



# FORTH REPLACEMENT CROSSING M9 Junction 1a MATERIALS TRANSPORTATION STRATEGY






*Issue 2 : May 2012*

# FORTH REPLACEMENT CROSSING M9 Junction A1

## MATERIALS TRANSPORTATION STRATEGY

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Rev	Date	By	Summary of Changes	Chkd	Aprvd
02	31-05-12	RT	Revised to reflect comments from EDT on CR00195	RT	PMc

Transport Scotland  
Arrol House  
Viking Way  
Rosyth  
KY11 2UU

# MATERIALS TRANSPORTATION STRATEGY

## Introduction

As detailed in Cl3.6.4.1 Part A1 of the Employers Requirements, the purpose of this Strategy is to ensure that the impacts of transport (impacts caused by the transportation of materials to and from the Site) are kept to a minimum.

Through this strategy, SRB intend to give consideration to more sustainable forms of freight transport, including transportation by rail or sea. Where freight is to be transported by road, the Contractor shall demonstrate, where required by the Employer, that due consideration has been given to efficient route planning.

## SRB Materials Transportation Strategy Policy

Where reasonably practicable, SRB will resource and supply goods and materials used in the temporary and permanent works from local suppliers and manufacturers. Where these goods are not available locally, consideration will be given to the source of these materials and the mode of transportation of them to site.

## Management of Materials Transportation Strategy

Roland Tarrant will act as the SRB Sustainability Manager and he will champion the goals of the materials transportation strategy, including:

- Ensuring that adequate consideration of supply routes is incorporated into the decision making process regarding procurement of goods and materials
- Ensuring that adequate consideration of the relevant modes of transport is incorporated into the decision making process regarding procurement of goods and materials
- Co-ordinating the regular senior management review of performance in terms of minimising the impacts of transport of materials to and from the site
- Co-ordinating and aligning the aims of the Materials Transportation Strategy with similar aims in other Plans, Strategies and Schemes e.g. CEEQUAL, Considerate Constructor, Zero Waste Scotland, Sustainable Resource Management Framework, Construction Environmental Management Plan.
- Reducing the number of HGV journeys through the use of efficient ordering methods

## Register of materials to be used on the Project

Included in **Appendix A** is a categorised list of all materials proposed to be used in the M9J1a project. This is intended to be a live Register and will be constantly updated as procurement progresses and suppliers and sub-contractors are appointed to the Project.

## Transportation Options

A general breakdown of the modes of transport that could be utilised on the scheme and an analysis of the practicalities of using them is included below:

### Road

The site is located on the existing M9 Motorway and M9 Spur towards the Forth Road Bridge. All sections of the site are to be accessed from the designated access points shown in **Appendix B**. In general, the site is very accessible using the existing road network and this is the primary mode of transport proposed for the supply of goods and materials to the Project.

### Rail

There are rail freight transfer facilities at a limited number of locations in Edinburgh: Powderhall, Portobello and the eastern docks area in Leith. The Powderhall facility is used only for waste transfer. The future of the remaining facilities is not clear. Some transfer of freight from water to rail takes place in Leith Eastern Docks, but the implications of Forth Ports' proposals for the redevelopment of the docks is that there is no long term requirement for this facility. At present there is relatively limited potential for the use of rail as a transport source for the M9J1a Project as there would still be a requirement for the use of road transportation for the final material destination.

## **Air**

The site is adjacent to Edinburgh International Airport (approx. one mile as the crow flies). Connectivity from there to other airports within the UK and throughout Europe is quite good. In 2009 and 2010 over 43,000Tonnes of air freight passed through Edinburgh Airport. Given that it is widely recognised that air transport is the least environmentally friendly of all modes of transport, it is not proposed that air transport of materials and goods to site is promoted.

## **Sea**

There is an existing euoport in Rosyth to the north of the scheme. This offers potential opportunities with regard the import of materials and goods from Zeebrugge and Rostock; the main connective ports that are served by Rosyth. However, on analysis of the Material Register in Appendix A, it is not envisaged that this would be of benefit for the types of materials and goods to be supplied to the Project.

