.

			5 Pre-St	Option 1.1 ressed Beams,	. 6 Spans	4 Pre-St	tressed	Option 1.2 Beams, 6 Spans	s (no Bus Lane)		4 Gird	Option 2.1 der, 6 Spans, Fla	t Soffit	4	Girder	Option 3.1 r, 6 Spans, Curv	ed Soffit		5 Girder	Option 4.1 , 6 Spans, Curv	ed Soffit	Ladde	r Deck,	Option 5.2 6 Spans, Curved Jane)	l Soffit (No bus
Iten	n Description	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£
	Series 700: Highways																								
A	Bridge Deck Carriageway; including approx. 185mm thick binder and approx. 40mm surface course	1,870	m2	63.00	117,794	1,870	m2	63.00	117,794	1,870	m2	63.00	117,794	1,870	m2	63.00	117,794	1,870	m2	63.00	117,794	1,870	m2	63.00	117,794
В	Bridge Deck Bus Lane; including approx. 185mm thick binder and approx. 40mm surface course	970	m2	63.00	61,079	0	m2	63.00	0	970	m2	63.00	61,079	970	m2	63.00	61,079	970	m2	63.00	61,079	0	m2	63.00	0
	Series 700: Highways				178,872.75				117,794.25				178,872.75				178,872.75				178,872.75				117,794.25
	Series 1100: Kerbs, Footways & Paved Areas																								
А	125 x 255 HB Kerb	0	m	32.00	0.00	0	m	32.00	0.00	0	m	32.00	0.00	0	m	32.00	0.00	0	m	32.00	0.00	0	m	32.00	0.00
В	Beaney Block type kerb	554	m	132.00	73,128.00	554	m	132.00	73,128.00	554	m	132.00	73,128.00	554	m	132.00	73,128.00	554	m	132.00	73,128.00	554	m	132.00	73,128.00
C	50 x 150 Edging	0	m	21.00	0.00	0	m	21.00	0.00	0	m	21.00	0.00	0	m	21.00	0.00	0	m	21.00	0.00	0	m	21.00	0.00
D	Tactile Paving	0	m2	81.00	0.00	0	m2	81.00	0.00	0	m2	81.00	0.00	0	m2	81.00	0.00	0	m2	81.00	0.00	0	m2	81.00	0.00
E	Multi-User Path	997	m2	48.00	47,866	997	m2	48.00	47,866	997	m2	48.00	47,866	997	m2	48.00	47,865.60	997	m2	48.00	47,865.60	997	m2	48.00	47,865.60
F	Hard Verge, including approx. 150mm regulating and approx. 30mm surface course	166	m2	52.00	8,642	166	m2	52.00	8,642	166	m2	52.00	8,642	166	m2	52.00	8,642.40	166	m2	52.00	8,642.40	166	m2	52.00	8,642.40
1	Series 1100: Kerbs, Footways & Paved Areas				129,636.00				129,636.00				129,636.00				129,636.00				129,636.00		-		129,636.00
	Series 1200: Traffic Signs & Road Markings																								
А	Allowance for signs		item		10,000.00		item		10,000.00		item		10,000.00		item		10,000.00		item		10,000.00		item		10,000.00
В	Allowance for road markings	277	m	7.00	1,939.00	277	m	7.00	1,939.00	277	m	7.00	1,939.00	277	m	7.00	1,939.00	277	m	7.00	1,939.00	277	m	7.00	1,939.00
	Series 1200: Traffic Signs & Road Markings				11,939.00				11,939.00				11,939.00				11,939.00				11,939.00		_		11,939.00
	Series 1300 & 1400: Lighting Columns & Electrical Work																								
A	Lighting columns	18	nr	2,250.00	41,550.00	18	nr	2,250.00	41,550.00	18	nr	2,250.00	41,550.00	18	nr	2,250.00	41,550.00	18	nr	2,250.00	41,550.00	18	nr	2,250.00	41,550.00
В	Illuminated bollards	0	nr	600.00	0.00	0	nr	600.00	0.00	0	nr	600.00	0.00	0	nr	600.00	0.00	0	nr	600.00	0.00	0	nr	600.00	0.00
с	Feeder pillar	2	nr	800.00	1,600.00	2	nr	800.00	1,600.00	2	nr	800.00	1,600.00	2	nr	800.00	1,600.00	2	nr	800.00	1,600.00	2	nr	800.00	1,600.00
	Series 1300 & 1400: Lighting Columns & Electrical Work				43,150.00				43,150.00				43,150.00	-			43,150.00				43,150.00				43,150.00
A	Series 1600: Piling and Embedded Retaining Walls Piling rig and associated works, including: - Mobilize plant, labour and equipment and set up on site - Clear away on completion - Install and test working pile - Set up at each pile position - Attendance on piling - Integrity testing of piles																								
	- Test cubes - Break down and trim tops of piles, 400 dia	7	item	20,000.00	140,000.00	7	item	20,000.00	140,000.00	7	item	20,000.00	140,000.00	7	item	20,000.00	140,000.00	7	item	20,000.00	140,000.00	7	item	20,000.00	140,000.00
В	Standing time	9.00	day	285.00	2,565.00	8.40	day	285.00	2,394.00	8.00	day	285.00	2,280.00	8.00	day	285.00	2,280.00	8.00	day	285.00	2,280.00	6.40	day	285.00	1,824.00
с	Concrete pile to abutments; 750mm diameter, 23m long	30	nr	5,150.00	154,500.00	24	nr	5,150.00	123,600.00	30	nr	5,150.00	154,500.00	30	nr	5,150.00	154,500.00	30	nr	5,150.00	154,500.00	24	nr	5,150.00	123,600.00
D	Concrete pile to piers; 750mm diameter, 21.5m long	60	nr	4,814.13	288,847.83	60	nr	4,814.13	288,847.83	50	nr	4,814.13	240,706.52	0	nr	4,814.13	0.00	0	nr	4,814.13	0.00	0	nr	4,814.13	0.00
E	Concrete pile to piers; 750mm diameter, 23m long	0	nr	5,150.00	0.00	0	nr	5,150.00	0.00	0	nr	5,150.00	0.00	50	nr	5,150.00	257,500.00	50	nr	5,150.00	257,500.00	40	nr	5,150.00	206,000.00
F	Piling mat	7	nr	7,350.00	51,450.00	7	nr	7,350.00	51,450.00	7	nr	7,350.00	51,450.00	7	nr	7,350.00	51,450.00	7	nr	7,350.00	51,450.00	7	nr	7,350.00	51,450.00

