

Whiting Oil and Gas Corporation

Weld County, CO

Sec. 30-T10N-R58W

Razor Federal #30K-1908

Plan A

Plan: Rev A0

Sperry Drilling Services

Proposal Report

12 February, 2014

Well Coordinates: 1,541,299.91 N, 3,440,125.24 E (40° 48' 30.31" N, 103° 54' 36.19" W)

Ground Level: 4,828.00 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

Centered on Well Razor Federal #30K-1908

KB 22' @ 4850.00usft (Frontier 26)

N

True

API - US Survey Feet - Custom

HALLIBURTON

Project: Weld County, CO
Site: Sec. 30-T10N-R58W
Well: Razor Federal #30K-1908
Wellbore: Plan A
Plan: Rev A0

Whiting Oil and Gas Corporation



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	700.00	4.00	28.75	699.84	6.12	3.36	2.00	28.75	6.38	
4	5477.26	4.00	28.75	5465.46	298.28	163.64	0.00	0.00	310.92	
5	6259.08	90.00	28.75	5950.00	753.83	413.57	11.00	0.00	785.78	
6	6334.08	90.00	28.75	5950.00	819.59	449.64	0.00	0.00	854.32	
7	7292.45	90.00	360.00	5950.00	1738.25	685.07	3.00	-90.00	1789.46	
8	13714.69	90.00	360.00	5950.00	8160.48	684.93	0.00	0.00	8189.18	Razor Federal 30K-1908 BHL

Plan: Rev A0 (Razor Federal #30K-1908/Plan A)

