

# Whiting Oil and Gas Corporation

Weld County, CO

Sec. 29-T10N-R58W

Razor Fed #29L-3201

Plan B

Plan: Rev B0

## Sperry Drilling Services

### Proposal Report

21 August, 2014

Well Coordinates: 1,541,347.70 N, 3,443,851.15 E (40° 48' 30.12" N, 103° 53' 47.73" W)

Ground Level: 4,827.00 usft

Local Coordinate Origin:

Centered on Well Razor Fed #29L-3201

Viewing Datum:

KB 17' @ 4844.00usft

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

**HALLIBURTON**

Project: Weld County, CO  
Site: Sec. 29-T10N-R58W  
Well: Razor Fed #29L-3201  
Wellbore: Plan B  
Plan: Rev B0

Whiting Oil and Gas Corporation



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1275.00	0.00	0.00	1275.00	0.00	0.00	0.00	0.00	0.00	
3	1755.00	9.60	305.00	1752.76	23.01	-32.86	2.00	305.00	-21.72	
4	4744.10	9.60	305.00	4700.00	308.93	-441.20	0.00	0.00	-291.63	
5	5224.10	0.00	0.00	5177.76	331.94	-474.06	2.00	180.00	-313.35	
6	5327.47	0.00	0.00	5281.13	331.94	-474.06	0.00	0.00	-313.35	
7	6145.66	90.00	178.40	5802.00	-188.72	-459.52	11.00	178.40	206.36	
8	12932.60	90.00	178.40	5802.00	-6973.02	-269.99	0.00	0.00	6978.24	Razor Federal #29L-3201_Rev B0_BHL Tgt

Plan: Rev B0 (Razor Fed #29L-3201/Plan B)