	Option 1.1 5 Pre-Stressed Beams, 6 Spans				, 6 Spans	4 Pre-S	tressed	Option 1.2 Beams, 6 Span	is (no Bus Lane)		4 Gird	Option 2.1 ler, 6 Spans, Fla	t Soffit		4 Girder	Option 3.1 r, 6 Spans, Curv	ved Soffit	e	i Girde	Option 4.1 r, 6 Spans, Curv	ed Soffit	Ladde	r Deck,	Option 5.2 6 Spans, Curved lane)	Soffit (No bus
Iten	Description	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£
	Series 1600: Piling and Embedded Retaining Walls				637,362.83				606,291.83				588,936.52				605,730.00				605,730.00				522,874.00
	Series 1700: Concrete Structures																								
A	Precast concrete beams, type W19	1,245	m	875.39	1,089,861.33	996	m	875.39	871,889.06																1
	Series 1700: Concrete Structures Cont'd																								
В	Concrete deck for viaduct; 250mm thick	3,853	m2	235.00	905,455.00	2,866	m2	235.00	673,510.00	3,853	m2	235.00	905,455.00	3,853	m2	235.00	905,455.00	3,853	m2	235.00	905,455.00	2,866	m2	235.00	673,510.00
с	Additional concrete beneath parapets; 450mm thick	215	m3	235.00	50,548.50	215	m3	235.00	50,548.50	215	m3	235.00	50,548.50	215	m3	235.00	50,548.50	215	m3	235.00	50,548.50	215	m3	235.00	50,548.50
D	Concrete columns; 1.2m diameter, 2.4m high	0	nr	2,550.18	0.00	0	nr	2,550.18	0.00	0	nr	2,550.18	0.00	4	nr	2,550.18	10,200.73	4	nr	2,550.18	10,200.73	3	nr	2,550.18	7,650.55
E	Concrete columns; 1.2m diameter, 2.7m high	4	nr	2,868.96	11,475.82	3	nr	2,868.96	8,606.87	4	nr	2,868.96	11,475.82	0	nr	2,868.96	0.00	0	nr	2,868.96	0.00	0	nr	2,868.96	0.00
F	Concrete columns; 1.2m diameter, 3.4m high	0	nr	3,612.76	0.00	0	nr	3,612.76	0.00	0	nr	3,612.76	0.00	4	nr	3,612.76	14,451.03	4	nr	3,612.76	14,451.03	3	nr	3,612.76	10,838.28
G	Concrete columns; 1.2m diameter, 3.7m high	4	nr	3,931.53	15,726.12	3	nr	3,931.53	11,794.59	4	nr	3,931.53	15,726.12	0	nr	3,931.53	0.00	0	nr	3,931.53	0.00	0	nr	3,931.53	0.00
н	Concrete columns; 1.2m diameter, 4m high	0	nr	4,250.30	0.00	0	nr	4,250.30	0.00	0	nr	4,250.30	0.00	4	nr	4,250.30	17,001.22	4	nr	4,250.30	17,001.22	3	nr	4,250.30	12,750.91
Т	Concrete columns; 1.2m diameter, 4.4m high	4	nr	4,675.33	18,701.34	3	nr	4,675.33	14,026.00	4	nr	4,675.33	18,701.34	0	nr	4,675.33	0.00	0	nr	4,675.33	0.00	0	nr	4,675.33	0.00
1	Concrete columns; 1.2m diameter, 4.9m high	0	nr	5,206.62	0.00	0	nr	5,206.62	0.00	0	nr	5,206.62	0.00	4	nr	5,206.62	20,826.49	4	nr	5,206.62	20,826.49	3	nr	5,206.62	15,619.87
к	Concrete columns; 1.2m diameter, 5.3m high	4	nr	5,631.65	22,526.61	3	nr	5,631.65	16,894.96	4	nr	5,631.65	22,526.61	0	nr	5,631.65	0.00	0	nr	5,631.65	0.00	0	nr	5,631.65	0.00
L	Concrete columns; 1.2m diameter, 5.7m high	0	nr	27,308.20	0.00	0	nr	27,308.20	0.00	0	nr	27,308.20	0.00	4	nr	27,308.20	109,232.81	4	nr	27,308.20	109,232.81	3	nr	27,308.20	81,924.61
м	Concrete columns; 1.2m diameter, 6.0m high	4	nr	6,375.46	25,501.82	3	nr	6,375.46	19,126.37	4	nr	6,375.46	25,501.82	0	nr	6,375.46	0.00	0	nr	6,375.46	0.00	0	nr	6,375.46	0.00
N	Capping beams to to concrete piers	172	m3	235.00	40,420.00	172	m3	235.00	40,420.00	126	m3	235.00	29,610.00	114	m3	235.00	26,790.00	114	m3	235.00	26,790.00	88	m3	235.00	20,680.00
0	Pile Caps	537	m3	235.00	126,195.00	470	m3	235.00	110,356.00	554	m3	235.00	130,190.00	554	m3	235.00	130,190.00	554	m3	235.00	130,190.00	472	m3	235.00	110,920.00
Ρ	Concrete binding; 75mm thick	488	m2	130.00	63,440.00	488	m2	130.00	63,440.00	503	m2	130.00	65,390.00	503	m2	130.00	65,390.00	503	m2	130.00	65,390.00	429	m2	130.00	55,770.00
Q	Concrete to south abutments	111	m3	235.00	26,085.00	111	m3	235.00	26,085.00	114	m3	235.00	26,790.00	114	m3	235.00	26,790.00	114	m3	235.00	26,790.00	114	m3	235.00	26,790.00
R	Concrete to north abutments	216	m3	235.00	50,760.00	216	m3	235.00	50,760.00	253	m3	235.00	59,455.00	253	m3	235.00	59,455.00	253	m3	235.00	59,455.00	253	m3	235.00	59,455.00
S	Concrete to south abutment wing walls	120	m3	235.00	28,200.00	120	m3	235.00	28,200.00	86	m3	235.00	20,210.00	86	m3	235.00	20,210.00	86	m3	235.00	20,210.00	86	m3	235.00	20,210.00
т	Concrete to north abutment wing walls	259	m3	235.00	60,865.00	259	m3	235.00	60,865.00	218	m3	235.00	51,230.00	218	m3	235.00	51,230.00	218	m3	235.00	51,230.00	218	m3	235.00	51,230.00
U	Expansion joints	16	nr	5,000.00	80,000.00	16	nr	5,000.00	80,000.00	16	nr	5,000.00	80,000.00	16	nr	5,000.00	80,000.00	16	nr	5,000.00	80,000.00	16	nr	5,000.00	80,000.00
	Series 1700: Concrete Structures				2,615,761.55				2,126,522.35				1,512,810.22				1,587,770.78				1,587,770.78				1,277,897.71
	Series 1800: Steelwork for Structures																								
A	Weathering Steelwork to abutment, beams, piers, and tower sections. Fabrication & Erection.	0	t	2,932.50	0.00	0	t	2,932.50	0.00	779	t	2,932.50	2,284,417.50	781	t	2,932.50	2,290,282.50	936	t	2,932.50	2,744,820.00	459	t	2,932.50	1,346,017.50
В	Parallel strand HT cables	0	m	310.00	0.00	0	m	310.00	0.00	0	m	310.00	0.00	0	m	310.00	0.00	0	m	310.00	0.00	0	m	310.00	0.00
с	Checking and adjustment post-completion		item		0.00		item		0.00		item		0.00		item		0.00		item		0.00		item		0.00
D	Steel reinforcement to mass fill concrete	863	t	1,524.90	1,315,988.70	690	t	1,524.90	1,052,790.96	834	t	1,524.90	1,271,766.60	844	t	1,524.90	1,287,015.60	844	t	1,524.90	1,287,015.60	741	t	1,524.90	1,129,950.90
E	Allowance for fixings and the like	9	t	1,524.90	13,724.10	7	t	1,524.90	10,674.30	16	t	1,524.90	24,398.40	16	t	1,524.90	24,398.40	18	t	1,524.90	27,448.20	12	t	1,524.90	18,298.80
	Series 1800: Steelwork for Structures			-	1,329,712.80				1,063,465.26				3,580,582.50				3,601,696.50				4,059,283.80		_		2,494,267.20
А	Series 2100: Bridge Bearings Bearings	60	nr	12.967.50	778,050.00	48	nr	12,967.50	622,440.00	48	nr	12,967.50	622,440.00	48	nr	12,967.50	622,440.00	72	nr	12,967.50	933,660.00	24	nr	12,967.50	311,220.00
1				,				,				,				,				,				,	