Created By: Troy L. Stoute Date: 18:03, February 12 2014

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

T

M

Azimuths to True North

Magnetic Field

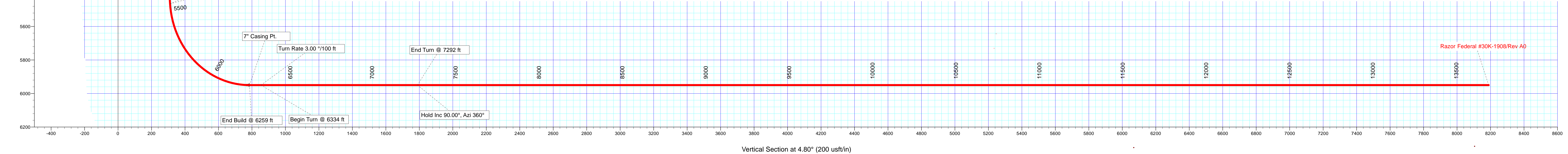
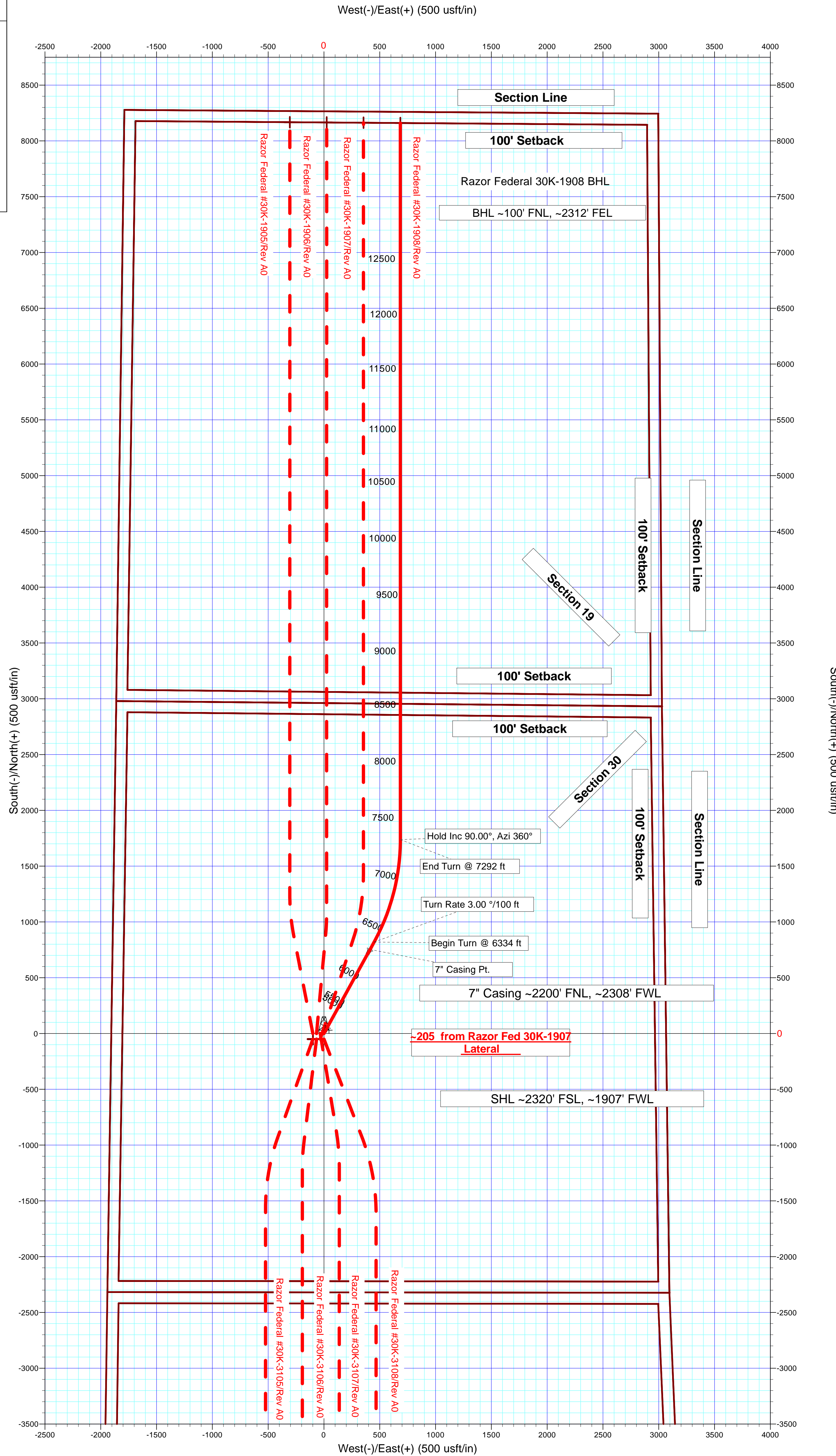