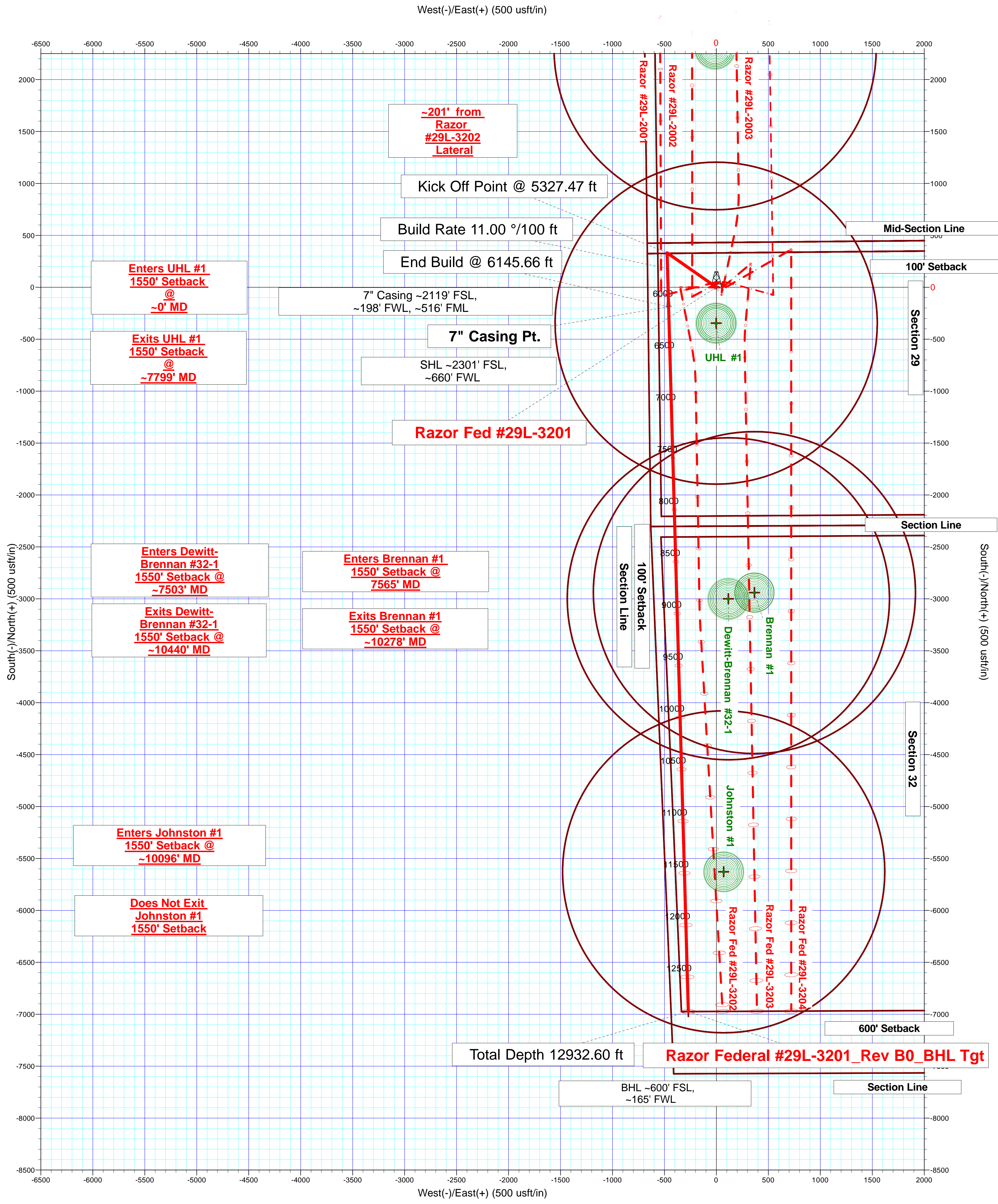
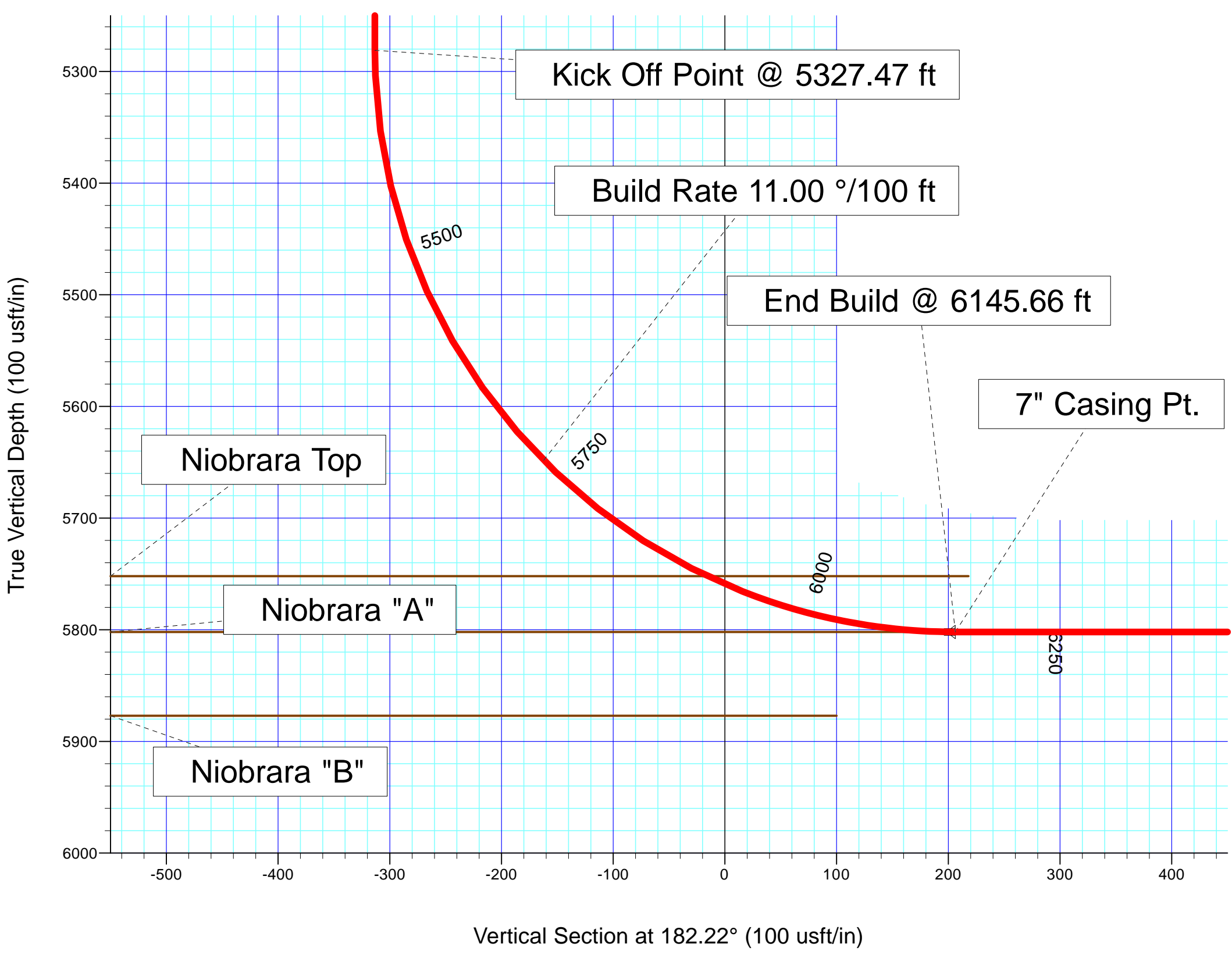
