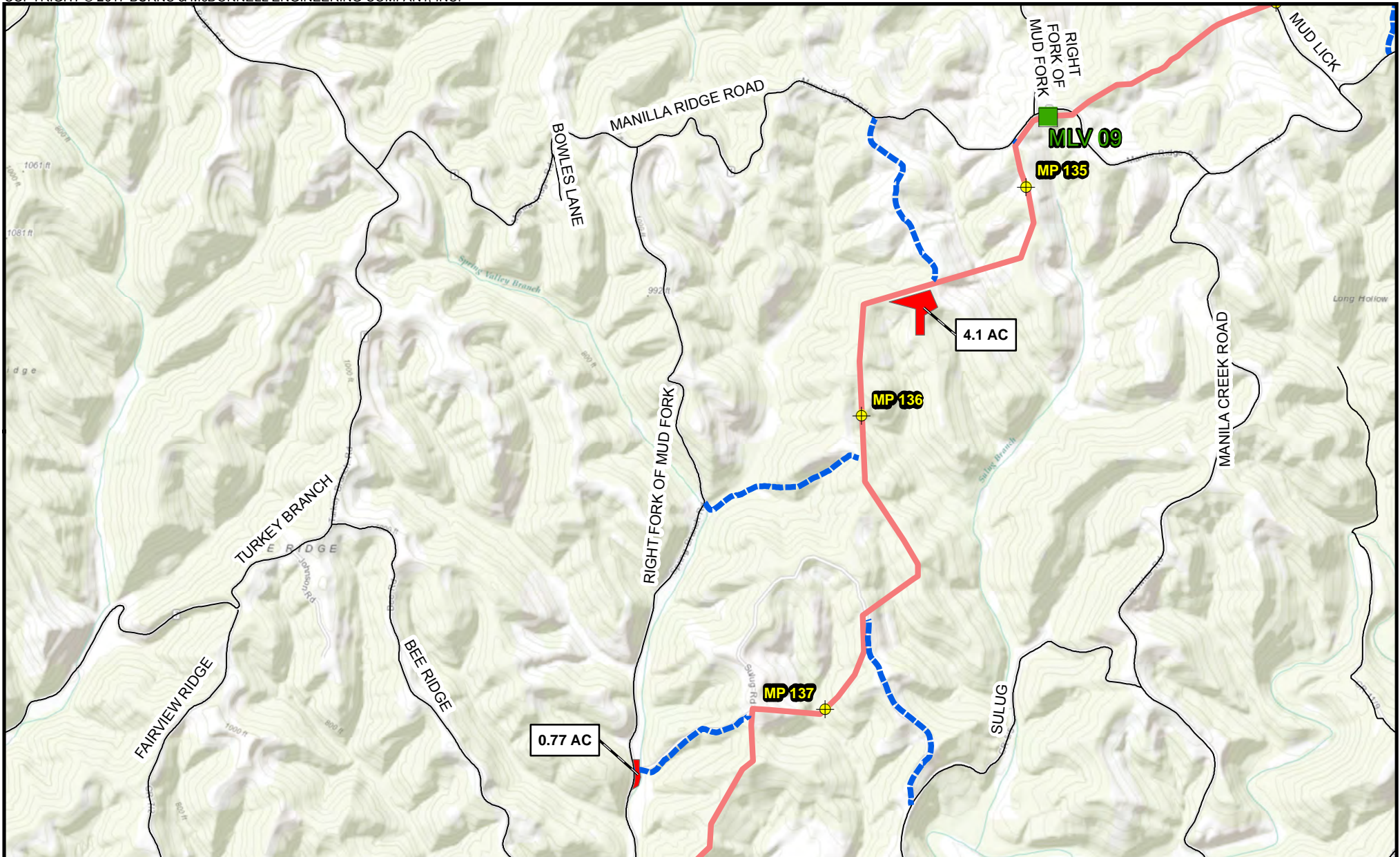
Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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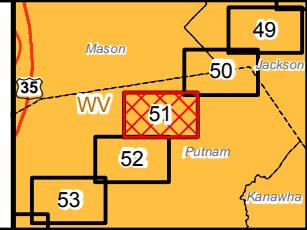
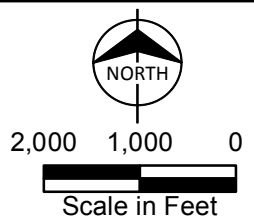
- Milepost
- Access Road
- Pipe/Contractor Yard, Staging Area
- Proposed Pipeline**
- MXP-100



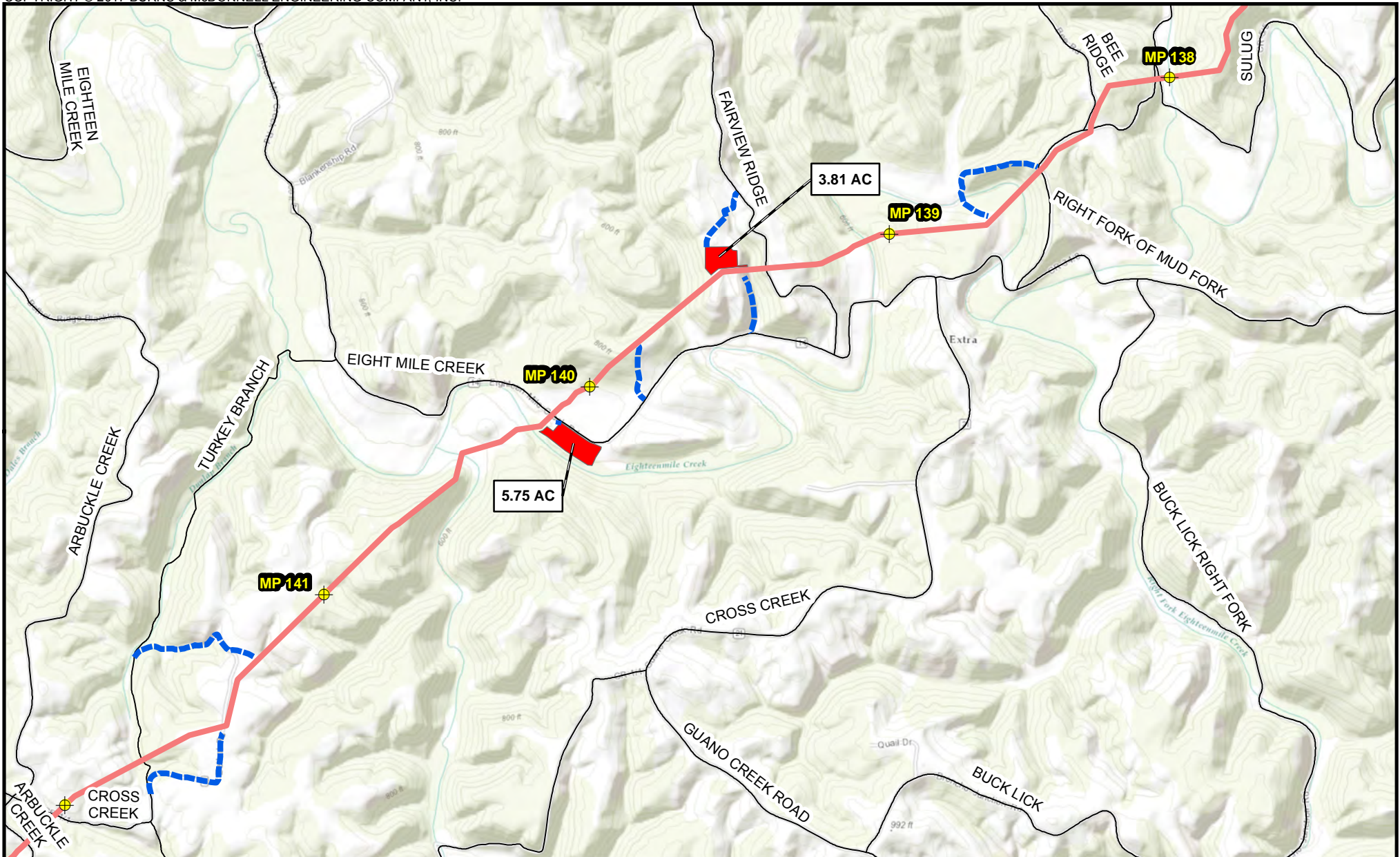
Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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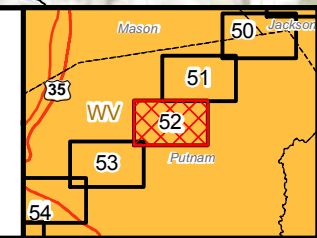
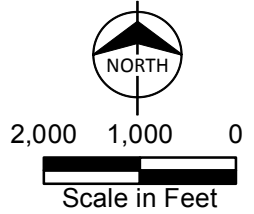
- Milepost
 - Mainline Valve
 - Access Road
 - Pipe\Contractor Yard, Staging Area
- Proposed Pipeline**
- MXP-100



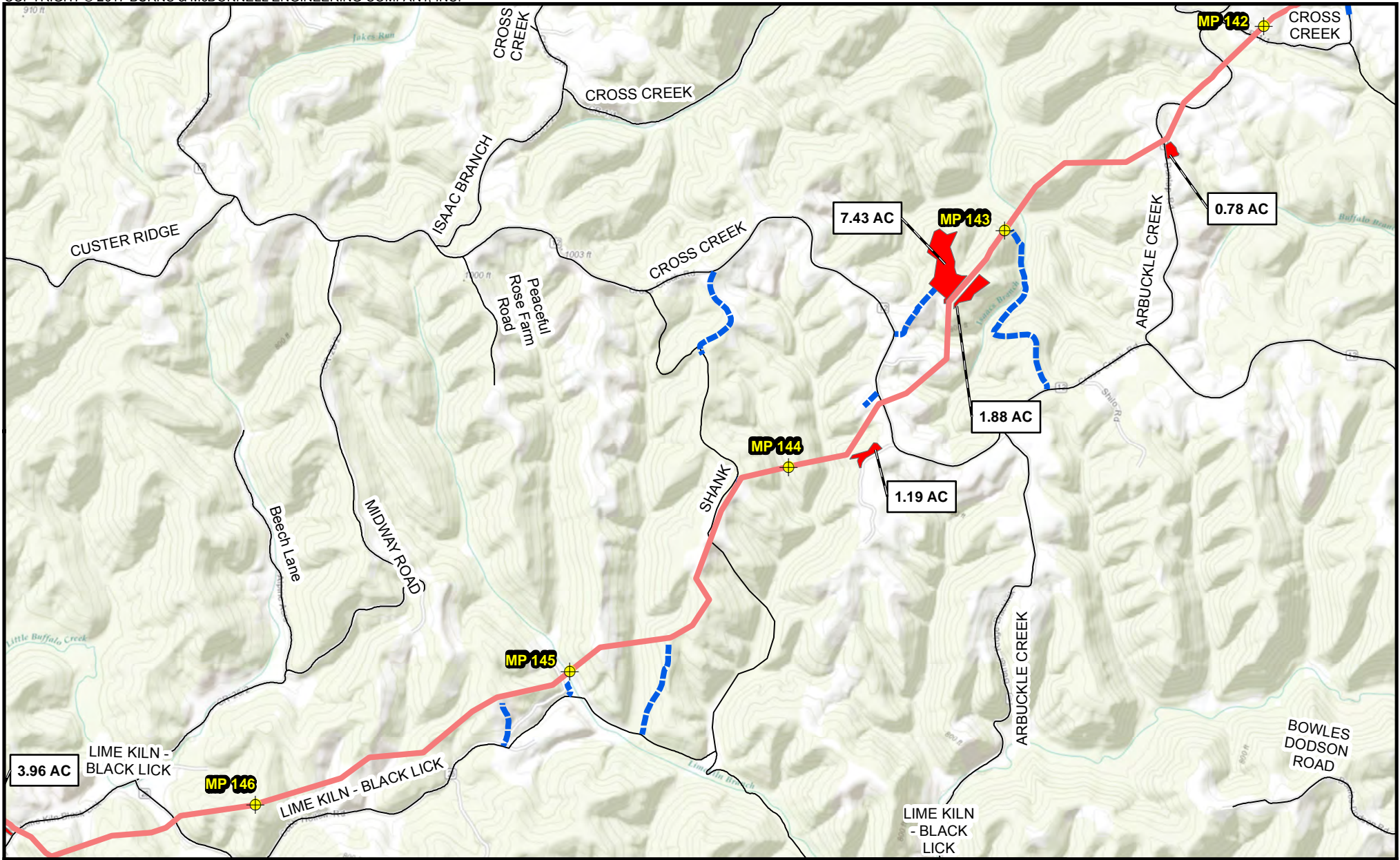
Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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- Milepost
- Access Road
- Proposed Pipeline MXP-100
- Pipe Contractor Yard, Staging Area



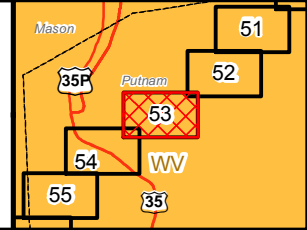
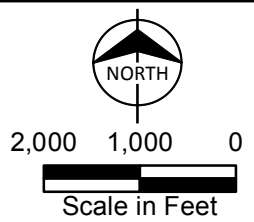
Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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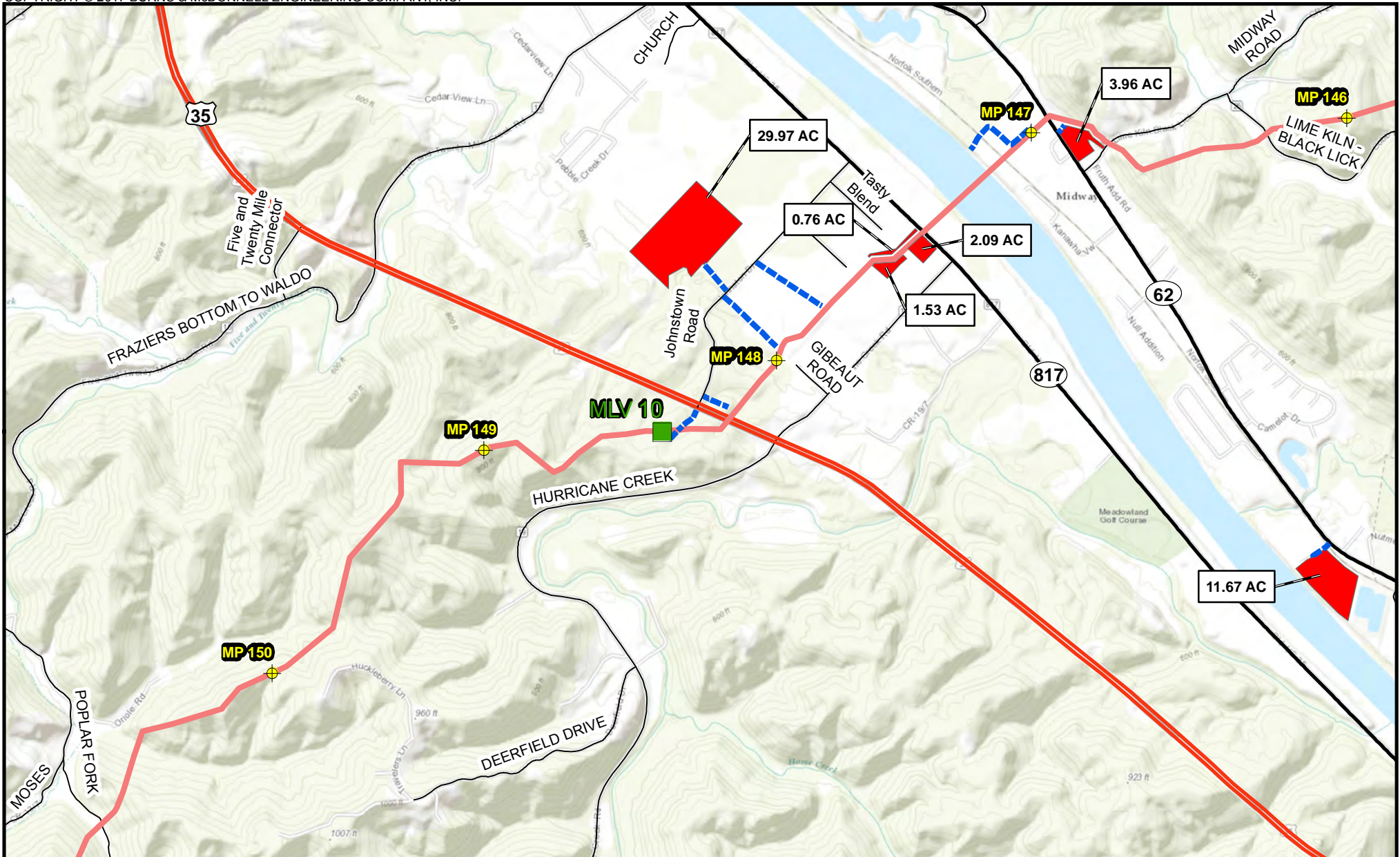
- Milepost
- Access Road
- Proposed Pipeline MXP-100
- Pipe/Contractor Yard, Staging Area

Proposed Pipeline

— MXP-100

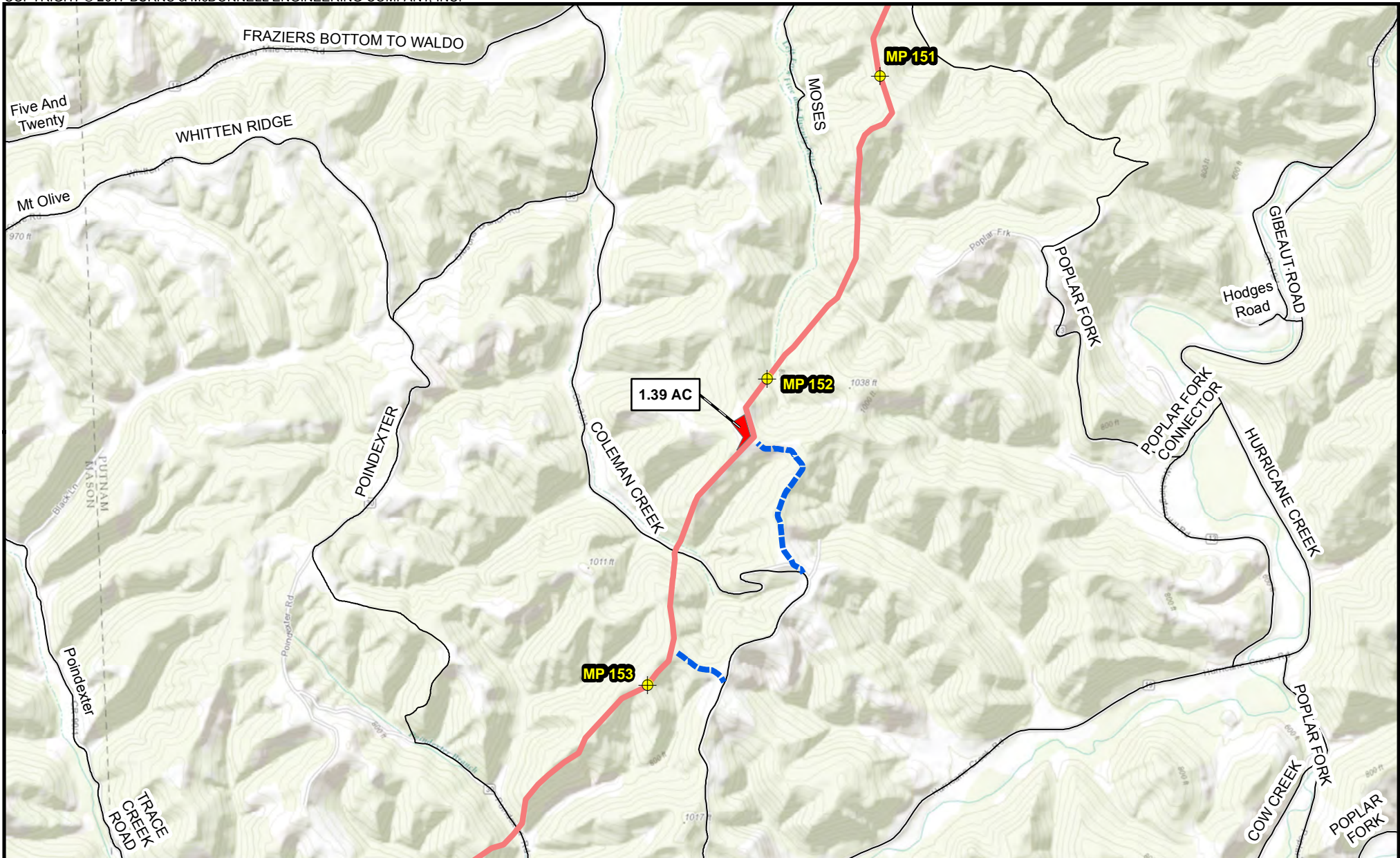


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 Project Overview Map
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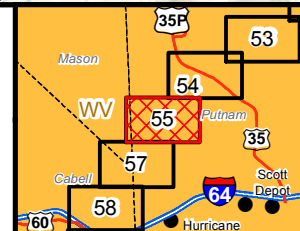
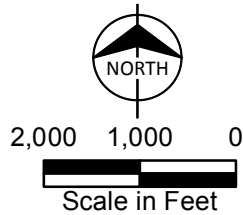
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Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
 Page 54 of 63

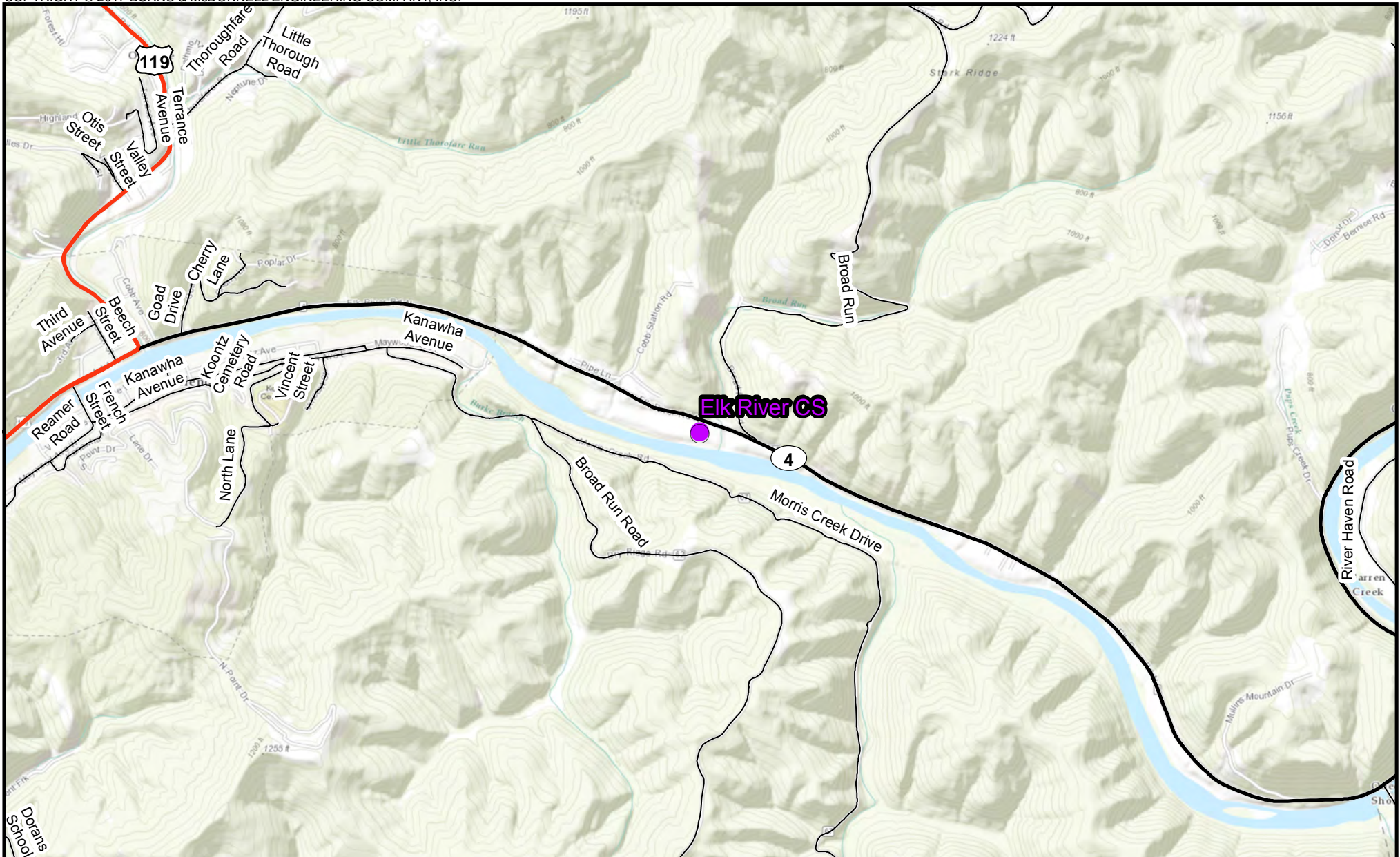


- Milepost
- Access Road
- Pipe/Contractor Yard, Staging Area

Proposed Pipeline
 MXP-100



Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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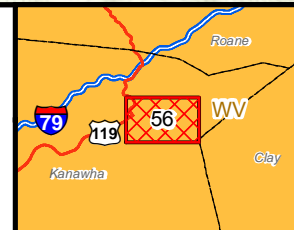
● Compressor Station



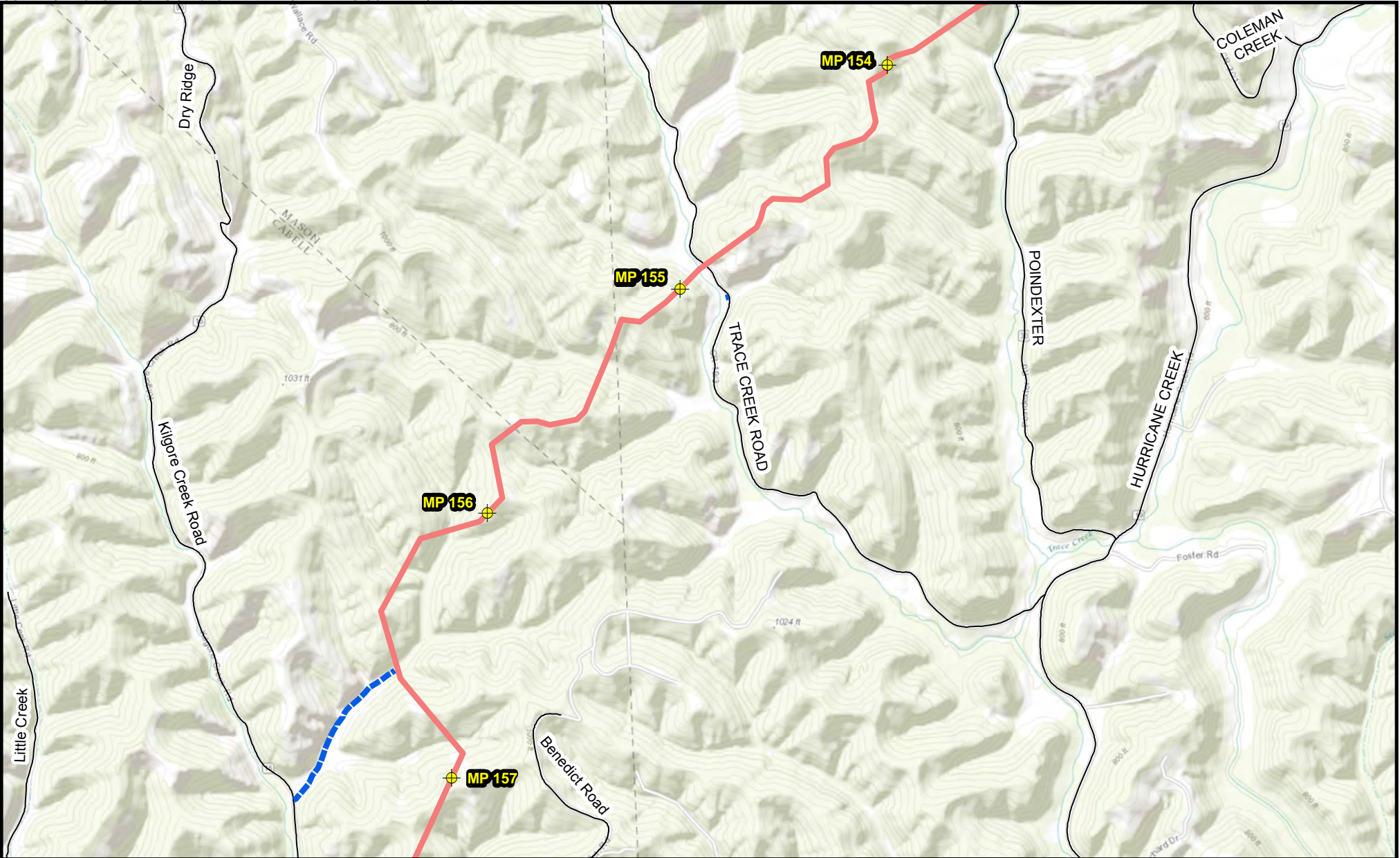
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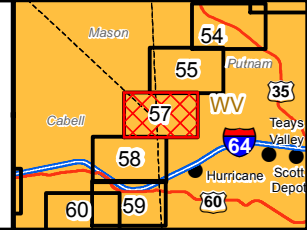
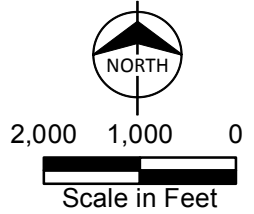
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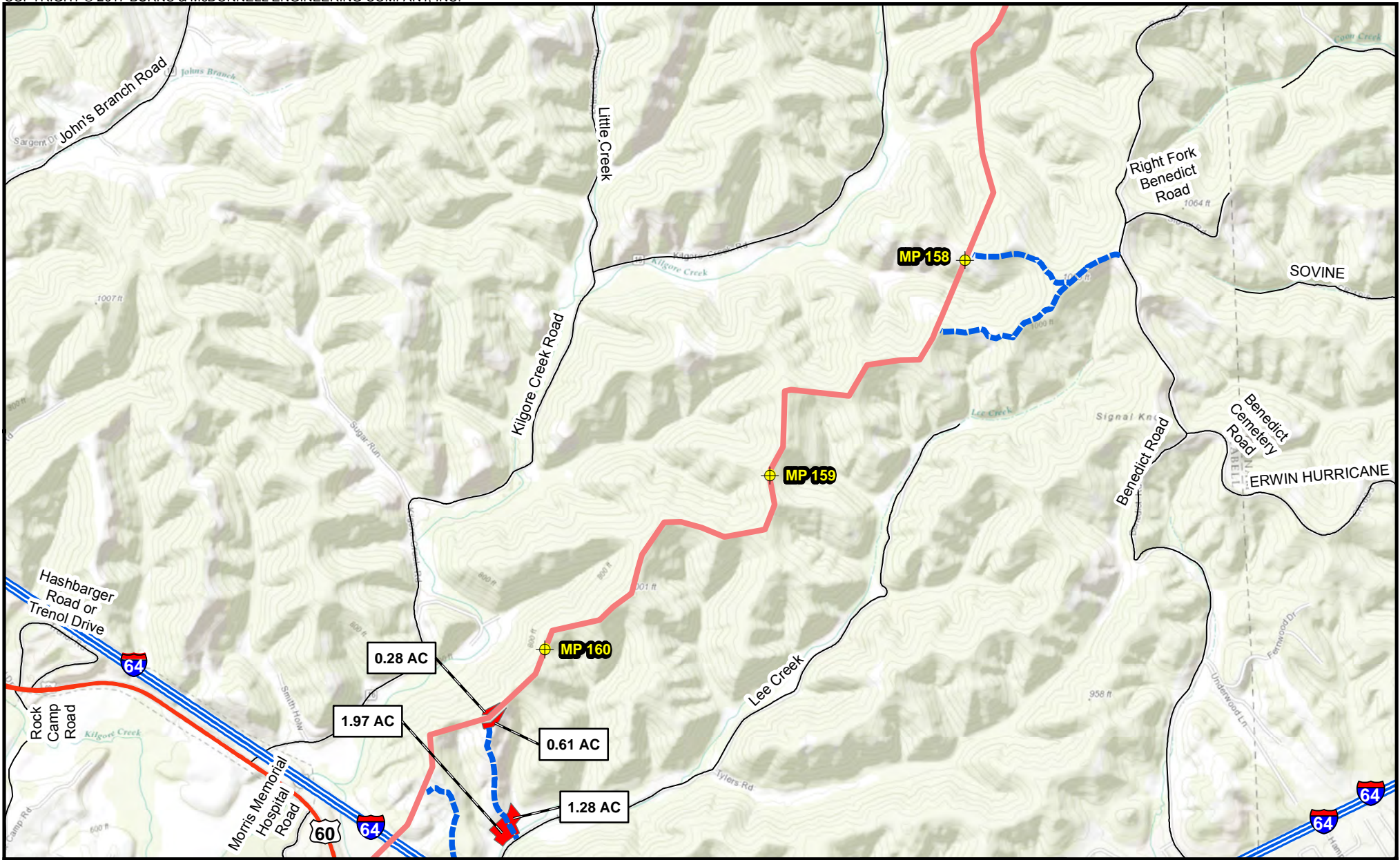
Appendix B-1
Mountaineer XPress Project
Project Overview Map
Page 56 of 63



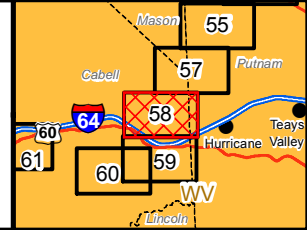
- Milepost
- Access Road
- Proposed Pipeline**
- MXP-100



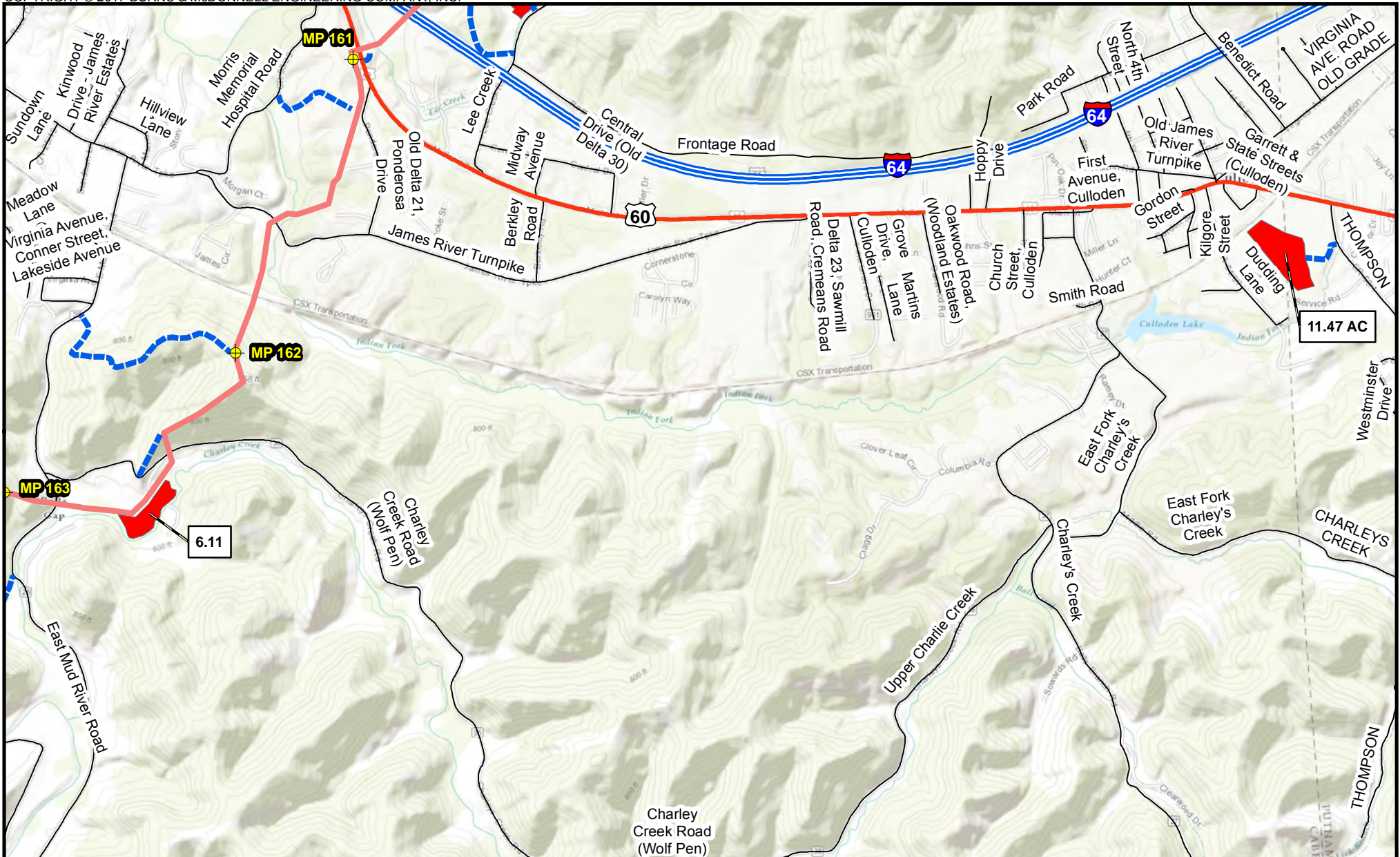
Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
 Page 57 of 63



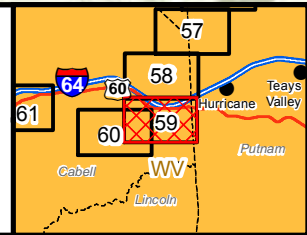
Milepost	Proposed Pipeline	
Access Road	MXP-100	
Pipe/Contractor Yard, Staging Area		<p>Scale in Feet</p>



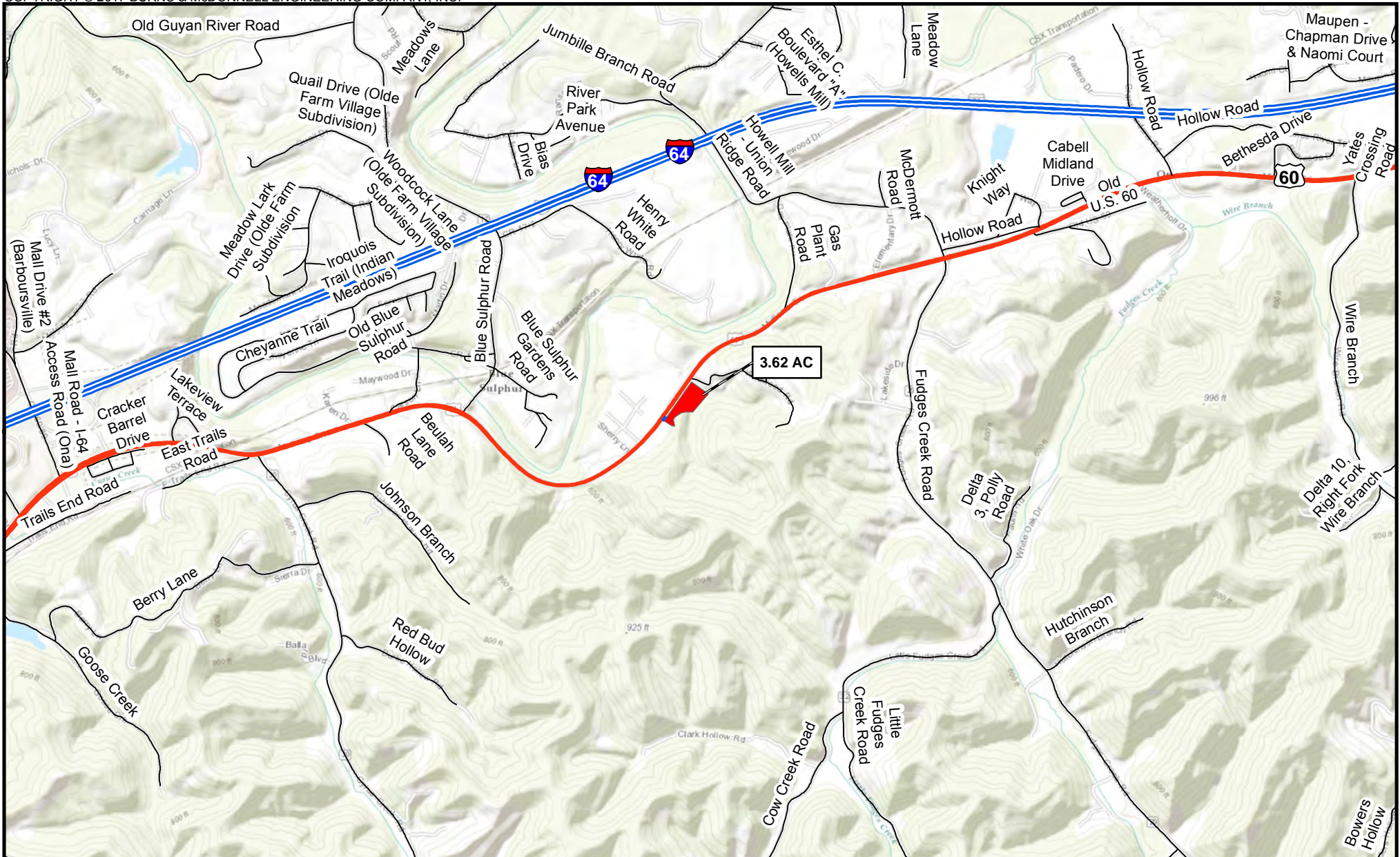
Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
 Page 58 of 63



Milepost	Proposed Pipeline	 NORTH
Access Road	MXP-100	
Pipe/Contractor Yard, Staging Area	 Scale in Feet	



Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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--- Access Road

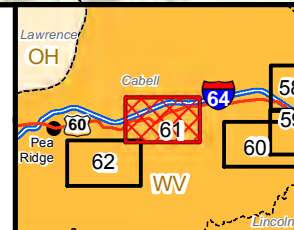
■ Pipe/Contractor Yard, Staging Area



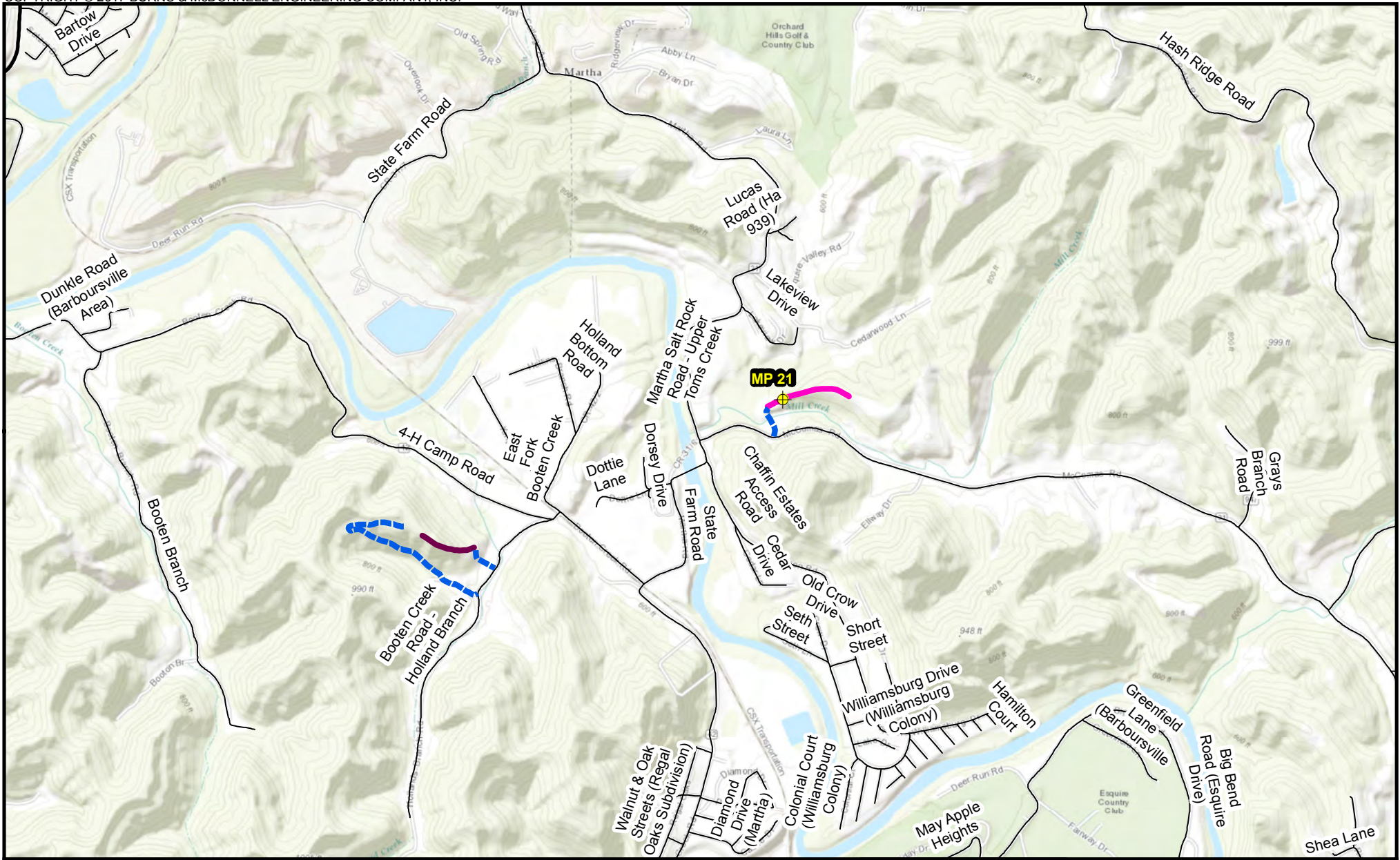
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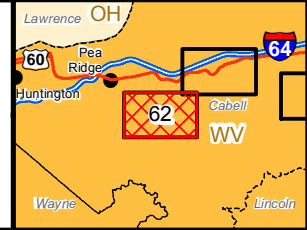
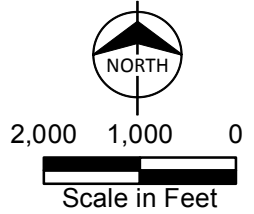
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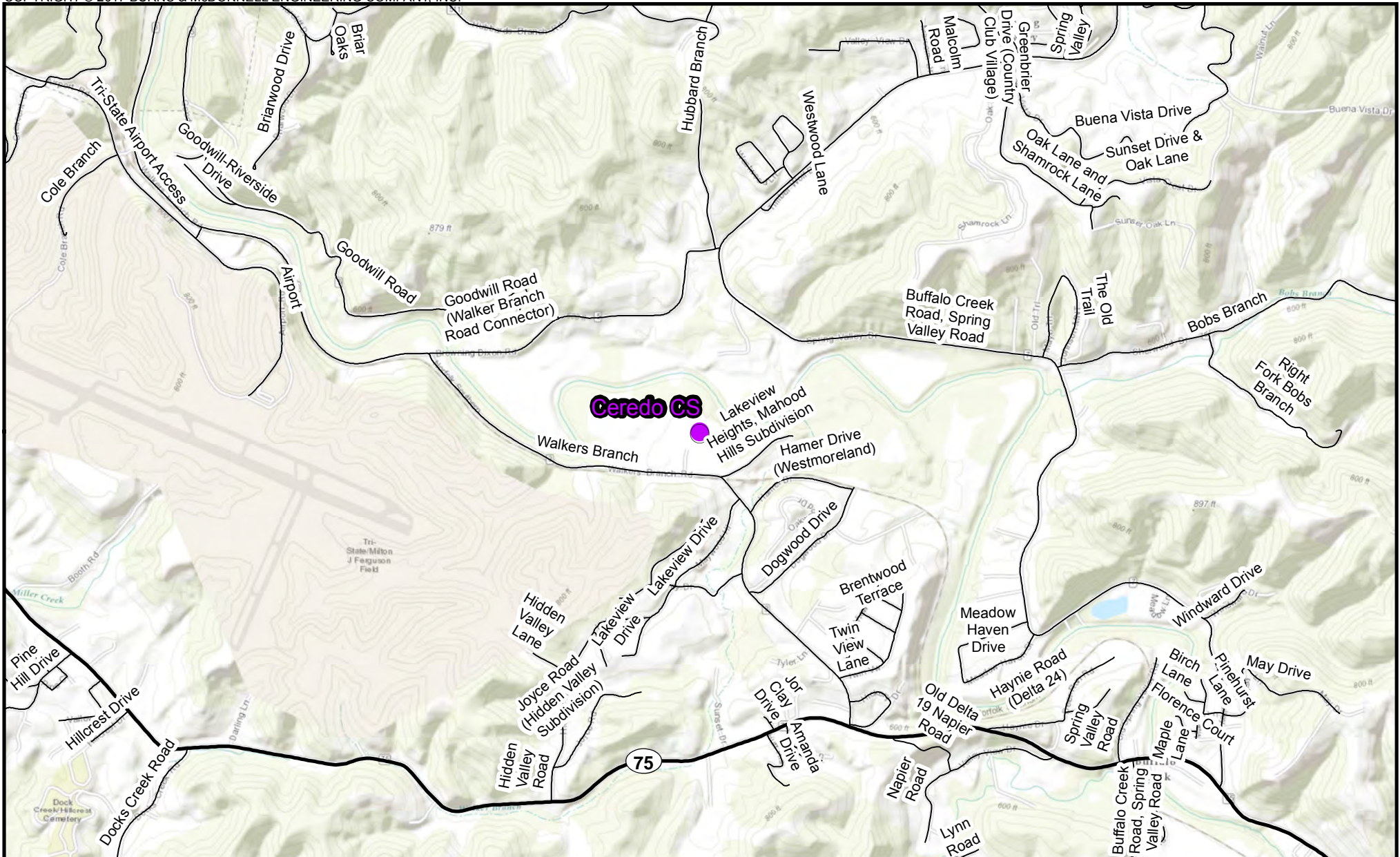
Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
 Page 61 of 63



-  Milepost
-  Access Road
- Proposed Pipeline**
-  SM-80 Line Replacement
-  SM-80 Loop Line Replacement



Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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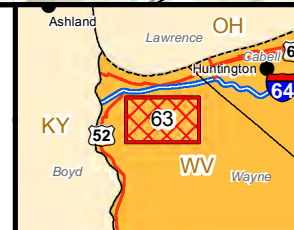
 Compressor Station



2,000 1,000 0



Scale in Feet



Appendix B-1
 Mountaineer XPress Project
 Project Overview Map
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Mountaineer XPress Project
Site-specific Stream and Highway Crossing Drawings



MOUNTAINEER XPRESS PROJECT

PROPOSED 36" PL-MXP-100 PIPELINE

ENGINEERING SERVICES DESIGN; JOB NUMBER 6987

SITE SPECIFIC STREAM & HIGHWAY CROSSINGS - COVER SHEET

D6987-SWD-006	PL-MXP-100 - RIVER CROSSING - KANAWHA RIVER MP 147.2 - PUTNAM COUNTY, WV	P6
D6987-SWD-007	PL-MXP-100 - RIVER CROSSING - BUCKEYE CREEK MP 48.5 - DODDRIDGE COUNTY, WV	P1
D6987-HXP-001	PL-MXP-100 - ROAD CROSSING - US HIGHWAY 50 MP 48.4 - DODDRIDGE COUNTY, WV	P7
D6987-SWD-008	PL-MXP-100 - RIVER CROSSING - MUD RIVER MP 163.6 - CABELL COUNTY, WV	P1

**ISSUED FOR
FERC SUPPL**
02/17/2017



DESIGN PRESSURE _____ PSE AT _____ T₁ _____ DESIGN FACTOR _____ MINIMUM HOOP STRESS LEVEL _____
 BY _____ PER _____ TYPED BY _____
 MINIMUM TEST PRESSURE _____ PSE AT _____ T₁ LIMITED BY _____ MINIMUM TEST PRESSURE _____ PSE AT _____
 TEST LIMITED BY _____ SURFACE _____ TEST PERIOD _____ HOURS
 TEST MEDIUM _____

CONDUCT THE INSPECTION REQUIREMENTS _____
 CERTIFICATE _____
 TO THE BEST OF MY KNOWLEDGE, ALL COMPONENTS OF THIS DRAWING ARE DESIGNED IN ACCORDANCE WITH APPLICABLE COLUMBIA GUIDELINES AND SPECIFICATIONS.

DESIGN ENGINEER _____ DATE _____
 APPROVED _____ DATE _____

NOTE: ANY CHANGES TO THE DESIGN OR DRAWING SHALL BE APPROVED BY THE DESIGN ENGINEER.

PROJECT DELIVERY
 PROJECT ENGINEERING
 P.O. BOX 1273 CHARLESTON, WV 25320-1273
 1700 WOODSIDE DRIVE SE, CHARLESTON, WV 25314



TITLE
 PL-MXP-100 PIPELINE
 SITE SPECIFIC STREAMS & HIGHWAY CROSSING COVER

PROJECT NUMBER 03-31-16
 DWG. NO. 0432
 DRAWING NUMBER 0432

PROJECT NUMBER 0432
 W.D. NUMBER 46130
 D6987-SWD-COV P3

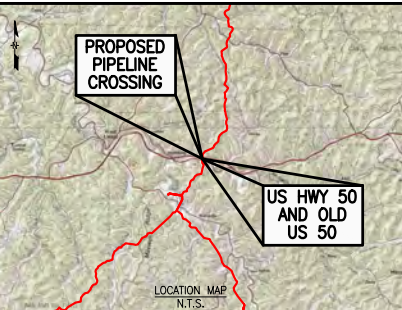
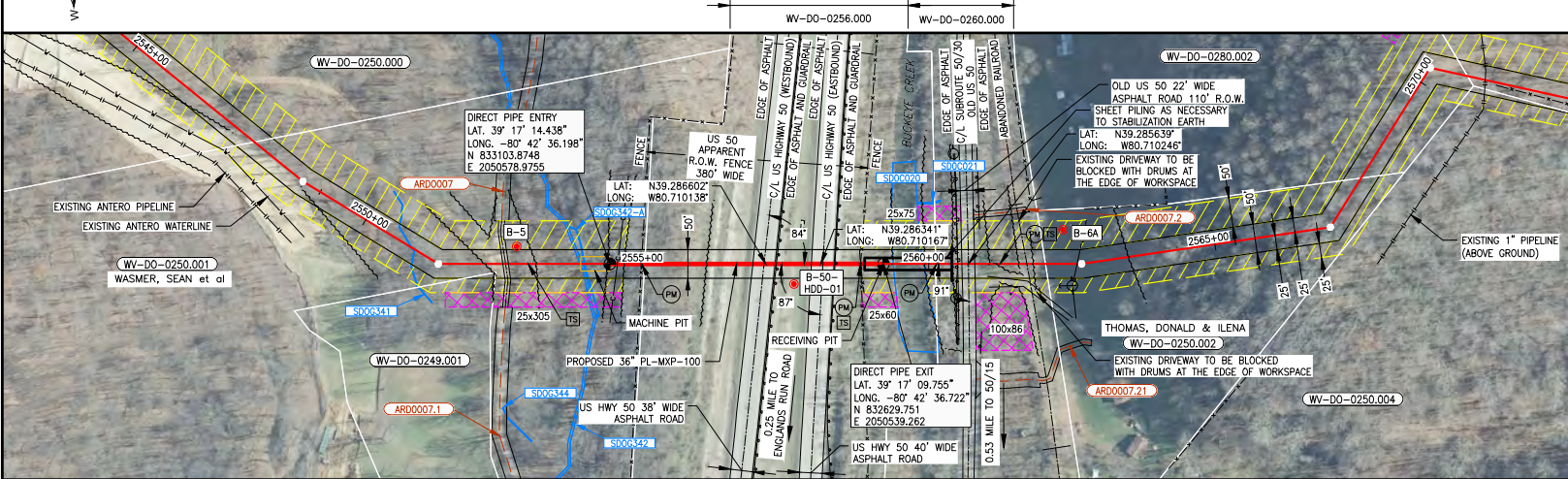
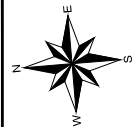
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△	ISSUED FOR FERC SUPPL FILING	SS	02/17/17		
△	ISSUED FOR FERC SUPPL FILING	TJ	02/17/17		
△	ISSUED FOR FERC FILING	JJE	02/29/14		
△	ISSUED FOR FERC FILING	SS	02/29/14		
△	ISSUED FOR FERC FILING	SS	02/29/14		
△	ISSUED FOR FERC FILING	TJ	02/29/14		

NO.	REVISIONS	BY	DATE	APPROVED	DATE
△	ISSUED FOR 50% REVIEW	JJE	02/29/14		
△	ISSUED FOR 50% REVIEW	SS	02/29/14		
△	ISSUED FOR 50% REVIEW	TJ	02/29/14		
△	ISSUED FOR 50% REVIEW	JJE	02/29/14		
△	ISSUED FOR 50% REVIEW	SS	02/29/14		
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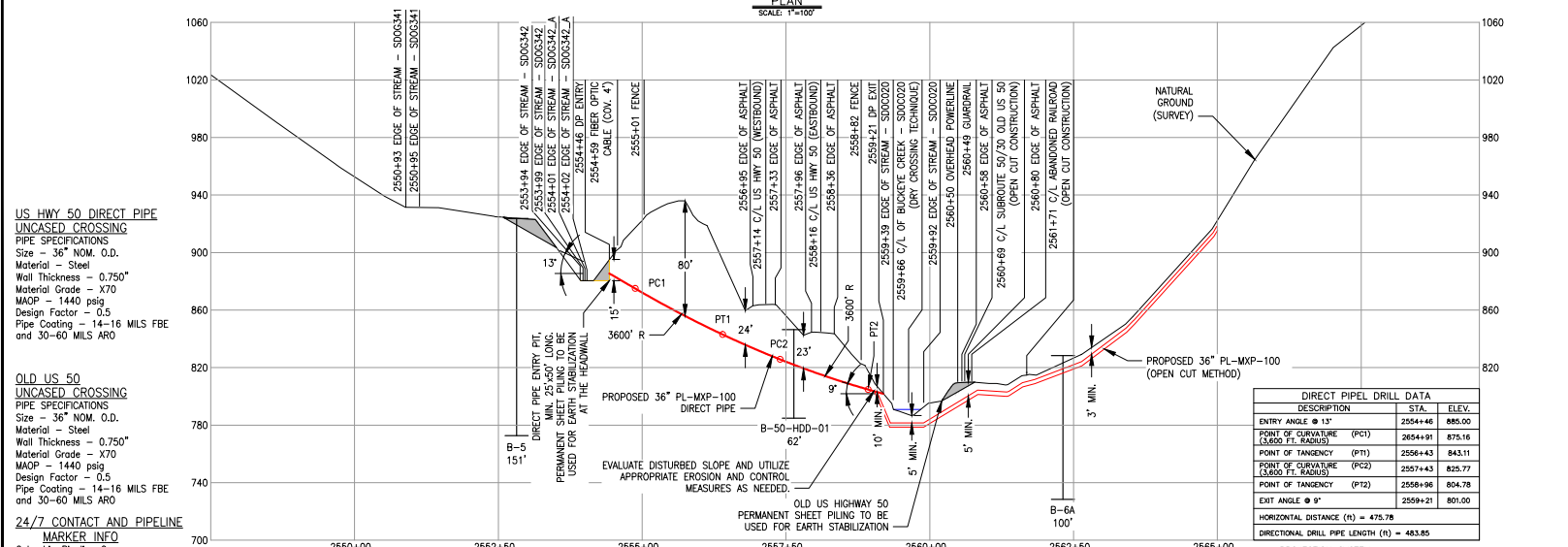
DWG. NO.	REFERENCE

D6987-SWD-COV
 DRAWING NUMBER
 P3

DODDRIDGE COUNTY, WEST VIRGINIA



- DIRECT BORE CONSTRUCTION NOTES:**
- ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS. NO VEHICULAR OR PEDESTRIAN TRAFFIC SHALL ENTER OR EXIT THE WORKSPACE FROM US 50.
 - WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY.
 - WATER SOURCE: DRILL WATER AND HYDROSTATIC TEST WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
 - HYDROSTATIC TEST: PRE-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE USED IN THE DRILLING PROCESS OR DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIBER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
 - SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCF PLAN.
 - EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
 - INSTALLATION: THE DIRECT PIPE SHALL BE COMPLETED USING A HERRENKNECHT 36" DIRECT PIPE MICROTUNNELING MACHINE. CONTRACTOR WILL CONTINUOUSLY MONITOR THRUST PRESSURE AND PIPE DEFLECTION TO AVOID OVERSTRESS OF THE PIPE. CONTRACTOR SHALL REPORT DAILY FEET OF PROGRESS, THRUST PRESSURES, VERTICAL AND HORIZONTAL DEFLECTION, AND VARIANCE FROM THE DESIGN CURVE.
 - DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY COLUMBIA'S REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS, ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICABLE AND DISPOSED OF AS DIRECTED BY COLUMBIA'S REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
 - CLEANUP/STABILIZATION/RESTORATION: DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDS AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY COLUMBIA TO FACILITATE CONTAMINANT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE DIRECT PIPE INSTALLATION PROCESS.
 - CONTRACTOR IS RESPONSIBLE FOR CALLING WEST VIRGINIA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 10 FEET OF THE DESIGNED DIRECT PIPE PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM COLUMBIA PRIOR TO INITIATING DIRECT PIPE OPERATIONS.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE DIRECT PIPE OPERATIONS. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER COLUMBIA'S SPECIFICATIONS, CONTRACT DOCUMENT AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
 - ACCESS TO THE RESIDENTS WILL BE CONSTRUCTED PRIOR TO CLOSURE OF OLD HWY 50. THIS ACCESS IS NOTED ON THE DRAWING AS ARD0007.2 AND ARD0007.21.
 - OLD HWY 50 WILL BE REPAIRED AND RECONSTRUCTED PER SHEET 2.
 - REFER TO FSI GEOTECHNICAL REPORTS DATED APRIL 15, 2016 FOR B-5 AND B-6A, AND SUPPLEMENTAL REPORT DATED NOVEMBER 14, 2016 FOR B-5+HDD-01.



US HWY 50 DIRECT PIPE UNCASED CROSSING
 PIPE SPECIFICATIONS
 Size - 36" NOM. O.D.
 Material - Steel
 Wall Thickness - 0.750"
 Material Grade - X70
 MAOP - 1440 psig
 Design Factor - 0.5
 Pipe Coating - 14-16 MILS FBE and 30-60 MILS ARO

OLD US 50 UNCASED CROSSING
 PIPE SPECIFICATIONS
 Size - 36" NOM. O.D.
 Material - Steel
 Wall Thickness - 0.750"
 Material Grade - X70
 MAOP - 1440 psig
 Design Factor - 0.5
 Pipe Coating - 14-16 MILS FBE and 30-60 MILS ARO

24/7 CONTACT AND PIPELINE MARKER INFO
 Columbia Pipeline Group
 P.O. Box 1273
 Charleston, WV 25325-1273
 Emergency Phone: 1-800-835-7191

PIPELINE CROSSING @ US HWY 50 MP 12.09
 LATITUDE: N39.286602° LONGITUDE: W80.710136°
PIPELINE CROSSING @ OLD US 50 RD MP 13.97
 LATITUDE: N39.286341° LONGITUDE: W80.710246°

PROFILE
 HORIZONTAL SCALE: 1"=100'
 VERTICAL SCALE: 1"=40'

PROJECTION SYSTEM
 NAD83 STATE PLANE,
 WEST VIRGINIA SOUTH (U.S. SURVEY FEET)

LEGEND
 MWPGT - MILEPOST
 --- EXISTING COLUMBIA PIPELINE
 --- FRESH PIPELINE
 --- PERMANENT ROW
 --- FENCE
 --- TEMPORARY WORKSPACE
 --- ADDITIONAL TEMPORARY WORKSPACE
 --- ACCESS ROAD
 --- CONTRACTOR / PIPE VAD
 --- NETWAD ID
 --- ACCESS ROAD NUMBER
 --- COUNTY BORDER
 --- UNDERGROUND CABLE
 --- OVERHEAD POWERLINE
 --- WATERLINE
 --- COUNTY BOUNDARY
 --- METAD
 --- SANITARY
 --- WATERSHED ID
 --- WATERBODY ID

DIRECT PIPEL DRILL DATA

DESCRIPTION	STA.	ELEV.
ENTRY ANGLE @ 13'	2554+46	885.00
POINT OF CURVATURE (PC1) (3,600 FT. RADIUS)	2654+91	875.16
POINT OF TANGENCY (PT1)	2556+43	843.11
POINT OF CURVATURE (PC2) (3,600 FT. RADIUS)	2557+43	825.77
POINT OF TANGENCY (PT2)	2559+96	804.78
EXIT ANGLE @ 9'	2559+21	801.00
HORIZONTAL DISTANCE (H) = 475.78		
DIRECTIONAL DRILL PIPE LENGTH (L) = 483.85		

LEGEND
 HD ENTRY/EXIT
 BORE HOLE
 FISH EXCLUSION NET
 PROPOSED CROSSING BRIDGE
 FRESH PILING
 WAYS
 HD ENTRY/EXIT
 BORE HOLE
 FISH EXCLUSION NET
 PROPOSED CROSSING BRIDGE
 FRESH PILING
 WAYS
 PROPOSED PIPE MARKER
 TEST STATION
 SILT FENCE
 ABSORBENT BOOM
 SAFETY BARRIER
 EMERGENCY CURTAIN
 WATERSHED BOUNDARY

WEST VIRGINIA DOH APP. NO.