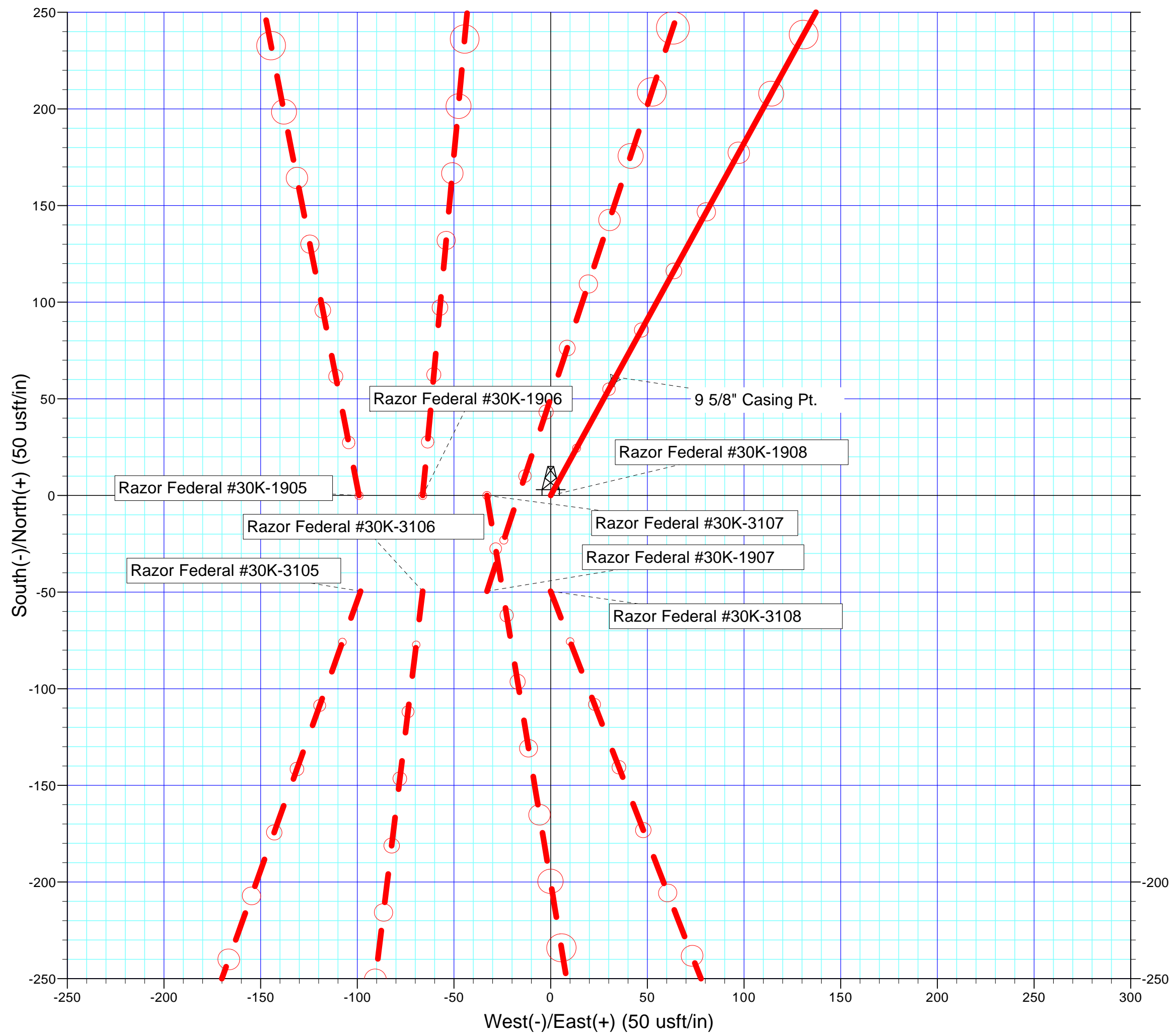
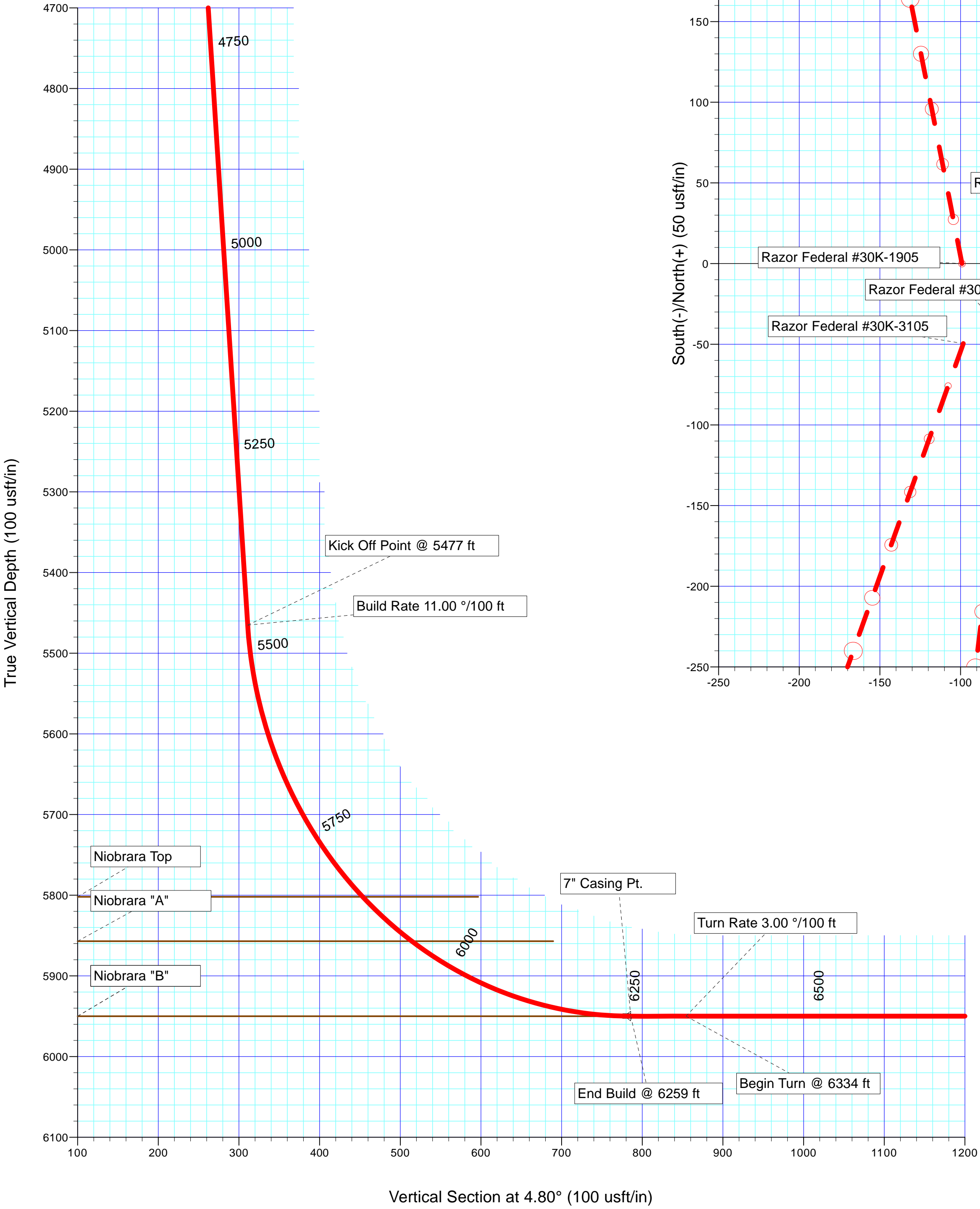
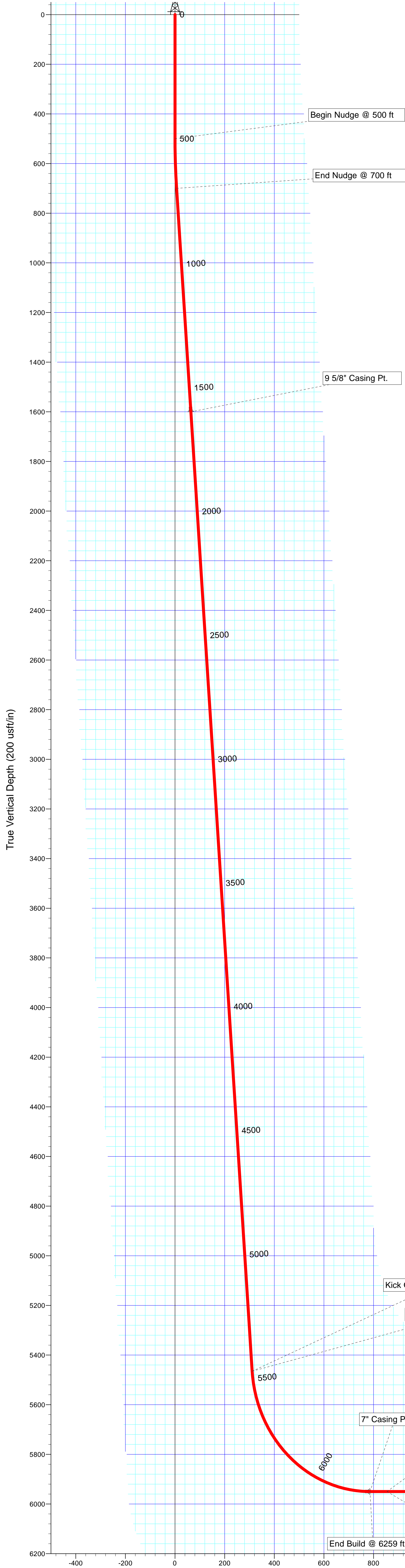
Magnetic North: 8.09°