	Option 1.1 5 Pre-Stressed Beams, 6 Spans			s, 6 Spans	4 Pre-S	tressed	Option 1.2 Beams, 6 Spar	ns (no Bus Lane)		4 Girde	Option 2.1 er, 6 Spans, F	lat Soffit	4	Girder, (Option 3.1 6 Spans, Curv	red Soffit	i	6 Girde	Option 4.1 er, 6 Spans, Cur	ved Soffit	Ladder	Deck,	Option 5.2 Spans, Curve lane)	d Soffit (No bus	
Ite	m Description	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£
1	Series 2100: Bridge Bearings				778,050.00				622,440.00				622,440.00				622,440.00				933,660.00				311,220.00
	Series 2700: Utilities																								
А	Electricity		item		20,000		item		20,000		item		20,000		item		20,000		item		20,000		item		20,000
в	Gas (Not included)		item		0		item		0		item		0		item		0		item		0		item		0
	Carles 2700. Hilling Carold																								
	Series 2700. Othities Cont u																								
c	Water (Not included)		item		0		item		0		item		0		item		0		item		0		item		0
D	Communications		item		20,000		item		20,000		item		20,000		item		20,000		item		20,000		item		20,000
	Series 2700: Utilities				40,000.00				40,000.00				40,000.00				40,000.00				40,000.00				40,000.00
	Series 3000: Landscape, Ecology & Archaeology																								
	Series Soon Landscape, Longy & Hendeology																								
A	Soft Verge	0	m2	17.00	0	0	m2	17.00	0	0	m2	17.00	0	0	m2	17.00	0	0	m2	17.00	0	0	m2	17.00	0
В	General landscape areas	0	m2	17.00	0	0	m2	17.00	0	0	m2	17.00	0	0	m2	17.00	0	0	m2	17.00	0	0	m2	17.00	o
	Series 3000: Landscape, Ecology & Archaeology				0.00				0.00				0.00				0.00				0.00				0.00
	Miscellaneous																								
A	Temporary Works				Inc. in Prelims				Inc. in Prelims				Inc. in Prelims				Inc. in Prelims				Inc. in Prelims				Inc. in Prelims
в	Access - haul roads				Inc. in Earthworks				Inc. in Earthworks				Inc. in Earthworks				Inc. in Earthworks				Inc. in Earthworks				Inc. in Earthworks
	Miscellaneous				0.00				0.00		4 4		0.00		_		0.00				0.00		 		0.00
	Site Highways & Infrastructure Total £ (Rounded)				6,180,000.00				5,180,000.00				7,120,000.00	12			7,230,000.00			7	8,000,000.00				5,360,000.00
								3																	
	Preliminaries		25%		1,545,000.00				1,295,000.00				1,780,000.00				1,807,500.00				2,000,000.00				1,340,000.00
	Traffic Management (Scope doesn't inpact the highway)		0%		0.00		0%		0.00				0.00				0.00				0.00				0.00
	Special Preliminaries																								
	Total £				7,725,000.00			Ĵ	6,475,000.00	Í.			8,900,000.00	ſ			9,037,500.00				10,000,000.00				6,700,000.00

