



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Jim Justice , Governor
Austin Caperton , Cabinet Secretary
www.dep.wv.gov

Friday, March 03, 2017
WELL WORK PERMIT
Vertical / New Drill

COLUMBIA GAS TRANSMISSION, LLC (A)
P. O. BOX 1273

CHARLESTON, WV 253251273

Re: Permit approval for RIPLEY 12597
47-035-03027-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.



James A. Martin
Chief

Operator's Well Number: RIPLEY 12597
Farm Name: DEBERRY, MICHAEL W. & BILLIE J.
U.S. WELL NUMBER: 47-035-03027-00-00
Vertical / New Drill
Date Issued: 3/3/2017

Promoting a healthy environment.

03/03/2017

PERMIT CONDITIONS

West Virginia Code §22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code §22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. Pursuant to 35 CSR 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR 4-19.1.c, if the operator is unable to sample and analyze any water well or spring with one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
4. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
5. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours
7. Well work activities shall not constitute a hazard to the safety of persons.
8. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced, drilling ceased, completion of any other permitted well work and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

WW-2B1
(5-12)

Well No. Ripley 12597

West Virginia Department of Environmental Protection
Office of Oil and Gas

NOTICE TO SURFACE OWNERS

The well operator named below is preparing to file for a permit from the state to drill a new well. Before a well work permit can be filed with the Chief of the Office of Oil and Gas, the well operator is required to have given notice of the right to request water well or spring analytical testing. This notice shall be given to the owners or occupants of land which have a water well or spring being utilized for human consumption, domestic animals, or other general use and which is located within 1000 feet of the proposed well site.

With this form, the operator is giving you notice of your right to request analytical testing. The operator is required to sample and analyze the water wells or springs of all owners or occupants who request it. Therefore, if you wish to have your water well or spring tested, contact the operator named below.

All sampling shall be completed prior to drilling. Within thirty (30) days of the receipt of such sample analyses the operator shall submit the results to the Chief of the Office of Oil and Gas and to the owners or occupants who may have requested them.

Be advised, you have the right to sample and analyze any water supply at your own expense.

Listed below is the laboratory chosen by operator to perform analysis, and contactor chosen to collect sample.

Certified Laboratory Name ALS Environmental
Sampling Contractor ALS Environmental

Well Operator Columbia Gas Transmission, LLC
Address 1700 MacCorkle Ave. SE
Charleston, WV 25314-1273
Telephone 304-357-2000

FOR OPERATOR'S USE ONLY: Below, or on an attached page, list those persons which were given this notice. Place an asterisk beside the one(s) that contacted you and requested sampling and analyses. If there were no requests made, indicate by underling which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site, the Chief may require the operator to test wells up to 2000 feet from the proposed site.

RAWAY STRICKLAND
4348 PARKERSBURG ROAD
SANDYVILLE, WV 25275

ERNEST & CRESTINA HARNES
4317 PARKERSBURG ROAD
SANDYVILLE, WV 25275

FILED
Office of Oil and Gas
JAN 30 2017
WV Department of
Environmental Protection
03/03/2017

Elevations
 GL: 797 ft
 KB: 809 ft

**4-1/2" Flowstring
 Double Barrier Diagram**

Ripley well 12597

~ not to scale ~

Maximum surface operating pressure 1675 psig

Maximum reservoir pore pressure 1900 psig

20" Conductor @ 32 ft KB

13-3/8" Surface csg @ 560 ft KB
 48 ppf H-40 ERW API 8rd thread
 Internal Yield: 1730 psi
 Collapse: 770 psi
 Joint Strength: 322 Klbs
 (cemented to surface)

There are three residential water wells within 1290 ft of proposed Ripley well 12597. Only one of the water well depths is known; reported as 50 ft, or at an elevation of 549 ft above sea level. However, due to the shallow depth of well, it is suspect that the depth is representative of the deepest fresh water zone. As a result, the depth of the deepest fresh water zone for Ripley 12597 will be assumed to be at an elevation of 304 ft above sea level, which is based on data obtained for Ripley well 12596.

Deepest Fresh Water @ 505 ft KB

Salt Sand 1707-1833 ft TVD KB

Berea 2494 - 2500 ft TVD KB

KOP @ 2610 ft TVD KB

9-5/8" Intermediate #1 csg @ 2550 ft TVD KB
 36 ppf J-55 ERW LTC API 8rd thread
 Internal Yield: 3520 psi (SF = 1.8)
 Collapse: 2020 psi
 Body Yield Strength: 564 Klbs
 Joint Strength: 453 Klbs
 (cemented to surface)

[Handwritten Signature]
 12-20-16

7" Interm #2 @ 5168 ft MD KB (4975 ft TVD)
 23 ppf N-80 ERW LTC API 8rd thread
 Internal Yield: 6340 psi (SF = 3.3)
 Collapse: 3830 psi
 Body Yield Strength: 532 Klbs
 Joint Strength: 442 Klbs
 (cement bottom 1000' with 50/50 Pozmix lead and Class A tail)

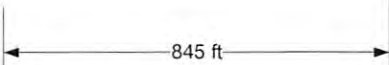
Marcellus shale 5088 - 5104 ft MD KB (4895 - 4911 ft TVD KB)

Onondaga limestone cap rock
 5104 - 5208 ft MD KB
 (4911 - 5015 ft TVD KB)

Oriskany storage 5208 - 5246 ft MD KB (5015 - 5053 ft TVD KB)

Helderberg limestone 5246 - 5313 ft MD KB
 (5053 - 5120 ft TVD KB)

4-1/2" Flowstring @ 5313 ft MD KB (5120 ft TVD)
 11.6 ppf P-110 USS-CDC HTQ modified API BTC
 Internal Yield: 10710 psi (SF = 5.6)
 Collapse: 7580 psi
 Body Yield Strength: 367 Klbs
 Joint Strength: 385 Klbs
 (cemented to 2100 ft with 50/50 Pozmix lead and Class A tail)



TD 5313 ft MD KB
 (5120 ft TVD KB)



TransCanada

Jackson County, WV
Ripley
Ripley 12597

Wellbore #1

Plan: Design #3

QES Well Planning Report

14 December, 2016

RECEIVED
Office of Oil and Gas
JAN 10 2017
WV Department of
Environmental Protection

03/03/2017



Well Planning Report



Database:	EDM5002	Local Co-ordinate Reference:	Well Ripley 12597
Company:	TransCanada	TVD Reference:	well @ 809.0usft (Rig 12' KB)
Project:	Jackson County, WV	MD Reference:	well @ 809.0usft (Rig 12' KB)
Site:	Ripley	North Reference:	Grid
Well:	Ripley 12597	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #3		

Project	Jackson County, WV		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	West Virginia Southern Zone		

Site	Ripley				
Site Position:		Northing:	686,397.57 usft	Latitude:	38° 52' 58.324 N
From:	Map	Easting:	1,769,353.28 usft	Longitude:	81° 41' 58.435 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.43 °

Well	Ripley 12597					
Well Position	+N/-S	-1,424.7 usft	Northing:	684,972.83 usft	Latitude:	38° 52' 44.550 N
	+E/-W	4,174.7 usft	Easting:	1,773,528.01 usft	Longitude:	81° 41' 5.510 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	797.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/28/2016	-7.81	66.42	51,881

Design	Design #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	34.88

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,610.0	0.00	0.00	2,610.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,022.6	28.88	34.88	3,005.4	83.5	58.2	7.00	7.00	0.00	34.88	
4,190.7	28.88	34.88	4,028.1	546.4	380.9	0.00	0.00	0.00	0.00	
4,912.7	0.00	0.00	4,720.0	692.5	482.8	4.00	-4.00	0.00	180.00	
5,312.7	0.00	0.00	5,120.0	692.5	482.8	0.00	0.00	0.00	0.00	PBHL - Ripley 12597

RECEIVED
 Office of Oil and Gas
 JAN 03 2017
 WV Department of
 Environmental Protection



Well Planning Report



Database:	EDM5002	Local Co-ordinate Reference:	Well Ripley 12597
Company:	TransCanada	TVD Reference:	well @ 809.0usft (Rig 12' KB)
Project:	Jackson County, WV	MD Reference:	well @ 809.0usft (Rig 12' KB)
Site:	Ripley	North Reference:	Grid
Well:	Ripley 12597	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #3		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
Salt Sand										
1,707.0	0.00	0.00	1,707.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
Berea										
2,494.0	0.00	0.00	2,494.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
9 5/8"										
2,550.0	0.00	0.00	2,550.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
Build 7° / 100'										
2,610.0	0.00	0.00	2,610.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,700.0	6.30	34.88	2,699.8	4.1	2.8	4.9	7.00	7.00	0.00	0.00
2,800.0	13.30	34.88	2,798.3	18.0	12.6	22.0	7.00	7.00	0.00	0.00
2,900.0	20.30	34.88	2,894.0	41.7	29.1	50.8	7.00	7.00	0.00	0.00
3,000.0	27.30	34.88	2,985.4	74.8	52.1	91.2	7.00	7.00	0.00	0.00
EOB @ 28.88° Inc. / 34.88° Azm										
3,022.6	28.88	34.88	3,005.3	83.5	58.2	101.8	7.00	7.00	0.00	0.00
3,100.0	28.88	34.88	3,073.1	114.2	79.6	139.2	0.00	0.00	0.00	0.00
3,200.0	28.88	34.88	3,160.7	153.8	107.2	187.5	0.00	0.00	0.00	0.00
3,300.0	28.88	34.88	3,248.2	193.4	134.8	235.8	0.00	0.00	0.00	0.00
3,400.0	28.88	34.88	3,335.8	233.1	162.5	284.1	0.00	0.00	0.00	0.00
3,500.0	28.88	34.88	3,423.4	272.7	190.1	332.4	0.00	0.00	0.00	0.00
3,600.0	28.88	34.88	3,510.9	312.3	217.7	380.7	0.00	0.00	0.00	0.00
3,700.0	28.88	34.88	3,598.5	351.9	245.3	429.0	0.00	0.00	0.00	0.00
3,800.0	28.88	34.88	3,686.0	391.6	273.0	477.3	0.00	0.00	0.00	0.00
3,900.0	28.88	34.88	3,773.6	431.2	300.6	525.6	0.00	0.00	0.00	0.00
4,000.0	28.88	34.88	3,861.2	470.8	328.2	573.9	0.00	0.00	0.00	0.00
4,100.0	28.88	34.88	3,948.7	510.4	355.8	622.2	0.00	0.00	0.00	0.00
Drop 4° / 100'										

RECEIVED
 Office of Oil and Gas
 WV Department of Environmental Protection
 03/03/2017



Well Planning Report



Database:	EDM5002	Local Co-ordinate Reference:	Well Ripley 12597
Company:	TransCanada	TVD Reference:	well @ 809.0usft (Rig 12' KB)
Project:	Jackson County, WV	MD Reference:	well @ 809.0usft (Rig 12' KB)
Site:	Ripley	North Reference:	Grid
Well:	Ripley 12597	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #3		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,190.7	28.88	34.88	4,028.1	546.4	380.9	666.0	0.00	0.00	0.00	
4,200.0	28.51	34.88	4,036.3	550.0	383.4	670.5	4.01	-4.01	0.00	
4,300.0	24.51	34.88	4,125.8	586.6	409.0	715.1	4.00	-4.00	0.00	
4,400.0	20.51	34.88	4,218.1	618.0	430.8	753.4	4.00	-4.00	0.00	
4,500.0	16.51	34.88	4,312.9	644.1	449.0	785.1	4.00	-4.00	0.00	
4,600.0	12.51	34.88	4,409.7	664.6	463.3	810.2	4.00	-4.00	0.00	
4,700.0	8.51	34.88	4,508.0	679.6	473.7	828.4	4.00	-4.00	0.00	
4,800.0	4.51	34.88	4,607.4	688.9	480.2	839.7	4.00	-4.00	0.00	
4,900.0	0.51	34.88	4,707.3	692.5	482.7	844.1	4.00	-4.00	0.00	
EOD @ Vertical										
4,912.7	0.00	34.88	4,720.0	692.5	482.8	844.2	4.00	-4.00	0.00	
5,000.0	0.00	0.00	4,807.3	692.5	482.8	844.2	0.00	0.00	0.00	
5,100.0	0.00	0.00	4,907.3	692.5	482.8	844.2	0.00	0.00	0.00	
Onondaga										
5,103.7	0.00	0.00	4,911.0	692.5	482.8	844.2	0.00	0.00	0.00	
7"										
5167.7	0.00	0.00	4975	692.5	482.8	844.2	0.00	0.00	0.00	
5,200.0	0.00	0.00	5,007.3	692.5	482.8	844.2	0.00	0.00	0.00	
Oriskany										
5,207.7	0.00	0.00	5,015.0	692.5	482.8	844.2	0.00	0.00	0.00	
Helderberg										
5,245.7	0.00	0.00	5,053.0	692.5	482.8	844.2	0.00	0.00	0.00	
5,300.0	0.00	0.00	5,107.3	692.5	482.8	844.2	0.00	0.00	0.00	
TD @ 5313' MD / 5120' TVD										
5,312.7	0.00	0.00	5,120.0	692.5	482.8	844.2	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL - Ripley 12597 D#	0.00	0.00	5,120.0	692.5	482.8	685,665.35	1,774,010.78	38° 52' 51.430 N	81° 40' 59.470 W	
- hit/miss target										
- Shape										
- plan hits target center										
- Point										

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)		Name	Casing Diameter (")	Hole Diameter (")	
2,550.0	2,550.0	9 5/8"		9-5/8	12-1/4	
5,152.7	4,960.0	7"			8-3/4	