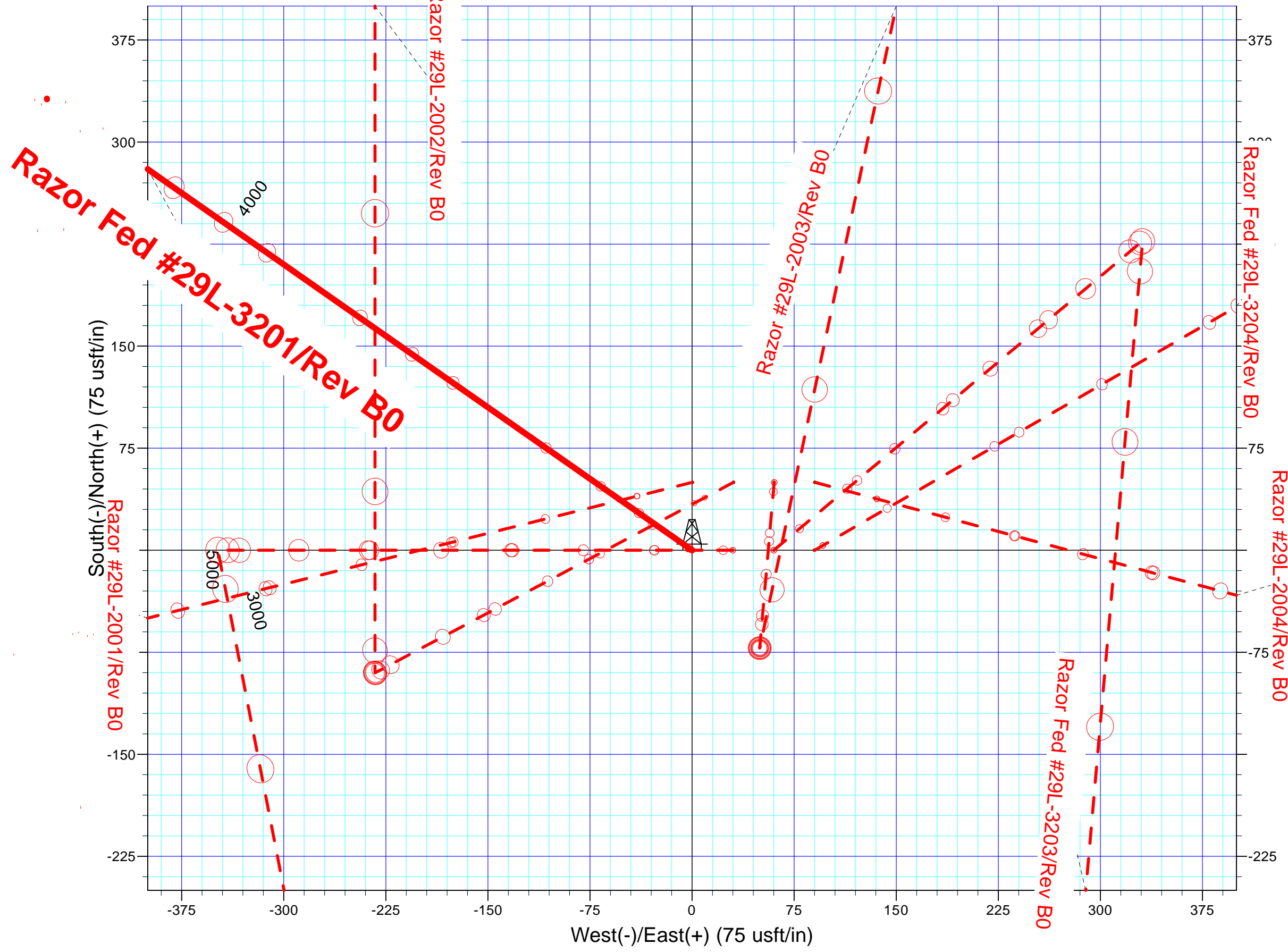
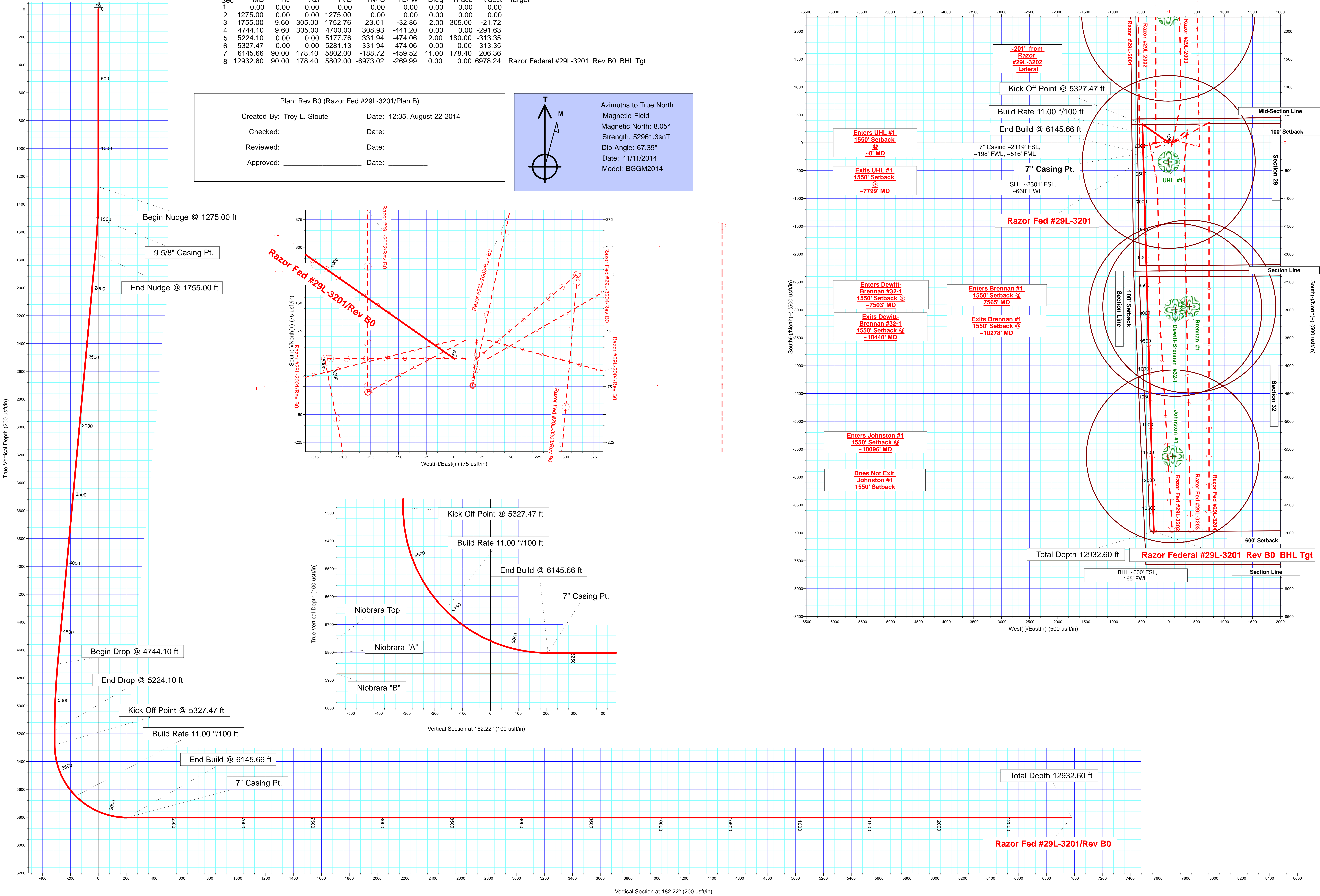
Created By: Troy L. Stoute      Date: 12:35, August 22 2014