		Ти	vin Tov	Option 6.1 wer Cable-Staye	d, 5 Spans	Twin Tow	ver Cat	Option 6.2 ole-Stayed, 5 Sp	ans (no Bus Lane)
Item	Description	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£
	Series 200: Site Clearance								
	General allowance for site clearance	F 600		0.50	3 800 00	F 600		0.50	3 800 00
~		5,600	1112	0.50	2,800.00	5,000	mz	0.50	2,800.00
	Series 200: Site Clearance				2,800.00				2,800.00
	Series 300: Fencing								
A	Knee Rails	0	m	25.00	0.00	0	m	25.00	0.00
в	Acoustic Fence (Allowance)	0	m	320.00	0.00	0	m	320.00	0.00
с	General Site Fencing	0	m	29.40	0.00	0	m	29.40	0.00
	Series 300: Fencing	-			0.00				0.00
	Series 400: Safety Barriers								
А	Vehicle Parapet; metal parapet system N2/W2 with mesh infil, 1m								
	high	239	m	500.00	119,500.00	239	m	500.00	119,500.00
В	Pedestrian Parapet; metal parapet system N2/W2 with mesh infil, 1.4m high	239	m	600.00	143,400.00	239	m	600.00	143,400.00
	Series 400: Safety Barriers				262,900.00				262 900.00
					202/00000				202,000.00
	Series 500: Drainage								
	Surface Water Drainage								
A	Rod access points to Beaney kerb (2no/25m)	44	nr	325.00	14,404.00	44	nr	325.00	14,404.00
В	Allowance for connection to existing highway drainage services		item		5,000.00		item		5,000.00
	Series 500: Drainage				19,404.00		_		19,404.00
	Series 600: Earthworks								
A	Excavate class 5a (topsoil) and deposit on site.	0	m3	8.00	0.00	0	m3	8.00	0.00
в	Excavate Class 5a (topsoil) and dispose off-site.	102	m3	25.00	2,540.00	86	m3	25.00	2,145.00
С	Excavate acceptable material and deposit on site	0	m3	8.00	0.00	0	m3	8.00	0.00
D	Excavate acceptable material and remove from site	4,134	m3	24.00	99,216.00	3,969	m3	24.00	95,256.00
E	Allowance for dealing with contaminated material.	212	m3	69.00	14,612.82	203	m3	69.00	13,989.06
F	Imported acceptable material	102	m3	37.00	3,759.20	86	m3	37.00	3,174.60
G	Excavate material in areas of soft fill, remove from site and backfill								
	will acceptable material 50% reclaimed and 50% imported.	0	m3	65.00	0.00	0	m3	65.00	0.00
н	Extra over for hard dig	0	m3	34.00	0.00	0	m3	34.00	0.00
1	Lightweight Fill	0	m3	72.00	0.00	0	m3	72.00	0.00
J	General Fill	0	m3	27.00	0.00	0	m3	27.00	0.00
к	Allowance for Geotextiles	945	m2	5.00	4,725.80	945	m2	5.00	4,725.80
	Series 600: Earthworks				124.853.82				119.290.46

Description Series 700: Highways	Quantity	Unit	Rate	2	Quantita	140.00		
Series 700: Highways					Quantity	Unit	Rate	£
Bridge Deck Carriageway; including approx. 185mm thick binder and approx. 40mm surface course	1,870	m2	63.00	117,794	1,870	m2	63.00	117,794
Bridge Deck Bus Lane; including approx. 185mm thick binder and approx. 40mm surface course	970	m2	63.00	61,079	0	m2	63.00	0
Series 700: Highways				178,872.75				117,794.25
Series 1100: Kerbs, Footways & Paved Areas								
125 x 255 HB Kerb	0	m	32.00	0.00	0	m	32.00	0.00
Beaney Block type kerb	554	m	132.00	73,128.00	554	m	132.00	73,128.00
50 x 150 Edging	0	m	21.00	0.00	0	m	21.00	0.00
Factile Paving	0	m2	81.00	0.00	0	m2	81.00	0.00
Multi-User Path	997	m2	48.00	47,865.60	997	m2	48.00	47,865.60
Hard Verge, including approx. 150mm regulating and approx. 30mm surface course	166	m2	52.00	8,642.40	166	m2	52.00	8,642.40
Series 1100: Kerbs, Footways & Paved Areas				129,636.00				129,636.00
Series 1200: Traffic Signs & Road Markings								
Allowance for signs		item		10,000.00		item		10,000.00
Allowance for road markings	277	m	7.00	1,939.00	277	m	7.00	1,939.00
Series 1200: Traffic Signs & Road Markings				11,939.00				11,939.00
Series 1300 & 1400: Lighting Columns & Electrical Work								
lighting columns	18	nr	2,250.00	41,550.00	18	nr	2,250.00	41,550.00
lluminated bollards	0	nr	600.00	0.00	0	nr	600.00	0.00
Feeder pillar	2	nr	800.00	1,600.00	2	nr	800.00	1,600.00
Series 1300 & 1400: Lighting Columns & Electrical Work				43,150.00				43,150.00
Series 1600: Piling and Embedded Retaining Walls Piling rig and associated works, including: - Mobilize plant, labour and equipment and set up on site - Clear away on completion - Install and test working pile - Set up at each pile position - Attendance on piling - Integrity testing of piles - Test cubes - Test cubes			20.000.00	120 000 00		-	20.000.00	120,000,00
Standing time	9.80	dav	285.00	2.793.00	6.40	dav	285.00	1.824.00
Concrete pile to abutments; 750mm diameter, 23m long	30	nr	5,150.00	154,500.00	24	nr	5,150.00	123,600.00
Concrete pile to piers; 750mm diameter, 21.5m long	0	nr	4,814.13	0.00	0	nr	4,814.13	0.00
Concrete pile to piers; 750mm diameter, 23m long	68	nr	5,150.00	350,200.00	40	nr	5,150.00	206,000.00
Piling mat	6	nr	7,350.00	44,100.00	6	nr	7,350.00	44,100.00
		enters 100. Kersy, toxing part enter finance 125 x 255 HB Kerb 0 leaney Block type kerb 554 i0 x 150 Edging 0 variable paving 0 dulti-User Path 997 ard Verge, including approx. 150mm regulating and approx. 166 Series 1100: Kerbs, Footways & Paved Areas ieries 1200: Traffic Signs & Road Markings Vilowance for signs 277 Series 1200: Traffic Signs & Road Markings Vilowance for road markings 277 Series 1200: Traffic Signs & Road Markings Vilowance for road markings 277 Series 1200: Traffic Signs & Road Markings Vilowance for road markings 2 Series 1300 & 1400: Lighting Columns & Electrical Work ighting columns 18 Iluminated bollards 0 eeder pillar Clear away on completion - Integrity testing of piles - Integrity testing of piles - Set up at each pile position - Integrity testing of piles - Test cubes <t< td=""><td>eines 1000, Relog, Looking, & Lance, Hells, 1 125 x 255 H8 Kerb 0 leaney Block type kerb 554 i0 x 150 Edging 0 i0 x 150 Edging 0 i0 x 150 Edging 0 iactile Paving 0 dulti-User Path 997 tard Verge, including approx. 150mm regulating and approx. 166 Series 1100: Kerbs, Footways & Paved Areas Series 1200: Traffic Signs & Road Markings 186 Vilowance for signs 188 Vilowance for road markings 277 Series 1200: Traffic Signs & Road Markings 188 Vilowance for road markings 18 ighting columns 18 Illuminated bollards 0 of nr Series 1300 & 1400: Lighting Columns & Electrical Work 18 ighting rolumns 18 nr Illuminated bollards 0 nr Series 1300 & 1400: Lighting Columns & Electrical Work 18 ighting rolumns 18 nr - Clear away on completion - - Series 1300 & 1400: Lighting Columns & Electrical Work -</td><td>energe 100. 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Kello, Forture article recent recen</td><td>Instruction Image: Section 1 and 1 and</td><td>izs x 255 HB kerb 0 m 32.00 0.000 0 m izs x 255 HB kerb 554 m 132.00 73,128.00 554 m idx 150 Edging 0 m 21.00 0.000 0 m idx 150 Edging 0 m2 81.00 0.000 0 m2 iduit-iJser Path 997 m2 48.00 47,865.60 997 m2 iduit-iJser Path 997 m2 52.00 8,642.40 166 m2 isries 1200: Traffic Signs & Road Markings Item 10,000.00 1,939.00 277 m isries 1300 & 1400: Lighting Columns & Electrical Work Item 11,939.00 20 m ighting columns Electrical Work Item 1,600.00 0.0 m</td><td>25 x 255 HB Kerb 0 m 32.00 0.00 0 m 32.00 125 x 255 HB Kerb 554 m 132.00 73.128.00 554 m 132.00 10 x 150 Edging 0 m 21.00 0.00 0 m 21.00 actile Paving 0 m2 81.00 0.00 0 m2 81.00 duit-User Path 997 m2 48.00 47,865.60 997 m2 48.00 tard Verge, including approx. 150m megulating and approx. 166 m2 52.00 8,642.40 166 m2 52.00 Series 1100: Kerbs, Footways & Paved Areas </td></td></t<>	eines 1000, Relog, Looking, & Lance, Hells, 1 125 x 255 H8 Kerb 0 leaney Block type kerb 554 i0 x 150 Edging 0 i0 x 150 Edging 0 i0 x 150 Edging 0 iactile Paving 0 dulti-User Path 997 tard Verge, including approx. 150mm regulating and approx. 166 Series 1100: Kerbs, Footways & Paved Areas Series 1200: Traffic Signs & Road Markings 186 Vilowance for signs 188 Vilowance for road markings 277 Series 1200: Traffic Signs & Road Markings 188 Vilowance for road markings 18 ighting columns 18 Illuminated bollards 0 of nr Series 1300 & 1400: Lighting Columns & Electrical Work 18 ighting rolumns 18 nr Illuminated bollards 0 nr Series 1300 & 1400: Lighting Columns & Electrical Work 18 ighting rolumns 18 nr - Clear away on completion - - Series 1300 & 1400: Lighting Columns & Electrical Work -	energe 100. 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Elemental Construction Costs