RECEIVED
 Office of Oil and Gas
 JAN 03 2017
 WV Department of
 Environmental Protection



Database:	EDM5002	Local Co-ordinate Reference:	Well Ripley 12597
Company:	TransCanada	TVD Reference:	well @ 809.0usft (Rig 12' KB)
Project:	Jackson County, WV	MD Reference:	well @ 809.0usft (Rig 12' KB)
Site:	Ripley	North Reference:	Grid
Well:	Ripley 12597	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #3		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,707.0	1,707.0	Salt Sand		0.00	
2,494.0	2,494.0	Berea		0.00	
5,103.7	4,911.0	Onondaga		0.00	
5,207.7	5,015.0	Oriskany		0.00	
5,245.7	5,053.0	Helderberg		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
2,610.0	2,610.0	0.0	0.0	Build 7° / 100'	
3,022.6	3,005.3	83.5	58.2	EOB @ 28.88° Inc. / 34.88° Azm	
4,190.7	4,028.1	546.4	380.9	Drop 4° / 100'	
4,912.7	4,720.0	692.5	482.8	EOD @ Vertical	
5,312.7	5,120.0	692.5	482.8	TD @ 5313' MD / 5120' TVD	

RECEIVED
Office of Oil and Gas
JAN 03 2017
WV Department of
Environmental Protection



TransCanada

Project: Jackson County, WV
 Site: Ripley
 Well: Ripley 12597
 Wellbore: Wellbore #1
 Design: Design #3
 Latitude: 38° 52' 44.550 N
 Longitude: 81° 41' 5.510 W
 Ground Level: 797.0
 well @ 809.0usft (Rig 12' KB)

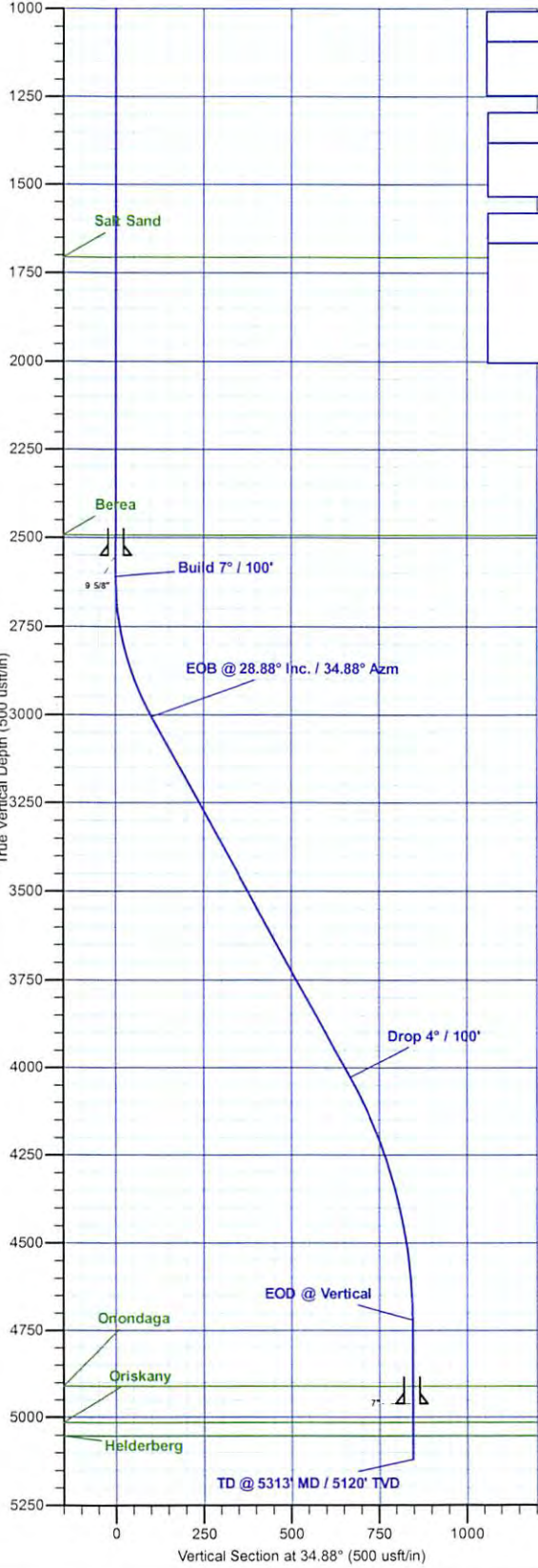


PROJECT DETAILS: Jackson County, WV

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: West Virginia Southern Zone
 System Datum: Mean Sea Level

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Ripley 12597, Grid North
 Vertical (TVD) Reference: well @ 809.0usft (Rig 12' KB)
 Section (VS) Reference: Slot - (0.0N, 0.0E)
 Measured Depth Reference: well @ 809.0usft (Rig 12' KB)
 Calculation Method: Minimum Curvature



WELL DETAILS: Ripley 12597

+N/-S	+E/-W	Northing	Ground Level: Easting	797.0 Latitude	Longitude
0.0	0.0	684972.83	1773528.01	38° 52' 44.550 N	81° 41' 5.510 W

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL - Ripley 12597 D#2	5120.0	692.5	482.8	685665.36	1774010.78	38° 52' 51.430 N	81° 40' 59.470 W

SECTION DETAILS

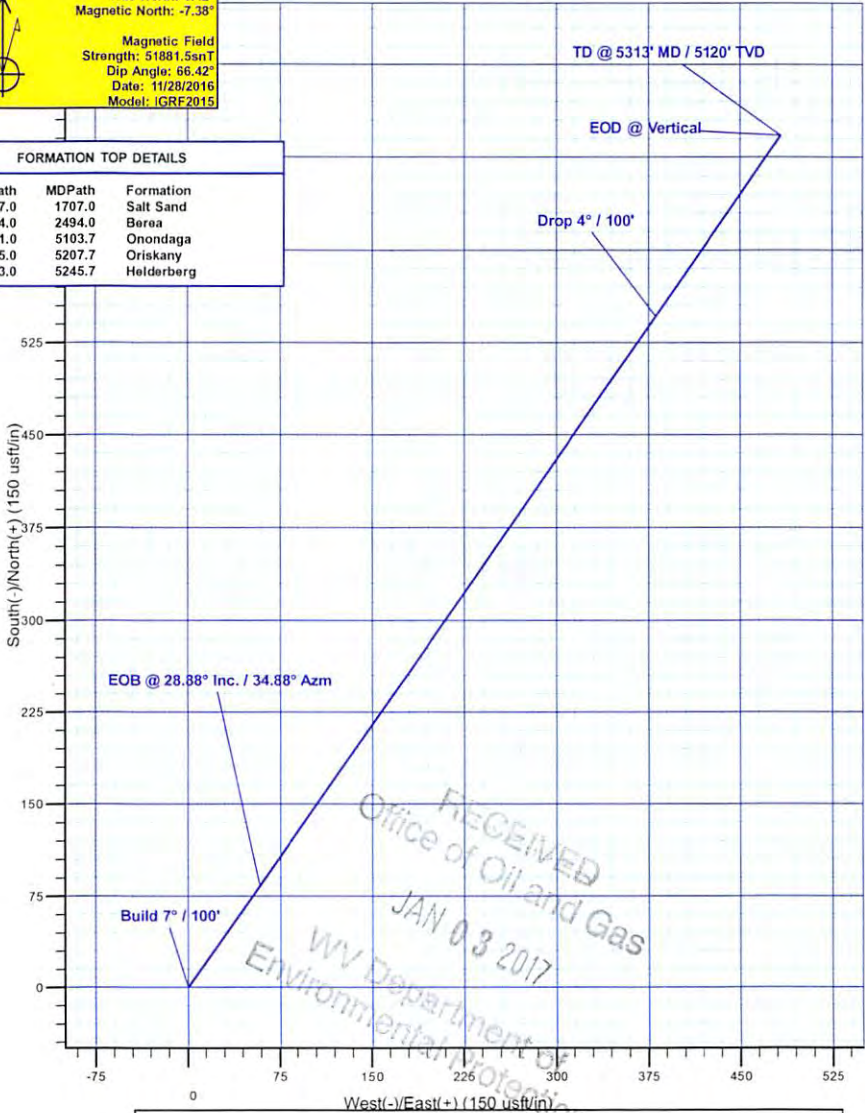
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2610.0	0.00	0.00	2610.0	0.0	0.0	0.00	0.00	0.0	Build 7° / 100'
3022.6	28.88	34.88	3005.4	83.5	58.2	7.00	34.88	101.8	EOB @ 28.88° Inc. / 34.88° Azm
4190.7	28.88	34.88	4028.1	546.4	380.9	0.00	0.00	666.0	Drop 4° / 100'
4912.7	0.00	0.00	4720.0	692.5	482.8	4.00	180.00	844.2	EOD @ Vertical
5312.7	0.00	0.00	5120.0	692.5	482.8	0.00	0.00	844.2	TD @ 5313' MD / 5120' TVD

MGT Azimuths to Grid North
 True North: 0.42°
 Magnetic North: -7.38°

Magnetic Field
 Strength: 51881.5snT
 Dip Angle: 66.42°
 Date: 11/28/2016
 Model: IGRF2015

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1707.0	1707.0	Salt Sand
2494.0	2494.0	Berea
4911.0	5103.7	Onondaga
5015.0	5207.7	Oriskany
5053.0	5245.7	Helderberg



RECEIVED
 Office of Oil and Gas
 JAN 03 2017
 WV Department of Environmental Protection

WW-2A
(Rev. 6-14)

1.) Date: 12/17/16
2.) Operator's Well Number Riplev 12597
State County Permit
3.) API Well No.: 47- 035 -

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE AND APPLICATION FOR A WELL WORK PERMIT**

4) Surface Owner(s) to be served: (a) Name Michael and Billie DeBerr Address 3980 Parkersburg Rd Sandvville, WV 25275-6671
(b) Name _____ Address _____
(c) Name _____ Address _____
5) (a) Coal Operator Name _____ Address _____
(b) Coal Owner(s) with Declaration Name not operated Address _____
(c) Coal Lessee with Declaration Name not operated Address _____
6) Inspector Jamie Stevens Address 105 Kentuck Rd Kenna, WV 25248 Telephone 304-206-7775

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas
OR

X Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through ___ on the above named parties by:

- _____ Personal Service (Affidavit attached)
- X _____ Certified Mail (Postmarked postal receipt attached)
- _____ Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 35 CSR 4, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

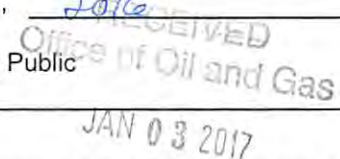
Well Operator Columbia Gas Transmission, LLC
By: James E. Amos
Its: Senior Well Services Engineer
Address: 48 Columbia Gas Rd Sandvville, WV 25275
Telephone: 304-373-2412
Email: james_amos@transcanada.com

Subscribed and sworn before me this 20 day of December, 2016

Robin Whiting Notary Public
My Commission Expires May 21, 2017

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov **03/03/2017**



**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6, Section 8(d)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
surface	Mabel Landfried and Harry K Landfried	Columbia Gas Transmission, LLC	Storage Lease 1052291-000	83 / 210
bottom hole	Otis Coast and Katie Coast	Columbia Gas Transmission, LLC	Storage Lease 1052786-00	84 / 527


**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources
- WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator:
By: Its:

Columbia Gas Transmission, LLC
 James E. Amos 
 Senior Well Services Engineer

L 12 030 \$C

Water Wells and Springs in Proximity to Ripley New Drills

* well / spring to be tested in blue highlight

Well	Landowner	Well or Spring	Requested by Landowner (yes / no)	Sample Date	Water Well or Spring Coordinates			Distance from Proposed Storage Well	GL Elevation (Google Earth)	Well Depth	Well Depth above MSL
					Lat	Long					
Ripley 12597	Randy Strickland	water well	no		38 52 53.82	81 41 13.78		1170	614		
Ripley 12597	Michael & Billie DeBerry	none									
Ripley 12597	Larry Hoschar	none									
Ripley 12597	Bob Pitts (formerly Hill)	water well but no longer in use	no		???	???		???	???	???	
Ripley 12597	Ernest & Chestina Haynes	water well	no		38 52 51.20	81 41 19.16		1290	599	50	549

RECEIVED
 Office of Oil and Gas
 JAN 03 2017
 WV Department of
 Environmental Protection

RECEIVED
 Office of Oil and Gas
 JAN 03 2017

WV Department of
 Environmental Protection

3503027T

WW-9
(5/16)

API Number 47 - 035
Operator's Well No. Ripley 12597

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Columbia Gas Transmission, LLC OP Code 307032

Watershed (HUC 10) Mud Run Quadrangle Sandyville

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes No

Will a pit be used? Yes No

If so, please describe anticipated pit waste: fresh and salt water, FW based drilling fluid, cement returns, cuttings

Will a synthetic liner be used in the pit? Yes No If so, what ml.? 30

Proposed Disposal Method For Treated Pit Wastes:

- Land Application (if selected provide a completed form WW-9-GPP)
- Underground Injection (UIC Permit Number 34-009-23821, 34-009-23823, 34-009-23824, 34-105-23619)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

Will closed loop system be used? If so, describe: yes - steel flow line to earthen pit or circulating tank

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. freshwater

-If oil based, what type? Synthetic, petroleum, etc.

