

1 General

1.1 Customer Information

Company	PICEANCE HL
Representative	Eric Kolstad
Address	1515 Arapahoe St., Suite 1000 Denver, CO 80202

1.2 Well Information

Well	RG 333-14-298	Wellbore No.	OH
Well Name	FEDERAL RG 333-14-298	Common Name	RG 333-14-298
Project	RG 14-02S-098W	Site	RG 32-14-298 Pad
Vertical Section Azimuth	174.69 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	1/25/2011	UWI	RG 333-14-298
Active Datum	KELLY BUSHING @6,568.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	CATHEDRAL
Date Started	1/25/2011	Ended	
Tool Name	MWD	Engineer	

2.1.1 Tie On Point

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)
0.0	0.00	0.00	0.00	0.00	0.00

2.1.2 Survey Stations

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
1/25/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/25/2011	NORMAL	178.0	2.50	157.60	177.94	-3.59	1.48	3.71	1.40	1.40	0.00	157.60
	NORMAL	208.0	3.00	164.60	207.91	-4.95	1.94	5.11	2.00	1.67	23.33	37.42
	NORMAL	241.0	3.30	175.80	240.86	-6.73	2.24	6.91	2.07	0.91	33.94	69.68
	NORMAL	272.0	3.50	186.60	271.81	-8.56	2.19	8.73	2.16	0.65	34.84	78.10
	NORMAL	334.0	3.70	181.00	333.68	-12.44	1.94	12.57	0.65	0.32	-9.03	296.82
	NORMAL	429.0	6.30	175.90	428.31	-20.71	2.26	20.83	2.77	2.74	-5.37	347.75
	NORMAL	520.0	8.30	183.20	518.57	-32.25	2.25	32.32	2.42	2.20	8.02	28.53
	NORMAL	613.0	10.60	181.20	610.31	-47.50	1.70	47.46	2.50	2.47	-2.15	350.89
	NORMAL	705.0	12.20	175.00	700.49	-65.65	2.37	65.59	2.19	1.74	-6.74	319.48
	NORMAL	797.0	14.70	174.50	789.96	-86.95	4.33	86.98	2.72	2.72	-0.54	357.09
	NORMAL	893.0	15.30	174.30	882.69	-111.68	6.76	111.83	0.63	0.63	-0.21	354.97
	NORMAL	988.0	14.20	175.20	974.56	-135.77	8.98	136.01	1.18	-1.16	0.95	168.67
	NORMAL	1,082.0	14.70	170.90	1,065.59	-159.03	11.83	159.44	1.26	0.53	-4.57	292.89
	NORMAL	1,176.0	15.60	168.40	1,156.32	-183.19	16.26	183.91	1.18	0.96	-2.66	322.81
1/26/2011	NORMAL	1,272.0	15.90	170.10	1,248.72	-208.79	21.11	209.85	0.57	0.31	1.77	57.79
	NORMAL	1,366.0	15.60	174.00	1,339.19	-234.05	24.65	235.32	1.17	-0.32	4.15	107.69
	NORMAL	1,461.0	15.80	176.40	1,430.65	-259.66	26.80	261.02	0.72	0.21	2.53	74.04
	NORMAL	1,556.0	15.60	177.60	1,522.10	-285.33	28.14	286.71	0.40	-0.21	1.26	122.21
	NORMAL	1,650.0	15.40	176.20	1,612.68	-310.41	29.50	311.81	0.45	-0.21	-1.49	241.20

