

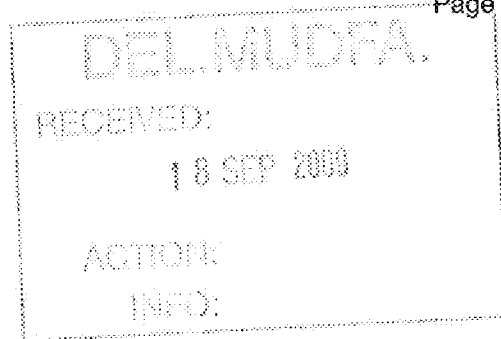


Ref: CUS/letter/PK/Projects/2767

17th September 2009

Page 1 of 2

Mr. Graeme Barclay
MUDFA Utilities Construction Director
Carillion Limited
Citypoint
1st Floor
65 Haymarket Terrace
Edinburgh
EH12 5HD



Dear Graeme,

Subject: MUDFA Carillion Utility Services (CUS) – Contract A150
Sections 1C-03-01, 1D-01-01, 2A-01-01, 1C-01-01

Further to the meeting held on Tuesday 15th September 2009 with Robert Burt, enclosed are the CUS addendum calculations for the Work Sections 1C-03-01, 1D-01-01, 2A-01-01, 1C-01-01.

The addendum for section 5 of the narrative for each of the Work Sections is also enclosed containing these changes.

Enclosed

- Work Section 1C-03-01 – Section 5 narrative addendum, entitlement calculation addendum.
- Work Section 1D-01-01 – Section 5 narrative addendum, entitlement calculation addendum.
- Work Section 2A-01-01 – Section 5 narrative addendum, entitlement calculation addendum.
- Work Section 1C-01-01 – Section 5 narrative addendum, entitlement calculation addendum

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Registered in Scotland No. 247624
Registered Office 24 Birch Street Wolverhampton WV1 4HY
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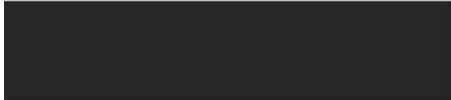
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17th September 2009
Page 2 of 2

Should you require any further information, please contact me.

Yours sincerely,

For and on behalf of **Carillion Utility Services**



Steve Beattie
Project Director

Copies:-
lie Project Team
John Casserly

MUDFA Project Team
Mike Mann
Taryne Lowe

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Work Section 1C-01-01 Addendum

- Narrative Section 5 (File 1)
- Entitlement Calculation Appendix F (File 4)



5. EXPLANATION OF THE CALCULATION OF ENTITLEMENT

- 5.1. The calculation of Carillion's Entitlement for the period 1st October 2008 to 31st May 2009 is attached at Appendix F. Carillion contends that it is entitled to a further sum of £765,295 in respect of this period for Work Section 1C 01 01.
- 5.2. Carillion's tendered rate of productivity has been reduced as a direct consequence of the circumstances in which it was required to carry out the Works all as more fully set out in Section 4. As a direct result, the Schedule 4 Rates and Prices fall to be revised to reflect actual productivity.
- 5.3. The calculation does this by comparing actual team days per lm (linear metre) of diversion compared to the planned team days per lm over the whole period and then producing a revised rate per lm of diversion which is applied to the quantity of work actually executed in each Work Section thus revising the Schedule 4 Rates and Prices to arrive at the true value of work carried out by Carillion.
- 5.4. Logic
- 5.4.1. The planned productivity output figure of an average of 4.74 lm per team per day (incl auxiliaries but excluding reinstatement), based on an 8hr day, has been accepted by tie as accurately reflecting the tendered productivity level for the whole project. Reference is made to an e-mail from John Cassely of tie to Taryne Lowe of Carillion dated 14th October 2008 in which tie adopted the Schedule 4 Rates and Prices productivity output as part of a calculation to analyse previous Carillion entitlement to additional payment. Furthermore, as part of the March 2009 settlement between Carillion and tie it was agreed by the parties that Carillion had suffered delay and disruption to resources employed by it, resulting in additional incurred costs, and agreement was reached in relation to the element of the settlement sum to be paid with reference to delay and disruption by establishing the reduced productivity associated with that delay and disruption. This analysis was based

upon a model produced jointly by the parties. The model applied the same Schedule 4 Rates and Prices productivity output of 4.74 lm per team per day (including auxiliaries).

- 5.4.2. The average planned productivity output figure for each individual Work Section varies from the figure of 4.74 lm per day dependant on the scope of work contained in that Work Section.
- 5.4.3. Carillion have analysed the tender nett Bill of Quantities to derive the **average labour & plant rate per lm** for each Work Section (e.g. for 1C 01 01 the relevant figure is £274.23 per lm) and also the average planned Work Section productivity output figure (e.g. for 1C 01 01 the relevant figure is 2.85 lm per day).
- 5.4.4. On the basis that Carillion originally planned to use their own labour which had to be disbanded due to the late design in 2007, the tender labour rates have been increased for the extra over cost of using specialist sub-contract labour to give an enhanced labour and plant rate per lm (e.g. for 1C 01 01 the relevant figure is £304.39 per lm).
- 5.4.5. Carillion have recalculated the average planned Work Section productivity output per team day (based on a tendered 8 hr day) for each individual Work Section to the average planned productivity (when working a 10 hr day) to derive the **enhanced average planned Work Section productivity output** (e.g. for 1C 01 01 the relevant figure is 3.56 lm per day).
- 5.4.6. Carillion have analysed the work actually carried out in each Work Section on a weekly basis from October 2008 to July 2009 using the actual lm of diversion achieved (from the monthly applications for payment), actual hours worked (from record sheets plus a 10% allowance for Hiab drivers which serve all the Work Sections) excluding hours spent on re-works by Carillion, based on an actual 10hr day, and calculated the **average actual Work Section productivity output per team per day** for the relevant period (e.g. for 1C 01 01 the relevant

figure is 1.04 lm per day).

5.4.7. Carillion have then divided the **average actual Work Section productivity output** by the **enhanced average planned Work Section productivity output** to derive a factor to increase the rate per lm (e.g. for 1C 01 01 the relevant factor is 4.07).

5.4.8. Carillion have then pro-rated the enhanced average labour and plant rate per lm by the factor to give a new rate per lm for the actual diversions (e.g. for 1C 01 01 the relevant figure is £1,238.89 per lm).

5.4.9. The new rate per lm is then multiplied by the actual lm achieved in the relevant period to derive the enhanced sum due (e.g. for 1C 01 01 the relevant figure is £973,769).

