

Data for the site:

Number of signals on posts	26		
Number of signals on gantries			
Track Circuits or Axle Counters?	Track Circuits		
Number of TPWS	16		
No of points	6		
Length of job (meters)	3250		
Number of interlockings	2	of type	Westrace
Design duration (months)	9		
Project Duration (months)	18	which is size	med
No. of Additional Commissioning Stages			
No of predictive crossings	0		

Coleraine to Londonderry £ 8,486,180.15

including new loop at Eglinton and recovery of Castlerock loop
excluding additional signalling for UWC safety improvements

Item	Unit Cost (£ / unit)	Qty	Total Cost (£)	Material Cost (£)	Labour Cost (£)					
Field Equipment										
Signal, 2 aspect, complete	5,552.82	19	£ 105,503.57	£ 57,712.88	£ 47,790.68					
Signal, 3 aspect, complete	5,489.55	7	£ 38,426.85	£ 20,819.75	£ 17,607.09					
Signal, 4 aspect, complete	5,821.76		£ -	£ -	£ -					
Signal, 4 aspect, without post	2,816.82		£ -	£ -	£ -					
Signal post and fittings, raising and lowering, straight, installed	6,890.00	26	£ 179,140.00	£ 100,318.40	£ 78,821.60					
Signal post and fittings, raising and lowering, gantry mounted, ins	3,880.00	0	£ -	£ -	£ -					
4-Track Gantry with 2 cages, raising and lowering, installed	68,650.00		£ -	£ -	£ -					
4-Track Gantry with 3 cages, raising and lowering, installed	71,500.00	0	£ -	£ -	£ -	qty =	signals on gantries /		3	
4-Track Gantry with 6 cages, raising and lowering, installed	80,050.00		£ -	£ -	£ -					
AWS, unidirectional, standard strength, complete	1,842.72	0	£ -	£ -	£ -	qty =	signals x		0.5	
AWS, bidirectional, standard strength, complete	4,749.00	26	£ 123,473.94	£ 85,833.67	£ 37,640.27	qty =	signals x		0.5	
TPWS per Installation	14,000.00	16	£ 224,000.00	£ 178,073.04	£ 45,926.96					
Points Machine, GEC HW2121, complete	11,786.40	6	£ 70,718.42	£ 46,859.76	£ 23,858.65					
Allowance for electric point heating	7,000.00	6	£ 42,000.00	£ 24,000.00	£ 18,000.00					
Track Circuit, DC, feed, complete	2,606.12	42	£ 109,457.14	£ 98,805.42	£ 10,651.72	qty =	signals x	2	+ points x	1
Track Circuit, DC, relay, complete	1,925.26	42	£ 80,861.02	£ 70,209.30	£ 10,651.72	qty =	signals x	2	+ points x	1
Block Joint (pair)	6,600.00	84	£ 554,400.00	£ 277,200.00	£ 277,200.00	qty =	track circuits x	1	+ points x	2
Axle Counter, end, complete	3,506.60	0	£ -	£ -	£ -	qty =	signals x	2	+ points x	1
Axle counter evaluator	-		£ -	£ -	£ -	qty =	axle counter ends /		32	
Cable Route, main, 100m laid	6,601.00		£ -	£ -	£ -					
Cable Route, tail, 100m laid	3,826.00		£ -	£ -	£ -					
Orange Pipe, 2 tracks, laid	517.15	0	£ -	£ -	£ -	qty =	(signals x	1	+ points x	1 + aws x 1 + T.C. x 2) / 2
Cable, multicore, 27 core, 100m	2,323.73	110	£ 255,609.76	£ 237,655.00	£ 17,954.76					
Cable, data, 100m	1,163.23	0	£ -	£ -	£ -	qty =	job length x		2	
Cable, power, 35mm, 100m	762.08	50	£ 38,104.19	£ 10,900.00	£ 27,204.19					
Under Track Crossing, 2 track	8,000.00	0	£ -	£ -	£ -	qty =	job length /		2000	
General wiring and interfacing on site	5,000.00	35	£ 175,000.00	£ -	£ -					
Provision for Retaining Walls / Walkways / Concrete bases	5,000.00	10	£ 50,000.00	£ -	£ -					
Provision of HSE / Structure / Platforms / Location Environments	5,000.00	10	£ 50,000.00	£ -	£ -					
			£ 2,096,694.89	£ 1,208,387.23	£ 613,307.65					
Interlocking										
Westrace Location and Chassis	6,876.96	0	£ -	£ -	£ -	qty =	interlockings x		1	
Westrace Interlocking	2,200.00	0	£ -	£ -	£ -	qty =	interlockings x		1	
Westrace Signal / Point Interface	1,514.79	0	£ -	£ -	£ -	qty =	signals x	1	+ points x	1
Westrace Controls	2,310.00	0	£ -	£ -	£ -	qty =	interlockings x		1	
Westrace Signal Outpost	2,838.66		£ -	£ -	£ -					
SSI Trackside Unit Single	8,731.80	0	£ -	£ -	£ -	qty =	remainder of (signals x	1	+ points x	1) / 2
SSI Trackside Unit Double	13,761.22	0	£ -	£ -	£ -	qty =	truncated (signals x	1	+ points x	1) / 2
SSI Trackside Unit Triple	17,625.75		£ -	£ -	£ -					
SSI Interlocking (complete)	63,970.51	0	£ -	£ -	£ -	qty =	interlockings x		1	
SSI LDT, only	4,000.00	0	£ -	£ -	£ -	qty =	interlockings x		1	
SSI Spares	28,334.58	0	£ -	£ -	£ -	qty =	interlockings x		1	
Full Width Location Cupboard	5,767.40	30	£ 173,021.86	£ 150,946.60	£ 22,075.26	qty =	signals x	1	- REB's x	1 if westrace or (signals x 1 + points x 1) / 2 if SSI
Location embankment platform, only	2,117.82	30	£ 63,534.60	£ 35,579.38	£ 27,955.22	qty =	Full length location cupboards x	1	SSI units x	1
Design of Location Case Base	2,000.00	30	£ 60,000.00	£ 33,600.00	£ 26,400.00	qty =	Full length location cupboards x	1	SSI units x	1
REB, large, only	19,671.55	3	£ 59,014.64	£ 46,500.00	£ 12,514.64	qty =	interlockings x		1	
Design and Construction of REB Base	15,000.00	3	£ 45,000.00	£ 30,000.00	£ 15,000.00	qty =	REB's x		1	
Fitting out of REB	10,000.00	5	£ 50,000.00	£ 30,000.00	£ 20,000.00	qty =	REB's x		2	
Westrace management overhead	100,000.00		£ -	£ -	£ -					