2.1.2 Survey Stations (Continued)

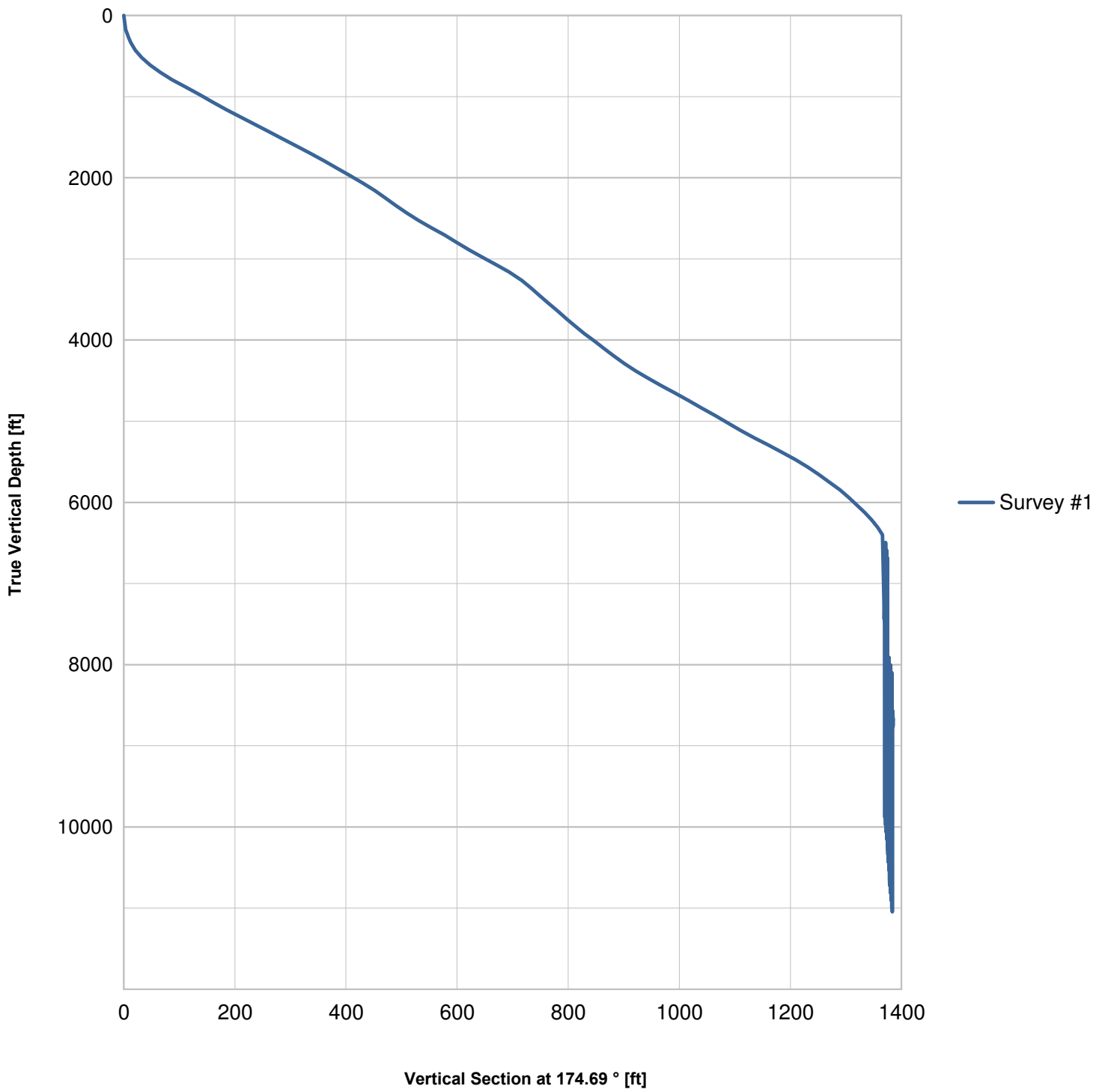
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
1/26/2011	NORMAL	1,744.0	15.00	176.60	1,703.39	-335.01	31.05	336.44	0.44	-0.43	0.43	165.50
	NORMAL	1,838.0	14.90	176.50	1,794.21	-359.21	32.51	360.68	0.11	-0.11	-0.11	194.42
	NORMAL	1,933.0	14.20	175.30	1,886.16	-383.02	34.21	384.54	0.80	-0.74	-1.26	202.72
	NORMAL	2,025.0	14.20	174.40	1,975.35	-405.49	36.23	407.11	0.24	0.00	-0.98	269.56
	NORMAL	2,119.0	13.80	174.00	2,066.56	-428.12	38.53	429.85	0.44	-0.43	-0.43	193.41
	NORMAL	2,213.0	12.60	172.00	2,158.08	-449.42	41.13	451.30	1.37	-1.28	-2.13	199.86
	NORMAL	2,306.0	11.20	168.40	2,249.08	-468.31	44.36	470.41	1.70	-1.51	-3.87	206.18
	NORMAL	2,400.0	11.90	168.80	2,341.17	-486.76	48.08	489.12	0.75	0.74	0.43	6.72
	NORMAL	2,495.0	12.70	172.90	2,433.99	-506.74	51.27	509.31	1.25	0.84	4.32	49.53
	NORMAL	2,588.0	13.50	175.60	2,524.57	-527.70	53.37	530.38	1.08	0.86	2.90	38.73
	NORMAL	2,682.0	14.80	175.50	2,615.72	-550.61	55.15	553.35	1.38	1.38	-0.11	358.87
	NORMAL	2,776.0	14.50	173.60	2,706.66	-574.28	57.40	577.12	0.60	-0.32	-2.02	237.11
	NORMAL	2,871.0	13.40	176.70	2,798.86	-597.09	59.36	600.02	1.40	-1.16	3.26	147.31
	NORMAL	2,965.0	14.10	176.80	2,890.17	-619.39	60.63	622.35	0.75	0.74	0.11	1.99
1/27/2011	NORMAL	3,060.0	15.20	174.90	2,982.08	-643.35	62.38	646.36	1.26	1.16	-2.00	335.48
	NORMAL	3,154.0	15.00	173.20	3,072.83	-667.71	64.92	670.85	0.52	-0.21	-1.81	244.88
	NORMAL	3,245.0	13.80	172.00	3,160.97	-690.15	67.82	693.46	1.36	-1.32	-1.32	193.39
2/17/2011	NORMAL	3,354.0	10.90	172.40	3,267.44	-713.24	70.99	716.75	2.66	-2.66	0.37	178.51