5.4.10. Carillion then:-

5.4.10.1. add an 8.07% allowance to the enhanced sum to compensate for disruption to reinstatement Labour and Plant not allowed for in the calculation. The calculation of the figure of 8.07% is contained on page 4 of Appendix F (e.g. for 1C 01 01 the relevant figure is £78,583);

5.4.10.2. consider the previously certified value of diversion work for the relevant period and:

5.4.10.2.1. reduce the enhanced sum due by the certified value of diversion work (e.g. for 1C 01 01 the relevant figure is £215,546);

5.4.10.2.2. reduce the enhanced sum due by the certified labour and plant value of Change Control based on an average 47.82% (e.g. for 1C 01 01 the relevant figure is £263,782);

5.4.11. Carillion thereafter add:-

5.4.11.1. 7% for price fluctuations for the labour and plant element only



based on the formulae contained in the CARP (e.g. for 1C 01 01 the relevant figure is £40,112);

5.4.11.2. 8.8% for the tender Mark-up in addition to the nett Bill of Quantities rates (e.g. for 1C 01 01 the relevant figure is £53,956).

5.5. This therefore calculates the true value of work carried out by Carillion at revised Schedule 4 Rates and Prices reflecting actual productivity for each Work Section. When calculated for Work Section 1C 01 01 this gives rise to an additional entitlement of £667,091.

5.6. However, account then requires to be taken of Work Section preliminaries which are calculated on page 2 of Appendix F as follows:

5.6.1. Carillion divide the new labour and plant rate per lm by the average labour and plant rate per lm using a weighted average for each of the Work Sections to give a Work Section factor to apply to the Work Section preliminaries (i.e. this gives a factor of 4.50).

5.6.2. Carillion then multiply the Work Section preliminaries by the Work Section factor less the average to give an entitlement for the increased labour and plant rate (i.e. £713,947).

5.6.3. Carillion then add 10.8% to the preliminaries for price fluctuations (i.e. £77,106). Carillion then add 8.80% for the tender Mark-up in addition to the nett Bill of Quantities rates (i.e. £69,613) giving a total preliminaries claim of £801,811.(e.g. for 1C 01 01 the relevant pro-rated figure is £98,204).

5.6.4. When the additional preliminaries figure of £98,204 is added to the additional entitlement for the Work Section of £667,091 this gives rise to a total additional entitlement for Work Section 1C 01 01 of £765,295.

5.7. Reasonableness



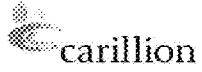
5.7.1. This method of calculation of Carillion's Entitlement is reasonable, in accordance with the provisions of the MUDFA and is similar to that applied in previous discussions and settlements between the parties. A similar method of calculation provided the basis for the March 2009 settlement. On page 2 of 4 of the March 2009 settlement, at paragraph 4.2 it is stated:-

5.7.1.1. "4.2 Contract Works

5.7.2. Delay and disruption to the resources employed by Carillion resulting in additional incurred costs. Agreement has been reached by establishing the reduced productivity associated with this element based upon a model produced in conjunction with Carillion to deal with the delay and disruption measures set out in Section 2.2 above."

5.8. Conclusion

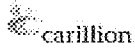
5.8.1. In summary it is clear that Carillion has encountered a number of issues for which Carillion has no contractual responsibility which have delayed, disrupted and reduced productivity output during the course of the Works. Carillion are not adequately reimbursed for these issues via payment applying the Schedule 4 Rates and Prices which accordingly fall to be revised to reflect actual productivity. The methodology used to calculate the Carillion Entitlement does this in accordance with the Agreement and Carillion are entitled to be paid the additional sum for Work Section 1C 01 01 of **£765,295** in respect of the period 1st October 2008 to 31st May 2009.



MUDFA DELAY & DISRUPTION CALCULATION

ENTITLEMENT SUMMARY

Preliminaries	£98,204	<u>£98,204</u>
Work Sections		
1C-01-01	£667,091	<u>£667,091</u>
Total Entitlement		£765,295



MUDFA DELAY & DISRUPTION CALCULATION

Preliminaries Calculation

From Work Sections

	Total Cost	Actual Recovery	% of Total
3A-01-01 May	£616,853	£132,625	7.23%
1B-01-01 May	£612,249	£49,440	7.17%
1B-01-02 May	£1,266,168	£169,430	14.84%
1C-01-01 July	£973,769	£215,546	11.41%
1C-03-01 May	£1,794,414	£574,845	21.03%
1C-04-01 May	£862,482	£212,662	10.11%
1C-05-01 May	£291,879	£54,309	3.42%
1D-01-01 May	£1,257,721	£263,833	14.74%
2A-01-01 May	£482,460	£145,486	5.65%
5B May	£107,810	£23,106	1.26%
5C May	£268,381	£57,014	3.14%
Total	£8,534,186	£1,898,298	100.00%

Factor (Total Cost / Actual Recovery) 4.50 {a}

From Preliminaries Schedule Breakdown (Estimators Mark Up)

Other Considerations

- Site Transport (Item F12)
- Lifting/Hoisting Plant (Item F13)
- Road Cleaning Brush (Item F20)
- Traffic Management (Item WS 6.1), need to exclude cost plus element

	Calculated Cost	Entitlement	BIR Ref
Traffic Management	£157,621 {b}	£708,616 {a x b}	£550,995 {Calculated Cost - b} WS 1 & 2 Item 6
Site Transport	£12,680 {b}	£57,005 {a x b}	£44,325 {Calculated Cost - b} F12
Lifting/Hoisting Plant	£6,800 {b}	£30,571 {a x b}	£23,771 {Calculated Cost - b} F13
Road Cleaning Brush	£17,000 {b}	£76,427 {a x b}	£59,427 {Calculated Cost - b} F20
Portakabins/Survey/Canteen	£10,135 {b}	£45,563 {a x b}	£35,428 {Calculated Cost - b} Portion D2 running costs
	Sub-Total	£713,947	
	Add Indices 10.8%	£77,106	
	Sub-Total	£791,053	
	Add MUDFA Margin 8.8%	£69,613	
	Total	£860,666	{£860,666 x 11.41%}
	Pro-rata for 1C-01-01	£98,204	

MUDFA DELAY & DISRUPTION CALCULATION

Reinstatement Portion

Calculated utilising values from Work Order Build-ups

	Nett Values	Portion Reinstatement
1A-01-01	£1,849,825	£214,590
1B-01-01	£1,865,031	£228,228
1B-01-02	£1,900,659	£152,083
1C-01-01	£360,079	£33,105
1C-03-01	£1,254,248	£86,324
1C-04-01	£1,049,589	£62,900
1C-05-01	£997,499	£66,414
1D-01-01	£888,424	£62,237
2A-01-01	£247,276	£16,312
5B	£380,756	£6,330
5C	£1,050,154	£27,596
Total	£11,843,540	£956,119

