



Alignment: Acesso

Description:

Curve Point Data

Description	Station	Northing	Easting
PC:	0+00.000	116813.935	61931.519
RP:		116844.046	61868.326
PT:	0+28.472	116791.391	61914.451

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	23° 18' 17.3628"	Type:	RIGHT
Radius:	70.000		
Length:	28.472	Tangent:	14.436
Mid-Ord:	1.443	External:	1.473
Chord:	28.276	Course:	S 37° 07' 46.4635" W

Tangent Data

Description	PT Station	Northing	Easting
Start:	0+28.472	116791.391	61914.451
End:	0+63.371	116768.396	61888.200

Tangent Data

Parameter	Value	Parameter	Value
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Length: 34.899

Course: S 48° 46' 55.1449" W

Curve Point Data

Description	Station	Northing	Easting
PC:	0+63.371	116768.396	61888.200
RP:		116715.741	61934.324
PT:	0+78.556	116757.234	61877.948

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	12° 25' 44.7721"	Type:	LEFT
Radius:	70.000		
Length:	15.185	Tangent:	7.622
Mid-Ord:	0.411	External:	0.414
Chord:	15.155	Course:	S 42° 34' 02.7589" W

Tangent Data

Description	PT Station	Northing	Easting
Start:	0+78.556	116757.234	61877.948
End:	1+84.706	116671.743	61815.026

Tangent Data

Parameter	Value	Parameter	Value
Length:	106.150	Course:	S 36° 21' 10.3728" W



Curve Point Data

Description	Station	Northing	Easting
PC:	1+84.706	116671.743	61815.026
RP:		116707.308	61766.703
PT:	2+38.077	116647.374	61769.510

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	50° 57' 56.3007"	Type:	RIGHT
Radius:	60.000		
Length:	53.371	Tangent:	28.596
Mid-Ord:	5.837	External:	6.466
Chord:	51.629	Course:	S 61° 50' 08.5232" W

Tangent Data

Description	PT Station	Northing	Easting
Start:	2+38.077	116647.374	61769.510
End:	2+44.072	116647.093	61763.522

Tangent Data

Parameter	Value	Parameter	Value
Length:	5.995	Course:	S 87° 19' 06.6735" W

Curve Point Data

Description	Station	Northing	Easting
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PC:	2+44.072	116647.093	61763.522
RP:		116587.159	61766.329
PT:	3+69.132	116555.270	61715.505

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	119° 25' 25.2194"	Type:	LEFT
Radius:	60.000		
Length:	125.060	Tangent:	102.726
Mid-Ord:	29.739	External:	58.965
Chord:	103.620	Course:	S 27° 36' 24.0638" W

Tangent Data

Description	PT Station	Northing	Easting
Start:	3+69.132	116555.270	61715.505
End:	4+85.199	116456.954	61777.191

Tangent Data

Parameter	Value	Parameter	Value
Length:	116.066	Course:	S 32° 06' 18.5458" E

Curve Point Data

Description	Station	Northing	Easting
PC:	4+85.199	116456.954	61777.191
RP:		116414.436	61709.425



PT: 5+51.233 116393.476 61786.631

Circular Curve Data

Parameter	Value	Parameter	Value
Delta:	47° 17' 38.3368"	Type:	RIGHT
Radius:	80.000		
Length:	66.035	Tangent:	35.029
Mid-Ord:	6.717	External:	7.333
Chord:	64.176	Course:	S 08° 27' 29.3774" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	5+51.233	116393.476	61786.631
End:	6+39.878	116307.928	61763.406

Tangent Data

Parameter	Value	Parameter	Value
Length:	88.644	Course:	S 15° 11' 19.7910" W

Curve Point Data

Description	Station	Northing	Easting
PC:	6+39.878	116307.928	61763.406
RP:		116281.728	61859.913
PT:	7+10.379	116239.141	61769.434

Circular Curve Data



Parameter	Value	Parameter	Value
Delta:	40° 23' 39.9904"	Type:	LEFT
Radius:	100.000		
Length:	70.502	Tangent:	36.787
Mid-Ord:	6.149	External:	6.552
Chord:	69.051	Course:	S 05° 00' 30.2042" E

Tangent Data

Description	PT Station	Northing	Easting
Start:	7+10.379	116239.141	61769.434
End:	8+97.083	116070.215	61848.945