Additives to be used in drilling medium? NaCl, KCl, biocide, polymer, bentonite, attapulgite, starch, surfactant

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. leave in pit

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) cement (if solidifying)

-Landfill or offsite name/permit number? if needed: Rumpke Beech Hollow Landfill (Wellston, OH)

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

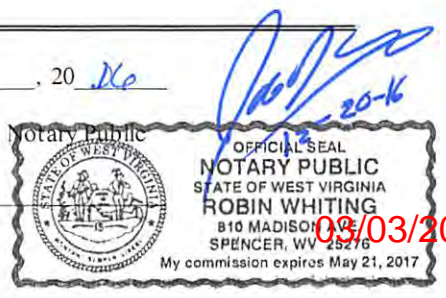
Company Official Signature *James E. Amos*

Company Official (Typed Name) James E. Amos

Company Official Title Senior Well Services Engineer

Subscribed and sworn before me this 30 day of December, 2016

Robin Whiting
My commission expires May 21, 2017



03/03/2017

Proposed Revegetation Treatment: Acres Disturbed 6.9 (pad+road+pipeline) Prevegetation pH 6-7

Lime 2 Tons/acre or to correct to pH 7-8

Fertilizer type 10-10-10

Fertilizer amount 600 lbs/acre

Mulch straw @ 2 Tons/acre


Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
<u>Annual Rye</u>	<u>40</u>	<u>Orchard Grass and/or Tall Fescue</u>	<u>29</u>
		<u>Birdsfoot Trefoil (Empire)</u>	<u>9</u>
		<u>Annual Rye</u>	<u>12</u>

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: 

Comments:

Title: CCS Inspector

Date: 12-20-16

Field Reviewed? () Yes

() No

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
GROUNDWATER PROTECTION PLAN

Operator Name: Columbia Gas Transmission, LLC
Watershed (HUC 10): Mud Rud Quad: Sandyville
Farm Name: Michael and Billie DeBerry

1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

No fluids planned to be discharged.

No fertilizer will be stored on site. Fuel, oil, and lubricants will be stored on site, but located within secondary containment. Spills from construction equipment, well treatment fluids, and produced well fluids are the only possible source of contamination to groundwater. Drilling and flowback fluids to be stored in tanks. Earthen pit to constructed to WV DEP standards.

2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

Earthen berm to be constructed around perimeter of well pad with storm water sumps to control release of captured precipitation.

Construction and well servicing equipment will be monitored and inspected daily for leaks. Earthen pit and tanks to be monitored daily for leaks. Spill kits will be on site.

3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

Mud Run is approximately 1200 ft to the W.

WV Baptist Conference Center (WV9918034) is the closest Well Head Protection Area at a distance of 5.3 miles from discharge area. Refer to enclosed assessment letter dated 12/6/16 from Department of Health and Human Resources, Source Water Assessment and Protection department.

4. Summarize all activities at your facility that are already regulated for groundwater protection.

N/A

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

N/A

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

No waste material will be used for deicing or fill material on the property.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

During routine tailgate and JSA meetings groundwater protection will be a topic of discussion.

8. Provide provisions and frequency for inspections of all GPP elements and equipment.

No fertilizer will be stored on site. Fuel, oil, and lubricants will be stored on site, but located within secondary containment. Spills from construction equipment, well treatment fluids, and produced well fluids are the only possible source of contamination to groundwater.
Inspections to be performed daily.

Signature: *Jam E Am*

Date: 12/19/16

RECEIVED
Office of Oil and Gas
JAN 03 2017
WV Department of
Environmental Protection



STATE OF WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN RESOURCES
BUREAU FOR PUBLIC HEALTH
OFFICE OF ENVIRONMENTAL HEALTH SERVICES

Earl Ray Tomblin
Governor

Karen L. Bowling
Cabinet Secretary

December 6, 2016

William Timmermeyer
Environmental Planning & Permitting Principal
TransCanada | Columbia Pipeline Group
1700 MacCorkle Ave., SE
PO Box 1273
Charleston, WV 25314

Ripley 12596
Lat: 38.8829
Long: 81.6996
Ripley 12597
Lat: 38.8790
Long: 81.6849
Ripley 12598
Lat: 38.8706
Long: 81.7084

Re: SWAP Information Request for
Proposed Ripley wells
Jackson County, West Virginia

Dear Mr. Timmermeyer:

In response to the informational request dated December 5, 2016 concerning the closest Wellhead Protection Areas for three proposed wells in Jackson County. Based on the current information, we have found that your project area **does not** intersect any public water sources or protection areas.

The closest distances to the Protection Areas are as follow:

Wellhead Protection Area	WV9918034	WV BAPTIST CONF. CENTER	5.3 miles
Zone of Critical Concern	WV3301811	CITY OF RIPLEY	3.5 mile
Zone of Peripheral Concern	WV3301811	CITY OF RIPLEY	3.4 mile

Your location is 104 miles upstream of a public water intake at the WVAWC –Huntington District.

We do not have information regarding private drinking wells in the area. I suggest you contact the county health department for this information.

I hope the information provided helps you with the completion of your project. If you have any questions, please do not hesitate to contact me at (304) 356-4309.

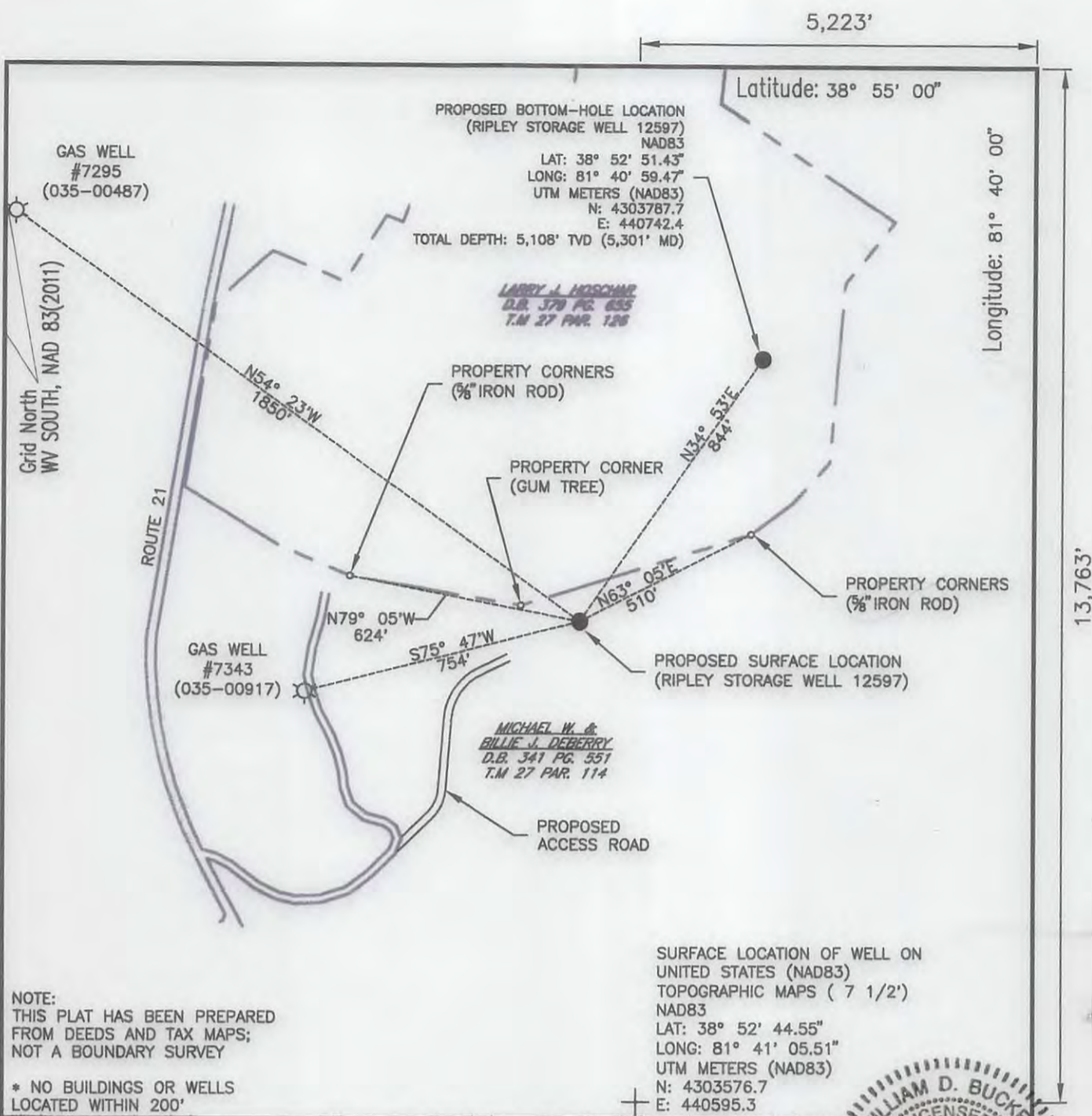
Sincerely,

Lisa A. King, GIS Administrator
Source Water Assessment and Protection

Office of Oil and Gas
JAN 03 2017

CC: William J. Toomey

WV Department of
Environmental Protection



NOTE:
THIS PLAT HAS BEEN PREPARED
FROM DEEDS AND TAX MAPS;
NOT A BOUNDARY SURVEY

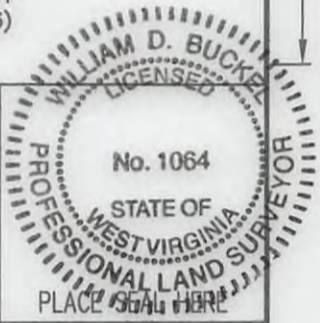
* NO BUILDINGS OR WELLS
LOCATED WITHIN 200'

SURFACE LOCATION OF WELL ON
UNITED STATES (NAD83)
TOPOGRAPHIC MAPS (7 1/2')
NAD83
LAT: 38° 52' 44.55"
LONG: 81° 41' 05.51"
UTM METERS (NAD83)
N: 4303576.7
E: 440595.3

FILE # _____
DRAWING # 12597
SCALE: 1" = 400'
MINIMUM DEGREE
OF ACCURACY: 1:2,500'
PROVEN SOURCE STATIC GPS SURVEY
OF ELEVATION: WITH TIES TO NGS DATA

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS
PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND
BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY
LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY
THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: *[Signature]*
R.P.E.: _____ L.L.S.: 1064



+) DENOTES LOCATION OF WELL ON
UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304



DATE: 12/27/2016
OPERATOR'S WELL #: 12597
API WELL #: 47 035 03027 T
STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: ~~SEEP FORK~~ MUD RUN ELEVATION: 804'
COUNTY/DISTRICT: JACKSON / RIPLEY QUADRANGLE: SANDYVILLE
SURFACE OWNER: MICHAEL W. & BILLIE J. DEBERRY ACREAGE: 132
OIL & GAS ROYALTY OWNER: OTIS COAST AND KATIE COAST ACREAGE: 50
LEASE NO. 1052291-000 (SURFACE) 1052786-000 (BOTTOM HOLE)
DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
CLEAN OUT & REPLUG OTHER CHANGE SPECIFY): _____

TARGET FORMATION: ORISKANY SANDSTONE (STORAGE RESERVOIR) ESTIMATED DEPTH: 5003 FT. TVD 5196 FT. MD
WELL OPERATOR COLUMBIA GAS TRANSMISSION DESIGNATED AGENT PAUL AMICK
Address 1700 MACCORKLE AVE. SE PO BOX 1273 Address 1700 MACCORKLE AVE. SE PO BOX 1273
City CHARLESTON State WV Zip Code 25325-1273 City CHARLESTON State WV Zip Code 25325-1273

03/03/2017

RECEIVED
JAN 08 2017
WV Department of Environmental Protection

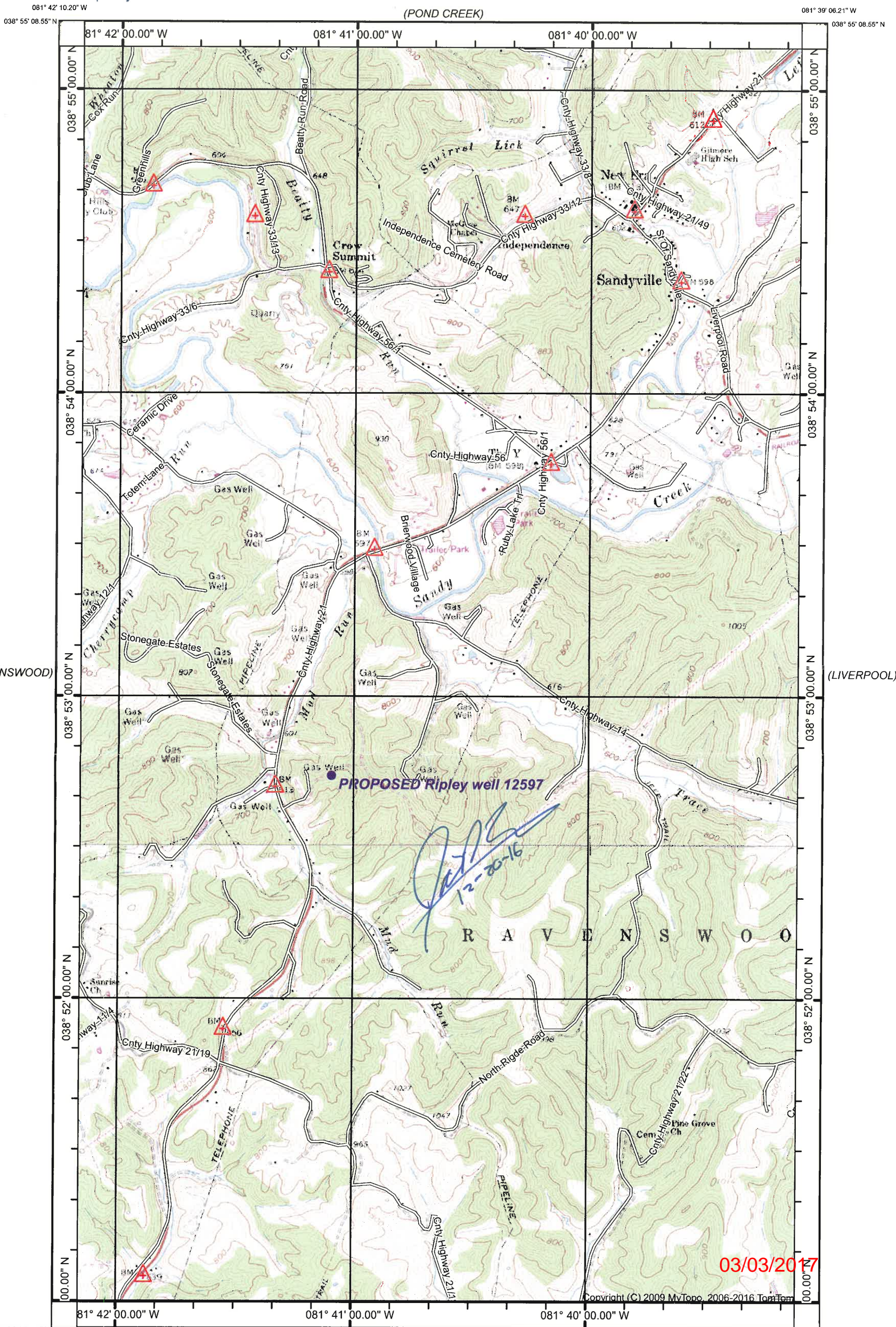
3503027T

(PORTLAND)