Checked: \_\_\_\_\_      Date: \_\_\_\_\_

Reviewed: \_\_\_\_\_      Date: \_\_\_\_\_

Approved: \_\_\_\_\_      Date: \_\_\_\_\_

Azimuths to True North  
Magnetic Field  
Magnetic North: 8.05°  
Strength: 52961.3snT  
Dip Angle: 67.39°  
Date: 11/11/2014  
Model: BGGM2014



**Plan Report for Razor Fed #29L-3201 - Rev B0**

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)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,275.00	0.00	0.00	1,275.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Begin Nudge @ 1275.00 ft</b>										
1,300.00	0.50	305.00	1,300.00	0.06	-0.09	-0.06	2.00	2.00	0.00	305.00
1,400.00	2.50	305.00	1,399.96	1.56	-2.23	-1.48	2.00	2.00	0.00	0.00
1,439.09	3.28	305.00	1,439.00	2.69	-3.85	-2.54	2.00	2.00	0.00	0.00
<b>Pierre</b>										
1,500.00	4.50	305.00	1,499.77	5.07	-7.23	-4.78	2.00	2.00	0.00	0.00
1,500.23	4.50	305.00	1,500.00	5.08	-7.25	-4.79	0.00	0.00	0.00	0.00
<b>9 5/8" Casing Pt.</b>										
1,600.00	6.50	305.00	1,599.30	10.56	-15.08	-9.97	2.00	2.00	0.00	0.00
1,700.00	8.50	305.00	1,698.44	18.05	-25.78	-17.04	2.00	2.00	0.00	0.00
1,755.00	9.60	305.00	1,752.76	23.01	-32.86	-21.72	2.00	2.00	0.00	0.00
<b>End Nudge @ 1755.00 ft</b>										
1,800.00	9.60	305.00	1,797.13	27.32	-39.01	-25.79	0.00	0.00	0.00	0.00
1,900.00	9.60	305.00	1,895.73	36.88	-52.67	-34.82	0.00	0.00	0.00	0.00
2,000.00	9.60	305.00	1,994.33	46.45	-66.33	-43.85	0.00	0.00	0.00	0.00
2,100.00	9.60	305.00	2,092.93	56.01	-79.99	-52.87	0.00	0.00	0.00	0.00
2,200.00	9.60	305.00	2,191.53	65.58	-93.65	-61.90	0.00	0.00	0.00	0.00
2,300.00	9.60	305.00	2,290.13	75.14	-107.31	-70.93	0.00	0.00	0.00	0.00
2,400.00	9.60	305.00	2,388.72	84.71	-120.98	-79.96	0.00	0.00	0.00	0.00
2,500.00	9.60	305.00	2,487.32	94.27	-134.64	-88.99	0.00	0.00	0.00	0.00
2,600.00	9.60	305.00	2,585.92	103.84	-148.30	-98.02	0.00	0.00	0.00	0.00
2,700.00	9.60	305.00	2,684.52	113.40	-161.96	-107.05	0.00	0.00	0.00	0.00
2,800.00	9.60	305.00	2,783.12	122.97	-175.62	-116.08	0.00	0.00	0.00	0.00
2,900.00	9.60	305.00	2,881.72	132.54	-189.28	-125.11	0.00	0.00	0.00	0.00
3,000.00	9.60	305.00	2,980.32	142.10	-202.94	-134.14	0.00	0.00	0.00	0.00
3,100.00	9.60	305.00	3,078.92	151.67	-216.60	-143.17	0.00	0.00	0.00	0.00
3,200.00	9.60	305.00	3,177.52	161.23	-230.26	-152.20	0.00	0.00	0.00	0.00
3,300.00	9.60	305.00	3,276.12	170.80	-243.92	-161.23	0.00	0.00	0.00	0.00
3,400.00	9.60	305.00	3,374.72	180.36	-257.58	-170.26	0.00	0.00	0.00	0.00
3,500.00	9.60	305.00	3,473.32	189.93	-271.25	-179.29	0.00	0.00	0.00	0.00
3,600.00	9.60	305.00	3,571.92	199.49	-284.91	-188.32	0.00	0.00	0.00	0.00
3,700.00	9.60	305.00	3,670.52	209.06	-298.57	-197.35	0.00	0.00	0.00	0.00
3,800.00	9.60	305.00	3,769.12	218.62	-312.23	-206.38	0.00	0.00	0.00	0.00
3,900.00	9.60	305.00	3,867.72	228.19	-325.89	-215.41	0.00	0.00	0.00	0.00
4,000.00	9.60	305.00	3,966.32	237.76	-339.55	-224.44	0.00	0.00	0.00	0.00
4,100.00	9.60	305.00	4,064.92	247.32	-353.21	-233.47	0.00	0.00	0.00	0.00
4,200.00	9.60	305.00	4,163.52	256.89	-366.87	-242.50	0.00	0.00	0.00	0.00
4,300.00	9.60	305.00	4,262.12	266.45	-380.53	-251.53	0.00	0.00	0.00	0.00
4,400.00	9.60	305.00	4,360.72	276.02	-394.19	-260.56	0.00	0.00	0.00	0.00
4,500.00	9.60	305.00	4,459.32	285.58	-407.85	-269.59	0.00	0.00	0.00	0.00
4,600.00	9.60	305.00	4,557.92	295.15	-421.52	-278.62	0.00	0.00	0.00	0.00
4,700.00	9.60	305.00	4,656.52	304.71	-435.18	-287.65	0.00	0.00	0.00	0.00
4,744.10	9.60	305.00	4,700.00	308.93	-441.20	-291.63	0.00	0.00	0.00	0.00
<b>Begin Drop @ 4744.10 ft</b>										