Apart from Rosyth, the other sea freight option using the Firth of Forth, is through Leith docks. This would require additional road transportation through Edinburgh via HGV's on the A90 / A901/2 or the A8. On analysis this would present additional logistics problems and lead to more concentration og HGVs on these urban routes than would be the case if materials deliveries were coming from several areas using a roads only based delivery network.

## **Transport Emissions**

In order to reduce emissions associated with transport, the following will be implemented:

- The reuse of as much material as found on site as possible, thereby reducing the need to import materials from outside the site
- The use of as much material and aggregate from the surrounding area (after the maximum material has been won on site as possible) thereby reducing the "freight miles" associated with delivering materials
- Using as much of the total expected import material as possible from the adjacent Bing (Hunters Bing - <one mile away), thereby reducing the amount of materials brought from non-renewable sources farther away
- Planning material deliveries, in so far as practicable, outside of times of peak congestion

## **Route Planning**

The TSCO and the Sustainability Manager will co-ordinate the delivery of materials / supplies and all site access arrangements in compliance with the Permitted Access Routes Detailed in Part A2: Employer's Requirements, Appendix 1/19. SRB have prepared a Site Location Map for agreed Site Access Points with the Employer and has informed suppliers and personnel of these locations using the following methods:

- Notification at pre-appointment meetings
- Emails and letter officially informing them of routes
- Regular reminders and updates
- Toolbox talks

These permitted access routes are shown in **Appendix B**.

This will be continuously monitored by the Site Manager and Site Foremen who will all arrange for routing of loads through the designated access routes.

Non-compliance with the access route requirements will be registered in the Non-Conformance Reporting System with all incidents being investigated and root cause effects determined.

Main Supplier locations will be maintained on a register, a sample of which is included in **Appendix C**.

**Appendix A**                      Sample Register of Materials

**Appendix B**                      Site Access Routes

**Appendix C**                      Main Supplier Locations

## Appendix A – Register of Materials

Code	Material	Description	Supplier / sub Contractor	Total Quantity	Unit Cost	Units	Source Distance From Site	Transportation Option and Reasoning
M.00.000 .0000	225mm S&S CONCRETE PIPES			18.90	12.00	m		
M.00.000 .0000A	225mm Filter Pipe			5351.85	4.85	m		
M.00.000 .0000B	HDPE pipework 160mm			270.90	8.00	m		
M.00.000 .0001A	300mm Filter Pipe			1547.70	8.06	m		
M.00.000 .0001B	375mm Filter Pipe			706.65	16.59	m		
M.00.000 .0003	450mm S&S CONCRETE PIPES			489.83	21.50	m		
M.00.000 .0003A	450mm Filter Pipe			276.15	22.27	m		
M.00.000 .0004A	Permanent Formwork & Sealants		EMJ	842.10	70.76	m2		
M.00.000 .0006	675mm S&S Concrete Pipes			69.00	50.00	m		
M.00.000 .0007	750mm S&S CONCRETE PIPES			93.45	66.01	m		
M.00.000 .0008	900mm S&S CONCRETE PIPES			33.83	89.68	m		

M.00.001 .0000	150mm OGEE CONCRETE PIPES			208.95	10.00	m	
M.00.002 .0008	1200mm dia*1m Manhole Ring		Burdens	129.00	69.52	no	
M.00.002 .0009	1200mm dia*0.5m Manhole Ring			94.00	52.00	no	
M.00.002 .0011	1200mm HD Cover Slab		Burdens	100.00	75.18	no	
M.00.002 .0012	1350mm dia*1m Manhole Ring		Burdens	34.00	103.60	no	
M.00.002 .0016	1500mm dia*1m Manhole Ring		Burdens	39.00	114.50	no	
M.00.002 .0019	1500mm HD Cover Slab		Burdens	9.00	130.54	no	
M.00.004 .0000	D400 HD Lockable Manhole Cover, 600x600 ope		Burdens	100.00	77.65	no	
M.00.005 .0002A	Envirodeck Units, 210mm deep		PDS PLC	636.00	79.75	no	
M.00.010	Misc Drainage Materials					Sum	
M.01.001 .0001	100mm uPVC Duct			1184.00	1.28	m	
M.01.001 .0003	150mm uPVC Duct			1239.00	1.41	m	
M.01.001 .0008	150mm uPVC Slotted Pipe			299.25	4.27	m	