% Reinstatement 8.07%

MUDFA DELAY & DISRUPTION CALCULATION

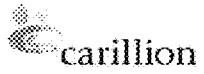
Work Section	1C 01 01									Average productivity output
Work Order Proposal	Labour (£)	Plant (£)	Total (£)	Total (M)	L&P (£/M)	No of 3 man team Days	Hrs/Day	Day Rate		
Work Order Values	85,185	112,541	197,721	721	274.73	253	8hrs	780.48	2.85	
Increase day rate cost of Labour £20: £14.89 plus 7% inflation	25.53%	21,747								
Adjusted Work Order Values	106,927	112,541	219,468	721	304.39	253	8hrs	866.33	2.85	
Adjustment for 10 hr shift										
Increase day rate for 10hr working day	106,927	112,541	219,468	721	304.39	203	10hrs	1,082.91	3.56	
Actual Team Days Worked based hrs/3man team/10hrs/day for Oct 08 to Apr 09						Work Site Specific Labour 817.5 (hrs from allocation sheets) Hiab Drivers (not included in Work Site Allocation Sheets) 81.75 (@10% rate from WQ Build-ups) Total 899.2				
Average Actual Work Section Output						786 (detailed in Payment Certificate)	899.21		0.87	
Factor									4.07	
New Rate						£304.39			£1,238.89	
Entitlement Calculation										
Total Cost based on a 10hr day rate									£973,769	
Add for Reinstatement D&D (see separate build-up)								(add 8.07%)	£78,583	
Less actual km multiplied by Works Order (WO) rate/km									£215,546	
Sub-Total									£836,806	
Less Amount recovered in Change Control								(Labour & plant nett value of Change Control 47.82%)	£283,782	
Sub-Total									£573,023	
Add for price fluctuations 7%									£40,112	
Sub-Total									£613,135	
Add MUDFA Markup 8.8%									£53,956	
Total									£667,091	

Haymarket to Shandwick Place

Work Section 1D-01-01 Addendum

- Narrative Section 5 (File 1)
- Entitlement Calculation Appendix F (File 4)





MUDFA DELAY & DISRUPTION CALCULATION

ENTITLEMENT SUMMARY

Preliminaries	£126,840	<u>£126,840</u>
Work Sections		
1D-01-01	£1,198,550	<u>£1,198,550</u>
Total Entitlement		<u>£1,325,390</u>

MUDFA DELAY & DISRUPTION CALCULATION

Preliminaries Calculation

From Work Sections

	Total Cost	Actual Recovery	
1A-01-01 May	£616,853	£132,625	7.23%
1B-01-01 May	£612,249	£49,440	7.17%
1B-01-02 May	£1,266,168	£169,430	14.84%
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2A-01-01 May	£482,460	£145,486	5.65%
5B May	£107,810	£23,106	1.26%
5C May	£268,381	£57,014	3.14%
Total	£8,534,186	£1,898,298	100.00%

Factor (Total Cost / Actual Recovery) 4.50 {x}

From Preliminaries Schedule Breakdown (Estimators Mark Up)

Other Considerations

- Site Transport (Item F12)
- Lifting/Hosting Plant (Item F13)
- Road Cleaning Brush (Item F20)
- Traffic Management (Item WS 6.1, need to exclude cost plus element)

	Calculated Cost	Entitlement	Bill Ref
Traffic Management	£157,621 {b}	£708,616 {a x b}	£550,995 {Calculated Cost - b} WS 1 & 2 Item 6
Site Transport	£12,680 {b}	£57,005 {a x b}	£44,325 {Calculated Cost - b} F12
Lifting/Hosting Plant	£6,800 {b}	£30,571 {a x b}	£23,771 {Calculated Cost - b} F13
Road Cleaning Brush	£17,000 {b}	£76,427 {a x b}	£59,427 {Calculated Cost - b} F20
Portakabins/Survey/Canteen	£10,135 {b}	£45,563 {a x b}	£35,428 {Calculated Cost - b} Portion D2 running costs
		Sub-Total	£713,947
		Add Indices 10.8%	£77,106
		Sub-Total	£791,053
		Add MUDFA Margin 8.8%	£69,613
		Total	£860,666
		Pro-rata for 1D-01-01	£126,840

{£860,666 x 14.74%}

MUDFA DELAY & DISRUPTION CALCULATION

Preliminaries Breakdown

Traffic Management				Site Transport			
Work sector Preliminaries - Line 1				Contract Preliminaries - Line 1			
		May'09	Sep'08		May'09	Sep'08	
Item 6	TM Night supervision	£79,097	£51,221	Item F12	£36,921	£24,241	
	Labour Proportion	£144,242	£93,406	Recovery in Period			£12,680
	Plant Proportion	£29,100	£18,915	Lifting/Hoisting Plant			
	Equipment Proportion	£58,430	£38,017	Contract Preliminaries - Line 1			
		£310,869	£201,558		May'09	Sep'08	
Work sector Preliminaries - Line 2				Item F13			
					£19,800	£13,000	
				Recovery in Period			£6,800
Item 6	TM Night supervision	£37,906	£25,610	Road Cleaning Brush			
	Labour Proportion	£69,121	£46,701	Contract Preliminaries - Line 1			
	Plant Proportion	£13,968	£9,458		May'09	Sep'08	
	Equipment Proportion	£28,094	£19,010	Item F20	£49,500	£32,500	
		£149,089	£100,779	Recovery in Period			£17,000
Total (Line 1 & line 2)		£459,958	£302,337				
Recovery in Period			£157,621				

Contract Facilities							
Accommodation Running Costs (Yard & Buildings)				Applicable			
	Land Rent & Rates	£1,019					
	Main Offices	£1,431					
	Site Portakabins	£190		£190			
	Sec Systems	£5					
	Main Office Services	£467					
	Other	£38					
	Photo Copies & Consumables	£366					
	Survey Equipment	£45		£45			
	Canteen Consumables	£72		£72			
	IT	£2,166	£5,799	£307	Factor 0.053		
	News Letters	£2,736	already excluded				
						May'09	Sep'08
				Item D2		£649,522	£458,145
				Recovery in Period			(x factor) £10,135

MUDFA DELAY & DISRUPTION CALCULATION

Reinstatement Portion

Calculated utilising values from Work Order Build-ups

	Nett Values	Portion Reinstatement	
1A-01-01	£1,849,825	£214,590	
1B-01-01	£1,865,031	£228,228	
1B-01-02	£1,900,659	£152,083	
1C-01-01	£360,079	£33,105	
1C-03-01	£1,254,248	£86,324	
1C-04-01	£1,049,589	£62,900	
1C-05-01	£997,499	£66,414	
1D-01-01	£888,424	£62,237	
2A-01-01	£247,276	£16,312	
5B	£380,756	£6,330	
5C	£1,050,154	£27,596	
Total	£11,843,540	£956,119	
		% Reinstatement	8.07%