	NORMAL	3,451.0	9.60	179.40	3,362.89	-730.42	72.29	733.98	1.85	-1.34	7.22	139.63
	NORMAL	3,545.0	8.70	176.10	3,455.70	-745.35	72.86	748.90	1.11	-0.96	-3.51	208.62
	NORMAL	3,641.0	10.20	179.10	3,550.39	-761.10	73.49	764.63	1.64	1.56	3.13	19.66
	NORMAL	3,734.0	9.70	185.40	3,641.99	-777.13	72.88	780.54	1.29	-0.54	6.77	117.75
	NORMAL	3,828.0	9.90	177.90	3,734.63	-793.09	72.43	796.39	1.37	0.21	-7.98	275.20
	NORMAL	3,922.0	9.90	175.00	3,827.23	-809.21	73.43	812.54	0.53	0.00	-3.09	268.57
	NORMAL	4,017.0	10.40	177.30	3,920.74	-825.92	74.54	829.27	0.68	0.53	2.42	40.17
	NORMAL	4,111.0	10.90	172.10	4,013.12	-843.19	76.17	846.62	1.15	0.53	-5.53	294.92
2/18/2011	NORMAL	4,206.0	10.70	170.10	4,106.44	-860.78	78.92	864.39	0.45	-0.21	-2.11	240.93
	NORMAL	4,299.0	11.00	175.30	4,197.78	-878.13	81.13	881.87	1.10	0.32	5.59	75.53
	NORMAL	4,394.0	12.20	175.90	4,290.84	-897.17	82.59	900.97	1.27	1.26	0.63	6.04
	NORMAL	4,489.0	13.60	182.40	4,383.44	-918.35	82.84	922.07	2.12	1.47	6.84	49.23
	NORMAL	4,583.0	14.60	181.50	4,474.61	-941.23	82.07	944.79	1.09	1.06	-0.96	347.20
	NORMAL	4,677.0	14.90	181.50	4,565.51	-965.16	81.44	968.55	0.32	0.32	0.00	0.00
	NORMAL	4,771.0	15.00	179.40	4,656.33	-989.40	81.25	992.67	0.59	0.11	-2.23	279.44
	NORMAL	4,865.0	14.60	175.80	4,747.22	-1,013.38	82.25	1,016.64	1.07	-0.43	-3.83	244.76
	NORMAL	4,958.0	14.40	173.90	4,837.25	-1,036.57	84.33	1,039.93	0.55	-0.22	-2.04	246.28
	NORMAL	5,053.0	14.80	171.80	4,929.19	-1,060.33	87.32	1,063.86	0.70	0.42	-2.21	306.06
	NORMAL	5,147.0	13.70	172.70	5,020.29	-1,083.25	90.45	1,086.97	1.19	-1.17	0.96	169.05
	NORMAL	5,242.0	14.30	179.50	5,112.48	-1,106.14	91.98	1,109.91	1.84	0.63	7.16	73.28