Westrace training	10,000.00	£	-	£	-	£	-			
Interfacing with Millerhill SSI	20,000.00	£	-	£	-	£	-			
		£	450,571.11	£	326,625.98	£	123,945.13			
Control										
Control Panel	25,300.00	£	-	£	-	£	-			
VDU Display	90,000.00	1	£	90,000.00	£	-	£			
Telemetry System	75,000.00	7	£	525,000.00	£	525,000.00	£		qty =	1 per site
		£	615,000.00	£	525,000.00	£	-			
Power Supply										
Supply authority connection	5,000.00	3	£	15,000.00	£	15,000.00	£		qty =	Interlockings x 1
Standby Generator	33,321.20	3	£	99,963.60	£	66,537.60	£	33,426.00	qty =	Interlockings x 1
UPS (60A for 12 hours)	64,196.00	3	£	192,588.00	£	178,161.00	£	14,427.00	qty =	Interlockings x 1
UPS Training	7,537.20	0	£	-	£	-	£	-	qty =	Interlockings x 1
		£	307,551.60	£	259,698.60	£	47,853.00			
Design / Engineering										
Signalling detailed design (per month)	8,400.00	72	£	604,800.00					qty =	design length x 1
Data preparation (per month)	8,400.00	6	£	50,400.00						
Systems engineering (per month)	8,400.00	6	£	50,400.00						
		£	705,600.00							
Project Management										
Project Manager (per month)	5,000.00	26	£	130,000.00					qty =	job length x 0.5 if small 0.75 if med. 1 if large
Project Engineer (per month)	4,400.00	48	£	211,200.00					qty =	job length x 1 if small 2 if med. 3 if large
Site Supervisor (per month)	4,400.00	21	£	92,400.00					qty =	job length x 0.5 if small 1 if med. 2 if large
Planning and Control (per month)	4,400.00	5	£	22,000.00					qty =	job length x 0.05 if small 0.1 if med. 0.25 if large
Administration (per month)	3,600.00	20	£	72,000.00						
Consumables and miscellaneous (per month)	500.00	48	£	24,000.00					qty =	job length x 1 if small 2 if med. 4 if large
Travel and Accommodation (per person per day)	100.00	280	£	28,000.00					qty =	job length x 4 if small 10 if med. 20 if large
		£	579,600.00							
Facilities (covered in unknown factor below)										
Establishment of site compound	10,000.00	£	-							
Portable building hire	20,000.00	£	-							
Services connection	20,000.00	£	-							
Light Vehicles	10,000.00	£	-							
Trucks	20,000.00	£	-							
Road/Railer	25,000.00	£	-							
Works Trains	20,000.00	£	-							
		£	-							
Worksite Protection (covered in difficulties factor below)										
Worksite Protection (per month)	13,200.00	£	-							
		£	-							
Testing and Commissioning										
Testing (per team per week)	7,150.00	32	£	228,800.00					qty =	roundup (job length / 6)
Commissioning (per team per shift)	5,819.00	55	£	320,045.00					qty =	roundup (job length / 6)
		£	548,845.00							
Sub-Total		£	5,303,862.60	£	2,319,711.81	£	785,105.79			
Contingency (%):	10%	£	530,386.26	£	231,971.18	£	78,510.58			
Difficulty Factor (% overhead):	20%	£	1,060,772.52	£	463,942.36	£	157,021.16			
Unknowns (%):	10%	£	530,386.26	£	231,971.18	£	78,510.58			
Contractor overheads and profit (%):	15%	£	795,579.39	£	347,956.77	£	117,765.87			
Commissioning Stages (15% per additional stage):	5%	£	265,193.13	£	115,985.59	£	39,255.29			
Total Estimate		£	8,486,180.15	£	3,711,538.90	£	1,256,169.26			

Made up Of:

Material	£ 3,711,538.90
Labour	£ 1,256,169.26
Design	£ 1,128,960.00
Management and Site Facilities	£ 927,360.00
Testing and Commissioning	£ 878,152.00