MUDFA DELAY & DISRUPTION CALCULATION

Work Section	1D 01 01						No of 3 man team Days	Hrs/Day	Day Rate	Average productivity output
Work Order Proposal	Labour (£)	Plant (£)	Total (£)	Total (M)	L&P (£/M)					
Work Order Values	198,637	230,634	429,271	2,574	166.77	538	8hrs	797.93	4.78	
Increase day rate cost of Labour £20-£14.89 plus 7% inflation	25.53%	50,714								
Adjusted Work Order Values	249,351	230,634	479,985	2,574	186.47	538	8hrs	897.19	4.78	
Adjustment for 10 hr Shift										
Increase day rate for 10hr working day	249,351	230,634	479,985	2,574	186.47	430	10hrs	1,115.24	(a)	5.98
Actual Team Days Worked based hrs/3man team/10hrs/day for Oct 08 to Apr 09						Work Site Specific Labour 1025,23333 (hrs from allocation sheets)				
						Hiab Drivers (not included in Work Site Allocation Sheets) 102.52 (@10% calc from WO Build-ups)				
						Total 1127.75667				
Average Actual Work Section Output						1,582 (deducted in Payment Certificate)	1,127.76		(b)	1.40
Factor									(a)/(b)	4.25 (c)
New Rate						£186.47 (d)				£795.02 (c)
Entitlement Calculation										
Total Cost based on a 10hr day rate								(d * c)		£1,257,721
Add for Reinstatement D&D (see separate build-up)								(add 8.07%)		£101,498
Less actual Im multiplied by Works Order (WO) rate/Im								(e * c)		-1263,833
Sub-Total										£1,095,386
Less Amount recovered in Change Control							(Labour & plant nett value of Change Control 47.82%)			-£5,845
Sub-Total										£1,029,541
Add for price fluctuations 7%										£72,068
Sub-Total										£1,101,609
Add MUDFA Markup 8.8%										£96,942
Total										£1,198,550

5.0 EXPLANATION OF THE QUANTUM ENTITLEMENT

- 5.1. The calculation of Carillion's Entitlement for the period 1st October 2008 to 31st May 2009 is attached at Appendix F. Carillion contends that it is entitled to a further sum of £1,325,390 in respect of this period for Work Section 1D 01 01.
- 5.2. Carillion's tendered rate of productivity has been reduced as a direct consequence of the circumstances in which it was required to carry out the Works all as more fully set out in Section 4. As a direct result, the Schedule 4 Rates and Prices fall to be revised to reflect actual productivity.
- 5.3. The calculation does this by comparing actual team days per lm (linear metre) of diversion compared to the planned team days per lm over the whole period and then producing a revised rate per lm of diversion which is applied to the quantity of work actually executed in each Work Section thus revising the Schedule 4 Rates and Prices to arrive at the true value of work carried out by Carillion.
- 5.4. Logic
- 5.4.1. The planned productivity output figure of an average of 4.74 lm per team per day (incl auxiliaries but excluding reinstatement), based on an 8hr day, has been accepted by tie as accurately reflecting the tendered productivity level for the whole project. Reference is made to an e-mail from John Cassely of tie to Taryne Lowe of Carillion dated 14th October 2008 in which tie adopted the Schedule 4 Rates and Prices productivity output as part of a calculation to analyse previous Carillion entitlement to additional payment. Furthermore, as part of the March 2009 settlement between Carillion and tie it was agreed by the parties that Carillion had suffered delay and disruption to resources employed by it, resulting in additional incurred costs, and agreement was reached in relation to the element of the settlement sum to be paid with reference to delay and disruption by establishing the reduced productivity associated with that delay and disruption. This analysis was based

upon a model produced jointly by the parties. The model applied the same Schedule 4 Rates and Prices productivity output of 4.74 lm per team per day (including auxiliaries).

- 5.4.2. The average planned productivity output figure for each individual Work Section varies from the figure of 4.74 lm per day dependant on the scope of work contained in that Work Section.
- 5.4.3. Carillion have analysed the tender nett Bill of Quantities to derive the **average labour & plant rate per lm** for each Work Section (e.g. for 1D 01 01 the relevant figure is £166.77 per lm) and also the average planned Work Section productivity output figure (e.g. for 1D 01 01 the relevant figure is 4.78 lm per day).
- 5.4.4. On the basis that Carillion originally planned to use their own labour which had to be disbanded due to the late design in 2007, the tender labour rates have been increased for the extra over cost of using specialist sub-contract labour to give an enhanced labour and plant rate per lm (e.g. for 1D 01 01 the relevant figure is £186.47 per lm).
- 5.4.5. Carillion have recalculated the average planned Work Section productivity output per team day (based on a tendered 8 hr day) for each individual Work Section to the average planned productivity (when working a 10 hr day) to derive the **enhanced average planned Work Section productivity output** (e.g. for 1D 01 01 the relevant figure is 5.98 lm per day).
- 5.4.6. Carillion have analysed the work actually carried out in each Work Section on a weekly basis from October 2008 to May 2009 using the actual lm of diversion achieved (from the monthly applications for payment), actual hours worked (from record sheets plus a 10% allowance for Hiab drivers which serve all the Work Sections) excluding hours spent on re-works by Carillion, based on an actual 10hr day, and calculated the **average actual Work Section productivity output per team per day** for the relevant period (e.g. for 1D 01 01 the relevant

figure is 1.38 lm per day).

5.4.7. Carillion have then divided the **average actual Work Section productivity output** by the **enhanced average planned Work Section productivity output** to derive a factor to increase the rate per lm (e.g. for 1D 01 01 the relevant factor is 4.26).

5.4.8. Carillion have then pro-rated the enhanced average labour and plant rate per lm by the factor to give a new rate per lm for the actual diversions (e.g. for 1D 01 01 the relevant figure is £795.02 per lm).

5.4.9. The new rate per lm is then multiplied by the actual lm achieved in the relevant period to derive the enhanced sum due (e.g. for 1D 01 01 the relevant figure is £1,257,721).

5.4.10. Carillion then:-

5.4.10.1. add an 8.07% allowance to the enhanced sum to compensate for disruption to reinstatement Labour and Plant not allowed for in the calculation. The calculation of the figure of 8.07% is contained on page 4 of Appendix F (e.g. for 1D 01 01 the relevant figure is £101,498);

5.4.10.2. consider the previously certified value of diversion work for the relevant period and:

5.4.10.2.1. reduce the enhanced sum due by the certified value of diversion work (e.g. for 1D 01 01 the relevant figure is £263,833);

5.4.10.2.2. reduce the enhanced sum due by the certified labour and plant value of Change Control based on an average 47.82% (e.g. for 1D 01 01 the relevant figure is £65,845);

5.4.11. Carillion thereafter add:-

5.4.11.1. 7% for price fluctuations for the labour and plant element

only based on the formulae contained in the CARP (e.g. for 1D 01 01 the relevant figure is £72,068);

5.4.11.2. 8.8% for the tender Mark-up in addition to the nett Bill of Quantities rates (e.g. for 1D 01 01 the relevant figure is £96,942).

5.5. This therefore calculates the true value of work carried out by Carillion at revised Schedule 4 Rates and Prices reflecting actual productivity for each Work Section. When calculated for Work Section 1D 01 01 this gives rise to an additional entitlement of £976,240.