ISSUED FOR FERC SUPPL
 02/17/2017

PROJECT DELIVERY PROJECT ENGINEERING

Columbia Gas Transmission

MOUNTAINEER XPRESS PROJECT

PL-MXP-100 - ROAD CROSSING US HIGHWAY 50 MP 48.4 - DODDRIDGE CO, WV

DATE: 02/17/17
SCALE: 1"=100'
DWG. NO.: 20432
ISSUED BY: 46130
DATE: 3/11/16
DRAWING NUMBER: 06987-HXP-001
SHEET: 1 OF 4
ISSUE: P7

No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE
1	ISSUED FOR FERC FILING		4/29/16	1	ISSUED FOR FERC DATA REQUEST		9/8/16	1	ISSUED FOR PERMIT	JTU	02/07/17
2	ISSUED FOR 50% REVIEW		5/9/16	2	ISSUED FOR FERC SUPPL FILING		10/27/16	2	ISSUED FOR FERC SUPPL FILING	SJO	02/17/17

GENERAL NOTES:

- THIS DRAWING IS FOR PERMITTING PURPOSES ONLY.
- ALL WORK AND MATERIALS WITHIN RIGHT-OF-WAY MUST CONFORM TO WVDOT REGULATIONS AND STANDARDS.
- NO IMPACTS TO THE PAVEMENT STRUCTURE ARE ANTICIPATED WITH BORE OR DIRECTIONAL DRILL CONSTRUCTION.
- ON ROADS WHERE OPEN-CUT CONSTRUCTION METHODS ARE USED, THE EXISTING ROAD SURFACE SHOULD BE RESTORED TO ORIGINAL CONDITIONS AFTER COMPLETION OF THE WORK.
- AFTER THIS LINE IS IN SERVICE, REPAIRS AND/OR REPLACEMENT OF THE INSTALLED PIPE WILL BE OUTSIDE OF THE ROADWAY RIGHT-OF-WAY WHEN POSSIBLE. WHEN THE REPAIRS ARE REQUIRED INSIDE OF THE ROADWAY RIGHT-OF-WAY, THE PIPELINE WILL BE ABANDONED BY REMOVING THE LINE FROM SERVICE, FILLING THE PIPE WITH AN APPROPRIATE GROUT, AND CAPPING BOTH ENDS. A NEW CROSSING WILL BE INSTALLED A SAFE DISTANCE A WAY AND TIED INTO THE EXISTING PIPELINE.
- THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION, SIZES AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- LINE MARKERS WILL BE LOCATED AT THE ROAD RIGHT-OF-WAY LINES INDICATING THE ADDRESS AND TELEPHONE NUMBER OF OPERATOR AND THAT THE UTILITY IS A NATURAL GAS PIPELINE.
- WORK ZONE TRAFFIC CONTROL CASES C1 & C4 SHALL BE APPLIED AS SHOWN IN WVDOT'S MANUAL ON TEMPORARY TRAFFIC CONTROL FOR STREETS AND HIGHWAY, 2006 EDITION.
- CONTRACTOR SHALL MAINTAIN 5 FEET COVER OVER PIPELINE WITHIN THE LIMITS OF THE ROAD RIGHT-OF-WAY ON NON-LIMITED RIGHTS AND 10' MINIMUM COVER OVER PIPELINE WITHIN THE ROADWAY RIGHT-OF-WAY FOR LIMITED ACCESS HIGHWAYS.
- THE CONTRACTOR SHALL EXERCISE CARE TO AVOID DAMAGES TO ALL EXISTING UTILITIES.
- THIS GAS AND/OR PETROLEUM PIPELINE INSTALLATION AND MAINTENANCE TO BE DESIGNED TO MEET ALL RULES, REGULATIONS AND PIPELINE CRITERIA CONTAINED IN 49 CFR 192 AND/OR CFR FEDERAL SAFETY STANDARDS.
- CONTRACTOR TO INSTALL SHORING AS NECESSARY TO MAINTAIN STABLE PIPE TRENCHES.
- PIPE PROFILE REPRESENTS MINIMUM DEPTH OF COVER REQUIREMENTS. ACTUAL CONSTRUCTION DEPTH TO BE DETERMINED BASED ON SITE-SPECIFIC CONDITIONS.

PIPELINE NOTES:

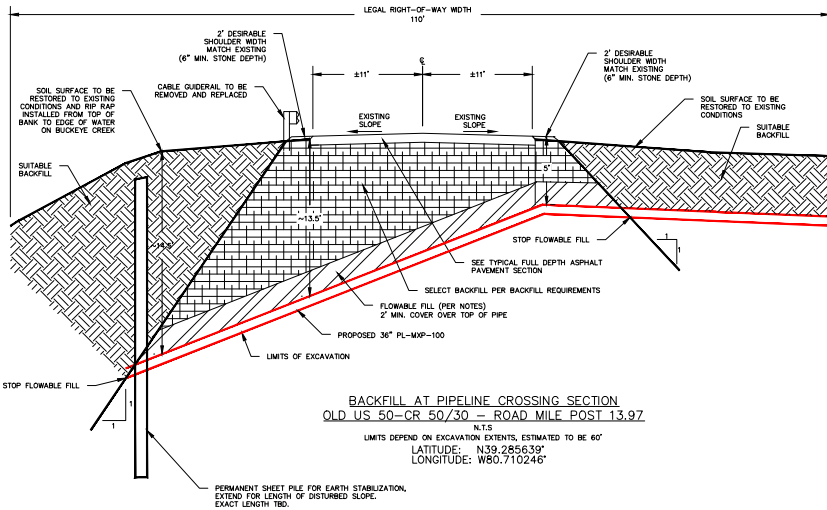
- THE CATHODIC PROTECTION FOR THE PIPELINE WILL BE PROVIDED BY IMPRESSED CURRENT.
- NO EXCAVATION ANTICIPATED WITHIN THE WVDOT RIGHT-OF-WAY.
- ANY SURFACE DISTURBANCE DUE TO TEST PIT/POTHOLE OF EXISTING UTILITIES SHALL BE REPAIRED IN ACCORDANCE WITH LOCAL STATE/COUNTY/TOWNSHIP AUTHORITIES.
- HORIZONTAL DATUM BASED ON NAD83, WEST VIRGINIA STATE PLANE SOUTH, US FOOT, VERTICAL DATUM BASED ON NAVD83, PROPERTY LINES SHOWN ON THESE SHEETS ARE APPROXIMATE AND NOT BASED ON A BOUNDARY SURVEY.
- THIS SURVEY WAS CONDUCTED BY TRC, 2016.

UTILITY NOTES:

- THE UNDERGROUND UTILITIES SHOWN HEREON WERE COMPILED FROM INFORMATION OBTAINED FROM EXISTING PLANS, SURFACE FACILITIES, AND FIELD WORK. UTILITIES ARE SHOWN AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. NO GUARANTEE OF ACTUAL LOCATION IS GIVEN UNTIL SAID LINES ARE UNCOVERED IN FIELD FOR VERIFICATION.
- PIPELINE SHALL BE REGISTERED WITH WEST VIRGINIA 8-1-1 UTILITIES PROTECTION SERVICE: 1-800-245-4548

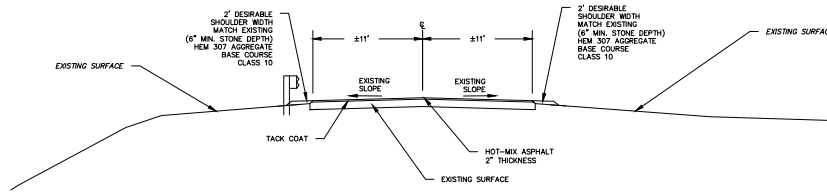
WEST VIRGINIA DOH NOTES:

- APPLICATIONS FOR PIPELINE ACCESSSES SHALL BEAR THE SIGNATURE OF THE PROPERTY OWNER OR PROPERTY OWNER'S AUTHORIZED AGENT (IF APPLICABLE) AND THE SIGNATURE OF THE OIL AND GAS COMPANY REPRESENTATIVE.
- YOU MUST CONTACT THE WVDOT TRANSPORTATION MANAGER 48 HOURS PRIOR TO STARTING ANY WORK AND UPON COMPLETION, A COPY OF THE PERMIT AND APPROVED PLANS MUST BE ON SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED WITHIN THE STATE RIGHT-OF-WAY.

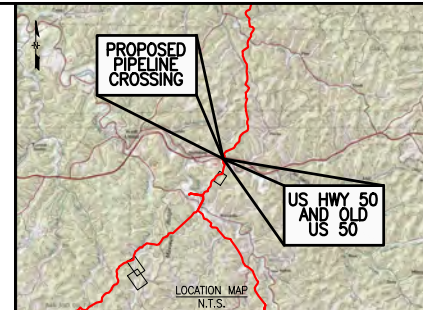


BACKFILL AT PIPELINE CROSSING SECTION
 OLD US 50-CR 50/30 - ROAD MILE POST 13.97
 N.T.S.
 LIMITS DEPEND ON EXCAVATION EXTENTS, ESTIMATED TO BE 6'
 LATITUDE: N39.285639°
 LONGITUDE: W80.710246°

TYPICAL FULL DEPTH ASPHALT PAVEMENT SECTION
 N.T.S.



TYPICAL PAVEMENT OVERLAY SECTION
 N.T.S.
 LIMITS TO BE APPROXIMATELY 10' ON EACH SIDE OF THE FULL DEPTH EXCAVATION



SELECT BACKFILL REQUIREMENTS

- THE FOLLOWING BACKFILLING SPECIFICATION IS TO BE USED IN CONNECTION WITH ANY UTILITY WORK PERFORMED WITHIN HIGHWAY RIGHT OF WAY.
- AFTER THE CASING CONDUIT OR OTHER UNDERGROUND FACILITY IS INSTALLED, THE TRENCH IS TO BE BACKFILLED. ALL BACKFILL MATERIAL SHALL BE FREE FROM PARTICLES LARGER THAN 3 INCHES (75MM); NOT BE FROZEN; CONTAIN NO CINDERS, ASHES, REFUSE, ORGANIC, VEGETABLE OR OTHER LIKE MATTER; NO OTHER MATERIAL DEEMED UNSUITABLE BY THE DISTRICT ENGINEER OR HIS AUTHORIZED REPRESENTATIVE. CARE SHALL BE TAKEN TO COMPACT THE MATERIAL UNDER THE HAUNCHES OF THE CASING, CONDUIT PIPE OR OTHER FACILITY AND TO PLACE THE BACKFILL EVENLY ON EACH SIDE. THE BACKFILL MATERIAL SHALL BE DEPOSITED IN THE TRENCH FOR ITS FULL WIDTH IN LAYERS NOT EXCEEDING 4 INCHES (100MM) AFTER COMPACTION. THIS METHOD SHALL BE FOLLOWED UNTIL THE TRENCH IS FULLY BACKFILLED. THE TARGET PERCENTAGE OF DRY DENSITY FOR THE BACKFILL MATERIAL WILL BE 95% OR THE DENSITY OF THE EXISTING MATERIAL, AS EVIDENCED BY TESTING, IF THE EXISTING DENSITY IS LOWER THAN 95% IN AREAS OUTSIDE THE LIMITS OF THE TRAVELED WAY AND SHOULDERS, COMPACTION TO THE DENSITY OF THE ORIGINAL GROUND IS SUFFICIENT.
- ALL BACKFILL MATERIAL AND COMPACTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS IN THIS MANUAL AND SUBJECT TO DIVISION OF HIGHWAYS APPROVAL EVIDENCE OF PROPER COMPACTION BY TESTING WILL BE THE RESPONSIBILITY OF THE APPLICANT. THE TESTING SHALL BE 1 (ONE) PER DAY OF EVERY 500 LINEAL FEET (150M) OR AS DETERMINED BY THE DISTRICT ENGINEER OF HIS AUTHORIZED REPRESENTATIVE.
- APPROPRIATE AGGREGATE BASE COURSE AND/OR AGGREGATE SHOULDER STONE IS TO BE PLACED ON THE SHOULDER AT A THICKNESS EQUAL TO 6 INCHES (150MM) OR ITS ORIGINAL THICKNESS WHICHEVER IS GREATER. PAVED SHOULDER SHALL BE REPAVED.

FLOWABLE FILL

- PIPELINE WILL BE BACKFILLED WITH FLOWABLE FILL TO A MINIMUM OF 2' OF COVER WITHIN THE ANGLE OF INFLUENCE.
- FLOWABLE FILL TO BE PER MIXTURE SPECIFIED ON TYPICAL.

GENERAL NOTES FOR TYPICAL SECTIONS

- SOIL SURFACE WILL BE SCARIFIED AND SEEDED IN ACCORDANCE WITH WVDOT STANDARDS.
- ROADWAY MARKINGS, SIGNAGE, AND LINE STRIPING SHALL BE RESTORED TO EXISTING CONDITIONS IN ACCORDANCE WITH WVDOT STANDARDS.
- NEW ROADWAY SURFACE SHALL BE TIED INTO EXISTING ROADWAY SURFACE IN ACCORDANCE WITH WVDOT STANDARD DETAILS.
- ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH WVDOT STANDARD SPECIFICATIONS, ROADS, AND BRIDGES 2010 AND MOST CURRENT SUPPLEMENTAL SPECIFICATIONS.

OLD US 50 UNCASED CROSSING

PIPE SPECIFICATIONS
 Size - 36" NOM. O.D.
 Material - Steel
 Wall Thickness - 0.750"
 Material Grade - X70
 MAOP - 1440 psig
 Design Factor - 0.5
 Pipe Coating - 14-16 MILS FBE
 and 30-60 MILS ARO



24/7 CONTACT AND PIPELINE MARKER INFO

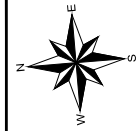
WEST VIRGINIA DOH APP. NO. _____
 Columbia Pipeline Group
 P.O. Box 1273
 Charleston, WV 25325-1273
 Emergency Phone: 1-800-835-7191

LEGEND

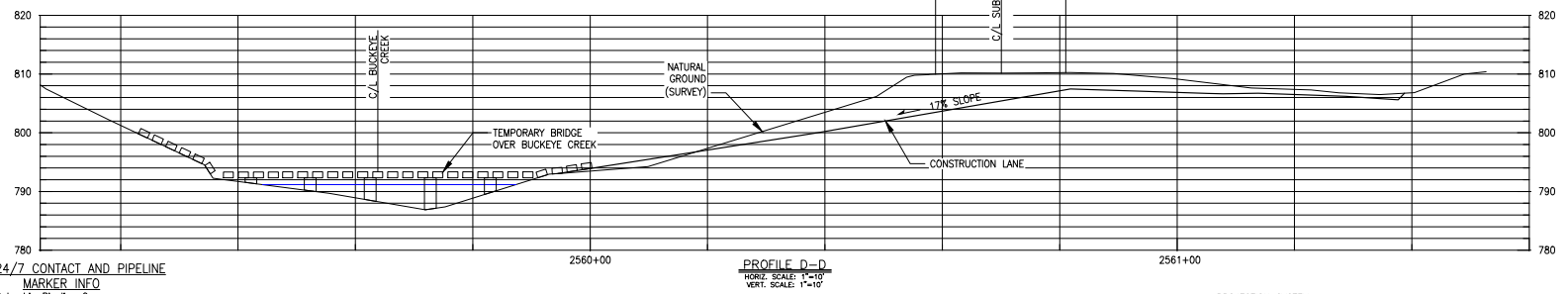
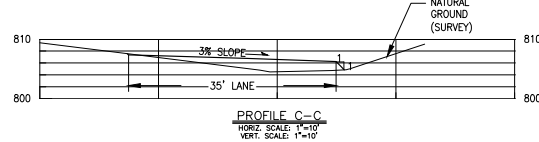
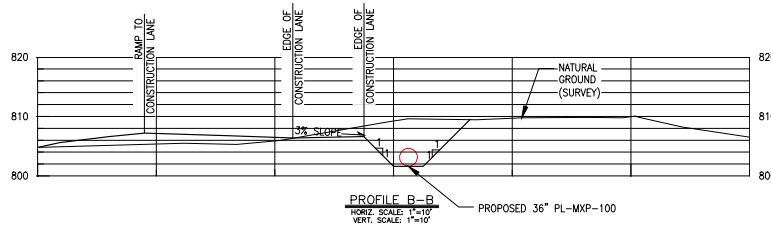
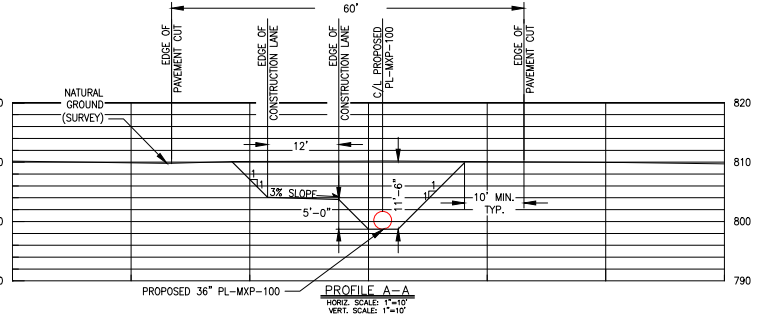
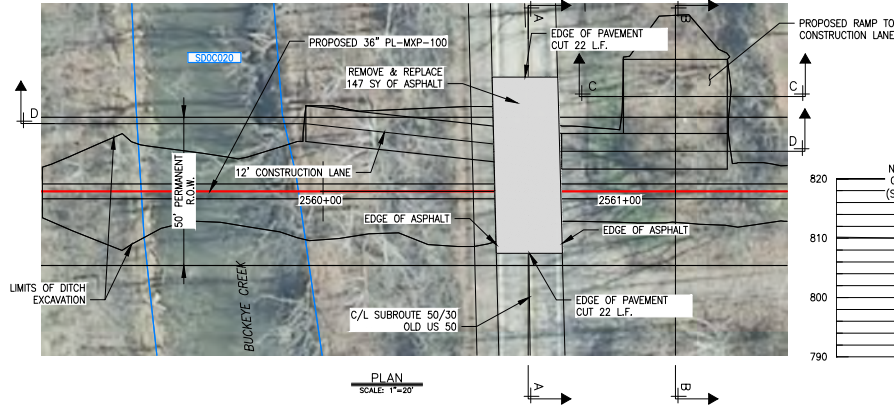
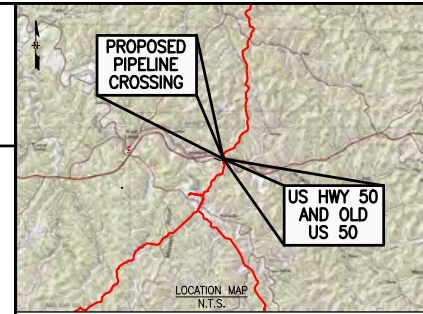


ISSUED FOR FERC SUPPL
 02/17/2017

<p>THE PIPELINE SERVICES, LLC 2007 EAST 71ST STREET OKLAHOMA CITY, OK 73114 (405) 496-0400 FPM CGA NO. 002358</p>		<p>SCALE: NONE 0'</p>		<p>2007-ALC-004 ALIGNMENT SHEET 2007-RP-04 TYPICAL ROAD REPAIR DETAIL (TYPE C) FLOWABLE FILL MIX SPECIFICATION 2007-RP-05 TEMPORARY ROAD ENTRANCE ROCK PADS</p>		<p>PROJECT DELIVERY PROJECT ENGINEERING MOUNTAINEER XPRSS PROJECT</p>		<p>Columbia Gas Transmission</p>	
<p>LEGEND</p> <ul style="list-style-type: none"> EXISTING COLUMN PIPELINE PROPOSED PIPELINE PERMANENT ROW FENCE ROUTE TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE ACCESS ROAD CONTRACTOR / PIPE VAD ACCESS ROAD NUMBER PROPERTY TRACT NUMBER NETLAND ID NETLAND ID WATERBODY ID UNDERGROUND CABLE EXISTING PAVEMENT WATERLINE COUNTY BORDER NETLAND WATERBODY SANITARY SEWER 		<p>ISSUED FOR PERMIT JTB 02/07/17</p>		<p>ISSUED FOR FERC SUPPL FILING SJO 02/17/17</p>		<p>APPROVED BY DATE No.</p>		<p>APPROVED BY DATE No.</p>	
<p>REVISIONS</p>		<p>REVISIONS</p>		<p>REVISIONS</p>		<p>REVISIONS</p>		<p>APPROVED BY DATE DWG. NO. REFERENCE</p>	
<p>No. REVISIONS</p>		<p>No. REVISIONS</p>		<p>No. REVISIONS</p>		<p>No. REVISIONS</p>		<p>APPROVED BY DATE DWG. NO. REFERENCE</p>	



DODDRIDGE COUNTY, WEST VIRGINIA



24/7 CONTACT AND PIPELINE MARKER INFO
 Columbia Pipeline Group
 P.O. Box 1273
 Charleston, WV 25325-1273
 Emergency Phone: 1-800-835-7191

PROJECTION SYSTEM:
 NAD83 STATE PLANE,
 WEST VIRGINIA SOUTH (U.S. SURVEY FEET)

WEST VIRGINIA DOH APP. NO.

REG. P. 1460
 CALL 1-800-245-4448

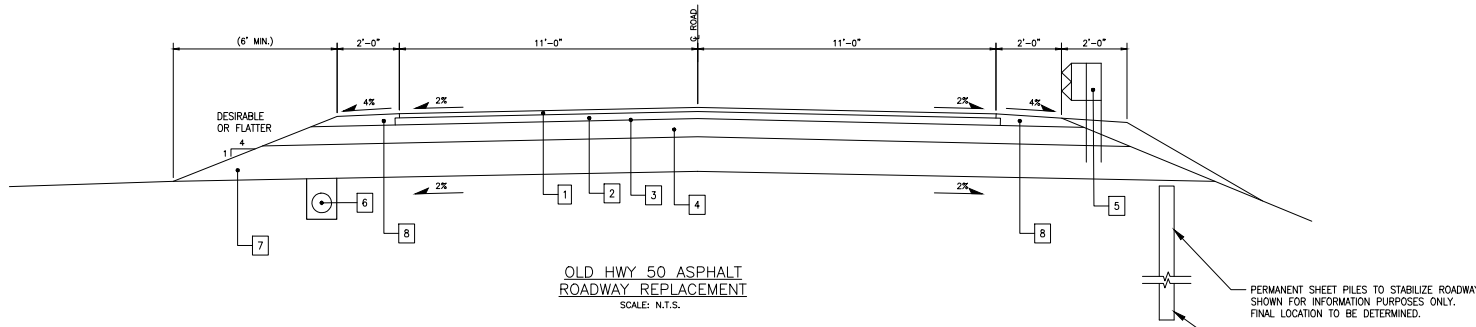
TRC PIPELINE SERVICES, LLC
 2085 EAST 73RD STREET
 TULSA, OK 74136
 (918) 459-0400
 FIRM COA NO. 022308

ISSUED FOR FERC SUPPL
02/17/2017

No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE	DWG. NO.	REFERENCE
1	ISSUED FOR PERMIT	JTD	2/10/17	-	-	-	-	-	-	-	-	-	-
2	ISSUED FOR FERC SUPPL FILING	SJO	02/17/17	-	-	-	-	-	-	-	-	-	-

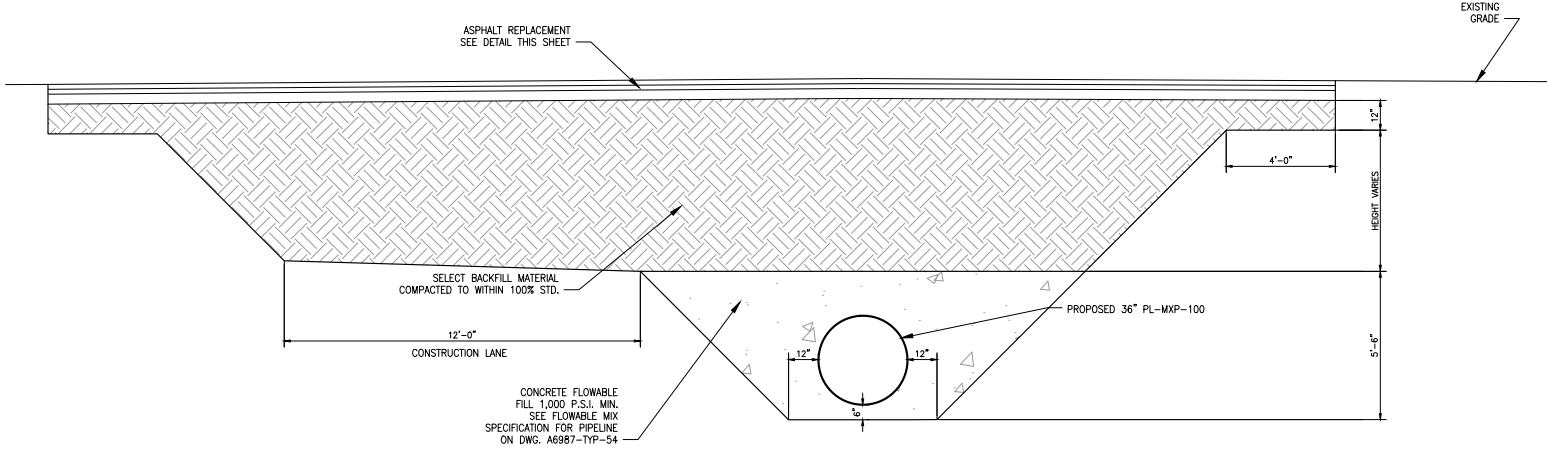
LEGEND	PROPERTY TRACT NUMBER	WETLAND	WATERBODY	SANITARY SEWER
MILEPOST EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE PERMANENT ROW FENCE TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE ACCESS ROAD CONTRACTOR / PIPE YARD SIGNAL REMOVAL / REPLACEMENT ACCESS ROAD NUMBER	PROPERTY TRACT NUMBER WETLAND ID WATERBODY ID	WETLAND WATERBODY	SANITARY SEWER	UNDERGROUND CABLE OVERHEAD POWERLINE WATERLINE COUNTY BORDER

PROJECT DELIVERY PROJECT ENGINEERING	Columbia Gas Transmission	MOUNTAINEER XPRESS PROJECT
0887-ALC-004 PROPOSED 36" PL-MXP-100 PIPELINE 0887-060-001 MXP-100 RIVER CROSSING BUCKEYE CREEK 0887-10-25 TEMPORARY ROAD ENTRANCE ROCK PADS	PROJECT ENGINEERING TITLE: PL-MXP-100 - ROAD CROSSING OLD US 50 MP 48.6 - DODDRIDGE CO, WV DRAWING NUMBER: 06987-HXP-001 SHEET: 3 OF 4 ISSUE: P2	PROJECT ENGINEERING TITLE: PL-MXP-100 - ROAD CROSSING OLD US 50 MP 48.6 - DODDRIDGE CO, WV DRAWING NUMBER: 06987-HXP-001 SHEET: 3 OF 4 ISSUE: P2



- 1 ITEM 40 -001, HOT-MIX ASPHALT 2" THICK
- 2 ITEM 401001-001, HOT-MIX ASPHALT BASE COURSE, 4" THICK
- 3 TACK COAT 0.04-0.05 GAL. PER S.Y. UNDLUTED OR 0.08-0.10 GAL. PER S.Y. DILUTED 1:1.
- 4 ITEM 307001-00, AGGREGATE BASE COURSE, CLASS 3-12" MINIMUM.
- 5 ITEM 607001-001, TYPE I GUARDRAIL, CLASS (MATCH EXISTING)
- 6 ITEM 606025-, UNDERDRAIN PIPE OR MATCH EXISTING (IF ANY)
ITEM 606020-001, FABRIC UNDERDRAIN. (MATCH EXISTING)
- 7 ITEM 207002-000, SUBGRADE MINIMUM 12" OF CLASS 3 AGGREGATE BASE, COMPACTED AND IN ACCORDANCE WITH SECTION 200 OF THE WEST VIRGINIA DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS.
- 8 ITEM 308001-001, 6" OF CLASS 10 AGGREGATE BASE.

- ASPHALT PAVEMENT NOTES:**
1. ROADS SHALL NOT BE SURFACED WITH HMA PAVEMENT UNTIL CONSTRUCTION IS COMPLETED. PRIOR TO APPLICATION OF PRIME COAT, THE BASE MATERIAL SHALL BE SCARIFIED, RE-GRADED, AND COMPACTED TO THE REQUIREMENTS DESCRIBED ON THIS DRAWING.
 2. EXPOSED SUBGRADE SHALL BE THOROUGHLY PROOF-ROLLED PRIOR TO PLACING ROAD BASE OR FILL, IN ORDER TO IDENTIFY SOFT SPOTS AND/OR UNSUITABLE SOILS. PROOF-ROLLING SHOULD BE PERFORMED WITH A LOADED, TANDEM-AXEL DUMP TRUCK, WITH A MINIMUM GROSS WEIGHT OF 20,000 LBS. OR SIMILAR RUBBER-TIRED CONSTRUCTION EQUIPMENT. PROOF-ROLLING OPERATIONS SHOULD BE OBSERVED BY A GEOTECHNICAL REPRESENTATIVE. WHEN SOFT SPOTS ARE IDENTIFIED BY EXCESSIVE DEFLECTION OR RUTTING, THE AREA SHALL BE OVER EXCAVATED AND REPLACED WITH A STRUCTURAL FILL OR AGGREGATE ROAD BASE MATERIAL.
 3. AGGREGATE BASE COURSE SHALL BE COMPACTED TO WITHIN 100% STD. PROCTOR, ASTM D698.
 4. SELECT FILL, WHEN REQUIRED TO ACHIEVE GRADE PROFILE, SHALL BE COMPACTED TO WITHIN 100% OF STD. PROCTOR, PER ASTM D698.
 5. PRIME COATS SHALL CONSIST OF CUTBACK ASPHALT, AND APPLIED PER WVDH SPECIFICATIONS, BUT AT A RATE NO LESS THAN .3 GAL./yd².
 6. CONTRACTOR TO COORDINATE ROAD CLOSURE WITH ALL APPLICABLE AGENCIES AND SHALL IMPLEMENT DETOUR ROUTE IN ACCORDANCE WITH LATEST MUTCD GUIDELINES.
 7. ALL CONSTRUCTION ACTIVITIES SHALL BE IN COMPLIANCE WITH LATEST OSHA GUIDELINES.

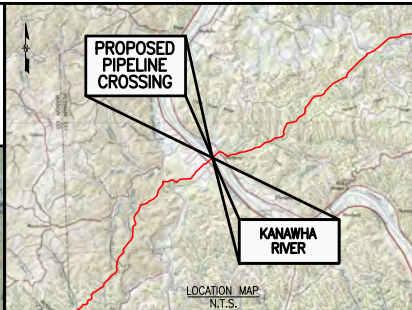
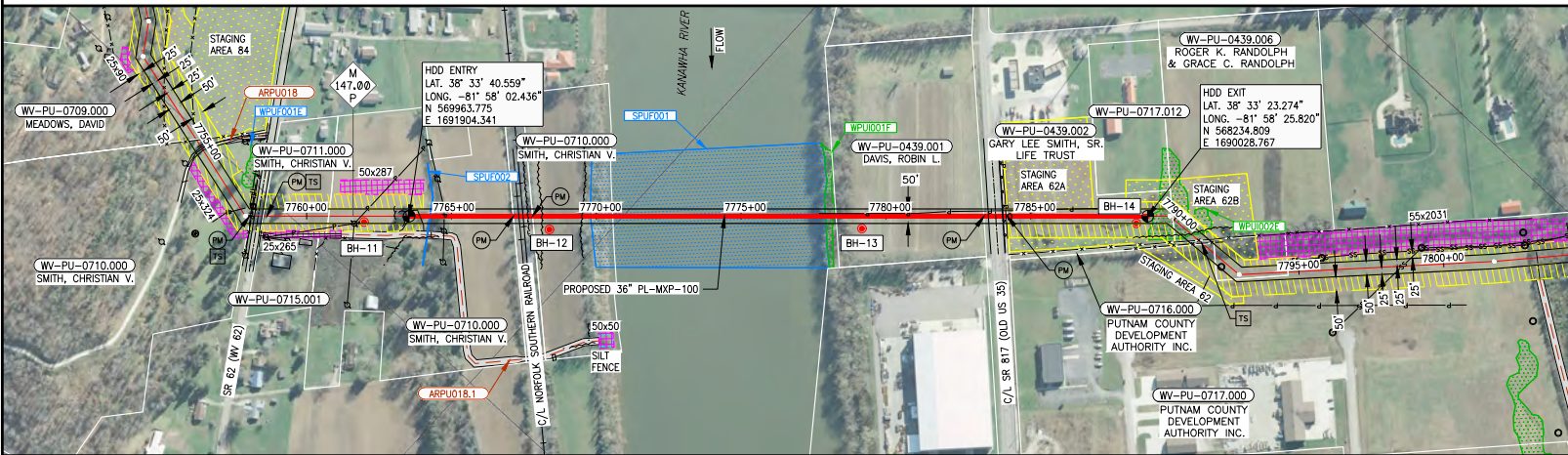
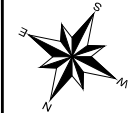


THE PIPELINE SERVICES, LLC
2007 EAST 71ST STREET
TULSA, OK 74136
(918) 498-0400
FIRM CDA NO. 202258

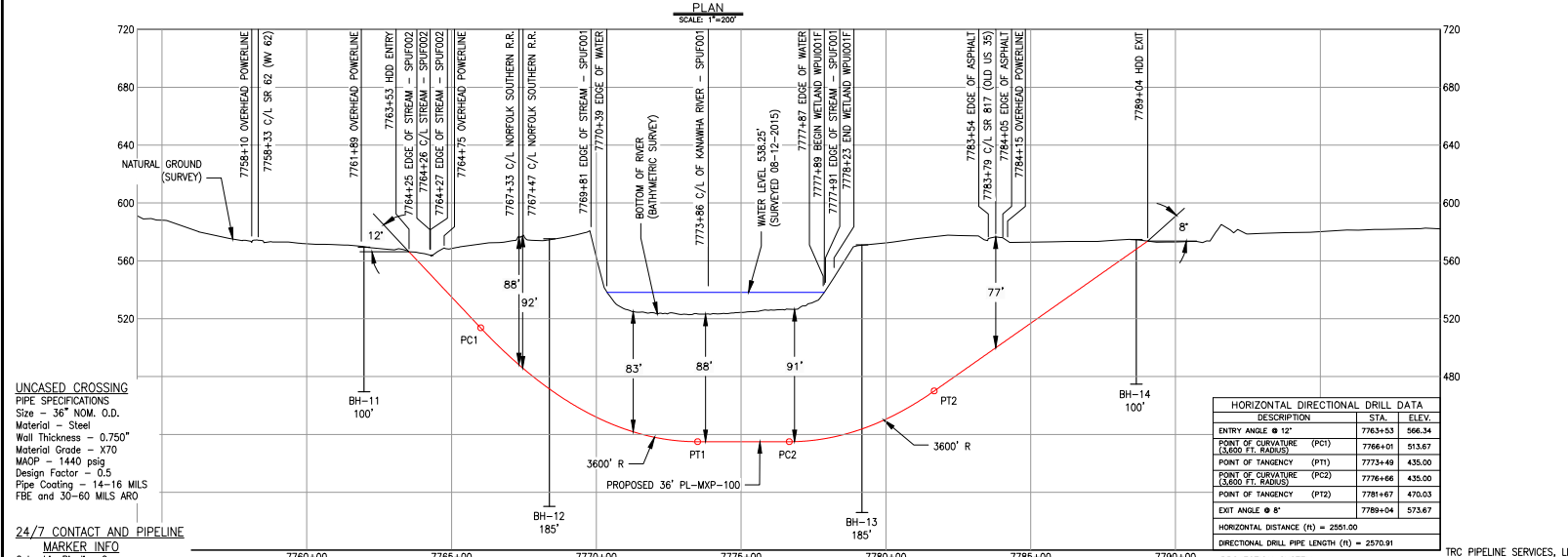
ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: NONE 		D087-ALC-204 PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING MOUNTAINEER XPRESS PROJECT			
				D087-98-001 WXP-100 RIVER CROSSING BUCKEYE CREEK		TITLE PL-MXP-100 - ROAD CROSSING OLD US 50 MP 48.6 - DODDRIDGE CO, WV		DRAWING NUMBER 06987-HXP-001	
ISSUED FOR PERMIT JFJ 2/07/17		ISSUED FOR FERC SUPPL FILING SJO 02/17/17		REVISIONS APPROVED BY DATE No.		REVISIONS APPROVED BY DATE No.		DWG. NO. 20432 REFERENCE 46130	

PUTNAM COUNTY, WEST VIRGINIA



- DIRECTIONAL DRILL CONSTRUCTION NOTES:**
- ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
 - WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED, RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
 - WATER SOURCE: DRILL WATER AND HYDROSTATIC TEST WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
 - HYDROSTATIC TEST PIPE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF Dewatering AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
 - SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPPC PLAN.
 - EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
 - INSTALLATION OF THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN AFTER THE PILOT HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO COLUMBIA FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
 - DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY COLUMBIA'S REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICABLE AND DISPOSED OF AS DIRECTED BY COLUMBIA'S REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
 - CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY COLUMBIA TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNING THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
 - CONTRACTOR IS RESPONSIBLE FOR CALLING WEST VIRGINIA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM COLUMBIA PRIOR TO INITIATING HDD OPERATIONS.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
 - CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER COLUMBIA'S SPECIFICATIONS, CONTRACT DOCUMENT AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
 - WETLAND AREAS AT HDD EXIT WILL NEED TO BE MATTED.
 - REFER TO PSI GEOTECHNICAL REPORTS DATED APRIL 15, 2016 FOR B-11 AND B-14, AND SUPPLEMENTAL REPORT DATED NOVEMBER 14, 2016 FOR B-12 AND B-13.

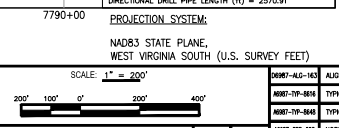


UNCASED CROSSING
 PIPE SPECIFICATIONS
 Size = 36" NOM. O.D.
 Material - Steel
 Wall Thickness = 0.750"
 Material Grade = X70
 MAOP = 1440 psig
 Design Factor = 0.5
 Pipe Coating = 14-16 MILS
 FBE and 30-60 MILS ARO

24/7 CONTACT AND PIPELINE MARKER INFO
 Columbia Pipeline Group
 P.O. Box 1273
 Charleston, WV 25325-1273
 Emergency Phone: 1-800-835-7191

HORIZONTAL DIRECTIONAL DRILL DATA		
DESCRIPTION	STA.	ELEV.
ENTRY ANGLE @ 12°	7765+53	566.34
POINT OF CURVATURE (PC1) (3,600 FT. RADIUS)	7766+01	513.67
POINT OF TANGENCY (PT1)	7773+49	435.00
POINT OF CURVATURE (PC2) (3,600 FT. RADIUS)	7776+66	435.00
POINT OF TANGENCY (PT2)	7781+67	470.03
EXIT ANGLE @ 8°	7789+04	573.67
HORIZONTAL DISTANCE (H) = 2351.01		
DIRECTIONAL DRILL PIPE LENGTH (L) = 2570.91		

LEGEND		PROPERTY TRACER NUMBER		WETLAND	
	EXISTING COLUMBIA PIPELINE		PROPERTY TRACER NUMBER		WETLAND
	TEMPORARY WORKSPACE		WETLAND I		WATERBODY
	ADDITIONAL TEMPORARY WORKSPACE		WATERBODY B		WATERBODY M
	ACCESS ROAD		WATERBODY U		WATERBODY A
	CONTRACTOR / PIPE VAD		WATERBODY C		WATERBODY H
	ACCESS ROAD NUMBER		WATERBODY E		WATERBODY F
	ACCESS ROAD NUMBER		WATERBODY G		WATERBODY J
	ACCESS ROAD NUMBER		WATERBODY K		WATERBODY L
	ACCESS ROAD NUMBER		WATERBODY N		WATERBODY O
	ACCESS ROAD NUMBER		WATERBODY P		WATERBODY Q



TRC PIPELINE SERVICES, LLC
 2087 EAST 71ST STREET
 TULSA, OK 74136
 (918) 496-0400
 FIRM COA NO. 023558

WEST VIRGINIA DOH APP. NO.

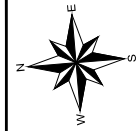
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PROJECT DELIVERY PROJECT ENGINEERING

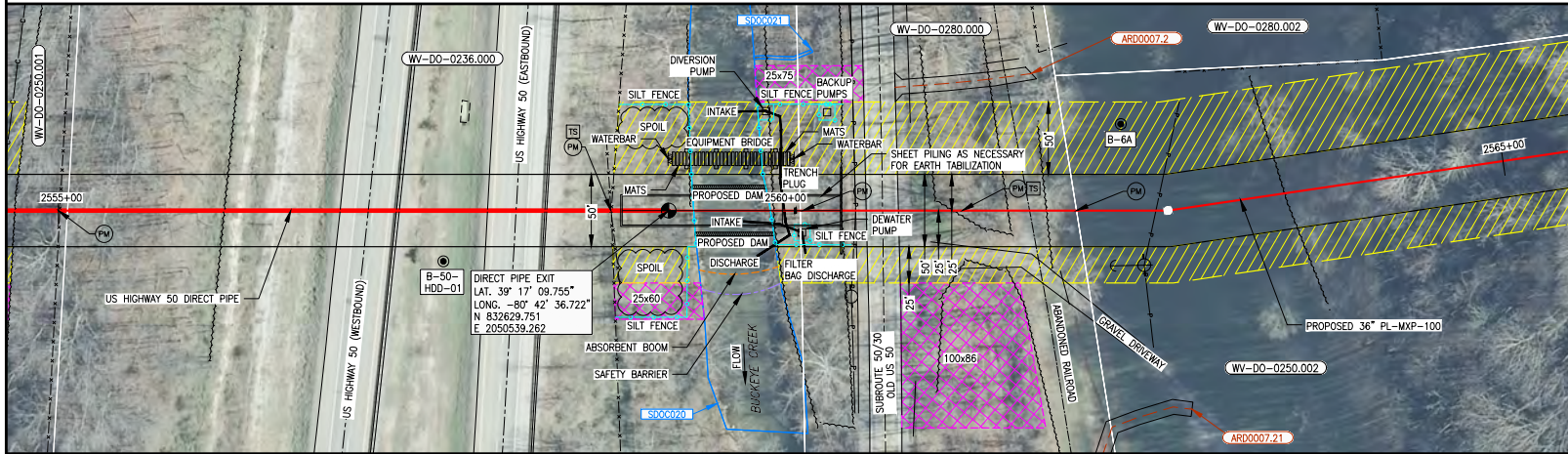
MOUNTAINEER XPRESS PRODUCTION

Columbia Gas Transmission

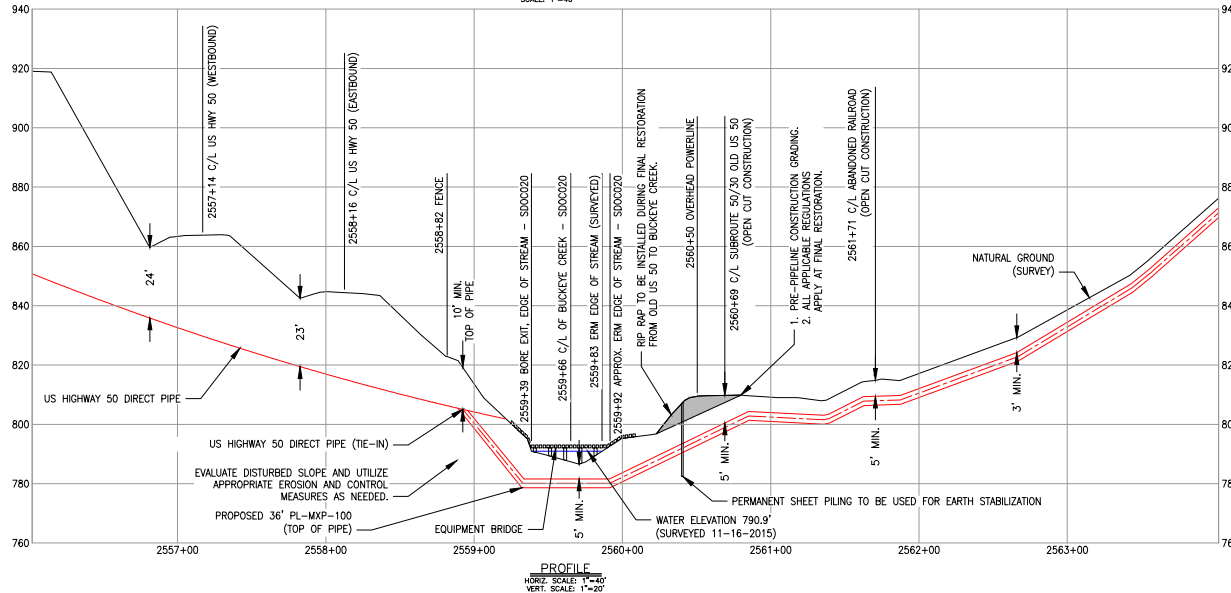
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1	ISSUED FOR FERC REVIEW		3/31/16	1	ISSUED FOR SOX REVIEW		3/9/16	1	ISSUED FOR PERMIT		3/02/16	1	ISSUED FOR FERC SUPPL FILING		3/02/16	06987-SWD-006	1 OF 1
2	ISSUED FOR FERC FILING		4/29/16	2	ISSUED FOR FERC SUPPL FILING		10/22/16	2	ISSUED FOR FERC SUPPL FILING		10/22/16	2	ISSUED FOR FERC SUPPL FILING		10/22/16	06987-SWD-006	1 OF 1



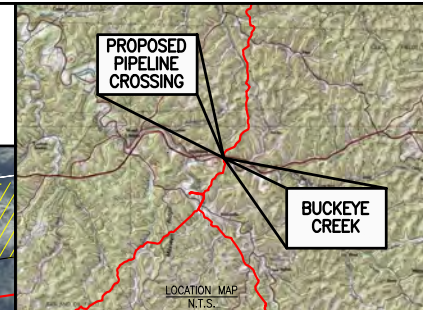
DODDRIDGE COUNTY, WEST VIRGINIA



PLAN
SCALE: 1" = 40'



PROFILE
HORIZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 20'



- CONSTRUCTION NOTES:
1. THE BUCKEYE CREEK CONSTRUCTION CONSISTS OF THE INSTALLATION OF A NEW 36" LINE IN A NEW TRENCH.
 2. TRENCH SHALL BE BACKFILLED TO CONFORM TO RIVER BOTTOM ELEVATIONS EXISTING PRIOR TO CONSTRUCTION.
 3. BUOYANCY CONTROL TO BE USED 10 FEET OUTSIDE OF ENVIRONMENTAL FEATURE BOUNDARIES.

- ENVIRONMENTAL CONTROLS AND DETAILS:
1. EROSION/SEDIMENT CONTROL STRUCTURES (SILT FENCES) TO BE INSTALLED PRIOR TO EARTH DISTURBANCE AND MAINTAINED DAILY TO MINIMIZE IMPACTS.
 2. DISTURBED AREAS TO BE STABILIZED/RESTORED PRIOR TO REMOVAL OF EROSION/SEDIMENT CONTROL STRUCTURES.
 3. TRENCH DEWATERING TO BE DIRECTED TO FILTER BAGS LOCATED IN AN UPLAND AREA IN A MANNER SO AS NOT TO CAUSE SEDIMENT TRANSPORT TO RIVER.
 4. EROSION CONTROL DEVICES WILL BE INSTALLED AROUND FILTER BAGS.
 5. NO HEAVY EQUIPMENT TRAFFIC TO TAKE PLACE WITHIN RIVER, FLOODPLAIN, WETLAND, OR 100-FOOT WATERBODY SETBACK AREA.
 6. THE USE OF PUMPS WITHIN 100' OF A WATERBODY OR WETLAND WILL COMPLY WITH COLUMBIA'S ECS.
 7. DEPLOY ABSORBENT BOOMS "AT THE READY", ONSHORE DOWNSTREAM OF THE WORK AREA.
 8. EROSION CONTROL MEASURES AS DEPICTED IN THESE PLANS ARE INTENDED AS GUIDELINES AND MAY BE ADJUSTED BY COLUMBIA'S ENVIRONMENTAL INSPECTORS TO MEET ACTUAL FIELD CONDITIONS.
 9. EQUIPMENT WILL OPERATE ON A (MATTING, RAILCAR BRIDGE OR ROCK AND FILM) DUE TO ACTUAL SITE CONDITIONS.
 10. BACKUP PUMPS (AS SAME NUMBER AND CAPACITY AS ACTIVE PUMPS) WILL BE READILY AVAILABLE IN WORKING CONDITION ON SITE AT CROSSING.
 11. INSTALL SEDIMENT CONTROL DEVICES ALONG ACCESS ROAD, AS NEEDED.
 12. PROPOSED DAM UTILIZED WILL BE SANDBAGS, AQUA DAM AND/OR COFFER DAM OR EQUIVALENT AND SHALL BE OF ADEQUATE HEIGHT TO IMPOUND WATER.
 13. INSTALL REMOVABLE EROSION CONTROL DEVICE ACROSS TRAVEL LANE. REPLACE AT THE END OF EACH DAY.
 14. ALL PUMPS MUST BE PLACED IN APPROPRIATE SECONDARY CONTAINMENT.
 15. CONSTRUCT AND MAINTAIN EQUIPMENT BRIDGES TO ALLOW UNRESTRICTED FLOW AND TO PREVENT SOIL FROM ENTERING THE WATERBODY. BRIDGE SHOULD BE DESIGNED AND MAINTAINED TO WITHSTAND AND PASS THE HIGHEST FLOW EXPECTED TO OCCUR WHILE THE BRIDGE IS IN PLACE.
 16. PIPELINE SACK WEIGHTS WILL BE 17 FEET FROM CENTER TO CENTER OF BAGS, OR USE 6.25" THICK CONCRETE COATED PIPE.

PROJECTION SYSTEM:
NAD83 STATE PLANE,
WEST VIRGINIA SOUTH (U.S. SURVEY FEET)

UNCASED CROSSING
PIPE SPECIFICATIONS
Size = 36" NOM. O.D.
Material = Steel
Wall Thickness = 0.750"
Material Grade = X70
MAOP = 1440 psig
Design Factor = 0.5
Pipe Coating = 14-16 MILS FBE
and 30-60 MILS ARO

24/7 CONTACT AND PIPELINE MARKER INFO
Columbia Pipeline Group
P.O. Box 1273
Charleston, WV 25325-1273
Emergency Phone: 1-800-835-7191

LEGEND

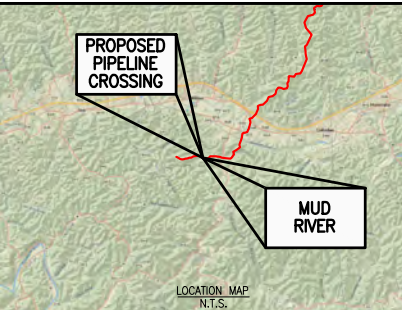
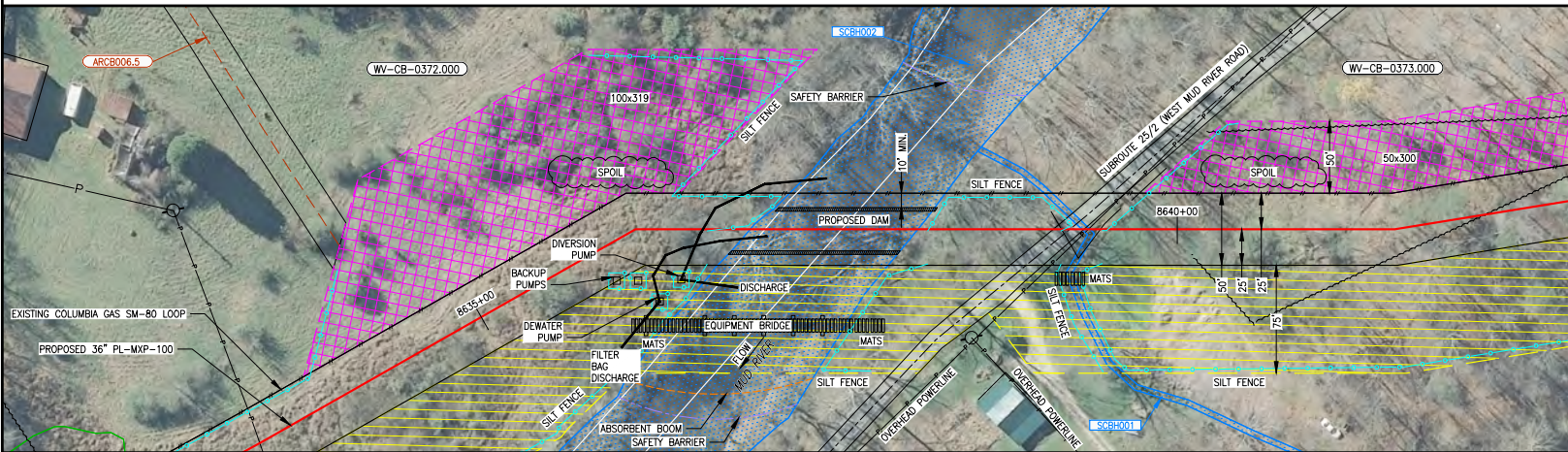
- HED ENTRY/EXIT
- BORE HOLE
- FISH EXCLUSION NET
- EQUIPMENT CROSSING BRIDGE
- TRENCH PLUS
- WELLS
- PROPOSED PIPE MARKER
- TEST STATION
- SILT FENCE
- ABSORBENT BOOM
- SAFETY BARRIER
- TURBIDITY CURTAIN
- WATERBODIES

ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: 1" = 40' 		0087-ALC-004 ALIGNMENT SHEET 0087-TIP-001 TYPICAL STREAM CROSSING DAM AND PUMP 0087-MOP-001 MOP-100 ROAD CROSSING/US HIGHWAY 50	PROJECT DELIVERY PROJECT ENGINEERING Columbia Gas Transmission
ISSUED FOR FERC SUPPL FILING SJO 10/2/16 ISSUED FOR FERC SUPPL FILING SJO 02/17/17	REVISIONS No. DATE 1 10/2/16 2 02/17/17	REVISIONS No. DATE 1 10/2/16 2 02/17/17	REVISIONS No. DATE 1 10/2/16 2 02/17/17	0087-89-004 STATE RAIL AUTHORITY TITLE PL-MXP-100 - RIVER CROSSING BUCKEYE CREEK MP 48.5 - DODDRIDGE CO, WV DRAWING NUMBER: 20432 SHEET: 1 OF 1 ISSUE: P1	MOUNTAINEER XPRSS PROJECT DRAWING NUMBER: 20432 SHEET: 1 OF 1 ISSUE: P1

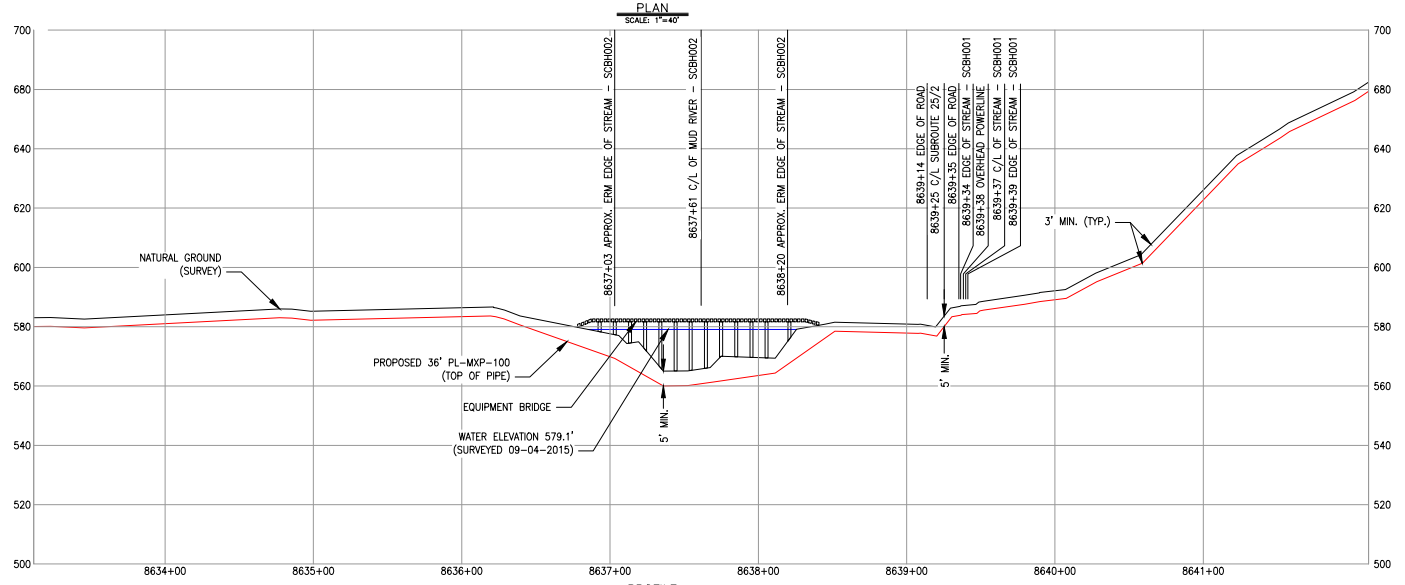


CABELL COUNTY, WEST VIRGINIA



- CONSTRUCTION NOTES:**
1. THE MUD RIVER CONSTRUCTION CONSISTS OF THE INSTALLATION OF A NEW 36" LINE IN A NEW TRENCH.
 2. TRENCH SHALL BE BACKFILLED TO CONFORM TO RIVER BOTTOM ELEVATIONS EXISTING PRIOR TO CONSTRUCTION.
 3. BUOYANCY CONTROL TO BE USED 10 FEET OUTSIDE OF ENVIRONMENTAL FEATURE BOUNDARIES.

- ENVIRONMENTAL CONTROLS AND DETAILS:**
1. EROSION/SEDIMENT CONTROL STRUCTURES (SILT FENCES) TO BE INSTALLED PRIOR TO EARTH DISTURBANCE AND MAINTAINED DAILY TO MINIMIZE IMPACTS.
 2. DISTURBED AREAS TO BE STABILIZED/RESTORED PRIOR TO REMOVAL OF EROSION/SEDIMENT CONTROL STRUCTURES.
 3. TRENCH DEWATERING TO BE DIRECTED TO FILTER BAGS LOCATED IN AN UPLAND AREA IN A MANNER SO AS NOT TO CAUSE SEDIMENT TRANSPORT TO RIVER.
 4. EROSION CONTROL DEVICES WILL BE INSTALLED AROUND FILTER BAGS.
 5. NO HEAVY EQUIPMENT REFUELING TO TAKE PLACE WITHIN RIVER, FLOODPLAIN, WETLAND, OR 100-FOOT WATERBODY SETBACK AREA.
 6. THE USE OF PUMPS WITHIN 100' OF A WATERBODY OR WETLAND WILL COMPLY WITH COLUMBIA'S ECS.
 7. DEPLOY ABSORBENT BOOMS "AT THE READY", ONSHORE DOWNSTREAM OF THE WORK AREA.
 8. EROSION CONTROL MEASURES AS DEPICTED IN THESE PLANS ARE INTENDED AS GUIDELINES AND MAY BE ADJUSTED BY COLUMBIA'S ENVIRONMENTAL INSPECTORS TO MEET ACTUAL FIELD CONDITIONS.
 9. EQUIPMENT WILL OPERATE ON A (MATTING, RAILCAR BRIDGE OR ROCK AND FLUME) DUE TO ACTUAL SITE CONDITIONS.
 10. BACKUP PUMPS (AS SAME NUMBER AND CAPACITY AS ACTIVE PUMPS) WILL BE READILY AVAILABLE IN WORKING CONDITION ON SITE AT CROSSING.
 11. INSTALL SEDIMENT CONTROL DEVICES ALONG ACCESS ROAD, AS NEEDED.
 12. PROPOSED DAM UTILIZED WILL BE SANDBAGS, AQUA DAM AND/OR COFFER DAM OR EQUIVALENT AND SHALL BE OF ADEQUATE HEIGHT TO IMPOUND WATER.
 13. INSTALL REMOVABLE EROSION CONTROL DEVICE ACROSS TRAVEL LANE. REPLACE AT THE END OF EACH DAY.
 14. ALL PUMPS MUST BE PLACED IN APPROPRIATE SECONDARY CONTAINMENT.
 15. CONSTRUCT AND MAINTAIN EQUIPMENT BRIDGES TO ALLOW UNRESTRICTED FLOW AND TO PREVENT SOIL FROM ENTERING THE WATERBODY. BRIDGE SHOULD BE DESIGNED AND MAINTAINED TO WITHSTAND AND PASS THE HIGHEST FLOW EXPECTED TO OCCUR WHILE THE BRIDGE IS IN PLACE.
 16. PIPELINE SACK WEIGHTS WILL BE 17 FEET FROM CENTER TO CENTER OF BAGS, OR 6.25" THICK CONCRETE COATED PIPE.