SANDYVILLE QUADRANGLE
WEST VIRGINIA
TOPOGRAPHIC SERIES

(ROCKPORT)



(RAVENSWOOD)

(LIVERPOOL)

PROPOSED Ripley well 12597

[Handwritten signature]
12-20-16

R A V E N S W O O

03/03/2017

Copyright (C) 2009 MyTopo, 2006-2016 TomTom

Printed: Sat Dec 17, 2016

(COTTAGEVILLE)

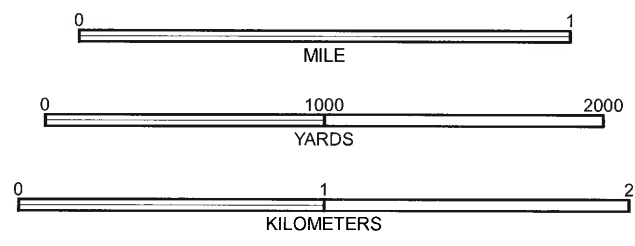
(GAY)

Declination



GN 0.42° W
MN 7.79° W

(RIPLEY)
SCALE 1:24000

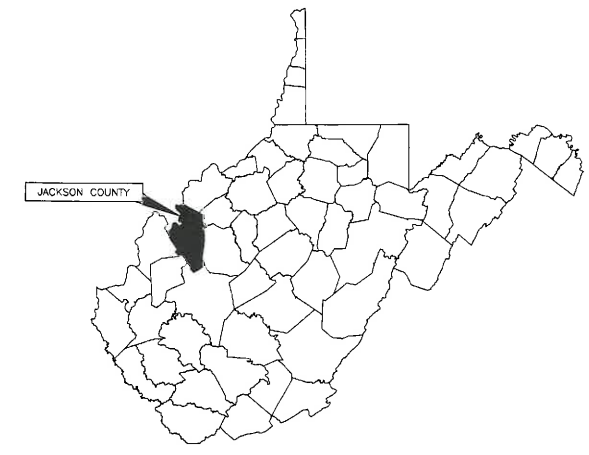


Produced by MyTopo Terrain Navigator
Topography based on USGS 1:24,000 Maps
North American 1983 Datum (NAD83)
Polyconic Projection
To place on the predicted North American 1927 move the
projection lines 9M N and 13M E

SANDYVILLE, WV
1960

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM 1929

PROJECT NUMBER 22892
 FACILITY NAME
 ASSET GROUP X - ZONE X
 JACKSON COUNTY, WEST VIRGINIA
 PIPELINE: 6" LINE X59W12597
 MAOP - XXX PSIG, MOP - XXX PSIG
 INVENTORY MAP: XXXXXX
 XX.XXXX"N, -XX.XXXX"W



PROJECT LOCATION:
 JACKSON COUNTY, WEST VIRGINIA

RIPLEY WELL 12597 (MOD)

PROPOSED WELL PAD AND ACCESS ROAD
 ENGINEERING SERVICES - DESIGN - WORK ORDER # 47101 - PROJECT # 22892
 DESIGN DRAWINGS - CIVIL

DESIGN DRAWINGS

D	7117	COV-1	COVER SHEET
D	7117	NOT	GENERAL NOTES
D	7117	INX-1	INDEX SHEET
D	7117	INX-2	INDEX SHEET
TD	7117	103A	LAYOUT & GRADING PLAN
TD	7117	103B	LAYOUT & GRADING PLAN
TD	7117	103C	BASELINE & PAD CROSS SECTIONS
TD	7117	103D	ACCESS ROAD PROFILE
D	7117	TYP-1	TYPICALS
D	7117	TYP-2	TYPICALS
D	7117	TYP-3	TYPICALS
D	7117	TYP-4	TYPICALS

WV DEP Reclamation Plan

[Signature]
 12-26-16

- BASIS OF COORDINATES AND DATUM IS GRID NORTH DERIVED FROM STATIC TIES TO NGS MONUMENTS AND TRANSFORMED INTO WEST VIRGINIA STATE PLANE SOUTH, NAD 83 (2011), US SURVEY FOOT.
- INFORMATION DEPICTED HEREON IS BASED ON A SURVEY CONDUCTED FOR THE PURPOSE OF ESTABLISHING BASELINES FOR MAPPING SELECTED TOPOGRAPHIC FEATURES.
- PROPERTY LINES SHOWN ARE FROM AVAILABLE PROPERTY LINE EVIDENCE AND DEED INFORMATION SUPPLIED BY THE CLIENT. A COMPLETE BOUNDARY SURVEY COMPLIANT WITH WV CODE 30-13A HAS NOT BEEN CONDUCTED.

BID SET
 ISSUED: 11/29/2016
 MOTT MACDONALD



TO THE BEST OF MY KNOWLEDGE, ALL COMPONENTS OF THIS DRAWING PACKAGE ARE DESIGNED IN ACCORDANCE WITH APPLICABLE COLUMBIA PIPELINE GROUP GUIDELINES AND SPECIFICATIONS AND IN COMPLIANCE WITH COLUMBIA PIPELINE GROUP CAD / DRAFTING STANDARDS

LEAD CPD DESIGN ENGINEER: _____ DATE: _____
 ENGINEERING REVIEW: _____ DATE: _____
 LEAD/SENIOR DESIGNER: _____ DATE: _____

03/03/2017

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

PROJECT DELIVERY PROJECT ENGINEERING			
P.O. BOX 1273 CHARLESTON, WV 25320-1273 1700 MACDONALD AVENUE SE, CHARLESTON, WV 25314			
RIPLEY WELL SITE 12597			
COVER SHEET			
DRAWN BY: MM	DATE: 09/01	DRAWING NUMBER	ISSUE
PROJECT NUMBER: 22892		D-7117-COV-1	
W.O. NUMBER: 47101		B	

DRAWING NUMBER
D-7117-N01

GENERAL NOTES

- 1. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING STATE ONE-CALL UTILITY LOCATING SERVICE. IN WEST VIRGINIA CALL 811 TO CONTACT WEST VIRGINIA UTILITY PROTECTION SERVICES (OWPS).
- 2. CONTRACTOR SHALL PERFORM ALL WORK IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL LAWS & REGULATIONS AS DEFINED BY THE CONTRACT DOCUMENTS, SPECIFICATIONS, DRAWINGS, ENVIRONMENTAL PLANS, AND PERMIT STIPULATIONS.
- 3. WELDING, GRINDING, AND BEVELING TO BE DONE IN ACCORDANCE WITH COLUMBIA PIPELINE GROUP'S GENERAL WELDING SPECIFICATIONS.
- 4. TIE IN PIPING IS TO BE INTERNALLY TAPERED IN ACCORDANCE WITH COLUMBIA PIPELINE GROUP'S WELDING SPECIFICATIONS.
- 5. GALVANIZED STEEL PIPE CLAMPS SHALL COME WITH A 1/8" THICK VIBALON LINER ATTACHED TO THE PIPE CLAMP. THE SHIM BLOCKS MAY BE OF THE EPOXY TYPE OR THE GALVANIZED STEEL TYPE WITH A 1/8" PVC LINER. ALTERNATIVES TO GALVANIZED STEEL PIPE CLAMPS ARE CABLES OR U-BOLTS. A VIBALON SHEATH MAY BE ORDERED FOR EITHER THE CABLES OR U-BOLTS AS REQUIRED.
- 6. ALL WELDING ON PRESSURIZED PIPING TO REMAIN IN SERVICE SHALL BE PERFORMED BY WELDERS QUALIFIED AND TESTED THRU CPG AND API 1104.
- 7. EXISTING UNDERGROUND UTILITIES LOCATIONS SHOWN ON DRAWINGS ARE APPROXIMATE AND BASED ON FIELD LOCATES, RECORDS, DOCUMENTS, AND OPERATING PERSONNEL. CONTRACTOR MUST FOLLOW ALL CPG AND STATE REGULATIONS REGARDING UTILITY LOCATES.
- 8. THE EXISTING ADJACENT PIPELINE SHALL BE ENERGIZED DURING CONSTRUCTION. EXTREME CAUTION SHALL BE REQUIRED AT ALL TIMES DURING CONSTRUCTION ON OR ALONG THE EXISTING COLUMBIA PIPELINES. A MINIMUM OF 2 FEET OF SOIL/TIMBER MATTING OR OTHER CPG APPROVED COVER SHALL BE PLACED OVER ENERGIZED PIPELINES TO ALLOW EQUIPMENT TO CROSS, TRAVERSE ALONG OR OTHERWISE WORK OVER THE LOADED LINES.
- 9. FOREIGN PIPELINES ENCOUNTERED DURING THE ABANDONMENT PROCESS WILL BE CROSSED USING THE OWNER'S PRE-APPROVED CROSSING METHODS.
- 10. CONTRACTOR SHALL CONFINE EQUIPMENT AND WORK ACTIVITY WITHIN THE PIPELINE RIGHT-OF-WAY AND ANY DESIGNATED WORK AREAS.
- 11. EROSION CONTROL DEVICES SHALL MEET APPLICABLE STATE, FEDERAL, AND COLUMBIA STANDARDS. THESE DEVICES SHALL BE INSTALLED AND MAINTAINED USING GOOD ENVIRONMENTAL PRACTICES AND IN ACCORDANCE WITH APPLICABLE PERMITS.
- 12. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL WHEREVER CONSTRUCTION ACTIVITIES INTERFACE WITH PUBLIC ROADWAYS, ENSURING PUBLIC SAFETY IN THE FORM OF PERSONNEL BARRIERS AND FENCES, WARNING SIGNS, FLASHING LIGHTS, FLAG-PERSONS, ETC. ALL CONSTRUCTION AND DETOUR SIGNING SHALL BE IN STRICT ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).
- 13. AREAS DISTURBED DURING CONSTRUCTION OUTSIDE OF PROPOSED FENCE, SHALL BE RESTORED TO ORIGINAL CONDITION. REFER TO CGT STANDARDS FOR SEEDING REQUIREMENTS.
- 14. ALL PIPELINE ABANDONMENT PROCESSES WILL FOLLOW CPG SPECIFICATION 220.01.01-PIPE REMOVAL AND ABANDONMENT IN PLACE.

STANDARD GRADING NOTES

A APPLICABLE CODES AND STANDARDS:	
1	ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS (AASHTO)
2	AMERICAN CONCRETE INSTITUTE - "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", (ACI-318-02).

B MATERIALS	
1	AASHTO #57 STONE
2	GEOTEXTILE FABRIC, WEED BARRIER, TYPE AR 3201 OR APPROVED EQUAL (IF APPLICABLE TO BE DETERMINED BY ENGINEER)

C INSTALLATION	
1	EXCAVATE TO PROPER ELEVATION AND GRADE.
2	AFTER SUBGRADE GRADING HAS BEEN COMPLETED A GEOTEXTILE FABRIC FOR WEED CONTROL SHALL BE INSTALLED.
3	AFTER THE INSTALLATION OF THE GEOTEXTILE HAS BEEN COMPLETED, BACKFILL AND COMPACT STONE IN SIX-INCH LIFTS.

STANDARD CONCRETE NOTES

1	CONCRETE AND REBAR SPECIFICATIONS PER COLUMBIA SPECIFICATION CON-101.
2	ALL CONCRETE SHALL BE PROTECTED BY ONE OR MORE CURING MATERIALS, POLYETHYLENE SHEETING WILL BE PERMITTED AS CURING ONLY ON AREAS WHERE INTIMATE CONTACT WITH THE CONCRETE SURFACE CAN BE OBTAINED AND MAINTAINED FOR AT LEAST SEVEN DAYS. MEMBRANE FORMING CURING COMPOUND MAY BE USED IF IMMEDIATELY APPLIED AFTER ACCEPTANCE OF THE CONCRETE FINISH.
3	ALL FOUNDATIONS SHALL BE PLACED ON FIRM UNDISTURBED SOIL FREE OF FROST AND NOT FROZEN, BOULDERS, SOFT SPOTS, EXCESSIVE WATER AND ORGANIC MATERIALS. IF UNSUITABLE CONDITIONS ARE ENCOUNTERED, NOTIFY THE COLUMBIA PIPELINE GROUP ENGINEER BEFORE PROCEEDING.
4	ALL EXPOSED CONCRETE SURFACES SHALL BE A FLOAT FINISH AND STEEL TROWELED TO PRODUCE A SMOOTH, UNIFORM SURFACE. UPON REMOVAL OF FORMS ALL FINS AND IRREGULAR PROJECTIONS SHALL BE REMOVED. CAVITIES PRODUCED BY FORM TIES AND OTHER HOLES, HONEYCOMB SPOTS, BROKEN CORNERS OR EDGES AND OTHER DEFECTS SHALL BE REPAIRED AND THEN RUBBED.
5	ALL CORROSION CONTROL WORK TO BE PERFORMED PER THE REFERENCED PROCEDURE / SPECIFICATION.