5.6. However, account then requires to be taken of Work Section preliminaries which are calculated on page 2 of Appendix F as follows:

5.6.1. Carillion divide the new labour and plant rate per lm by the average labour and plant rate per lm using a weighted average for each of the Work Sections to give a Work Section factor to apply to the Work Section preliminaries (i.e. this gives a factor of 4.50).

5.6.2. Carillion then multiply the Work Section preliminaries by the Work Section factor less the average to give an entitlement for the increased labour and plant rate (i.e. £713,947).

5.6.3. Carillion then add 10.8% to the preliminaries for price fluctuations (i.e. £77,106). Carillion then add 8.80% for the tender Mark-up in addition to the nett Bill of Quantities rates (i.e. £69,613) giving a total preliminaries claim of £860,666.(e.g. for 1D 01 01 the relevant pro-rated figure is £120,191).

5.6.4. When the additional preliminaries figure of £126,840 is added to the additional entitlement for the Work Section of £1,198,550 this gives rise to a total additional entitlement for Work Section 1D 01 01 of £1,325,390.

5.7. Reasonableness

5.7.1. This method of calculation of Carillion's Entitlement is reasonable, in accordance with the provisions of the MUDFA and is similar to that applied in previous discussions and settlements between the parties. A similar method of calculation provided the basis for the March 2009 settlement. On page 2 of 4 of the March 2009 settlement, at paragraph 4.2 it is stated:-

5.7.1.1. "4.2 Contract Works

5.7.2. Delay and disruption to the resources employed by Carillion resulting in additional incurred costs. Agreement has been reached by establishing the reduced productivity associated with this element based upon a model produced in conjunction with Carillion to deal with the delay and disruption measures set out in Section 2.2 above."

5.8. **Conclusion**

5.8.1. In summary it is clear that Carillion has encountered a number of issues for which Carillion has no contractual responsibility which have delayed, disrupted and reduced productivity output during the course of the Works. Carillion are not adequately reimbursed for these issues via payment applying the Schedule 4 Rates and Prices which accordingly fall to be revised to reflect actual productivity. The methodology used to calculate the Carillion Entitlement does this in accordance with the Agreement and Carillion are entitled to be paid the additional sum for Work Section 1D 01 01 of **£1,325,390** in respect of the period 1st October 2008 to 31st May 2009.

York Place to South St Andrew Street

Work Section 1C-03-01 Addendum

- Narrative Section 5 (File 1)

- Entitlement Calculation Appendix F (File 4)



5.0 EXPLANATION OF THE QUANTUM ENTITLEMENT

- 5.1. The calculation of Carillion's Entitlement for the period 1st October 2008 to 31st May 2009 is attached at Appendix F. Carillion contends that it is entitled to a further sum of £1,715,233 in respect of this period for Work Section 1C 03 01.
- 5.2. Carillion's tendered rate of productivity has been reduced as a direct consequence of the circumstances in which it was required to carry out the Works all as more fully set out in Section 4. As a direct result, the Schedule 4 Rates and Prices fall to be revised to reflect actual productivity.
- 5.3. The calculation does this by comparing actual team days per lm (linear metre) of diversion compared to the planned team days per lm over the whole period and then producing a revised rate per lm of diversion which is applied to the quantity of work actually executed in each Work Section thus revising the Schedule 4 Rates and Prices to arrive at the true value of work carried out by Carillion.
- 5.4. Logic
- 5.4.1. The planned productivity output figure of an average of 4.74 lm per team per day (incl auxiliaries but excluding reinstatement), based on an 8hr day, has been accepted by tie as accurately reflecting the tendered productivity level for the whole project. Reference is made to an e-mail from John Cassely of tie to Taryne Lowe of Carillion dated 14th October 2008 in which tie adopted the Schedule 4 Rates and Prices productivity output as part of a calculation to analyse previous Carillion entitlement to additional payment. Furthermore, as part of the March 2009 settlement between Carillion and tie it was agreed by the parties that Carillion had suffered delay and disruption to resources employed by it, resulting in additional incurred costs, and agreement was reached in relation to the element of the settlement sum to be paid with reference to delay and disruption by establishing the reduced productivity associated with that delay and disruption. This analysis was based

upon a model produced jointly by the parties. The model applied the same Schedule 4 Rates and Prices productivity output of 4.74 lm per team per day (including auxiliaries).

- 5.4.2. The average planned productivity output figure for each individual Work Section varies from the figure of 4.74 lm per day dependant on the scope of work contained in that Work Section.
- 5.4.3. Carillion have analysed the tender nett Bill of Quantities to derive the **average labour & plant rate per lm** for each Work Section (e.g. for 1C 03 01 the relevant figure is £168.87 per lm) and also the average planned Work Section productivity output figure (e.g. for 1C 03 01 the relevant figure is 4.35 lm per day).
- 5.4.4. On the basis that Carillion originally planned to use their own labour which had to be disbanded due to the late design in 2007, the tender labour rates have been increased for the extra over cost of using specialist sub-contract labour to give an enhanced labour and plant rate per lm (e.g. for 1C 03 01 the relevant figure is £189.42 per lm).
- 5.4.5. Carillion have recalculated the average planned Work Section productivity output per team day (based on a tendered 8 hr day) for each individual Work Section to the average planned productivity (when working a 10 hr day) to derive the **enhanced average planned Work Section productivity output** (e.g. for 1C 03 01 the relevant figure is 5.43 lm per day).
- 5.4.6. Carillion have analysed the work actually carried out in each Work Section on a weekly basis from October 2008 to May 2009 using the actual lm of diversion achieved (from the monthly applications for payment), actual hours worked (from record sheets plus a 10% allowance for Hiab drivers which serve all the Work Sections) excluding hours spent on re-works by Carillion, based on an actual 10hr day, and calculated the **average actual Work Section productivity output per team per day** for the relevant period (e.g. for 1C 03 01 the relevant

figure is 2.23 lm per day).

5.4.7. Carillion have then divided the **average actual Work Section productivity output** by the **enhanced average planned Work Section productivity output** to derive a factor to increase the rate per lm (e.g. for 1C 03 01 the relevant factor is 2.78).

5.4.8. Carillion have then pro-rated the enhanced average labour and plant rate per lm by the factor to give a new rate per lm for the actual diversions (e.g. for 1C 03 01 the relevant figure is £527.15 per lm).

5.4.9. The new rate per lm is then multiplied by the actual lm achieved in the relevant period to derive the enhanced sum due (e.g. for 1C 03 01 the relevant figure is £1,794,414).