Strength: 53057.4snT

Dip Angle: 67.40°

Date: 3/19/2014

Model: BGGM2013



Plan Report for Razor Federal #30K-1908 - Rev A0

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
Begin Nudge @ 500 ft										
600.00	2.00	28.75	599.98	1.53	0.84	1.59	2.00	2.00	0.00	28.75
700.00	4.00	28.75	699.84	6.12	3.36	6.38	2.00	2.00	0.00	0.00
End Nudge @ 700 ft										
800.00	4.00	28.75	799.59	12.23	6.71	12.75	0.00	0.00	0.00	0.00
900.00	4.00	28.75	899.35	18.35	10.07	19.13	0.00	0.00	0.00	0.00
1,000.00	4.00	28.75	999.11	24.47	13.42	25.50	0.00	0.00	0.00	0.00
1,100.00	4.00	28.75	1,098.86	30.58	16.78	31.88	0.00	0.00	0.00	0.00
1,200.00	4.00	28.75	1,198.62	36.70	20.13	38.25	0.00	0.00	0.00	0.00
1,300.00	4.00	28.75	1,298.38	42.81	23.49	44.63	0.00	0.00	0.00	0.00
1,400.00	4.00	28.75	1,398.13	48.93	26.84	51.00	0.00	0.00	0.00	0.00
1,485.07	4.00	28.75	1,483.00	54.13	29.70	56.43	0.00	0.00	0.00	0.00
Pierre										
1,500.00	4.00	28.75	1,497.89	55.04	30.20	57.38	0.00	0.00	0.00	0.00
1,600.00	4.00	28.75	1,597.65	61.16	33.55	63.75	0.00	0.00	0.00	0.00
1,602.36	4.00	28.75	1,600.00	61.30	33.63	63.90	0.00	0.00	0.00	0.00
9 5/8" Casing Pt.										
1,700.00	4.00	28.75	1,697.40	67.28	36.91	70.13	0.00	0.00	0.00	0.00
1,800.00	4.00	28.75	1,797.16	73.39	40.26	76.50	0.00	0.00	0.00	0.00
1,900.00	4.00	28.75	1,896.91	79.51	43.62	82.88	0.00	0.00	0.00	0.00
2,000.00	4.00	28.75	1,996.67	85.62	46.97	89.25	0.00	0.00	0.00	0.00
2,100.00	4.00	28.75	2,096.43	91.74	50.33	95.63	0.00	0.00	0.00	0.00
2,200.00	4.00	28.75	2,196.18	97.85	53.68	102.00	0.00	0.00	0.00	0.00
2,300.00	4.00	28.75	2,295.94	103.97	57.04	108.38	0.00	0.00	0.00	0.00
2,400.00	4.00	28.75	2,395.70	110.09	60.40	114.75	0.00	0.00	0.00	0.00
2,500.00	4.00	28.75	2,495.45	116.20	63.75	121.13	0.00	0.00	0.00	0.00
2,600.00	4.00	28.75	2,595.21	122.32	67.11	127.50	0.00	0.00	0.00	0.00
2,700.00	4.00	28.75	2,694.97	128.43	70.46	133.88	0.00	0.00	0.00	0.00
2,800.00	4.00	28.75	2,794.72	134.55	73.82	140.25	0.00	0.00	0.00	0.00
2,900.00	4.00	28.75	2,894.48	140.66	77.17	146.63	0.00	0.00	0.00	0.00
3,000.00	4.00	28.75	2,994.23	146.78	80.53	153.00	0.00	0.00	0.00	0.00
3,100.00	4.00	28.75	3,093.99	152.90	83.88	159.38	0.00	0.00	0.00	0.00
3,200.00	4.00	28.75	3,193.75	159.01	87.24	165.75	0.00	0.00	0.00	0.00
3,300.00	4.00	28.75	3,293.50	165.13	90.59	172.13	0.00	0.00	0.00	0.00
3,400.00	4.00	28.75	3,393.26	171.24	93.95	178.50	0.00	0.00	0.00	0.00
3,500.00	4.00	28.75	3,493.02	177.36	97.30	184.88	0.00	0.00	0.00	0.00
3,600.00	4.00	28.75	3,592.77	183.47	100.66	191.25	0.00	0.00	0.00	0.00
3,700.00	4.00	28.75	3,692.53	189.59	104.01	197.63	0.00	0.00	0.00	0.00
3,800.00	4.00	28.75	3,792.29	195.71	107.37	204.00	0.00	0.00	0.00	0.00
3,900.00	4.00	28.75	3,892.04	201.82	110.72	210.38	0.00	0.00	0.00	0.00
4,000.00	4.00	28.75	3,991.80	207.94	114.08	216.75	0.00	0.00	0.00	0.00
4,100.00	4.00	28.75	4,091.56	214.05	117.43	223.13	0.00	0.00	0.00	0.00
4,200.00	4.00	28.75	4,191.31	220.17	120.79	229.50	0.00	0.00	0.00	0.00
4,300.00	4.00	28.75	4,291.07	226.28	124.14	235.88	0.00	0.00	0.00	0.00
4,400.00	4.00	28.75	4,390.82	232.40	127.50	242.25	0.00	0.00	0.00	0.00
4,500.00	4.00	28.75	4,490.58	238.52	130.85	248.62	0.00	0.00	0.00	0.00
4,600.00	4.00	28.75	4,590.34	244.63	134.21	255.00	0.00	0.00	0.00	0.00
4,700.00	4.00	28.75	4,690.09	250.75	137.56	261.37	0.00	0.00	0.00	0.00
4,800.00	4.00	28.75	4,789.85	256.86	140.92	267.75	0.00	0.00	0.00	0.00
4,900.00	4.00	28.75	4,889.61	262.98	144.28	274.12	0.00	0.00	0.00	0.00
5,000.00	4.00	28.75	4,989.36	269.09	147.63	280.50	0.00	0.00	0.00	0.00
5,100.00	4.00	28.75	5,089.12	275.21	150.99	286.87	0.00	0.00	0.00	0.00