M.01.003 .0001A	Duct Chamber Materials					Sum	
M.01.005 .0000	Sand - Bedding			109.17	22.41	m3	
M.02.003 A	Asset Pipework - Multiplate MP200					Sum	
M.02.003 B	675mm diameter penstock - wall mounted					Sum	
M.02.003 C	750mm diameter penstock - wall mounted					Sum	
M.04.000 A	Erosion Protection Mat		LandLok 450			Sum	
M.04.001	GEOTEXTILE TERRAM 1000G 4.5m X 100m			4.77	130.00	m2	
M.04.002	GEOTEXTILE TERRAM 2000G 45.M X 100M			50.00	200.00	m2	
M.06.000 .0001	BLOCKS 215mm HOLLOW CONCRETE			10.96	1182.0 0	Tho	
M.07.000 .0001	FLEXCELL 20mm x 1200 x 2400mm			11.00	18.33	m2	
M.07.000 .0003	HYDROCELL EXPANSION JOINT 10mm x			28.60	9.57	m2	



	1000X2000mm							
M.07.001 .0002	Expoband Plus 190mm flexible expansion joint strip membrane			243.10	15.40	m		
M.07.001 .0003	Bitumen Based Joint Sealant (Plastiseal)			5.76	123.55	m		
M.07.001 .0004	Thioflex 600 (2 part Polysulphide Sealant)			49.14	11.41	lt		
M.07.001 .0005	Primer 7 (for use with Thioflex 600)			9.83	26.07	lt		
M.07.001 .0017	Butyl-nek 25 x 40mm			232.10	4.17	m		
M.08.005	CONCRETE 30/N/20 STANDARD MIX (100mm SLUMP)			491.63	72.90	m3		
M.08.005 A	CONCRETE C32/40 Air Entraned w. 40% GGBFS			3299.10	75.90	m3		
M.08.012	CONCRETE ST1			1068.08	64.00	m3		
M.08.013	CONCRETE ST2			131.00	65.70	m3		
M.08.015	CONCRETE ST4			39.90	67.50	m3		
M.08.017	No Fines Concrete			41.79	73.00	m3		
M.08.019	Concrete Pump Mix E/O			1677.90	5.00	m3		
M.09.000 .0000	REINFORCEMENT STEEL H.T.CUT & BENT CARES			538.06	580.00	Tn		

	APPR							
M.09.000 .0012	MESH A252 STEEL REINFORCEMENT			426.80	2.71	m2		
M.09.000 .0014A	MESH A142 STEEL REINFORCEMENT			1115.46	2.54	m2		
M.09.001 .0000B	Stainless Steel Dowels - Price per tn			0.81	3700.0 0	m		
M.11.000	6"X3" Timber			7616.07	3.09	m		
M.11.001	6"X2" Timber Framing			186.86	2.25	m		
M.11.004	Pourform Plywood			2127.14	10.54	m2		
M.11.009	Miscellaneous Formwork Materials					Sum		
M.11.009 A	Timber for pattern finish - Overton					Sum		
M.11.012	Super Slim Soldiers, ties, nuts & plates			1952.08	14.08	m2		
M.11.013 .0004	1500mm dia Steel Pier Form			63.00	25.00	m2		
M.11.016	Deck Cantilever Brackets			33.00	90.00	no		
M.12.014	Class 6F1 Selected Granular Fill			10903.20	12.65	m3		
M.12.017	Class 6G Selected Granular Fill			1348.80	16.50	m3		

M.12.019	Class 6I Selected Granular Fill			1834.35	16.50	m3	
M.12.021	Class 6K Selected Granular Fill			728.70	20.88	m3	
M.12.022	Class 6L Selected Granular Fill			72.45	7.00	m3	
M.12.023	Class 6M Selected Granular Fill			1350.30	12.76	m3	
M.12.023 A	Class BLAES			33376.28	9.52	m3	
M.12.024	Class 6N Selected Granular Fill			1791.30	12.65	m3	
M.12.026	Class 6Q Selected Granular Fill			338.10	9.52	m3	
M.12.029 A	Quarry Dust			722.40	10.50	m3	
M.12.030	SAND WASHED PER LOAD			59.46	21.17	m3	
M.12.031	CLAUSE 803			1083.60	19.55	m3	
M.12.032	CLAUSE 804			7808.90	19.55	m3	
M.12.042	Clause 503 Granular Fill			6462.44	20.88	m3	
M.12.045	Trench Backfill Material			9956.08	12.65	m3	
M.13.000 .0004A	MY Beams		Shay Murtagh			Sum	
M.13.000	TY Beams		Shay			Sum	