		ти	vin Tov	Option 6.1 wer Cable-Staye	d, 5 Spans	Twin Tow	er Cab	Option 6.2 le-Stayed, 5 Sp	ans (no Bus Lane)
Item	Description	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£
	Series 1600: Piling and Embedded Retaining Walls	_	-		671,593.00				495,524.00
	Series 1700: Concrete Structures								
A	Precast concrete beams, type W19								
	Series 1700: Concrete Structures Cont'd								
В	Concrete deck for viaduct; 250mm thick	3,853	m2	235.00	905,455.00	2,866	m2	235.00	673,510.00
с	Additional concrete beneath parapets; 450mm thick	215	m3	235.00	50,548.50	215	m3	235.00	50,548.50
D	Concrete columns; 1.2m diameter, 2.4m high	0	nr	2,550.18	0.00	0	nr	2,550.18	0.00
E	Concrete columns; 1.2m diameter, 2.7m high	4	nr	2,868.96	11,475.82	4	nr	2,868.96	11,475.82
F	Concrete columns; 1.2m diameter, 3.4m high	0	nr	3,612.76	0.00	0	nr	3,612.76	0.00
G	Concrete columns; 1.2m diameter, 3.7m high	0	nr	3,931.53	0.00	0	nr	3,931.53	0.00
н	Concrete columns; 1.2m diameter, 4m high	0	nr	4,250.30	0.00	0	nr	4,250.30	0.00
т	Concrete columns; 1.2m diameter, 4.4m high	0	nr	4,675.33	0.00	0	nr	4,675.33	0.00
J	Concrete columns; 1.2m diameter, 4.9m high	0	nr	5,206.62	0.00	0	nr	5,206.62	0.00
к	Concrete columns; 1.2m diameter, 5.3m high	0	nr	5,631.65	0.00	0	nr	5,631.65	0.00
L	Concrete columns; 1.2m diameter, 5.7m high	0	nr	27,308.20	0.00	0	nr	27,308.20	0.00
м	Concrete columns; 1.2m diameter, 6.0m high	4	nr	6,375.46	25,501.82	4	nr	6,375.46	25,501.82
N	Capping beams to to concrete piers	46	m3	235.00	10,810.00	46	m3	235.00	10,810.00
0	Pile Caps	637	m3	235.00	149,695.00	472	m3	235.00	110,920.00
Ρ	Concrete binding; 75mm thick	508	m2	130.00	66,040.00	429	m2	130.00	55,770.00
Q	Concrete to south abutments	114	m3	235.00	26,790.00	114	m3	235.00	26,790.00
R	Concrete to north abutments	253	m3	235.00	59,455.00	253	m3	235.00	59,455.00
s	Concrete to south abutment wing walls	86	m3	235.00	20,210.00	86	m3	235.00	20,210.00
т	Concrete to north abutment wing walls	218	m3	235.00	51,230.00	218	m3	235.00	51,230.00
U	Expansion joints	16	nr	5,000.00	80,000.00	16	nr	5,000.00	80,000.00
	Series 1700: Concrete Structures				1,457,211.14				1,176,221.14
	Series 1800: Steelwork for Structures								
A	Weathering Steelwork to abutment, beams, piers, and tower sections. Fabrication & Erection.	865	t	2,932.50	2,536,612.50	554	t	2,932.50	1,624,605.00
в	Parallel strand HT cables	2,485	m	310.00	770,350.00	2,485	m	310.00	770,350.00
с	Checking and adjustment post-completion		item		30,000.00		item		30,000.00
D	Steel reinforcement to mass fill concrete	825	t	1,524.90	1,258,042.50	741	t	1,524.90	1,129,950.90
E	Allowance for fixings and the like	17	t	1,524.90	25,923.30	13	t	1,524.90	19,823.70
	Series 1800: Steelwork for Structures				4,620,928.30				3,574,729.60
	Series 2100: Bridge Bearings								
A	Bearings	36	nr	12,967.50	466,830.00	30	nr	12,967.50	389,025.00