5.4.10. Carillion then:-

5.4.10.1. add an 8.07% allowance to the enhanced sum to compensate for disruption to reinstatement Labour and Plant not allowed for in the calculation. The calculation of the figure of 8.07% is contained on page 4 of Appendix F (e.g. for 1C 03 01 the relevant figure is £144,809);

5.4.10.2. consider the previously certified value of diversion work for the relevant period and:

5.4.10.2.1. reduce the enhanced sum due by the certified value of diversion work (e.g. for 1C 03 01 the relevant figure is £574,845);

5.4.10.2.2. reduce the enhanced sum due by the certified labour and plant value of Change Control based on an average 47.82% (e.g. for 1C 03 01 the relevant figure is £46,460);

5.4.11. Carillion thereafter add:-

5.4.11.1. 7% for price fluctuations for the labour and plant element

only based on the formulae contained in the CARP (e.g. for 1C 03 01 the relevant figure is £92,254);

5.4.11.2. 8.8% for the tender Mark-up in addition to the nett Bill of Quantities rates (e.g. for 1C 03 01 the relevant figure is £124,095).

5.5. This therefore calculates the true value of work carried out by Carillion at revised Schedule 4 Rates and Prices reflecting actual productivity for each Work Section. When calculated for Work Section 1C 03 01 this gives rise to an additional entitlement of £1,534,268.

5.6. However, account then requires to be taken of Work Section preliminaries which are calculated on page 2 of Appendix F as follows:

5.6.1. Carillion divide the new labour and plant rate per lm by the average labour and plant rate per lm using a weighted average for each of the Work Sections to give a Work Section factor to apply to the Work Section preliminaries (i.e. this gives a factor of 4.50).

5.6.2. Carillion then multiply the Work Section preliminaries by the Work Section factor less the average to give an entitlement for the increased labour and plant rate (i.e. £713,947).

5.6.3. Carillion then add 10.8% to the preliminaries for price fluctuations (i.e. £77,106). Carillion then add 8.80% for the tender Mark-up in addition to the nett Bill of Quantities rates (i.e. £69,613) giving a total preliminaries claim of £860,666.(e.g. for 1C 03 01 the relevant pro-rated figure is £180,965)

5.6.4. When the additional preliminaries figure of £180,965 is added to the additional entitlement for the Work Section of £1,534,268 this gives rise to a total additional entitlement for Work Section 1C 03 01 of £1,715,233.

5.7. Reasonableness

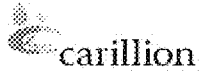
5.7.1. This method of calculation of Carillion's Entitlement is reasonable, in accordance with the provisions of the MUDFA and is similar to that applied in previous discussions and settlements between the parties. A similar method of calculation provided the basis for the March 2009 settlement. On page 2 of 4 of the March 2009 settlement, at paragraph 4.2 it is stated:-

5.7.1.1. "4.2 Contract Works

5.7.2. Delay and disruption to the resources employed by Carillion resulting in additional incurred costs. Agreement has been reached by establishing the reduced productivity associated with this element based upon a model produced in conjunction with Carillion to deal with the delay and disruption measures set out in Section 2.2 above."

5.8. **Conclusion**

5.8.1. In summary it is clear that Carillion has encountered a number of issues for which Carillion has no contractual responsibility which have delayed, disrupted and reduced productivity output during the course of the Works. Carillion are not adequately reimbursed for these issues via payment applying the Schedule 4 Rates and Prices which accordingly fall to be revised to reflect actual productivity. The methodology used to calculate the Carillion Entitlement does this in accordance with the Agreement and Carillion are entitled to be paid the additional sum for Work Section 1C 03 01 of **£1,715,233** in respect of the period 1st October 2008 to 31st May 2009.



MUDFA DELAY & DISRUPTION CALCULATION

ENTITLEMENT SUMMARY

Preliminaries	£180,965	<u>£180,965</u>
Work Sections		
1C-03-01	£1,534,268	<u>£1,534,268</u>
Total Entitlement		<u>£1,715,233</u>

MUDFA DELAY & DISRUPTION CALCULATION

Preliminaries Calculation

From Work Sections

	Total Cost	Actual Recovery	% of Total
1A-01-01 May	£616,853	£132,625	7.23%
1B-01-01 May	£612,249	£49,440	7.17%
1B-01-02 May	£1,266,168	£169,430	14.84%
1C-01-01 July	£973,769	£215,546	11.41%
1C-03-01 May	£1,794,414	£574,845	21.03%
1C-04-01 May	£862,482	£212,662	10.11%
1C-05-01 May	£291,879	£54,309	3.42%
1D-01-01 May	£1,257,721	£263,833	14.74%
2A-01-01 May	£482,460	£145,486	5.65%
5B May	£107,810	£23,106	1.26%
5C May	£268,381	£57,014	3.14%
Total	£8,534,186	£1,898,298	100.00%

Factor (Total Cost / Actual Recovery) 4.50 {x}

From Preliminaries Schedule Breakdown (Estimators Mark Up)

Other Considerations

- Site Transport (Item F12)
- Lifting/Hoisting Plant (Item F13)
- Road Cleaning Brush (Item F20)
- Traffic Management (Item WS 6.1), need to exclude cost plus element

	Calculated Cost	Entitlement	Bill Ref
Traffic Management	£157,621 {b}	£708,616 {a x b}	£550,995 {Calculated Cost - b} WS 1 & 2 Item 6
Site Transport	£12,680 {b}	£57,005 {a x b}	£44,325 {Calculated Cost - b} F12
Lifting/Hoisting Plant	£6,800 {b}	£30,571 {a x b}	£23,771 {Calculated Cost - b} F13
Road Cleaning Brush	£17,000 {b}	£76,427 {a x b}	£59,427 {Calculated Cost - b} F20
Portakabins/Survey/Canteen	£10,135 {b}	£45,563 {a x b}	£35,428 {Calculated Cost - b} Portion D2 running costs
Sub-Total		£713,947	
Add Indices 10.8%		£77,106	
Sub-Total		£791,053	
Add MUDFA Margin 8.8%		£69,613	
Total		£860,666	{£860,666 x 21.03%}
Pro-rata for 1C-03-01		£180,965	

MUDFA DELAY & DISRUPTION CALCULATION
Preliminaries Breakdown

Traffic Management				Site Transport			
Work sector Preliminaries - Line 1				Contract Preliminaries - Line 1			
		May'09	Sep'08		May'09	Sep'08	
Item 6	TM Night supervision	£79,097	£51,221	Item F12	£36,921	£24,241	
	Labour Proportion	£144,242	£93,406	Recovery in Period			£12,680
	Plant Proportion	£29,100	£18,915	Lifting/Hoisting Plant			
	Equipment Proportion	£58,430	£38,017	Contract Preliminaries - Line 1			
		£310,869	£201,558		May'09	Sep'08	
Work sector Preliminaries - Line 2				Item F13			
					£19,800	£13,000	
				Recovery in Period			£6,800
				Road Cleaning Brush			
				Contract Preliminaries - Line 1			
					May'09	Sep'08	
Item 6	TM Night supervision	£37,906	£25,610	Item F20	£49,500	£32,500	
	Labour Proportion	£69,121	£46,701	Recovery in Period			£17,000
	Plant Proportion	£13,968	£9,458				
	Equipment Proportion	£28,094	£19,010				
		£149,089	£100,779				
Total (Line 1 & line 2)		£459,958	£302,337				
Recovery in Period			£157,621				