Plan Report for Razor Federal #30K-1908 - Rev A0

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 (°)
5,200.00	4.00	28.75	5,188.88	281.33	154.34	293.25	0.00	0.00	0.00	0.00
5,300.00	4.00	28.75	5,288.63	287.44	157.70	299.62	0.00	0.00	0.00	0.00
5,400.00	4.00	28.75	5,388.39	293.56	161.05	306.00	0.00	0.00	0.00	0.00
5,477.00	4.00	28.75	5,465.20	298.27	163.63	310.91	0.00	0.00	0.00	0.00
Kick Off Point @ 5477 ft - Build Rate 11.00 °/100 ft										
5,477.26	4.00	28.75	5,465.46	298.28	163.64	310.92	0.00	0.00	0.00	0.00
5,500.00	6.50	28.75	5,488.10	300.11	164.64	312.83	11.00	11.00	0.00	0.00
5,600.00	17.50	28.75	5,585.77	318.31	174.63	331.80	11.00	11.00	0.00	0.00
5,700.00	28.50	28.75	5,677.68	352.52	193.40	367.46	11.00	11.00	0.00	0.00
5,800.00	39.50	28.75	5,760.45	401.47	220.25	418.48	11.00	11.00	0.00	0.00
5,856.48	45.71	28.75	5,802.00	434.97	238.63	453.41	11.00	11.00	0.00	0.00
Niobrara Top										
5,900.00	50.50	28.75	5,831.05	463.37	254.21	483.01	11.00	11.00	0.00	0.00
5,943.00	55.23	28.75	5,857.00	493.41	270.70	514.32	11.00	11.00	0.00	0.00
Niobrara "A"										
6,000.00	61.50	28.75	5,886.88	535.94	294.03	558.66	11.00	11.00	0.00	0.00
6,100.00	72.50	28.75	5,925.89	616.52	338.24	642.65	11.00	11.00	0.00	0.00
6,200.00	83.50	28.75	5,946.65	702.15	385.21	731.91	11.00	11.00	0.00	0.00
6,259.00	89.99	28.75	5,950.00	753.76	413.53	785.71	11.00	11.00	0.00	0.00
End Build @ 6259 ft - 7" Casing Pt.										
6,259.08	90.00	28.75	5,950.00	753.83	413.57	785.78	11.00	11.00	0.00	0.00
Niobrara "B"										
6,300.00	90.00	28.75	5,950.00	789.71	433.25	823.18	0.00	0.00	0.00	0.00
6,334.00	90.00	28.75	5,950.00	819.52	449.60	854.25	0.00	0.00	0.00	0.00
Turn Rate 3.00 °/100 ft - Begin Turn @ 6334 ft										
6,334.08	90.00	28.75	5,950.00	819.59	449.64	854.32	0.00	0.00	0.00	0.00
6,400.00	90.00	26.77	5,950.00	877.92	480.34	915.02	3.00	0.00	-3.00	-90.00
6,500.00	90.00	23.77	5,950.00	968.34	523.03	1,008.69	3.00	0.00	-3.00	-90.00
6,600.00	90.00	20.77	5,950.00	1,060.86	560.93	1,104.06	3.00	0.00	-3.00	-90.00
6,700.00	90.00	17.77	5,950.00	1,155.25	593.93	1,200.88	3.00	0.00	-3.00	-90.00
6,800.00	90.00	14.77	5,950.00	1,251.23	621.95	1,298.87	3.00	0.00	-3.00	-90.00
6,900.00	90.00	11.77	5,950.00	1,348.55	644.90	1,397.76	3.00	0.00	-3.00	-90.00
7,000.00	90.00	8.77	5,950.00	1,446.94	662.73	1,497.30	3.00	0.00	-3.00	-90.00
7,100.00	90.00	5.77	5,950.00	1,546.12	675.39	1,597.19	3.00	0.00	-3.00	-90.00
7,200.00	90.00	2.77	5,950.00	1,645.83	682.84	1,697.18	3.00	0.00	-3.00	-90.00
7,292.00	90.00	0.01	5,950.00	1,737.80	685.07	1,789.01	3.00	0.00	-3.00	-90.00
End Turn @ 7292 ft - Hold Inc 90.00°, Azi 360°										
7,292.45	90.00	360.00	5,950.00	1,738.25	685.07	1,789.46	3.00	0.00	-3.00	-90.00
7,300.00	90.00	360.00	5,950.00	1,745.80	685.07	1,796.98	0.00	0.00	0.00	0.00
7,400.00	90.00	360.00	5,950.00	1,845.80	685.07	1,896.63	0.00	0.00	0.00	0.00
7,500.00	90.00	360.00	5,950.00	1,945.80	685.07	1,996.28	0.00	0.00	0.00	0.00
7,600.00	90.00	360.00	5,950.00	2,045.80	685.07	2,095.93	0.00	0.00	0.00	0.00
7,700.00	90.00	360.00	5,950.00	2,145.80	685.07	2,195.57	0.00	0.00	0.00	0.00
7,800.00	90.00	360.00	5,950.00	2,245.80	685.06	2,295.22	0.00	0.00	0.00	0.00
7,900.00	90.00	360.00	5,950.00	2,345.80	685.06	2,394.87	0.00	0.00	0.00	0.00
8,000.00	90.00	360.00	5,950.00	2,445.80	685.06	2,494.52	0.00	0.00	0.00	0.00
8,100.00	90.00	360.00	5,950.00	2,545.80	685.06	2,594.17	0.00	0.00	0.00	0.00
8,200.00	90.00	360.00	5,950.00	2,645.80	685.05	2,693.82	0.00	0.00	0.00	0.00
8,300.00	90.00	360.00	5,950.00	2,745.80	685.05	2,793.47	0.00	0.00	0.00	0.00
8,400.00	90.00	360.00	5,950.00	2,845.80	685.05	2,893.12	0.00	0.00	0.00	0.00
8,500.00	90.00	360.00	5,950.00	2,945.80	685.05	2,992.77	0.00	0.00	0.00	0.00
8,600.00	90.00	360.00	5,950.00	3,045.80	685.05	3,092.42	0.00	0.00	0.00	0.00
8,700.00	90.00	360.00	5,950.00	3,145.80	685.04	3,192.07	0.00	0.00	0.00	0.00
8,800.00	90.00	360.00	5,950.00	3,245.80	685.04	3,291.72	0.00	0.00	0.00	0.00
8,900.00	90.00	360.00	5,950.00	3,345.80	685.04	3,391.37	0.00	0.00	0.00	0.00
9,000.00	90.00	360.00	5,950.00	3,445.80	685.04	3,491.02	0.00	0.00	0.00	0.00
9,100.00	90.00	360.00	5,950.00	3,545.80	685.03	3,590.67	0.00	0.00	0.00	0.00
9,200.00	90.00	360.00	5,950.00	3,645.80	685.03	3,690.32	0.00	0.00	0.00	0.00