STANDARD GRATING NOTES

1	GRATING SHALL HAVE 3/16" BEARING BARS MATCHING THE DEPTH SHOWN ON THE PLANS WITH CROSS BARS @ 4" O.C.
2	SUPPORT GRATING WITH SADDLE CLIPS AT 24" O.C. PROVIDE MIN (2) CLIPS AT THE ENDS OF EACH PANEL.
3	ALL OPENINGS LARGER THAN 4" SHALL BE BANDED.
4	GRATING SHALL MEET THE FOLLOWING CRITERIA: -UNIFORM LIVE LOAD 60 PSF -CONCENTRATED LIVE LOAD 300 LB (OVER 1 SQ. FT.) -MAXIMUM DEFLECTION 3/8"

GENERAL CONSTRUCTION NOTES

1	CLEAR ALL WOODY AND ORGANIC MATERIAL AND TREES FROM THE SITE BEFORE BEGINNING CUTS/FILLS.
2	ALL TREES 10 INCHES DBH AND LARGER ARE TO BE CUT INTO POLE LENGTHS (12' TO 14') AND STACKED.
3	STOCKPILE THE TOPSOIL IN DESIGNATED LOCATIONS.
4	NO FILL IS TO BE PLACED ON FROZEN MATERIAL.
5	FILL MATERIAL SHALL BE CLEAN SOIL AND BE PLACED IN LIFTS OR LAYERS IN ACCORDANCE WITH DETAILS IN THIS PLAN.
6	PROPER COMPACTION SHALL BE ACCOMPLISHED BEFORE BEGINNING THE NEXT FILL LIFT.
7	NO FILLS ARE TO BE PLACED AT GREATER THAN A 2:1 SLOPE.
8	ROCK LIFTS OR ROCK DIMENSIONS SHALL NOT EXCEED 36 INCHES.
9	ENSURE THAT EMBANKMENT MATERIALS EXHIBIT ADEQUATE SOIL STRENGTH AND PROPER MOISTURE CONTENT.
10	DURING OR AFTER ANY RAIN EVENT PAD SUMPS SHALL BE INSPECTED FOR ANY CONTAMINANTS OR SHEEN ON THE WATER SURFACE PRIOR TO RELEASING PAD RUNOFF. IF CONTAMINANTS OR SHEEN ARE OBSERVED, FOLLOW APPROVED PROCEDURES IN THE WELLSITE SAFETY PLAN.

SEQUENCE OF CONSTRUCTION

1	MAKE ALL AGENCY NOTIFICATIONS ACCORDING TO PERMIT REQUIREMENTS.
2	SURVEY AND STAKE CONTROL CENTERLINES AND WORK AREA LIMITS.
3	HOLD PRE-CONSTRUCTION CONFERENCE WITH ENVIRONMENTAL INSPECTORS. CONTRACTOR TO PROVIDE PROPOSED SEQUENCE OF EARTH DISTURBANCE WITH TIMELINES BY STATIONING.
4	PERFORM TREE CLEARING AND INSTALL Bmps AS NEEDED TO CONTROL INITIAL DISTURBANCES.
5	INSTALL CONSTRUCTION ENTRANCES.
6	CLEAR AND GRUB FOR INSTALLATION OF PERIMETER CONTROLS.
7	INSTALL PERIMETER CONTROLS (SILT FENCE, COMPOST FILTER SOCK, OUTLET STRUCTURES, ETC.).
8	COMPLETE SITE CLEARING AND GRUBBING.
9	STRIP TOPSOIL FROM DESIGNATED AREAS.
10	GRADE SITE TO CIVIL DESIGN PLANS.
11	AFTER PIPELINE IS INSTALLED, GRADE SITE TO FINAL RESTORATION CONTOURS.
12	COMPLETE FINAL STABILIZATION BY PERFORMING SEEDBED PREPARATIONS, TOPSOIL APPLICATION, SOIL AMENDMENT APPLICATIONS, SEEDING AND MULCHING.
13	AFTER SITE IS PERMANENTLY STABILIZED AND UPON FINAL INSPECTION AND COMPANY APPROVAL, REMOVE TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES AND THEN STABILIZE AREAS DISTURBED BY REMOVAL.
NOTE	ON COMPLETION OR TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITY OR AT ANY STAGE OR PHASE WHERE CESSATION OF EARTH DISTURBANCE WILL EXCEED SEVEN DAYS, IMMEDIATELY SEED AND MULCH OR OTHERWISE PROTECT THE SITE FROM ACCELERATED EROSION AND SEDIMENTATION.

MATERIAL SUMMARY - WELL PAD 12597

ITEM	QUANTITY	UNIT	DESCRIPTION
CE	0	EACH	CONSTRUCTION ENTRANCE
SF	1,400.00	LINEAR FEET (LF)	SILT FENCE/ SOCK
ECB	8,025.00	SQUARE YARD (SY)	EROSION CONTROL BLANKET

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

TYPE	RATE (lb/ACRE)
ORCHARD GRASS AND/OR TALL FESCUE ²	20
BIRDSFOOT TREFLOL (EMPIRE) ³	8
ANNUAL RYE	12
FERTILIZER ¹	600*
MULCH	
HAY OR STRAW	4,000
AGRICULTURAL LIME	4,000

TABLE 2B - SEED MIX FOR TEMPORARY STABILIZATION

TYPE	RATE (lb/ACRE)
ANNUAL RYE	40
MULCH	
HAY OR STRAW	5,000

TABLE 2C - SEED MIX REQUIREMENTS IN WETLANDS

TYPE	RATE (lb/ACRE)
ANNUAL RYE	40

1 PURE LIVE SEED WITHIN 12 MONTHS OF TESTING
2 IF TALL FESCUE IS USED, PLANT ENDOPHYTE-FREE CERTIFIED SEED
3 LEGUMES 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
4 WHERE WOOD CHIPS ARE SPREAD, ADDITIONAL NITROGEN (12 TO 15 lb/TON OF CHIPS) WILL BE SPREAD
5 SEED RATE MUST BE DOUBLED FOR BROADCAST SEEDING.

Columbia Pipeline Group
PROJECT SEED MIXES

G:\Columbia_370880_Ripley_Well_Site\Deliverables\Work\Drafting\General_Notes\TD-7117-N01.dwg
11/29/2016 8:44 AM JReber, Jason S

SR

DESIGN PRESSURE PSIG AT _____ °F DESIGN FACTOR _____ MAXIMUM HOOP STRESS LEVEL _____
AT _____ PSIG _____ % SMYS. BASED ON _____
MAP 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 _____
DWG. NO. _____ REFERENCE _____

RE-ISSUED FOR BID
MM 11/29/2016
MM 11/29/2016

PROJECT DELIVERY PROJECT ENGINEERING
RIPLEY WELL SITE 12597
GENERAL NOTES

Columbia Gas Transmission

NO. REVISIONS BY DATE APPROVED DATE
NO. REVISIONS BY DATE APPROVED DATE

NO. REVISIONS BY DATE APPROVED DATE

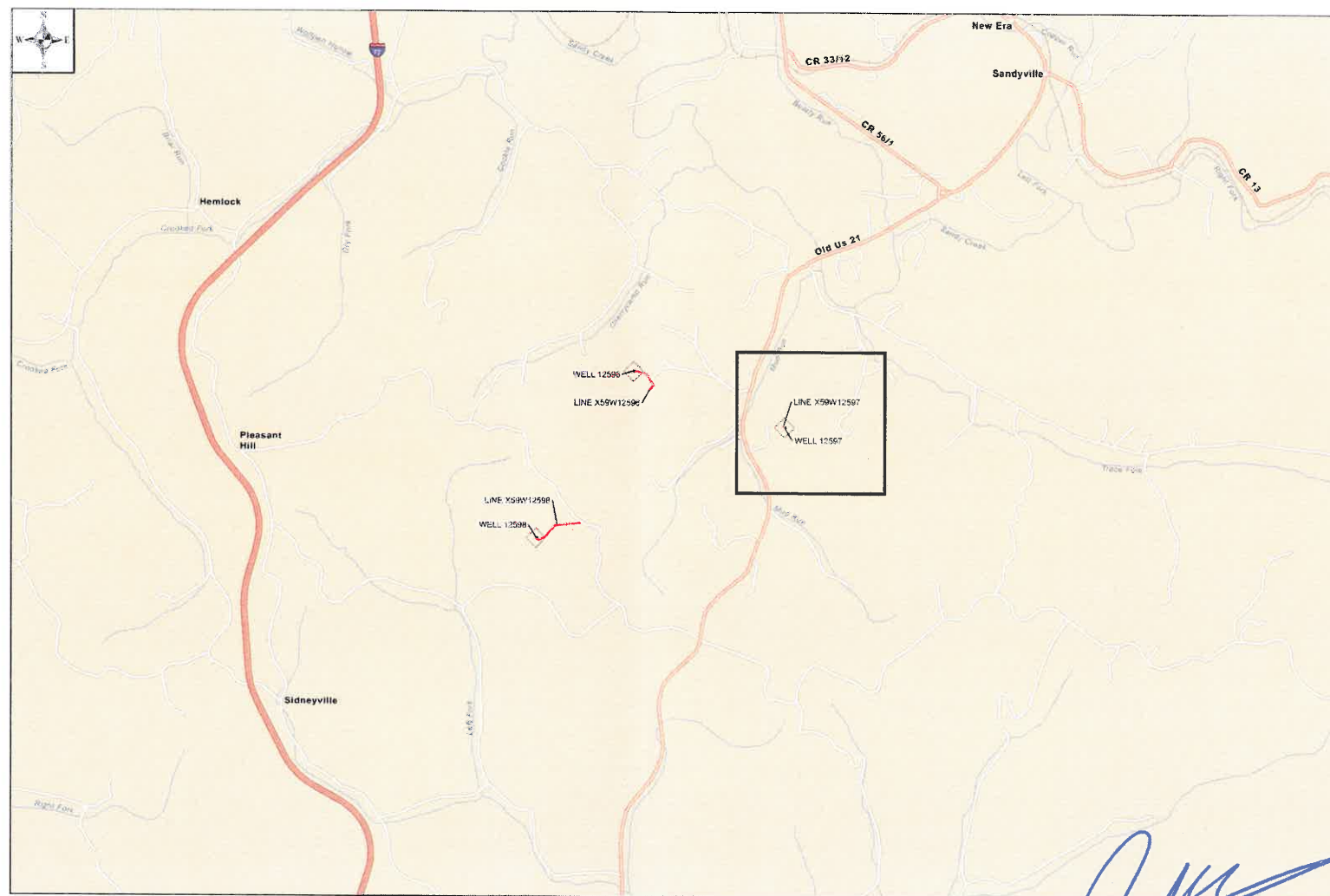
ISSUED: 11/29/2016

03/03/2017

B	D7117-INX-1
ISSUE	DRAWING NUMBER



Columbia Gas Transmission






[Signature]
12-20-16

RIPLEY WELL 12597

BID SET
ISSUED: 11/29/2016

G:\Columbia\370980_Ripley_Well_Site\DrawProd\Work\Drafting\Cover_Sheet\07117-INX-1.dwg
11/29/2016 8:45 AM Reese, Jason S

		NON-SCALED 		DESIGN PRESSURE _____ PSIG AT _____ °F DESIGN FACTOR. MAXIMUM HOOP STRESS LEVEL AT _____ PSIG _____ % SMYS. BASED ON _____ MAOP OF _____ PSIG AT _____ °F IS LIMITED BY _____ MINIMUM TEST PRESSURE _____ PSIG. MAXIMUM TEST PERIOD _____ PSIG. TEST LIMITED BY _____ TEST PERIOD _____ HOURS. TEST MEDIUM _____ SERVICE _____ NONDESTRUCTIVE INSPECTION REQUIREMENTS _____		PROJECT DELIVERY PROJECT ENGINEERING P.O. BOX 1273 CHARLESTON, WV 25325-1273 1706 MACCORDE AVENUE SE, CHARLESTON, WV 25314 	
RE-ISSUED FOR BID		TO THE BEST OF MY KNOWLEDGE, ALL COMPONENTS OF THIS DRAWING ARE DESIGNED IN ACCORDANCE WITH APPLICABLE COLUMBIA GUIDELINES AND SPECIFICATIONS.		CERTIFICATE I, _____ DESIGN ENGINEER DATE _____		TITLE RIPLEY WELL 12597 INDEX SHEET	
NO. _____ REVISIONS _____ BY _____ DATE _____ APPROVED _____ DATE _____		NO. _____ REVISIONS _____ BY _____ DATE _____ APPROVED _____ DATE _____		NO. _____ REVISIONS _____ BY _____ DATE _____ APPROVED _____ DATE _____		DWG. NO. _____ REFERENCE _____ PROJECT NUMBER: 22892 W.O. NUMBER: 47101 DRAWING NUMBER: D7117-INX-1 ISSUE: B	