Contract Facilities				Applicable			
Accommodation Running Costs (Yard & Buildings)							
	Land Rent & Rates	£1,019					
	Main Offices	£1,431					
	Site Portakabins	£190		£190			
	Sec Systems	£5					
	Main Office Services	£467					
	Other	£38					
	Photo Copies & Consumables	£366					
	Survey Equipment	£45		£45			
	Canteen Consumables	£72		£72			
	IT	£2,166	£5,799	£307			Factor 0.053
	News Letters	£2,736	already excluded				
					May'09	Sep'08	
				Item D2	£649,522	£458,145	
				Recovery in Period			(x factor) £10,135

MUDFA DELAY & DISRUPTION CALCULATION

Reinstatement Portion

Calculated utilising values from Work Order Build-ups

	Nett Values	Portion Reinstatement
1A-01-01	£1,849,825	£214,590
1B-01-01	£1,865,031	£228,228
1B-01-02	£1,900,659	£152,083
1C-01-01	£360,079	£33,105
1C-03-01	£1,254,248	£86,324
1C-04-01	£1,049,589	£62,900
1C-05-01	£997,499	£66,414
1D-01-01	£888,424	£62,237
2A-01-01	£247,276	£16,312
5B	£380,756	£6,330
5C	£1,050,154	£27,596
Total	£11,843,540	£956,119

% Reinstatement 8.07%

MUDFA DELAY & DISRUPTION CALCULATION

Work Section 1C 03 01										Average productivity output
Work Order Proposal	Labour (£)	Plant (£)	Total (£)	Total (M)	L&P (£/M)	No of 3 man team Days	Hrs/Day	Day Rate		
Work Order Values	327,101	359,370	686,471	4,065	168.87	935	8hrs	734.06	4.35	
Increase day rate cost of Labour £20-£34.89 plus 7% inflation	75.53%	83,513								
Adjusted Work Order Values	410,613	359,370	769,983	4,065	189.42	935	8hrs	823.36	4.35	
Adjustment for 10 hr Shift										
Increase day rate for 10hr working day	410,613	359,370	769,983	4,065	189.42	748	10hrs	1,029.20	5.43	
Actual Team Days Worked based hrs/3man team/10hrs/day for Oct 08 to Apr 09						Work Site Specific Labour 1585 (hrs from allocation sheets)				
						Hiab Drivers (not included in Work Site Allocation Sheets) 158.50 (@10% calc from WO Build-ups)				
						Total 1743.5				
Average Actual Work Section Output						3,404 (detailed in Payment Certificate)	1,743.50		1.95	
Factor									3.78	
New Rate									£527.35	
Entitlement Calculation										
Total Cost based on a 10hr day rate										(if not) £1,794,414
Add for Reinstatement D&D (see separate build-up)										(add 8.07%) £144,899
Less actual Im multiplied by Works Order (WO) rate/Im										(xxxx) £573,845
Sub-Total										£1,364,378
Less Amount recovered in Change Control										(Labour & plant nett value of Change Control 47.82%) -216,800
Sub-Total										£1,317,918
Add for price fluctuations 7%										£92,254
Sub-Total										£1,410,172
Add MUDFA Markup 8.8%										£125,095
Total										£1,534,268

Haymarket Yards

Work Section 2A-01-01 Addendum

- Narrative Section 5 (File 1)
- Entitlement Calculation Appendix F (File 3)



5.0 EXPLANATION OF THE QUANTUM ENTITLEMENT

- 5.1. The calculation of Carillion's Entitlement for the period 1st October 2008 to 31st May 2009 is attached at Appendix F. Carillion contends that it is entitled to a further sum of £410,570 in respect of this period for Work Section 2A 01 01.
- 5.2. Carillion's tendered rate of productivity has been reduced as a direct consequence of the circumstances in which it was required to carry out the Works all as more fully set out in Section 4. As a direct result, the Schedule 4 Rates and Prices fall to be revised to reflect actual productivity.
- 5.3. The calculation does this by comparing actual team days per Im (linear metre) of diversion compared to the planned team days per Im over the whole period and then producing a revised rate per Im of diversion which is applied to the quantity of work actually executed in each Work Section thus revising the Schedule 4 Rates and Prices to arrive at the true value of work carried out by Carillion.

5.4. Logic

- 5.4.1. The planned productivity output figure of an average of 4.74 Im per team per day (incl auxiliaries but excluding reinstatement), based on an 8hr day, has been accepted by tie as accurately reflecting the tendered productivity level for the whole project. Reference is made to an e-mail from John Cassely of tie to Taryne Lowe of Carillion dated 14th October 2008 in which tie adopted the Schedule 4 Rates and Prices productivity output as part of a calculation to analyse previous Carillion entitlement to additional payment. Furthermore, as part of the March 2009 settlement between Carillion and tie it was agreed by the parties that Carillion had suffered delay and disruption to resources employed by it, resulting in additional incurred costs, and agreement was reached in relation to the

element of the settlement sum to be paid with reference to delay and disruption by establishing the reduced productivity associated with that delay and disruption. This analysis was based upon a model produced jointly by the parties. The model applied the same Schedule 4 Rates and Prices productivity output of 4.74 lm per team per day (including auxiliaries).

5.4.2. The average planned productivity output figure for each individual Work Section varies from the figure of 4.74 lm per day dependant on the scope of work contained in that Work Section.

5.4.3. Carillion have analysed the tender nett Bill of Quantities to derive the **average labour & plant rate per lm** for each Work Section (e.g. for 1D 01 01 the relevant figure is £136.73 per lm) and also the average planned Work Section productivity output figure (e.g. for 2A 01 01 the relevant figure is 5.42 lm per day).

5.4.4. On the basis that Carillion originally planned to use their own labour which had to be disbanded due to the late design in 2007, the tender labour rates have been increased for the extra over cost of using specialist sub-contract labour to give an enhanced labour and plant rate per lm (e.g. for 2A 01 01 the relevant figure is £153.26 per lm).

5.4.5. Carillion have recalculated the average planned Work Section productivity output per team day (based on a tendered 8 hr day) for each individual Work Section to the average planned productivity (when working a 10 hr day) to derive the **enhanced average planned Work Section productivity output** (e.g. for 2A 01 01 the relevant figure is 6.77 lm per day).

5.4.6. Carillion have analysed the work actually carried out in each Work Section on a weekly basis from October 2008 to May 2009 using the actual lm of diversion achieved (from the monthly applications for

payment), actual hours worked (from record sheets plus a 10% allowance for Hiab drivers which serve all the Work Sections) excluding hours spent on re-works by Carillion, based on an actual 10hr day, and calculated the **average actual Work Section productivity output per team per day** for the relevant period (e.g. for 2A 01 01 the relevant figure is 2.45 lm per day)..