.0006			Murtagh				
M.13.002 .0002	Reinforced Earth Panels - Retaining Wall		RECO	210.00	90.00	m2	
M.13.003	Coping units for RE earth		RECo	47.00	170.00	m	
M.13.006	Precast Box Culverts		Shay Murtagh			Sum	
M.13.008	Precast Concrete Wingwalls		Shay Murtagh			Sum	
M.14.000 A	255mm x 125mm Precast Kerb			402.00	2.98	m	
M.14.000 B	255mm x 125mm Precast Kerb - Dropper			16.00	3.15	m	
M.14.000 C	200mm x 50mm Precast Kerb			1643.00	2.11	m	
M.14.000 D	150mm x 125mm Precast Kerb			691.00	2.86	m	
M.14.003	Concrete Paving Tactile Slabs			107.00	31.32	m2	
M.14.004	Concrete Paving Standard Flags			2154.00	14.38	m2	
M.14.004 A	Marshalls Grassguard 160 or equivalent			1216.00	16.00	m2	
M.15.000	MCDur 1680			64.26	6.30	Kg	

M.15.001	MCThinner EP			7.50	3.50	lt	
M.15.002	Mulseal - 2 coats (blackjack)			2435.00	1.16	m2	
M.16.000 .0005	Fixed Pot Bearing General					Sum	
M.16.001 .0008	Free Sliding Pot Bearings General					Sum	
M.16.002 .0004	Guided Sliding Pot Bearings General					Sum	
M.16.003 .0007	Elastomeric Bearing General					Sum	
M.18.006	Diesel			688384.5 9	0.82	lt	
M.18.008	Misc General Materials					Sum	
Category :	PL						
P.00.002	30T Mobile Crane			200.00	42.00		
P.00.006	50T Mobile Crane			1515.57	57.50		
P.00.010	100T Mobile Crane			25.00	110.00		

P.00.012	120T Mobile Crane			70.30	160.00		
P.00.018	200T Mobile Crane			18.00	150.00		
P.00.018 A	200T Mobile Crane Mobilisation			1.00	1150.0 0		
P.01.000	Mini Digger			24.00	250.00		
P.01.001	12T Excavator			160.63	23.00		
P.01.001 A	14tn Rubber Duck			438.65	24.00		
P.01.001 B	20' Flat Bed Vehicle			324.36	35.00		
P.01.002	20T Excavator			7070.77	25.00		
P.01.003	25T Excavator			219.17	27.00		
P.01.004	30T Excavator			4473.56	32.00		
P.01.005	40T Excavator			2618.64	42.00		
P.01.011	JBC Backhoe			3352.08	23.00		
P.01.011 A	Tractor & Trailer			160.63	20.00		
P.01.011 B	Bobcat Skidsteer			56.00	10.00		
P.01.012. 0001	Rock Hammers for 20T Excavator			341.97	12.00		
P.01.012. 0003	Rock Hammers for 30T Excavator			248.33	8.00		
P.01.012.	Rock Hammers for 40T			25.11	13.00		

0004	Excavator						
P.02.000	A25 Dump Truck			10226.29	25.00		
P.02.004	6T Dumper Swivel type			569.26	250.00		
P.03.000	14H Grader			177.10	45.00		
P.04.000	D6 Dozer			2925.20	36.00		
P.05.002	12T Vibratory Roller			4875.72	6.50		
P.07.000	Plant Miscellaneous						
P.07.001	Miscellaneous Concrete Plant						
P.07.003	Trench Box			2935.95	105.00		
P.07.004 A	6" pump - Hire Rate including diesel			10.00	615.00		
P.07.007 A	2" pump - Purchase Cost			2.00	700.00		
P.07.008	Jacking Equipment						
P.07.010	24m Concrete Pump			79.64	34.00		
P.07.011	42m Concrete Pump			20.20	86.00		
P.07.012	E/O Pumping Charge - Concrete Pump			1354.00	0.00		