**Plan Report for Razor Fed #29L-3201 - Rev B0**

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)	Toolface Azimuth (°)
4,800.00	8.48	305.00	4,755.20	313.97	-448.40	-296.39	2.00	-2.00	0.00	180.00
4,900.00	6.48	305.00	4,854.35	321.44	-459.06	-303.44	2.00	-2.00	0.00	180.00
5,000.00	4.48	305.00	4,953.88	326.92	-466.89	-308.61	2.00	-2.00	0.00	180.00
5,100.00	2.48	305.00	5,053.69	330.40	-471.86	-311.90	2.00	-2.00	0.00	180.00
5,200.00	0.48	305.00	5,153.66	331.89	-473.98	-313.30	2.00	-2.00	0.00	180.00
5,224.10	0.00	0.00	5,177.76	331.94	-474.06	-313.35	2.00	-2.00	0.00	180.00
<b>End Drop @ 5224.10 ft</b>										
5,300.00	0.00	0.00	5,253.66	331.94	-474.06	-313.35	0.00	0.00	0.00	0.00
5,327.47	0.00	0.00	5,281.13	331.94	-474.06	-313.35	0.00	0.00	0.00	0.00
<b>Kick Off Point @ 5327.47 ft</b>										
5,400.00	7.98	178.40	5,353.42	326.90	-473.92	-308.32	11.00	11.00	0.00	178.40
5,500.00	18.98	178.40	5,450.52	303.64	-473.27	-285.10	11.00	11.00	0.00	0.00
5,600.00	29.98	178.40	5,541.39	262.29	-472.12	-243.83	11.00	11.00	0.00	0.00
5,700.00	40.98	178.40	5,622.70	204.36	-470.50	-186.00	11.00	11.00	0.00	0.00
5,735.00	44.83	178.40	5,648.33	180.55	-469.83	-162.24	11.00	11.00	0.00	0.00
<b>Build Rate 11.00 °/100 ft</b>										
5,800.00	51.98	178.40	5,691.46	131.99	-468.48	-113.77	11.00	11.00	0.00	0.00
5,900.00	62.98	178.40	5,745.14	47.83	-466.13	-29.76	11.00	11.00	0.00	0.00
5,915.56	64.69	178.40	5,752.00	33.87	-465.74	-15.83	11.00	11.00	0.00	0.00
<b>Niobrara Top</b>										
6,000.00	73.98	178.40	5,781.77	-45.01	-463.53	62.92	11.00	11.00	0.00	0.00
6,100.00	84.98	178.40	5,800.00	-143.14	-460.79	160.86	11.00	11.00	0.00	0.00
6,144.79	89.90	178.40	5,802.00	-187.86	-459.54	205.50	11.00	11.00	0.00	0.00
<b>Niobrara "A"</b>										
6,145.66	90.00	178.40	5,802.00	-188.73	-459.52	206.37	10.96	10.96	0.00	0.00
<b>End Build @ 6145.66 ft - 7" Casing Pt.</b>										
6,200.00	90.00	178.40	5,802.00	-243.05	-458.00	260.58	0.00	0.00	0.00	0.00
6,300.00	90.00	178.40	5,802.00	-343.01	-455.21	360.36	0.00	0.00	0.00	0.00
6,400.00	90.00	178.40	5,802.00	-442.97	-452.42	460.14	0.00	0.00	0.00	0.00
6,500.00	90.00	178.40	5,802.00	-542.93	-449.62	559.92	0.00	0.00	0.00	0.00
6,600.00	90.00	178.40	5,802.00	-642.89	-446.83	659.70	0.00	0.00	0.00	0.00
6,700.00	90.00	178.40	5,802.00	-742.85	-444.04	759.48	0.00	0.00	0.00	0.00
6,800.00	90.00	178.40	5,802.00	-842.81	-441.25	859.25	0.00	0.00	0.00	0.00
6,900.00	90.00	178.40	5,802.00	-942.77	-438.45	959.03	0.00	0.00	0.00	0.00
7,000.00	90.00	178.40	5,802.00	-1,042.73	-435.66	1,058.81	0.00	0.00	0.00	0.00
7,100.00	90.00	178.40	5,802.00	-1,142.70	-432.87	1,158.59	0.00	0.00	0.00	0.00
7,200.00	90.00	178.40	5,802.00	-1,242.66	-430.08	1,258.37	0.00	0.00	0.00	0.00
7,300.00	90.00	178.40	5,802.00	-1,342.62	-427.28	1,358.14	0.00	0.00	0.00	0.00
7,400.00	90.00	178.40	5,802.00	-1,442.58	-424.49	1,457.92	0.00	0.00	0.00	0.00
7,500.00	90.00	178.40	5,802.00	-1,542.54	-421.70	1,557.70	0.00	0.00	0.00	0.00
7,600.00	90.00	178.40	5,802.00	-1,642.50	-418.91	1,657.48	0.00	0.00	0.00	0.00
7,700.00	90.00	178.40	5,802.00	-1,742.46	-416.11	1,757.26	0.00	0.00	0.00	0.00
7,800.00	90.00	178.40	5,802.00	-1,842.42	-413.32	1,857.03	0.00	0.00	0.00	0.00
7,900.00	90.00	178.40	5,802.00	-1,942.38	-410.53	1,956.81	0.00	0.00	0.00	0.00
8,000.00	90.00	178.40	5,802.00	-2,042.34	-407.74	2,056.59	0.00	0.00	0.00	0.00
8,100.00	90.00	178.40	5,802.00	-2,142.31	-404.94	2,156.37	0.00	0.00	0.00	0.00
8,200.00	90.00	178.40	5,802.00	-2,242.27	-402.15	2,256.15	0.00	0.00	0.00	0.00
8,300.00	90.00	178.40	5,802.00	-2,342.23	-399.36	2,355.92	0.00	0.00	0.00	0.00
8,400.00	90.00	178.40	5,802.00	-2,442.19	-396.57	2,455.70	0.00	0.00	0.00	0.00
8,500.00	90.00	178.40	5,802.00	-2,542.15	-393.77	2,555.48	0.00	0.00	0.00	0.00
8,600.00	90.00	178.40	5,802.00	-2,642.11	-390.98	2,655.26	0.00	0.00	0.00	0.00
8,700.00	90.00	178.40	5,802.00	-2,742.07	-388.19	2,755.04	0.00	0.00	0.00	0.00
8,800.00	90.00	178.40	5,802.00	-2,842.03	-385.39	2,854.82	0.00	0.00	0.00	0.00
8,900.00	90.00	178.40	5,802.00	-2,941.99	-382.60	2,954.59	0.00	0.00	0.00	0.00
9,000.00	90.00	178.40	5,802.00	-3,041.95	-379.81	3,054.37	0.00	0.00	0.00	0.00
9,100.00	90.00	178.40	5,802.00	-3,141.92	-377.02	3,154.15	0.00	0.00	0.00	0.00
9,200.00	90.00	178.40	5,802.00	-3,241.88	-374.22	3,253.93	0.00	0.00	0.00	0.00
9,300.00	90.00	178.40	5,802.00	-3,341.84	-371.43	3,353.71	0.00	0.00	0.00	0.00
9,400.00	90.00	178.40	5,802.00	-3,441.80	-368.64	3,453.48	0.00	0.00	0.00	0.00