Tangent Data

Parameter	Value	Parameter	Value
Length:	186.703	Course:	S 25° 12' 20.1994" E



Alignment Name: Acesso

Description:

Station Range: Start: 0+000.00, End: 89+708.00

Station Increment: 12.50

Station	Northing	Easting	Tangential Direction
0+000.00	116,813.9354m	61,931.5188m	N 228.3080 (g)
0+012.50	116,803.1897m	61,925.1656m	N 239.6762 (g)
0+025.00	116,793.7432m	61,917.0047m	N 251.0444 (g)
0+037.50	116,785.4428m	61,907.6599m	N 254.2022 (g)
0+050.00	116,777.2063m	61,898.2573m	N 254.2022 (g)
0+062.50	116,768.9697m	61,888.8547m	N 254.2022 (g)
0+075.00	116,760.0434m	61,880.1273m	N 243.6261 (g)
0+087.50	116,750.0309m	61,872.6460m	N 240.3921 (g)
0+100.00	116,739.9636m	61,865.2366m	N 240.3921 (g)
0+112.50	116,729.8963m	61,857.8271m	N 240.3921 (g)
0+125.00	116,719.8291m	61,850.4177m	N 240.3921 (g)
0+137.50	116,709.7618m	61,843.0082m	N 240.3921 (g)
0+150.00	116,699.6945m	61,835.5988m	N 240.3921 (g)
0+162.50	116,689.6273m	61,828.1893m	N 240.3921 (g)
0+175.00	116,679.5600m	61,820.7798m	N 240.3921 (g)
0+187.50	116,669.5321m	61,813.3186m	N 243.3562 (g)
0+200.00	116,660.7075m	61,804.4975m	N 256.6191 (g)
0+212.50	116,653.8982m	61,794.0419m	N 269.8820 (g)

0+225.00	116,649.3987m	61,782.4040m	N 283.1449 (g)
0+237.50	116,647.4035m	61,770.0871m	N 296.4078 (g)
0+250.00	116,646.5241m	61,757.6243m	N 290.7308 (g)
0+262.50	116,643.4400m	61,745.5341m	N 277.4679 (g)
0+275.00	116,637.9219m	61,734.3431m	N 264.2050 (g)
0+287.50	116,630.2086m	61,724.5355m	N 250.9421 (g)
0+300.00	116,620.6335m	61,716.5353m	N 237.6792 (g)
0+312.50	116,609.6107m	61,710.6885m	N 224.4163 (g)
0+325.00	116,597.6171m	61,707.2479m	N 211.1533 (g)
0+337.50	116,585.1711m	61,706.3624m	N 197.8904 (g)
0+350.00	116,572.8112m	61,708.0702m	N 184.6275 (g)
0+362.50	116,561.0717m	61,712.2975m	N 171.3646 (g)
0+375.00	116,550.3001m	61,718.6236m	N 164.3276 (g)
0+387.50	116,539.7116m	61,725.2670m	N 164.3276 (g)
0+400.00	116,529.1232m	61,731.9104m	N 164.3276 (g)
0+412.50	116,518.5348m	61,738.5539m	N 164.3276 (g)
0+425.00	116,507.9463m	61,745.1973m	N 164.3276 (g)
0+437.50	116,497.3579m	61,751.8408m	N 164.3276 (g)
0+450.00	116,486.7695m	61,758.4842m	N 164.3276 (g)
0+462.50	116,476.1811m	61,765.1276m	N 164.3276 (g)
0+475.00	116,465.5926m	61,771.7711m	N 164.3276 (g)
0+487.50	116,454.9869m	61,778.3863m	N 166.1590 (g)