2/19/2011	NORMAL	5,336.0	16.10	179.40	5,203.18	-1,130.79	92.22	1,134.47	1.92	1.91	-0.11	359.12
	NORMAL	5,430.0	15.20	178.20	5,293.70	-1,156.14	92.74	1,159.76	1.02	-0.96	-1.28	199.21
	NORMAL	5,524.0	15.60	172.50	5,384.33	-1,180.99	94.78	1,184.69	1.66	0.43	-6.06	282.04
	NORMAL	5,619.0	14.60	172.50	5,476.05	-1,205.52	98.01	1,209.42	1.05	-1.05	0.00	180.00
	NORMAL	5,713.0	12.90	166.40	5,567.36	-1,227.47	102.02	1,231.64	2.37	-1.81	-6.49	217.52
	NORMAL	5,807.0	11.60	172.70	5,659.22	-1,247.04	105.69	1,251.47	1.98	-1.38	6.70	137.25
	NORMAL	5,901.0	11.40	167.00	5,751.33	-1,265.47	108.98	1,270.13	1.23	-0.21	-6.06	257.23
	NORMAL	5,996.0	11.00	168.60	5,844.52	-1,283.50	112.88	1,288.44	0.53	-0.42	1.68	142.94
	NORMAL	6,090.0	9.30	180.80	5,937.06	-1,299.89	114.55	1,304.92	2.91	-1.81	12.98	134.23
	NORMAL	6,183.0	8.60	181.70	6,028.93	-1,314.36	114.24	1,319.29	0.77	-0.75	0.97	169.13
	NORMAL	6,277.0	8.80	175.10	6,121.85	-1,328.55	114.64	1,333.45	1.08	0.21	-7.02	278.05
	NORMAL	6,371.0	7.00	165.60	6,214.96	-1,341.26	116.68	1,346.30	2.36	-1.91	-10.11	211.32
	NORMAL	6,466.0	5.80	168.50	6,309.36	-1,351.57	119.08	1,356.79	1.31	-1.26	3.05	166.36
	NORMAL	6,559.0	4.80	174.90	6,401.96	-1,360.05	120.36	1,365.35	1.25	-1.08	6.88	152.57
2/20/2011	NORMAL	6,654.0	2.20	165.80	6,496.78	-1,365.78	121.16	1,371.13	2.79	-2.74	-9.58	187.54
	NORMAL	6,749.0	0.60	166.90	6,591.75	-1,368.03	121.72	1,373.43	1.68	-1.68	1.16	179.59
	NORMAL	6,843.0	0.80	121.00	6,685.74	-1,368.85	122.40	1,374.30	0.61	0.21	-48.83	265.69
	NORMAL	6,937.0	1.30	59.20	6,779.73	-1,368.64	123.88	1,374.23	1.23	0.53	-65.74	260.80
	NORMAL	7,031.0	1.60	44.70	6,873.70	-1,367.16	125.71	1,372.93	0.50	0.32	-15.43	301.87