PROJECTION SYSTEM:
NAD83 STATE PLANE,
WEST VIRGINIA SOUTH (U.S. SURVEY FEET)

UNCASED CROSSING

PIPE SPECIFICATIONS
Size - 36" NOM. O.D.
Material - Steel
Wall Thickness - 0.750"
Material Grade - X70
MAOP - 1440 psig
Design Factor - 0.5
Pipe Coating - 14-16 MILS
FBE and 30-60 MILS ARO

24/7 CONTACT AND PIPELINE MARKER INFO
Columbia Pipeline Group
P.O. Box 1273
Charleston, WV 25325-1273
Emergency Phone: 1-800-835-7191

LEGEND

- HED ENTRY/EXIT
- BONE HOLE
- FOREIGN PIPELINE
- PERMANENT FLOW
- FENCE
- ROUTE
- TEMPORARY WORKSPACE
- ADDITIONAL TEMPORARY WORKSPACE
- ACCESS ROAD
- CONTRACTOR / PIPE VAD
- PROPERTY TRACT NUMBER
- WETLAND ID
- WATERBODY ID
- UNDERGROUND CABLE
- OVERHEAD POWERLINE
- WATERLINE
- COUNTY BORDER
- WETLAND
- WATERBODY
- SANITARY SEWER
- PROPOSED PIPE MARKER
- TEST STATION
- SILT FENCE
- ABSORBENT BOOM
- EQUIPMENT CROSSING BRIDGE
- SAFETY BARRIER
- TURBIDITY CURTAIN
- TRENCH FLAG
- MATS

ISSUED FOR FERC SUPPL
02/17/2017

<p>LEGEND</p> <ul style="list-style-type: none"> MILEPOST EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE PERMANENT FLOW FENCE ROUTE TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE ACCESS ROAD CONTRACTOR / PIPE VAD PROPERTY TRACT NUMBER WETLAND ID WATERBODY ID UNDERGROUND CABLE OVERHEAD POWERLINE WATERLINE COUNTY BORDER WETLAND WATERBODY SANITARY SEWER PROPOSED PIPE MARKER TEST STATION SILT FENCE ABSORBENT BOOM EQUIPMENT CROSSING BRIDGE SAFETY BARRIER TURBIDITY CURTAIN TRENCH FLAG MATS 		<p>SCALE: 1" = 40'</p>		<p>0287-ALJ-101 ALIGNMENT SHEET 0687-TIP-30 TYPICAL STREAM CROSSING DAM AND PUMP</p>		<p>PROJECT DELIVERY PROJECT ENGINEERING Columbia Gas Transmission</p>	
<p>ISSUED FOR FERC SUPPL FILING</p>		<p>SJD 02/17/17</p>		<p>0287-ALJ-101 ALIGNMENT SHEET 0687-TIP-30 TYPICAL STREAM CROSSING DAM AND PUMP</p>		<p>TITLE PL-MXP-100 - RIVER CROSSING MUD RIVER MP 163.6 - CABELL CO, WV</p>	
<p>REVISIONS</p>		<p>REVISIONS</p>		<p>REVISIONS</p>		<p>REVISIONS</p>	
No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE
<p>PROJECT DELIVERY PROJECT ENGINEERING</p>		<p>PROJECT DELIVERY PROJECT ENGINEERING</p>		<p>PROJECT DELIVERY PROJECT ENGINEERING</p>		<p>PROJECT DELIVERY PROJECT ENGINEERING</p>	
<p>02/17/2017</p>		<p>02/17/2017</p>		<p>02/17/2017</p>		<p>02/17/2017</p>	
<p>20432</p>		<p>20432</p>		<p>20432</p>		<p>20432</p>	
<p>46130</p>		<p>46130</p>		<p>46130</p>		<p>46130</p>	
<p>6987-SWD-008</p>		<p>6987-SWD-008</p>		<p>6987-SWD-008</p>		<p>6987-SWD-008</p>	
<p>1 OF 1</p>		<p>1 OF 1</p>		<p>1 OF 1</p>		<p>1 OF 1</p>	
<p>P1</p>		<p>P1</p>		<p>P1</p>		<p>P1</p>	

Mountaineer XPress Project
Site-specific Residential Drawings

Mountaineer XPress Project
MXP-100 Site-specific Residential Drawings



MOUNTAINEER XPRESS - MXP

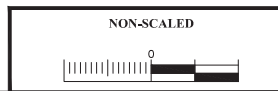
PROPOSED 36" PL-MXP-100 PIPELINE ENGINEERING SERVICES DESIGN; JOB NUMBER 6987 SITE SPECIFIC RESIDENTIAL PLANS - COVER SHEET

HIGHLIGHTED RESIDENTIAL DETAILS BELOW ARE NEW THIS ISSUE

DRAWING NO.	DRAWING TITLE	TRACT NO.	REV.
D6987-RSD-04	PL-MXP-100 MP 22.7 RESIDENTIAL DETAIL - WETZEL COUNTY, WV	WV-WZ-0421.000	P2
D6987-RSD-05	PL-MXP-100 MP 23.2 RESIDENTIAL DETAIL - WETZEL COUNTY, WV	WV-WZ-0422.000	P2
D6987-RSD-06	PL-MXP-100 MP 24.8 RESIDENTIAL DETAIL - WETZEL COUNTY, WV	WV-WZ-0429.000	P2
D6987-RSD-07	PL-MXP-100 MP 25.13 RESIDENTIAL DETAIL - WETZEL COUNTY, WV	WV-WZ-0430.000	P3
D6987-RSD-09	PL-MXP-100 MP 46.1 RESIDENTIAL DETAIL - DODDRIDGE COUNTY, WV	WV-DO-0184.000	P1
D6987-RSD-10	PL-MXP-100 MP 50.81 RESIDENTIAL DETAIL - DODDRIDGE COUNTY, WV	WV-DO-0278.007	P3
D6987-RSD-11	PL-MXP-100 MP 56.5 RESIDENTIAL DETAIL - DODDRIDGE COUNTY, WV	WV-DO-0358.001	P1
D6987-RSD-13	PL-MXP-100 MP 68.13 RESIDENTIAL DETAIL - RITCHIE COUNTY, WV	WV-RI-0078.000	P3
D6987-RSD-14	PL-MXP-100 MP 69.75 RESIDENTIAL DETAIL - RITCHIE COUNTY, WV	WV-RI-0203.000	P2
D6987-RSD-15	PL-MXP-100 MP 72.25 RESIDENTIAL DETAIL - RITCHIE COUNTY, WV	WV-RI-0248.000	P3
D6987-RSD-18	PL-MXP-100 MP 79.1 RESIDENTIAL DETAIL - RITCHIE COUNTY, WV	WV-RI-0434.000	P2
D6987-RSD-19	PL-MXP-100 MP 88.13 RESIDENTIAL DETAIL - WIRT COUNTY, WV	WV-WI-0094.000	P2
D6987-RSD-22	PL-MXP-100 MP 123.94 RESIDENTIAL DETAIL - JACKSON COUNTY, WV	WV-JA-0364.000	P3
D6987-RSD-24	PL-MXP-100 MP 124.53 RESIDENTIAL DETAIL - JACKSON COUNTY, WV	WV-JA-0424.000	P2
D6987-RSD-25	PL-MXP-100 MP 124.75 RESIDENTIAL DETAIL - JACKSON COUNTY, WV	WV-JA-0368.000	P3
D6987-RSD-26	PL-MXP-100 MP 129.8 RESIDENTIAL DETAIL - JACKSON COUNTY, WV	WV-JA-0623.000	P2
D6987-RSD-28	PL-MXP-100 MP 134.9 RESIDENTIAL DETAIL - PUTNAM COUNTY, WV	WV-PU-0062.001	P2
D6987-RSD-29	PL-MXP-100 MP 138.5 RESIDENTIAL DETAIL - PUTNAM COUNTY, WV	WV-PU-0175.000	P2
D6987-RSD-32	PL-MXP-100 MP 143.3 RESIDENTIAL DETAIL - PUTNAM COUNTY, WV	WV-PU-0239.000	P2
D6987-RSD-40	PL-MXP-100 MP 158.20 RESIDENTIAL DETAIL - CABELL COUNTY, WV	WV-CB-0065.000	P3
D6987-RSD-41	PL-MXP-100 MP 160.6 RESIDENTIAL DETAIL - CABELL COUNTY, WV	WV-CB-0194.000	P2
D6987-RSD-42	PL-MXP-100 MP 160.6 RESIDENTIAL DETAIL - CABELL COUNTY, WV	WV-CB-0109.000	P2
D6987-RSD-47	PL-MXP-100 MP 162.41 RESIDENTIAL DETAIL - CABELL COUNTY, WV	WV-CB-0208.000	P3

DRAWING NO.	DRAWING TITLE	TRACT NO.	REV.
D6987-RSD-49	PL-MXP-100 MP 7.1 RESIDENTIAL DETAIL - MARSHALL COUNTY, WV	WV-MA-0181.001	P1
D6987-RSD-50	PL-MXP-100 MP 21.2 RESIDENTIAL DETAIL - WETZEL COUNTY, WV	WV-WZ-0270.000	P1
D6987-RSD-51	PL-MXP-100 MP 24.4 RESIDENTIAL DETAIL - WETZEL COUNTY, WV	WV-WZ-0329.000	P1
D6987-RSD-52	PL-MXP-100 MP 35.1 RESIDENTIAL DETAIL - TYLER COUNTY, WV	WV-TY-0049.000	P1
D6987-RSD-53	PL-MXP-100 MP 42.8 RESIDENTIAL DETAIL - DODDRIDGE COUNTY, WV	WV-DO-0009.000	P1
D6987-RSD-54	PL-MXP-100 MP 43.9 RESIDENTIAL DETAIL - DODDRIDGE COUNTY, WV	WV-DO-0158.000	P1
D6987-RSD-55	PL-MXP-100 MP 43.8 RESIDENTIAL DETAIL - DODDRIDGE COUNTY, WV	WV-DO-0157.000	P1
D6987-RSD-56	PL-MXP-100 MP 45.02 RESIDENTIAL DETAIL - DODDRIDGE COUNTY, WV	WV-DO-0196.000	P1
D6987-RSD-57	PL-MXP-100 MP 77.7 RESIDENTIAL DETAIL - RITCHIE COUNTY, WV	WV-RI-0349.000	P1
D6987-RSD-58	PL-MXP-100 MP 77.7 RESIDENTIAL DETAIL - RITCHIE COUNTY, WV	WV-RI-0415.000	P1
D6987-RSD-59	PL-MXP-100 MP 91.72 RESIDENTIAL DETAIL - WIRT COUNTY, WV	WV-WI-0142.000	P1
D6987-RSD-60	PL-MXP-100 MP 106.08 RESIDENTIAL DETAIL - ROANE COUNTY, WV	WV-RO-0195.000	P1
D6987-RSD-61	PL-MXP-100 MP 107.4 RESIDENTIAL DETAIL - ROANE COUNTY, WV	WV-RO-0200.000	P1
D6987-RSD-62	PL-MXP-100 MP 112.12 RESIDENTIAL DETAIL - JACKSON COUNTY, WV	WV-JA-0059.000	P1
D6987-RSD-63	PL-MXP-100 MP 145.3 RESIDENTIAL DETAIL - PUTNAM COUNTY, WV	WV-PU-0405.000	P1
D6987-RSD-64	PL-MXP-100 MP 156.8 RESIDENTIAL DETAIL - CABELL COUNTY, WV	WV-CB-0006.001	P1
D6987-RSD-65	PL-MXP-100 MP 161.9 RESIDENTIAL DETAIL - CABELL COUNTY, WV	WV-CB-0371.000	P1

ISSUED FOR FERC SUPPL
02/17/2017



DESIGN PRESSURE _____ PSIG AT _____ °F (_____ DESIGN FACTOR), MAXIMUM HOOP STRESS LEVEL _____
 AT _____ PSIG _____ % SAFS, BASED ON _____
 MAOP OF _____ PSIG AT _____ °F IS LIMITED BY _____
 MINIMUM TEST PRESSURE _____ PSIG, MAXIMUM TEST PRESSURE _____ PSIG.
 TEST LIMITED BY _____ TEST PERIOD _____ HOURS.
 TEST MEDIUM _____ SERVICE _____
 NONDESTRUCTIVE INSPECTION REQUIREMENTS _____

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

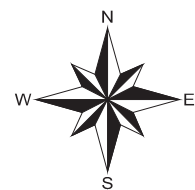
DESIGN ENGINEER _____ DATE _____
 BY _____ DATE _____
 APPROVED _____ DATE _____

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

DWG. NO.	REFERENCE
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PROJECT DELIVERY PROJECT ENGINEERING P.O. BOX 1273 CHARLESTON, WV 25305-1273 1700 MACCORLE AVENUE SE, CHARLESTON, WV 25314			
MOUNTAINEER XPRESS - MXP			
TITLE PROPOSED PL-MXP-100 PIPELINE SITE SPECIFIC RESIDENTIAL PLANS - COVER SHEET			
DRAWN BY: GPM	DATE: 09/19/16	DRAWING NUMBER	ISSUE
PROJECT NUMBER: 20432		D6987-RSD-COV	P3
W.O. NUMBER: 46130			

NO.	REVISIONS	BY	DATE	APPROVED	DATE	NO.	REVISIONS
	ISSUED FOR FERC SUPPL FILING	JHE	02/17/17				ISSUED FOR FERC SUPPL FILING
	ISSUED FOR FERC FILING	TJL	02/17/17				ISSUED FOR FERC FILING



TRACT WV-WZ-0421.000
WETZEL COUNTY, WEST VIRGINIA

DESCRIPTION
THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
2. A MINIMUM OF 25 FEET WILL BE MAINTAINED BETWEEN THE RESIDENCE AND CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF THE RESIDENCE. IF THE FACILITY MUST BE WITHIN 25 FEET OF A RESIDENCE, IT MUST BE INSTALLED SUCH THAT THE TRENCH DOES NOT REMAIN OPEN OVERNIGHT.
3. MATURE TREES AND LANDSCAPING WILL NOT BE REMOVED FROM WITHIN THE EDGE OF THE CONSTRUCTION WORK AREA UNLESS NECESSARY FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT OR AS SPECIFIED IN LANDOWNER AGREEMENTS.
4. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
5. TRENCH SHALL NOT BE EXCAVATED UNTIL PIPELINE IS READY FOR INSTALLATION AND SHALL BE BACKFILLED IN SAME DAY AS PIPE INSTALLATION IN THIS AREA. ALL OPEN DITCHES SHALL BE BARRICADED/FENCED OFF OR PLATED WHEN CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.
6. IMMEDIATELY AFTER BACKFILLING THE TRENCH, ALL LAWN AND LANDSCAPING WILL BE RESTORED TO FINAL RESTORATION, OR TEMPORARY RESTORATION PENDING WEATHER AND SOIL CONDITIONS. IF SEASONAL OR WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES, TEMPORARY EROSION CONTROLS MUST BE MONITORED AND MAINTAINED UNTIL CONDITIONS ALLOW COMPLETION OF RESTORATION.
7. CONTRACTOR SHALL UTILIZE WATER TRUCKS AS NECESSARY TO MINIMIZE FUGITIVE DUST FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES/BUSINESSES.
8. ACCESS TO RESIDENCES BY CAR WILL BE MAINTAINED AT ALL TIMES, OR OTHER ACCOMMODATIONS WILL BE MADE WITH EACH RESPECTIVE LANDOWNER.
9. CONTRACTOR SHALL MAINTAIN AGREED UPON ACCESS TO THE IMPACTED AREA DURING CONSTRUCTION.
10. CONTRACTOR SHALL LIMIT WORK IN THIS AREA TO DAYLIGHT HOURS, UNLESS OTHERWISE AGREED UPON WITH LANDOWNER/OCCUPANT.
11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.

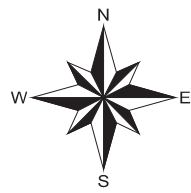


ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: 		D6987-ALG-027 PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING 3151 SANFELICE BLVD SUITE 2000 HOUSTON TX 77056 Columbia Gas Transmission	
MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 22.7 - RESIDENTIAL DETAIL WETZEL COUNTY, WV		DRAWN BY: JHE PROJECT NUMBER: 20432 REVISION NUMBER: 46130		DATE: 08/11/16 DRAWING NUMBER: D6987-RSD-04 SHEET: 1 OF 1 ISSUE: P2		DWG. NO. REFERENCE	
REVISIONS No. APPROVED BY DATE No.		REVISIONS No. APPROVED BY DATE No.		REVISIONS No. APPROVED BY DATE No.		ISSUED FOR FERC SUPPL FILING JHE 02/17/17 ISSUED FOR FERC SUPPL FILING JHE 10/02/16	

TRACT WV-WZ-0422.000

WETZEL COUNTY, WEST VIRGINIA



DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
2. A MINIMUM OF 25 FEET WILL BE MAINTAINED BETWEEN THE RESIDENCE AND CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF THE RESIDENCE. IF THE FACILITY MUST BE WITHIN 25 FEET OF A RESIDENCE, IT MUST BE INSTALLED SUCH THAT THE TRENCH DOES NOT REMAIN OPEN OVERNIGHT.
3. MATURE TREES AND LANDSCAPING WILL NOT BE REMOVED FROM WITHIN THE EDGE OF THE CONSTRUCTION WORK AREA UNLESS NECESSARY FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT OR AS SPECIFIED IN LANDOWNER AGREEMENTS.
4. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
5. TRENCH SHALL NOT BE EXCAVATED UNTIL PIPELINE IS READY FOR INSTALLATION AND SHALL BE BACKFILLED IN SAME DAY AS PIPE INSTALLATION IN THIS AREA. ALL OPEN DITCHES SHALL BE BARRICADED/FENCED OFF OR PLATED WHEN CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.
6. IMMEDIATELY AFTER BACKFILLING THE TRENCH, ALL LAWN AND LANDSCAPING WILL BE RESTORED TO FINAL RESTORATION, OR TEMPORARY RESTORATION PENDING WEATHER AND SOIL CONDITIONS. IF SEASONAL OR WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES, TEMPORARY EROSION CONTROLS MUST BE MONITORED AND MAINTAINED UNTIL CONDITIONS ALLOW COMPLETION OF RESTORATION.
7. CONTRACTOR SHALL UTILIZE WATER TRUCKS AS NECESSARY TO MINIMIZE FUGITIVE DUST FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES/BUSINESSES.
8. ACCESS TO RESIDENCES BY CAR WILL BE MAINTAINED AT ALL TIMES, OR OTHER ACCOMMODATIONS WILL BE MADE WITH EACH RESPECTIVE LANDOWNER.
9. CONTRACTOR SHALL MAINTAIN AGREED UPON ACCESS TO THE IMPACTED AREA DURING CONSTRUCTION.
10. CONTRACTOR SHALL LIMIT WORK IN THIS AREA TO DAYLIGHT HOURS, UNLESS OTHERWISE AGREED UPON WITH LANDOWNER/OCCUPANT.
11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.

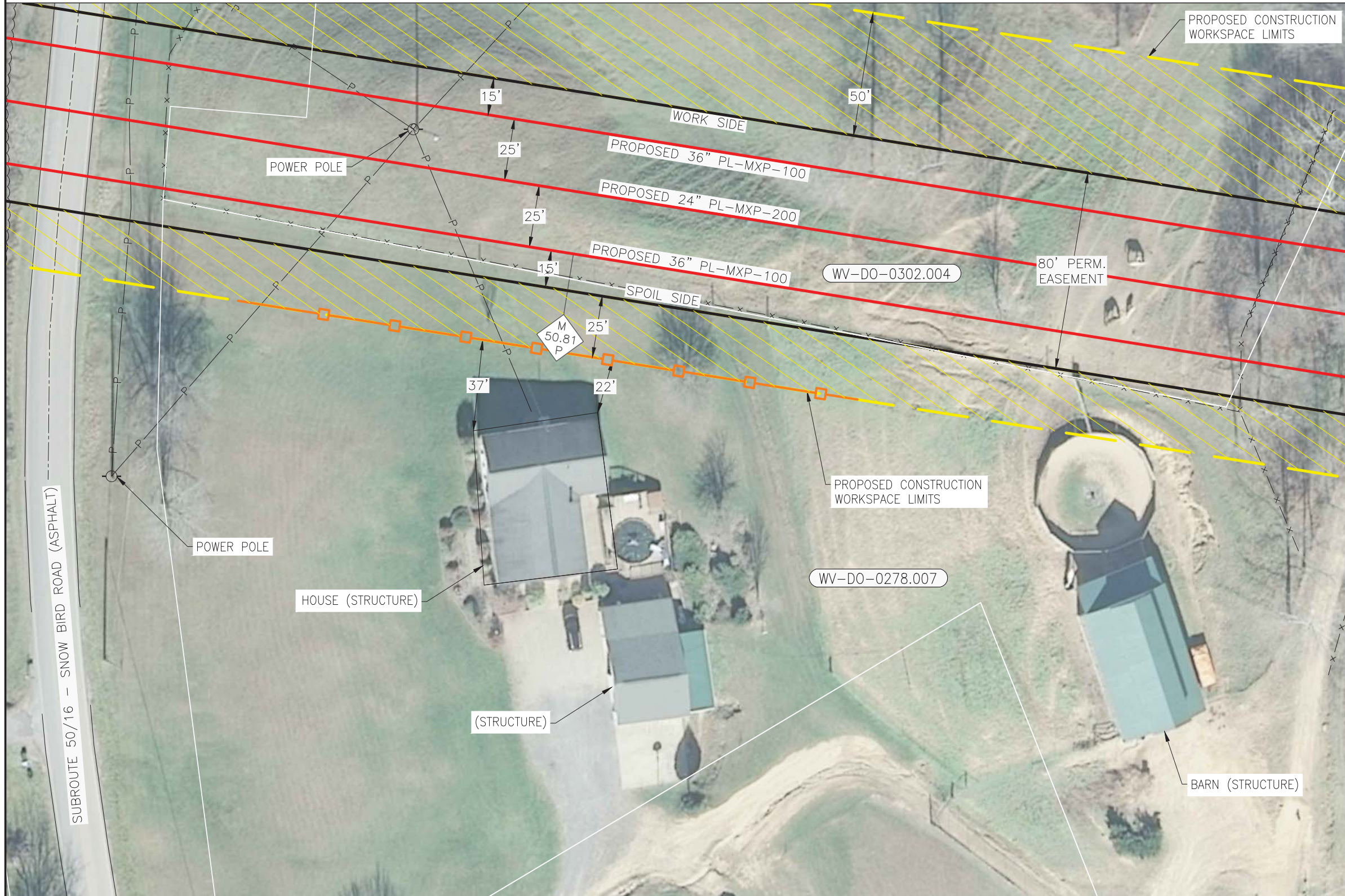
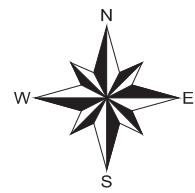


ISSUED FOR FERC SUPPL
02/17/2017

LEGEND MILEPOST ROUTE PERMANENT ROW TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE CONTRACTOR / PIPE YARD WETLAND WATERBODY SAFETY FENCE PROPERTY TRACT NUMBER WETLAND ID WETLAND ID WETLAND ID ACCESS ROAD ACCESS ROAD NUMBER SANITARY SEWER PROPERTY LINE EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE FENCE UNDERGROUND CABLE OVERHEAD POWER LINE WATERLINE COUNTY BORDER		SCALE: 20' 10' 0' 20' 40'	D6987-ALG-027 PROPOSED 36" PL-MXP-100 PIPELINE	PROJECT DELIVERY PROJECT ENGINEERING 3151 SANFORD BLVD, SUITE 2000 HOUSTON, TX 77056 Columbia Gas Transmission
No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE		ISSUED FOR FERC SUPPL FILING JHE 02/17/17 ISSUED FOR FERC SUPPL FILING JHE 10/02/16	DWG. NO. REFERENCE	MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 23.2 - RESIDENTIAL DETAIL WETZEL COUNTY, WV DRAWN BY GPM DATE 08/11/16 DRAWING NUMBER SHEET ISSUE PROJECT NUMBER 20432 D6987-RSD-05 1 OF 1 P2 DRAWING NUMBER 46130

TRACT WV-DO-0278.007

DODDRIDGE COUNTY, WEST VIRGINIA



DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

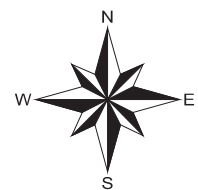
CONSTRUCTION REQUIREMENTS

1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
2. A MINIMUM OF 25 FEET WILL BE MAINTAINED BETWEEN THE RESIDENCE AND CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF THE RESIDENCE. IF THE FACILITY MUST BE WITHIN 25 FEET OF A RESIDENCE, IT MUST BE INSTALLED SUCH THAT THE TRENCH DOES NOT REMAIN OPEN OVERNIGHT.
3. MATURE TREES AND LANDSCAPING WILL NOT BE REMOVED FROM WITHIN THE EDGE OF THE CONSTRUCTION WORK AREA UNLESS NECESSARY FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT OR AS SPECIFIED IN LANDOWNER AGREEMENTS.
4. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
5. TRENCH SHALL NOT BE EXCAVATED UNTIL PIPELINE IS READY FOR INSTALLATION AND SHALL BE BACKFILLED IN SAME DAY AS PIPE INSTALLATION IN THIS AREA. ALL OPEN DITCHES SHALL BE BARRICADED/FENCED OFF OR PLATED WHEN CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.
6. IMMEDIATELY AFTER BACKFILLING THE TRENCH, ALL LAWN AND LANDSCAPING WILL BE RESTORED TO FINAL RESTORATION, OR TEMPORARY RESTORATION PENDING WEATHER AND SOIL CONDITIONS. IF SEASONAL OR WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES, TEMPORARY EROSION CONTROLS MUST BE MONITORED AND MAINTAINED UNTIL CONDITIONS ALLOW COMPLETION OF RESTORATION.
7. CONTRACTOR SHALL UTILIZE WATER TRUCKS AS NECESSARY TO MINIMIZE FUGITIVE DUST FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES/BUSINESSES.
8. ACCESS TO RESIDENCES BY CAR WILL BE MAINTAINED AT ALL TIMES, OR OTHER ACCOMMODATIONS WILL BE MADE WITH EACH RESPECTIVE LANDOWNER.
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11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.

ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: 20' 10' 0' 20' 40' 		D6987-ALG-058 PROPOSED 36" PL-MXP-100 PIPELINE D6988-ALG-001 PROPOSED 24" PL-MXP-200 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 50.81 - RESIDENTIAL DETAIL DODDRIDGE COUNTY, WV			
ISSUED FOR FERC SUPPL FILING JHE 02/17/17		ISSUED FOR FERC SUPPL FILING JHE 02/17/17		ISSUED FOR FERC SUPPL FILING JHE 02/17/17		ISSUED FOR FERC SUPPL FILING JHE 02/17/17		ISSUED FOR FERC SUPPL FILING JHE 02/17/17	
REVISIONS APPROVED BY DATE No.		REVISIONS APPROVED BY DATE No.		REVISIONS APPROVED BY DATE No.		REVISIONS APPROVED BY DATE No.		DWG. NO. REFERENCE D6987-RSD-10 1 OF 1 P3	

TRACT WV-RI-0203.000
RITCHIE COUNTY, WEST VIRGINIA



DESCRIPTION
THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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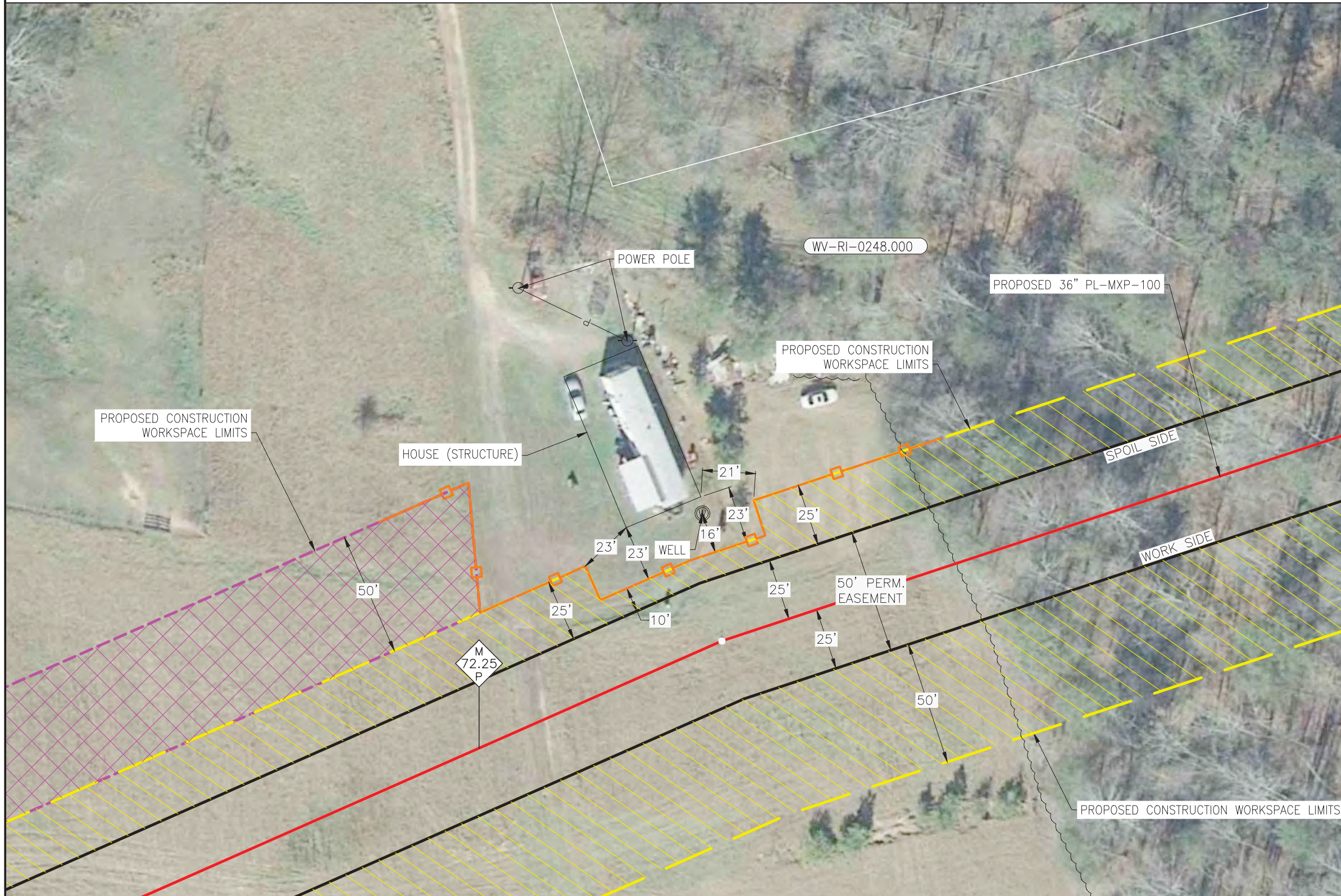
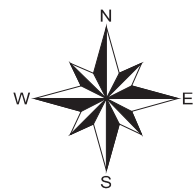


ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: 		D6987-ALG-078 PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING 3151 SANDLIFE, SUITE 2000 HOUSTON, TX 77056 Columbia Gas Transmission	
MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 69.75 - RESIDENTIAL DETAIL RITCHIE COUNTY, WV		DRAWN BY: JHE PROJECT NUMBER: 20432 REVISION NUMBER: 46130		DATE: 08/12/16 DRAWING NUMBER: D6987-RSD-14 SHEET: 1 OF 1 ISSUE: P2		DWG. NO. REFERENCE	
REVISIONS No. APPROVED BY DATE No.		REVISIONS No. APPROVED BY DATE No.		REVISIONS No. APPROVED BY DATE No.		ISSUED FOR FERC SUPPL FILING JHE 02/17/17 ISSUED FOR FERC SUPPL FILING JHE 10/02/16	

TRACT WV-RI-0248.000

RITCHIE COUNTY, WEST VIRGINIA



DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

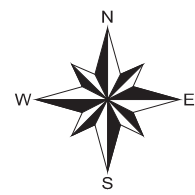
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ISSUED FOR FERC SUPPL
02/17/2017

LEGEND MILEPOST ROUTE PERMANENT ROW TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE CONTRACTOR / PIPE YARD WETLAND WATERBODY SAFETY FENCE ST-CO-001.000 PROPERTY TRACT NUMBER WPA01C002 WETLAND ID SPAD/C002 WATERBODY ID ACCESS ROAD ACCESS ROAD NUMBER SS SANITARY SEWER PROPERTY LINE EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE FENCE UNDERGROUND CABLE OVERHEAD POWER LINE WATERLINE COUNTY BORDER		SCALE: 	D6987-ALG-081 PROPOSED 36" PL-MXP-100 PIPELINE	PROJECT DELIVERY PROJECT ENGINEERING MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 72.25 - RESIDENTIAL DETAIL RITCHIE COUNTY, WV	
No. REVISIONS APPROVED BY DATE	No. REVISIONS APPROVED BY DATE	No. REVISIONS APPROVED BY DATE	DWG. NO. REFERENCE	DRAWN BY: GPM DATE: 03/11/16 PROJECT NUMBER: 20432 WORK ORDER NUMBER: 46130 DRAWING NUMBER: D6987-RSD-15 SHEET: 1 OF 1 ISSUE: P3	

TRACT WV-RI-0434.000

RITCHIE COUNTY, WEST VIRGINIA



DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

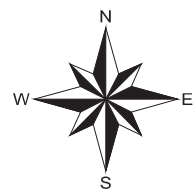
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ISSUED FOR FERC SUPPL
02/17/2017

LEGEND MILEPOST TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE CONTRACTOR / PIPE YARD PERMANENT ROW WETLAND WATERBODY SAFETY FENCE PROPERTY TRACT NUMBER WETLAND ID WATERBODY ID ACCESS ROAD ACCESS ROAD NUMBER SANITARY SEWER PROPERTY LINE EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE FENCE UNDERGROUND CABLE OVERHEAD POWER LINE WATERLINE COUNTY BORDER		SCALE: 20' 10' 0' 20' 40'	D6987-ALG-088 PROPOSED 36" PL-MXP-100 PIPELINE	PROJECT DELIVERY PROJECT ENGINEERING 3101 SANFORD BLVD, SUITE 2000 HOUSTON, TX 77056 Columbia Gas Transmission
No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE		ISSUED FOR FERC SUPPL FILING JHE 02/17/17 ISSUED FOR FERC SUPPL FILING JHE 10/02/16	DWG. NO. REFERENCE	MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 79.1 - RESIDENTIAL DETAIL RITCHIE COUNTY, WV DRAWN BY GPM DATE 08/15/16 DRAWING NUMBER SHEET ISSUE PROJECT NUMBER 20432 D6987-RSD-18 1 OF 1 P2 REVISION NUMBER 46130

TRACT WV-WI-0094.000
WIRT COUNTY, WEST VIRGINIA



DESCRIPTION
THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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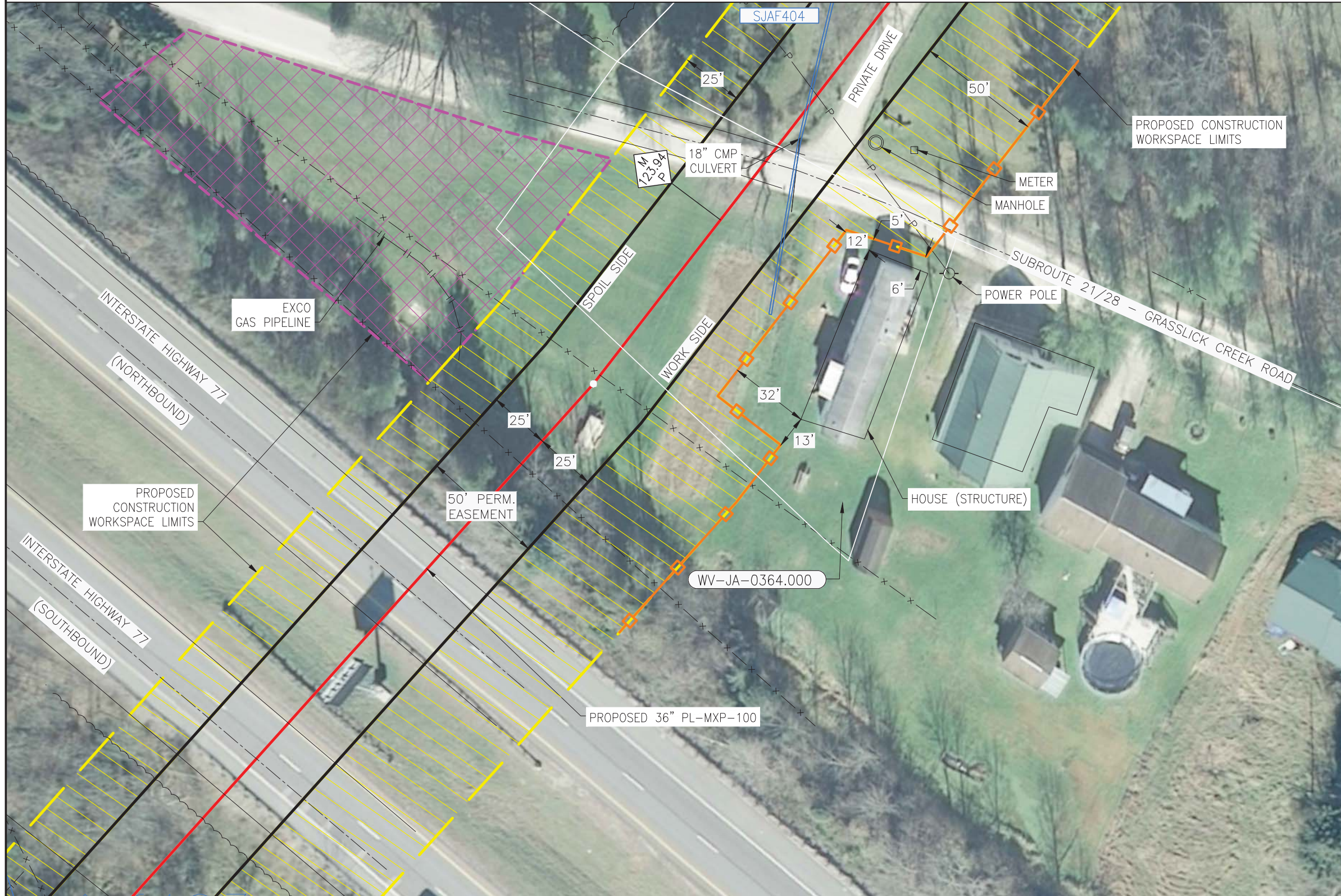
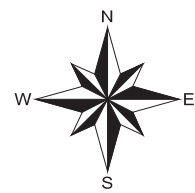


ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: 20' 10' 0' 20' 40' 		D6987-ALG-99 PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING 5101 SAN FELIPE, SUITE 2400, HOUSTON, TX 77056 Columbia Gas Transmission	
TITLE PL-MXP-100 MP 88.13 - RESIDENTIAL DETAIL WIRT COUNTY, WV		DRAWN BY: GPM PROJECT NUMBER: 20432 WORK ORDER NUMBER: 46130		DATE: 03/11/16 DRAWING NUMBER: D6987-RSD-19 SHEET: 1 OF 1 ISSUE: P2		DWG. NO. REFERENCE	
APPROVED BY: [Signature] DATE: 02/17/17 ISSUED FOR FERC SUPPL FILING		APPROVED BY: [Signature] DATE: 10/02/16 ISSUED FOR FERC SUPPL FILING		APPROVED BY: [Signature] DATE: 02/17/17 ISSUED FOR FERC SUPPL FILING		APPROVED BY: [Signature] DATE: 10/02/16 ISSUED FOR FERC SUPPL FILING	
No.	REVISIONS	No.	REVISIONS	No.	REVISIONS	No.	REVISIONS

TRACT WV-JA-0364.000

JACKSON COUNTY, WEST VIRGINIA



DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

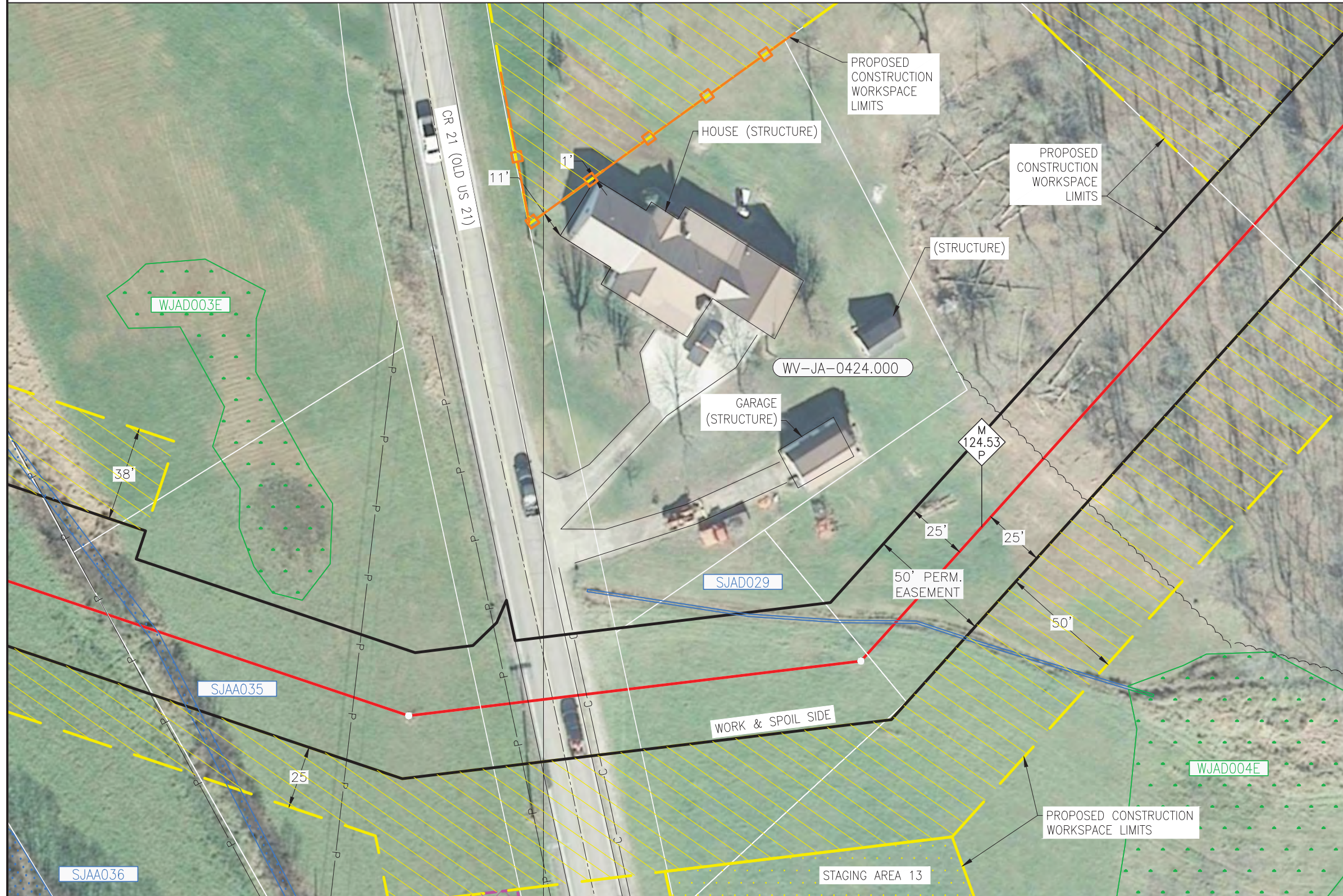
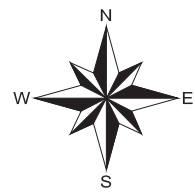
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ISSUED FOR FERC SUPPL
02/17/2017

LEGEND MILEPOST ROUTE PERMANENT ROW TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE CONTRACTOR / PIPE YARD WETLAND WATERBODY SAFETY FENCE PROPERTY TRACT NUMBER NETLAND ID WATERBODY ID ACCESS ROAD ACCESS ROAD NUMBER SANITARY SEWER PROPERTY LINE EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE FENCE UNDERGROUND CABLE OVERHEAD POWER LINE WATERLINE COUNTY BORDER		SCALE: 20' 10' 0' 20' 40'	D6987-ALG-137 PROPOSED 36" PL-MXP-100 PIPELINE	PROJECT DELIVERY PROJECT ENGINEERING 5112 SANDYBARK BLVD. JACKSON, WV 26030 Columbia Gas Transmission
No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE		ISSUED FOR FERC SUPPL FILING JHE 02/17/17	ISSUED FOR FERC SUPPL FILING JHE 04/29/16	PROJECT: PL-MXP-100 MP 123.94 - RESIDENTIAL DETAIL JACKSON COUNTY, WV DRAWN BY: GPM DATE: 03/11/16 PROJECT NUMBER: 20432 DRAWING NUMBER: D6987-RSD-22 SHEET: 1 OF 1 REVISION NUMBER: 46130

TRACT WV-JA-0424.000

JACKSON COUNTY, WEST VIRGINIA



DESCRIPTION

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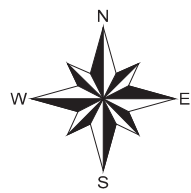
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4. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
5. TRENCH SHALL NOT BE EXCAVATED UNTIL PIPELINE IS READY FOR INSTALLATION AND SHALL BE BACKFILLED IN SAME DAY AS PIPE INSTALLATION IN THIS AREA. ALL OPEN DITCHES SHALL BE BARRICADED/FENCED OFF OR PLATED WHEN CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.
6. IMMEDIATELY AFTER BACKFILLING THE TRENCH, ALL LAWN AND LANDSCAPING WILL BE RESTORED TO FINAL RESTORATION, OR TEMPORARY RESTORATION PENDING WEATHER AND SOIL CONDITIONS. IF SEASONAL OR WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES, TEMPORARY EROSION CONTROLS MUST BE MONITORED AND MAINTAINED UNTIL CONDITIONS ALLOW COMPLETION OF RESTORATION.
7. CONTRACTOR SHALL UTILIZE WATER TRUCKS AS NECESSARY TO MINIMIZE FUGITIVE DUST FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES/BUSINESSES.
8. ACCESS TO RESIDENCES BY CAR WILL BE MAINTAINED AT ALL TIMES, OR OTHER ACCOMMODATIONS WILL BE MADE WITH EACH RESPECTIVE LANDOWNER.
9. CONTRACTOR SHALL MAINTAIN AGREED UPON ACCESS TO THE IMPACTED AREA DURING CONSTRUCTION.
10. CONTRACTOR SHALL LIMIT WORK IN THIS AREA TO DAYLIGHT HOURS, UNLESS OTHERWISE AGREED UPON WITH LANDOWNER/OCCUPANT.
11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.

ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: 20' 10' 0' 20' 40'		D6987-ALG-138 PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 124.53 - RESIDENTIAL DETAIL JACKSON COUNTY, WV			
APPROVED BY: [Signature] DATE: 02/17/17		APPROVED BY: [Signature] DATE: 10/02/16		DWG. NO. D6987-RSD-24		REFERENCE: 1 OF 1		SHEET: P2	
REVISIONS: [Table with columns for No., Description, Date]		REVISIONS: [Table with columns for No., Description, Date]		REVISIONS: [Table with columns for No., Description, Date]		REVISIONS: [Table with columns for No., Description, Date]		REVISIONS: [Table with columns for No., Description, Date]	

TRACT WV-JA-0368.000

JACKSON COUNTY, WEST VIRGINIA

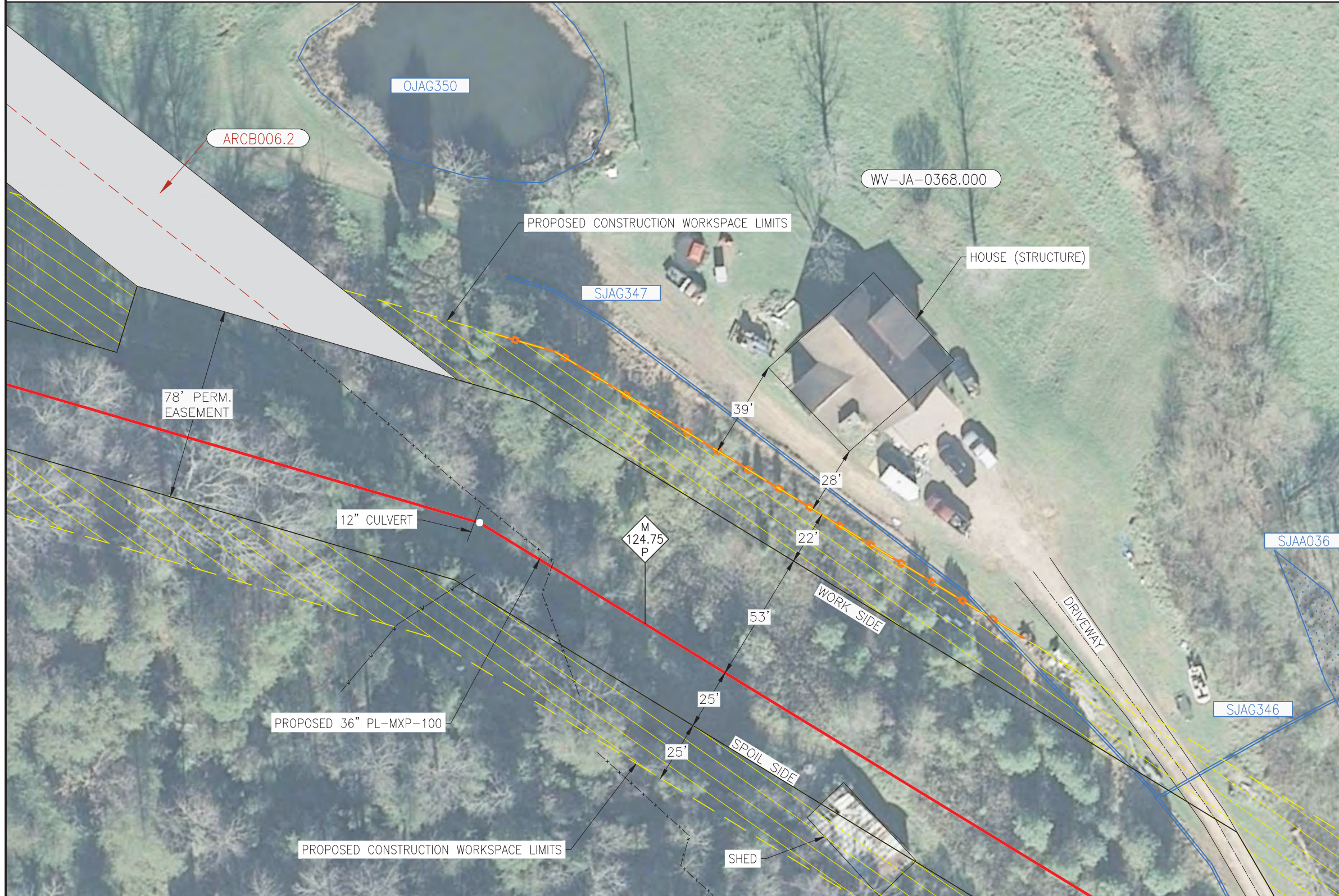


DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

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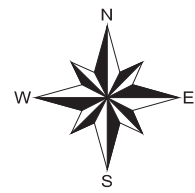


ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: 20' 10' 0' 20' 40'		D6987-ALG-138 PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING 5915 SAFFOLD BLVD SUITE 400 WOODSTOCK, VA 22694 Columbia Gas Transmission	
MOUNTAINEER XPRESS PROJECT TITLE: PL-MXP-100 MP 124.75 - RESIDENTIAL DETAIL JACKSON COUNTY, WV		DWG. NO. D6987-RSD-25		REFERENCE		SHEET 1 OF 1	
REVISIONS		REVISIONS		REVISIONS		DATE 03/11/16	
APPROVED BY		APPROVED BY		APPROVED BY		DATE 04/29/16	
No.		No.		No.		DWG. NO. D6987-RSD-25	
DATE		DATE		DATE		SHEET 1 OF 1	
No.		No.		No.		ISSUE P3	

TRACT WV-JA-0623.000

JACKSON COUNTY, WEST VIRGINIA



DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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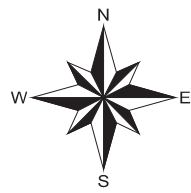


ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: 1" = 40' 		D6987-ALG-144 PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 129.8 - RESIDENTIAL DETAIL JACKSON COUNTY, WV			
REVISIONS No. APPROVED BY DATE No. APPROVED BY DATE		REVISIONS No. APPROVED BY DATE No. APPROVED BY DATE		REVISIONS No. APPROVED BY DATE No. APPROVED BY DATE		DWG. NO. REFERENCE		DRAWN BY: GPM DATE: 08/11/16 DRAWING NUMBER: D6987-RSD-26 SHEET: 1 OF 1 ISSUE: P2	

TRACT WV-PU-0062.001

PUTNAM COUNTY, WEST VIRGINIA



DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

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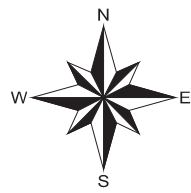


ISSUED FOR FERC SUPPL
02/17/2017

LEGEND MILEPOST ROUTE PERMANENT ROW TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE CONTRACTOR / PIPE YARD WETLAND WATERBODY SAFETY FENCE PROPERTY TRACT NUMBER WETLAND ID WATERBODY ID ACCESS ROAD ACCESS ROAD NUMBER SANITARY SEWER PROPERTY LINE EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE FENCE UNDERGROUND CABLE OVERHEAD POWER LINE WATERLINE COUNTY BORDER		SCALE: 20' 10' 0' 20' 40'	PROJECT DELIVERY PROJECT ENGINEERING 3151 SANFORD BLVD., SUITE 2000 HOUSTON, TX 77056 Columbia Gas Transmission
No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE		ISSUED FOR FERC SUPPL FILING JHE 02/17/17 ISSUED FOR FERC SUPPL FILING JHE 10/02/16	MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 134.9 - RESIDENTIAL DETAIL PUTNAM COUNTY, WV DRAWN BY GPM DATE 08/11/16 DRAWING NUMBER SHEET ISSUE PROJECT NUMBER 20432 D6987-RSD-28 1 OF 1 P2 DRAWING NUMBER 46130

TRACT WV-PU-0239.000

PUTNAM COUNTY, WEST VIRGINIA



DESCRIPTION
 THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

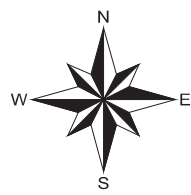
- CONSTRUCTION REQUIREMENTS**
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ISSUED FOR FERC SUPPL
 02/17/2017

LEGEND MILEPOST TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE PERMANENT ROW WETLAND WATERBODY SAFETY FENCE PROPERTY TRACT NUMBER WETLAND ID WATERBODY ID ACCESS ROAD ACCESS ROAD NUMBER SANITARY SEWER PROPERTY LINE EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE FENCE UNDERGROUND CABLE OVERHEAD POWER LINE WATERLINE COUNTY BORDER		SCALE: 30' 15' 0' 30' 60'	D6987-ALG-158 PROPOSED 36" PL-MXP-100 PIPELINE	PROJECT DELIVERY PROJECT ENGINEERING 3101 SANFORD BLVD, SUITE 2000 HOUSTON, TX 77056 Columbia Gas Transmission
No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE		No. ISSUED FOR FERC SUPPL FILING JHE 02/17/17 No. ISSUED FOR FERC SUPPL FILING JHE 10/02/16	DWG. NO. REFERENCE	MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 143.3 - RESIDENTIAL DETAIL PUTNAM COUNTY, WV DRAWN BY GPM DATE 08/18/16 DRAWING NUMBER SHEET ISSUE PROJECT NUMBER 20432 DRAWING NUMBER 46130 D6987-RSD-32 1 OF 1 P2

TRACT WV-CB-0065.000
CABELL COUNTY, WEST VIRGINIA



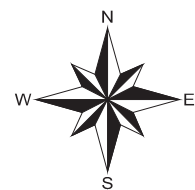
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ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: 20' 10' 0' 20' 40'		D6987-ALG-176 PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING 3151 SANFORD BLVD, SUITE 2000 HOUSTON, TX 77056 Columbia Gas Transmission	
MOUNTAINEER XPRESS PROJECT TITLE: PL-MXP-100 MP 158.20 - RESIDENTIAL DETAIL CABELL COUNTY, WV		DRAWN BY: JHE PROJECT NUMBER: 20432 REVISION NUMBER: 46130		DATE: 10/02/16 DATE: 04/29/16		DRAWING NUMBER: D6987-RSD-40 SHEET: 1 OF 1 ISSUE: P3	
No. REVISIONS APPROVED BY DATE		No. REVISIONS APPROVED BY DATE		No. REVISIONS APPROVED BY DATE		DWG. NO. REFERENCE	



TRACT WV-CB-0194.000
CABELL COUNTY, WEST VIRGINIA

DESCRIPTION
THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

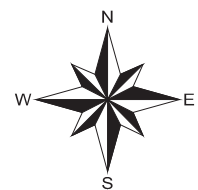
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ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: 		PROJECT DELIVERY PROJECT ENGINEERING 3151 SANFORD BLVD., SUITE 2000 HOUSTON, TX 77056 Columbia Gas Transmission	
PROJECT TRACT NUMBER: WV-CB-0194.000 WETLAND ID: WPAJUC002 WATERBODY ID: SPAJUC002		ACCESS ROAD: ARW001 ACCESS ROAD NUMBER: ARW001 SANITARY SEWER: SS PROPERTY LINE: PL		UNDERGROUND CABLE: C OVERHEAD POWER LINE: P WATERLINE: W COUNTY BORDER: CB	
TITLE: PL-MXP-100 MP 160.6 - RESIDENTIAL DETAIL CABELL COUNTY, WV		DRAWN BY: JHE DATE: 02/17/17		PROJECT NUMBER: 20432 DRAWING NUMBER: D6987-RSD-41 SHEET: 1 OF 1 ISSUE: P2	
REVISIONS No. APPROVED BY DATE No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE		DWG. NO.		REFERENCE	

TRACT WV-CB-0109.000
CABELL COUNTY, WEST VIRGINIA



DESCRIPTION
THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

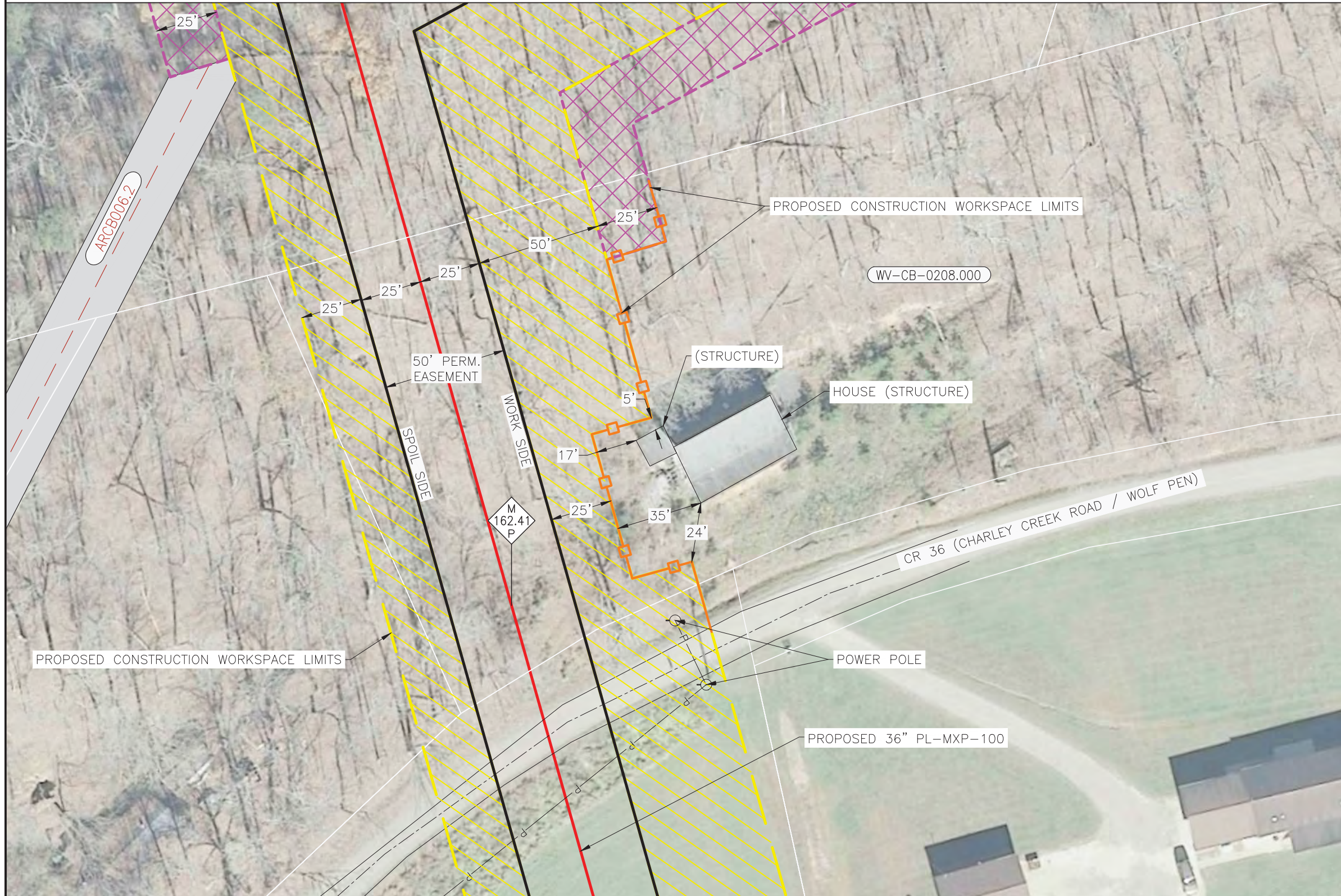
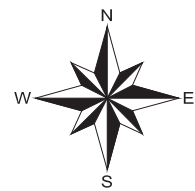
1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
2. A MINIMUM OF 25 FEET WILL BE MAINTAINED BETWEEN THE RESIDENCE AND CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF THE RESIDENCE. IF THE FACILITY MUST BE WITHIN 25 FEET OF A RESIDENCE, IT MUST BE INSTALLED SUCH THAT THE TRENCH DOES NOT REMAIN OPEN OVERNIGHT.
3. MATURE TREES AND LANDSCAPING WILL NOT BE REMOVED FROM WITHIN THE EDGE OF THE CONSTRUCTION WORK AREA UNLESS NECESSARY FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT OR AS SPECIFIED IN LANDOWNER AGREEMENTS.
4. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
5. TRENCH SHALL NOT BE EXCAVATED UNTIL PIPELINE IS READY FOR INSTALLATION AND SHALL BE BACKFILLED IN SAME DAY AS PIPE INSTALLATION IN THIS AREA. ALL OPEN DITCHES SHALL BE BARRICADED/FENCED OFF OR PLATED WHEN CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.
6. IMMEDIATELY AFTER BACKFILLING THE TRENCH, ALL LAWN AND LANDSCAPING WILL BE RESTORED TO FINAL RESTORATION, OR TEMPORARY RESTORATION PENDING WEATHER AND SOIL CONDITIONS. IF SEASONAL OR WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES, TEMPORARY EROSION CONTROLS MUST BE MONITORED AND MAINTAINED UNTIL CONDITIONS ALLOW COMPLETION OF RESTORATION.
7. CONTRACTOR SHALL UTILIZE WATER TRUCKS AS NECESSARY TO MINIMIZE FUGITIVE DUST FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES/BUSINESSES.
8. ACCESS TO RESIDENCES BY CAR WILL BE MAINTAINED AT ALL TIMES, OR OTHER ACCOMMODATIONS WILL BE MADE WITH EACH RESPECTIVE LANDOWNER.
9. CONTRACTOR SHALL MAINTAIN AGREED UPON ACCESS TO THE IMPACTED AREA DURING CONSTRUCTION.
10. CONTRACTOR SHALL LIMIT WORK IN THIS AREA TO DAYLIGHT HOURS, UNLESS OTHERWISE AGREED UPON WITH LANDOWNER/OCCUPANT.
11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.



ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: 		PROJECT DELIVERY PROJECT ENGINEERING 3151 SANFORD BLVD, SUITE 2000 HOUSTON, TX 77056 Columbia Gas Transmission	
PROJECT TRACT NUMBER: ST-CO-001.000 WETLAND ID: WPAJUC002 WATERBODY ID: SPADJUC002		ACCESS ROAD: ARW001 ACCESS ROAD NUMBER: ARW001 SANITARY SEWER: SS PROPERTY LINE: PL		UNDERGROUND CABLE: C OVERHEAD POWER LINE: P WATERLINE: W COUNTY BORDER: CB	
TITLE: PL-MXP-100 MP 160.6 - RESIDENTIAL DETAIL CABELL COUNTY, WV		DRAWING NUMBER: D6987-RSD-42 SHEET: 1 OF 1 ISSUE: P2		PROJECT NUMBER: 20432 DRAWING NUMBER: 46130	
REVISIONS No. APPROVED BY DATE		REVISIONS No. APPROVED BY DATE		REVISIONS No. APPROVED BY DATE	
ISSUED FOR FERC SUPPL FILING JHE 02/17/17		ISSUED FOR FERC SUPPL FILING JHE 10/02/16		DWG. NO. REFERENCE	

TRACT WV-CB-0208.000
CABELL COUNTY, WEST VIRGINIA

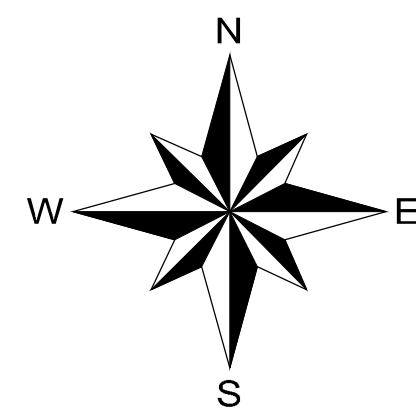


DESCRIPTION
THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

- CONSTRUCTION REQUIREMENTS**
1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
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 11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.

ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: 1" = 40' 		D6987-ALG-180 PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING 5110 NEW BRIDGE BLVD, SUITE 200, CHARLETTON, WV 25301 Columbia Gas Transmission	
TITLE: PL-MXP-100 MP 162.41 - RESIDENTIAL DETAIL CABELL COUNTY, WV		DRAWN BY: JHE CHECKED BY: JHE DATE: 03/11/16		DRAWING NUMBER: D6987-RSD-47 SHEET: 1 OF 1 ISSUE: P3		PROJECT NUMBER: 20432 PROJECT ORDER NUMBER: 46130	
REVISIONS No. APPROVED BY DATE No. APPROVED BY DATE		REVISIONS No. APPROVED BY DATE No. APPROVED BY DATE		REVISIONS No. APPROVED BY DATE No. APPROVED BY DATE		DWG. NO. REFERENCE	
ISSUED FOR FERC SUPPL FILING JHE 02/17/17		ISSUED FOR FERC SUPPL FILING JHE 02/17/17		ISSUED FOR FERC SUPPL FILING JHE 02/17/17		ISSUED FOR FERC SUPPL FILING JHE 02/17/17	



TRACT WV-MA-0181.001
MARSHALL COUNTY, WEST VIRGINIA

DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

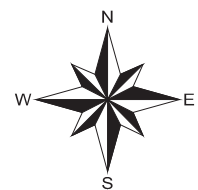
- CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
- A MINIMUM OF 25 FEET WILL BE MAINTAINED BETWEEN THE RESIDENCE AND CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF THE RESIDENCE. IF THE FACILITY MUST BE WITHIN 25 FEET OF A RESIDENCE, IT MUST BE INSTALLED SUCH THAT THE TRENCH DOES NOT REMAIN OPEN OVERNIGHT.
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- CONTRACTOR SHALL LIMIT WORK IN THIS AREA TO DAYLIGHT HOURS, UNLESS OTHERWISE AGREED UPON WITH LANDOWNER/OCCUPANT.
- LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.



**ISSUED FOR
FERC SUPPL**
02/17/2017

LEGEND 		SCALE: 		PROJECT DELIVERY PROJECT ENGINEERING 8101 SAN FELIPE, SUITE 200, HOUSTON, TX 77058 Columbia Gas Transmission	
PROJECT MOUNTAINEER XPRESS PROJECT		TITLE PL-MXP-100 MP 7.1 - RESIDENTIAL DETAIL MARSHALL COUNTY, WV		DRAWN BY: SAJ DATE: 12/16/16 DRAWING NUMBER: D6987-RSD-49 SHEET: 1 OF 1 ISSUE: P1	
REVISIONS No. APPROVED BY DATE No. APPROVED BY DATE No. APPROVED BY DATE		REVISIONS No. APPROVED BY DATE No. APPROVED BY DATE No. APPROVED BY DATE		REFERENCE DWG. NO. PROJECT NUMBER 20432 WORK ORDER NUMBER 46130	

TRACT WV-WZ-0329.000
WETZEL COUNTY, WEST VIRGINIA



DESCRIPTION
THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

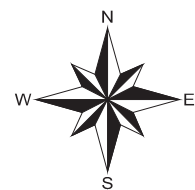
CONSTRUCTION REQUIREMENTS

1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
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11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.



ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: 		D6987-ALG-028 PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING 3101 SANFELICE BLVD SUITE 2000 HOUSTON TX 77056 Columbia Gas Transmission	
MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 24.4 - RESIDENTIAL DETAIL WETZEL COUNTY, WV		DRAWN BY: JHE SAJ DATE: 12/27/16 PROJECT NUMBER: 20432 DRAWING NUMBER: D6987-RSD-51 SHEET: 1 OF 1 ISSUE: P1		DWG. NO.		REFERENCE	
No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE		ISSUED FOR FERC SUPPL FILING JHE 02/17/17		DWG. NO.		REFERENCE	



TRACT WV-DO-0009.000
DODDRIDGE COUNTY, WEST VIRGINIA

DESCRIPTION
THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

- CONSTRUCTION REQUIREMENTS**
- CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
 - A MINIMUM OF 25 FEET WILL BE MAINTAINED BETWEEN THE RESIDENCE AND CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF THE RESIDENCE. IF THE FACILITY MUST BE WITHIN 25 FEET OF A RESIDENCE, IT MUST BE INSTALLED SUCH THAT THE TRENCH DOES NOT REMAIN OPEN OVERNIGHT.
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 - LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.



**ISSUED FOR
FERC SUPPL**
02/17/2017

LEGEND		TEMPORARY WORKSPACE		WETLAND		PROPERTY TRACT NUMBER		ACCESS ROAD		EXISTING COLUMBIA PIPELINE		UNDERGROUND CABLE		OVERHEAD POWER LINE	
	MILEPOST		TEMPORARY WORKSPACE		WETLAND		PROPERTY TRACT NUMBER		ACCESS ROAD		EXISTING COLUMBIA PIPELINE		UNDERGROUND CABLE		OVERHEAD POWER LINE
	ROUTE		ADDITIONAL TEMPORARY WORKSPACE		WATERBODY		WETLAND ID		ACCESS ROAD NUMBER		FOREIGN PIPELINE		WATERLINE		SANITARY SEWER
	PERMANENT ROW		CONTRACTOR / PIPE YARD		SAFETY FENCE		WATERBODY ID		PROPERTY LINE		FENCE		COUNTY BORDER		

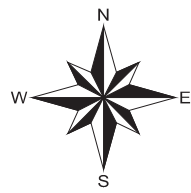
REVISIONS		REVISIONS		REVISIONS	
No.	DATE	No.	DATE	No.	DATE

SCALE:	DATE:	PROJECT:	DWG. NO.	REFERENCE:
20' 10' 0' 20' 40'	02/17/17	ISSUED FOR FERC SUPPL FILING		

PROJECT DELIVERY PROJECT ENGINEERING		Columbia Gas Transmission	
MOUNTAINEER XPRESS PROJECT			
TITLE PL-MXP-100 MP 42.8 - RESIDENTIAL DETAIL DODDRIDGE COUNTY, WV			
DRAWN BY	SAJ	DATE	12/19/16
PROJECT NUMBER	20432	DRAWING NUMBER	D6987-RSD-53
REVISION NUMBER	46130	SHEET	1 OF 1
		ISSUE	P 1

TRACT WV-DO-0158.000

DODDRIDGE COUNTY, WEST VIRGINIA

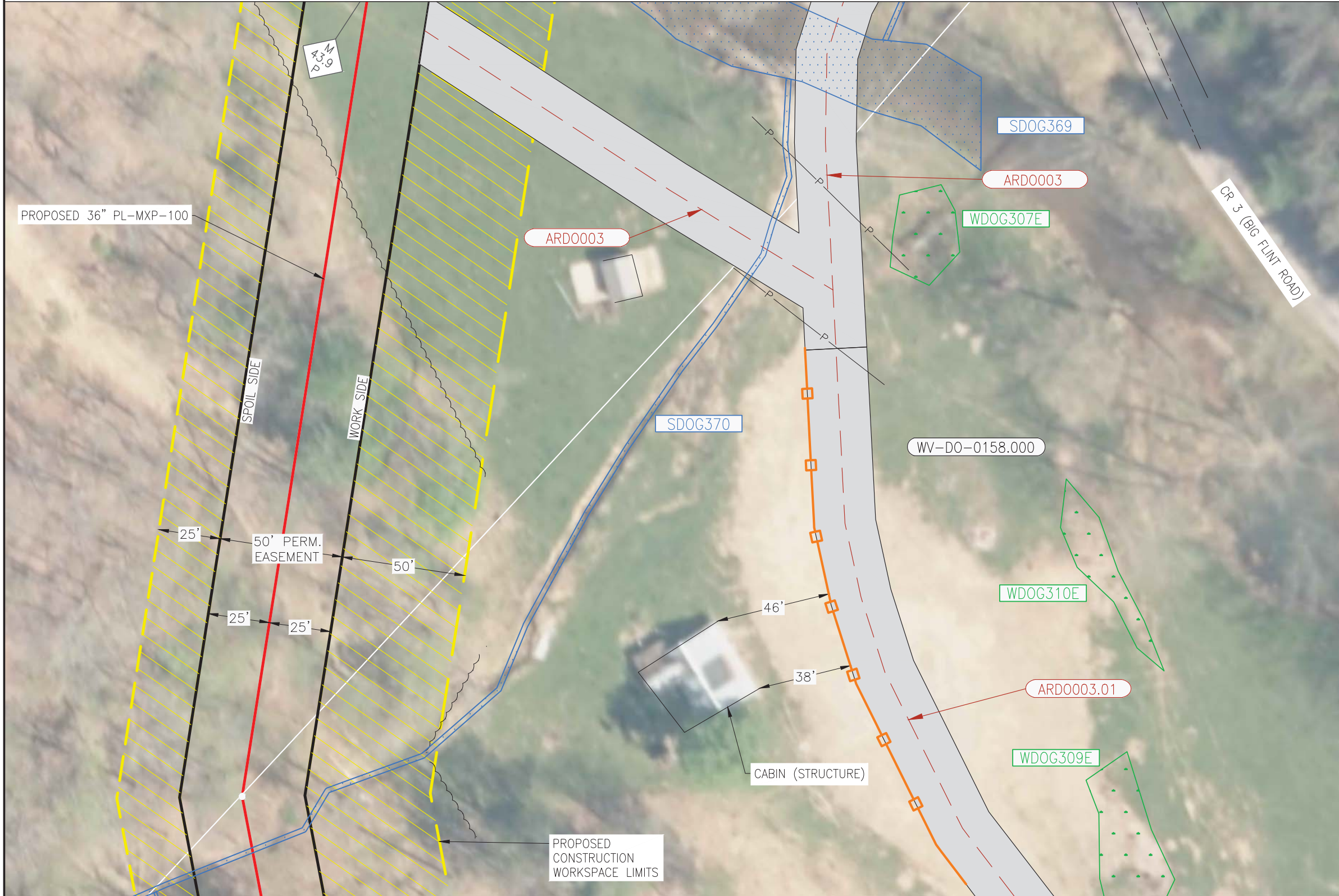


DESCRIPTION

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CONSTRUCTION REQUIREMENTS

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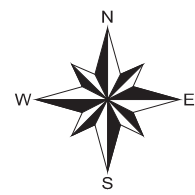


ISSUED FOR FERC SUPPL
02/17/2017

LEGEND MILEPOST ROUTE PERMANENT ROW TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE CONTRACTOR / PIPE YARD WETLAND WATERBODY SAFETY FENCE PROPERTY TRACT NUMBER WETLAND ID WATERBODY ID ACCESS ROAD ACCESS ROAD NUMBER SANITARY SEWER PROPERTY LINE EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE FENCE UNDERGROUND CABLE OVERHEAD POWER LINE WATERLINE COUNTY BORDER		SCALE: 20' 10' 0' 20' 40'	D6987-ALG-051 PROPOSED 36" PL-MXP-100 PIPELINE	PROJECT DELIVERY PROJECT ENGINEERING 3151 SANFLEUR, SUITE 2000 HOUSTON, TX 77056 Columbia Gas Transmission
No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE		ISSUED FOR FERC SUPPL FILING JHE 02/17/17	DWG. NO. REFERENCE D6987-RSD-54 1 OF 1 P1	MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 43.9 - RESIDENTIAL DETAIL DODDRIDGE COUNTY, WV DRAWN BY SAJ DATE 12/21/16 DRAWING NUMBER SHEET ISSUE PROJECT NUMBER 20432 D6987-RSD-54 1 OF 1 P1 REVISION NUMBER 46130

TRACT WV-DO-0157.000

DODDRIDGE COUNTY, WEST VIRGINIA



DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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3. MATURE TREES AND LANDSCAPING WILL NOT BE REMOVED FROM WITHIN THE EDGE OF THE CONSTRUCTION WORK AREA UNLESS NECESSARY FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT OR AS SPECIFIED IN LANDOWNER AGREEMENTS.
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5. TRENCH SHALL NOT BE EXCAVATED UNTIL PIPELINE IS READY FOR INSTALLATION AND SHALL BE BACKFILLED IN SAME DAY AS PIPE INSTALLATION IN THIS AREA. ALL OPEN DITCHES SHALL BE BARRICADED/FENCED OFF OR PLATED WHEN CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.
6. IMMEDIATELY AFTER BACKFILLING THE TRENCH, ALL LAWN AND LANDSCAPING WILL BE RESTORED TO FINAL RESTORATION, OR TEMPORARY RESTORATION PENDING WEATHER AND SOIL CONDITIONS. IF SEASONAL OR WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES, TEMPORARY EROSION CONTROLS MUST BE MONITORED AND MAINTAINED UNTIL CONDITIONS ALLOW COMPLETION OF RESTORATION.
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11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.

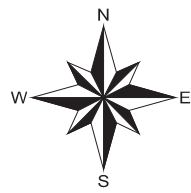


ISSUED FOR FERC SUPPL
02/17/2017

LEGEND MILEPOST ROUTE PERMANENT ROW TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE CONTRACTOR / PIPE YARD WETLAND WATERBODY SAFETY FENCE PROPERTY TRACT NUMBER WETLAND ID WATER BODY ID ACCESS ROAD ACCESS ROAD NUMBER SANITARY SEWER PROPERTY LINE EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE FENCE UNDERGROUND CABLE OVERHEAD POWER LINE WATERLINE COUNTY BORDER		SCALE: 20' 10' 0' 20' 40'	D6987-ALG-051 PROPOSED 36" PL-MXP-100 PIPELINE	PROJECT DELIVERY PROJECT ENGINEERING 3101 SANFLEUR BLVD SUITE 2000 HOUSTON TX 77056 Columbia Gas Transmission MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 43.8 - RESIDENTIAL DETAIL DODDRIDGE COUNTY, WV
No. REVISIONS APPROVED BY DATE	No. REVISIONS APPROVED BY DATE	No. REVISIONS APPROVED BY DATE	No. REVISIONS APPROVED BY DATE	DWG. NO. REFERENCE PROJECT NUMBER: 20432 DRAWING NUMBER: D6987-RSD-55 SHEET: 1 OF 1 ISSUE: P1

TRACT WV-DO-0196.000

DODDRIDGE COUNTY, WEST VIRGINIA



DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

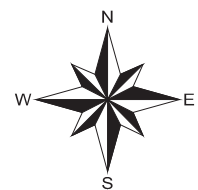
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11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.



**ISSUED FOR
FERC SUPPL**
02/17/2017

LEGEND MILEPOST ROUTE PERMANENT ROW TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE CONTRACTOR / PIPE YARD WETLAND WATERBODY SAFETY FENCE PROPERTY TRACT NUMBER WETLAND ID WATERBODY ID ACCESS ROAD ACCESS ROAD NUMBER SANITARY SEWER PROPERTY LINE EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE FENCE UNDERGROUND CABLE OVERHEAD POWER LINE WATERLINE COUNTY BORDER		SCALE: 20' 10' 0' 20' 40'	D6987-ALG-052 PROPOSED 36" PL-MXP-100 PIPELINE	PROJECT DELIVERY PROJECT ENGINEERING 3101 SANFELICE BLVD SUITE 2000 HOUSTON TX 77056 Columbia Gas Transmission MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 45.02 - RESIDENTIAL DETAIL DODDRIDGE COUNTY, WV
No. REVISIONS APPROVED BY DATE	No. REVISIONS APPROVED BY DATE	No. REVISIONS APPROVED BY DATE	DWG. NO. REFERENCE JHE 02/17/17 20432 46130	DRAWN BY SAJ DATE 12/27/16 PROJECT NUMBER 20432 DRAWING NUMBER D6987-RSD-56 SHEET 1 OF 1 ISSUE P 1

TRACT WV-RI-0349.000
RITCHIE COUNTY, WEST VIRGINIA



DESCRIPTION
THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

CONSTRUCTION REQUIREMENTS

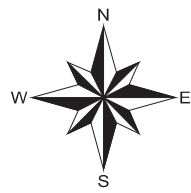
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ISSUED FOR FERC SUPPL
02/17/2017

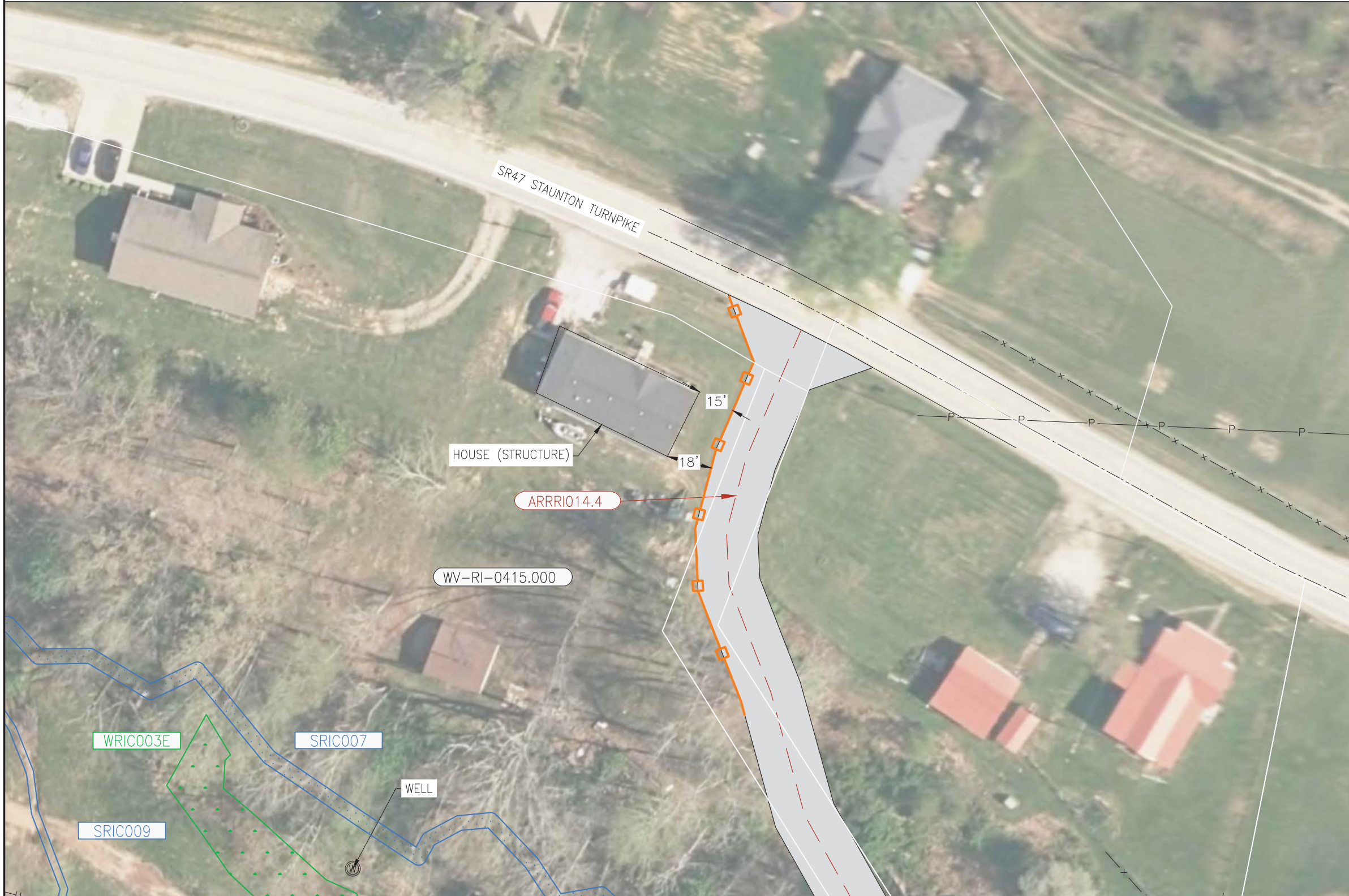
LEGEND 		SCALE: 20' 10' 0' 20' 40'		D6986-ALG-086 PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING 3151 SAN FELIX BLVD SUITE 2000 HOUSTON TX 77056 Columbia Gas Transmission	
MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 77.7 - RESIDENTIAL DETAIL RITCHIE COUNTY, WV		DRAWN BY: SAJ DATE: 12/23/16 PROJECT NUMBER: 20432 DRAWING NUMBER: D6987-RSD-57 SHEET: 1 OF 1 ISSUE: P1		DWG. NO. REFERENCE		JHE 02/17/17 ISSUED FOR FERC SUPPL FILING	
No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE

TRACT WV-RI-0415.000
RITCHIE COUNTY, WEST VIRGINIA



DESCRIPTION
THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

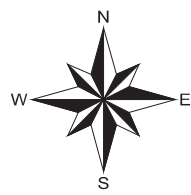
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**ISSUED FOR
FERC SUPPL**
02/17/2017

LEGEND 		SCALE: 20 10 0' 20 40		D6987-ALG-086 PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING 3151 SANFELICE BLVD SUITE 2000 HOUSTON TX 77056 Columbia Gas Transmission	
MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 77.7 - RESIDENTIAL DETAIL RITCHIE COUNTY, WV		DRAWN BY: SAJ PROJECT NUMBER: 20432 REVISION NUMBER: 46130		DATE: 12/21/16 DRAWING NUMBER: D6987-RSD-58 SHEET: 1 OF 1 ISSUE: P1		JHE 02/17/17 DWG. NO. REFERENCE	
No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE

TRACT WV-WI-0142.000
WIRT COUNTY, WEST VIRGINIA



DESCRIPTION
THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

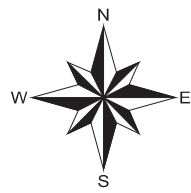
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ISSUED FOR FERC SUPPL
02/17/2017

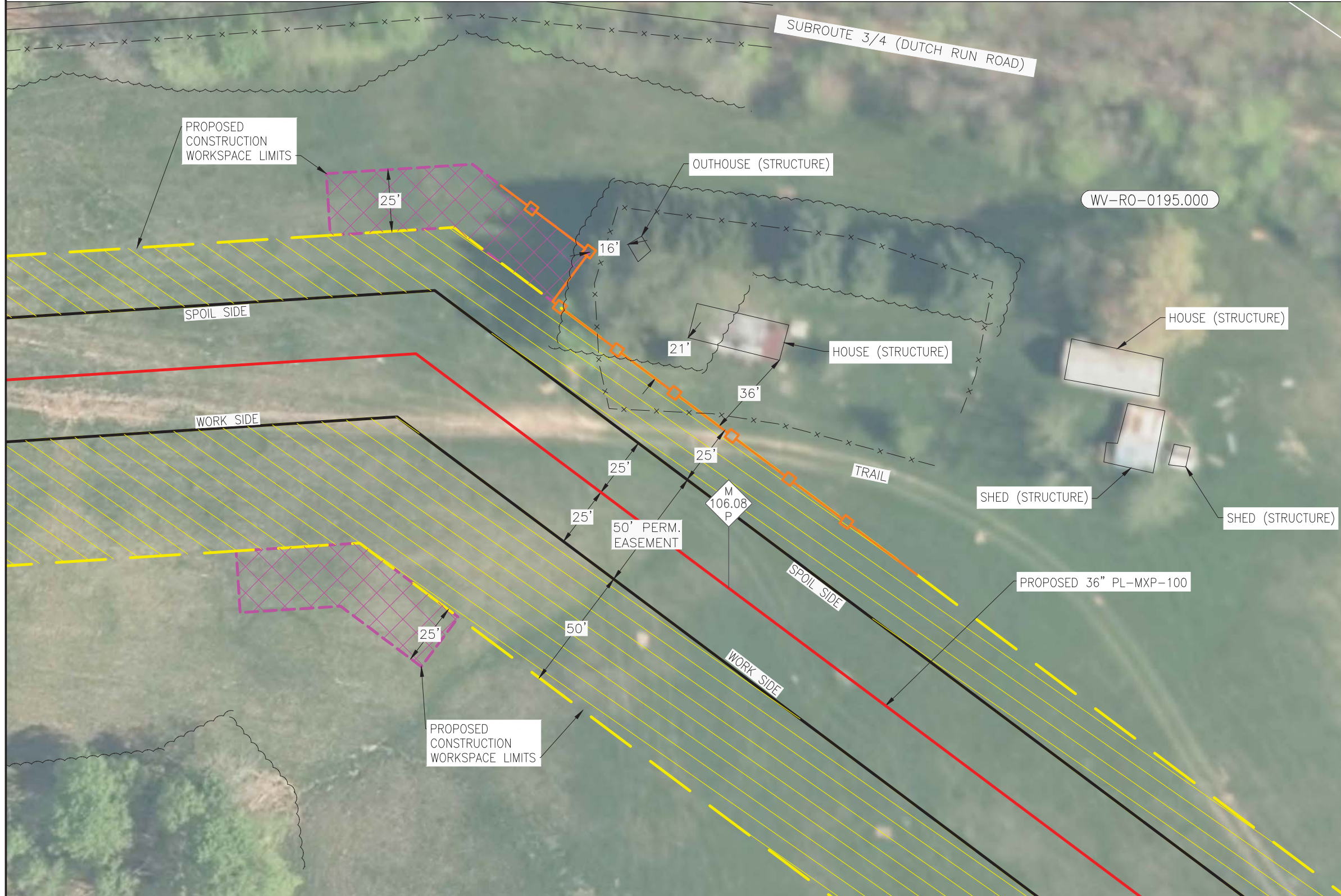
LEGEND 		SCALE: 20' 10' 0' 20' 40'		D6987-ALG-102 PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING 3151 SAN FELICE BLVD SUITE 2000 HOUSTON TX 77056 Columbia Gas Transmission							
MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 91.72 - RESIDENTIAL DETAIL WIRT COUNTY, WV		DRAWN BY: SAJ PROJECT NUMBER: 20432 REVISION NUMBER: 46130		DATE: 12/16/16 DRAWING NUMBER: D6987-RSD-59 SHEET: 1 OF 1 ISSUE: P1		JHE 02/17/17 ISSUED FOR FERC SUPPL FILING							
No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE	DWG. NO.	REFERENCE

TRACT WV-RO-0195.000
ROANE COUNTY, WEST VIRGINIA



DESCRIPTION
THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

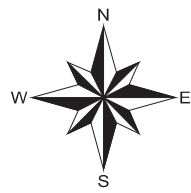
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ISSUED FOR FERC SUPPL
02/17/2017

LEGEND 		SCALE: 		D6987-ALG-119 PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING 3151 SANFELICE BLVD SUITE 2000 HOUSTON TX 77056 Columbia Gas Transmission	
MOUNTAINEER XPRESS PROJECT TITLE: PL-MXP-100 MP 106.08 - RESIDENTIAL DETAIL ROANE COUNTY, WV		DRAWN BY: SAJ PROJECT NUMBER: 20432 REVISION NUMBER: 46130		DATE: 12/20/16 DRAWING NUMBER: D6987-RSD-60 SHEET: 1 OF 1 ISSUE: P1		JHE 02/17/17 DWG. NO. REFERENCE	
No.	REVISIONS	APPROVED BY	DATE	No.	REVISIONS	APPROVED BY	DATE

TRACT WV-RO-0200.000
ROANE COUNTY, WEST VIRGINIA



DESCRIPTION
THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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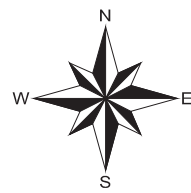


**ISSUED FOR
FERC SUPPL**
02-17-2017

LEGEND		TEMPORARY WORKSPACE		WETLAND		PROPERTY TRACT NUMBER		ACCESS ROAD		EXISTING COLUMBIA PIPELINE		UNDERGROUND CABLE		D6987-ALG-120		PROPOSED 36" PL-MXP-100 PIPELINE		PROJECT DELIVERY PROJECT ENGINEERING		Columbia Gas Transmission			
MILEPOST		ADDITIONAL TEMPORARY WORKSPACE		WATERBODY		WETLAND ID		ACCESS ROAD NUMBER		FOREIGN PIPELINE		OVERHEAD POWER LINE		TITLE PL-MXP-100 MP 107.4 - RESIDENTIAL DETAIL		MOUNTAINEER XPRESS PROJECT		3151 SANFORD BLVD, SUITE 2000 HOUSTON, TX 77056		Roane County, WV			
PERMANENT ROW		CONTRACTOR / PIPE YARD		SAFETY FENCE		WATERBODY ID		PROPERTY LINE		FENCE		WATERLINE		DRAWN BY		DATE		DRAWING NUMBER		SHEET			
														JHE		02/17/17		20432		1 OF 1			
No.		REVISIONS		APPROVED BY		DATE		No.		REVISIONS		APPROVED BY		DATE		No.		REVISIONS		DWG. NO.		REFERENCE	
																				D6987-RSD-61		P 1	

TRACT WV-JA-0059.000

JACKSON COUNTY, WEST VIRGINIA



DESCRIPTION
 THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

- CONSTRUCTION REQUIREMENTS**
1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
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 11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.

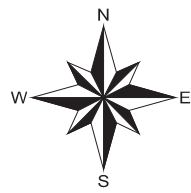


ISSUED FOR FERC SUPPL
02-17-2017

LEGEND MILEPOST ROUTE PERMANENT ROW TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE CONTRACTOR / PIPE YARD WETLAND WATERBODY SAFETY FENCE PROPERTY TRACT NUMBER WETLAND ID WATERBODY ID ACCESS ROAD ACCESS ROAD NUMBER SANITARY SEWER PROPERTY LINE EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE FENCE UNDERGROUND CABLE OVERHEAD POWER LINE WATERLINE COUNTY BORDER		SCALE: 20' 10' 0' 20' 40'	D6987-ALG-126 PROPOSED 36" PL-MXP-100 PIPELINE	PROJECT DELIVERY PROJECT ENGINEERING 810 SAN FILIPPE SUITE 200 HOBBSVILLE WV 26041 Columbia Gas Transmission MOUNTAINEER XPRESS PROJECT TITLE: PL-MXP-100 MP 112.12 - RESIDENTIAL DETAIL JACKSON COUNTY, WV
No. REVISIONS APPROVED BY DATE No.	No. REVISIONS APPROVED BY DATE No.	No. REVISIONS APPROVED BY DATE No.	DWG. NO. REFERENCE 20432 46130 D6987-RSD-62 1 OF 1 P1	PROJECT NUMBER: 20432 DRAWING NUMBER: D6987-RSD-62 SHEET: 1 OF 1 ISSUE: P1

TRACT WV-PU-0405.000

PUTNAM COUNTY, WEST VIRGINIA



DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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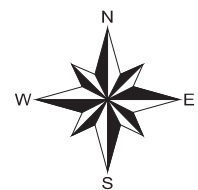


ISSUED FOR FERC SUPPL
02/17/2017

LEGEND MILEPOST ROUTE PERMANENT ROW TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE CONTRACTOR / PIPE YARD WETLAND WATERBODY SAFETY FENCE PROPERTY TRACT NUMBER WETLAND ID WATERBODY ID ACCESS ROAD ACCESS ROAD NUMBER SANITARY SEWER PROPERTY LINE EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE FENCE UNDERGROUND CABLE OVERHEAD POWER LINE WATERLINE COUNTY BORDER		SCALE: 20' 10' 0' 20' 40'	D6987-ALG-160 PROPOSED 36" PL-MXP-100 PIPELINE	PROJECT DELIVERY PROJECT ENGINEERING 3101 SANFORD BLVD, SUITE 2000 HOUSTON, TX 77056 Columbia Gas Transmission
No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE No. REVISIONS APPROVED BY DATE		ISSUED FOR FERC SUPPL FILING JHE 02/17/17	DWG. NO. REFERENCE	MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 145.3 - RESIDENTIAL DETAIL PUTNAM COUNTY, WV DRAWN BY SAJ DATE 12/23/16 DRAWING NUMBER SHEET ISSUE PROJECT NUMBER 20432 D6987-RSD-63 1 OF 1 P1 REVISION NUMBER 46130

TRACT WV-CB-0006.001

CABELL COUNTY, WEST VIRGINIA



DESCRIPTION
 THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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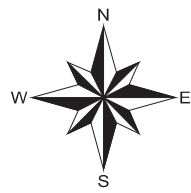
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ISSUED FOR FERC SUPPL
02/17/2017

LEGEND MILEPOST ROUTE PERMANENT ROW TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE CONTRACTOR / PIPE YARD WETLAND WATERBODY SAFETY FENCE PROPERTY TRACT NUMBER WETLAND ID SPADUC002 WATERBODY ID ACCESS ROAD ACCESS ROAD NUMBER SS SANITARY SEWER PROPERTY LINE EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE FENCE UNDERGROUND CABLE OVERHEAD POWER LINE WATERLINE COUNTY BORDER		SCALE: 20' 10' 0' 20' 40'	PROJECT DELIVERY PROJECT ENGINEERING 3151 SANFELICE, SUITE 2000 HOUSTON, TX 77056 Columbia Gas Transmission
MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 156.8 - RESIDENTIAL DETAIL CABELL COUNTY, WV		DRAWN BY: SAJ PROJECT NUMBER: 20432 CHECKED BY: 46130	DATE: 12/23/16 DRAWING NUMBER: D6987-RSD-64 SHEET: 1 OF 1 ISSUE: P1
No. REVISIONS APPROVED BY DATE No.	No. REVISIONS APPROVED BY DATE No.	No. REVISIONS APPROVED BY DATE No.	DWG. NO. REFERENCE

TRACT WV-CB-0371.000
 CABELL COUNTY, WEST VIRGINIA



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ISSUED FOR FERC SUPPL
 02/17/2017

LEGEND 		SCALE: 		PROJECT DELIVERY PROJECT ENGINEERING 3151 SAN ANTONIO BLVD, SUITE 2000 HOUSTON, TX 77056 Columbia Gas Transmission	
MOUNTAINEER XPRESS PROJECT TITLE PL-MXP-100 MP 161.9 - RESIDENTIAL DETAIL CABELL COUNTY, WV		DRAWN BY: SAJ PROJECT NUMBER: 20432 DWG. NO.: D6987-RSD-65		DATE: 12/23/16 SHEET: 1 OF 1 ISSUE: P1	
REVISIONS No. APPROVED BY DATE		REVISIONS No. APPROVED BY DATE		REVISIONS No. APPROVED BY DATE	

Mountaineer XPress Project
30-inch SM80 and SM80 Loop Replacement Segments Site-specific Residential Drawings

TRACT WV-CB-0806.001
CABELL COUNTY, WEST VIRGINIA



DESCRIPTION

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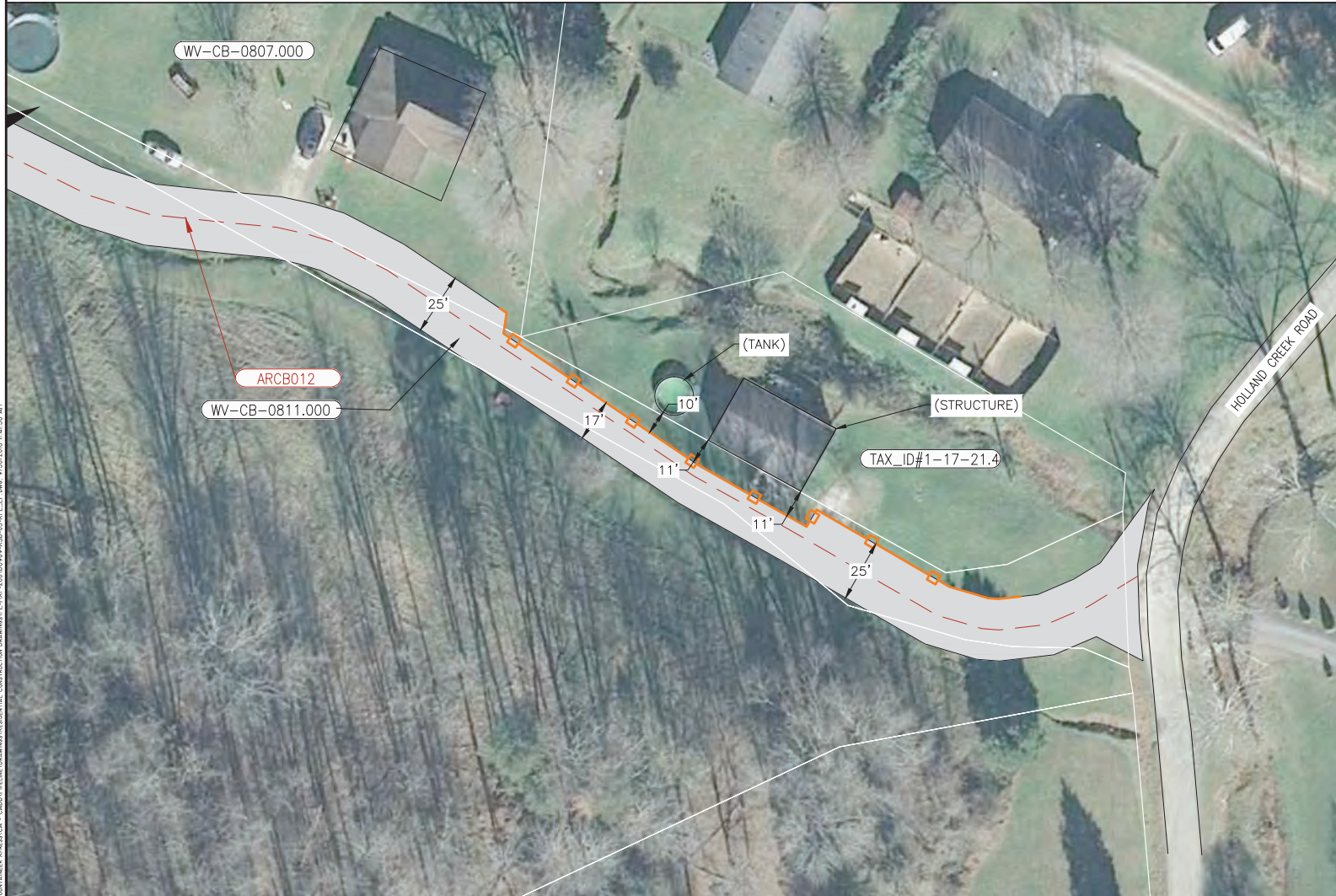
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ISSUED FOR
FERC SUPPL
10/02/2016

<p>LEGEND</p> <ul style="list-style-type: none"> MILPOST TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE CONTRACTOR / PIPE YARD NETLAND WATERBODY SAFETY FENCE PROPERTY TRACT NUMBER NETLAND ID WATERBODY ID ACCESS ROAD ACCESS ROAD NUMBER SAFETY SEWER PROPERTY LINE EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE FENCE UNDERGROUND CABLE DISHING POWER LINE WATERLINE COUNTY BORDER 		<p>SCALE: 1" = 20'</p>	<p>D6989-ALG-001 30" SM-80 LOOP REPLACEMENT</p>	<p>PROJECT DELIVERY PROJECT ENGINEERING COLUMBIA GAS TRANSMISSION</p> <p>Columbia Gas Transmission</p> <p>MOUNTAINEER XPRESS PROJECT</p> <p>TITLE: 30" SM-80 REPL LOOP MP 20.75 - RESIDENTIAL DETAIL CABELL COUNTY, WV</p> <p>ISSUED BY: GPM DATE: 09/28/16 DRAWING NUMBER: 20432 SHEET: 1 OF 1 ISSUE: 46129</p>					
<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>No.</th> <th>REVISIONS</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		No.	REVISIONS	DATE				<p>ISSUED FOR FERC SUPPL FILING</p> <p>JHE 10/02/16</p>	<p>DWG. NO. REFERENCE</p>
No.	REVISIONS	DATE							

TRACT TAX ID NO. 1-17-21.4
 CABELL COUNTY, WEST VIRGINIA



DESCRIPTION

THIS DRAWING DOCUMENTS MITIGATION MEASURES THAT WILL BE IMPLEMENTED FOR ALL RESIDENCES WITHIN 50 FEET OF THE PROPOSED CONSTRUCTION WORK AREA. CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION MITIGATION REQUIREMENTS IN ADDITION TO THOSE LISTED IN THE CONSTRUCTION SPECIFICATIONS.

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**ISSUED FOR
 FERC SUPPL**
 10/02/2016

LEGEND MILEPOST ROUTE PERMANENT ROW TEMPORARY WORKSPACE ADDITIONAL TEMPORARY WORKSPACE CONTRACTOR / PPE YARD WETLAND WATERBODY SAFETY FENCE PROPERTY TRACT NUMBER WETLAND ID WATERBODY ID ACCESS ROAD ACCESS ROAD NUMBER SHADOWY SIDER PROPERTY LINE EXISTING COLUMBIA PIPELINE FOREIGN PIPELINE FENCE UNDERGROUND CABLE OVERHEAD POWER LINE WATERLINE COUNTY BORDER		SCALE: 1" = 20' 20' 10' 0' 20' 40'	06989-ALG-001 30" SM-80 LOOP REPLACEMENT	PROJECT DELIVERY PROJECT ENGINEERING MOUNTAINEER XPRESS PROJECT TITLE 30" SM-80 REPL. LOOP MP 20.74-RESIDENTIAL DETAIL CABELL COUNTY, WV DRAWN BY GEM 29/28/16 CHECKED 20432 DATE 46129	Columbia Gas Transmission SHEET 1 OF 1 ISSUE
REVISIONS No. DATE No. DATE No. DATE	REVISIONS No. DATE No. DATE No. DATE	ISSUED FOR FERC SUPPL FILING JHE 10/02/16	DWG. NO. REFERENCE	06989-RSD-03 1 OF 1 P1	

TRACT WV-CB-0807.000
CABELL COUNTY, WEST VIRGINIA



DESCRIPTION
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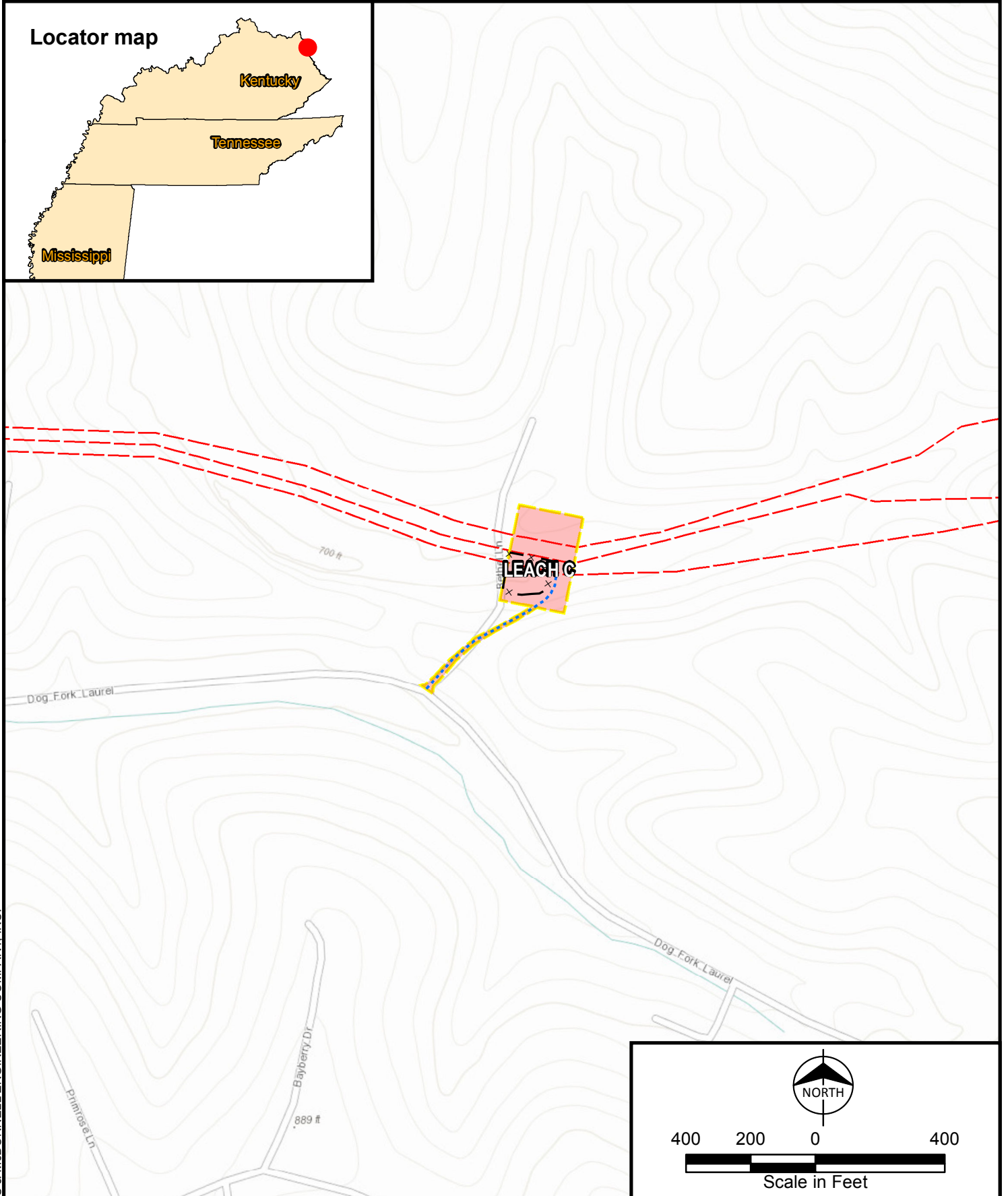
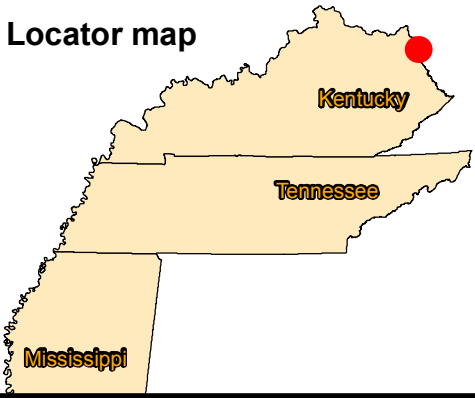
- CONSTRUCTION REQUIREMENTS**
1. CONTRACTOR SHALL ERECT AND MAINTAIN A SAFETY FENCE BETWEEN THE CONSTRUCTION ZONE AND THE ADJACENT RESIDENCES EXTENDING 100 FEET ON EITHER SIDE OF THE RESIDENCE TO ENSURE THAT EQUIPMENT, MATERIALS AND SPOIL REMAIN WITHIN THE CONSTRUCTION WORK AREA.
 2. A MINIMUM OF 25 FEET WILL BE MAINTAINED BETWEEN THE RESIDENCE AND CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF THE RESIDENCE. IF THE FACILITY MUST BE WITHIN 25 FEET OF A RESIDENCE, IT MUST BE INSTALLED SUCH THAT THE TRENCH DOES NOT REMAIN OPEN OVERNIGHT.
 3. MATURE TREES AND LANDSCAPING WILL NOT BE REMOVED FROM WITHIN THE EDGE OF THE CONSTRUCTION WORK AREA UNLESS NECESSARY FOR SAFE OPERATION OF CONSTRUCTION EQUIPMENT OR AS SPECIFIED IN LANDOWNER AGREEMENTS.
 4. OTHER EXISTING PHYSICAL FEATURES THAT NEED TO BE PROTECTED WILL BE ENCLOSED IN SAFETY FENCE TO AVOID DISTURBANCE DURING CONSTRUCTION.
 5. TRENCH SHALL NOT BE EXCAVATED UNTIL PIPELINE IS READY FOR INSTALLATION AND SHALL BE BACKFILLED IN SAME DAY AS PIPE INSTALLATION IN THIS AREA. ALL OPEN DITCHES SHALL BE BARRICADED/FENCED OFF OR PLATED WHEN CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.
 6. IMMEDIATELY AFTER BACKFILLING THE TRENCH, ALL LAWN AND LANDSCAPING WILL BE RESTORED TO FINAL RESTORATION, OR TEMPORARY RESTORATION PENDING WEATHER AND SOIL CONDITIONS. IF SEASONAL OR WEATHER CONDITIONS PREVENT COMPLIANCE WITH THESE TIME FRAMES, TEMPORARY EROSION CONTROLS MUST BE MONITORED AND MAINTAINED UNTIL CONDITIONS ALLOW COMPLETION OF RESTORATION.
 7. CONTRACTOR SHALL UTILIZE WATER TRUCKS AS NECESSARY TO MINIMIZE FUGITIVE DUST FROM CONSTRUCTION ACTIVITIES NEAR RESIDENCES/BUSINESSES.
 8. ACCESS TO RESIDENCES BY CAR WILL BE MAINTAINED AT ALL TIMES, OR OTHER ACCOMMODATIONS WILL BE MADE WITH EACH RESPECTIVE LANDOWNER.
 9. CONTRACTOR SHALL MAINTAIN AGREED UPON ACCESS TO THE IMPACTED AREA DURING CONSTRUCTION.
 10. CONTRACTOR SHALL LIMIT WORK IN THIS AREA TO DAYLIGHT HOURS, UNLESS OTHERWISE AGREED UPON WITH LANDOWNER/OCCUPANT.
 11. LANDOWNER/OCCUPANT SHALL BE NOTIFIED OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION WORK.

**ISSUED FOR
FERC SUPPL**
10/02/2016

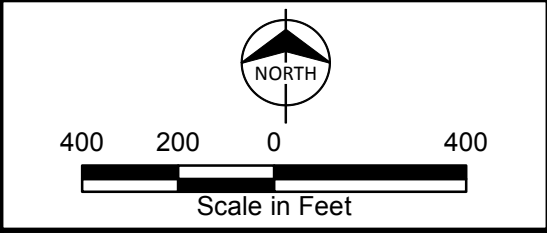
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

APPENDIX B-2
Overview Mapping for the Gulf XPress Project

Locator map



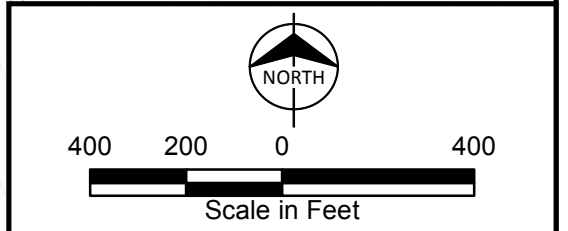
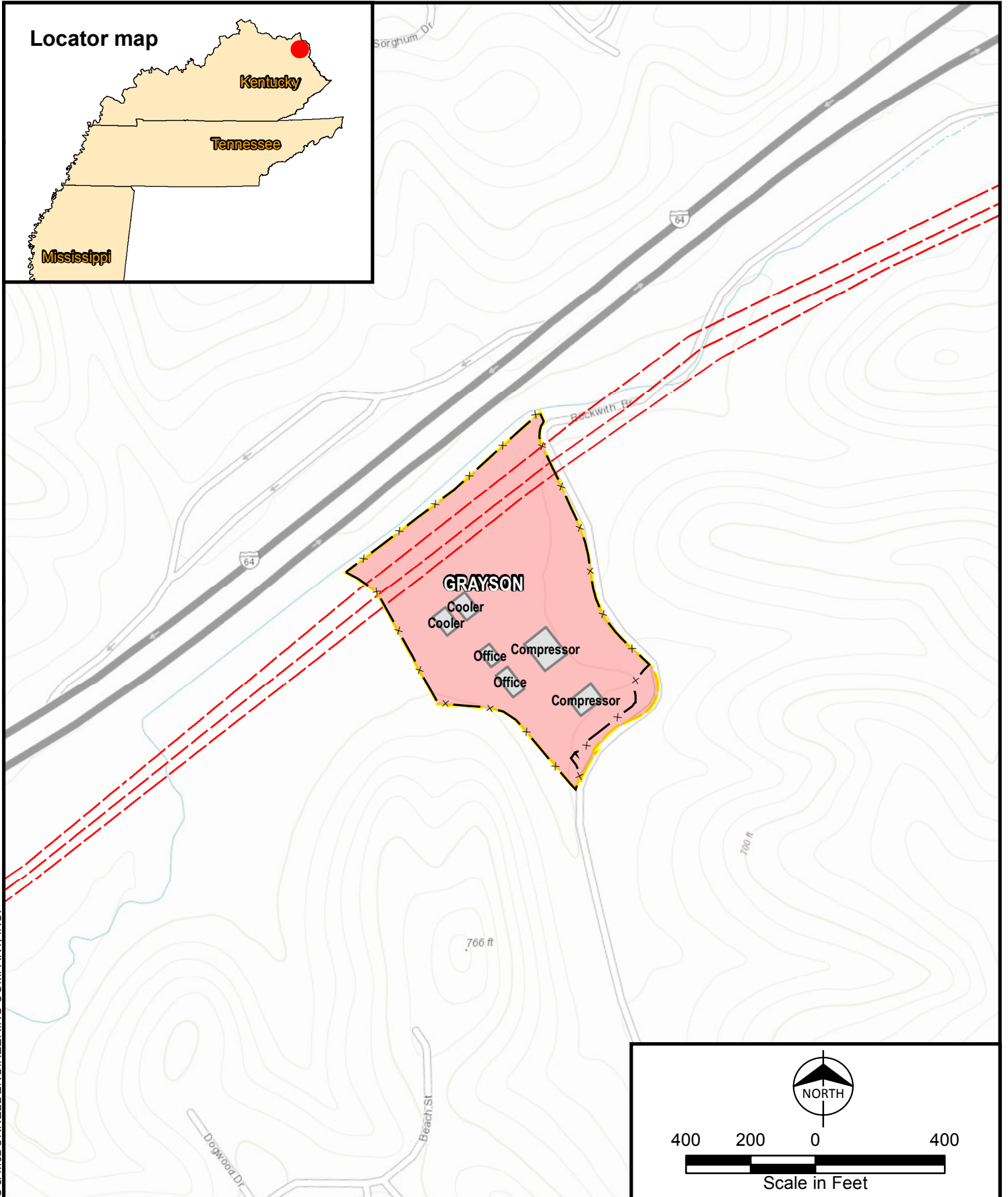
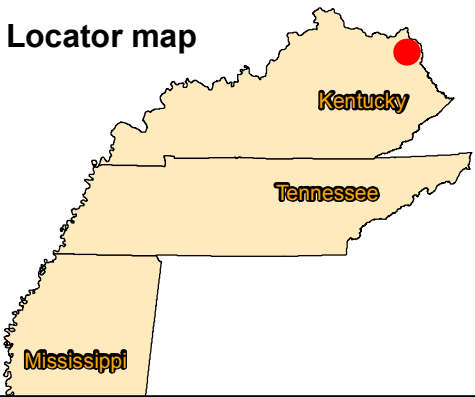
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-  Fenced Area
-  Facility Access Road
-  Workspace Boundary
-  CGT Pipelines
-  Temporary Workspace

Appendix B-2
 Gulf XPress Project
 Project Overview Map
 Page 1 of 9
 Leach C Compressor Station
 BOYD, KY

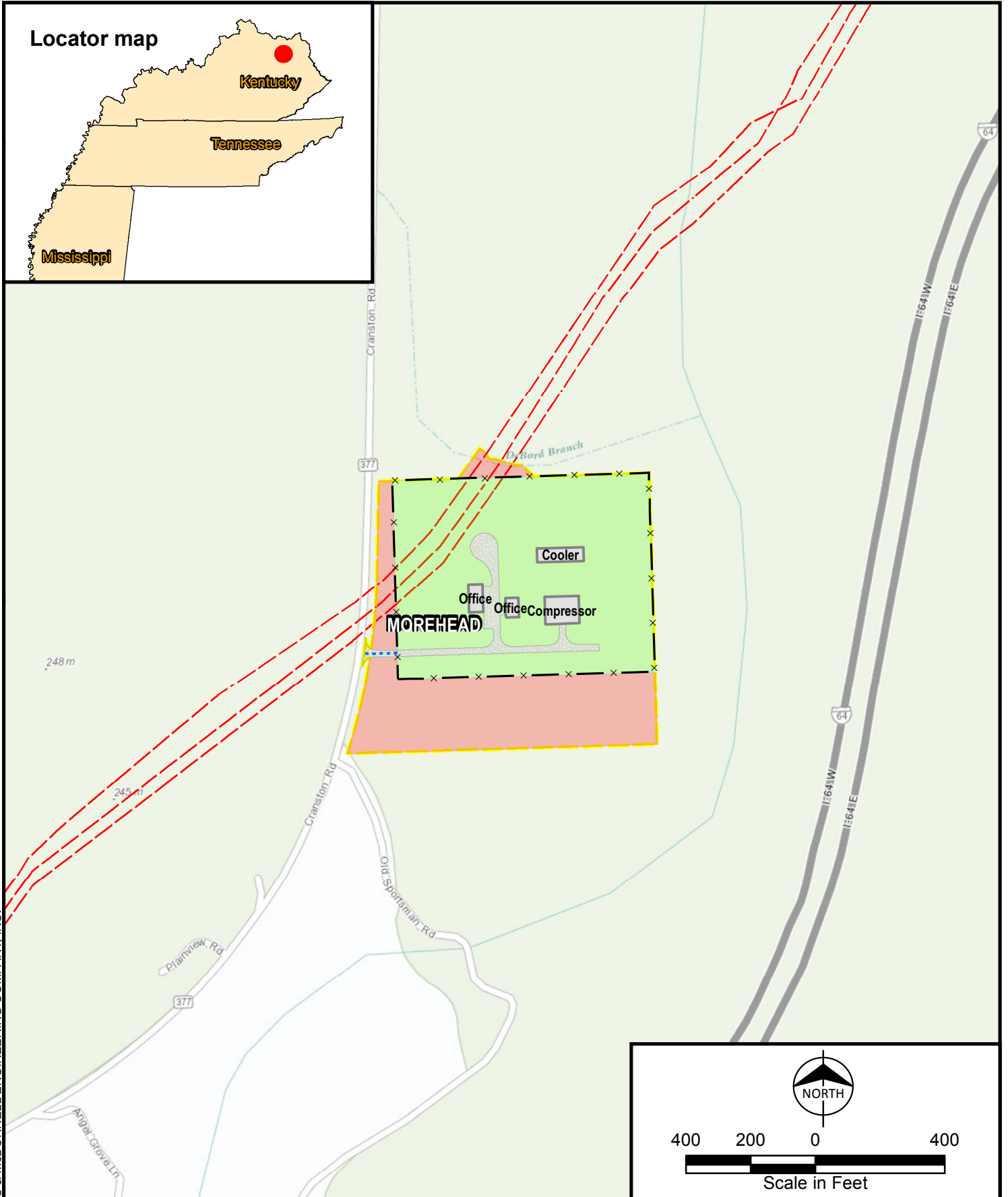
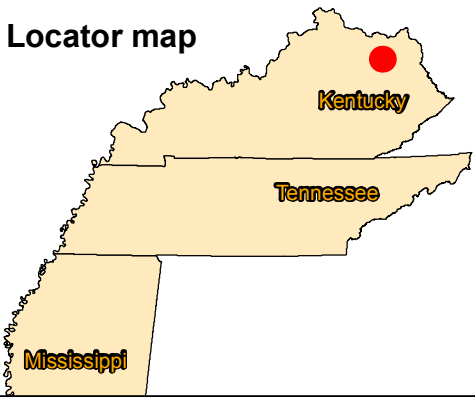
Locator map



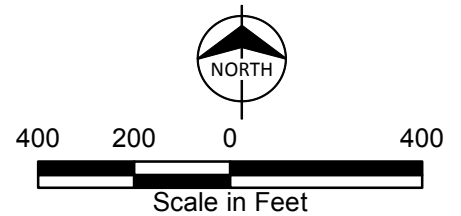
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|--------------------|-------------------------|
| CS Structure | CGT Pipelines |
| Fenced Area | Facility Asphalt Paving |
| Workspace Boundary | Permanent Workspace |
| | Temporary Workspace |

Appendix B-2
Gulf XPress Project
Project Overview Map
 Page 2 of 9
Grayson Compressor Station
CARTER, KY

Locator map

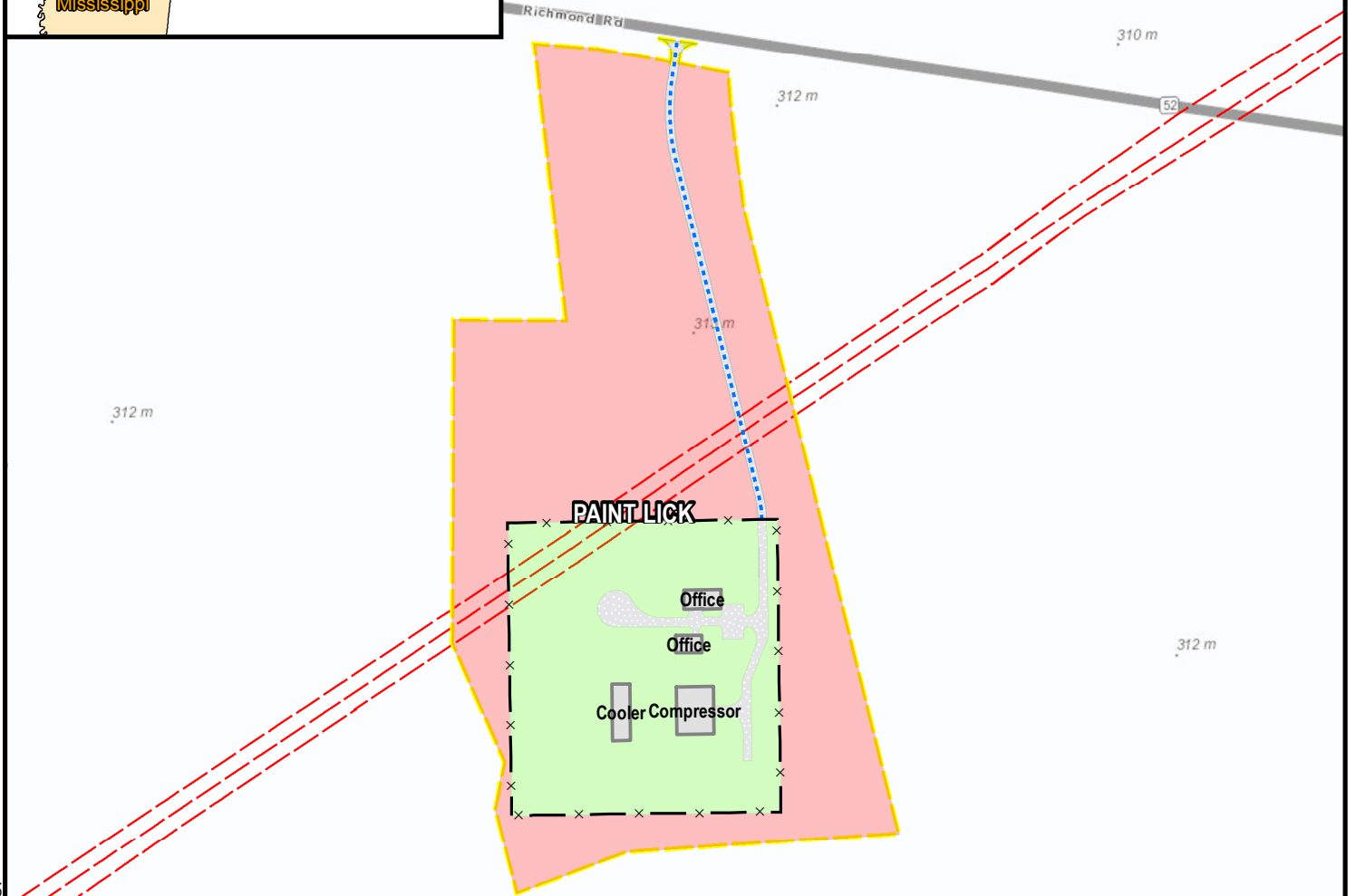
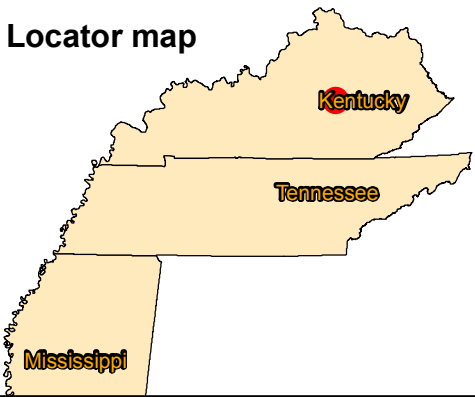