Elemental Construction Costs

		Ти	/in Tov	Option 6.1 wer Cable-Staye	ed, 5 Spans	Twin Tov	ver Cat	Option 6.2 ole-Stayed, 5 Sp	ans (no Bus Lane)
Item	Description	Quantity	Unit	Rate	£	Quantity	Unit	Rate	£
	Series 2100: Bridge Bearings				466,830.00				389,025.00
	Series 2700: Utilities								
А	Electricity		item		20,000		item		20,000
в	Gas (Not included)		item		0		item		o
	Series 2700: Utilities Cont'd								
с	Water (Not included)		item		0		item		o
D	Communications		item		20,000		item		20,000
	Series 2700: Utilities				40,000.00		-		40,000.00
	Series 3000: Landscape, Ecology & Archaeology								
А	Soft Verge	0	m2	17.00	0	0	m2	17.00	o
в	General landscape areas	0	m2	17.00	0	0	m2	17.00	o
	Series 3000: Landscape, Ecology & Archaeology				0.00				0.00
	Miscellaneous								
A	Temporary Works				Inc. in Prelims				Inc. in Prelims
в	Access - haul roads				Inc. in Earthworks				Inc. in Earthworks
	Miscellaneous				0.00				0.00
	Site Highways & Infrastructure Total £ (Rounded)				8,040,000.00			j	6,390,000.00
	Preliminaries				2,010,000.00				1,597,500.00
	Traffic Management (Scope doesn't inpact the highway)				0.00				0.00
	Special Preliminaries								

Total £

7,987,500.00

10,050,000.00

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STURRY ROAD - SUMMARY OF REPORT COSTS (21/03/17)

Table 1 Comparable Cost estimates for options with bus lane

			Capital Cost	Main	tenance Cost	٧	Vhole Life Cost
Option 1.1	5 Pre-Stressed Beams, 6 Spans	£	19,552,956.99	£	349,640.00	£	19,902,596.99
Option 2.1	4 Girder, 6 Spans, Flat Soffit	£	21,445,591.40	£	349,640.00	£	21,795,231.40
Option 3.1	4 Girder, 6 Spans, Curved Soffit	£	21,667,069.89	£	349,640.00	£	22,016,709.89
Option 4.1	6 Girder, 6 Spans, Curved Soffit	£	23,217,419.35	£	349,640.00	£	23,567,059.35
Option 6.1	Twin Tower Cable-Stayed, 5 Spans	£	23,547,849.46	£	398,776.00	£	23,946,625.46

Table 2 Comparable Cost estimates for options without bus lane

			Capital Cost	Main	tenance Cost	V	/hole Life Cost
Option 1.2	5 Pre-Stressed Beams, 6 Spans (no Bus Lane)	£	17,539,516.13	£	229,191.00	£	17,768,707.13
Option 5.2	Ladder Deck, 6 Spans, Curved Soffit (No bus lane)	£	17,901,935.48	£	248,428.00	£	18,150,363.48
Option 6.2	Twin Tower Cable-Stayed, 5 Spans (no Bus Lane)	£	20,225,672.04	£	299,032.00	£	20,524,704.04

Table 3 Comparable Cost of abutment variations to wing walls perpendicular to abutment face

			Capital Cost	Ma	aintenance Cost	W	hole Life Cost
Abutment 1	Baseline - Wing walls perpendicular to abutment face	£	r.	£	-	£	-
Abutment 2	Splayed wing walls with inspection gallery	£	103,125.00	£	31,560.00	£	134,685.00
Abutment 3	Splayed wing walls with no inspection gallery	£	65,625.00	£	14,310.00	£	79,935.00
Abutment 4	Bank seat on reinforced soil	-£	183,750.00	£	43,625.00	-£	140,125.00

Table 4 Comparable Cost of steel beam type

		C	apital Cost	Mai	ntenance Cost	W	hole Life Cost
Beam 1	Baseline - Unpainted weathering steel (Corten)	£	-	£	-	£	-
Beam 2	Painted carbon steel	£	42,200.00	£	229,954.00	£	272,154.00