Plan Report for Razor Federal #30K-1908 - Rev A0

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 (°)
9,300.00	90.00	360.00	5,950.00	3,745.80	685.03	3,789.97	0.00	0.00	0.00	0.00
9,400.00	90.00	360.00	5,950.00	3,845.80	685.03	3,889.62	0.00	0.00	0.00	0.00
9,500.00	90.00	360.00	5,950.00	3,945.80	685.02	3,989.26	0.00	0.00	0.00	0.00
9,600.00	90.00	360.00	5,950.00	4,045.80	685.02	4,088.91	0.00	0.00	0.00	0.00
9,700.00	90.00	360.00	5,950.00	4,145.80	685.02	4,188.56	0.00	0.00	0.00	0.00
9,800.00	90.00	360.00	5,950.00	4,245.80	685.02	4,288.21	0.00	0.00	0.00	0.00
9,900.00	90.00	360.00	5,950.00	4,345.80	685.02	4,387.86	0.00	0.00	0.00	0.00
10,000.00	90.00	360.00	5,950.00	4,445.80	685.01	4,487.51	0.00	0.00	0.00	0.00
10,100.00	90.00	360.00	5,950.00	4,545.80	685.01	4,587.16	0.00	0.00	0.00	0.00
10,200.00	90.00	360.00	5,950.00	4,645.80	685.01	4,686.81	0.00	0.00	0.00	0.00
10,300.00	90.00	360.00	5,950.00	4,745.80	685.01	4,786.46	0.00	0.00	0.00	0.00
10,400.00	90.00	360.00	5,950.00	4,845.80	685.00	4,886.11	0.00	0.00	0.00	0.00
10,500.00	90.00	360.00	5,950.00	4,945.80	685.00	4,985.76	0.00	0.00	0.00	0.00
10,600.00	90.00	360.00	5,950.00	5,045.80	685.00	5,085.41	0.00	0.00	0.00	0.00
10,700.00	90.00	360.00	5,950.00	5,145.80	685.00	5,185.06	0.00	0.00	0.00	0.00
10,800.00	90.00	360.00	5,950.00	5,245.80	685.00	5,284.71	0.00	0.00	0.00	0.00
10,900.00	90.00	360.00	5,950.00	5,345.80	684.99	5,384.36	0.00	0.00	0.00	0.00
11,000.00	90.00	360.00	5,950.00	5,445.80	684.99	5,484.01	0.00	0.00	0.00	0.00
11,100.00	90.00	360.00	5,950.00	5,545.80	684.99	5,583.66	0.00	0.00	0.00	0.00
11,200.00	90.00	360.00	5,950.00	5,645.80	684.99	5,683.30	0.00	0.00	0.00	0.00
11,300.00	90.00	360.00	5,950.00	5,745.80	684.98	5,782.95	0.00	0.00	0.00	0.00
11,400.00	90.00	360.00	5,950.00	5,845.80	684.98	5,882.60	0.00	0.00	0.00	0.00
11,500.00	90.00	360.00	5,950.00	5,945.80	684.98	5,982.25	0.00	0.00	0.00	0.00
11,600.00	90.00	360.00	5,950.00	6,045.80	684.98	6,081.90	0.00	0.00	0.00	0.00
11,700.00	90.00	360.00	5,950.00	6,145.80	684.98	6,181.55	0.00	0.00	0.00	0.00
11,800.00	90.00	360.00	5,950.00	6,245.80	684.97	6,281.20	0.00	0.00	0.00	0.00
11,900.00	90.00	360.00	5,950.00	6,345.80	684.97	6,380.85	0.00	0.00	0.00	0.00
12,000.00	90.00	360.00	5,950.00	6,445.80	684.97	6,480.50	0.00	0.00	0.00	0.00
12,100.00	90.00	360.00	5,950.00	6,545.80	684.97	6,580.15	0.00	0.00	0.00	0.00
12,200.00	90.00	360.00	5,950.00	6,645.80	684.96	6,679.80	0.00	0.00	0.00	0.00
12,300.00	90.00	360.00	5,950.00	6,745.80	684.96	6,779.45	0.00	0.00	0.00	0.00
12,400.00	90.00	360.00	5,950.00	6,845.80	684.96	6,879.10	0.00	0.00	0.00	0.00
12,500.00	90.00	360.00	5,950.00	6,945.80	684.96	6,978.75	0.00	0.00	0.00	0.00
12,600.00	90.00	360.00	5,950.00	7,045.80	684.95	7,078.40	0.00	0.00	0.00	0.00
12,700.00	90.00	360.00	5,950.00	7,145.80	684.95	7,178.05	0.00	0.00	0.00	0.00
12,800.00	90.00	360.00	5,950.00	7,245.80	684.95	7,277.70	0.00	0.00	0.00	0.00
12,900.00	90.00	360.00	5,950.00	7,345.80	684.95	7,377.35	0.00	0.00	0.00	0.00
13,000.00	90.00	360.00	5,950.00	7,445.80	684.95	7,476.99	0.00	0.00	0.00	0.00
13,100.00	90.00	360.00	5,950.00	7,545.80	684.94	7,576.64	0.00	0.00	0.00	0.00
13,200.00	90.00	360.00	5,950.00	7,645.80	684.94	7,676.29	0.00	0.00	0.00	0.00
13,300.00	90.00	360.00	5,950.00	7,745.80	684.94	7,775.94	0.00	0.00	0.00	0.00
13,400.00	90.00	360.00	5,950.00	7,845.80	684.94	7,875.59	0.00	0.00	0.00	0.00
13,500.00	90.00	360.00	5,950.00	7,945.80	684.93	7,975.24	0.00	0.00	0.00	0.00
13,600.00	90.00	360.00	5,950.00	8,045.80	684.93	8,074.89	0.00	0.00	0.00	0.00
13,700.00	90.00	360.00	5,950.00	8,145.80	684.93	8,174.54	0.00	0.00	0.00	0.00
13,714.60	90.00	360.00	5,950.00	8,160.40	684.93	8,189.09	0.00	0.00	0.00	0.00
Total Depth 13714.6 ft										
13,714.69	90.00	360.00	5,950.00	8,160.48	684.93	8,189.18	0.00	0.00	0.00	0.00