P.07.016 A	Generators incl diesel - weekly charge			30.00	500.00			
P.07.017	Access Scaffold			10572.96	1.50			
P.07.018	Compressor			324.36	4.00			
P.07.019	Oxyacetylene burning gear			40.00	100.00			
P.07.021	Plate Compactor			316.06	90.00			
P.07.025	MEWP - Cherry Picker			928.96	8.00			
Category :	SUB							
S.05.000 A	Attenuation Lining		PROVISIONAL					
S.08.000 A	Silane - Surface Impregnation		Volker Laser					
S.08.002	Eliminator Waterproofing - Spray Applied							
S.08.004	Deck Preparation - Shot Blasting							
S.09.002 B	Removal of Waste Material							

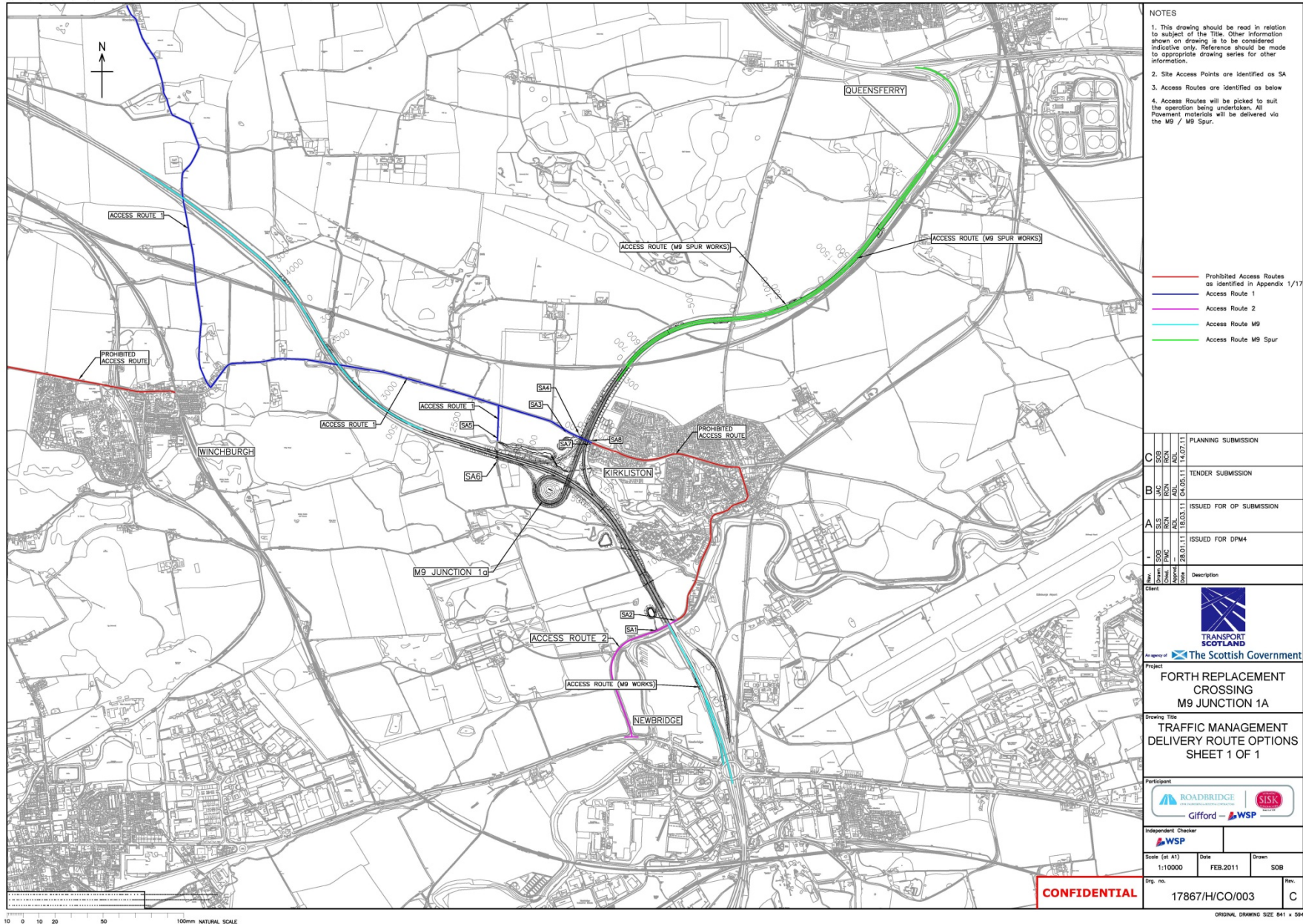


S.09.002 D	Removal of Timber waste							
S.09.005	Demolition Subcontract		Hunter Demolition					
S.10.000	Piling Subcontract - Structures		Van Elle					
S.10.001	Piling Subcontract - Gantries		Van Elle					
S.10.006 A	Breaking Down Piles & Preparing Heads							
S.10.007	Piling - Disposal of arising							
S.10.008	Sheet Piling Subcontract		LB Foundations					
S.11.000	Permanent Road Signs		WJ Harte					
S.12.000	Public Lighting Subcontract		Premier M&E Services					
S.13.000	Structural Steelwork Subcontract		Siac Butler Steel					
S.13.000 A	Miscellaneous Metalwork							
S.13.000 B	Miscellaneous Metalwork		PROVISIONA L					
S.13.002	Painting of Steelwork		TI Protective Coatings					
S.13.004	Gantry Steelwork		Siac Butler					

	Subcontract		Steel					
S.14.000	Fencing Subcontract		Mulligan Fencing					
S.15.000	Paving Subcontract		AA Tarmac Rev A M9J1A					
S.15.000 A	Planing Subcontract		Peter Lawless Road Planing					
S.19.000	Landscaping		WF Watt					
S.19.002	Tree Surgery		Central Tree Surgeons					
S.20.003	Bridge Parapets		Varley and Gulliver Ltd.					
S.21.000	Safety Barriers		Roocroft Fencing					