**Plan Report for Razor Fed #29L-3201 - Rev B0**

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)	Toolface Azimuth (°)
9,500.00	90.00	178.40	5,802.00	-3,541.76	-365.85	3,553.26	0.00	0.00	0.00	0.00
9,600.00	90.00	178.40	5,802.00	-3,641.72	-363.05	3,653.04	0.00	0.00	0.00	0.00
9,700.00	90.00	178.40	5,802.00	-3,741.68	-360.26	3,752.82	0.00	0.00	0.00	0.00
9,800.00	90.00	178.40	5,802.00	-3,841.64	-357.47	3,852.60	0.00	0.00	0.00	0.00
9,900.00	90.00	178.40	5,802.00	-3,941.60	-354.68	3,952.37	0.00	0.00	0.00	0.00
10,000.00	90.00	178.40	5,802.00	-4,041.56	-351.88	4,052.15	0.00	0.00	0.00	0.00
10,100.00	90.00	178.40	5,802.00	-4,141.53	-349.09	4,151.93	0.00	0.00	0.00	0.00
10,200.00	90.00	178.40	5,802.00	-4,241.49	-346.30	4,251.71	0.00	0.00	0.00	0.00
10,300.00	90.00	178.40	5,802.00	-4,341.45	-343.51	4,351.49	0.00	0.00	0.00	0.00
10,400.00	90.00	178.40	5,802.00	-4,441.41	-340.71	4,451.27	0.00	0.00	0.00	0.00
10,500.00	90.00	178.40	5,802.00	-4,541.37	-337.92	4,551.04	0.00	0.00	0.00	0.00
10,600.00	90.00	178.40	5,802.00	-4,641.33	-335.13	4,650.82	0.00	0.00	0.00	0.00
10,700.00	90.00	178.40	5,802.00	-4,741.29	-332.34	4,750.60	0.00	0.00	0.00	0.00
10,800.00	90.00	178.40	5,802.00	-4,841.25	-329.54	4,850.38	0.00	0.00	0.00	0.00
10,900.00	90.00	178.40	5,802.00	-4,941.21	-326.75	4,950.16	0.00	0.00	0.00	0.00
11,000.00	90.00	178.40	5,802.00	-5,041.17	-323.96	5,049.93	0.00	0.00	0.00	0.00
11,100.00	90.00	178.40	5,802.00	-5,141.14	-321.17	5,149.71	0.00	0.00	0.00	0.00
11,200.00	90.00	178.40	5,802.00	-5,241.10	-318.37	5,249.49	0.00	0.00	0.00	0.00
11,300.00	90.00	178.40	5,802.00	-5,341.06	-315.58	5,349.27	0.00	0.00	0.00	0.00
11,400.00	90.00	178.40	5,802.00	-5,441.02	-312.79	5,449.05	0.00	0.00	0.00	0.00
11,500.00	90.00	178.40	5,802.00	-5,540.98	-310.00	5,548.82	0.00	0.00	0.00	0.00
11,600.00	90.00	178.40	5,802.00	-5,640.94	-307.20	5,648.60	0.00	0.00	0.00	0.00
11,700.00	90.00	178.40	5,802.00	-5,740.90	-304.41	5,748.38	0.00	0.00	0.00	0.00
11,800.00	90.00	178.40	5,802.00	-5,840.86	-301.62	5,848.16	0.00	0.00	0.00	0.00
11,900.00	90.00	178.40	5,802.00	-5,940.82	-298.83	5,947.94	0.00	0.00	0.00	0.00
12,000.00	90.00	178.40	5,802.00	-6,040.78	-296.03	6,047.72	0.00	0.00	0.00	0.00
12,100.00	90.00	178.40	5,802.00	-6,140.75	-293.24	6,147.49	0.00	0.00	0.00	0.00
12,200.00	90.00	178.40	5,802.00	-6,240.71	-290.45	6,247.27	0.00	0.00	0.00	0.00
12,300.00	90.00	178.40	5,802.00	-6,340.67	-287.66	6,347.05	0.00	0.00	0.00	0.00
12,400.00	90.00	178.40	5,802.00	-6,440.63	-284.86	6,446.83	0.00	0.00	0.00	0.00
12,500.00	90.00	178.40	5,802.00	-6,540.59	-282.07	6,546.61	0.00	0.00	0.00	0.00
12,600.00	90.00	178.40	5,802.00	-6,640.55	-279.28	6,646.38	0.00	0.00	0.00	0.00
12,700.00	90.00	178.40	5,802.00	-6,740.51	-276.49	6,746.16	0.00	0.00	0.00	0.00
12,800.00	90.00	178.40	5,802.00	-6,840.47	-273.69	6,845.94	0.00	0.00	0.00	0.00
12,900.00	90.00	178.40	5,802.00	-6,940.43	-270.90	6,945.72	0.00	0.00	0.00	0.00
12,932.60	90.00	178.40	5,802.00	-6,973.02	-269.99	6,978.24	0.00	0.00	0.00	0.00
<b>Total Depth 12932.60 ft</b>										