Plan Report for Razor Federal #30K-1908 - Rev A0**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.00	500.00	0.00	0.00	Begin Nudge @ 500 ft
700.00	699.84	6.12	3.36	End Nudge @ 700 ft
5,477.00	5,465.20	298.27	163.63	Kick Off Point @ 5477 ft
5,477.00	5,465.20	298.27	163.63	Build Rate 11.00 °/100 ft
6,259.00	5,950.00	753.76	413.53	End Build @ 6259 ft
6,334.00	5,950.00	819.52	449.60	Turn Rate 3.00 °/100 ft
6,334.00	5,950.00	819.52	449.60	Begin Turn @ 6334 ft
7,292.00	5,950.00	1,737.80	685.07	End Turn @ 7292 ft
7,292.00	5,950.00	1,737.80	685.07	Hold Inc 90.00°, Azi 360°
13,714.60	5,950.00	8,160.40	684.93	Total Depth 13714.6 ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
Target	Razor Federal 30K-1908 BHL	4.80	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	1,600.00	Rev A0	MWD+IFR1+MS+sag
1,600.00	6,259.00	Rev A0	MWD+IFR1+MS+sag
6,259.00	13,714.09	Rev A0	MWD+IFR1+MS+sag

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,602.36	1,600.00	9 5/8" Casing Pt.	9-5/8	13-1/2
6,259.00	5,950.00	7" Casing Pt.	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,485.07	1,483.00	Pierre		0.00	
5,856.48	5,802.00	Niobrara Top		0.00	
5,943.00	5,857.00	Niobrara "A"		0.00	
6,259.08	5,950.00	Niobrara "B"		0.00	

Plan Report for Razor Federal #30K-1908 - Rev A0

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Razor Fed Section 30 100' Setback	0.00	-49.55	-98.28	Polygon
Razor Fed Section 31 100' Setback	0.00	-49.55	-98.28	Polygon
Razor Fed Section 19	0.00	-49.55	-98.28	Polygon
Razor Fed Section 30	0.00	-49.55	-98.28	Polygon
Razor Fed Section 31	0.00	-49.55	-98.28	Polygon
Razor Fed Section 19 100' Setback	0.00	-49.55	-98.28	Polygon
Razor Federal 30K-1908 BHL	5,950.00	8,160.48	684.93	Point

Directional Difficulty Index

Average Dogleg over Survey:	0.87 °/100usft	Maximum Dogleg over Survey:	11.00 °/100usft at 6,259.08 usft
Net Tortousity applicable to Plans:	0.87 °/100usft	Directional Difficulty Index:	6.532

Audit Info

North Reference Sheet for Sec. 30-T10N-R58W - Razor Federal #30K-1908 - Plan A

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

Vertical Depths are relative to KB 22' @ 4850.00usft (Frontier 26). Northing and Easting are relative to Razor Federal #30K-1908

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: 1.00000417

Grid Coordinates of Well: 1,541,299.91 usft N, 3,440,125.24 usft E

Geographical Coordinates of Well: 40° 48' 30.31" N, 103° 54' 36.19" W

Grid Convergence at Surface is: 1.03°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,714.69usft
the Bottom Hole Displacement is 8,189.18usft in the Direction of 4.80° (True).

Magnetic Convergence at surface is: -7.06° (19 March 2014, , BGGM2013)