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
2/20/2011	NORMAL	7,125.0	1.20	53.30	6,967.67	-1,365.64	127.43	1,371.57	0.48	-0.43	9.15	156.54
	NORMAL	7,220.0	0.20	92.20	7,062.66	-1,365.05	128.39	1,371.08	1.11	-1.05	40.95	173.14
	NORMAL	7,313.0	1.10	29.70	7,155.66	-1,364.28	128.99	1,370.37	1.10	0.97	-67.20	287.52
	NORMAL	7,407.0	1.30	51.60	7,249.64	-1,362.84	130.28	1,369.05	0.53	0.21	23.30	77.64
	NORMAL	7,501.0	0.70	86.10	7,343.62	-1,362.14	131.69	1,368.48	0.88	-0.64	36.70	151.26
	NORMAL	7,595.0	0.20	114.20	7,437.62	-1,362.16	132.41	1,368.57	0.57	-0.53	29.89	169.80
	NORMAL	7,691.0	1.00	185.60	7,533.61	-1,363.07	132.48	1,369.48	1.00	0.83	74.38	82.84
	NORMAL	7,785.0	1.00	188.60	7,627.60	-1,364.69	132.28	1,371.08	0.06	0.00	3.19	91.50
	NORMAL	7,879.0	1.00	187.50	7,721.58	-1,366.32	132.05	1,372.68	0.02	0.00	-1.17	269.45
	NORMAL	7,973.0	1.60	213.80	7,815.56	-1,368.22	131.21	1,374.49	0.88	0.64	27.98	58.50
2/21/2011	NORMAL	8,066.0	2.40	211.50	7,908.50	-1,370.96	129.47	1,377.06	0.86	0.86	-2.47	353.12
	NORMAL	8,160.0	2.10	192.80	8,002.43	-1,374.32	128.06	1,380.27	0.84	-0.32	-19.89	238.61
	NORMAL	8,255.0	0.50	190.80	8,097.40	-1,376.42	127.60	1,382.33	1.68	-1.68	-2.11	180.62
	NORMAL	8,348.0	0.70	263.20	8,190.40	-1,376.89	126.96	1,382.73	0.78	0.22	77.85	113.37
2/22/2011	NORMAL	8,445.0	1.20	271.60	8,287.39	-1,376.93	125.35	1,382.62	0.53	0.52	8.66	19.79
	NORMAL	8,541.0	1.10	273.10	8,383.37	-1,376.85	123.43	1,382.37	0.11	-0.10	1.56	163.99
	NORMAL	8,635.0	1.10	235.40	8,477.35	-1,377.32	121.78	1,382.68	0.76	0.00	-40.11	251.15
	NORMAL	8,728.0	1.40	219.80	8,570.33	-1,378.70	120.32	1,383.92	0.48	0.32	-16.77	303.42
	NORMAL	8,822.0	0.40	234.20	8,664.32	-1,379.77	119.32	1,384.89	1.08	-1.06	15.32	174.39
	NORMAL	8,917.0	1.50	53.00	8,759.31	-1,379.22	120.05	1,384.41	2.00	1.16	188.21	179.05
	NORMAL	9,011.0	1.10	66.40	8,853.28	-1,378.12	121.85	1,383.48	0.53	-0.43	14.26	149.34
	NORMAL	9,105.0	1.30	44.90	8,947.26	-1,377.00	123.43	1,382.51	0.52	0.21	-22.87	282.95
	NORMAL	9,199.0	0.70	32.90	9,041.25	-1,375.76	124.50	1,381.38	0.67	-0.64	-12.77	193.31
	NORMAL	9,292.0	1.30	41.90	9,134.23	-1,374.50	125.51	1,380.22	0.66	0.65	9.68	19.20
2/23/2011	NORMAL	9,386.0	0.90	19.80	9,228.22	-1,373.01	126.47	1,378.82	0.61	-0.43	-23.51	216.00
	NORMAL	9,480.0	0.90	0.00	9,322.21	-1,371.58	126.72	1,377.42	0.33	0.00	-21.06	260.10
	NORMAL	9,573.0	1.30	328.50	9,415.19	-1,369.95	126.17	1,375.75	0.76	0.43	-33.87	287.06
	NORMAL	9,666.0	1.20	342.10	9,508.17	-1,368.12	125.32	1,373.85	0.34	-0.11	14.62	115.34
	NORMAL	9,759.0	1.10	332.80	9,601.15	-1,366.40	124.62	1,372.07	0.23	-0.11	-10.00	237.22
	NORMAL	9,852.0	0.90	313.30	9,694.14	-1,365.11	123.68	1,370.69	0.42	-0.22	-20.97	230.05
	NORMAL	9,945.0	0.60	322.40	9,787.13	-1,364.22	122.85	1,369.73	0.35	-0.32	9.78	162.85
	NORMAL	10,038.0	2.40	101.90	9,880.10	-1,364.24	124.46	1,369.90	3.10	1.94	150.00	147.26
	NORMAL	10,132.0	2.50	102.00	9,974.02	-1,365.07	128.39	1,371.09	0.11	0.11	0.11	2.50
	NORMAL	10,225.0	1.30	118.30	10,066.97	-1,365.99	131.30	1,372.28	1.40	-1.29	17.53	163.76
2/24/2011	NORMAL	10,318.0	1.00	146.20	10,159.95	-1,367.16	132.68	1,373.58	0.67	-0.32	30.00	131.65
	NORMAL	10,411.0	0.40	184.50	10,252.94	-1,368.16	133.11	1,374.61	0.78	-0.65	41.18	160.13
	NORMAL	10,504.0	0.90	212.40	10,345.93	-1,369.10	132.69	1,375.51	0.62	0.54	30.00	46.80
	NORMAL	10,597.0	1.30	248.40	10,438.92	-1,370.11	131.32	1,376.38	0.84	0.43	38.71	78.77
	NORMAL	10,690.0	1.90	247.30	10,531.88	-1,371.09	128.91	1,377.14	0.65	0.65	-1.18	356.52
	NORMAL	10,784.0	1.60	256.10	10,625.84	-1,372.01	126.20	1,377.80	0.43	-0.32	9.36	142.49
	NORMAL	10,877.0	1.50	236.60	10,718.80	-1,372.99	123.93	1,378.57	0.57	-0.11	-20.97	249.62
	NORMAL	10,970.0	1.60	236.90	10,811.77	-1,374.37	121.82	1,379.74	0.11	0.11	0.32	4.79
	NORMAL	11,062.0	2.30	242.70	10,903.72	-1,375.92	119.11	1,381.03	0.79	0.76	6.30	18.66
	NORMAL	11,155.0	2.50	245.50	10,996.63	-1,377.61	115.60	1,382.40	0.25	0.22	3.01	31.79
	NORMAL	11,205.0	2.60	245.50	11,046.59	-1,378.54	113.58	1,383.13	0.20	0.20	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