**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,275.00	1,275.00	0.00	0.00	Begin Nudge @ 1275.00 ft
1,755.00	1,752.76	23.01	-32.86	End Nudge @ 1755.00 ft
4,744.10	4,700.00	308.93	-441.20	Begin Drop @ 4744.10 ft
5,224.10	5,177.76	331.94	-474.06	End Drop @ 5224.10 ft
5,327.47	5,281.13	331.94	-474.06	Kick Off Point @ 5327.47 ft
5,735.00	5,648.33	180.55	-469.83	Build Rate 11.00 °/100 ft
6,145.66	5,802.00	-188.72	-459.52	End Build @ 6145.66 ft
12,932.60	5,802.00	-6,973.02	-269.99	Total Depth 12932.60 ft

## Plan Report for Razor Fed #29L-3201 - Rev B0

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
Target	Razor Federal #29L-3201_Rev B0_BHL Tgt	182.22	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	1,500.00	Rev B0	MWD+IFR1+MS+sag
1,500.00	6,145.66	Rev B0	MWD+IFR1+MS+sag
6,145.66	12,932.60	Rev B0	MWD+IFR1+MS+sag

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,500.23	1,500.00	9 5/8" Casing Pt.	9-5/8	13-1/2
6,145.66	5,802.00	7" Casing Pt.	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,439.09	1,439.00	Pierre		0.00	
5,915.56	5,752.00	Niobrara Top		0.00	
6,144.79	5,802.00	Niobrara "A"		0.00	

## Plan Report for Razor Fed #29L-3201 - Rev B0

### Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
JOHNSTON #1_SB	0.00	-5,628.26	70.33	Circle
UHL #1_SB	0.00	-345.38	-1.94	Circle
BRENNAN #1_SB	0.00	-2,939.82	366.02	Circle
DEWITT-BRENNAN #32-1_SB	0.00	-2,999.21	115.18	Circle
Section 29 Mid-Section Line	0.00	774.87	3,702.23	Polygon
Section 29 Mid-Section Line_North SB	0.00	774.87	3,702.23	Polygon
UHL #2_SB	0.00	2,296.06	-12.18	Circle
NELSON RANCHES #A-5_SB	0.00	7,611.04	-68.36	Circle
Razor Section 32 Lines	-35.00	774.87	3,702.23	Polygon
Razor Section 20 Lines	-35.00	774.87	3,702.23	Polygon
Razor Section 29 Lines	-35.00	774.87	3,702.23	Polygon
Razor Section 32 100' Setback	-35.00	774.87	3,702.23	Polygon
Razor Section 29 100' Setback	-35.00	774.87	3,702.23	Polygon
Razor Section 20 100' Setback	-35.00	774.87	3,702.23	Polygon
Razor Federal #29L-3201_Rev B0_BHL Tgt	5,802.00	-6,973.02	-269.99	Point

### Directional Difficulty Index

Average Dogleg over Survey:	0.84 °/100usft	Maximum Dogleg over Survey:	11.00 °/100usft at 6,145.66 usft
Net Tortousity applicable to Plans:	0.84 °/100usft	Directional Difficulty Index:	6.462

### Audit Info

# North Reference Sheet for Sec. 29-T10N-R58W - Razor Fed #29L-3201 - Plan B

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference .

Vertical Depths are relative to KB 17' @ 4844.00usft. Northing and Easting are relative to Razor Fed #29L-3201

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -105.50°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:40° 47' 0.000 N°

False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 1.00000416

Grid Coordinates of Well: 1,541,347.70 usft N, 3,443,851.15 usft E

Geographical Coordinates of Well: 40° 48' 30.12" N, 103° 53' 47.73" W

Grid Convergence at Surface is: 1.04°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,932.60usft

the Bottom Hole Displacement is 6,978.24usft in the Direction of 182.22° ( True).

Magnetic Convergence at surface is: -7.01° ( 11 November 2014, , BGGM2014)