Project Name	Sturry Link
Document Title	Structures Options Report

Appendix C

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Item Risk Benefit Wig Comment Item Risk Benefit Wig Comment OPTION 1.1 Const. cost 10.0 35% Cheapest capital cost point, baards 10.0 15% Aesthetics 5.0 10% Heavy weight looking 6.3 7.4 15% Cheapest maintenance cost Aesthetics 5.0 10% Heavy weight looking Const. cost 5.0 10% Heavy weight looking Aesthetics 5.0 10% Heavy weight looking Const. cost 5.0 10% Heavy weight looking Aesthetics 5.0 10% Heavy weight looking Const. cost 5.0 10% Heavy weight looking Const. cost 5.0 10% Heavy weight looking Aesthetics 5.0 10%				CONS	STRUCT	TION	MAINTENANCE			ENVIRONMENTAL				
OPTION 1.1 S No. precase concrete beam with bus lane Const. cost const. hazards fundations 10.0 35% Ls Maint. cost however heavy beams and substructure 10.0 15% basing 10.0 15% basing Cheapest maintenance cost associated with precase units, however maximum number of bearings and heave lifts Cheapest maintenance cost associated with precase units, however maximum number of bearings and heave lifts Aesthetics 5.0 10% basing Heavyweight looking construction and more concrete super structure Aesthetics 6.0 10% basing Heavyweight looking construction and more concrete super structure Maint. cost 10.0 15% basing Cheapest maintenance cost associated with precase units, note were maximum number of bearings and heave lifts Aesthetics 6.0 10% basing Heavyweight looking construction and more concrete super structure Maint. cost 10.0 15% basing Lo 10% Heavyweight looking construction and more concrete super structure Image: Nint Inspect notice, Vibn I.5 polt Aesthetics 6.0 10% basing Heavyweight looking construction and more concrete super structure Aesthetics 6.0 10% basing Image: Nint Inspect notice, Vibn I.5 Image: N			Item Risk	Benefit	Wtg	Comment	Item Risk	Benefit	Wtg	Comment	Item Risk	Benefit	Wtg	Comment
OPTION 1.1 Const. hazards Const. cost 10.0 35% Maint. cost 10.0 15% Cheapest maintenance cost aubstructure 6.23 sub-structure 6.3 sub-structure 7.3 sub-structure 7.														
S No. precast concrete beam with bus lane Const. hazards foundations Los Society Cheapest capital cost option, however heavy beams and sub-structure Maint. hazards sub-structure Cheapest capital cost option, however heavy beams and sub-structure Cheapest capital cost option, however heavy beams and sub-structure Cheapest capital cost option, however mainum number of bearings and heave lifts optime. capital cost option, required for replacements. Enviruit impact noise, vibn 1.0, poltn, coology 1.7, enviruit mack Best option for construction hazards OPTION 2.1 Const. cost 9.1 35% Best option for construction hazards. Maint. cost 10.0 15% Aesthetics 6.0 10% VIDENTIAL Const. cost 9.1 35% Best option for construction hazards. Maint. cost 10.0 15% Ted best maintenance option overall. Aesthetics 6.0 10% Heavy weight looking duration 4.2 VIDENTIAL Const. cost 9.1 35% Best option for construction hazards. Maint. hazards 10.0 15% Ted best maintenance option overall. Aesthetics 6.0 10% Heavy weight looking duration 4.2 Firvitii impact No. No. Heavy weight looking duration 4.2 No. Society No. Society No.	OPTIC	ON 1.1	Const. cost	10.0	35%		Maint. cost	10.0	15%		Aesthetics	5.0	10%	
S. No. precast concrete beam with bus lane Foundations 1.6 sub-structure 6.2 super structure 6.2 sup			Const. hazards				Maint. hazards			Cheapest maintenance cost	Env'mtl impact			1
bus lane sub-structure 6.2 5.2 15% nowever neary beams and more concrete support, increasing construction hazard. 7.4 15% however maximum number of bearings and heave lifts required for replacements. polth, cology 1.7 8.6 10% Construction and more concrete required than option 3.1. 0PTION 2.1 Const. cost 9.1 35% 9.1 35% Maint. cost 10.0 15% noise, vibn 1.5 6.0 10% Flat beams tend to appear to support on overall. 4 No. steel beam composite, flat softwith bus lane S.Core stort 1.1 8.9 15% Best option for construction hazards. 1.0 15% 1.0 15% Ted best maintenance option overall. Flat beams tend to appear to sage. However low environmental impact. Rank Score stort thirt bus lane 9.0 35% Best option for construction hazards. 10.0 15% Ted best maintenance option overall. Flat beams tend to appear to sage. However low environmental impact. 4 No. steel beam composite, flat soft thirt bus lane 0.5 9.0 35% Best option for construction hazards. 10.0 15% 15% 10% 15% 7.7 15% Ted best maintenance option overall. Forthit impact 7.7	5 No. precast cor	ncrete beam with	foundations 1.6			Cheapest capital cost option,	bearings 6.3			associated with precast units,	noise, vib'n 1.0			Heavyweight looking
super structure 8.3 Raik Substructure to support, increasing construction hazard. super structure 1.0 joints 1.0 bearings and heave lifts requised for replacements. emb. energy 1.8 duration 1.0 requised the option 3.1. OPTION 2.1 Const. cost 9.1 35% Maint. cost 10.0 15% Aesthetics 6.0 10% Visual and soft with bus lane Const. cost 9.1 35% Best option for construction hazards. Maint. cost 10.0 15% Tied best maintenance option overall. Aesthetics 9.0 10% Pathetics	bus	lane	sub-structure 6.2	5.2	15%	nowever neavy beams and	sub-structure 2.3	7.4	15%	however maximum number of	pol'tn, ecology 1.7	8.6	10%	construction and more concrete
Rank 3 Score B2.5 NR disruption 3.0 Increasing construction hazard. points joints 1.0 requied for replacements. duration 1.0 Image: construction for			super structure 8.3			substructure to support,	super structure 1.0			bearings and heave lifts	emb. energy 1.8			requried than option 3.1.
3 82.5 A Second Const. hazards to spont the second construction hazards to spont the second consecond construction hazards to	Rank	Score	NR disruption 3.0			increasing construction hazard.	joints 1.0			regruied for replacements.	duration 1.0			
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Project Name	Sturry Link
Document Title	Structures Options Report

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Major Project Front End Pack Network Rail A28 Sturry Link Road, Canterbury

CO04300392/001 Rev 1 January 2017



amey

Document Control Sheet

Project Name:	A28 Sturry Link Road, Canterbury
Project Number:	CO04300392
Report Title:	Major Project Front End Pack Network Rail
Report Number:	001

Issue	Prepared	Reviewed	Approved
Status/Amendment			
Rev 0	Name:	Name:	Name:
	Signature:	Signature:	Signature:
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	Date: 15/06/2016	Date: 20/06/2016	Date: 20/06/2016
Rev 1 – Amendments	Name:	Name:	Name:
following initial comments from NR			
	Signature:	Signature:	Signature:
		Confirmed by e-mail	
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	Date: 9/01/17		Date: 16/01/17
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1 Introduction

Amey is currently working on behalf of Kent County Council (KCC) on the design of a new link road in the Borough of Canterbury, Kent, to link the A28 Sturry Road to the A291 Herne Bay Road as shown in outline on the location plan below.

The link road will impact on the Network Rail high speed St Pancras - Ashford – Canterbury West - Ramsgate route.

This document therefore serves to provide Network Rail 'Major Project Front End Pack' information.





2 General Project Description and Value

The new link road provides a strategic link between the A28 Sturry road and the A291 north of the railway line as shown in the plan below, which is an extract from the developers current Master Plan (pre-planning).

One of the key scheme objectives for KCC is to improve the operational safety of the existing Sturry level crossing by reducing traffic using the crossing through diverting and encouraging use of the new link road and the new bridge crossing over the railway lines to the west.



Current Master Plan proposal (pre-planning submission)



Overall, the new link road is approximately 1.5km in length of single carriageway construction connecting the A291 Sturry Hill Road in the east to the A28 Sturry Road in the west. From the A291 the route follows an east to westerly route north of the railway line before heading southwards to span over the railway and across the Great Stour and its floodplain and connect to the A28.

The proposal is for a viaduct to over sail the railway and both branches of the great Stour and its floodplain.

KCC are in negotiation with three developers including the developers of the Sturry site who will be providing the funding for the cost of the link road at no cost to KCC.

The development sites are included in the Canterbury District Draft Local Plan (2015) and the developers will be submitting outline planning applications for these sites late 2016. KCC are progressing the highway alignment design with a view to submitting a detailed planning application early 2017.

The project is to be funded by developer contributions secured through S106 agreements and 5.9 million of LEP funding.

The current construction budget estimate for the link road is £29.6 million.



3 Client and Consultant Details

The Client for this scheme is Kent County Council (KCC). KCC's project manager for the scheme is Richard Shelton (<u>Richard.shelton@kent.gov.uk</u>).

KCC has commissioned Amey to act as their design consultants for the scheme with the initial scope to develop scheme proposals and submit a detailed planning application to the County Planning Authority (KCC).