03/03/2017

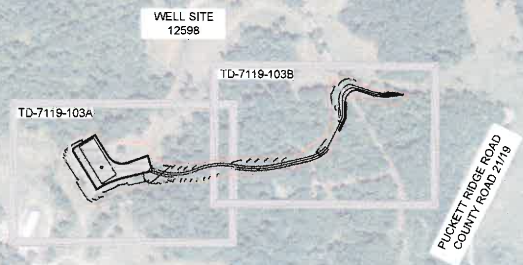
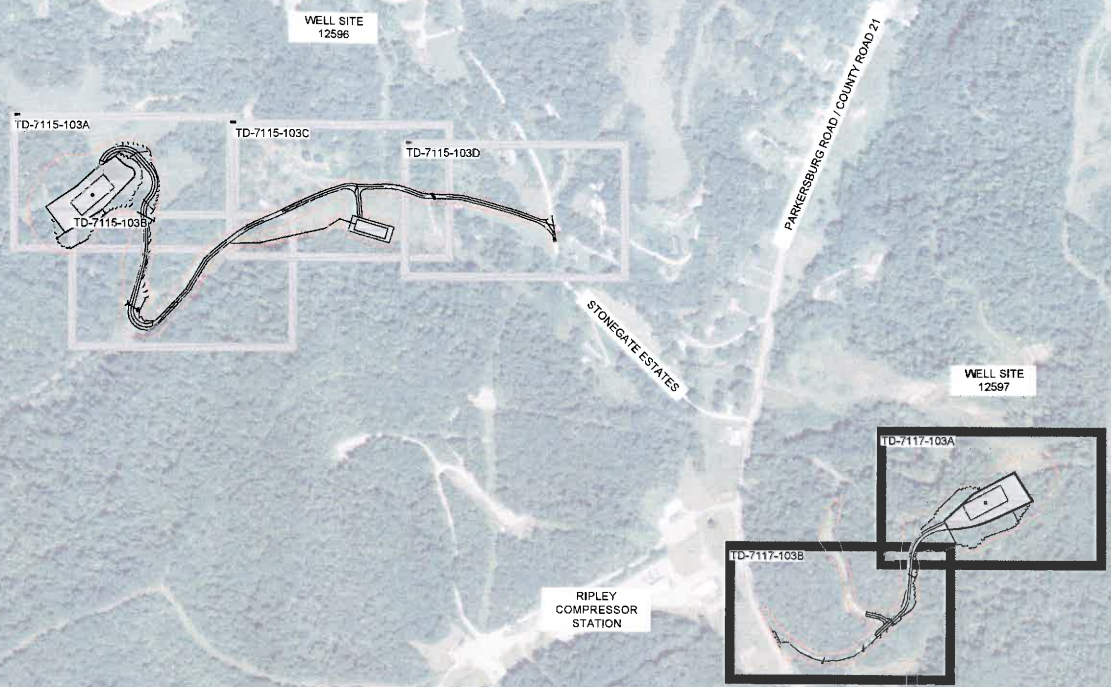
1 2 3 4 5 6 7 8 9 10 11

B
D7117-INX-2
ISSUE
DRAWING NUMBER

JACKSON COUNTY, WEST VIRGINIA



A
B
C
D
E
F
G
H



SM

CITY OF RIPLEY
APPROXIMATELY 3.80 MILES

BID SET
ISSUED: 11/29/2016

G:\Columbia\370980_Ripley_Well_Site\DrawProd\Work\Drafting\Cover_Sheet\07117-INX-2.dwg
11/29/2016 8:46 AM Reese, Jason S

NO.	REVISIONS	BY	DATE	NO.	REVISIONS	BY	DATE

M M
MOTT
MACDONALD

NON-SCALED

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

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

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

03/03/2017

DWG. NO. _____ REFERENCE _____

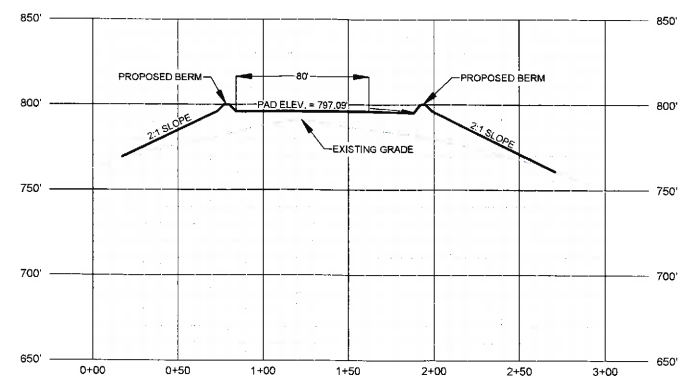
PROJECT DELIVERY
PROJECT ENGINEERING
F.O. BOX 1273 CHARLESTON, WV 25329-1273
1700 MACCORLE AVENUE SE, CHARLESTON, WV 25314

Columbia
Gas Transmission

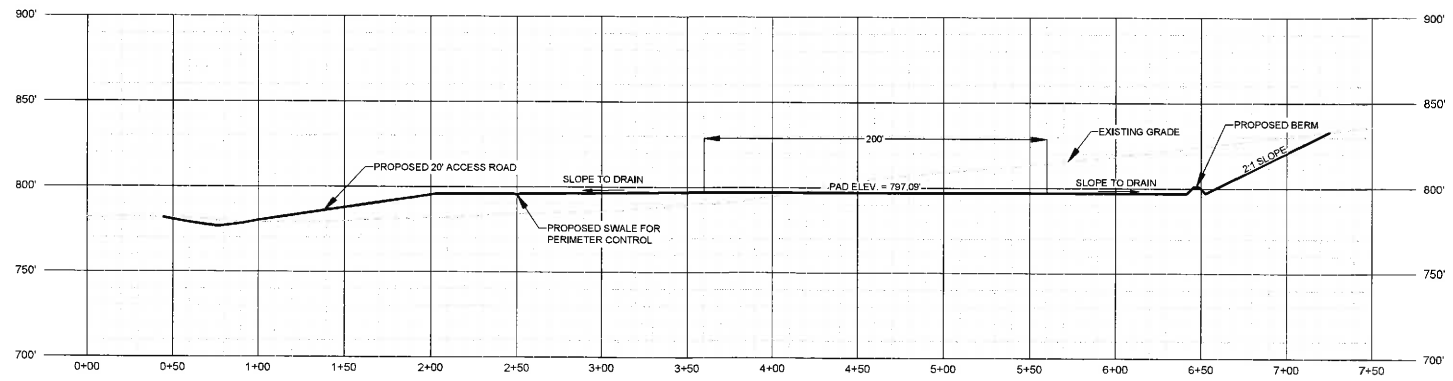
TITLE
RIPLEY WELL 12597
INDEX SHEET

DRAWN BY	MM	DATE	09/01	DRAWING NUMBER	ISSUE
PROJECT NUMBER	22892			D7117-INX-2	B
W.O. NUMBER	47101				

B	TD-7117-103C
ISSUE	DRAWING NUMBER



12597 PAD CROSS SECTION B-B'
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 50'



12597 PAD CROSS SECTION A-A'
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 50'

SEZ

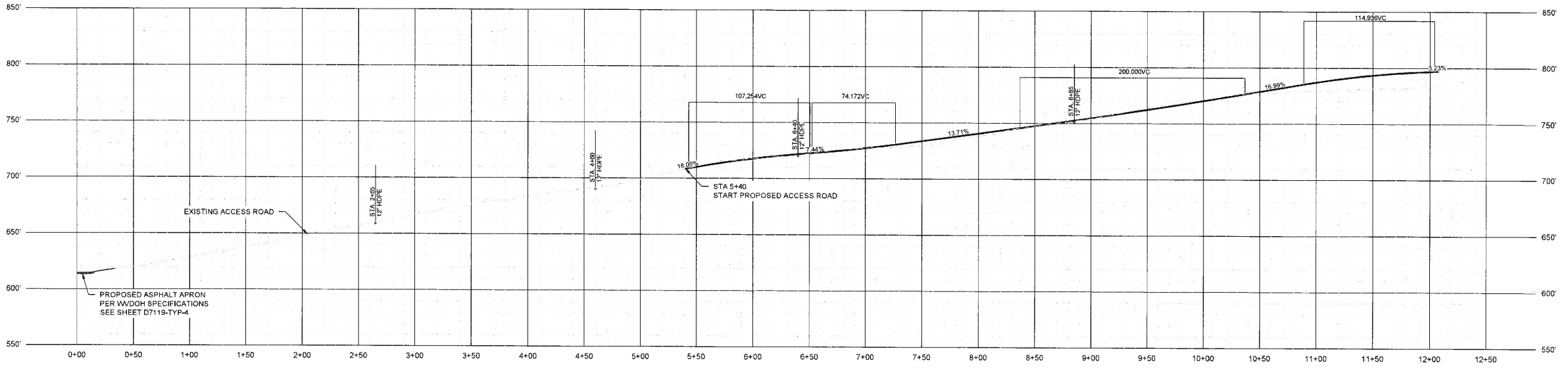
BID SET
 ISSUED: 11/29/2016

G:\Columbia\370980_Ripley_Well_Site\Drawings\Plant\Profile\12597_BaseLine_&_Pad_Cross_Sections.dwg
 11/29/2016 8:56 AM Reese, Jason S

		AS NOTED 		DESIGN PRESSURE _____ PSIG AT _____ °F / _____ DESIGN FACTOR / MAXIMUM HOOP STRESS LEVEL AT _____ PSIG / _____ % SMYS. BASED ON _____ MAOP OF _____ PSIG AT _____ °F IS LIMITED BY _____ MINIMUM TEST PRESSURE _____ PSIG. MAXIMUM TEST PRESSURE _____ PSIG. TEST LIMITED BY _____ TEST PERIOD _____ HOURS. TEST MEDIUM _____ SERVICE _____ NONDESTRUCTIVE INSPECTION REQUIREMENTS _____		TD-7117-103A RIPLEY WELL SITE 12597 - LAYOUT & GRADING PLAN		PROJECT DELIVERY PROJECT ENGINEERING P.O. BOX 1273 CHARLESTON, WV 25320-1273 1700 MACCORALE AVENUE SE, CHARLESTON, WV 25314 		RIPLEY WELL SITE 12597 TITLE BASELINE & PAD CROSS SECTIONS	
RE-ISSUED FOR BID		03/03/2017		DWG. NO.		REFERENCE		DRAWN BY: MM DATE: 09/01 PROJECT NUMBER: 22892 W.G. NUMBER: 47101		DRAWING NUMBER: TD-7117-103C ISSUE: B	

A
B
C
D
E
F
G
H

B	TD-7117-103D
ISSUE	DRAWING NUMBER



12597 ACCESS ROAD CENTERLINE PROFILE

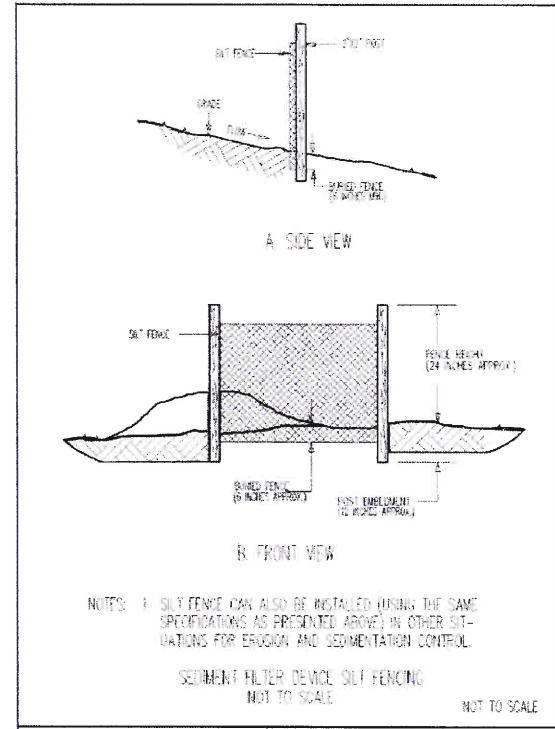
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 50'

JRZ

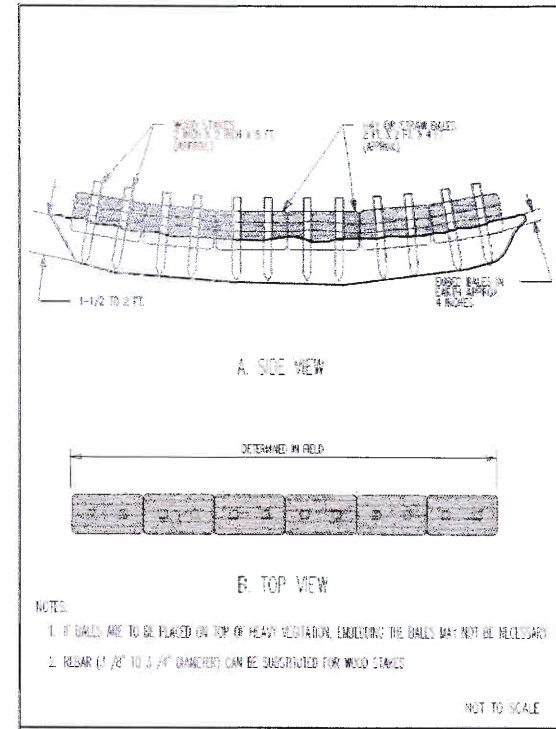
G:\Columbia\370980_Ripley_Well_Site\Site\Drawings\Plan\Profile\12597_Plan_Pod_&_Access_Road_Profiles.dwg 11/29/2016 8:58 AM Reese, Jason S