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| CS Structure | CGT Pipelines |
| Fenced Area | Facility Asphalt Paving |
| Facility Access Road | Permanent Workspace |
| Workspace Boundary | Temporary Workspace |

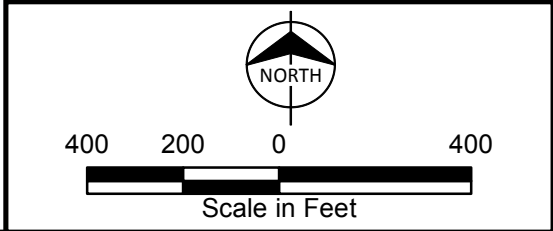


Appendix B-2
Gulf XPress Project
Project Overview Map
 Page 3 of 9
Morehead Compressor Station
ROWAN, KY

Locator map



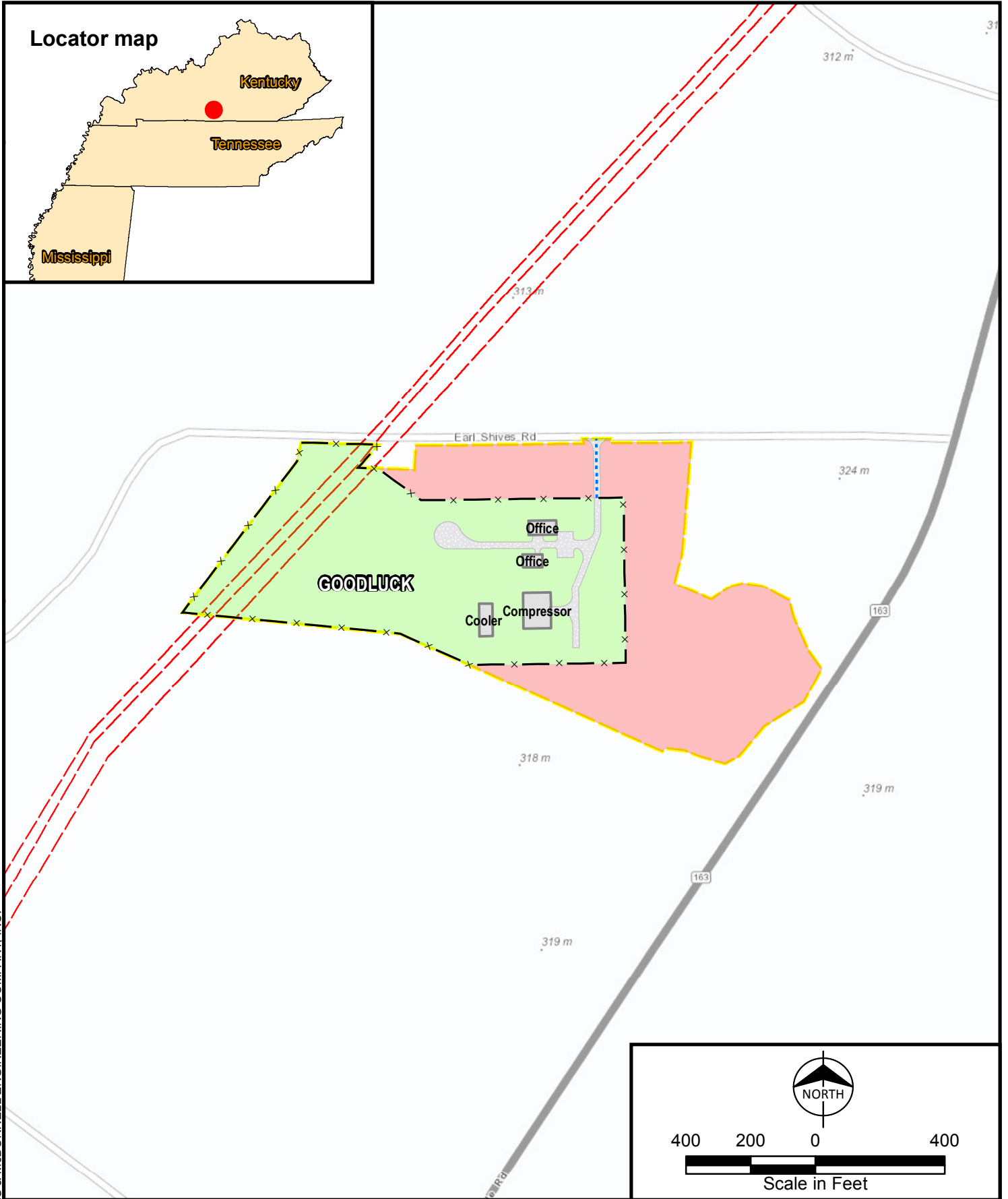
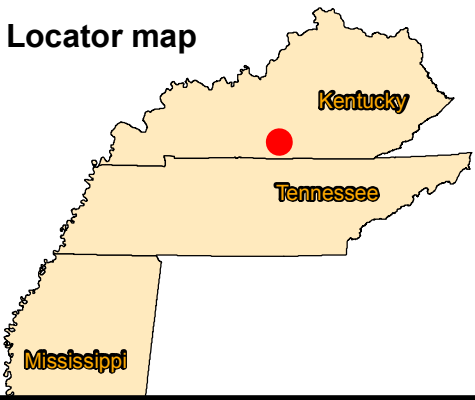
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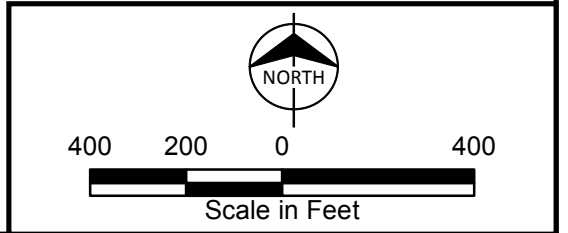
Appendix B-2
Gulf XPress Project
Project Overview Map
Page 4 of 9
Paint Lick Compressor Station
GARRARD, KY

- | | |
|----------------------|-------------------------|
| CS Structure | CGT Pipelines |
| Fenced Area | Facility Asphalt Paving |
| Facility Access Road | Permanent Workspace |
| Workspace Boundary | Temporary Workspace |

Locator map



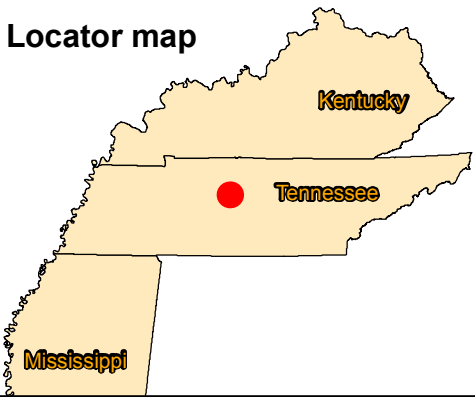
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Appendix B-2
Gulf XPress Project
Project Overview Map
 Page 5 of 9
Goodluck Compressor Station
METCALFE, KY

- | | |
|----------------------|-------------------------|
| CS Structure | CGT Pipelines |
| Fenced Area | Facility Asphalt Paving |
| Facility Access Road | Permanent Workspace |
| Workspace Boundary | Temporary Workspace |

Locator map



Blackpool Dr

Barnes Rd

Stanford Village Ct

Stanford Village Dr

Blake Dr

Kelsey Ct

Old Hickory Blvd

202 m

508 m

CANE RIDGE

Cooler

Compressor

Office

Office



400 200 0 400



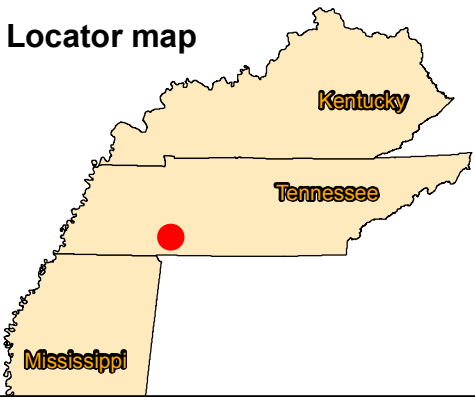
Scale in Feet

- CS Structure
- CGT Pipelines
- Fenced Area
- Facility Asphalt Paving
- Facility Access Road
- Permanent Workspace
- Workspace Boundary
- Temporary Workspace

Appendix B-2
 Gulf XPress Project
 Project Overview Map
 Page 6 of 9
 Cane Ridge Compressor Station
 DAVIDSON, TN

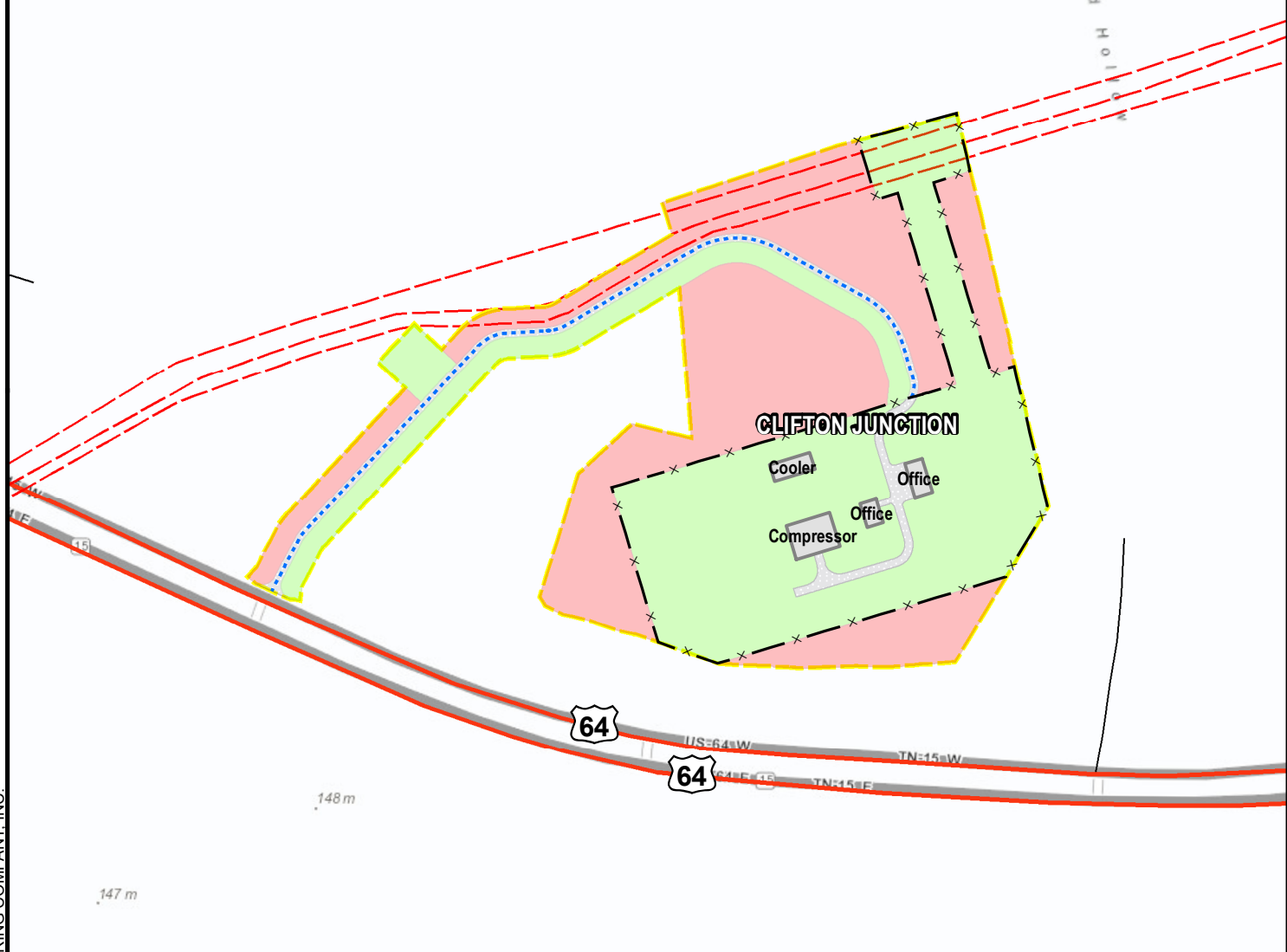
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Locator map











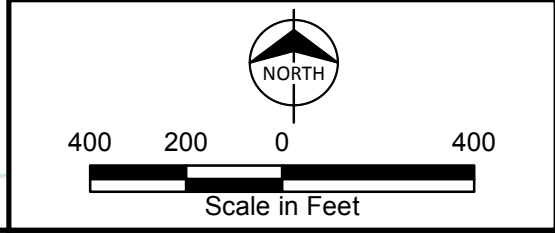
221 m

MICHIGAN PIPELINE



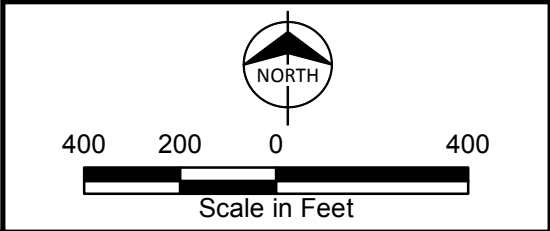
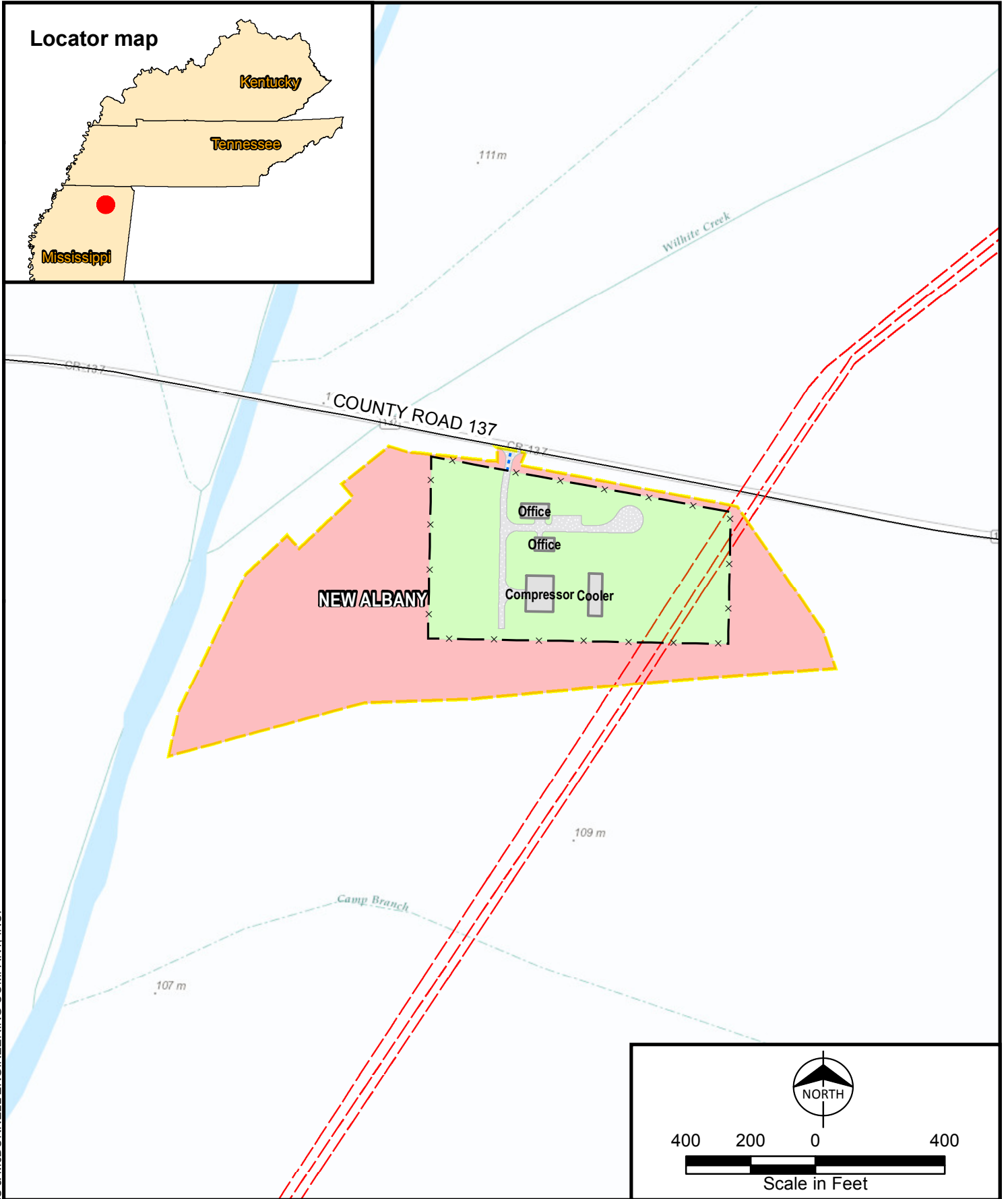
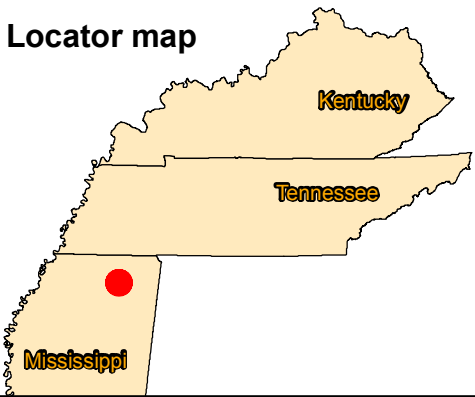
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-  CS Structure
-  Fenced Area
-  Facility Access Road
-  Workspace Boundary
-  CGT Pipelines
-  Facility Asphalt Paving
-  Permanent Workspace
-  Temporary Workspace



Appendix B-2
Gulf XPress Project
Project Overview Map
 Page 7 of 9
Clifton Junction Compressor Station
WAYNE, TN

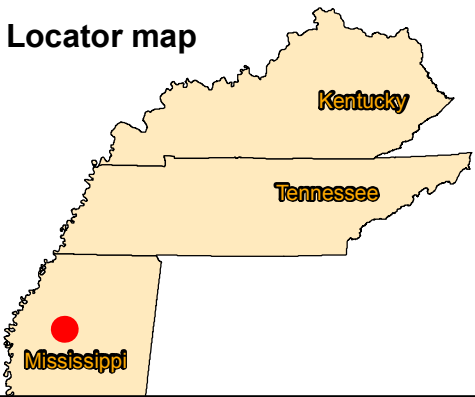
Locator map



- | | |
|----------------------|-------------------------|
| CS Structure | CGT Pipelines |
| Fenced Area | Facility Asphalt Paving |
| Facility Access Road | Permanent Workspace |
| Workspace Boundary | Temporary Workspace |

Appendix B-2
 Gulf XPress Project
 Project Overview Map
 Page 8 of 9
 New Albany Compressor Station
 UNION, MS

Locator map



44 m

10 m

57 m

HOLCOMB

Compressor
Office
Office
Cooler

OLD HIGHWAY 7

7

44 m

69 m



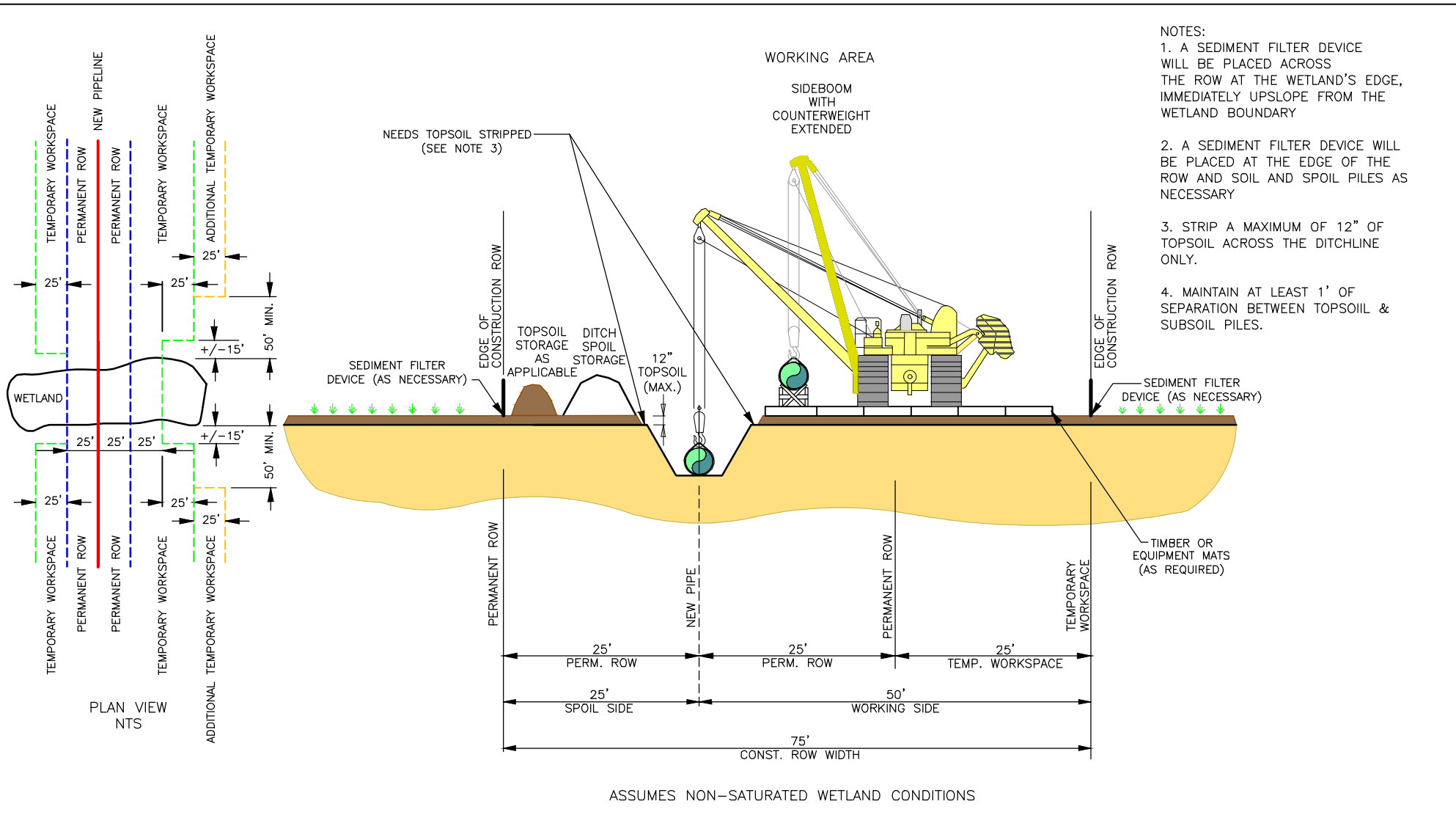
Scale in Feet

- CS Structure
- CGT Pipelines
- Fenced Area
- Facility Asphalt Paving
- Facility Access Road
- Permanent Workspace
- Workspace Boundary
- Temporary Workspace

Appendix B-2
Gulf XPress Project
Project Overview Map
Page 9 of 9
Holcomb Compressor Station
GRENADA, MS

APPENDIX C
Typical Construction Right-of-way Configurations

P:\PROJECTS\53373000 - CPG MOUNTAINEER XPRESS\CA - CADD\PIPELINE DRAWINGS\TYPICAL\VA6987-TYP-1.DWG
 9/19/2016 2:02 PM
 CWBROWN



- NOTES:
1. A SEDIMENT FILTER DEVICE WILL BE PLACED ACROSS THE ROW AT THE WETLAND'S EDGE, IMMEDIATELY UPSLOPE FROM THE WETLAND BOUNDARY
 2. A SEDIMENT FILTER DEVICE WILL BE PLACED AT THE EDGE OF THE ROW AND SOIL AND SPOIL PILES AS NECESSARY
 3. STRIP A MAXIMUM OF 12" OF TOPSOIL ACROSS THE DITCHLINE ONLY.
 4. MAINTAIN AT LEAST 1' OF SEPARATION BETWEEN TOPSOIL & SUBSOIL PILES.

ASSUMES NON-SATURATED WETLAND CONDITIONS



PL-MXP-100 & PL-MXP-200
 TYPICAL WETLAND ROW CONFIGURATION

NO.	REVISION	APP'D	DATE	DRAWN BY	PM	DATE	SCALE:	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16			07/17/2015	NTS		
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16		TJ	07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16		SJO	07/30/2015		A6987-TYP-1	P5

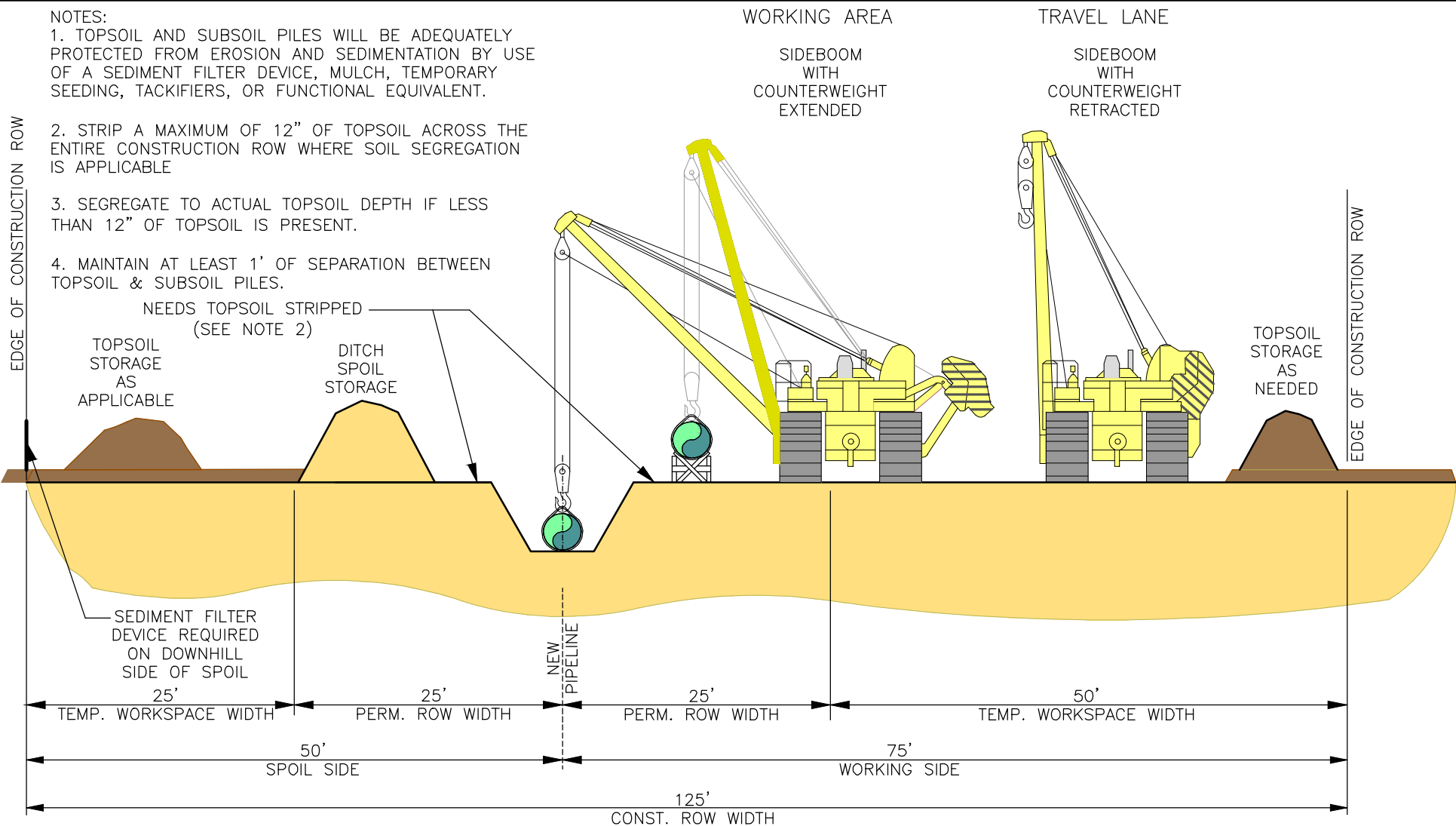
NOTES:

1. TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED FROM EROSION AND SEDIMENTATION BY USE OF A SEDIMENT FILTER DEVICE, MULCH, TEMPORARY SEEDING, TACKIFIERS, OR FUNCTIONAL EQUIVALENT.

2. STRIP A MAXIMUM OF 12" OF TOPSOIL ACROSS THE ENTIRE CONSTRUCTION ROW WHERE SOIL SEGREGATION IS APPLICABLE

3. SEGREGATE TO ACTUAL TOPSOIL DEPTH IF LESS THAN 12" OF TOPSOIL IS PRESENT.

4. MAINTAIN AT LEAST 1' OF SEPARATION BETWEEN TOPSOIL & SUBSOIL PILES.



P:\PROJECTS\53373000 - CPG MOUNTAINEER XPRESS\CA - CADD\PIPELINE DRAWINGS\TYPICAL\A6987-TYP-2.DWG
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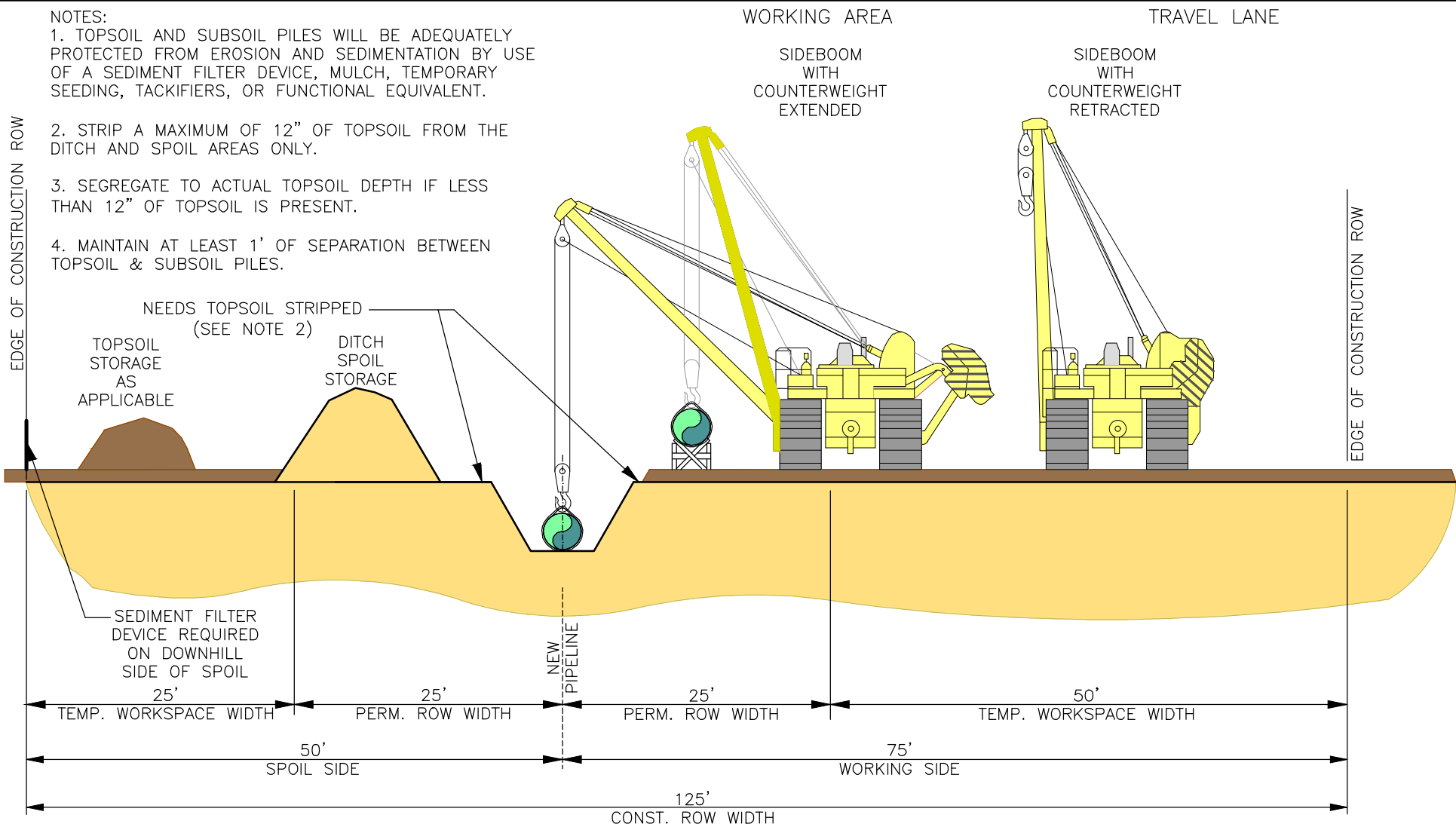
**TYPICAL ROW CONFIGURATION
GREENFIELD-FULL TOPSOIL SEGREGATION**

NO.	REVISION	APP'D	DATE
	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16
	ISSUED FOR 50% REVIEW	SJO	05/09/16
	ISSUED FOR FERC FILING	SJO	04/29/16

DRAWN BY	PM	DATE	SCALE:	
DRAFTING CHECK	TJ	07/25/2015	DRAWING NUMBER	ISSUE
ENGINEERS REVIEW	SJO	07/30/2015	A6987-TYP-2	P5

NOTES:

1. TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED FROM EROSION AND SEDIMENTATION BY USE OF A SEDIMENT FILTER DEVICE, MULCH, TEMPORARY SEEDING, TACKIFIERS, OR FUNCTIONAL EQUIVALENT.
2. STRIP A MAXIMUM OF 12" OF TOPSOIL FROM THE DITCH AND SPOIL AREAS ONLY.
3. SEGREGATE TO ACTUAL TOPSOIL DEPTH IF LESS THAN 12" OF TOPSOIL IS PRESENT.
4. MAINTAIN AT LEAST 1' OF SEPARATION BETWEEN TOPSOIL & SUBSOIL PILES.



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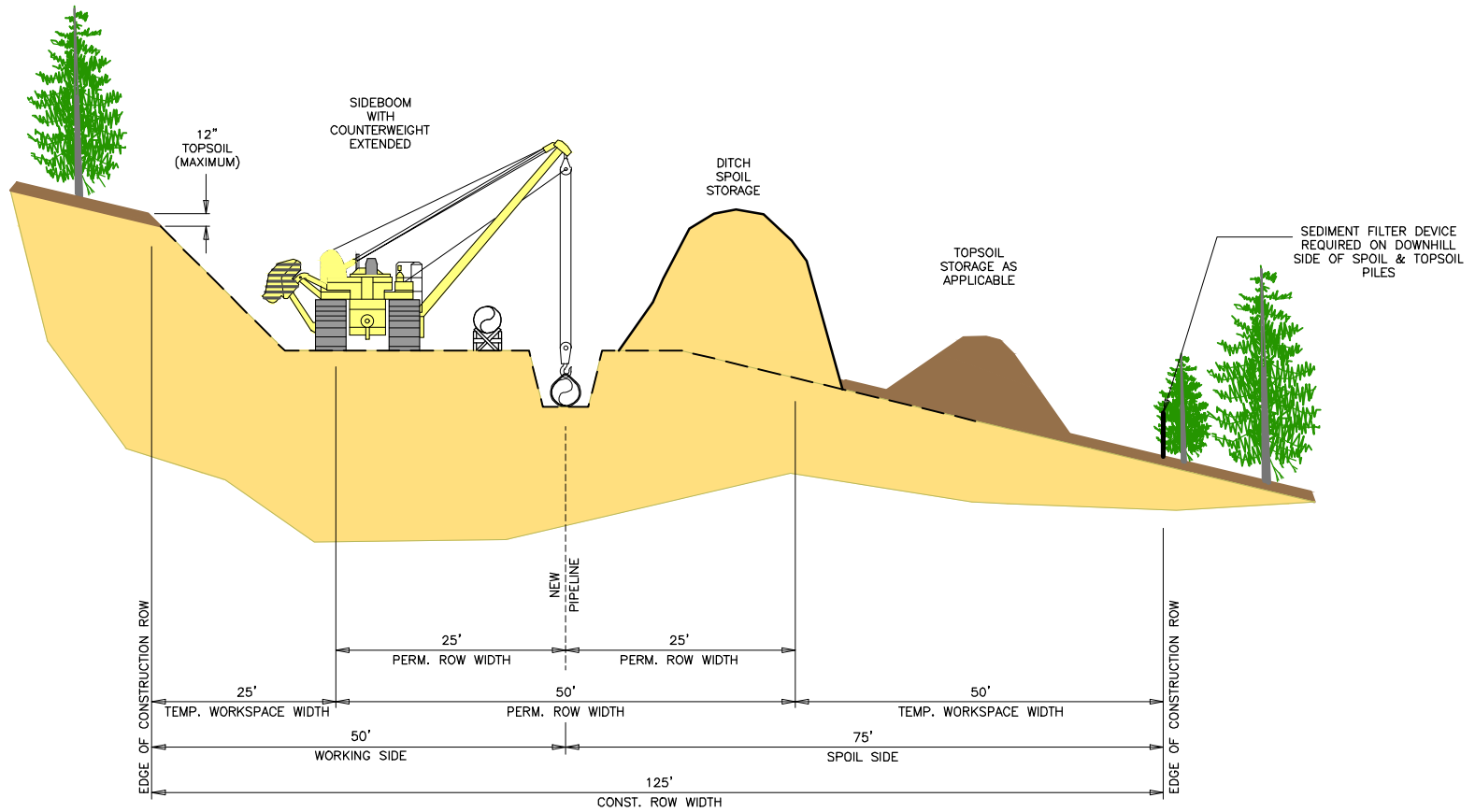


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**TYPICAL ROW CONFIGURATION
GREENFIELD-DITCH/SPOIL TOPSOIL SEGREGATION**

NO.	REVISION	APP'D	DATE	DRAWN BY	PM	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16			07/17/2015		A6987-TYP-3	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16			07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16			07/30/2015			

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


- NOTES:
1. TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED FROM EROSION AND SEDIMENTATION BY USE OF A SEDIMENT FILTER DEVICE, MULCH, TEMPORARY SEEDING, TACKIFIERS, OR FUNCTIONAL EQUIVALENT.
 2. STRIP A MAXIMUM OF 12" OF TOPSOIL ACROSS THE ENTIRE CONSTRUCTION ROW WHERE SOIL SEGREGATION IS APPLICABLE
 3. SEGREGATE TO ACTUAL TOPSOIL DEPTH IF LESS THAN 12" OF TOPSOIL IS PRESENT.
 4. MAINTAIN AT LEAST 1' OF SEPARATION BETWEEN TOPSOIL & SUBSOIL PILES.

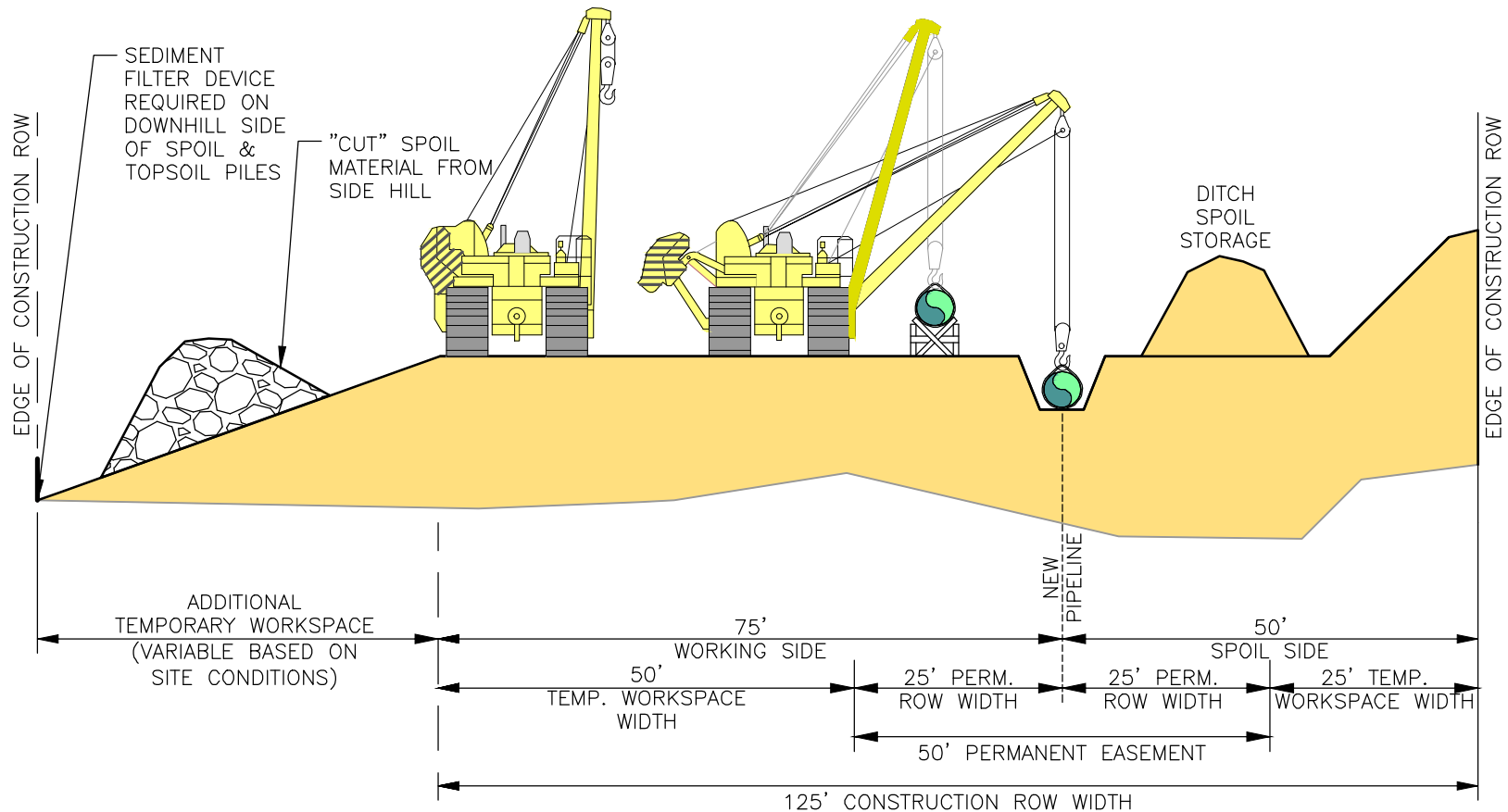


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**MAINLINE CONSTRUCTION GREENFIELD
CONSTRUCTION TYPICAL SIDE HILL RIGHT-OF-WAY**

NO.	REVISION	APP'D	DATE	DRAWN BY	PM	DATE	SCALE: <u> </u> NTS 	DRAWING NUMBER	ISSUE
	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16			07/17/2015			
	ISSUED FOR 50% REVIEW	SJO	05/09/16		TJ	07/25/2015			
	ISSUED FOR FERC FILING	SJO	04/29/16		SJO	07/30/2015		A6987-TYP-4	P5

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NOTES:

1. TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED FROM EROSION AND SEDIMENTATION BY USE OF A SEDIMENT FILTER DEVICE, MULCH, TEMPORARY SEEDING, TACKIFIERS, OR FUNCTIONAL EQUIVALENT.
2. STRIP TOPSOIL IN ACCORDANCE WITH THE ECS AND LANDOWNER/LAND MANAGING AGENCY AGREEMENTS.
3. RESTORE CUT SLOPE USING NATIVE MATERIAL OR SUITABLE MATERIAL IN ACCORDANCE WITH COLUMBIA SPECIFICATIONS WHERE NATIVE MATERIAL HAS BEEN DETERMINED TO BE INAPPROPRIATE. DISPOSE OF ANY EXCESS MATERIAL IN ACCORDANCE WITH APPLICABLE LANDOWNER AND PERMIT CONDITIONS.
4. ON STEEP SIDE SLOPES CENTERLINE OF PIPE MAY BE ADJUSTED WITHIN PERM. ROW TO MEET FIELD CONDITIONS.

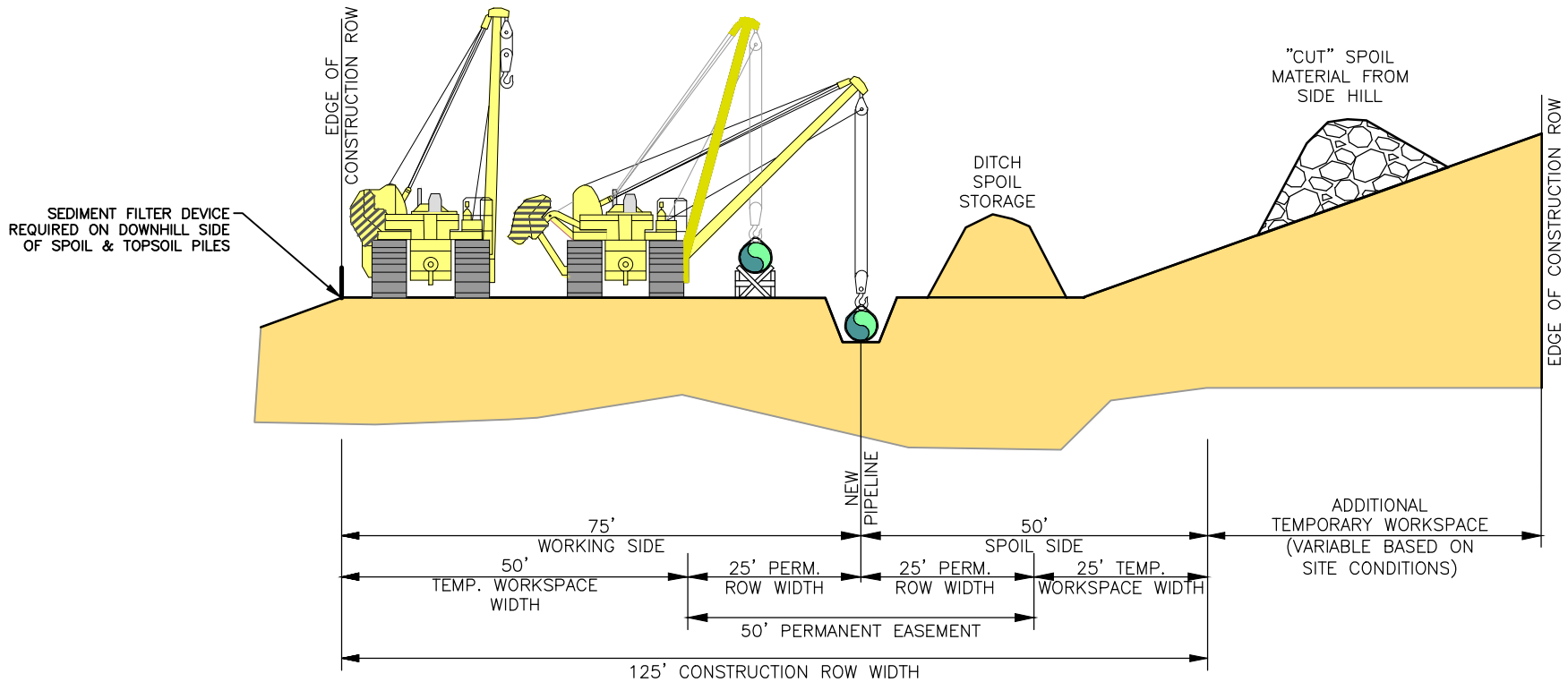


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TYPICAL STEEP SIDE SLOPE WITH ATWS ON WORKING SIDE

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE:	DRAWING NUMBER	ISSUE
P3	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	TBH	03/02/2016	NTS		
P2	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	03/02/2016			
P1	ISSUED FOR FERC FILING	SJO	04/29/16	MLT	03/02/2016		A6987-TYP-5	P3

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NOTES:

1. TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED FROM EROSION AND SEDIMENTATION BY USE OF A SEDIMENT FILTER DEVICE, MULCH, TEMPORARY SEEDING, TACKIFIERS, OR FUNCTIONAL EQUIVALENT.
2. STRIP TOPSOIL IN ACCORDANCE WITH THE ECS AND LANDOWNER/LAND MANAGING AGENCY AGREEMENTS.
3. RESTORE CUT SLOPE USING NATIVE MATERIAL OR SUITABLE MATERIAL IN ACCORDANCE WITH COLUMBIA SPECIFICATIONS WHERE NATIVE MATERIAL HAS BEEN DETERMINED TO BE INAPPROPRIATE. DISPOSE OF ANY EXCESS MATERIAL IN ACCORDANCE WITH APPLICABLE LANDOWNER AND PERMIT CONDITIONS.
4. ON STEEP SIDE SLOPES CENTERLINE OF PIPE MAY BE ADJUSTED WITHIN PERM. ROW TO MEET FIELD CONDITIONS.

				PL-MXP-100			
				TYPICAL STEEP SIDE SLOPE WITH ATWS ON SPOIL SIDE			
NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE:	
P3	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	TBH	03/02/2016	NTS	
P2	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	03/02/2016	DRAWING NUMBER	
P1	ISSUED FOR FERC FILING	SJO	04/29/16	MLT	03/02/2016	A6987-TYP-6	
				ENGINEERS REVIEW	03/02/2016	ISSUE	
						P3	

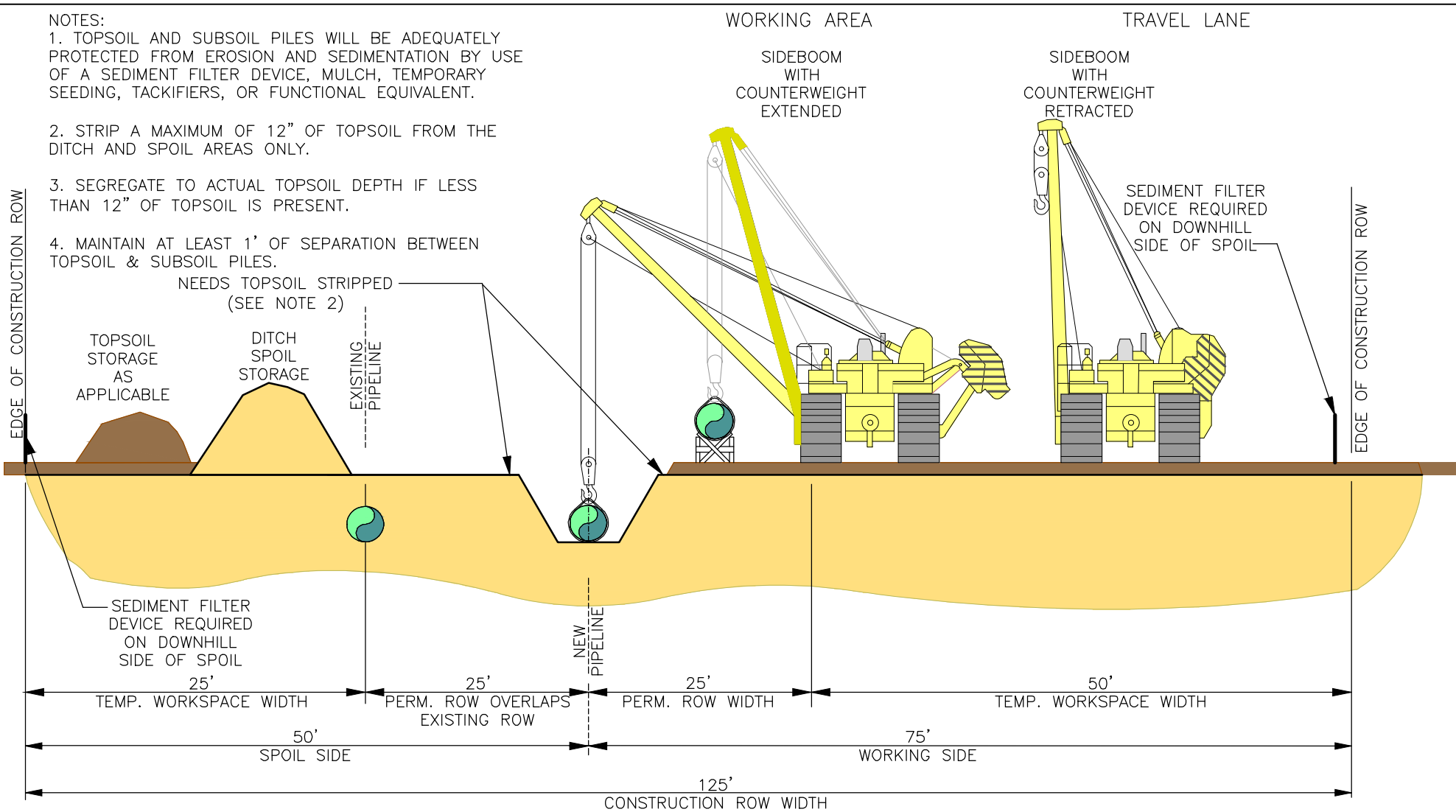
NOTES:

1. TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED FROM EROSION AND SEDIMENTATION BY USE OF A SEDIMENT FILTER DEVICE, MULCH, TEMPORARY SEEDING, TACKIFIERS, OR FUNCTIONAL EQUIVALENT.

2. STRIP A MAXIMUM OF 12" OF TOPSOIL FROM THE DITCH AND SPOIL AREAS ONLY.

3. SEGREGATE TO ACTUAL TOPSOIL DEPTH IF LESS THAN 12" OF TOPSOIL IS PRESENT.

4. MAINTAIN AT LEAST 1' OF SEPARATION BETWEEN TOPSOIL & SUBSOIL PILES.



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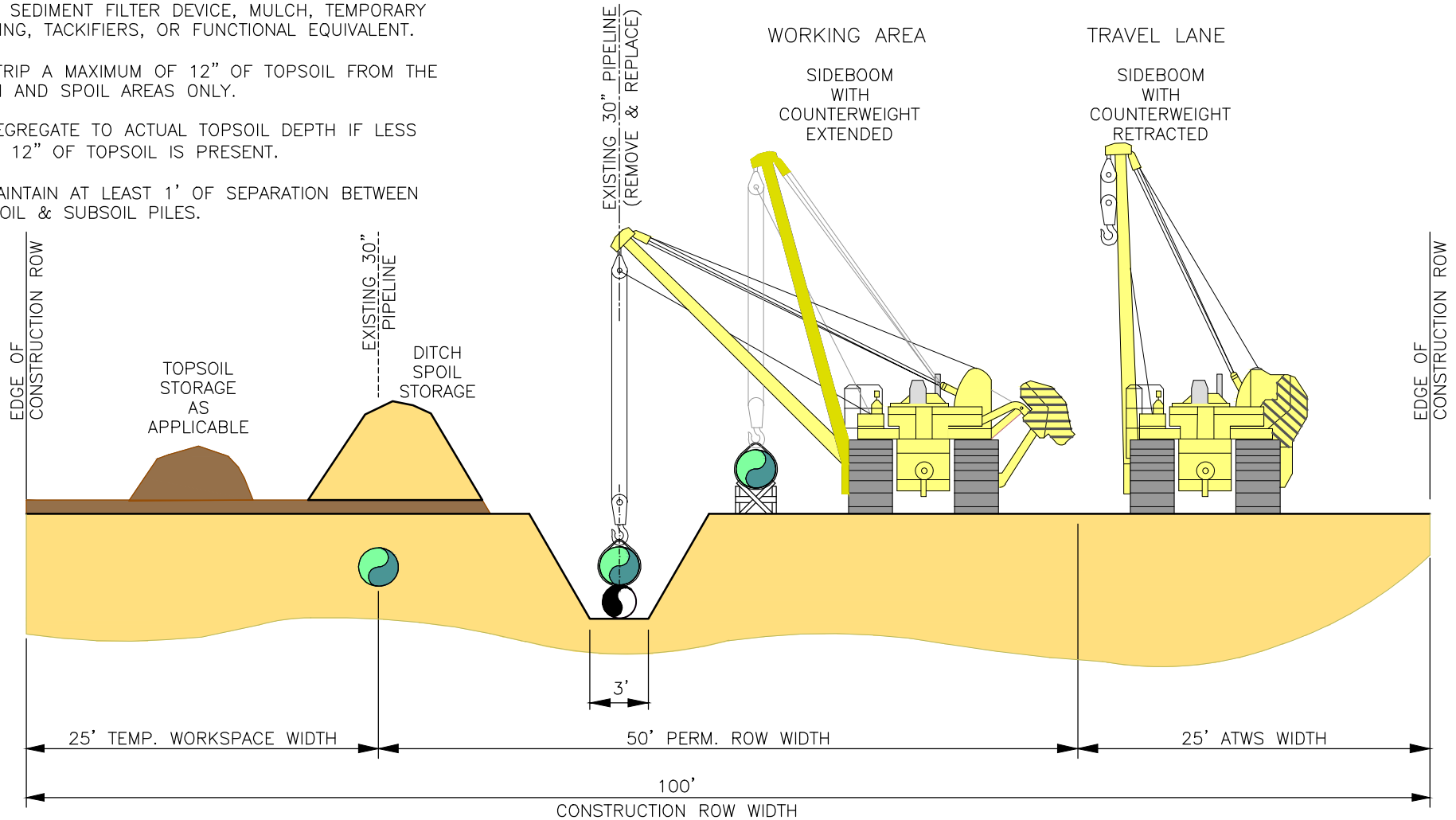
PL-MXP-100

**TYPICAL ROW CONFIGURATION
ABUT EXISTING PIPELINES WITH TEMP OVERLAP**

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE:	DRAWING NUMBER	ISSUE
P3	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	TBH	03/02/2016	NTS		
P2	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	03/02/2016			
P1	ISSUED FOR FERC FILING	SJO	04/29/16	MLT	03/02/2016		A6987-TYP-7	P3

NOTES:

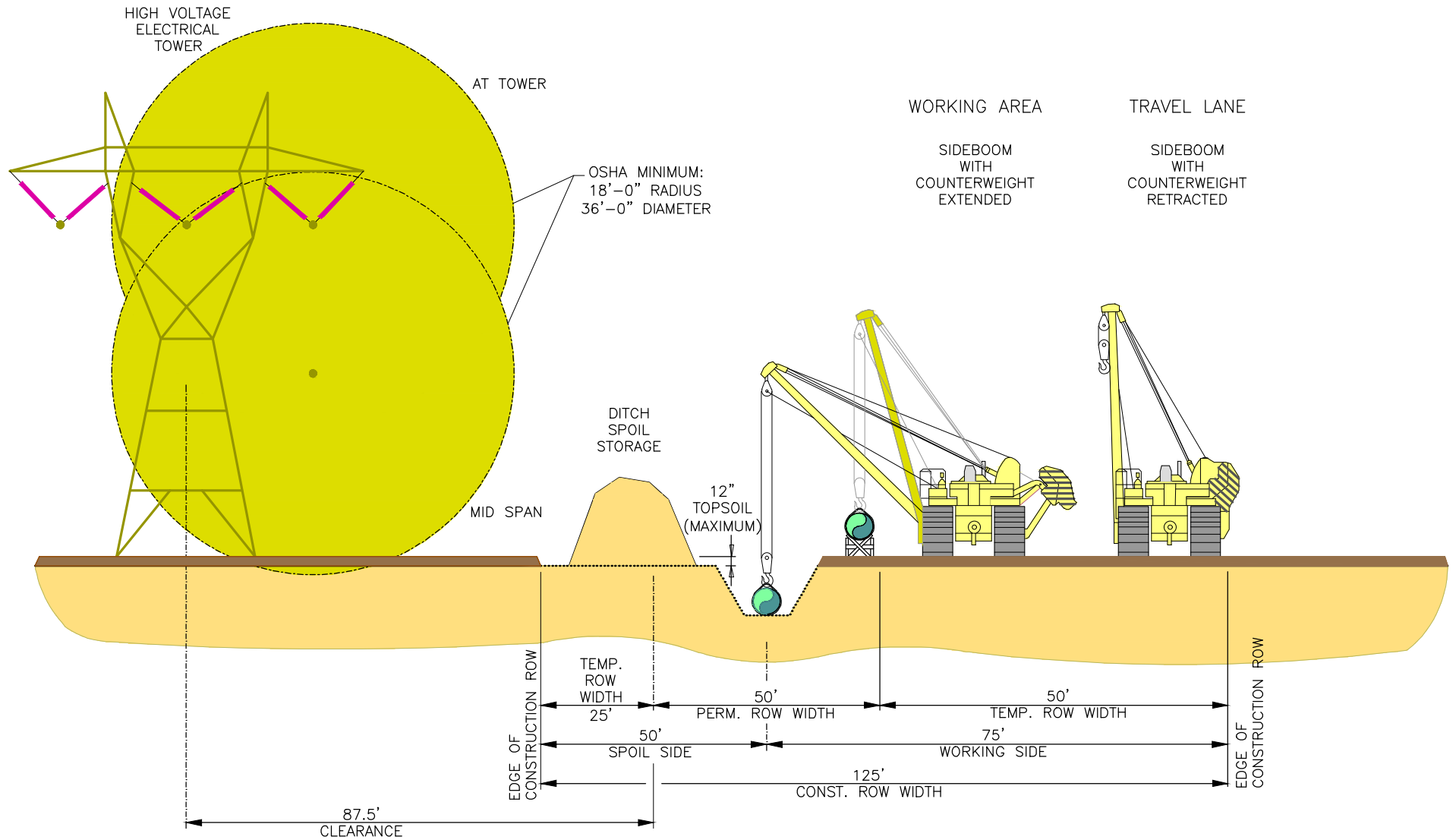
1. TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED FROM EROSION AND SEDIMENTATION BY USE OF A SEDIMENT FILTER DEVICE, MULCH, TEMPORARY SEEDING, TACKIFIERS, OR FUNCTIONAL EQUIVALENT.
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MXP SM-80/SM-80 LOOP REPLACEMENT PIPELINE REPLACEMENT			
NO.	REVISION	APP'D	DATE
P3	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16
P2	ISSUED FOR 50% REVIEW	SJO	05/09/16
P1	ISSUED FOR FERC FILING	SJO	04/29/16
DRAWN BY	TBH	DATE	SCALE: <u> </u> NTS
DRAFTING CHECK	PAD	DATE	DRAWING NUMBER
ENGINEERS REVIEW	MLT	DATE	ISSUE
		03/15/2016	A6989-TYP-8
		03/21/2016	P3
		03/21/2016	

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POWER LINE VOLTAGE	OSHA MINIMUM APPROACH DISTANCE
0 - 69,000 VOLTS	10 FEET
115,000-138,000 VOLTS	11 FEET
230,000 VOLTS	13 FEET
500,000 VOLTS	18 FEET

NO.	REVISION	APP'D	DATE
P3	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16
P2	ISSUED FOR 50% REVIEW	SJO	05/09/16
P1	ISSUED FOR FERC FILING	SJO	04/29/16



PL-MXP-100

MAINLINE CONSTRUCTION PARALLEL TO POWERLINES RIGHT-OF-WAY

DRAWN BY	SJS	DATE	03/28/2016	SCALE:	NTS
DRAFTING CHECK	TJ		03/29/2016	DRAWING NUMBER	A6987-TYP-9
ENGINEERS REVIEW	MLT		03/29/2016	ISSUE	P3

NOTES:

1. TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED FROM EROSION AND SEDIMENTATION BY USE OF A SEDIMENT FILTER DEVICE, MULCH, TEMPORARY SEEDING, TACKIFIERS, OR FUNCTIONAL EQUIVALENT.