0+500.00	116,443.7615m	61,783.8566m	N 176.1062 (g)
0+512.50	116,431.8217m	61,787.5134m	N 186.0534 (g)
0+525.00	116,419.4582m	61,789.2676m	N 196.0006 (g)
0+537.50	116,406.9724m	61,789.0765m	N 205.9477 (g)
0+550.00	116,394.6684m	61,786.9448m	N 215.8949 (g)
0+562.50	116,382.6026m	61,783.6790m	N 216.8765 (g)
0+575.00	116,370.5393m	61,780.4040m	N 216.8765 (g)
0+587.50	116,358.4759m	61,777.1290m	N 216.8765 (g)
0+600.00	116,346.4126m	61,773.8539m	N 216.8765 (g)
0+612.50	116,334.3492m	61,770.5789m	N 216.8765 (g)
0+625.00	116,322.2859m	61,767.3039m	N 216.8765 (g)
0+637.50	116,310.2226m	61,764.0289m	N 216.8765 (g)
0+650.00	116,298.0418m	61,761.2524m	N 210.4325 (g)
0+662.50	116,285.6140m	61,759.9882m	N 202.4748 (g)
0+675.00	116,273.1257m	61,760.2833m	N 194.5170 (g)
0+687.50	116,260.7715m	61,762.1331m	N 186.5593 (g)
0+700.00	116,248.7444m	61,765.5087m	N 178.6015 (g)
0+712.50	116,237.2222m	61,770.3372m	N 171.9938 (g)
0+725.00	116,225.9124m	61,775.6606m	N 171.9938 (g)
0+737.50	116,214.6026m	61,780.9839m	N 171.9938 (g)
0+750.00	116,203.2928m	61,786.3073m	N 171.9938 (g)
0+762.50	116,191.9830m	61,791.6306m	N 171.9938 (g)

0+775.00	116,180.6732m	61,796.9540m	N 171.9938 (g)
0+787.50	116,169.3633m	61,802.2773m	N 171.9938 (g)
0+800.00	116,158.0535m	61,807.6006m	N 171.9938 (g)
0+812.50	116,146.7437m	61,812.9240m	N 171.9938 (g)
0+825.00	116,135.4339m	61,818.2473m	N 171.9938 (g)
0+837.50	116,124.1241m	61,823.5707m	N 171.9938 (g)
0+850.00	116,112.8142m	61,828.8940m	N 171.9938 (g)
0+862.50	116,101.5044m	61,834.2174m	N 171.9938 (g)
0+875.00	116,090.1946m	61,839.5407m	N 171.9938 (g)
0+887.50	116,078.8848m	61,844.8641m	N 171.9938 (g)



Vertical Alignment: Acesso (14) (1)

Description:

Station Range: Start: 0+000.00, End: 89+708.00

Vertical Curve Information:(crest curve)

PVC Station:	0+084.21	Elevation:	768.156m
PVI Station:	0+109.21	Elevation:	766.897m
PVT Station:	0+134.21	Elevation:	764.754m
High Point:	0+084.21	Elevation:	768.156m
Grade in:	-5.04%	Grade out:	-8.57%
Change:	3.53%	K:	14.15m
Curve Length:	50.00m	Curve Radius	1,415.03m
Passing Distance:	462.63m	Stopping Distance:	213.08m

Vertical Curve Information:(sag curve)

PVC Station:	0+161.97	Elevation:	762.375m
PVI Station:	0+189.84	Elevation:	759.985m
PVT Station:	0+217.72	Elevation:	759.793m
Low Point:	0+217.72	Elevation:	759.793m
Grade in:	-8.57%	Grade out:	-0.69%
Change:	7.88%	K:	7.07m
Curve Length:	55.75m	Curve Radius	707.47m
Headlight Distance:	68.41m		



Vertical Curve Information:(crest curve)

PVC Station:	0+426.93	Elevation:	758.347m
PVI Station:	0+457.89	Elevation:	758.133m
PVT Station:	0+488.73	Elevation:	755.401m
High Point:	0+426.93	Elevation:	758.347m
Grade in:	-0.69%	Grade out:	-8.86%
Change:	8.17%	K:	
Curve Length:	61.81m	Curve Radius	759.817855833064
Passing Distance:	Stopping Distance:		

Vertical Curve Information:(sag curve)

PVC Station:	0+579.76	Elevation:	747.335m
PVI Station:	0+640.26	Elevation:	741.976m
PVT Station:	0+700.46	Elevation:	749.943m
Low Point:	0+628.30	Elevation:	745.189m
Grade in:	-8.86%	Grade out:	13.23%
Change:	22.09%	K:	
Curve Length:	120.70m	Curve Radius	550
Headlight Distance:			

Vertical Curve Information:(crest curve)

PVC Station:	0+700.25	Elevation:	749.916m
PVI Station:	0+733.90	Elevation:	754.368m



PVT Station:	0+767.54	Elevation:	754.705m
High Point:	0+767.54	Elevation:	754.705m
Grade in:	13.23%	Grade out:	1.00%
Change:	12.23%	K:	5.50m
Curve Length:	67.29m	Curve Radius	550.00m
Passing Distance:	160.04m	Stopping Distance:	87.97m