BID SET
ISSUED: 11/29/2016

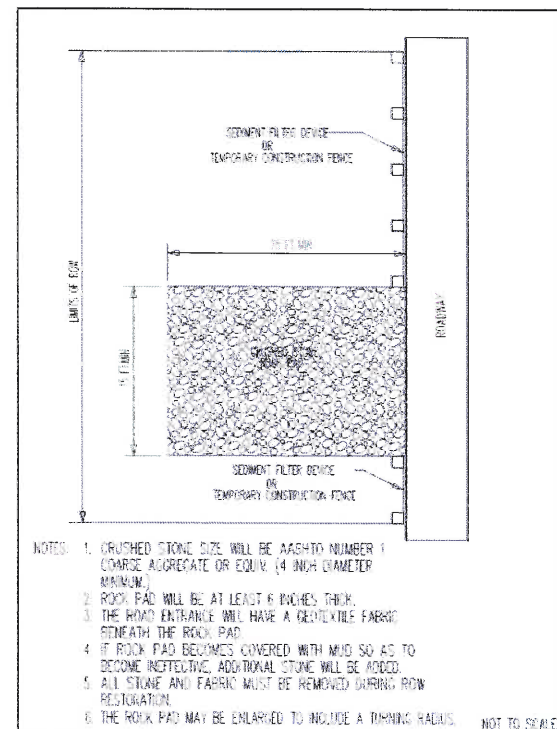
		AS NOTED 	DESIGN PRESSURE _____ PSIG AT _____ ' FT _____ DESIGN FACTOR _____ MAXIMUM HOOP STRESS LEVEL AT _____ PSIG _____ % SMYS. BASED ON _____ MAOP OF _____ PSIG AT _____ ' FT IS LIMITED BY _____ MINIMUM TEST PRESSURE _____ PSIG. MAXIMUM TEST PRESSURE _____ PSIG. TEST LIMITED BY _____ TEST PERIOD _____ HOURS. TEST MEDIUM _____ SERVICE _____ NONDESTRUCTIVE INSPECTION REQUIREMENTS _____	TD-7117-103B RIPLEY WELL SITE 12597 - LAYOUT & GRADING PLAN	TD-7117-103C RIPLEY WELL SITE 12597 - LAYOUT & GRADING PLAN	PROJECT DELIVERY PROJECT ENGINEERING P.O. BOX 1273 CHARLESTON, WV 25325-1273 1700 MACCORRLE AVENUE SE CHARLESTON, WV 25314	
RE-ISSUED FOR BID		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.	03/03/2017	DWG. NO. _____ REFERENCE _____	TITLE RIPLEY WELL SITE 12597 ACCESS ROAD PROFILE	DRAWN BY: MM DATE: 09/01 DRAWING NUMBER: TD-7117-103D ISSUE: B PROJECT NUMBER: 22892 W.O. NUMBER: 47101	
NO.	REVISIONS	NO.	REVISIONS	NO.	REVISIONS	NO.	REVISIONS



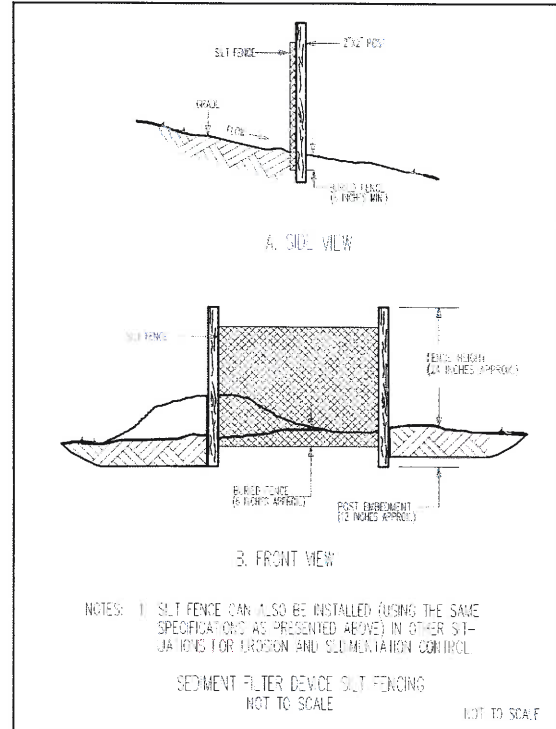
Columbia Pipeline Group
ENVIRONMENTAL CONSTRUCTION STANDARDS
SEDIMENT FILTER DEVICE SILT FENCING
FIGURE - 7



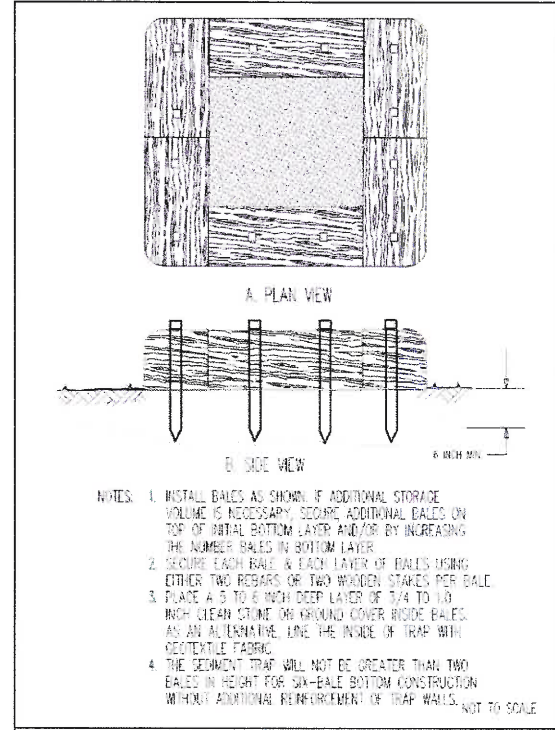
Columbia Pipeline Group
ENVIRONMENTAL CONSTRUCTION STANDARDS
SEDIMENT FILTER DEVICE STAKED BALES
FIGURE - 8



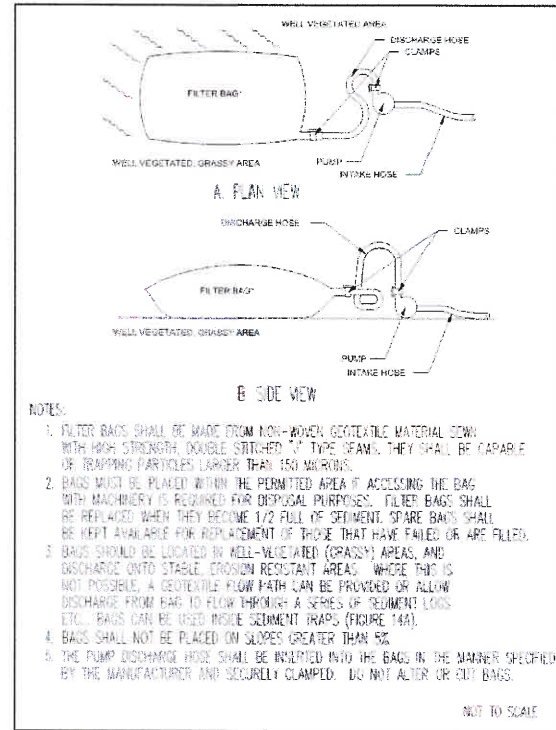
Columbia Pipeline Group
ENVIRONMENTAL CONSTRUCTION STANDARDS
TEMPORARY ROAD ENTRANCE ROCK PADS
FIGURE - 9



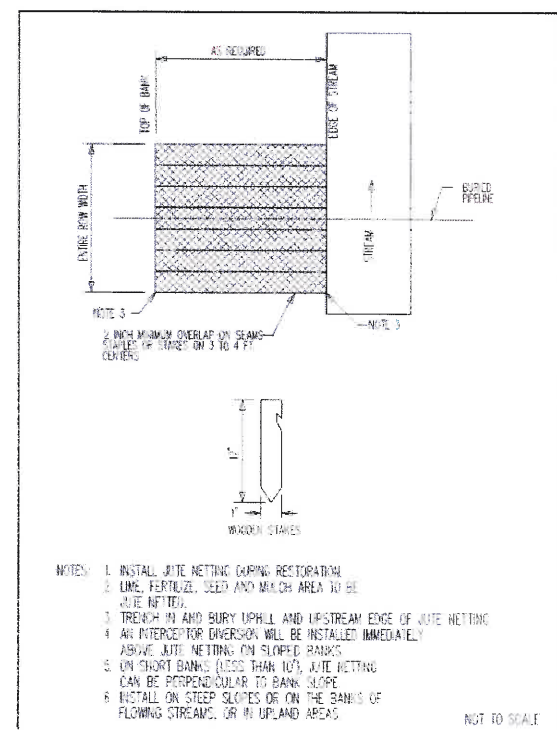
Columbia Pipeline Group
ENVIRONMENTAL CONSTRUCTION STANDARDS
SEDIMENT FILTER DEVICE SILT FENCING
FIGURE - 10



Columbia Pipeline Group
ENVIRONMENTAL CONSTRUCTION STANDARDS
SEDIMENT TRAP
FIGURE - 14A



Columbia Pipeline Group
ENVIRONMENTAL CONSTRUCTION STANDARDS
FILTER BAG (DIRT BAG)
FIGURE - 14B



Columbia Pipeline Group
ENVIRONMENTAL CONSTRUCTION STANDARDS
EROSION CONTROL BLANKET
FIGURE - 16

JOE

RECEIVED
Office of Oil and Gas
BID SET
ISSUED: 11/29/2016

G:\Columbia\370980_Ripley_Well_Site_DataProd\Work\Drafting\E&S_Typicals\D7117-TYP-1.dwg
11/29/2016 10:54 AM keese, Jason S

<p>DESIGN PRESSURE _____ PSIG AT _____ % OF DESIGN FACTOR. MAXIMUM HOOP STRESS LEVEL AT _____ PSIG. % DVYS. BASED ON _____</p> <p>MAJOR OF _____ PSIG AT _____ % IS LIMITED BY _____</p> <p>MINIMUM TEST PRESSURE _____ PSIG. MAXIMUM TEST PRESSURE _____ PSIG.</p> <p>TEST LIMITED BY _____ TEST PERIOD _____ HOURS.</p> <p>TEST MEDIUM _____ SERVICE _____</p> <p>NONDESTRUCTIVE INSPECTION REQUIREMENTS _____</p>		<p>CERTIFICATE</p> <p>TO THE BEST OF MY KNOWLEDGE, ALL COMPONENTS OF THIS DRAWING ARE DESIGNED IN ACCORDANCE WITH APPLICABLE COLUMBIA GUIDELINES AND SPECIFICATIONS.</p> <p>DESIGN ENGINEER _____ DATE _____</p> <p>NOTE: ANY CHANGES TO THE DESIGN SHOWN ON THIS DRAWING MUST BE APPROVED BY THE DESIGN ENGINEER.</p>		<p>PROJECT DELIVERY PROJECT ENGINEERING</p> <p>P.O. BOX 1273 CHARLESTON, WV 25302-1273</p> <p>1700 MACCORMICK AVENUE, SU. CHARLESTON, WV 25314</p> <p>RIPLEY WELL 12597</p> <p>TYPICALS</p> <p>DRAWN BY _____ DATE 09/01 DRAWING NUMBER _____ ISSUE _____</p> <p>PROJECT NUMBER 22892 D7117-TYP-1</p> <p>W.O. NUMBER 47101</p>	
<p>NO. _____ REVISIONS _____</p>		<p>NO. _____ REVISIONS _____</p>		<p>NO. _____ REVISIONS _____</p>	