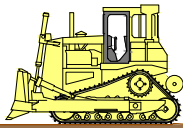
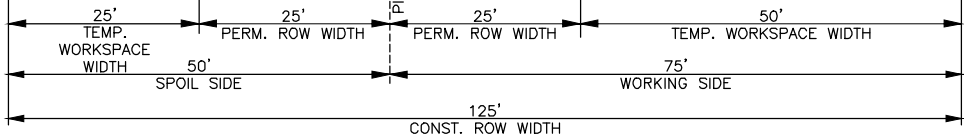
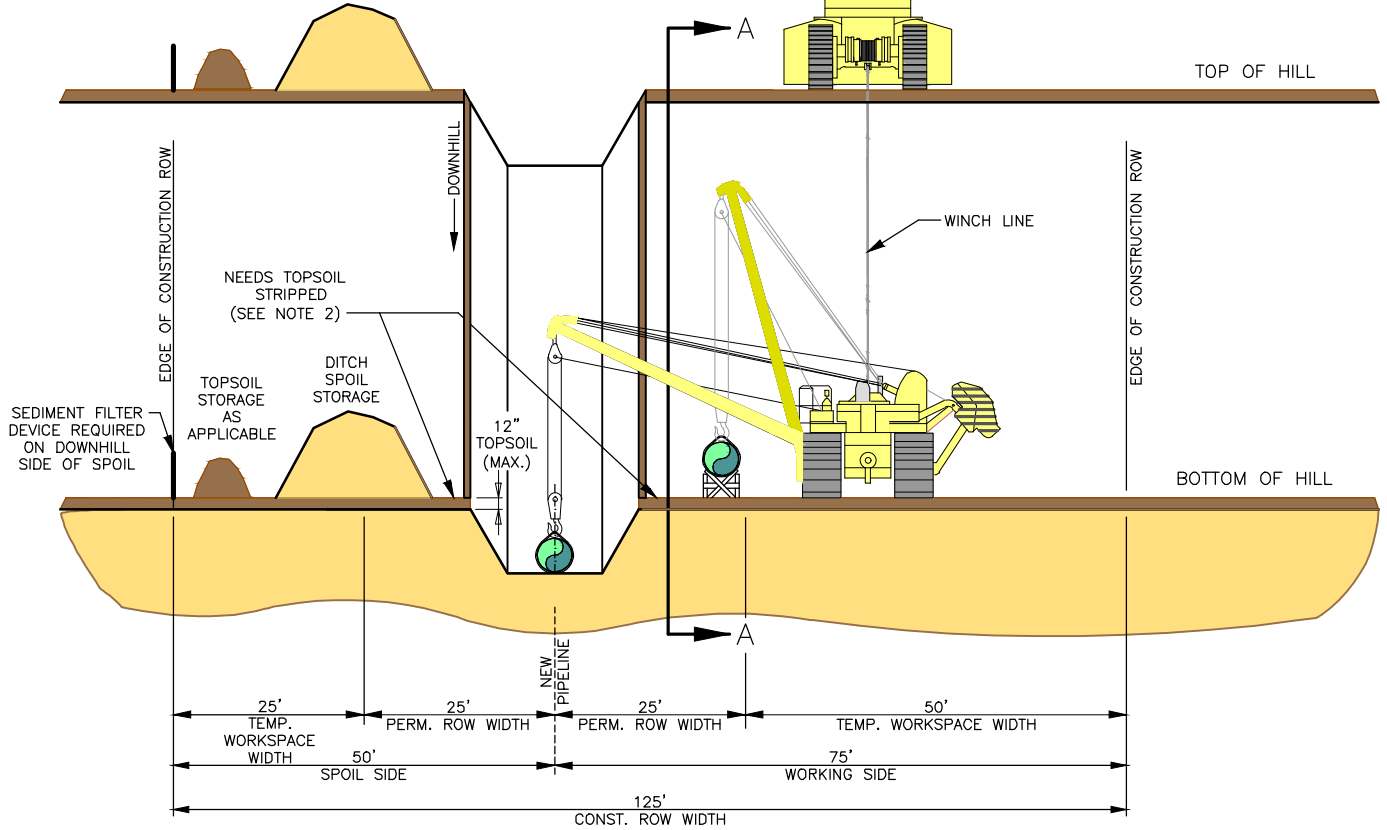
2. CLEAR 125' MAXIMUM OF ROW FOR WINCH HILL CONSTRUCTION

WORKING AREA

SIDEBOOM WITH COUNTERWEIGHT EXTENDED

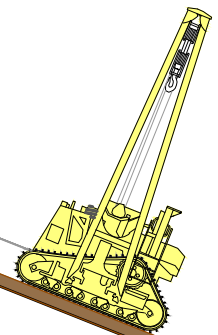
TOP OF HILL

BOTTOM OF HILL



1
2.5
OR STEEPER

WINCH LINE



SECTION A-A



PL-MXP-100

TYPICAL RIGHT OF WAY CONFIGURATION
WINCH HILL

NO.	REVISION	APP'D	DATE	DRAWN BY	BBS	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16			12/14/2015		A6987-TYP-10	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16		09/22/2015				
P3	ISSUED FOR FERC FILING	SJO	04/29/16		09/22/2015				

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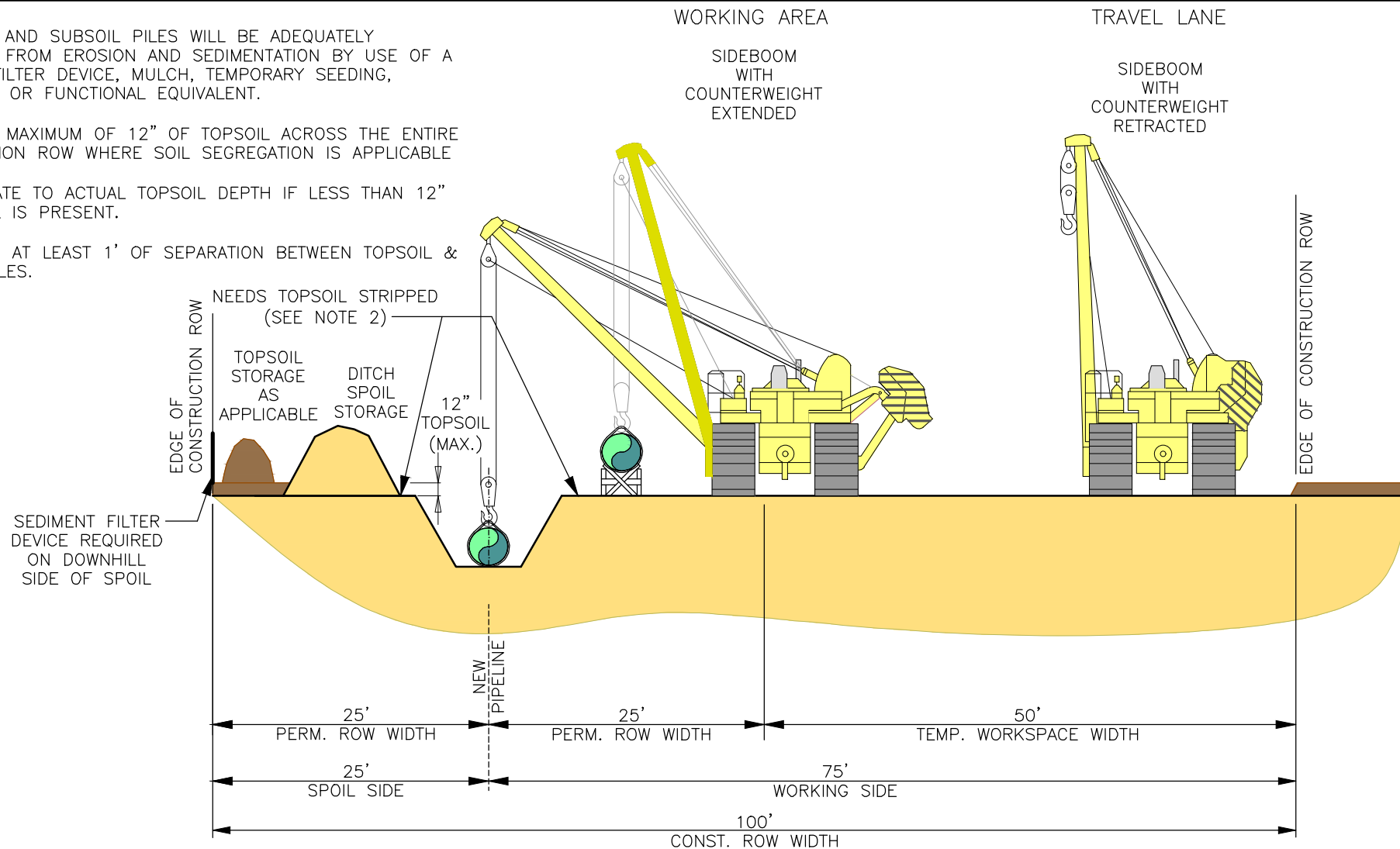
NOTES:

1. TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED FROM EROSION AND SEDIMENTATION BY USE OF A SEDIMENT FILTER DEVICE, MULCH, TEMPORARY SEEDING, TACKIFIERS, OR FUNCTIONAL EQUIVALENT.

2. STRIP A MAXIMUM OF 12" OF TOPSOIL ACROSS THE ENTIRE CONSTRUCTION ROW WHERE SOIL SEGREGATION IS APPLICABLE

3. SEGREGATE TO ACTUAL TOPSOIL DEPTH IF LESS THAN 12" OF TOPSOIL IS PRESENT.

4. MAINTAIN AT LEAST 1' OF SEPARATION BETWEEN TOPSOIL & SUBSOIL PILES.



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PL-MXP-200

TYPICAL ROW CONFIGURATION
24" SHERWOOD LATERAL-FULL TOPSOIL SEGREGATION

NO.	REVISION	APP'D	DATE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16
P3	ISSUED FOR FERC FILING	SJO	04/29/16

DRAWN BY	PM	DATE	SCALE: <u> </u> NTS
DRAFTING CHECK	TJ	07/25/2015	DRAWING NUMBER
ENGINEERS REVIEW	SJO	07/30/2015	A6988-TYP-11
			ISSUE
			P5

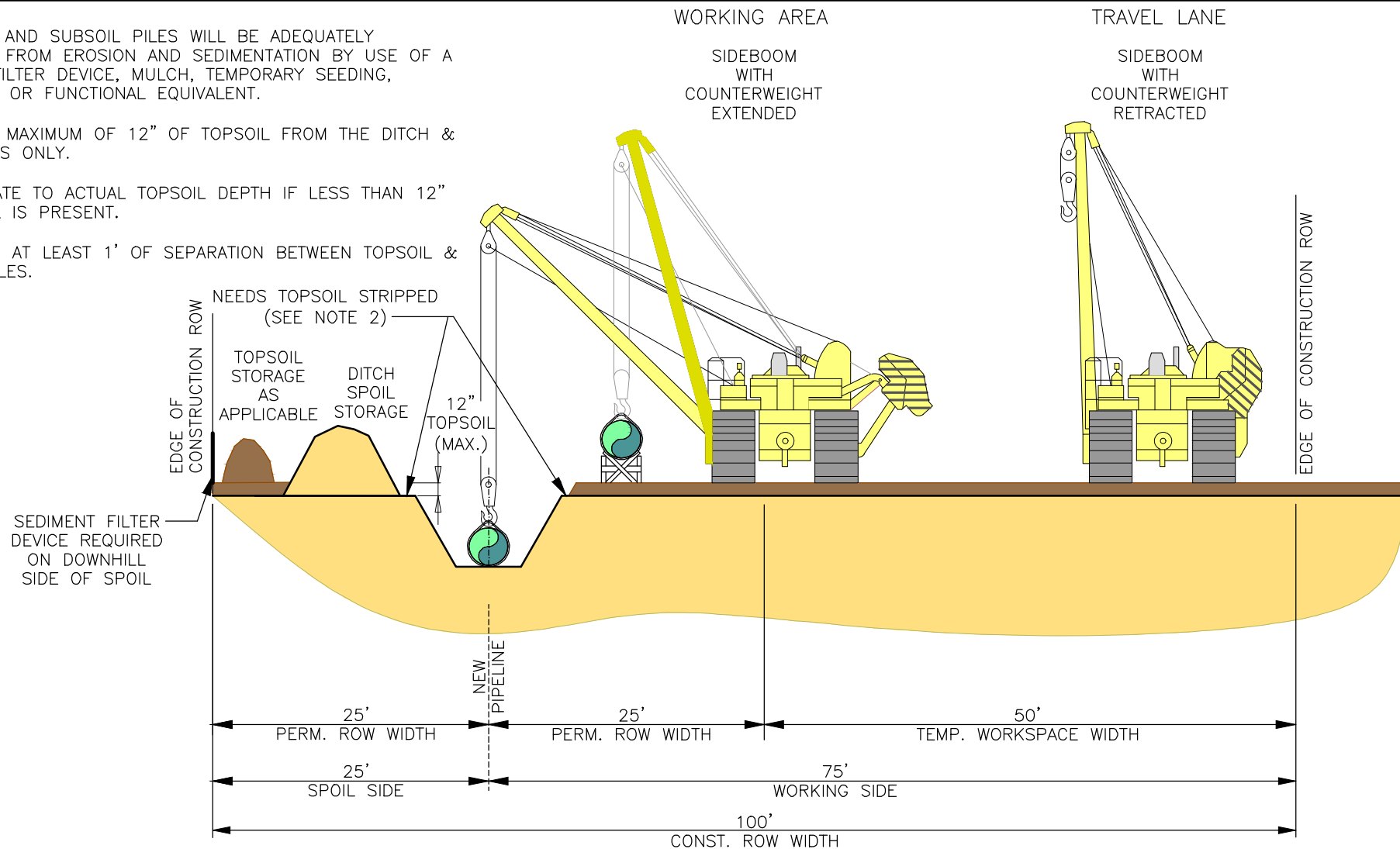
NOTES:

1. TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED FROM EROSION AND SEDIMENTATION BY USE OF A SEDIMENT FILTER DEVICE, MULCH, TEMPORARY SEEDING, TACKIFIERS, OR FUNCTIONAL EQUIVALENT.

2. STRIP A MAXIMUM OF 12" OF TOPSOIL FROM THE DITCH & SPOIL AREAS ONLY.

3. SEGREGATE TO ACTUAL TOPSOIL DEPTH IF LESS THAN 12" OF TOPSOIL IS PRESENT.

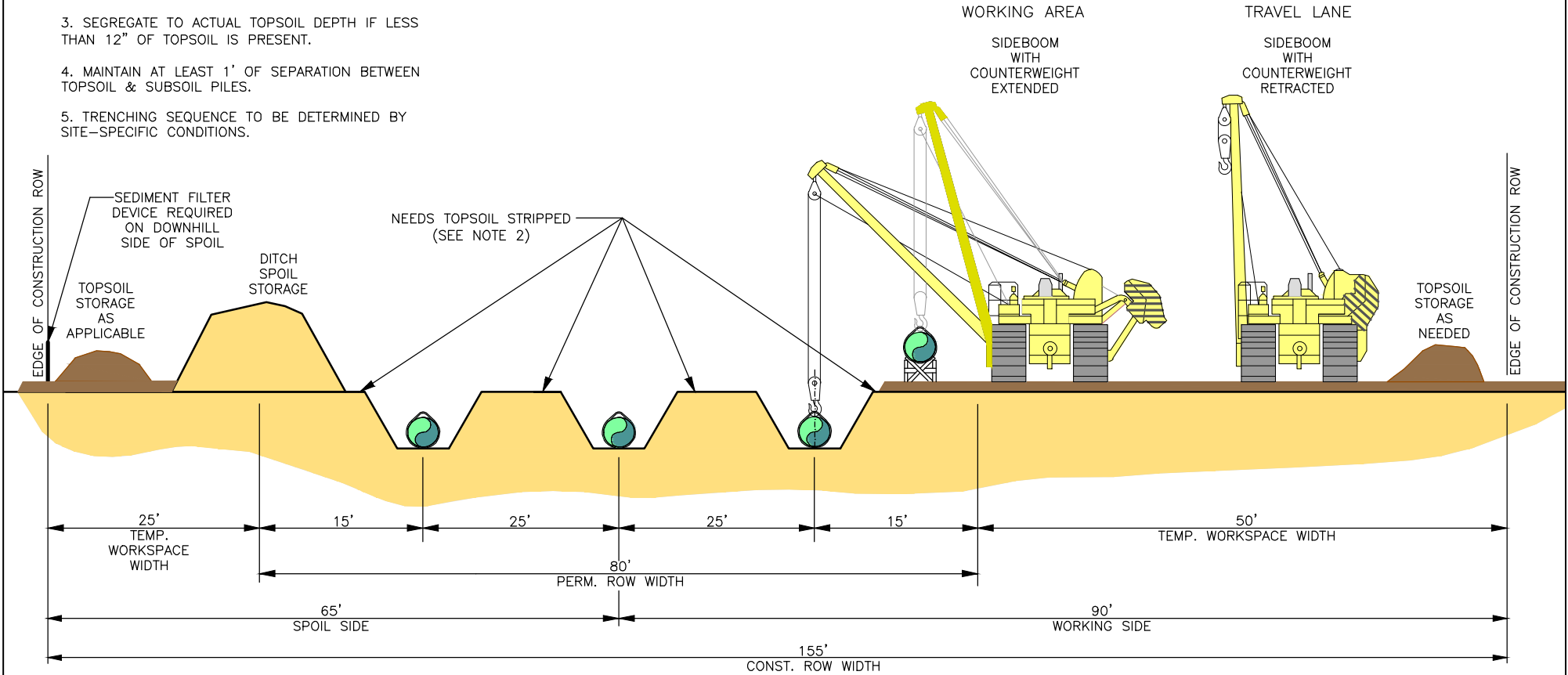
4. MAINTAIN AT LEAST 1' OF SEPARATION BETWEEN TOPSOIL & SUBSOIL PILES.



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				PL-MXP-200			
				TYPICAL ROW CONFIGURATION			
				24" SHERWOOD LATERAL-DITCH/SPOIL TOPSOIL SEGREGATION			
NO.	REVISION	APP'D	DATE	DRAWN BY	PM	DATE	SCALE: <u> </u> NTS
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	TJ	SJO	07/17/2015	
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	SJO	TJ	07/25/2015	DRAWING NUMBER
P3	ISSUED FOR FERC FILING	SJO	04/29/16	SJO	TJ	07/30/2015	ISSUE
				ENGINEERS REVIEW		A6988-TYP-12	
				SJO		P5	





- NOTES:
1. TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED FROM EROSION AND SEDIMENTATION BY USE OF A SEDIMENT FILTER DEVICE, MULCH, TEMPORARY SEEDING, TACKIFIERS, OR FUNCTIONAL EQUIVALENT.
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 3. SEGREGATE TO ACTUAL TOPSOIL DEPTH IF LESS THAN 12" OF TOPSOIL IS PRESENT.
 4. MAINTAIN AT LEAST 1' OF SEPARATION BETWEEN TOPSOIL & SUBSOIL PILES.
 5. TRENCHING SEQUENCE TO BE DETERMINED BY SITE-SPECIFIC CONDITIONS.



P:\PROJECTS\53373000 - CPG MOUNTAINEER XPRESS\CA - CADD\PIPELINE DRAWINGS\TYPICAL\A6987-TYP-13.DWG
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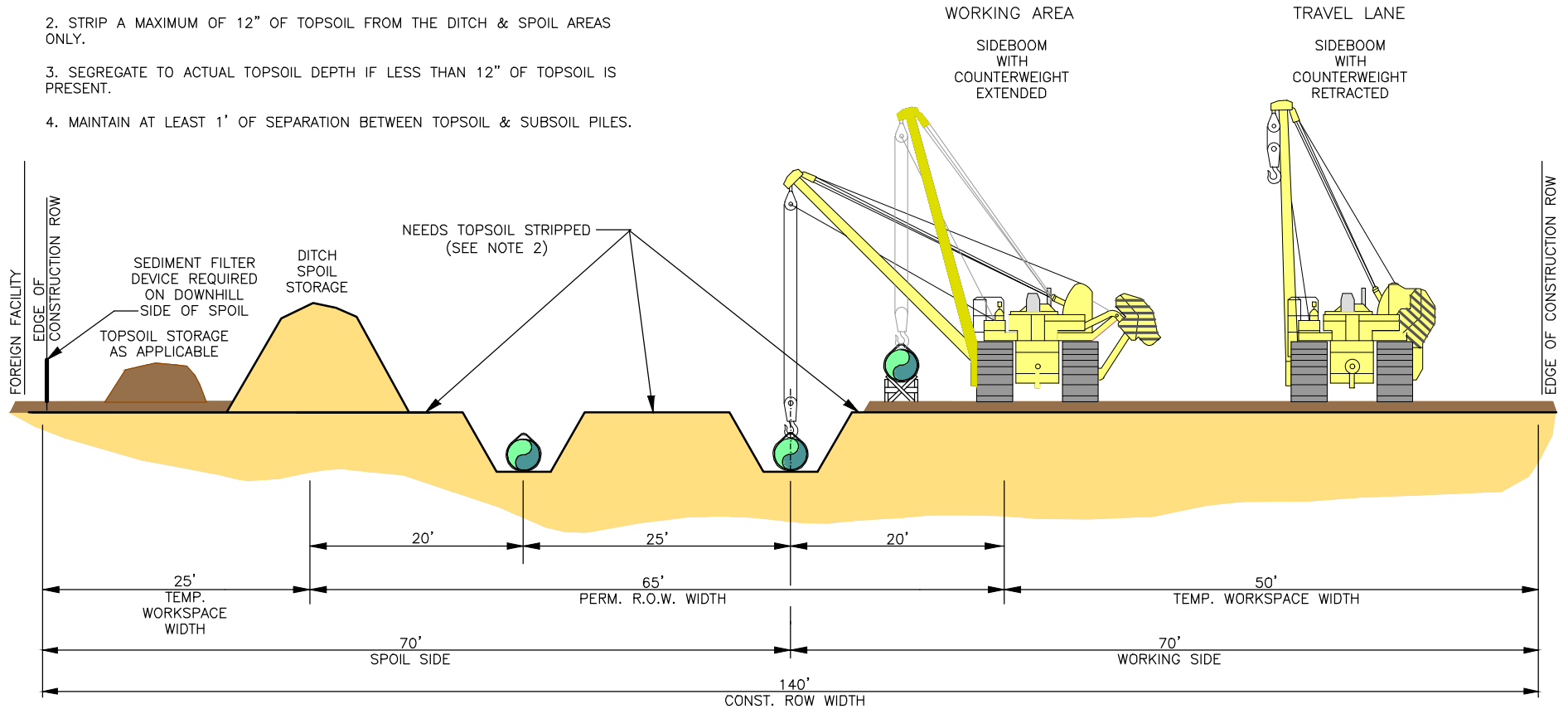


PL-MXP-100 & PL-MXP-200
 TYPICAL ROW CONFIGURATION
 3 PARALLEL CPG PIPELINES

NO.	REVISION	APP'D	DATE	DRAWN BY	PM	DATE	SCALE: <u> </u> NTS 	DRAWING NUMBER	ISSUE
	ISSUED FOR FERC SUPPL FILING	SJO	02/17/17			07/17/2015			
	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16		TJ	07/25/2015			
	ISSUED FOR 50% REVIEW	SJO	05/09/16	ENGINEERS REVIEW	SJO	07/30/2015		A6987-TYP-13	P6

NOTES:

1. TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED FROM EROSION AND SEDIMENTATION BY USE OF A SEDIMENT FILTER DEVICE, MULCH, TEMPORARY SEEDING, TACKIFIERS, OR FUNCTIONAL EQUIVALENT.
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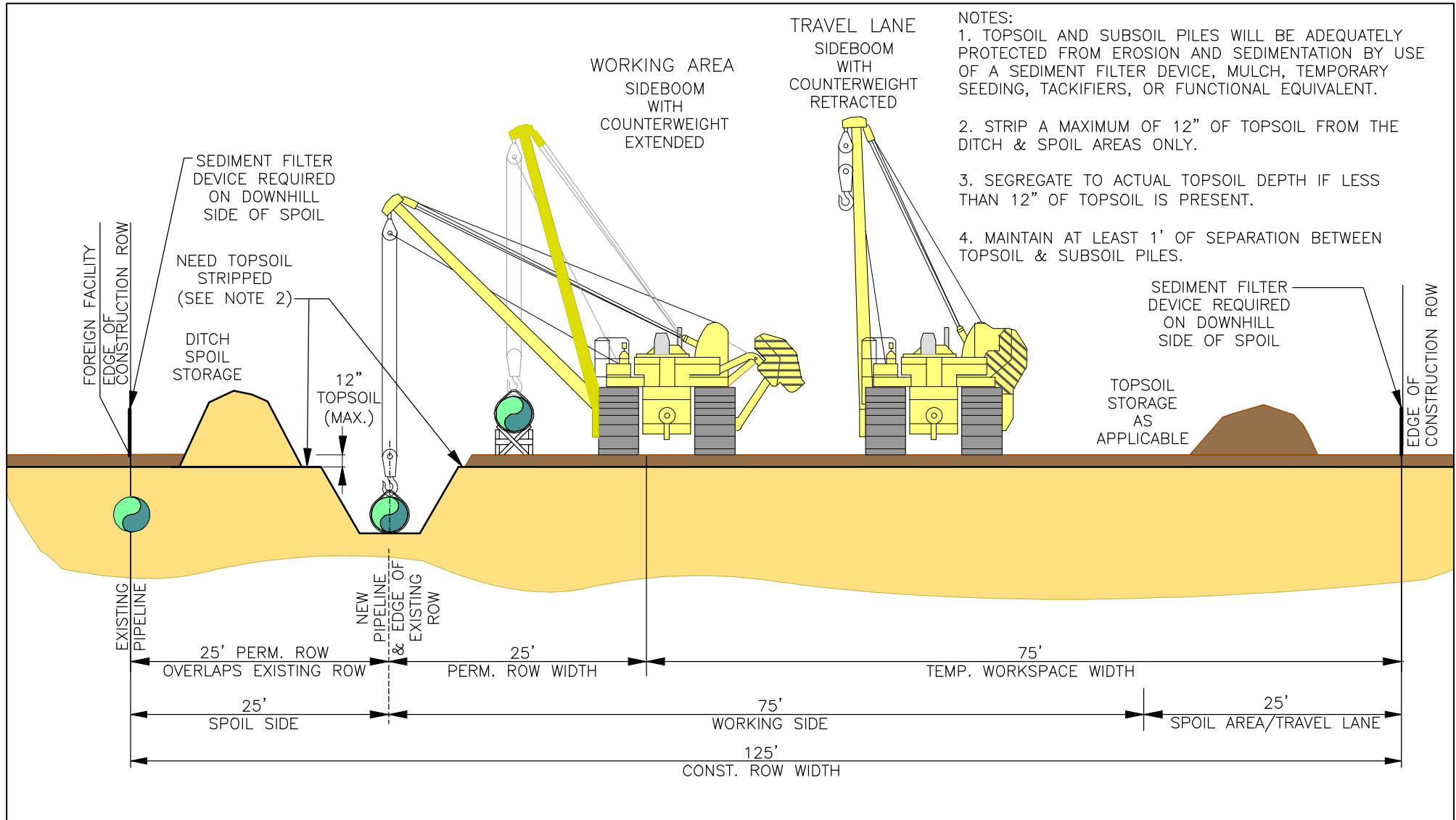


PL-MXP-100 & PL-MXP-200
TYPICAL ROW CONFIGURATION
2 PARALLEL CPG PIPELINES

NO.	REVISION	APP'D	DATE
	ISSUED FOR FERC SUPPL FILING	SJO	02/17/17
	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16
	ISSUED FOR 50% REVIEW	SJO	05/09/16

DRAWN BY	PM	DATE	SCALE: <u> </u> NTS
DRAFTING CHECK	TJ	07/25/2015	DRAWING NUMBER
ENGINEERS REVIEW	SJO	07/30/2015	ISSUE
			A6987-TYP-14
			P6

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 9/15/2016 12:44 PM CWBROWN




- NOTES:
1. TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED FROM EROSION AND SEDIMENTATION BY USE OF A SEDIMENT FILTER DEVICE, MULCH, TEMPORARY SEEDING, TACKIFIERS, OR FUNCTIONAL EQUIVALENT.
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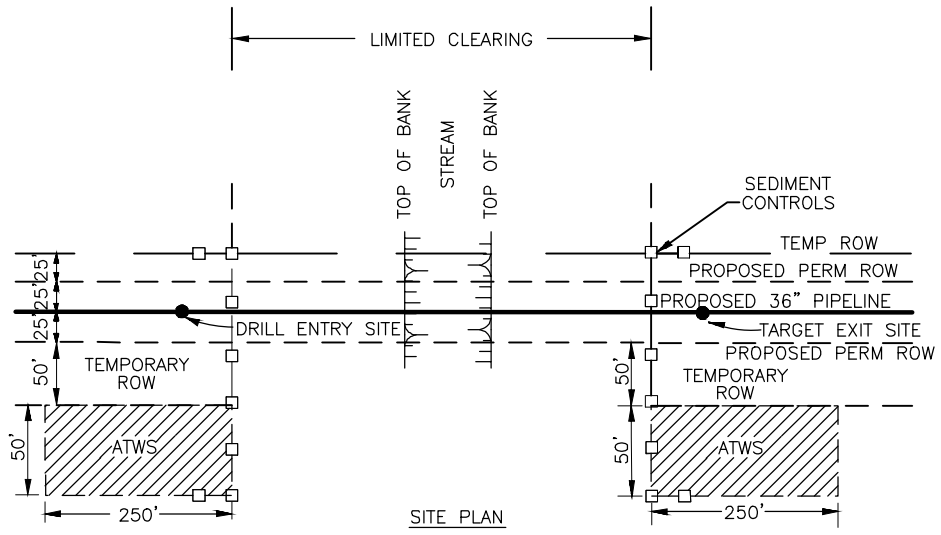


PL-MXP-100

TYPICAL ROW CONFIGURATION OVERLAP ABUT EXISTING PIPELINES

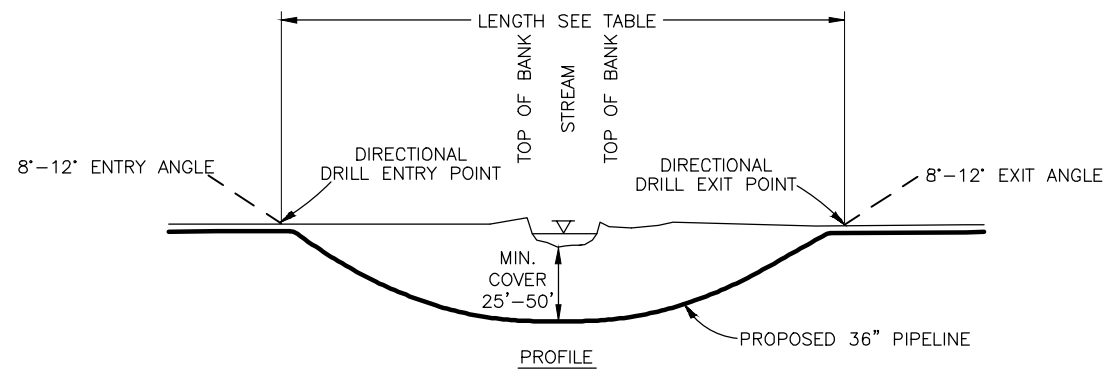
NO.	REVISION	APP'D	DATE	DRAWN BY	PM	DATE	SCALE: <u> </u> NTS 	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16			07/17/2015			
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16		TJ	07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO	07/30/2015		A6987-TYP-15	P5

1. INSTALL SEDIMENT CONTROLS BASED ON SITE SPECIFIC CONDITIONS.
2. LIMIT CLEARING BETWEEN ENTRANCE AND EXIT FOR HAND PLACEMENT OF HDD TRACKING WIRES.



SITE PLAN

N.T.S.

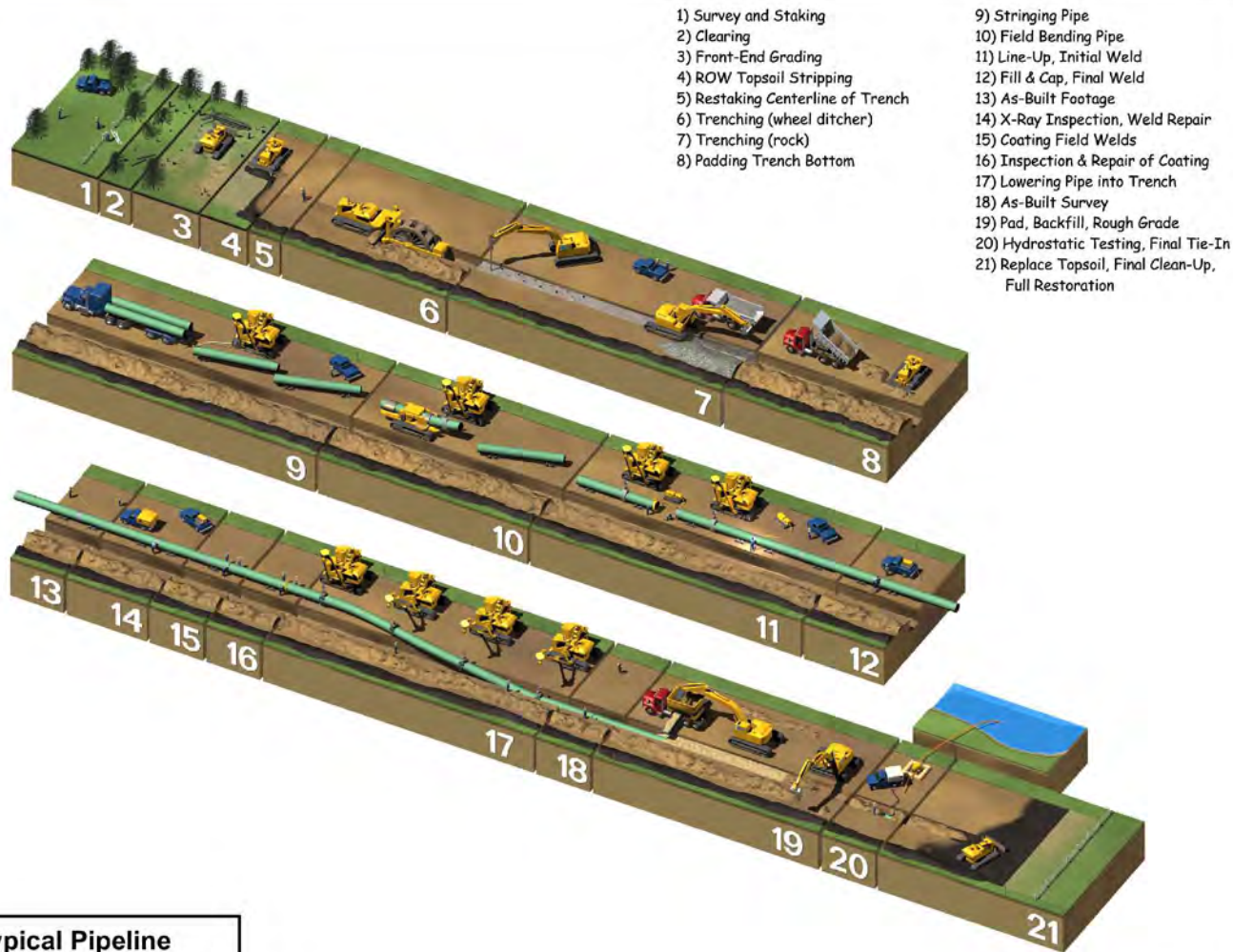


PROFILE

RIVER/CREEK	MP	LENGTH	RADIUS
1. KANAWHA	142.5	1800'	3600'

				PL-MXP-100				
				TYPICAL WORKSPACE LAYOUT FOR DIRECTIONAL DRILL				
NO.	REVISION	APP'D	DATE	DRAWN BY	PM	DATE	SCALE: <u>NTS</u>	
	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16			07/17/2015		
	ISSUED FOR 50% REVIEW	SJO	05/09/16		TJ	07/25/2015		
	ISSUED FOR FERC FILING	SJO	04/29/16		SJO	07/30/2015		
				DRAFTING CHECK			DRAWING NUMBER	ISSUE
				ENGINEERS REVIEW			A6987-TYP-16	P5

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- 1) Survey and Staking
- 2) Clearing
- 3) Front-End Grading
- 4) ROW Topsoil Stripping
- 5) Restaking Centerline of Trench
- 6) Trenching (wheel ditcher)
- 7) Trenching (rock)
- 8) Padding Trench Bottom
- 9) Stringing Pipe
- 10) Field Bending Pipe
- 11) Line-Up, Initial Weld
- 12) Fill & Cap, Final Weld
- 13) As-Built Footage
- 14) X-Ray Inspection, Weld Repair
- 15) Coating Field Welds
- 16) Inspection & Repair of Coating
- 17) Lowering Pipe into Trench
- 18) As-Built Survey
- 19) Pad, Backfill, Rough Grade
- 20) Hydrostatic Testing, Final Tie-In
- 21) Replace Topsoil, Final Clean-Up, Full Restoration


Typical Pipeline Construction Sequence

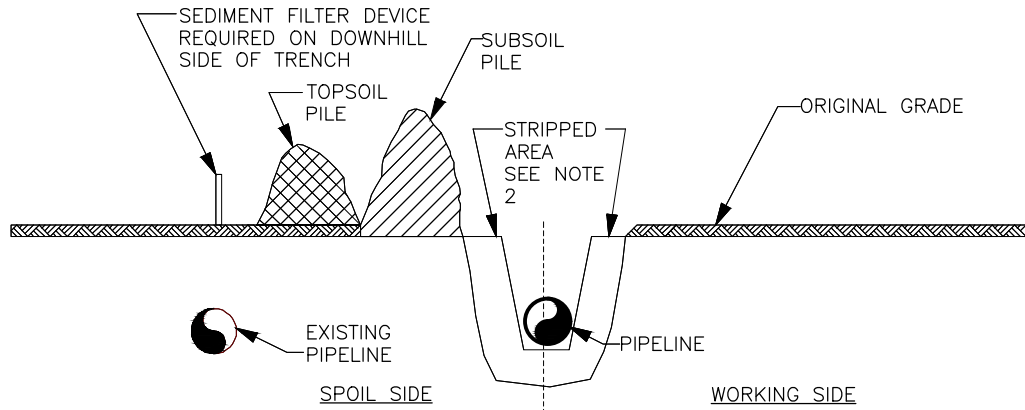
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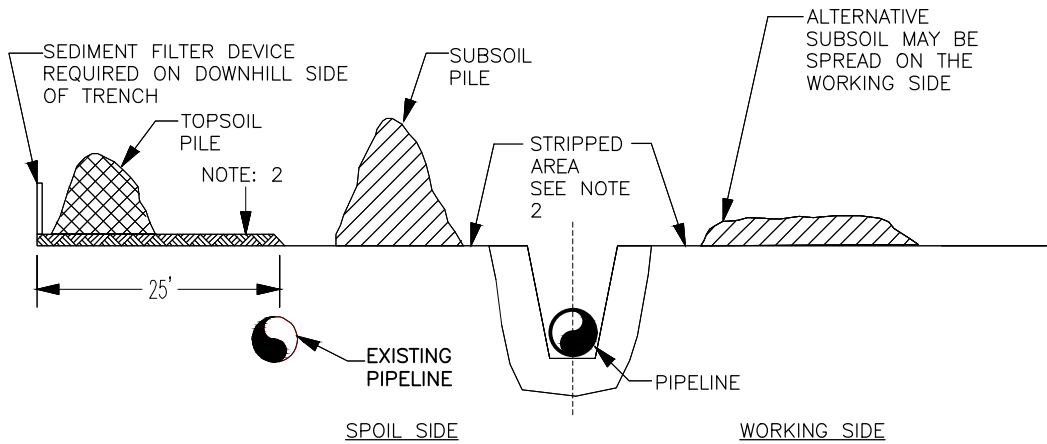
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TYPICAL PIPELINE CONSTRUCTION SEQUENCE

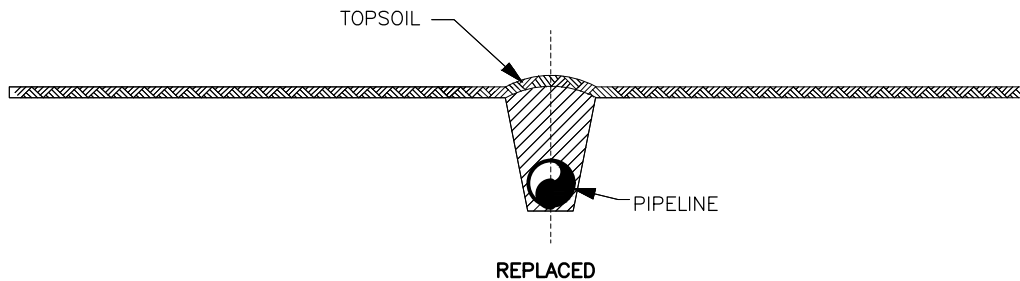
NO.	REVISION	APP'D	DATE			SCALE: <u> </u> NTS <u> </u>	
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	DRAWN BY	PM	DATE 07/17/2015	 DRAWING NUMBER A6987-TYP-17 ISSUE P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	DRAFTING CHECK	TJ	DATE 09/21/2015	
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO	DATE 09/22/2015	



TRENCHLINE AND SPOIL SIDE METHOD



ENTIRE CONSTRUCTION ROW METHOD



REPLACED

NOTES:

- 1.) OTHER CONFIGURATIONS OF TOPSOIL AND SUBSOIL ARE ACCEPTABLE PROVIDED THEY ARE KEPT SEPARATE.
- 2.) UP TO 12 INCHES OF TOPSOIL REMOVED.
- 3.) TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED TO PREVENT EROSION AND SEDIMENTATION BY USE OF SEDIMENT FILTER DEVICES OR MULCH.



PL-MXP-100 & PL-MXP-200

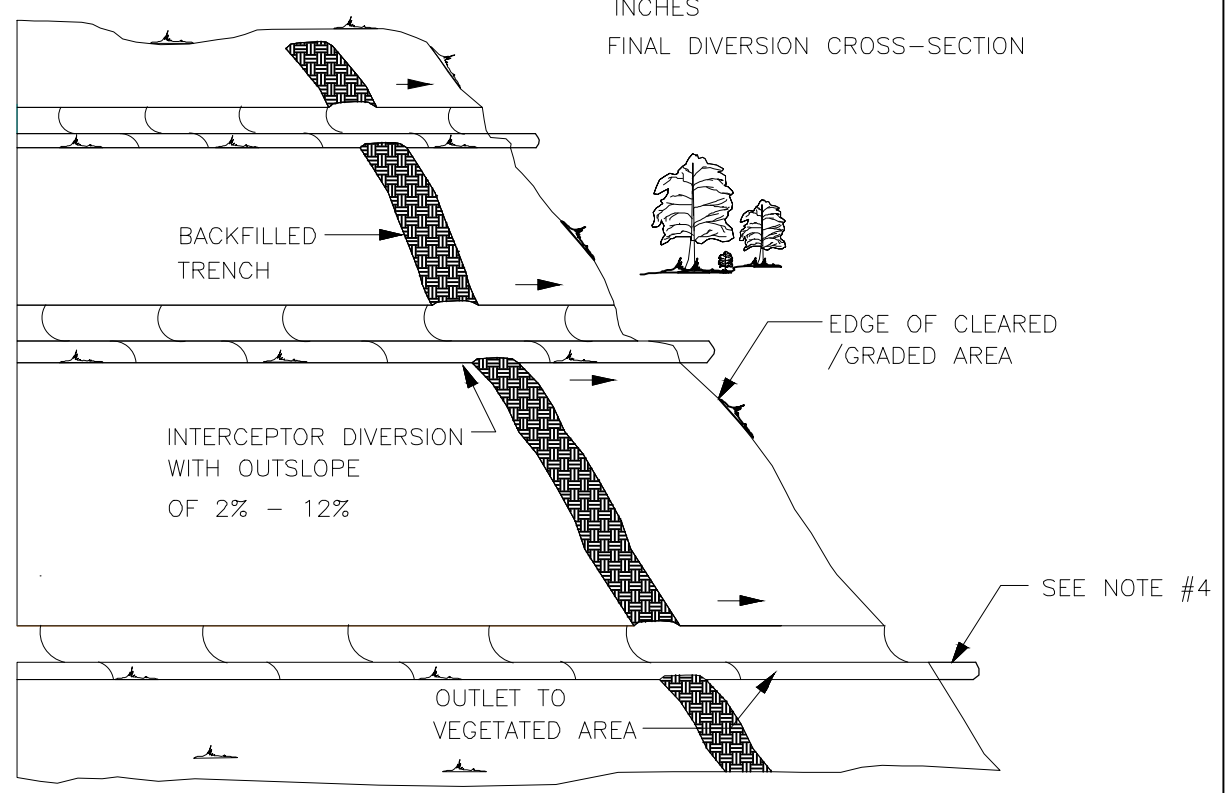
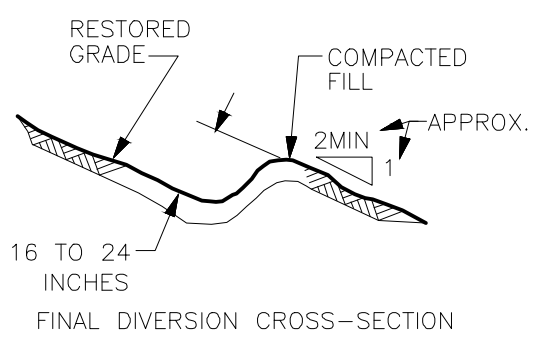
FIGURE NO. 5

TYPICAL TOPSOIL CONSERVATION RIGHT-OF-WAY

NO.	REVISION	APP'D	DATE					
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	DRAWN BY	PM	DATE	06/17/2015	SCALE: <u> </u> NTS <u> </u>
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	DRAFTING CHECK	TJ	DATE	09/21/2015	DRAWING NUMBER
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO	DATE	09/22/2015	A6987-TYP-18
								ISSUE

NOTE 1		
<u>SLOPE</u>	<u>SPACING</u>	<u>AREAS OF SPECIAL CONCERN</u>
< 5%	NONE	
5-15%	300 FEET	
15-30%	200 FEET	100 FEET *
>30%	100 FEET	50 FEET *
INTERCEPTOR SPACING (MINIMUM REQUIRED)		

*AREAS OF LOW STRENGTH/LANDSLIDE PRONE SOILS, THE SPACING OF THE INTERCEPTOR DIVERSION SHALL BE ADJUSTED ACCORDINGLY.



NOTES:

1. SPACING USED FOR BOTH TEMPORARY AND FINAL INTERCEPTOR DIVERSIONS.
2. TEMPORARY INTERCEPTOR DIVERSIONS WILL BE MAINTAINED DURING THE CONSTRUCTION PHASE UNTIL FINAL INTERCEPTOR DIVERSIONS ARE INSTALLED.
3. IF EXISTING GROUND COVER IS SPARSE, SECURE SEDIMENT FILTER DEVICE IN OUTLET.
4. THE DIVERSION MAY BE EXTENDED UP TO 5 FEET OFF THE ROW, IF NECESSARY, TO PROVIDE AN ADEQUATE OUTLET.
5. DIVERSION OUTLETS WILL ALTERNATE FROM SIDE TO SIDE WHENEVER POSSIBLE.

NOT TO SCALE



PL-MXP-100 & PL-MXP-200

FIGURE NO. 6A
INTERCEPTOR DIVERSIONS/SLOPE BREAKERS

NO.	REVISION	APP'D	DATE	DRAWN BY	PM	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16			06/17/2015		A6987-TYP-19	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16			07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16			07/30/2015			

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INTERCEPTOR DIVERSIONS ARE THE MOST COMMON AND EFFECTIVE DEVICE USED FOR EROSION CONTROL ON CONSTRUCTION ROW. DURING CONSTRUCTION, TEMPORARY DIVERSIONS ARE INSTALLED TO CONTROL WATER ON THE GRADED ROW. DURING RESTORATION FINAL DIVERSIONS ARE INSTALLED TO PROTECT THE ROW FROM EROSION UNTIL THE VEGETATION RE-ESTABLISHES ON THE DISTURBED AREAS.

TEMPORARY DIVERSIONS ARE GENERALLY MADE BY BUILDING A CURB 8 TO 14 INCHES HIGH ACROSS THE ROW. THE CURBS ARE SHAPED TO ALLOW PASSAGE OF CONSTRUCTION EQUIPMENT AND INSPECTOR VEHICLES. THE DIVERSION SHOULD HAVE A GRADIENT OF 2% -12% AND MUST DRAIN EITHER INTO TRENCH OR OFF THE ROW. WHERE WATER IS DIRECTED OFF THE ROW, THE OUTLET WILL BE PROTECTED BY HEAVY VEGETATION. TEMPORARY DIVERSIONS MAY BE BROKEN DOWN BY CONSTRUCTION EQUIPMENT DURING THE WORKDAY, BUT WILL BE RESTORED BY END OF EACH DAY. TEMPORARY DIVERSIONS WILL BE SPACED ALONG THE ROW IN ACCORDANCE WITH FIGURE 6A. THE ACTUAL NUMBER OF TEMPORARY DIVERSIONS MAY VARY FROM THAT OF FINAL DIVERSIONS BECAUSE THE CONSTRUCTION ROW'S ARTIFICIAL GRADE MAY REDUCE THE SLOPE. POSITION THE OUTFALL OF EACH TEMPORARY SLOPE BREAKER TO PREVENT SEDIMENT DISCHARGE INTO WETLAND, WATERBODIES, OR OTHER SENSITIVE AREAS.

FINAL DIVERSIONS TYPICALLY CONSIST OF A CURB 16 TO 24 INCHES HIGH BELOW A SHALLOW SWALE. THE CURB IS CONSTRUCTED OF COMPACTED EARTH FILL WITH SIDESLOPES OF 2:1 OR FLATTER TO ALLOW PASSAGE OF MAINTENANCE EQUIPMENT. THE DIVERSIONS SHOULD EXTEND ACROSS THE ENTIRE ROW AND DRAIN WATER WITH A 2% TO 12% GRADIENT. THE OUTLETS OF FINAL DIVERSIONS MAY BE STABILIZED WITH SEDIMENT FILTER DEVICES. FINAL DIVERSIONS WILL BE SPACED ALONG THE ROW IN ACCORDANCE WITH FIGURE 6A (OR AS SHOWN ON THE ENVIRONMENTAL CONSTRUCTION DRAWINGS), AND WILL TIE INTO EXISTING DIVERSIONS WHERE PRESENT. IN PLACES WHERE FINAL GRADE CREATES SIDE SLOPES OR SLOPES WHICH BREAK IN MORE THEN ONE DIRECTION, DIVERSION INSTALLATION MAY NEED TO VARY TO CREATE AN OUTSLOPE OF 2% TO 12% WHICH WILL CARRY WATER OFF THE ROW.

ALTERNATIVE DIVERSION CONSTRUCTION MAY BE USED IN AREAS WHERE AN EARTHEN DIVERSION IS IMPRACTICAL

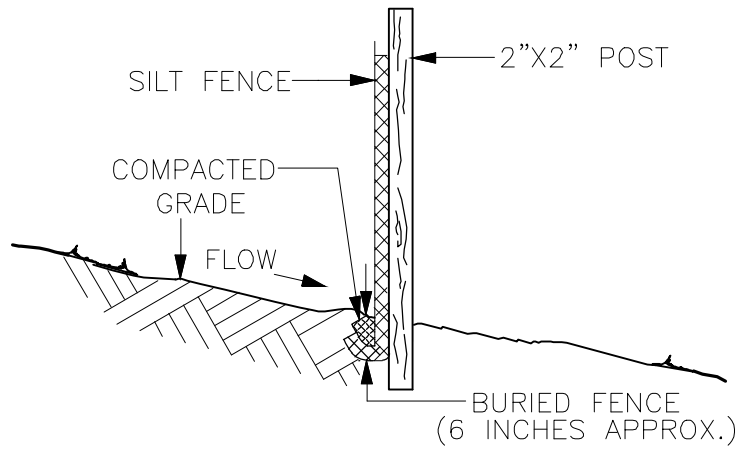
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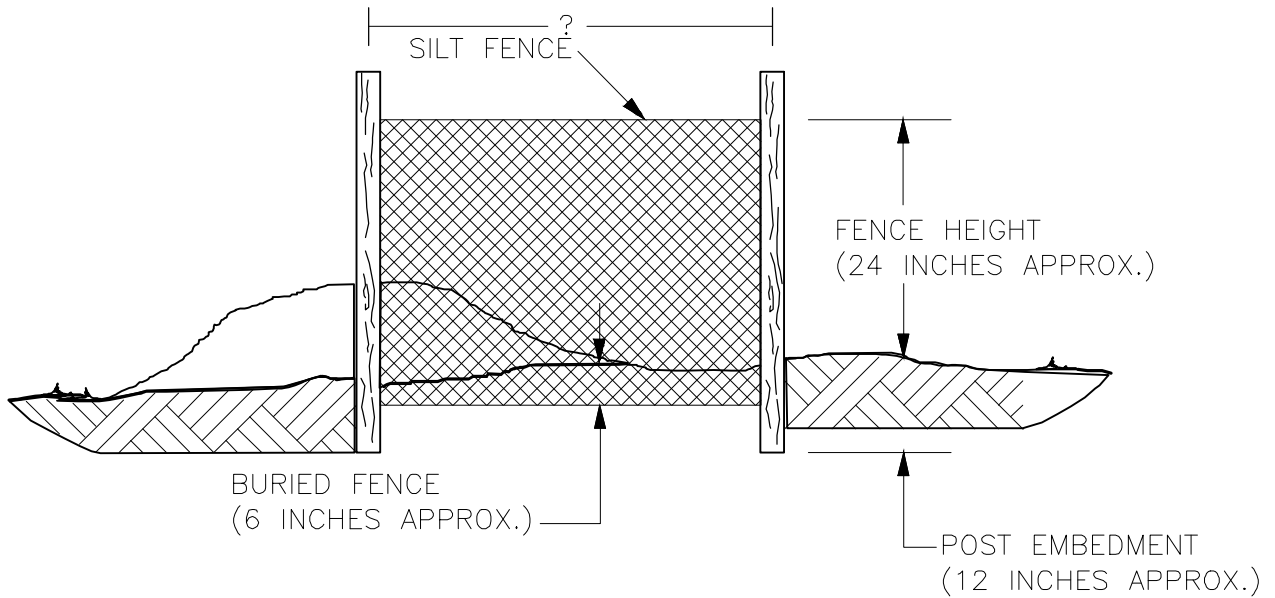
PL-MXP-100 & PL-MXP-200

**FIGURE NO. 6B
INTERCEPTOR DIVERSIONS**

NO.	REVISION	APP'D	DATE					
	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	DRAWN BY	PM	DATE	06/17/2015	SCALE: <u> </u> NTS <u> </u>
	ISSUED FOR 50% REVIEW	SJO	05/09/16	DRAFTING CHECK	TJ	DATE	07/25/2015	DRAWING NUMBER
	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO	DATE	07/30/2015	ISSUE
							A6987-TYP-20	P5



SIDE VIEW



FRONT VIEW

NOTE: SILT FENCE CAN ALSO BE INSTALLED (USING THE SAME SPECIFICATIONS AS PRESENTED ABOVE) IN OTHER SITUATIONS FOR EROSION AND SEDIMENTATION CONTROL.

NOT TO SCALE



PL-MXP-100 & PL-MXP-200

FIGURE NO. 7A
SEDIMENT FILTER DEVICE SILT FENCING

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015		A6987-TYP-21	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	SJO	07/30/2015			

TABLE 4.3 FABRIC PROPERTIES FOR SILT FENCE

FABRIC PROPERTY	MINIMUM ACCEPTABLE VALUE	TEST METHOD
GRAB TENSILE STRENGTH (LB)	120	ASTM D 1682
ELONGATION AT FAILURE (%)	20% MAX.	ASTM D 1682
MULLEN BURST STRENGTH (PSI)	200	ASTM D 3786
TRAPEZOIDAL TEAR STRENGTH (LB)	50	
PUNCTURE STRENGTH (LB)	40	ASTM D 751 (MODIFIED)
SLURRY FLOW RATE (GAL/MIN/SF)	0.3	ASTM 5141
EQUIVALENT OPENING SIZE	30	US STD. SIEVE CW-02215
ULTRAVIOLET RADIATION STABILITY (%)	80	ATSM G-26

TABLE 4.4
Maximum Slope Length for Silt Fence

Slope - Percent	Maximum Slope Length (ft) Above Fence		
	Standard (18" High) Silt Fence	Reinforced (30" High) Silt Fence	Super Silt Fence
2 (or less)	150	500	1000
5	100	250	550
10	50	150	325
15	35	100	215
20	25	70	175
25	20	55	135
30	15	45	100
35	15	40	85
40	15	35	75
45	10	30	60
50	10	25	50

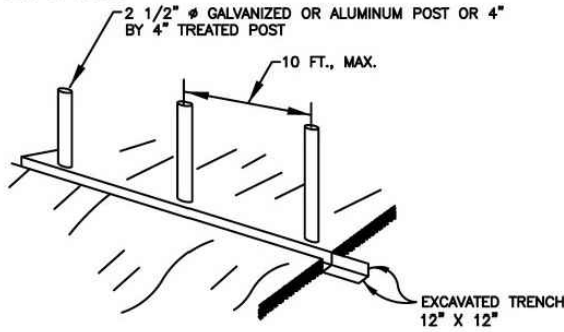


PL-MXP-100 & PL-MXP-200

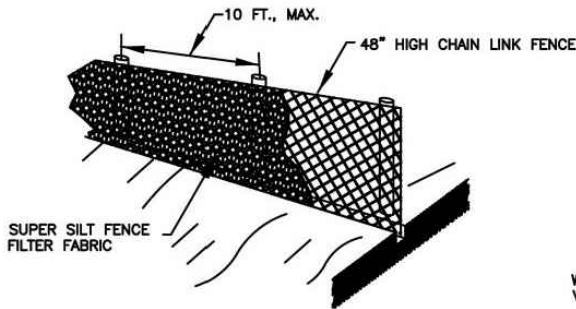
SILT FENCE SPECIFICATIONS
TABLE 4.3, TABLE 4.4

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015		A6987-TYP-22	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO			

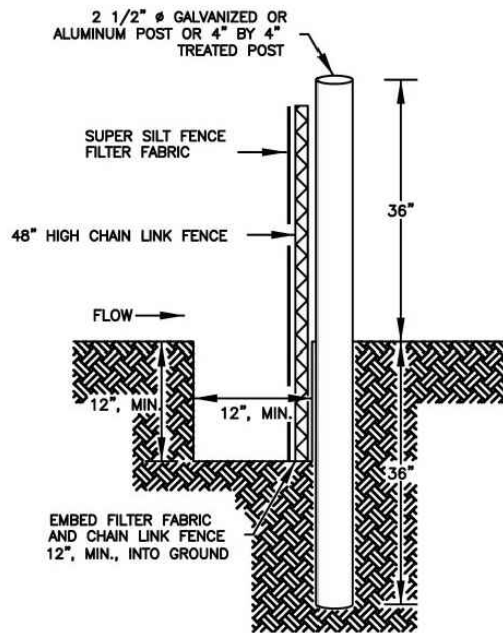
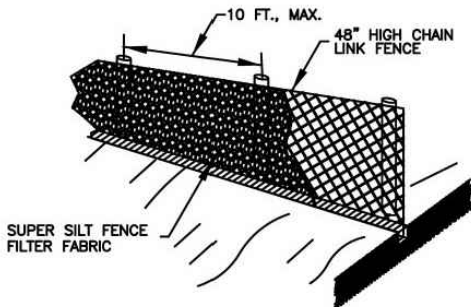
1. SET POSTS ALONG CONTOUR OF THE LAND AND EXCAVATE TRENCH UPSLOPE ALONG THE LINE OF POSTS.



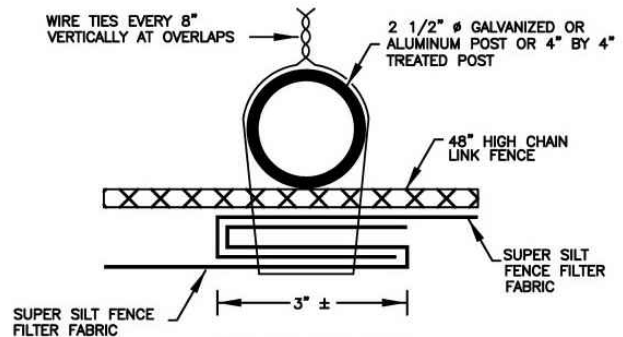
2. ATTACH THE CHAIN LINK FENCE AND FILTER FABRIC TO THE FENCE POSTS AND EXTEND THEM 12", MIN., INTO THE DITCH.



3. BACKFILL AND COMPACT THE TRENCH WITH EXCAVATED SOILS.



SIDE VIEW
NOT TO SCALE



END LAP TOP VIEW
NOT TO SCALE

SUPER SILT FENCE NOTES:

1. CHAIN LINK FENCE SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 608 OF THE WDOH SPECIFICATIONS. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE POSTS WITH WIRE TIES OR STAPLES.
2. POSTS NEED NOT BE SET IN CONCRETE.
3. THE FILTER FABRIC SHALL BE FASTENED TO THE CHAIN LINK FENCE WITH TIES EVERY 24" AT THE TOP AND MID SECTION.
4. FABRIC AND FENCE SHALL BE EMBEDDED 12", MINIMUM, INTO THE GROUND.
5. A 6", MINIMUM, OVERLAP SHALL BE PROVIDED WHERE TWO SECTIONS OF FABRIC ADJOIN. THE OVERLAPPED FABRIC SHALL BE FOLDED TOGETHER AND ATTACHED TO THE CHAIN LINK FENCE.
6. 4" BY 4" PRESSURE TREATED POSTS MAY BE SUBSTITUTED FOR METAL FENCE POSTS WITH THE APPROVAL OF THE ENGINEER.
7. THE LENGTH OF SLOPE ABOVE THE FENCE SHALL NOT EXCEED 400 FEET IN STEEP TERRAIN. IN FLATTER AREAS THE LENGTH CAN BE EXTENDED WITH THE APPROVAL OF THE ENGINEER.