Amey's Project Director for the scheme is David Ward (David.Ward@amey.co.uk) and the Project Manager is Mick Mortley (Michael.Mortley@amey.co.uk).



4 **Project Elements That Affect the Railway**

There are three elements of the project that will impact the railway (refer to plan 4300392/000/06 in Appendix A);

- i. A bridge/viaduct crossing over the railway (Location Mile 72+350yrds)¹
- ii. Junction improvements adjacent to the Sturry railway station
- A change in the volume of traffic crossing the rail lines on both the Sturry and Broad Oak level crossings

4.1 Bridge/Viaduct Crossing

The aim of the new bridge design will be to avoid any physical impact on existing Network Rail owned infrastructure or land. This includes any temporary works during construction of the bridge. No significant impacts are envisaged based on information collected to date, however, engagement and surveys with Network Rail are required to confirm this.

It is envisaged that only night time possessions would be needed for installation of overhead beams and associated deck works.

Preliminary bridge design options have been developed and a general arrangement drawing is provided in Appendix B for illustration purposes only (Drg No. 4300392/1700/103-RevP0). Pier and abutment locations shown are indicative but intended to lie entirely outside Network Rail owned land. Final locations will be subject to further surveys.

Further design considerations are as follows;

Design Criteria and Clearances

The new bridge will be designed to meet the following clearances as set out in the Network Rail 'Track Design Handbook NR/L2/TRK/2049':

• For vertical clearances, a minimum 5100mm from top of high rail to the bridge deck soffit (i.e. for route type 'Primary 'InterCity' main routes'), plus allowances for max bridge deflection. Additional clearances required, if any, for cant and curvature are to be confirmed with Network Rail.

¹ As determined from the NR Civil Engineering Plan – Diagram No. ACR-04 – Sturry-Chislet Halt (Included in Appendix C)



• For horizontal clearances, a minimum of 1625mm laterally from the nearest running edge.

Network Rail Property/Services

The intended crossing zone indicated no Network Rail property, however there is a 2' (600mm) brick/concrete culvert either side of the intended structure¹, but these are unlikely to be affected.

Network rail have undertaken a services search enquiry (Ref: Network Rail letter date 31 march 2015) indicating a 33kV cable running along the north edge of the railway² and the 72.25 mileage post in the vicinity of the intended structure.

Network Rail Land Take

As previously stated, the abutments/piers for the proposed bridge are intended to be located outside Network Rail land, including all temporary works for their construction. Land acquisition/temporary licenses are not therefore anticipated. Initial indications suggest a bridge span in the order of 45m is practicable, taking into account accessibility to the site for pre-formed beam elements (steel or concrete). This should provide sufficient flexibility in locating the abutments/piers outside Network Rail land given that the railway corridor is in the order of 20m between boundary fences.

New Bridge Foundations – Impact on Railway

Foundations are likely to be founded on piles constructed using continuous flight auger (CFA) or bored cast in-situ. It is assumed at this stage the piling works will not require rail possessions.

New Embankments behind Bridge Abutments

It is likely that the new embankment behind the abutment adjacent to the railway will need to be pre-loaded for a period of time prior to construction in order to minimize differential settlements in the alluvium. The possibility of heave beneath the railway will be mitigated by the use of wick drains and a drainage blanket to allow excess pore pressures to be dissipated. The use of a piled granular raft beneath the embankment will also be considered. Monitoring of the railway during this phase of the works can be implemented if required.

² As determined from dwg no. 716,211/KCE/FC1 sht 1 (Included in Appendix C)



Bridge Deck Beam Erection

It is likely that the bridge deck will comprise a composite steel beam with an in-situ reinforced concrete composite deck slab. The beams would be lifted in place in pairs, with edge falsework attached, via a mobile crane under an assumed weekend or possibly two night possessions. A further one or two night possessions will be required to complete placing the permanent deck soffit formwork, after which it is envisaged that work can continue on the bridge deck outside of any possessions. A final weekend or possibly two night possessions will be needed to remove the edge formwork on completion of the bridge span over the railway.

High Containment Parapets

It is expected that both parapets on the bridge deck will be steel or aluminium very high containment level (H4a), 1.5m in height. They will be erected outside of any possessions, prior to removal of the cantilever edge falsework.

4.2 Junction Improvements – Sturry Railway Station/Level Crossing

KCC are investigating several options to reconfigure the A28/A291 junction layout, which is located immediately to the north of the Sturry level crossing and adjacent to the Sturry Railway station forecourt. These options aim to support and align with the adjacent development infrastructure to encourage traffic to utilise the new link that in turn would result with a reduction in traffic using the Sturry level crossing.

Furthermore, KCC are seeking to reduce the significant level of congestion that occurs during times when the level crossing barriers are down.

Some of these options, for instance, involve signalisation of some or all junction arms and as such will need to be carefully integrated with the operation of the level crossing. An example layout currently in development is shown overleaf.

It should be noted that no physical alterations to the level crossing are proposed.





Example of junction improvement with signalisation

Full consultation with Network Rail Kent Level crossing teams will therefore take place to ensure safe and practical designs are established.

Additionally, and intrinsic to the design of any option, will be its integration with the station forecourt, particularly in relation to access and egress considerations. Again, full consultation with management of the station forecourt will take place.

4.3 Sturry and Broad oak Level Crossings

Both level crossings will remain in operation but will experience changes in the volume of traffic using them as a result of traffic reassignment.

Increases in traffic levels can be expected at the Broad Oak level crossing whilst a reduction is likely at the Sturry level crossing. The amount of change is subject to further traffic analysis and when complete, a risk assessment is to be carried out at each of the level crossings to assess the impact any additional traffic or localised network changes will have on the crossings.

This risk assessment would be carried out by a Network Rail approved specialist subcontractor and consider whether or not the crossings would need to be upgraded.



5 Tabulated Summary List of Impacts

Location (See Drg. No. 43000392/000/06)	Work Description	Railway Impact	Programme		
Mile 72 + 350yrds	New bridge crossing over the railway	None anticipated other than white period possessions during construction	Year 2019/2020		
Station Forecourt	Minor alterations to forecourt access and egress entrances	Adjustment to internal forecourt parking arrangements	Year 2019/2020		
Sturry Level Crossing	Junction improvement in the vicinity of the level crossing	Integration of the signal/barrier controls at the level crossing with the junction traffic signals	Year 2019/2020		
Broad Oak Level Crossing	No physical impact but increases in traffic flow using the crossing expected	Potential for upgrading level crossing subject to outcome of risk assessment	Year 2019/2020		