Vertical Alignment: Acesso (14) (1)

Description:

Station Range: Start: 0+000.00, End: 89+708.00

Station Increment: 12.50

Station	Elevation	Grade Percent (%)	Location
0+000.00	772.398m		PVI
0+012.50	771.769m	-5.04%	
0+025.00	771.139m	-5.04%	
0+037.50	770.509m	-5.04%	
0+050.00	769.879m	-5.04%	
0+062.50	769.250m	-5.04%	
0+075.00	768.620m	-5.04%	
0+084.21	768.156m	-5.04%	PVC
0+087.50	767.987m	-5.15%	
0+100.00	767.273m	-5.71%	
0+109.21	766.676m	-6.48%	Crest
0+112.50	766.448m	-6.92%	
0+125.00	765.513m	-7.48%	
0+134.21	764.754m	-8.25%	PVT
0+137.50	764.472m	-8.57%	
0+150.00	763.400m	-8.57%	
0+161.97	762.375m	-8.57%	PVC
0+162.50	762.329m	-8.53%	

0+175.00	761.378m	-7.61%	
0+187.50	760.647m	-5.85%	
0+189.84	760.535m	-4.80%	Sag
0+200.00	760.137m	-3.91%	
0+212.50	759.848m	-2.31%	
0+217.72	759.793m	-1.06%	PVT
0+225.00	759.742m	-0.69%	
0+237.50	759.656m	-0.69%	
0+250.00	759.570m	-0.69%	
0+262.50	759.483m	-0.69%	
0+275.00	759.397m	-0.69%	
0+287.50	759.311m	-0.69%	
0+300.00	759.224m	-0.69%	
0+312.50	759.138m	-0.69%	
0+325.00	759.052m	-0.69%	
0+337.50	758.965m	-0.69%	
0+350.00	758.879m	-0.69%	
0+362.50	758.792m	-0.69%	
0+375.00	758.706m	-0.69%	
0+387.50	758.620m	-0.69%	
0+400.00	758.533m	-0.69%	
0+412.50	758.447m	-0.69%	

0+425.00	758.361m	-0.69%	
0+426.93	758.347m	-0.69%	PVC
0+437.50	758.201m	-1.39%	
0+450.00	757.837m	-2.91%	
0+457.89	757.502m	-4.25%	Crest
0+462.50	757.268m	-5.08%	
0+475.00	756.492m	-6.21%	
0+487.50	755.509m	-7.86%	
0+488.73	755.401m	-8.78%	PVT
0+500.00	754.402m	-8.86%	
0+512.50	753.295m	-8.86%	
0+525.00	752.187m	-8.86%	
0+537.50	751.080m	-8.86%	
0+550.00	749.972m	-8.86%	
0+562.50	748.865m	-8.86%	
0+575.00	747.758m	-8.86%	
0+579.76	747.335m	-8.86%	PVC
0+587.50	746.705m	-8.15%	
0+600.00	745.918m	-6.30%	
0+612.50	745.416m	-4.01%	
0+625.00	745.199m	-1.74%	
0+637.50	745.266m	0.54%	

0+640.26	745.319m	1.92%	Sag
0+650.00	745.617m	3.06%	
0+662.50	746.253m	5.09%	
0+675.00	747.175m	7.37%	
0+687.50	748.384m	9.67%	
0+700.00	749.882m	11.99%	
0+700.25	749.916m	13.17%	PVC
0+700.46	749.943m	13.21%	PVT
0+712.50	751.400m	12.10%	
0+725.00	752.634m	9.87%	
0+733.90	753.339m	7.93%	Crest
0+737.50	753.584m	6.79%	
0+750.00	754.249m	5.33%	
0+762.50	754.631m	3.05%	
0+767.54	754.705m	1.46%	PVT
0+775.00	754.779m	1.00%	
0+787.50	754.904m	1.00%	
0+800.00	755.029m	1.00%	
0+812.50	755.154m	1.00%	
0+825.00	755.279m	1.00%	
0+837.50	755.404m	1.00%	
0+850.00	755.529m	1.00%	



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0+862.50	755.654m	1.00%	
0+875.00	755.779m	1.00%	
0+887.50	755.904m	1.00%	
0+897.08	756.000m	1.00%	PVI