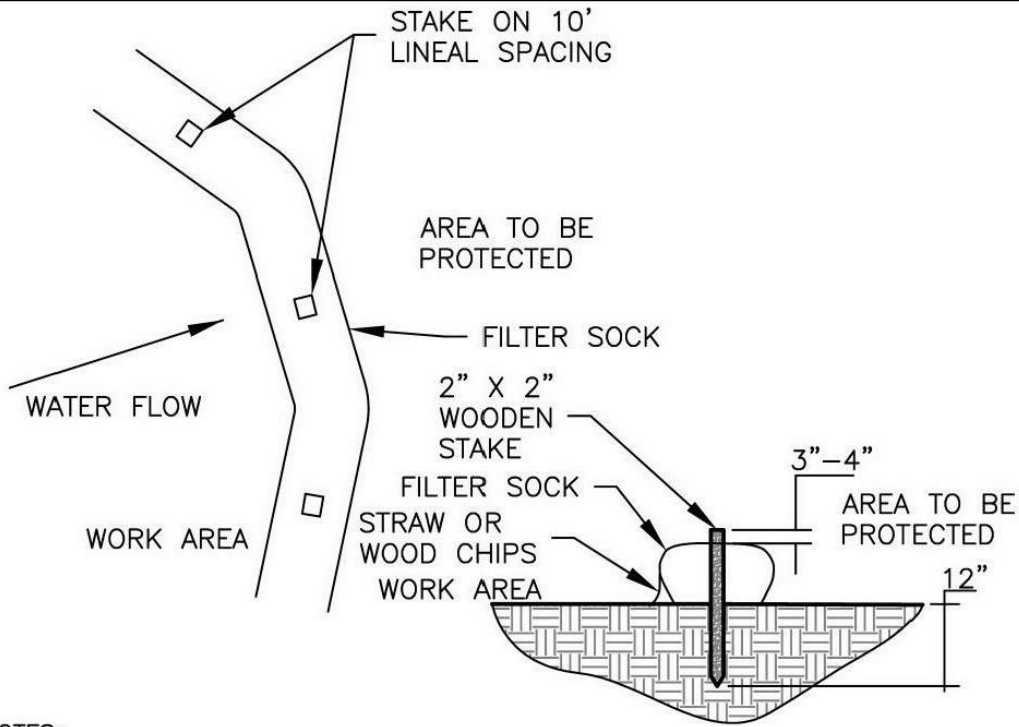
NOT TO SCALE



PL-MXP-100 & PL-MXP-200
**FIGURE NO. 7B SEDIMENT FILTER DEVICE
SUPER SILT FENCE**

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015		A6987-TYP-23	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	07/30/2015			

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NOTES:

1. COMPOST FILTER SOCK TO BE FILTREXX SILTSoxx OR APPROVED EQUIVALENT.
2. 8", 12" 18" AND 24" COMPOST FILTER SOCK TO BE USED. SEE PLAN SHEET FOR SIZES AND LOCATIONS.
3. ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE COMPOST FILTER SOCK.
4. COMPOST FILTER SOCK SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED COMPOST FILTER SOCK SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

FILTER SOCK SIZING CHART

SLOPE PERCENT	8 IN (200 mm) SiltSoxx™	12 IN (300 mm) SiltSoxx™	18 IN (450 mm) SiltSoxx™	24 IN (600 mm) SiltSoxx™	32 IN (800 mm) SiltSoxx™
	6.5 IN (160 mm)**	9.5 IN (240 mm)**	14.5 IN (360 mm)**	19 IN (480 mm)**	26 IN (650 mm)**
2 (OR LESS)	600 (180)	750 (225)	1000 (300)	1300 (400)	1650 (500)
5	400 (120)	500 (150)	550 (165)	650 (200)	750 (225)
10	200 (120)	250 (75)	300 (90)	400 (120)	500 (150)
15	140 (40)	170 (50)	200 (60)	325 (100)	450 (140)
20	100 (30)	125 (38)	140 (42)	260 (80)	400 (120)
25	80 (24)	100 (30)	110 (33)	200 (60)	275 (85)
30	60 (18)	75 (23)	90 (27)	130 (40)	200 (60)
35	60 (18)	75 (23)	80 (24)	115 (35)	150 (45)
40	60 (18)	75 (23)	80 (24)	100 (30)	125 (38)
45	40 (12)	50 (15)	60 (18)	80 (24)	100 (30)
50	40 (12)	50 (15)	55 (17)	65 (20)	75 (23)

* BASED ON FAILURE POINT OF 36 IN (0.9 m) SUPER SILT FENCE (WIRE REINFORCED) AT 1000 FT. (303 m) OF SLOPE, WATERSHED WIDTH EQUIVALENT TO RECEIVING LENGTH OF SEDIMENT CONTROL DEVICE, 1 IN/24 hr (25 mm/24 hr) RAIN EVENT.

** EFFECTIVE HEIGHT OF SiltSoxx™ AFTER INSTALLATION AND WITH CONSTANT HEAD FROM RUNOFF AS DETERMINED BY OHIO STATE UNIVERSITY.

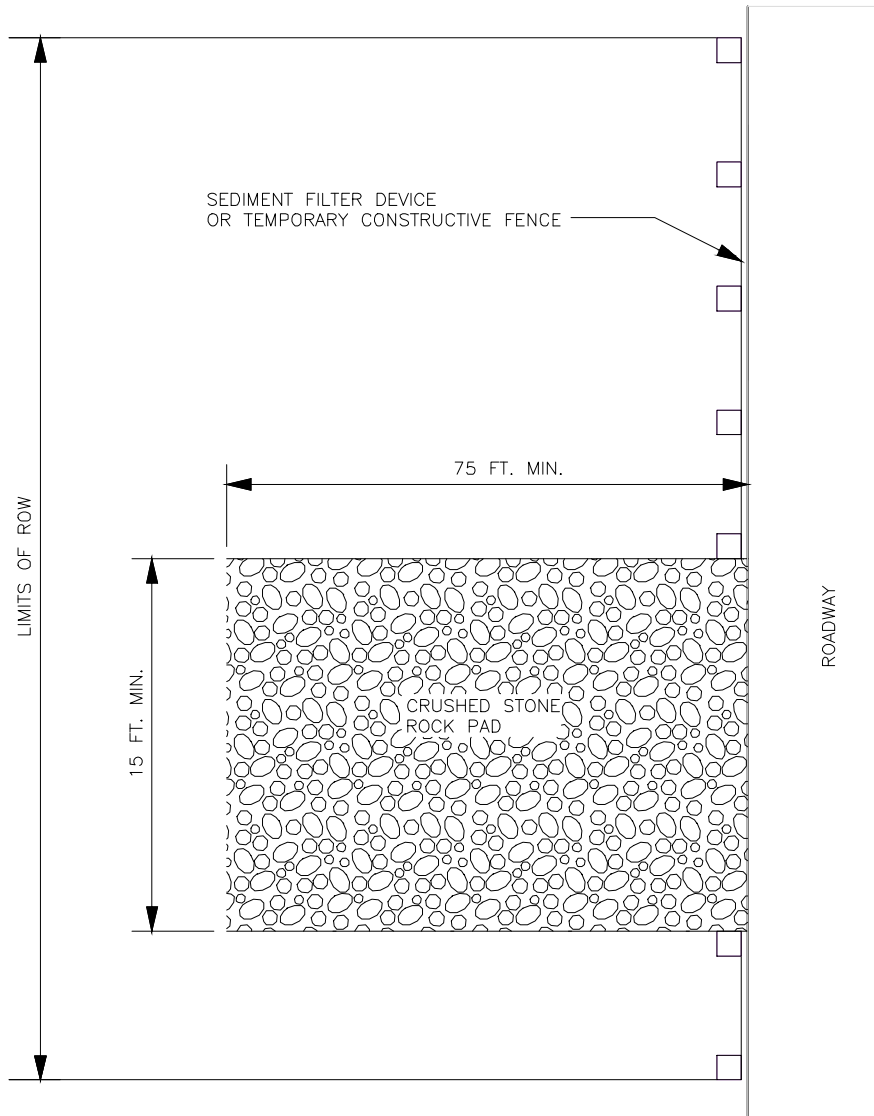
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PL-MXP-100 & PL-MXP-200

**FIGURE NO. 25
TYPICAL COMPOST FILTER SOCK**

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: _____	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015		A6987-TYP-24	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	SJO	07/30/2015			



- NOTES: 1. CRUSHED STONE SIZE WILL BE WASHED NUMBER 1 COARSE AGGREGATE OR EQUIV. (4 INCH DIAMETER MINIMUM.)
2. ROCK PAD WILL BE AT LEAST 6 INCHES THICK.
3. THE ROAD ENTRANCE WILL HAVE A GEOTEXTILE FABRIC BENEATH THE ROCK PAD.
4. IF ROCK PAD BECOMES COVERED WITH MUD SO AS TO BECOME INEFFECTIVE, ADDITIONAL STONE WILL BE ADDED.
5. ALL STONE AND FABRIC MUST BE REMOVED DURING ROW RESTORATION.
6. THE ROCK PAD MAY BE ENLARGED TO INCLUDE A TURNING RADIUS (RADIUS NOT TO EXTEND PAST TEMPORARY WORKSPACE).
7. INSTALL CULVERT AT ROADWAYS IN ACCORDANCE WITH PERMIT CONDITIONS.

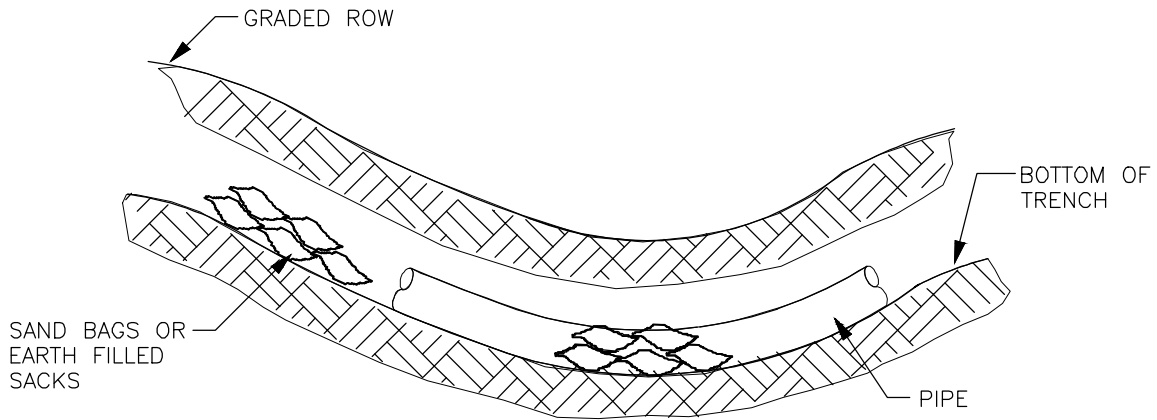
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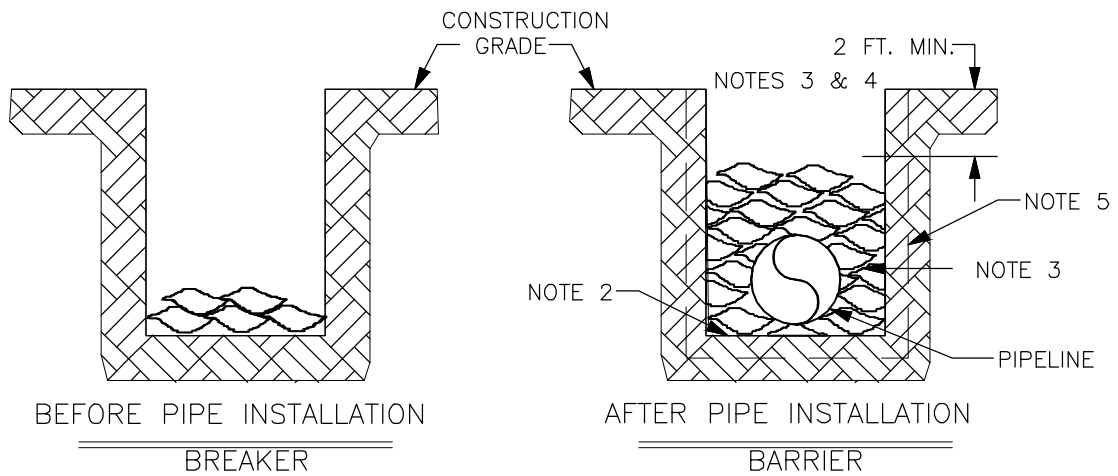
PL-MXP-100 & PL-MXP-200

**FIGURE NO. 8
TEMPORARY ROAD ENTRANCE ROCK PADS**

NO.	REVISION	APP'D	DATE			SCALE: <u> </u> NTS <u> </u>	
	ISSUED FOR FERC SUPPL FILING	SJO	02/17/17	DRAWN BY	PM	DATE	
	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	DRAFTING CHECK	TJ	07/25/2015	DRAWING NUMBER
	ISSUED FOR 50% REVIEW	SJO	05/09/16	ENGINEERS REVIEW	SJO	07/30/2015	ISSUE
							A6987-TYP-25
							P6



SIDE VIEW



FRONT VIEW

- NOTES: 1. INSTALL AT EVERY SECOND INTERCEPTOR DIVERSION PROMPTLY AS TRENCH IS COMPLETED.(SEE FIGURE 6A)
2. PRIOR TO LOWERING IN, REMOVE ALL DECOMPOSED MATERIAL AND ROCKS.
3. INSTALL SACKS TO TOP OF TRENCH ON STEEP GRADES THAT ARE NOT USED FOR FARMING.
4. TOP OF TRENCHLINE BARRIER WILL BE BELOW FLOW DEPTH IN AGRICULTURAL LAND.
5. SANDBAGS WILL BE KEYED INTO SIDE OF DITCH.

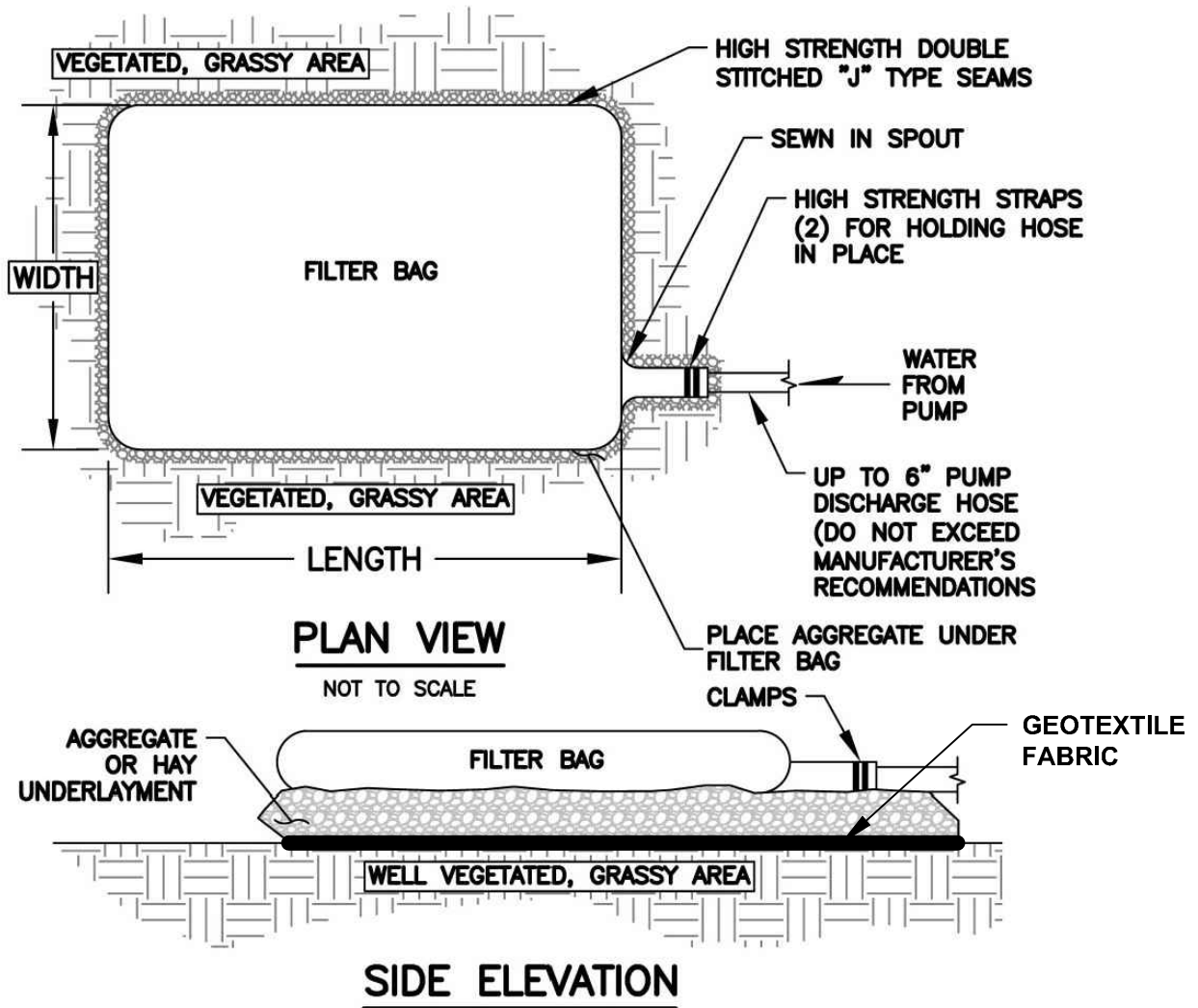
NOT TO SCALE



PL-MXP-100 & PL-MXP-200

**FIGURE NO. 10
TRENCHLINE BARRIERS AND BREAKERS**

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015		A6987-TYP-26	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO			



PLAN VIEW

NOT TO SCALE

SIDE ELEVATION

NOT TO SCALE

NOTES:

1. FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS.
2. BAGS MUST BE PLACED WITHIN THE PERMITTED AREA IF ACCESSING THE BAG WITH MACHINERY IS REQUIRED FOR DISPOSAL PURPOSES. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED.
3. BAGS SHOULD BE LOCATED IN WELL-VEGETATED (GRASSY) AREAS, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE FLOW PATH CAN BE PROVIDED OR ALLOW DISCHARGE FROM BAG TO FLOW THROUGH A SERIES OF SEDIMENT LOGS ETC.... BAGS CAN BE USED INSIDE SEDIMENT TRAPS.
4. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%.
5. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. DO NOT ALTER OR CUT BAGS.
6. AGGREGATE OR HAY SHALL BE PLACED UNDERNEATH FILTER BAGS.
7. SEDIMENT FILTER DEVICE (COMPOST FILTER SOCK, HAY BALE OR APPROVED EQUIVALENT) SHALL BE PLACED WHERE WARRANTED OR AS DETERMINED BY THE EI.

NOT TO SCALE

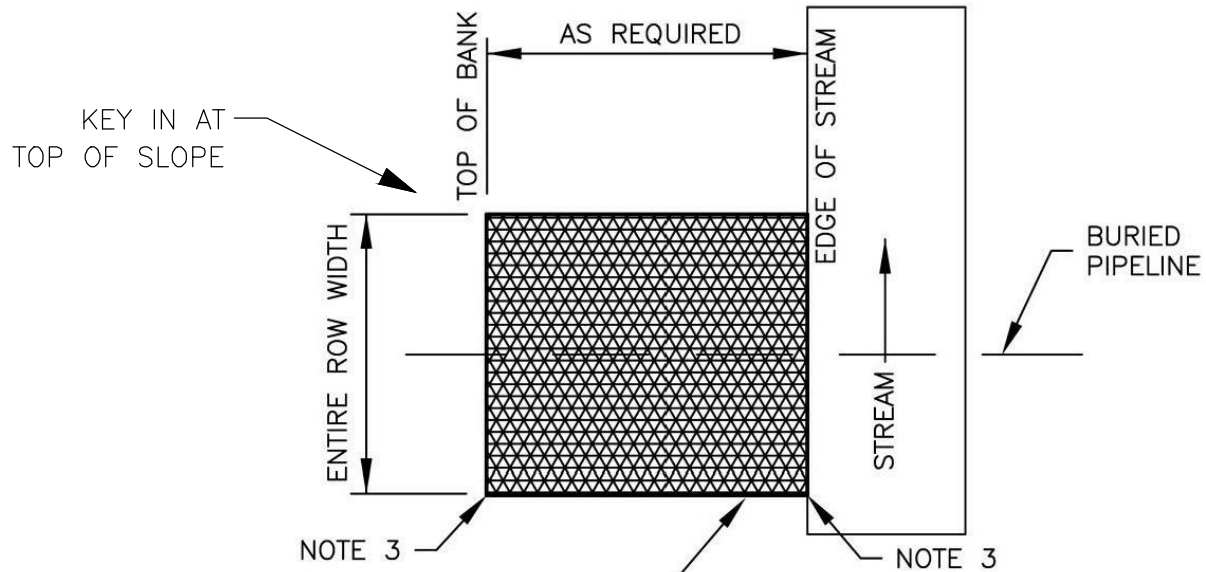


PL-MXP-100 & PL-MXP-200

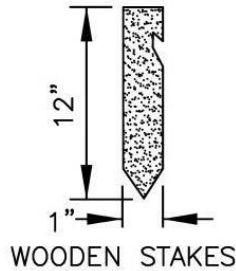
**FIGURE NO. 29
TYPICAL WATER FILTER BAG**

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015		A6987-TYP-27	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	SJO	07/30/2015			

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NOTE 3
 2 INCH MINIMUM OVERLAP ON SEAMS STAPLES OR STAKES ON 3FT TO 4 FT. CENTERS



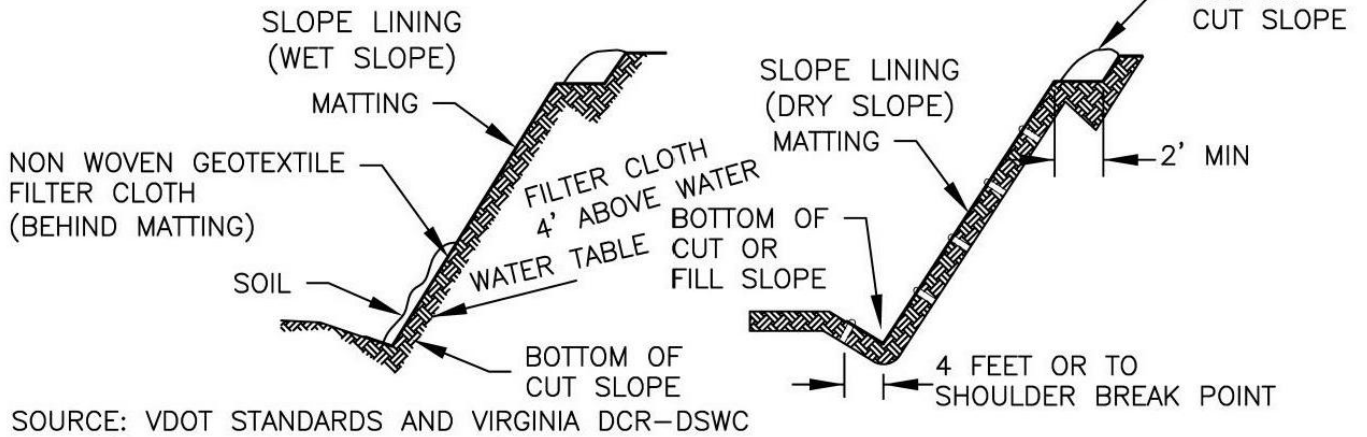
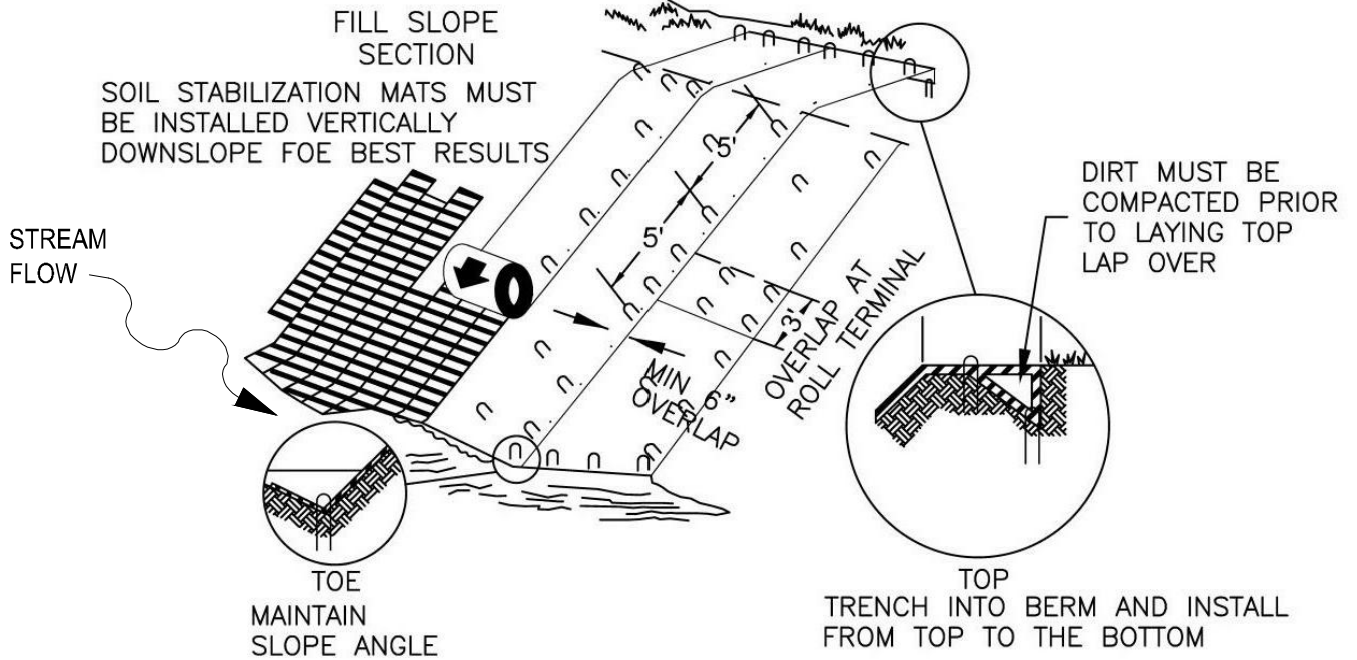
- NOTES:
1. INSTALL JUTE NETTING DURING RESTORATION.
 2. SEED AND MULCH AREA TO BE JUTE NETTED.
 3. TRENCH IN AND BURY UPHILL AND UPSTREAM EDGE OF JUTE NETTING.
 4. AN INTERCEPTOR DIVERSION WILL BE INSTALLED IMMEDIATELY ABOVE JUTE NETTING ON SLOPED BANKS.
 5. ON SHORT BANKS (LESS THAN 10'), JUTE NETTING CAN BE PERPENDICULAR TO BANK SLOPE.
 6. INSTALL ON STEEP SLOPES OR ON THE BANKS OF FLOWING STREAMS, OR IN UPLAND AREAS.



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**FIGURE NO. 12A
 EROSION CONTROL BLANKET**

NO.	REVISION	APP'D	DATE			SCALE: <u> </u> NTS <u> </u>		
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	DRAWN BY	PM	DATE 06/17/2015		
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	DRAFTING CHECK	TJ	07/25/2015		
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO	07/30/2015	DRAWING NUMBER	
							A6987-TYP-28	ISSUE
								P5



NOTE:

SLOPE SURFACE MUST BE SMOOTH AND FREE OF ROCKS, LUMPS, GRASS, AND STICKS. MAT MUST BE PLACED FLAT ON SURFACE FOR PROPER SOIL CONTACT.

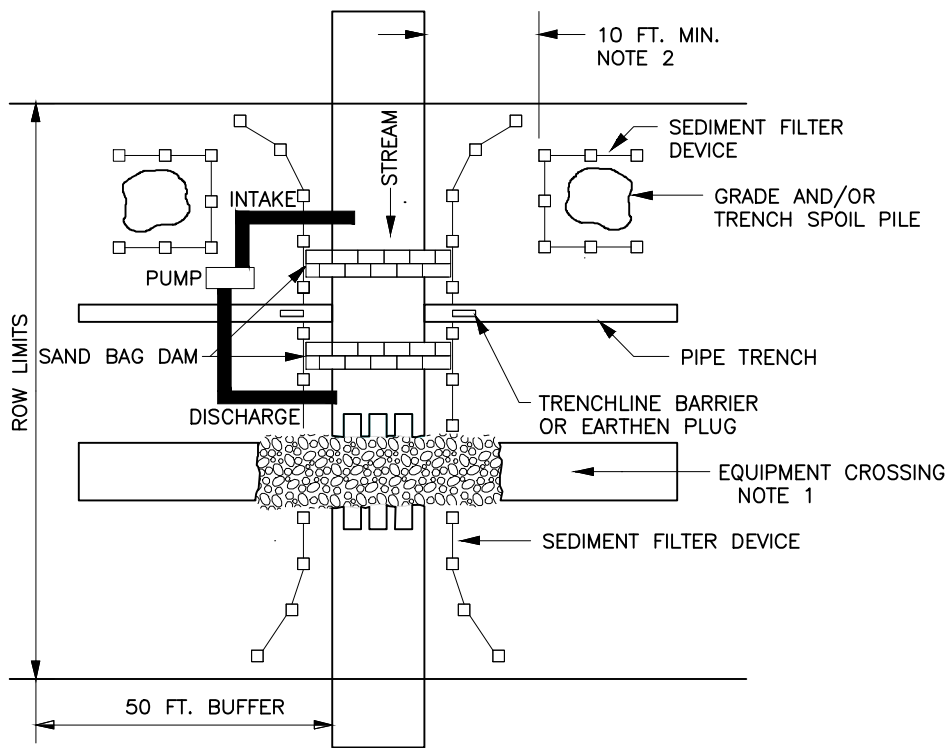
NOT TO SCALE



PL-MXP-100 & PL-MXP-200

**FIGURE NO. 12B
ROLLED EROSION CONTROL PRODUCTS**

NO.	REVISION	APP'D	DATE			SCALE: <u> </u> NTS <u> </u>
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	DRAWN BY	PM	DATE 06/17/2015
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	DRAFTING CHECK	TJ	07/25/2015
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO	07/30/2015
						DRAWING NUMBER
						A6987-TYP-29
						ISSUE
						P5



- NOTES: 1. EQUIPMENT CROSSINGS ARE TO BE INSTALLED AS ILLUSTRATED IN FIGURES 17 OR 18.
 2. GRADE AND TRENCH SPOIL WILL BE STOCKPILED AT LEAST 10 FEET FROM THE WATERS' EDGE OR TOP OF BANK, TOPOGRAPHY PERMITTING
 3. PUMP INTAKES WILL BE SCREENED, PREVENT STREAMBED SCOUR AT DISCHARGE
 4. SUFFICIENT PUMP CAPACITY WILL BE USED TO MAINTAIN STREAM FLOW AT ALL TIMES UNTIL BACKFILL AND REMOVAL OF SANDBAG DAM.
 5. BACKUP PUMPS (AS SAME NUMBER AND CAPACITY AS ACTIVE PUMPS) WILL BE READILY AVAILABLE IN WORKING CONDITION ON SITE AT CROSSING.
 6. CONSTRUCT DAMS WITH MATERIAL THAT PREVENT SEDIMENT AND OTHER POLLUTANTS FROM ENTERING THE WATERBODY.
 7. MONITOR THE DAM AND PUMPS TO ENSURE PROPER OPERATIONS THROUGHOUT THE WATERBODY CROSSING.
 8. SECONDARY CONTAINMENT FOR PUMP.
 9. COMPLETE STREAMBED AND BANK STABILIZATION BEFORE RETURNING FLOW TO THE WATERBODY CHANNEL.

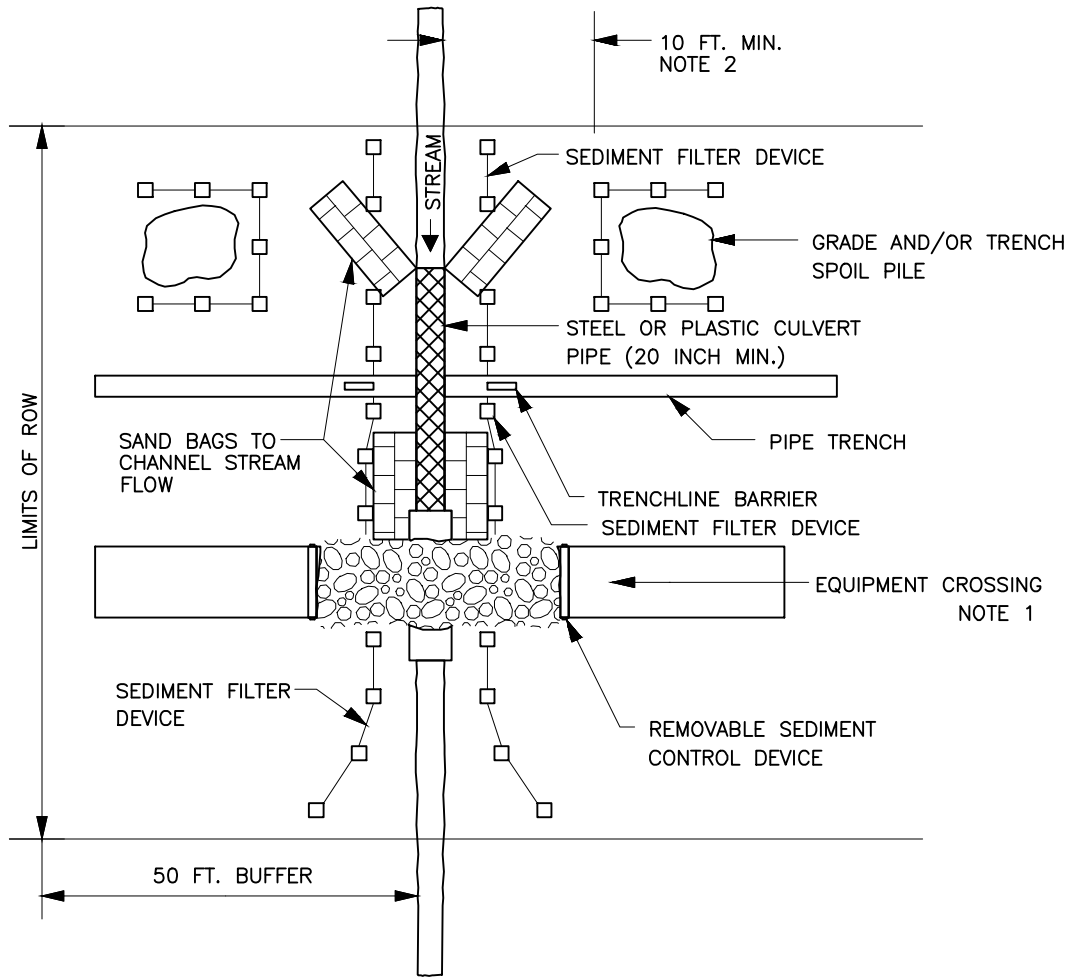
NOT TO SCALE



PL-MXP-100 & PL-MXP-200

FIGURE NO. 15
 TYPICAL STREAM CROSSING DAM AND PUMP

NO.	REVISION	APP'D	DATE						
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	DRAWN BY	PM	DATE	06/17/2015	SCALE: <u> </u> NTS <u> </u>	
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	DRAFTING CHECK	TJ		07/25/2015	DRAWING NUMBER	ISSUE
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO		07/30/2015	A6987-TYP-30	P5




- NOTES:
1. EQUIPMENT CROSSINGS ARE TO BE PREPARED AS ILLUSTRATED IN FIGURES 17 & 18.
 2. GRADE AND TRENCH SPOIL WILL BE STOCKPILED AT LEAST 10 FEET FROM THE WATER'S EDGE.
 3. INSTALL FLUME PIPE AFTER BLASTING (IF NECESSARY), BUT BEFORE TRENCHING.
 4. PROPERLY ALIGN FLUME PIPE(S) TO PREVENT BANK EROSION OR STREAM BED SCOUR.
 5. COMPLETE STREAMBED AND BANK STABILIZATION BEFORE RETURNING FLOW TO THE WATERBODY CHANNEL.

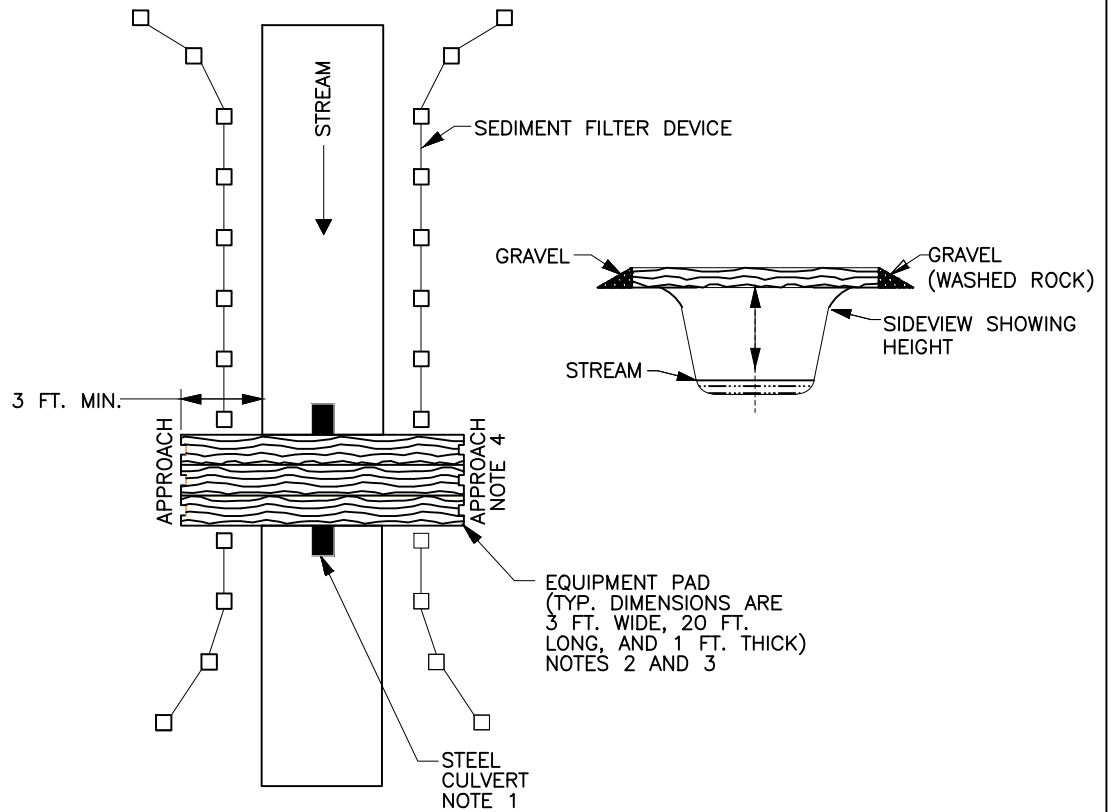
NOT TO SCALE



PL-MXP-100 & PL-MXP-200

**FIGURE NO. 14
TYPICAL STREAM CROSSING DRY DITCH**

NO.	REVISION	APP'D	DATE			SCALE: <u> </u> NTS <u> </u>	
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	DRAWN BY	PM	DATE 06/17/2015	
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	DRAFTING CHECK	TJ	07/25/2015	
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO	07/30/2015	
				DRAWING NUMBER		ISSUE	
				A6987-TYP-31		P5	



- NOTES:
1. CULVERT PIPE UTILIZED IF ADDITIONAL SUPPORT IS REQUIRED.
 2. ADDITIONAL PADS CAN BE PUT SIDE BY SIDE IF EXTRA WIDTH IS REQUIRED.
 3. EQUIPMENT PAD TYPICALLY CONSTRUCTED OF HARD-WOOD; MUST ACCOMMODATE THE LARGEST EQUIPMENT USED.
 4. RAMP APPROACHES CAN EITHER BE GRADED OR DUG INTO GROUND. IF NECESSARY, WASHED, CRUSHED STONE WILL BE USED TO RAMP UP TO THE EQUIPMENT PADS.
 5. MINIMUM CULVERT DIAMETER 20 INCHES.
 6. MAINTAIN PADS SO AS NOT TO ALLOW MUD TO ENTER THE STREAM.
 7. EQUIPMENT CANNOT INTERFERE WITH STREAM FLOW.

NOT TO SCALE

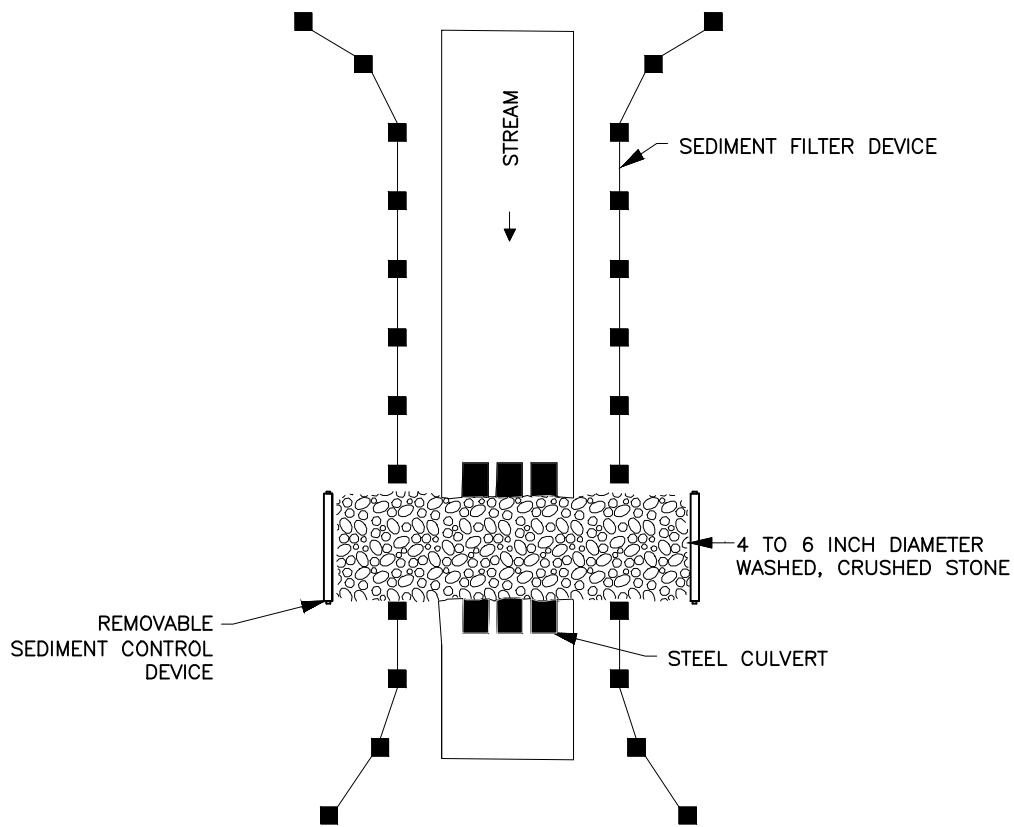


PL-MXP-100 & PL-MXP-200

FIGURE NO. 18

TEMP. EQUIPMENT CROSSING W/ EQUIPMENT PADS

NO.	REVISION	APP'D	DATE					
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	DRAWN BY	PM	DATE	06/17/2015	SCALE: <u> </u> NTS <u> </u>
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	DRAFTING CHECK	TJ	DATE	07/25/2015	DRAWING NUMBER
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO	DATE	07/30/2015	A6987-TYP-32
								ISSUE



- NOTES:
1. MINIMUM CONTOURING OF THE BOTTOM NECESSARY TO LAY THE CULVERTS LEVEL MAY BE DONE.
 2. USE AS MANY CULVERTS AS REQUIRED TO SPAN ENTIRE STREAM BED. (CULVERTS SHALL BE PLACED SIDE BY SIDE.)
 3. MINIMUM CULVERT DIAMETER 20 INCHES.
 4. MAINTAIN ROCK SO AS NOT TO ALLOW MUD TO ENTER THE STREAM.
 5. ALIGN CULVERTS TO PREVENT BANK EROSION.

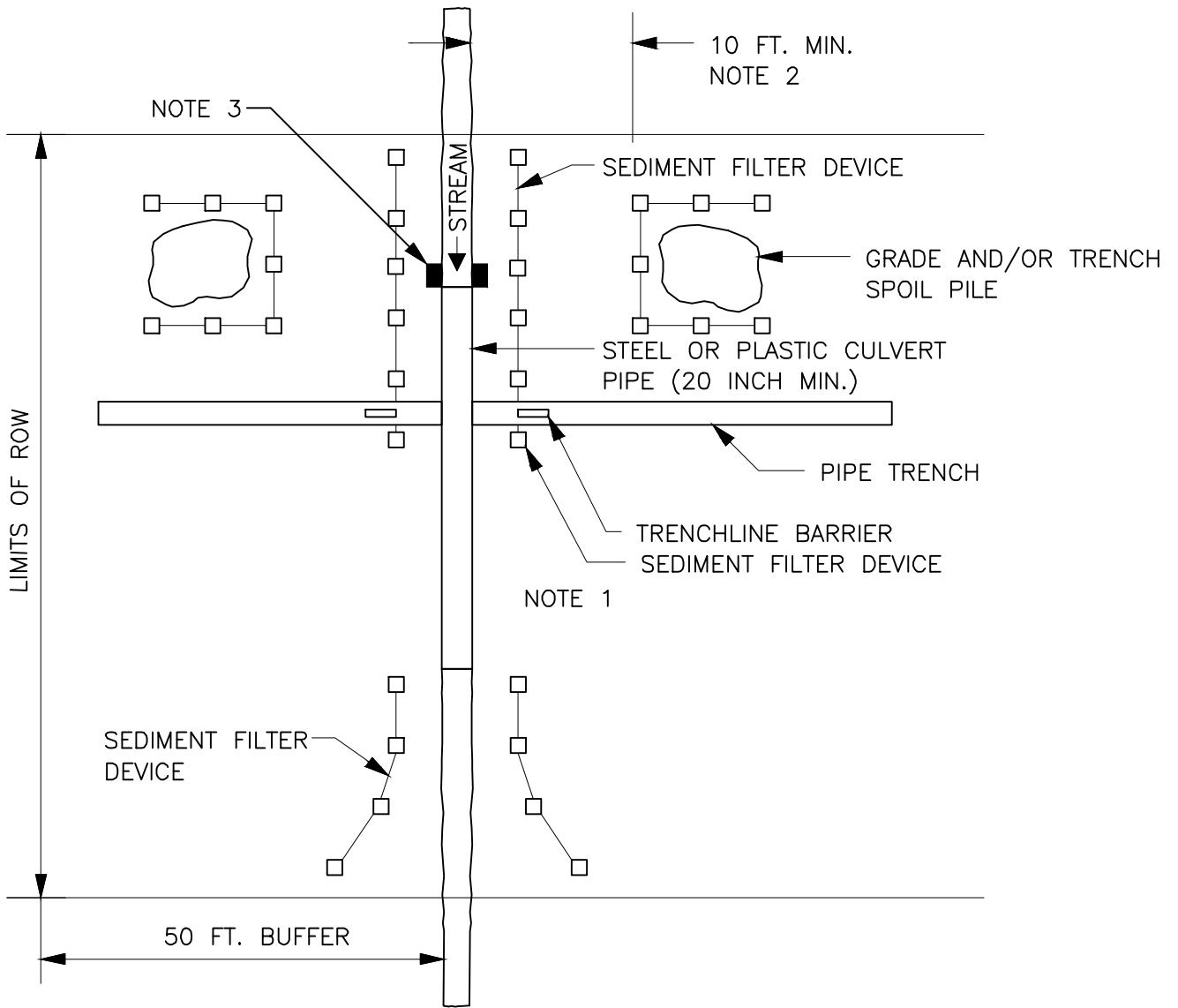
NOT TO SCALE



PL-MXP-100 & PL-MXP-200

FIGURE NO. 17 TEMPORARY EQUIPMENT CROSSING W/ CULVERT AND STONE

NO.	REVISION	APP'D	DATE	DRAWN BY	PM	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16			06/17/2015		A6987-TYP-33	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16		TJ	07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16		SJO	07/30/2015			



NOTES:

1. EQUIPMENT CROSSINGS ARE TO BE PREPARED AS ILLUSTRATED IN FIGURES 17 & 18.
2. GRADE AND TRENCH SPOIL WILL BE STOCKPILED AT LEAST 10 FEET FROM THE WATERS EDGE, TOPOGRAPHY PERMITTING.
3. SAND BAGS OR GRAVEL FILLED SACKS WILL BE PLACED AT UPSTREAM END OF CULVERT TO CHANNEL FLOW.

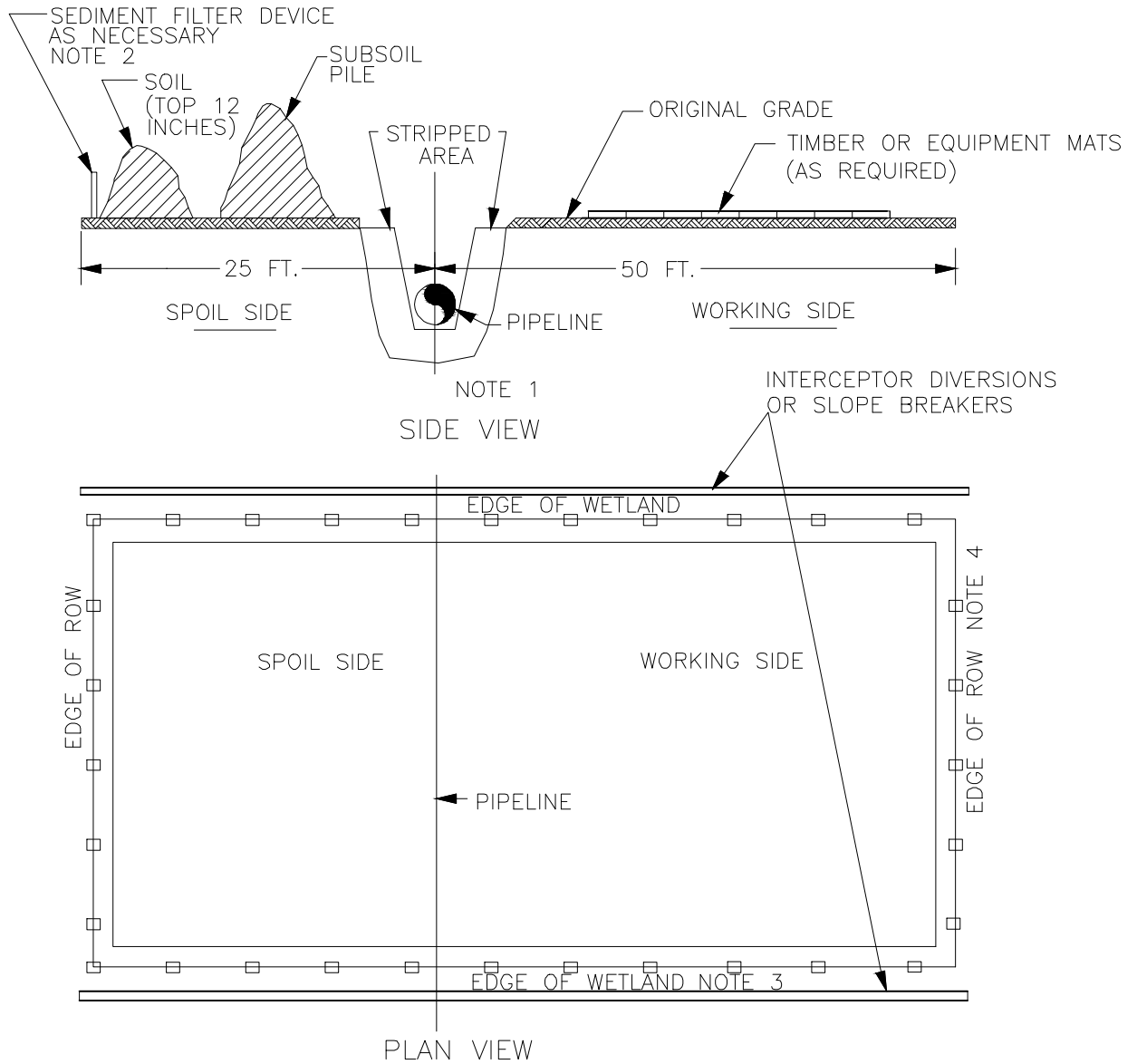
NOT TO SCALE



PL-MXP-100 & PL-MXP-200

FIGURE NO. 13 TYPICAL STREAM CROSSING INTERMITTENT STREAM

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015		A6987-TYP-34	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	SJO	07/30/2015			



NOTES:

1. FOR WETLAND CROSSINGS WITHOUT STANDING WATER OR SATURATED SOILS, UPLAND CONSTRUCTION TECHNIQUES CAN BE USED. IF STANDING WATER OR SATURATED SOILS BECOME PRESENT DURING CONSTRUCTION ACTIVITIES IN WETLANDS THAT WERE INITIALLY DRY, OPERATE PER REQUIREMENTS IN SECTION III.B.2 OF THIS ECS (SEE NOTE 2).
2. WETLANDS WITH STANDING WATER, SATURATED OR FROZEN SOIL, OPERATE EQUIPMENT PER REQUIREMENTS IN SECTION III.B.2. (ECS)
3. IN WETLAND AREAS WHICH CONTAIN NO STANDING WATER OR IF SOILS ARE SATURATED OR FROZEN, TOPSOIL (TOP 12 INCHES) AND SUBSOIL WILL BE STOCKPILED SEPARATELY WITHIN THE WETLAND CONSTRUCTION ROW.
4. A SEDIMENT FILTER DEVICE WILL BE PLACED ACROSS THE ROW AT THE WETLAND'S EDGE, IMMEDIATELY UPSLOPE OF THE WETLAND BOUNDARY.
5. A SEDIMENT FILTER DEVICE WILL BE PLACED AT THE EDGE OF THE ROW AND AROUND SOIL AND SUBSOIL PILES AS NECESSARY.

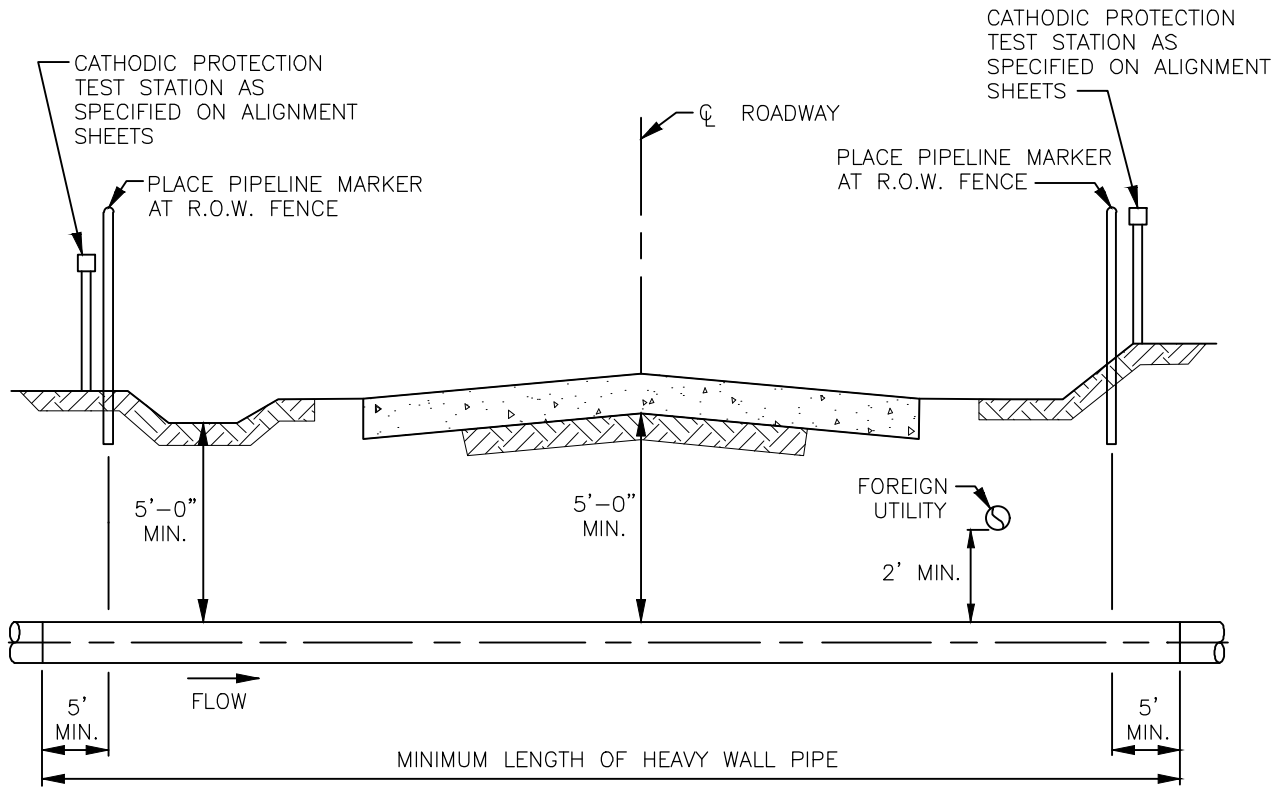
NOT TO SCALE



PL-MXP-100 & PL-MXP-200

FIGURE NO. 19
TYPICAL WETLAND CROSSING

NO.	REVISION	APP'D	DATE	DRAWN BY	PM	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16			06/17/2015		A6987-TYP-35	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16			07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16			07/30/2015			



NOTES:

1. CONTRACTOR SHALL INSTALL THE HEAVY WALL STEEL PIPE, BACKFILL AND REPLACE ROAD SURFACE IN ACCORDANCE WITH PERMIT ISSUED BY THE GOVERNMENT BODY HAVING JURISDICTION AND/OR IN ACCORDANCE WITH THE SPECIFICATIONS, WHICHEVER IS THE MOST STRINGENT.
2. THE PIPELINE SHALL CROSS AS NEAR TO RIGHT ANGLE AS POSSIBLE AND ECONOMICALLY PRACTICAL.
3. THE HEAVY WALL STEEL PIPE SHALL BE INSTALLED TO EXTEND A MINIMUM OF 5 FEET BEYOND THE R.O.W. LIMITS ON EACH SIDE OF ROAD.
4. THE HEAVY WALL STEEL PIPE WITHIN THE RIGHT-OF-WAY LIMITS SHALL BE FULLY EXTENDED DURING INSTALLATION.
5. ANY OPEN CUT TRENCH SHALL BE IN ACCORDANCE WITH STATE OR COUNTY SPECIFICATIONS AS DEFINED IN THE SPECIFICATION AND STANDARD.
6. AS REQUIRED, USE APPROVED CPG/WVDOT FLOWABLE FILL SPECIFICATION FOR BACKFILL MATERIAL ABOVE THE PIPE. SEE TYPICAL DETAIL A6987-TYP-54.
7. REPLACE SUB-GRADE AND ROAD SURFACE MATERIAL WITH EQUAL OR GREATER THICKNESS AND WITH EQUAL OR GREATER MATERIAL AND SPECIFICATIONS TO PROVIDE A SMOOTH AND CONTINUOUS ROAD SURFACE.

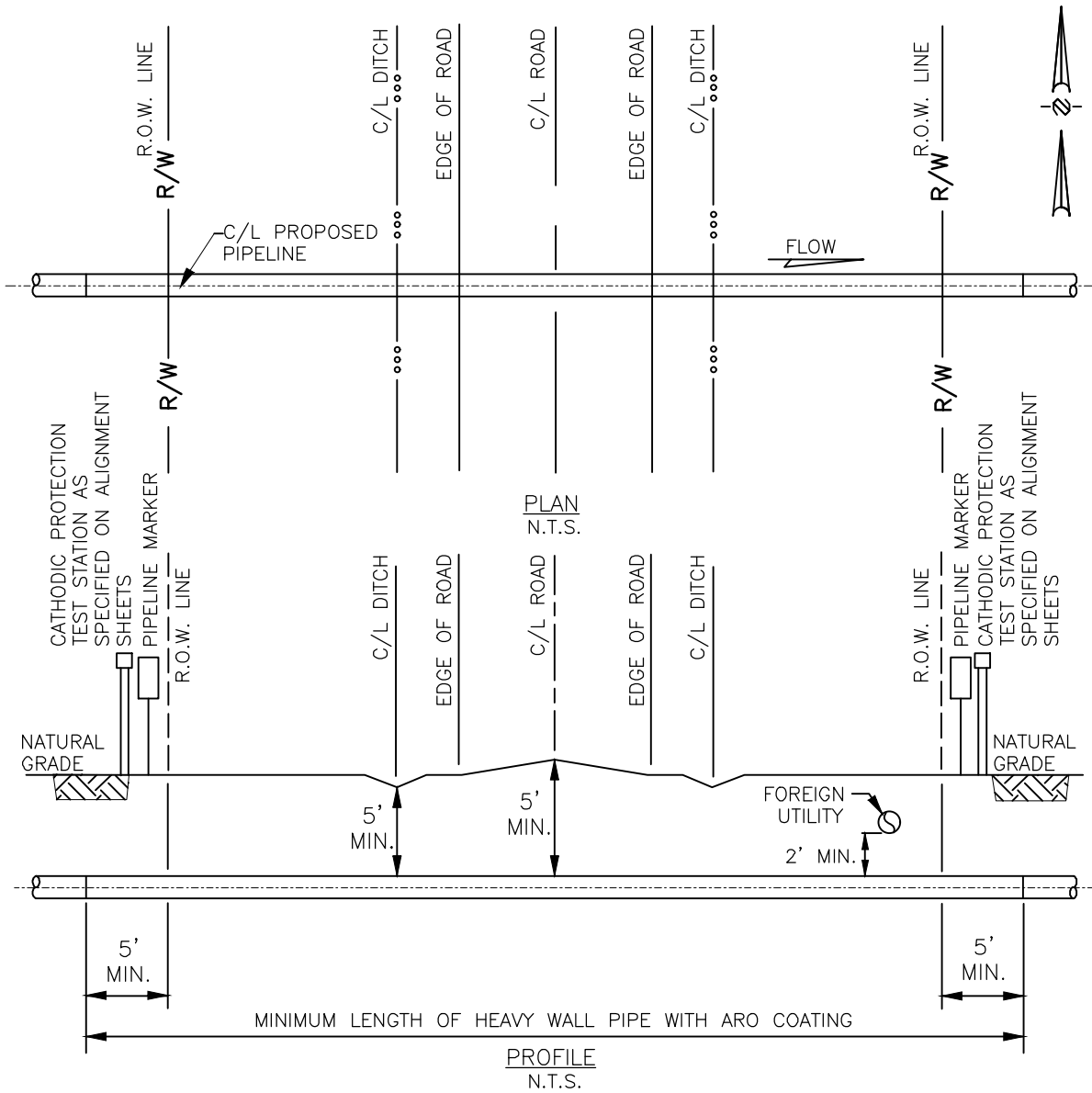


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TYPICAL
OPEN CUT ROAD

NO.	REVISION	APP'D	DATE					
P6	ISSUED FOR FERC SUPPL FILING	SJO	02/17/17	DRAWN BY	PM	DATE	06/17/2015	SCALE: <u> </u> NTS <u> </u>
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	DRAFTING CHECK	TJ	07/25/2015		DRAWING NUMBER
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	ENGINEERS REVIEW	SJO	07/30/2015		A6987-TYP-36
								ISSUE
								P6

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NOTES:

1. NO BENDS IN THE R.O.W.
2. PIPELINE CROSSINGS SHALL BE AS NEAR TO PERPENDICULAR TO THE ROADWAY CENTERLINE AS PRACTICAL.
3. MUST BE CATHODICALLY PROTECTED (ENTIRE PIPELINE).
4. WELDED JOINTS INSIDE R.O.W. SHALL BE 100% X-RAYED FOR WELD QUALITY.
5. MARKERS SHALL BE PLACED AT OR NEAR THE R.O.W. LINE.



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TYPICAL BORED ROAD CROSSING

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P6	ISSUED FOR FERC SUPPL FILING	SJO	02/17/17	PM	06/17/2015		A6987-TYP-37	P6
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	TJ	09/23/2015			
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	SJO	09/23/2015			

TABLE 2A – PERMANENT SEED MIX FOR UPLAND ROW AND WATERBODY CROSSINGS

TYPE	RATE (lbs./ACRE)
SEED ¹	
ORCHARD GRASS AND/OR TALL FESCUE ²	29
BIRDSFOOT TREFOIL (EMPIRE) ³	9
ANNUAL RYE	12
FERTILIZER	
10-10-10 (OR EQUIVALENT)	600 ⁴ (SHOULD NOT BE APPLIED ON STREAM BANKS)
MULCH	
HAY OR STRAW	4,000
AGRICULTURAL LIME	4,000

¹PURE LIVE SEED WITHIN 12 MONTHS OF TESTING

²IF TALL FESCUE IS USED, PLANT ENDOPHYTE-FREE CERTIFIED SEED

³LEGUMES TO BE INOCULATED BY MANUFACTURER'S RECOMMENDATIONS, IF NOT AVAILABLE LEGUMES ARE TO BE INOCULATED AT 4 TIMES RECOMMENDED RATE FOR CONVENTIONAL METHODS AND 10 TIMES RECOMMENDED RATE FOR HYDRO SEEDING.

⁴WHERE WOOD CHIPS ARE SPREAD, ADDITIONAL NITROGEN (12 TO 15 lbs./TON OF CHIPS) WILL BE SPREAD.