S.21.000 A	H1W2 Safety Barrier		DeltaBloc - Allowance for crossing					
S.23.000	Linemarking Subcontract		Line Markings Ltd					
S.23.001	Road Studs Subcontract		Line Markings Ltd					
S.24.001	Asphaltic Plug Joint, 500mm wide		Stirling Lloyd					
S.24.001 A	Expansion Joint							

S.25.000 A	Disposal of Material							
S.25.001 A	Disposal of Planings - Rate per m3							
S.25.001 B	Muck Away							
S.26.008 A	Precast Stairs incl handrail							
S.26.008 B	ITS		Pegasus					
S.26.008 C	Trenchless Subcontract		Dunnes Drilling					
S.26.009 A	Specialist Repair Works							
S.26.009 B	Specialist Crack Repair Works							
S.26.009 C	Specialist Cleaning							

# Appendix B Site Access Routes



**NOTES**

1. This drawing should be read in relation to subject of the Title. Other information shown on drawing is to be considered indicative only. Reference should be made to appropriate drawing series for other information.
2. Site Access Points are identified as SA
3. Access Routes are identified as below
4. Access Routes will be picked to suit the operation being undertaken. All Pavement materials will be delivered via the M9 / M9 Spur.

Prohibited Access Routes as identified in Appendix 1/17	Red line
Access Route 1	Blue line
Access Route 2	Purple line
Access Route M9	Cyan line
Access Route M9 Spur	Green line

C	PLANNING SUBMISSION
	TENDER SUBMISSION
	ISSUED FOR OP SUBMISSION
	ISSUED FOR DPM4
Description	
Client	
 Project of	
FORTH REPLACEMENT CROSSING M9 JUNCTION 1A	
Drawing Title TRAFFIC MANAGEMENT DELIVERY ROUTE OPTIONS SHEET 1 OF 1	
Participant  Gifford - WSP	
Independent Checker 	
Scale (at A1)	Date
1:10000	FEB.2011
Drawn	SOB
Rev. no.	17867/H/CO/003
Rev.	C

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