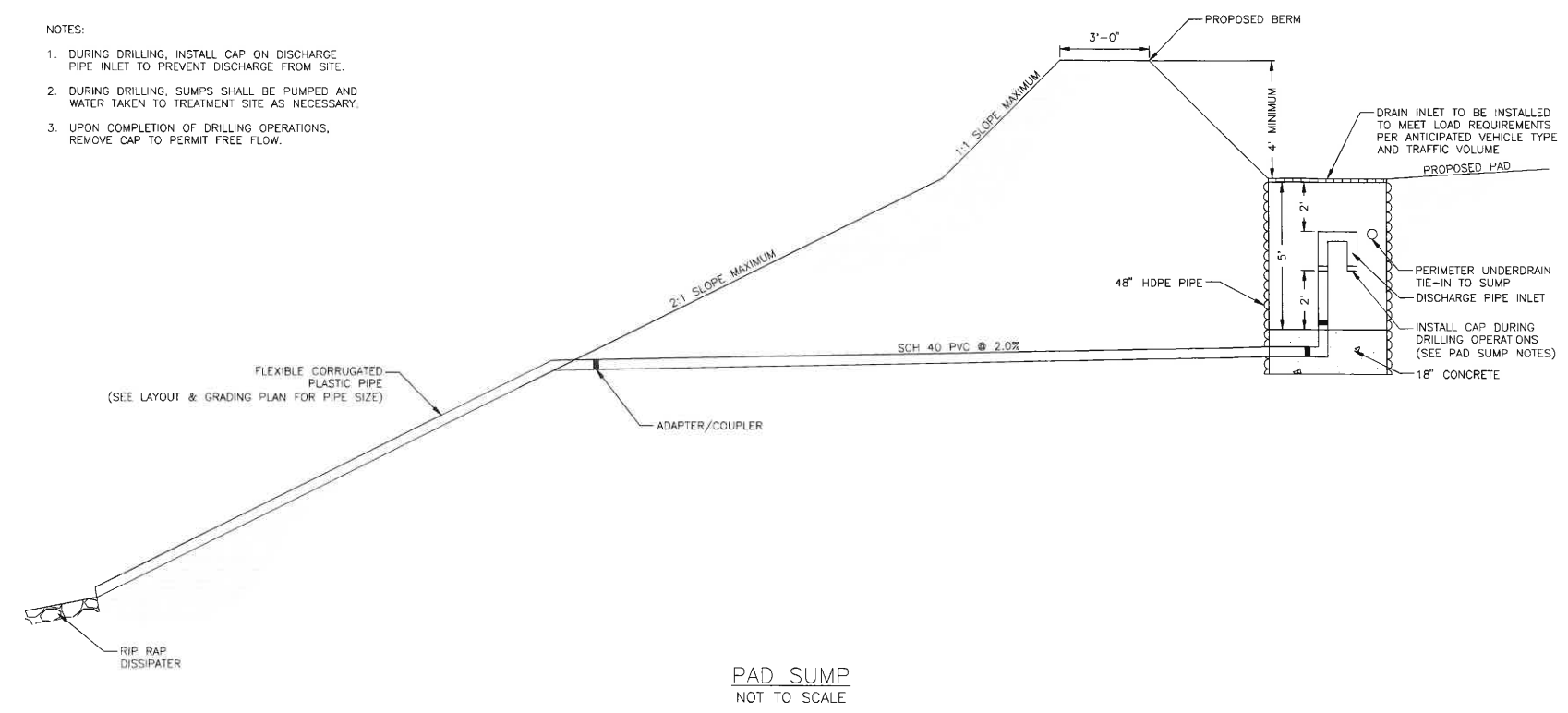
03/03/2017

REFERENCE

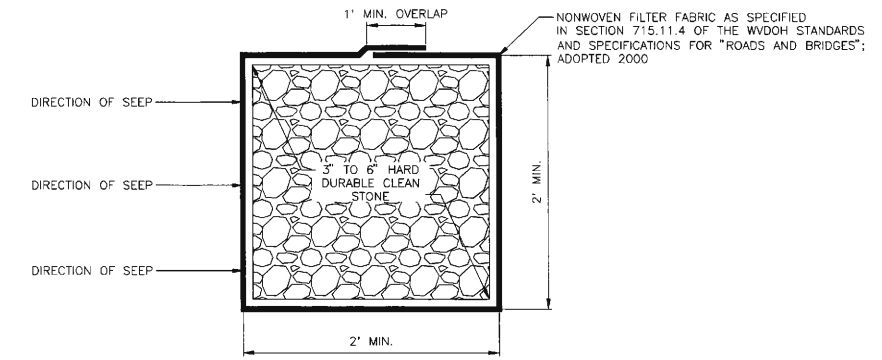
A
B
C
D
E
F
G
H

B	D7117-TYP-3
ISSUE	DRAWING NUMBER

- NOTES:
1. DURING DRILLING, INSTALL CAP ON DISCHARGE PIPE INLET TO PREVENT DISCHARGE FROM SITE.
 2. DURING DRILLING, SUMPS SHALL BE PUMPED AND WATER TAKEN TO TREATMENT SITE AS NECESSARY.
 3. UPON COMPLETION OF DRILLING OPERATIONS, REMOVE CAP TO PERMIT FREE FLOW.

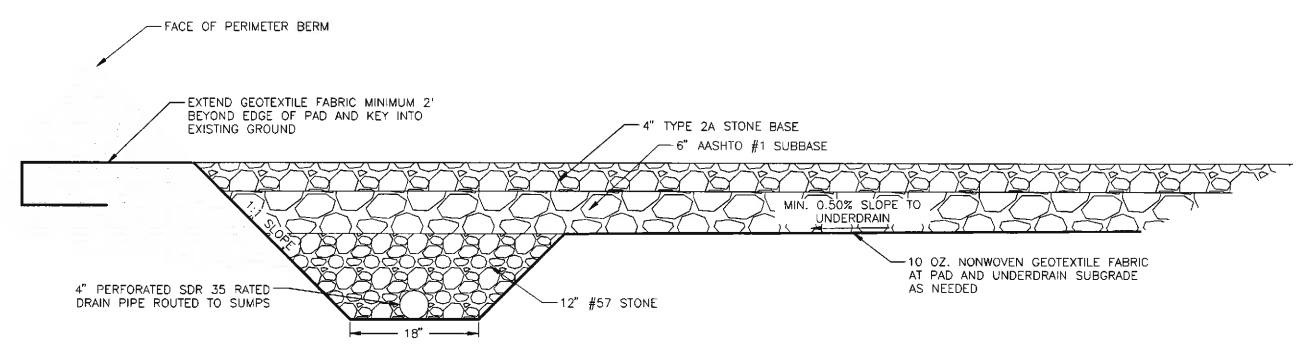


PAD SUMP
NOT TO SCALE

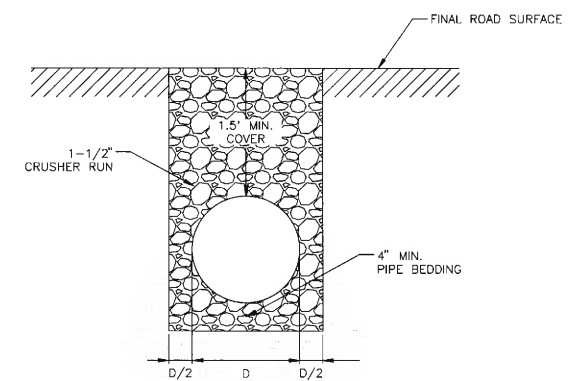


- NOTES:
1. FILTER FABRIC TO BE OVERLAPPED 1' MINIMUM AT ALL JOINTS.
 2. SLOPE DRAIN AT 5% MINIMUM TO DRAIN AND DAYLIGHT TO FACE OF EMBANKMENTS. LARGE SEEPS MAY REQUIRE PIPING TO BE PROPERLY CONVEYED TO THE TOE AREA AS DIRECTED.

TYPICAL FILL EMBANKMENT UNDERDRAIN
NOT TO SCALE

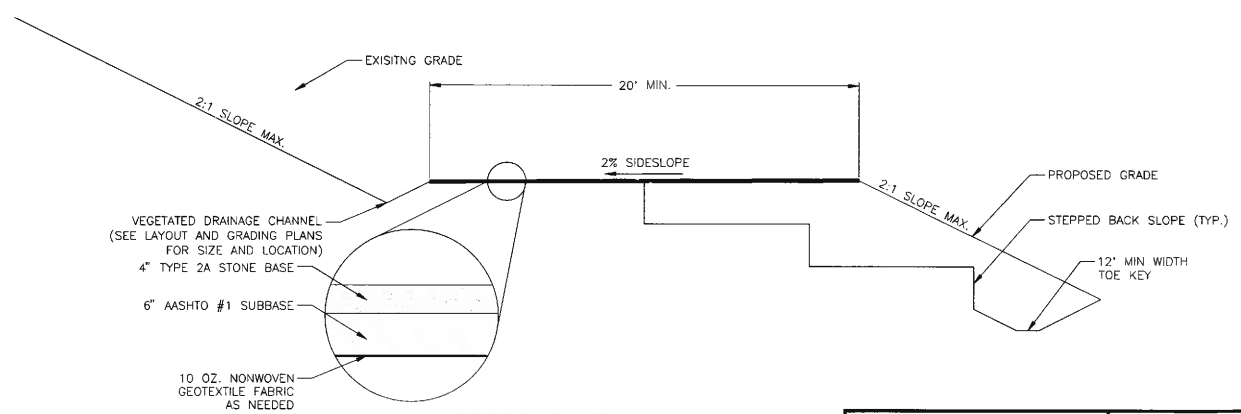


PAD PERIMETER UNDERDRAIN
NOT TO SCALE



- NOTES:
- ALL CULVERTS SHALL BE INSTALLED @ 2% MINIMUM SLOPE.

TYPICAL ACCESS ROAD CROSSING
NOT TO SCALE



TYPICAL ACCESS ROAD CONSTRUCTION
NOT TO SCALE

JP

RECEIVED
Office of Oil and Gas
BID SET
ISSUED: 11/29/2016

G:\Columbia\370980_Ripley_Well\Site\Data\Food\Work\Drafting\E&S_Typicals\07117-TYP-1.dwg
11/29/2016 10:54 AM keese, Jason S

NO.		REVISIONS		NO.		REVISIONS		NO.		REVISIONS		NO.		REVISIONS	
BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE
APPROVED	DATE	APPROVED	DATE	APPROVED	DATE	APPROVED	DATE	APPROVED	DATE	APPROVED	DATE	APPROVED	DATE	APPROVED	DATE

M M
MOTT
MACDONALD

NON-SCALED

DESIGN PRESSURE _____ PSIG AT _____ FT DESIGN FACTOR: MAXIMUM HOOP STRESS LEVEL _____
 AT _____ PSIG _____ % SMYS BASED ON _____
 MAJOR OF _____ PSIG AT _____ FT 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 _____
 03/03/2017
 DWG. NO. _____ REFERENCE

PROJECT DELIVERY
PROJECT ENGINEERING
P.O. BOX 1272 CHARLESTON, WV 25304-1272
1790 WASHINGTON AVENUE SE, CHARLESTON, WV 25304

Columbia
Gas Transmission

RIPLEY WELL 12597

TITLE _____ TYPICALS

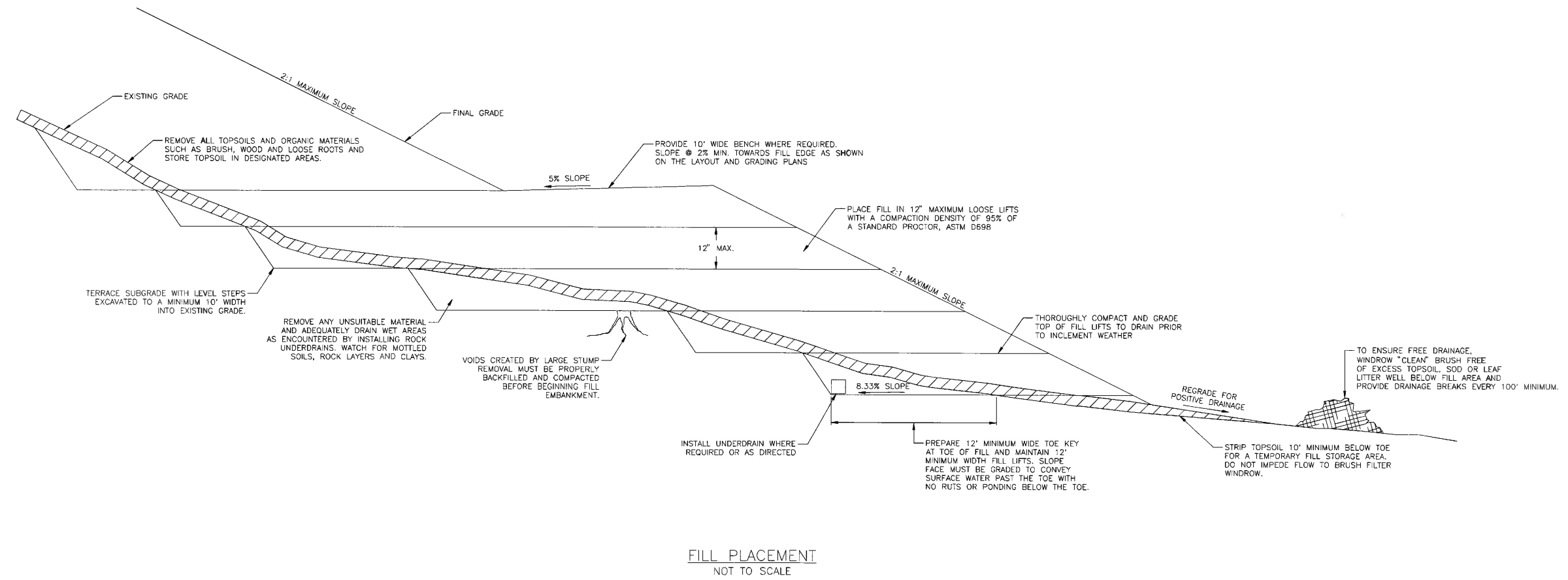
DRAWN BY _____ DATE _____
 PROJECT NUMBER: 22892
 W.O. NUMBER: 47101

DRAWING NUMBER: D7117-TYP-3
 ISSUE: B

B	D7117-TYP-4
ISSUE	DRAWING NUMBER

NOTES:

1. EXCAVATED TOE KEY BASE MUST BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO BEGINNING FILL PLACEMENT.



FILL PLACEMENT
NOT TO SCALE

JD

G:\Columbia\370980_Ripley_Well_Site\DataProd\Work\Drafting\E&S_Typicals\D7117-TYP-1.dwg
11/29/2016 10:54 Akreese, Jason S

NO.	REVISIONS	BY	DATE	NO.	REVISIONS	BY	DATE

M MOTT MACDONALD	NON-SCALED	
RE-ISSUED FOR BID	MM	11/29/2016
	MM	11/29/2016
MM	11/29/2016	

DESIGN PRESSURE	PSIG AT	DESIGN FACTOR	MAXIMUM HOOP STRESS LEVEL
AT	PSIG	% SMYS	BASED ON
MAOP OF	PSIG AT	"F IS LIMITED BY	
MINIMUM TEST PRESSURE	PSIG	MAXIMUM TEST PERIOD	HOURS
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
	03/03/2017
NOTE: ANY CHANGES TO THE DESIGN SHOWN ON THIS DRAWING MUST BE APPROVED BY THE DESIGN ENGINEER.	

PROJECT DELIVERY PROJECT ENGINEERING		Columbia Gas Transmission	
RIPLEY WELL 12597			
TYPICALS			
DRAWN BY	MM	DATE	09/15
PROJECT NUMBER	22892	DRAWING NUMBER	D7117-TYP-4
W.O. NUMBER	47101	ISSUE	B

BID SET
ISSUED: 11/29/2016

A
B
C
D
E
F
G
H