⁵SEED RATE MUST BE DOUBLED FOR BROADCAST SEEDING.

TABLE 2B – SEED MIX FOR TEMPORARY STABILIZATION

TYPE	RATE (lbs./ACRE)
SEED	
ANNUAL RYE	40
MULCH	
HAY OR STRAW	6,000

TABLE 2C – SEED MIX REQUIREMENTS IN WETLANDS (FOR STANDING WATER)

TYPE	RATE (lbs./ACRES)
SEED	
ANNUAL RYE	40

¹ANNUAL RYE IS USED AS TEMPORARY RE-VEGETATIVE MEASURE UNTIL INDIGENOUS PLANTS RE-ESTABLISH COVER. A MONITORING PROGRAM WILL BE IN EFFECT TO INSURE ADEQUATE COVER IS ESTABLISHED.

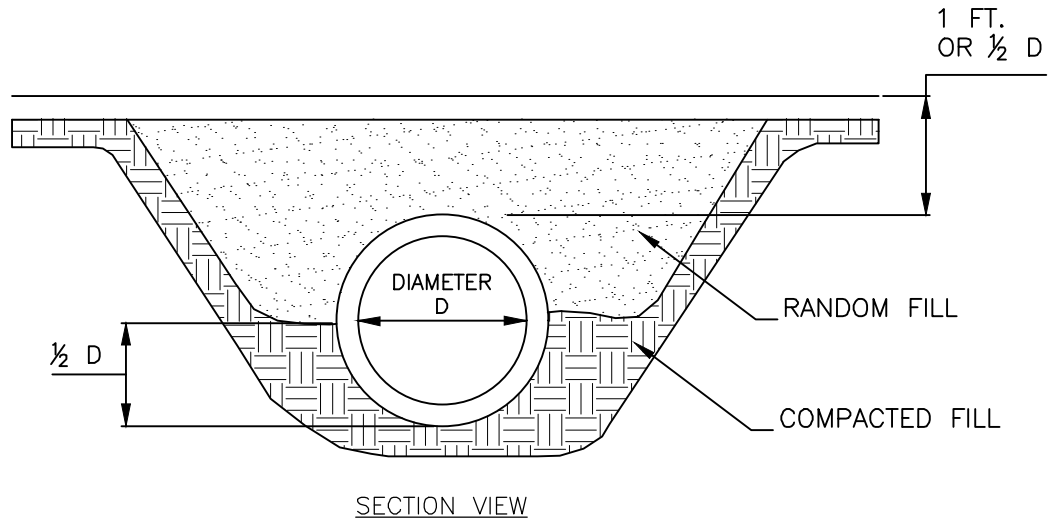


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TABLES
PROJECT SEED MIXES

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: _____	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015	_____		
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	07/25/2015	_____		
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	07/30/2015	_____	A6987-TYP-38	P5

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NOTES:

MINIMUM DIAMETER FOR ANY CULVERT IS 12"; OTHERWISE CULVERT SHALL BE SIZED FOR ANTICIPATED PEAK FLOW. PLACE CULVERT SO BOTTOM IS AT SAME LEVEL AS BOTTOM OF DITCH OR ADJOINING SLOPE. CULVERTS SHALL BE PLACED WITH A SLOPE OF 2 TO 4%. LOWER END SHALL BE AT LEAST 2" BELOW UPPER END.

EXTEND CULVERT 12" BEYOND BASE OF ROAD FILL ON BOTH SIDES. FIRMLY PACK FILL AROUND CULVERT, ESPECIALLY THE BOTTOM HALF.

PROVIDE SUITABLE OUTLET PROTECTION* AND, WHERE APPROPRIATE, INLET PROTECTION.

INSPECT CULVERT WEEKLY: REMOVE ANY FLOW OBSTRUCTIONS AND MAKE NECESSARY REPAIRS IMMEDIATELY.

THIS DETAIL MAY BE USED FOR DITCH RELIEF CULVERTS AND FOR CROSSINGS OF ROADSIDE DITCHES. IT IS NOT APPROPRIATE FOR STREAM CROSSINGS.

INSTALL ECDS AS NEEDED ON DIRT AT ENDS OF CULVERTS (MULCH OR BLANKET).

* FOR STEEP SLOPE (>2H:1V) OFFFALLS, A MINIMUM 20 FOOT LONG R-5 APRON IS RECOMMENDED FOR TEMPORARY ACCESS ROADS WHERE THE RECOMMENDED CULVERT SPACING IS USED. FOR PERMANENT ACCESS ROADS, A MINIMUM R-6 ROCK SIZE IS RECOMMENDED.

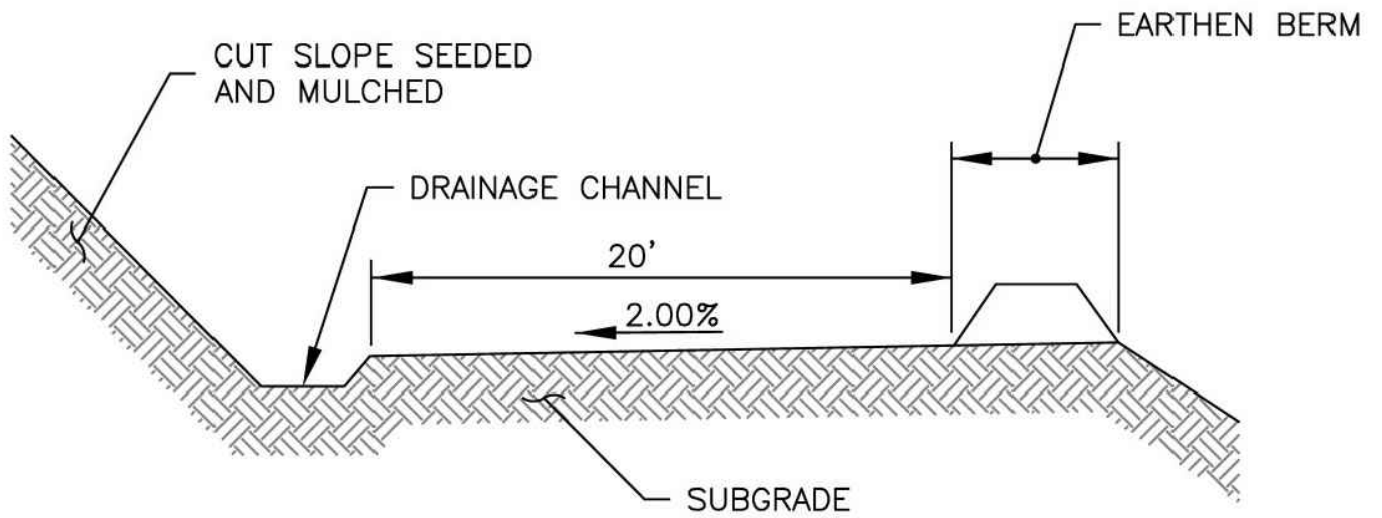
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**STANDARD CONSTRUCTION DETAIL #3-10
DITCH RELIEF CULVERT**

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015		A6987-TYP-39	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO			



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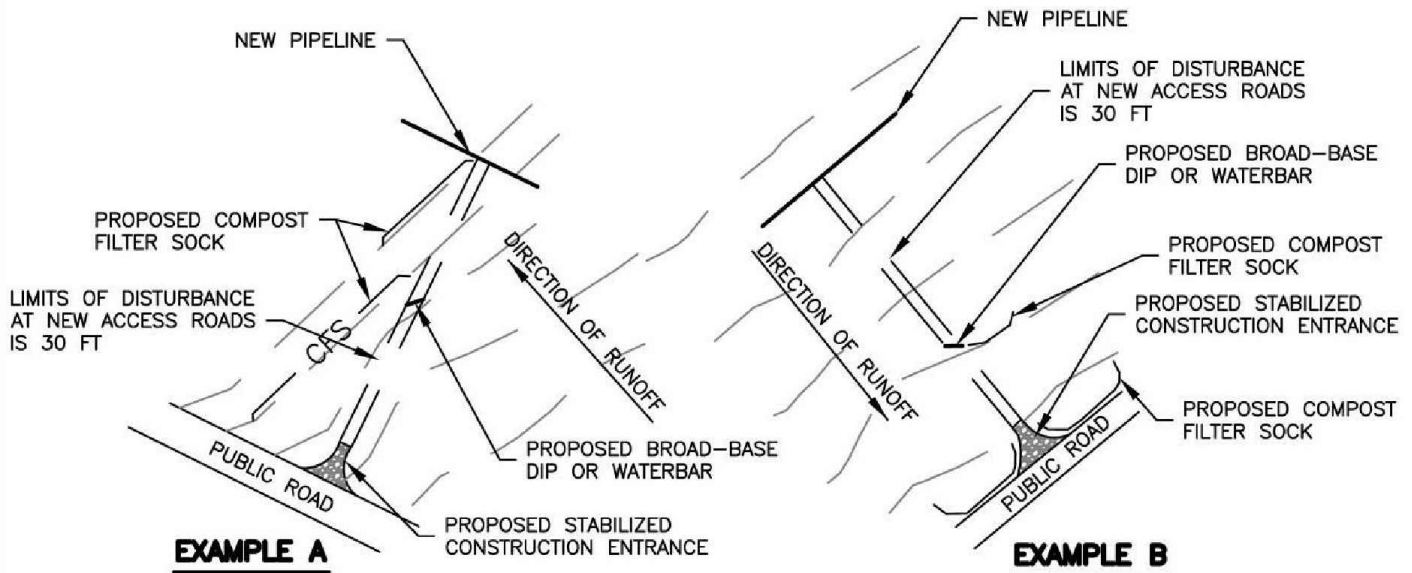
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**FIGURE NO. 23
TYPICAL NEWLY CONSTRUCTED ACCESS ROAD**

NO.	REVISION	APP'D	DATE	DRAWN BY	PM	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16			06/17/2015		A6987-TYP-40	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16		TJ	09/22/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16		SJO	09/22/2015			

STABILIZED CONSTRUCTION ENTRANCE:

1. USE TWO TO FOUR INCH (2-4") WASHED STONE LOW VOLUME ENTRANCES. STONE (4-6") FOR HEAVY USE OR MATERIAL DELIVERY ENTRANCES.
2. LENGTH IS AS REQUIRED, BUT NOT LESS THAN FIFTY (50') (EXCEPT ON SINGLE RESIDENCE LOT WHERE A THIRTY FOOT (30') MINIMUM LENGTH WOULD APPLY).
3. THICKNESS SHOULD NOT BE LESS THAN SIX INCHES (6").
4. THE WIDTH SHALL BE A MINIMUM OF TWENTY FEET (20') BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. GEOTEXTILE FABRICS SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO THE PACING OF STONE.
6. ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF A CULVERT IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES SHALL BE USED.



NOTES:

1. NO SILT FENCE REQUIRED IF CRITERIA FOR A NATURAL VEGETATIVE FILTER (BUFFER) STRIP IS MET AND LOCATED DOWN SLOPE OF CONSTRUCTION. THE VEGETATIVE FILTER (BUFFER) STRIP SHALL BE IN ACCORDANCE WITH VEGETATIVE FILTER (BUFFER) STRIP DETAIL.
2. REGULAR SILT FENCE WILL BE USED WHERE DRAINAGE AREA IS NO MORE THAN 1/4 ACRE PER 100' OF SILT FENCE AND THE MAXIMUM GRADIENT ABOVE FENCE IS 2:1. BELTED SILT RETENTION FENCE SHALL BE UTILIZED WHERE CONDITIONS EXCEED SILT FENCE REQUIREMENTS. SLOPE LENGTH ABOVE BELTED SILT RETENTION FENCE SHALL NOT EXCEED 400'.
3. USE THIS DETAIL FOR ALL PROPOSED/NEW AND UPGRADED EXISTING ACCESS ROADS.

NOT TO SCALE

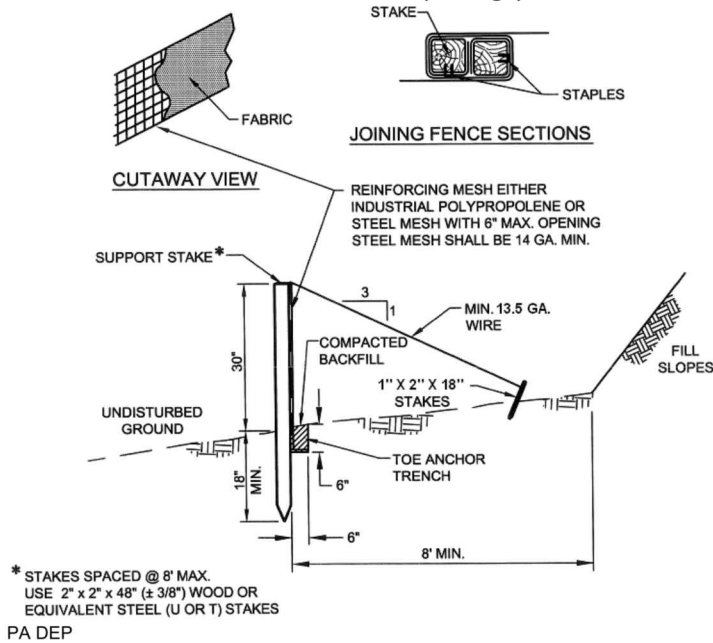


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**FIGURE NO. 24
TYPICAL ACCESS ROAD E&S CONTROL**

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE:	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015	NTS		
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	07/25/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	SJO	07/30/2015		A6987-TYP-41	P5

**STANDARD CONSTRUCTION DETAIL # 4-8
Reinforced Silt Fence (30" High)**



FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3.

FABRIC WIDTH SHALL BE 42" MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES. AN 18" SUPPORT STAKE SHALL BE DRIVEN 12" MINIMUM INTO UNDISTURBED GROUND.

SILT FENCE SHALL BE INSTALLED AT EXISTING LEVEL GRADE. BOTH ENDS OF EACH FENCE SECTION SHALL BE EXTENDED AT LEAST 8 FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT (FIGURE 4.1).

SEDIMENT SHALL BE REMOVED WHERE ACCUMULATIONS REACH HALF THE ABOVEGROUND HEIGHT OF THE FENCE.

ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET (STANDARD CONSTRUCTION DETAIL #4.6).

FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

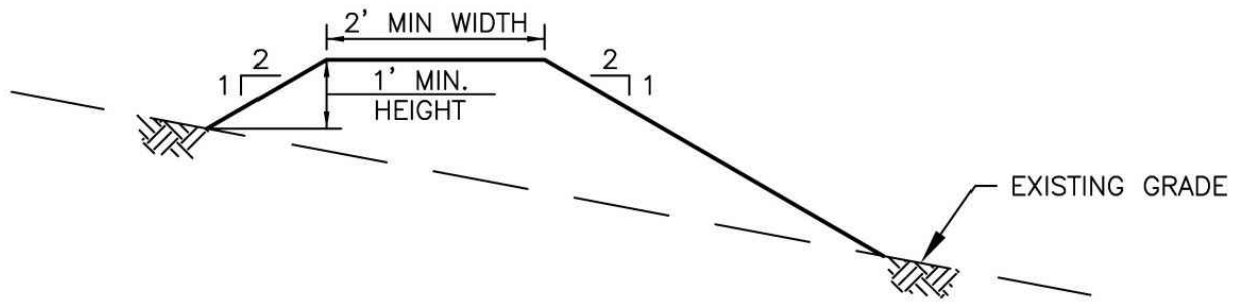
*STAKES SPACED @ 8' MAX.
USE 2"x2"x48" (± 3/8") WOOD OR
EQUIVALENT STEEL (U OR T) STAKES



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**STANDARD CONSTRUCTION DETAIL #4-8
REINFORCED SILT FENCE**

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015		A6987-TYP-42	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	09/23/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	SJO	09/23/2015			



NOT TO SCALE



PL-MXP-100 & PL-MXP-200

**FIGURE NO. 22
TYPICAL EARTHEN BERM**

NO.	REVISION	APP'D	DATE			SCALE: <u> </u> NTS <u> </u>		
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	DRAWN BY	PM	DATE	06/17/2015	
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	DRAFTING CHECK	TJ	DATE	09/22/2015	
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO	DATE	09/22/2015	
							DRAWING NUMBER	ISSUE
							A6987-TYP-43	P5

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IDENTIFICATION MARKER PLACEMENT

THE ROW INSPECTOR WILL IDENTIFY ANY OF THE FOLLOWING LOCATIONS WITHOUT A REQUIRED IDENTIFICATION MARKER:

- BOTH SIDES OF HIGHWAY CROSSINGS
- BOTH SIDES OF COUNTY ROAD CROSSINGS
- BOTH SIDES OF RAILROAD CROSSINGS
- BOTH SIDES OF ASPHALT/GRAVEL ROAD CROSSINGS
- BOTH SIDES OF WATERWAYS
- BOTH SIDES OF ABOVEGROUND PIPE SECTIONS
- BOTH SIDES OF EXPOSED UNDERGROUND PIPE SECTIONS (A TWO-SIDED IDENTIFICATION MARKER MAY BE APPROPRIATE ON SHORT SECTIONS.)
- FENCE LINES
- LOCATIONS WHERE A PIPELINE ENTERS OR EXITS A PUMP, BOOSTER, OR VALVE STATION
- WHEN A PIPELINE IS IN SHARED ROW AND DOES NOT HAVE AN IDENTIFICATION MARKER AT EVERY MARKED LOCATION OF THE OTHER PIPELINE(S).

ALSO IDENTIFY ANY OF THE FOLLOWING AREAS WITH LESS THAN LINE-OF-SIGHT IDENTIFICATION MARKER PLACEMENT. THESE AREAS WILL BE EVALUATED TO DETERMINE WHETHER ADDITIONAL IDENTIFICATION MARKERS ARE NECESSARY TO INFORM THE PUBLIC AND/OR REDUCE THE HAZARDS OF THIRD PARTY DAMAGE.

- RESIDENTIAL AREAS
- COMMERCIAL AREAS
- INDUSTRIAL AREAS
- GRAVEL PITS
- STRIP MINES
- OTHER AREAS OF FREQUENT CONSTRUCTION OR EXCAVATION ACTIVITY

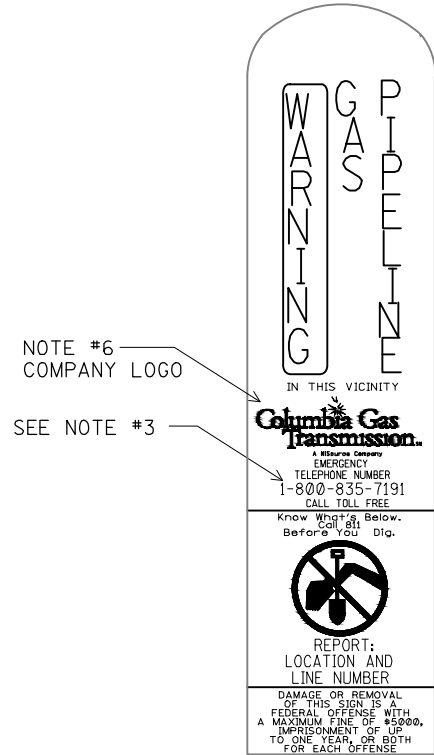
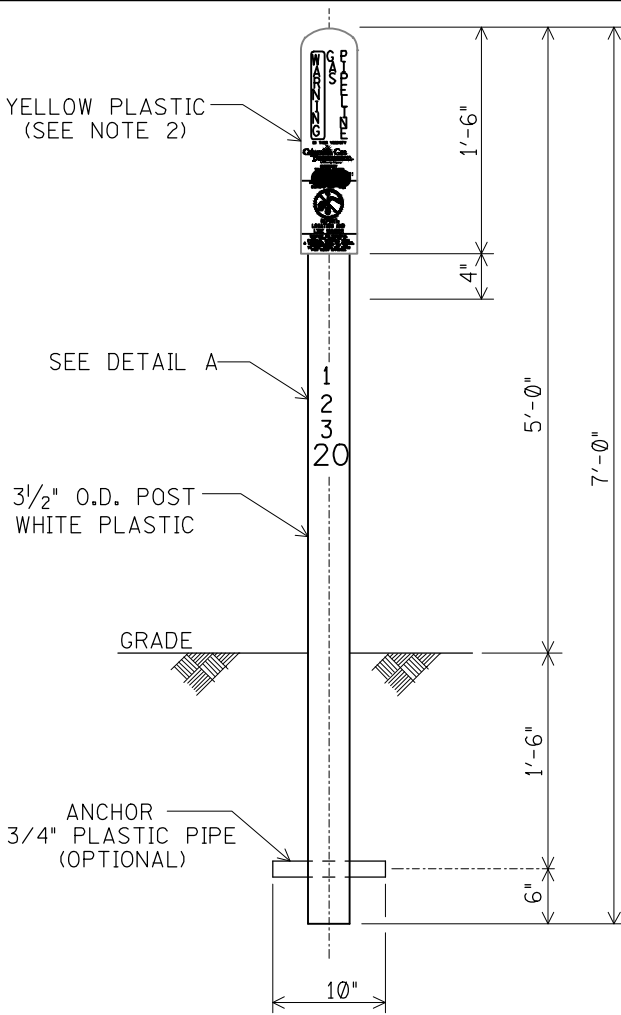
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PIPELINE STD PERMANENT LINE MARKER FOR ROADS, FENCES, FOREIGN LINE CROSSINGS, ETC.

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015		A6987-TYP-44	P5
	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	09/22/2015			
	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	09/22/2015			

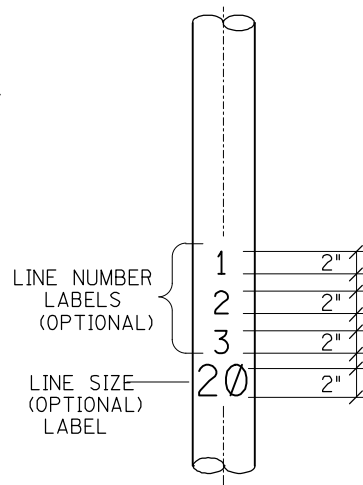


WARNING MESSAGE

ROUND LINE MARKER

NOTES:

1. REFER TO TYPICAL TA-8646 FOR REQUIRED LOCATIONS.
2. WARNING MESSAGE SHOULD BE PERMANENTLY AFFIXED BY VENDOR.
3. MONITORING CENTER TOLL FREE NUMBER.
4. MARKER IS ALSO AVAILABLE AS:
 - A) VENT TOP (WITH OR WITHOUT TEST STATION)
 - B) TEST STATION
5. LETTER FOR "WARNING GAS PIPELINE" SHALL BE AT LEAST 1" TALL AND 1/4" STROKE IN ACCORDANCE WITH 192.707.
6. USE APPROVED COMPANY LOGO AS PER THE ACTUAL OPERATING COMPANY.
7. A WRAP AROUND STICKER IS ALSO AVAILABLE FOR OLDER TOPS THAT ARE ORANGE.



DETAIL A

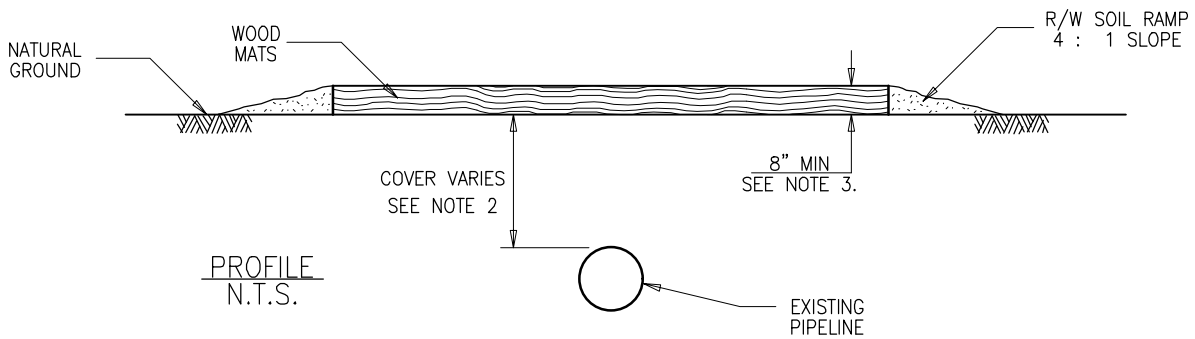
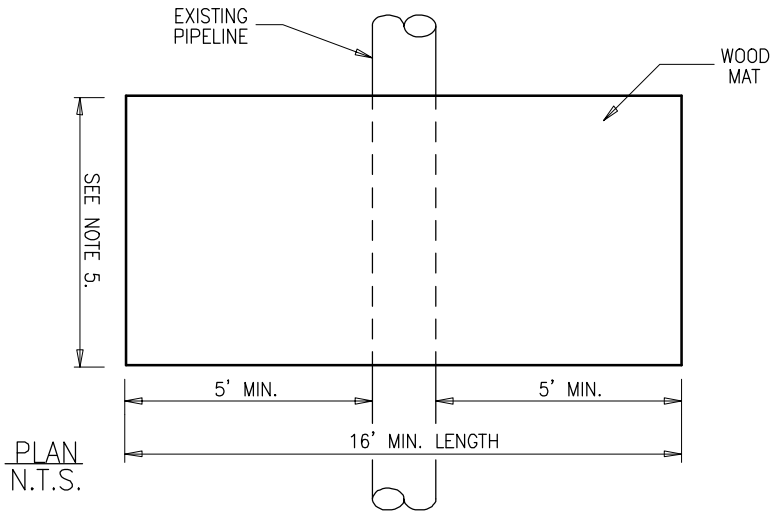
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TYPICAL PERMANENT PIPELINE MARKER

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: _____ NTS	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015		A6987-TYP-45	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	09/22/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	09/22/2015			



NOTES:

1. THE COMPANY REPRESENTATIVE SHALL BE NOTIFIED OF EACH PROPOSED CROSSING SO THAT THE EXISTING PIPELINE(S) CAN BE STAKED. CONTRACTOR SHALL VERIFY THE COVER DEPTH BY HAND EXCAVATING AT THE CROSSING LOCATION. THE PASSING OF EQUIPMENT OVER THE CROSSING WILL NOT BE MADE UNTIL IT HAS BEEN APPROVED BY THE COMPANY REPRESENTATIVE.
2. IF COVER IS LESS THAN 2', OR WHEEL LOAD IS GREATER THAN 16000 LB/AXLE, ADDITIONAL COVER SHALL BE PLACED IN A TRAPEZOIDAL CONFIGURATION WITH THE BERM AT LEAST 10' WIDER THAN THE WIDTH OF THE EQUIPMENT CROSSING THE WOOD MATS OVER THE PIPELINE TO CREATE 3' OVER THE EXISTING PIPE.
3. THE WOOD MAT(S) OVER THE EXISTING LOADED PIPELINE SHALL BE COMPOSED OF TWO LAYERS OF THREE PLY MATS 8' WIDE X 16' LONG. THREE PLY MATS SHALL CONSIST OF THREE ALTERNATING LAYERS OF 2" X 12" DIMENSIONAL LUMBER. THE TOP LAYER OF THE TOP MAT SHALL BE REPLACED WHEN DAMAGED AS DIRECTED BY COMPANY.
4. THE WOOD MAT SHALL EXTEND A MINIMUM OF 5' BEYOND THE OUTER EDGE OF THE PIPELINE THAT WILL BE CROSSED.
5. THE COMBINED WIDTHS OF THE WOOD MATS SHALL BE A MINIMUM OF 5' WIDER THAN THE WIDTH OF THE WEIGHT BEARING PORTION OF THE CONSTRUCTION EQUIPMENT. MULTIPLE MATS MAY BE REQUIRED.

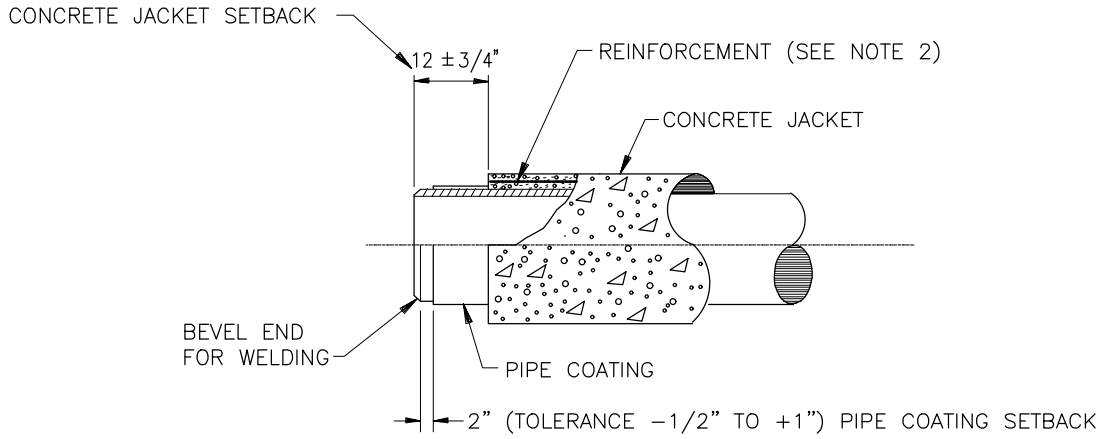
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PL-MXP-100 & PL-MXP-200

**EQUIPMENT CROSSING
EXISTING LOADED PIPELINES**

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: <u>NTS</u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015		A6987-TYP-46	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	09/22/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	SJO	09/22/2015			



CONCRETE COATING
END DETAIL

PIPE DIAMETER	WALL THICKNESS	CONCRETE THICKNESS
26"	0.500"	3.0"
20"	0.375"	2.5"
20"	0.281"	3.0"

1. CONCRETE COATING WITH COMPRESSIVE STRENGTH OF 2500 PSI TO BE INSTALLED OVER FBE COATED PIPE AT LOCATIONS INDICATED ON THE ALIGNMENT SHEETS.
2. REINFORCEMENT WILL CONSIST OF GALVANIZED 6"x6" 10 GAUGE WELDED WIRE MESH. CONCRETE SPACERS SHALL BE USED TO SUPPORT THE WIRE MESH 2" ABOVE THE PIPE. EDGE AND END LAPS SHALL BE A MINIMUM OF 12" AND TIED 12" O.C. STAGGERED.
3. THICKNESS OF CONCRETE SHALL HAVE A TOLERANCE OF -1/4" TO +1/2".
4. CONCRETE TO BE CURED TO 2500 PSI COMPRESSIVE STRENGTH BEFORE MOVING OR LOWERING THE PIPE IN THE DITCH.
5. CONCRETE COATING OF FIELD JOINTS AND FACTORY FURNISHED ELLS IS NOT REQUIRED. FIELD BENDS WILL REQUIRE CONCRETE COATING.
6. CONTRACTOR SHALL FURNISH ALL CONCRETE COATING MATERIALS.

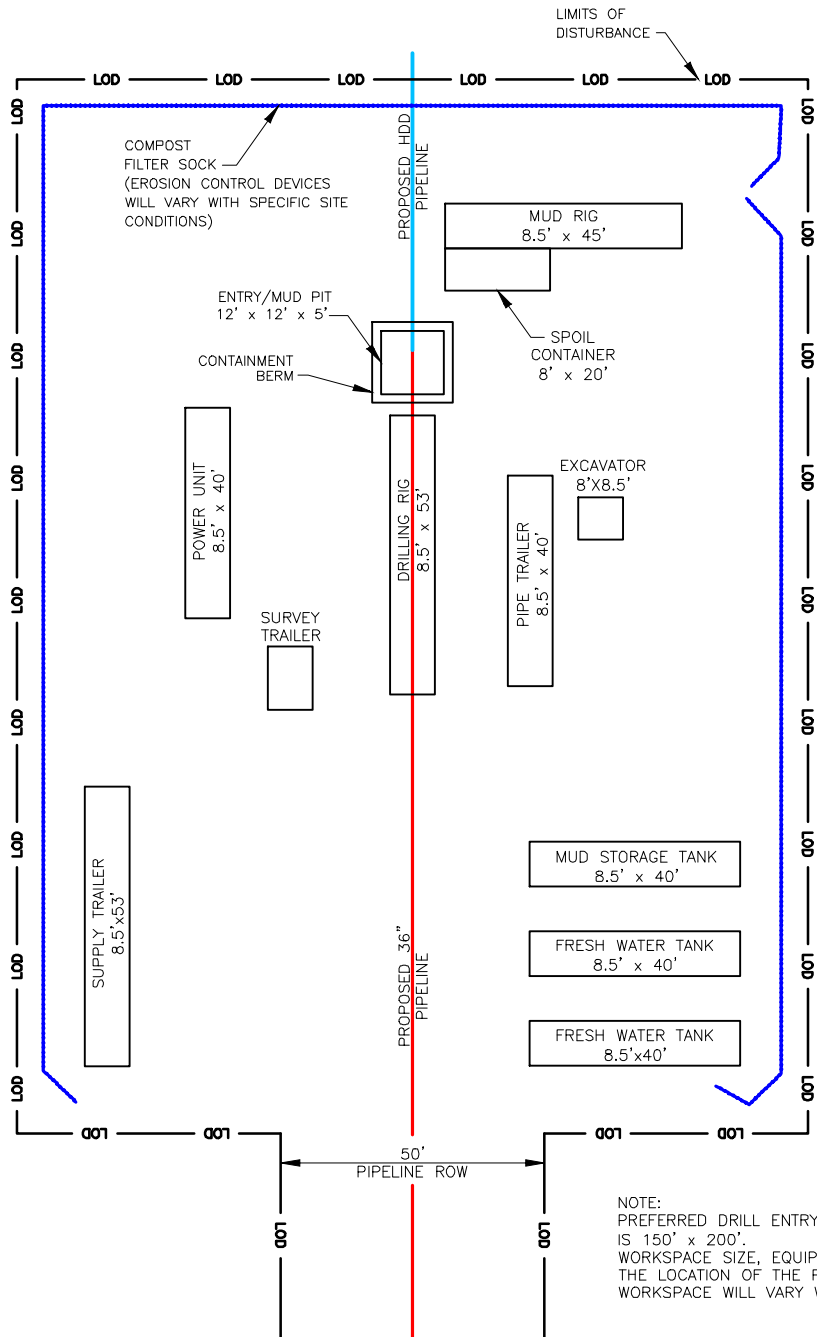


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**PIPELINE STANDARD
CONCRETE PROTECTIVE COATING**

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015		A6987-TYP-47	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	09/22/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO			

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NOTE:
 PREFERRED DRILL ENTRY WORKSPACE SIZE IS 150' x 200'.
 WORKSPACE SIZE, EQUIPMENT LAYOUT, AND THE LOCATION OF THE PIPELINE WITHIN THE WORKSPACE WILL VARY WITH THE SITE CONDITIONS.

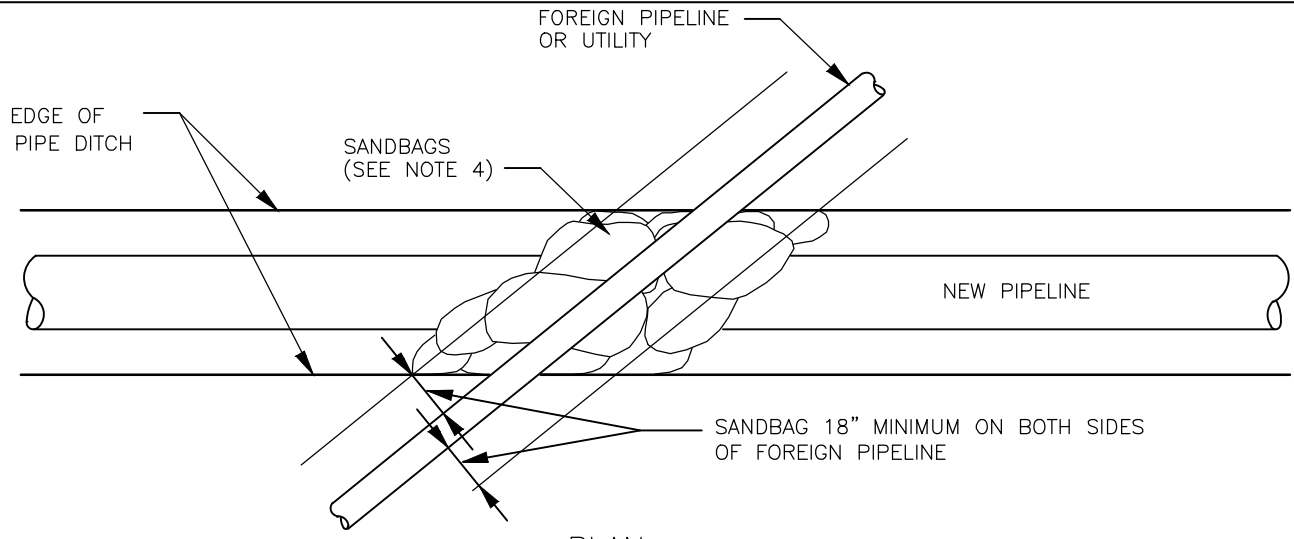
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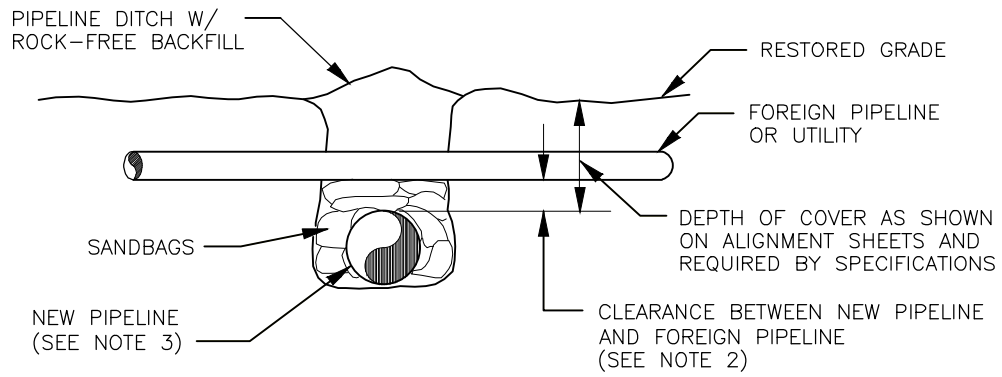
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**TYPICAL
 HDD ENTRY WORKSPACE**

NO.	REVISION	APP'D	DATE	DRAWN BY	DATE	SCALE: <u> </u> NTS 	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	PM	06/17/2015		A6987-TYP-48	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	TJ	09/22/2015			
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	09/22/2015			



PLAN



END VIEW
CROSS SECTION

NOTES:

1. TYPE CP-2 CATHODIC PROTECTION TEST STATION SHALL BE INSTALLED AT FOREIGN PIPELINE CROSSINGS, WHEN INDICATED ON THE ALIGNMENT SHEETS.
2. MAINTAIN 2' MINIMUM CLEARANCE WHEN CROSSING OVER OR UNDER FOREIGN PIPELINES.
3. THE NEW PIPELINE IS TO BE PLACED ABOVE THE FOREIGN PIPELINE OR UTILITY IF IT IS BURIED AT A DEPTH SUCH THAT 2' SEPARATION AND MINIMUM REQUIRED COVER OF 36" CAN BE MAINTAINED. OTHERWISE, THE NEW PIPELINE IS TO BE PLACED UNDER THE FOREIGN PIPELINE OR UTILITY.
4. SANDBAGS CONSIST OF BURLAP BAGS FILLED WITH EARTH FREE OF SHARP ROCKS, TWIGS, AND OTHER OBJECTIONABLE MATERIALS (TOP SOIL SHALL NOT BE USED). USE OF SYNTHETIC MATERIALS FOR BAGS IS NOT ACCEPTABLE.

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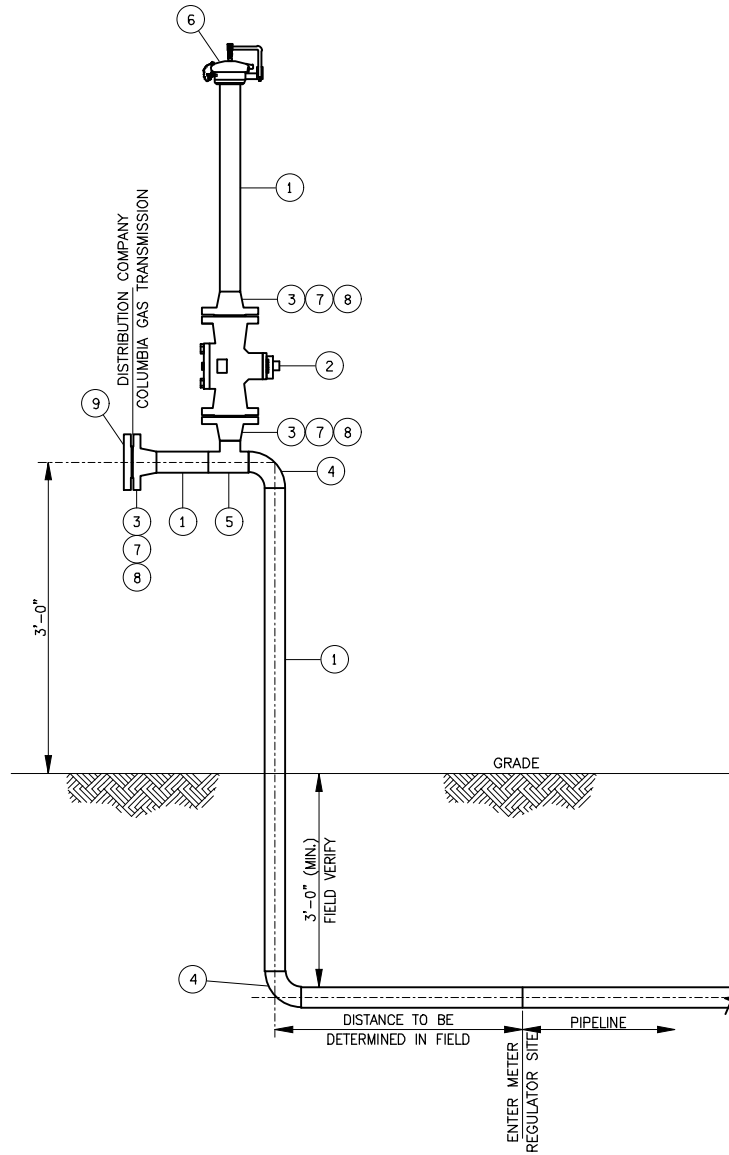


PL-MXP-100 & PL-MXP-200

**FOREIGN PIPELINE
UTILITY CROSSING DETAIL**

NO.	REVISION	APP'D	DATE					
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	DRAWN BY	PM	DATE	06/17/2015	SCALE: <u> </u> NTS <u> </u>
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16	DRAFTING CHECK	TJ	DATE	09/22/2015	DRAWING NUMBER
P3	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO	DATE	09/22/2015	ISSUE
							A6987-TYP-49	P5

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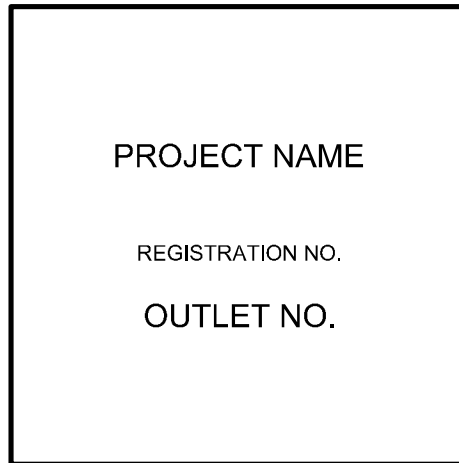
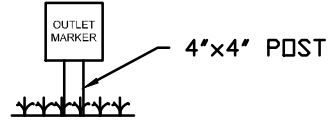
MATERIAL LISTING				
ITEM	QTY	UNIT	SIZE	DESCRIPTION
1	30	FT	2"	2 3/8" O.D. STEEL LINE PIPE, 0.218" W.T., GRADE X-42, SEAMLESS, PLAIN END, BEVELED FOR WELDING, BARE
2	1	EA	2"	VALVE, PLUG, F.E., NORD, FIG. 2245, R.F., 1440#, C.S., LUB RP, A600, F/F = 11-1/2"
3	3	EA	2"	FLANGE, WELD NECK, R.F., ANSI 600, F.S. BORED TO 0.218"
4	2	EA	2"	ELL, WELDED, 90°, L.R., Y-52, 0.218" W.T.
5	1	EA	2"	TEE, STRAIGHT, WELDED, Y-52, 0.218" W.T.
6	1	EA	2"	CLOSURE, YALE, FIGURE 500R, ANSI 600, 0.218" W.T., 1.939" BORE, HORIZONTAL
7	24	EA	5/8"	BOLT, STUD, 5/8" DIA. x 4-1/4" LG., ASTM A-193, GR B7, THREADED ENTIRE LENGTH, WITH 2-2H NUTS
8	3	EA	2"	GASKET, SPIRAL WOUND, ANSI 600, MFG. FLEXITALLIC, STYLE CGI, 316L/FLEXITE SUPER, 1/8" THK, ID = 2-3/4" x OD = 4-3/8"
9	1	EA	2"	FLANGE, BLIND, R.F., ANSI 600



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HIGH PRESSURE DOMESTIC METER

NO.	REVISION	APP'D	DATE	DRAWN BY	PD	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
P5	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16		PD	01/_/2016		A6987-TYP-50	P5
P4	ISSUED FOR 50% REVIEW	SJO	05/09/16		TJ	_/_/2016			
P3	ISSUED FOR FERC FILING	SJO	04/29/16			_/_/2016			



NOTES:

1. THE SIGN WILL BE AT LEAST 24" X 24".
2. THE LETTERS WILL BE 1.6" AND 0.8" IN TEXT HEIGHT.

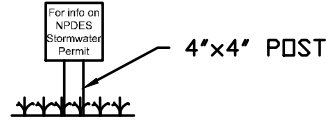
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TYPICAL OUTLET MARKER

NO.	REVISION	APP'D	DATE			DATE	SCALE: <u> </u> NTS <u> </u>		
P3	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	DRAWN BY	TBH	03/16/2016			
P2	ISSUED FOR 50% REVIEW	SJO	05/09/16	DRAFTING CHECK	PAD	03/21/2016		DRAWING NUMBER	ISSUE
P1	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO	03/21/2016	A6987-TYP-51	P3	






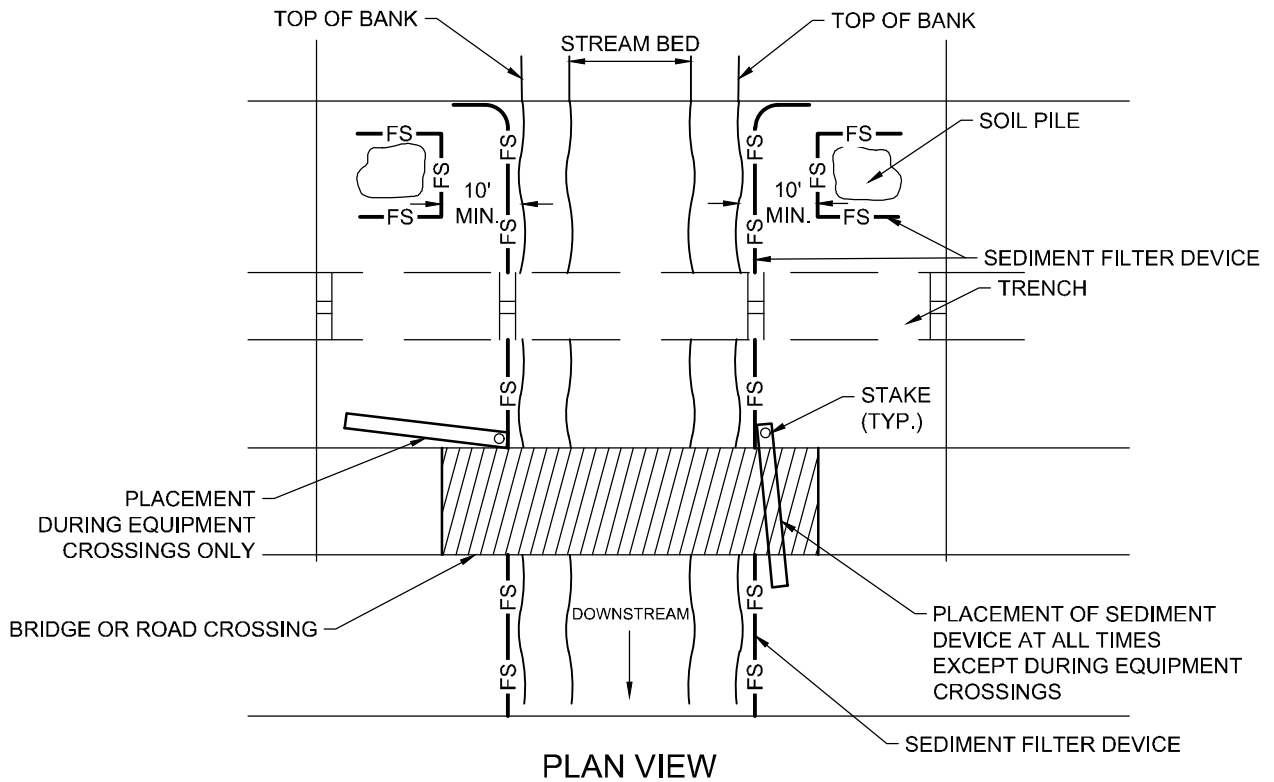
**For info on NPDES
Stormwater Permit**
 To Comment on Sediment Control Plan
Call: 800-654-5227
OR
DEP.Plan@wv.gov
 DEP 601 57th Street SE, Charleston, WV 25304
Application Date: XX/XX/XX
Name of Project,
Project Description
 (area code) Tele. No.

NOTES:

1. THE SIGN WILL BE AT LEAST 24" X 24".
2. THE LETTERS WILL BE 1.6" AND 0.8" IN TEXT HEIGHT.

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				PL-MXP-100 & PL-MXP-200					
				TYPICAL PUBLIC NOTICE/ENTRANCE SIGN					
NO.	REVISION	APP'D	DATE	DRAWN BY	TBH	DATE	SCALE: <u> </u> NTS <u> </u>		
P3	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16			03/16/2016			
P2	ISSUED FOR 50% REVIEW	SJO	05/09/16	DRAFTING CHECK	PAD	03/21/2016		DRAWING NUMBER	ISSUE
P1	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO	03/21/2016		A6987-TYP-52	P3



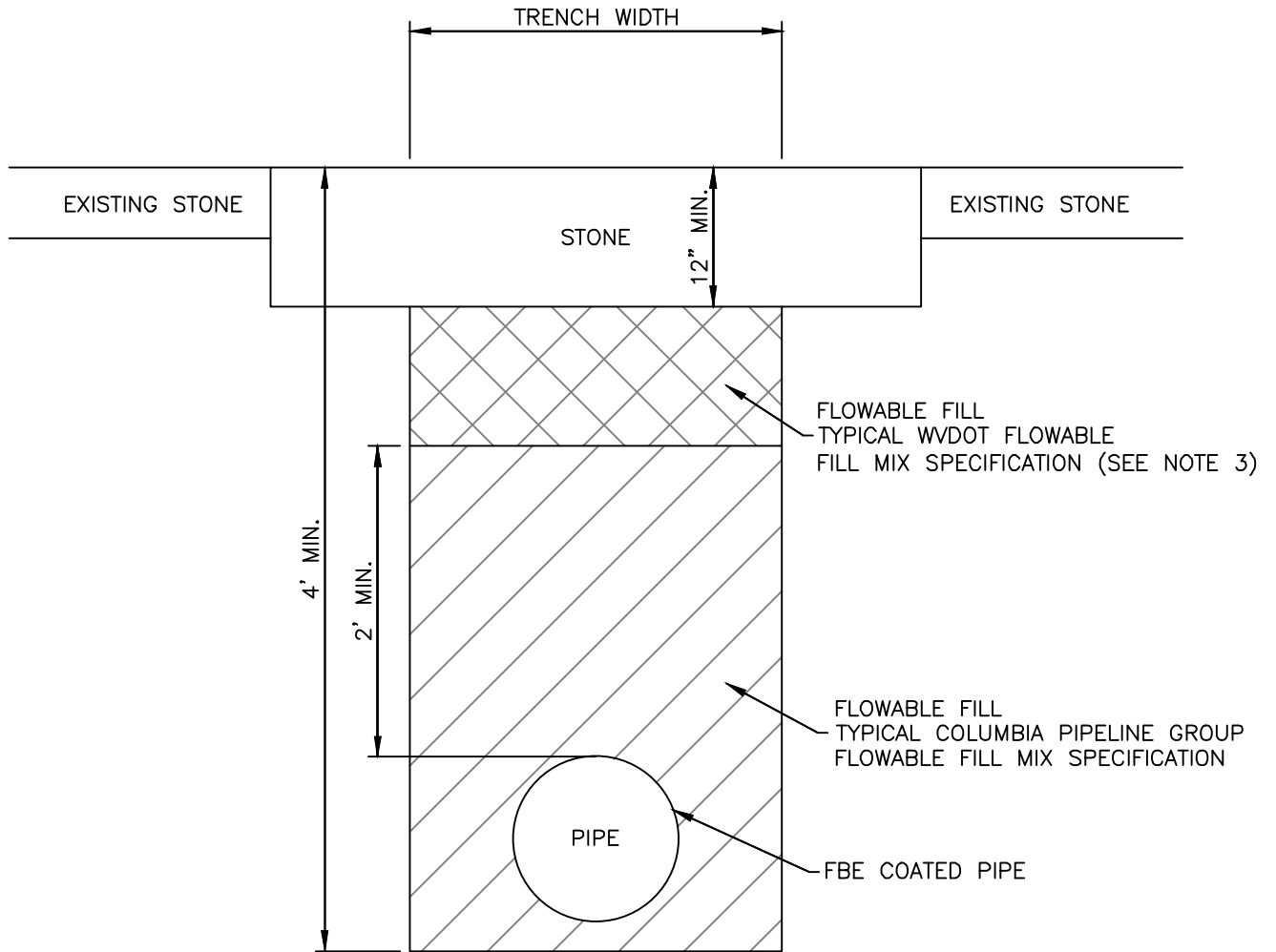
NOTES:

1. SEDIMENT FILTER DEVICE (COMPOST FILTER SOCK, SILT FENCE, OR OTHER APPROVED EQUIVALENT), SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SEDIMENT FILTER DEVICE SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. SEDIMENT FILTER DEVICE AT ENTRANCES SHALL BE IN PLACE FROM START OF DAY, DURING CONSTRUCTION ACTIVITIES AND AT END OF DAY. SEDIMENT FILTER DEVICE MAY BE TEMPORARILY MOVED AS SHOWN ON THE LEFT DURING EQUIPMENT CROSSING ACTIVITIES BUT MUST BE REPLACED IMMEDIATELY UPON COMPLETION OF CROSSING.
3. COMPOST FILTER SOCK TO BE FILTREXX SILTSOXX OR APPROVED EQUIVALENT.



PL-MXP-100 & PL-MXP-200
TYPICAL REMOVABLE SEDIMENT FILTER DEVICE

NO.	REVISION	APP'D	DATE			DATE	SCALE: <u> </u> NTS <u> </u>		
P3	ISSUED FOR FERC SUPPL FILING	SJO	10/02/16	DRAWN BY	TBH	03/16/2016			
P2	ISSUED FOR 50% REVIEW	SJO	05/09/16	DRAFTING CHECK	PAD	03/21/2016		DRAWING NUMBER	ISSUE
P1	ISSUED FOR FERC FILING	SJO	04/29/16	ENGINEERS REVIEW	SJO	03/21/2016		A6987-TYP-53	P3



ROAD REPAIR DETAIL (TYPE C)
NOT TO SCALE

NOTES:

1. IF GAS PIPELINE IS IN NEED OF REPAIR OR REPLACEMENT, EXISTING PIPE CROSSING MUST BE CUT/CAPPED AND GROUTED AND A NEW PIPELINE MUST BE INSTALLED IN A NEW LOCATION. (NO SAME DITCH REPLACEMENT)
2. STONE TO MEET REQUIREMENTS OF WVDOT, SECTION 307 CLASS I.
3. CONCRETE FLOWABLE FILL MIX TO BE 1000 PSI MINIMUM.

SHEET 1 OF 2



PL-MXP-100 & PL-MXP-200

**TYPICAL GRAVEL
ROAD REPAIR DETAIL**

NO.	REVISION	APP'D	DATE	DRAWN BY	CB	DATE	SCALE: <u> </u> NTS <u> </u>	DRAWING NUMBER	ISSUE
△						12/21/2016			
△						01/04/2017			
△									
P	ISSUED FOR FERC SUPPL FILING	SJO	02/17/17	ENGINEERS REVIEW	SJO	01/04/2017		A6987-TYP-54	P

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THIS MIX IS DESIGNED FOR SELF-LEVELING FLOW AND IS INTENDED TO BE EXCAVATABLE.
IT IS INTENDED FOR PIPELINE BACKFILL APPLICATIONS ONLY.

Flowable Fill Mix Specification for Pipelines						
Materials to Produce One Cubic Yard of Mix					W/C RATIO: 3.67	
Material	Type	SSD (lbs/vd)	Volume (%)	Abs. Vol. (ft ³)	ASTM	Sp. Gr.
Cement	I/II	85	1.5	0.43	C150	3.15
Fine Aggregate	A	2423	55	14.82	C33	2.62
Water	Potable	312	18.5	5		1.00
Air	*Master Cell 25	N/A	25	6.75	C260	1.01
Total Weight		2820 lbs/yd ³				
Unit Weight		104.4 lbs/ft ³				
Total Volume				27.00 ft ³		

*USE BASF CORP. MASTER BUILDERS MASTER CELL 25 OR EQUIVALENT TO PRODUCE 25% AIR VOLUME IN THE MIX. MASTER CELL 25 MUST BE USED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES.

- MASTER CELL 25 IS TO BE ADDED AT THE JOB SITE ONLY.
- MIX RATE FOR MASTER CELL 25 IS **18.80 OZ/CWT OF CEMENT.**
- MIX AT HIGH RPM MIXING SPEED FOR AT LEAST 10-12 MINUTES.

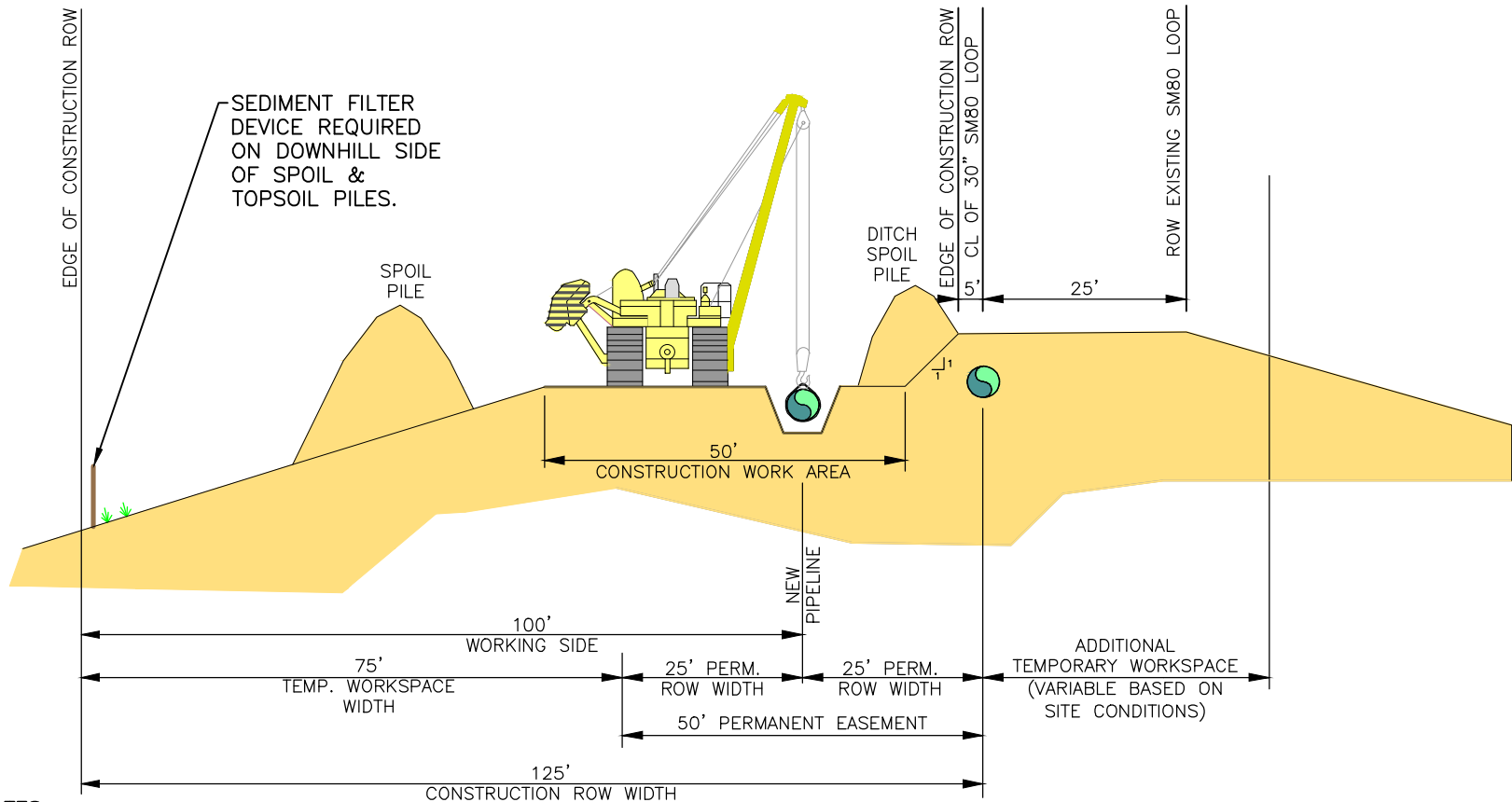
SHEET 2 OF 2



PL-MXP-100 & PL-MXP-200

TYPICAL GRAVEL ROAD REPAIR DETAIL

NO.	REVISION	APP'D	DATE	DRAWN BY	CWB	DATE	SCALE: _____ NTS _____	DRAWING NUMBER	ISSUE
△						12/21/2016			
△				DRAFTING CHECK	TJ	01/04/2017			
△	ISSUED FOR FERC SUPPL FILING	SJO	02/17/17	ENGINEERS REVIEW	SJO	01/04/2017		A6987-TYP-54	P



NOTES:

1. TOPSOIL AND SUBSOIL PILES WILL BE ADEQUATELY PROTECTED FROM EROSION AND SEDIMENTATION BY USE OF A SEDIMENT FILTER DEVICE, MULCH, TEMPORARY SEEDING, TACKIFIERS, OR FUNCTIONAL EQUIVALENT.
2. STRIP TOPSOIL IN ACCORDANCE WITH THE ECS AND LANDOWNER/LAND MANAGING AGENCY AGREEMENTS.
3. RESTORE CUT SLOPE USING NATIVE MATERIAL OR SUITABLE MATERIAL IN ACCORDANCE WITH COLUMBIA SPECIFICATIONS WHERE NATIVE MATERIAL HAS BEEN DETERMINED TO BE INAPPROPRIATE. DISPOSE OF ANY EXCESS MATERIAL IN ACCORDANCE WITH APPLICABLE LANDOWNER AND PERMIT CONDITIONS.
4. ON STEEP SIDE SLOPES CENTERLINE OF PIPE MAY BE ADJUSTED WITHIN PERM. ROW TO MEET FIELD CONDITIONS.

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 - CPG MOUNTAINEER XPRESS\CA - TJOHNSON

PL-MXP-100			
TYPICAL SM-80 LOOP PARALLEL ON SIDE SLOPE			
NO.	REVISION	APP'D	DATE
△			
△			
P	ISSUED FOR FERC SUPPL FILING	SJ0	02/17/17
DRAWN BY	PM	DATE	SCALE: <u> </u> NTS
DRAFTING CHECK	TJ	12/16/16	DRAWING NUMBER
ENGINEERS REVIEW	SO	12/16/16	A6987-TYP-55
			ISSUE
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