5.4.7. Carillion have then divided the **average actual Work Section productivity output** by the **enhanced average planned Work Section productivity output** to derive a factor to increase the rate per lm (e.g. for 2A 01 01 the relevant factor is 2.96).

5.4.8. Carillion have then pro-rated the enhanced average labour and plant rate per lm by the factor to give a new rate per lm for the actual diversions (e.g. for 2A 01 01 the relevant figure is £453.44 per lm).

5.4.9. The new rate per lm is then multiplied by the actual lm achieved in the relevant period to derive the enhanced sum due (e.g. for 2A 01 01 the relevant figure is £482,460).

5.4.10. Carillion then:-

5.4.10.1. add an 8.07% allowance to the enhanced sum to compensate for disruption to reinstatement Labour and Plant not allowed for in the calculation. The calculation of the figure of 8.07% is contained on page 4 of Appendix F (e.g. for 2A 01 01 the relevant figure is £38,935);

5.4.10.2. consider the previously certified value of diversion work for the relevant period and:

5.4.10.2.1. reduce the enhanced sum due by the certified value of diversion work (e.g. for 2A 01 01 the relevant figure is

£145,486);

5.4.10.2.2. reduce the enhanced sum due by the certified labour and plant value of Change Control based on an average 47.82% (e.g. for 2A 01 01 the relevant figure is £65,028);

5.4.11. Carillion thereafter add:-

5.4.11.1. 7% for price fluctuations for the labour and plant element only based on the formulae contained in the CARP (e.g. for 2A 01 01 the relevant figure is £21,762);

5.4.11.2. 8.8% for the tender Mark-up in addition to the nett Bill of Quantities rates (e.g. for 2A 01 01 the relevant figure is £29,273).

5.5. This therefore calculates the true value of work carried out by Carillion at revised Schedule 4 Rates and Prices reflecting actual productivity for each Work Section. When calculated for Work Section 2A 01 01 this gives rise to an additional entitlement of £361,915

5.6. However, account then requires to be taken of Work Section preliminaries which are calculated on page 2 of Appendix F as follows:

5.6.1. Carillion divide the new labour and plant rate per lm by the average labour and plant rate per lm using a weighted average for each of the Work Sections to give a Work Section factor to apply to the Work Section preliminaries (i.e. this gives a factor of 4.50).

5.6.2. Carillion then multiply the Work Section preliminaries by the Work Section factor less the average to give an entitlement for the increased labour and plant rate (i.e. £713,947).

- 5.6.3. Carillion then add 10.8% to the preliminaries for price fluctuations (i.e. £77,106). Carillion then add 8.80% for the tender Mark-up in addition to the nett Bill of Quantities rates (i.e. £69,613) giving a total preliminaries claim of £860,666 (e.g. for 2A 01 01 the relevant pro-rated figure is £48,656)
- 5.6.4. When the additional preliminaries figure of £48,656 is added to the additional entitlement for the Work Section of £361,915 this gives rise to a total additional entitlement for Work Section 2A 01 01 of £410,570.

5.7. Reasonableness

- 5.7.1. This method of calculation of Carillion's Entitlement is reasonable, in accordance with the provisions of the MUDFA and is similar to that applied in previous discussions and settlements between the parties. A similar method of calculation provided the basis for the March 2009 settlement. On page 2 of 4 of the March 2009 settlement, at paragraph 4.2 it is stated:-

5.7.1.1. "4.2 Contract Works

- 5.7.2. Delay and disruption to the resources employed by Carillion resulting in additional incurred costs. Agreement has been reached by establishing the reduced productivity associated with this element based upon a model produced in conjunction with Carillion to deal with the delay and disruption measures set out in Section 2.2 above."

5.8. **Conclusion**

- 5.8.1. In summary it is clear that Carillion has encountered a number of issues for which Carillion has no contractual responsibility which have delayed, disrupted and reduced productivity output during the course of the Works. Carillion are not adequately reimbursed for these issues via

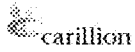
payment applying the Schedule 4 Rates and Prices which accordingly fall to be revised to reflect actual productivity. The methodology used to calculate the Carillion Entitlement does this in accordance with the Agreement and Carillion are entitled to be paid the additional sum for Work Section 2A 01 01 of **£410,570** in respect of the period 1st October 2008 to 31st May 2009.



MUDFA DELAY & DISRUPTION CALCULATION

ENTITLEMENT SUMMARY

Preliminaries	£48,656	<u>£48,656</u>
Work Sections		
2A-01-01	£361,915	<u>£361,915</u>
Total Entitlement		£410,570



MUDFA DELAY & DISRUPTION CALCULATION

Preliminaries Calculation

From Work Sections

	Total Cost	Actual Recovery	% of Total
1A-01-01 May	£616,853	£132,625	7.23%
1B-01-01 May	£612,249	£49,440	7.17%
1B-01-02 May	£1,266,168	£169,430	14.84%
1C-01-01 July	£973,769	£215,546	11.41%
1C-03-01 May	£1,794,414	£574,845	21.03%
1C-04-01 May	£862,482	£212,662	10.11%
1C-05-01 May	£291,879	£54,309	3.42%
1D-01-01 May	£1,257,721	£263,833	14.74%
2A-01-01 May	£482,460	£145,486	5.65%
5B May	£107,810	£23,106	1.26%
5C May	£268,381	£57,014	3.14%
Total	£8,534,186	£1,898,298	100.00%

Factor (Total Cost / Actual Recovery) 4.50 (a)

From Preliminaries Schedule Breakdown (Estimators Mark Up)

Other Considerations

- Site Transport (Item F12)
- Lifting/Hoisting Plant (Item F13)
- Road Cleaning Brush (Item F20)
- Traffic Management (Item WS 6.1), need to exclude cost plus element

	Calculated Cost	Entitlement	Bill Ref
Traffic Management	£157,621 (8)	£708,616 (a x b)	£550,995 (Calculated Cost - b) WS 1 & 2 Item 6
Site Transport	£12,680 (8)	£57,005 (a x b)	£44,325 (Calculated Cost - b) F12
Lifting/Hoisting Plant	£6,800 (8)	£30,571 (a x b)	£23,771 (Calculated Cost - b) F13
Road Cleaning Brush	£17,000 (8)	£76,427 (a x b)	£59,427 (Calculated Cost - b) F20
Portakabins/Survey/Canteen	£10,135 (8)	£45,563 (a x b)	£35,428 (Calculated Cost - b) Portion 02 running costs

Sub-Total	£713,947
Add Indices 10.8%	£77,106
Sub-Total	£791,053
Add MUDFA Margin 8.8%	£69,613
Total	£860,666
Pro-rata for 2A-01-01	£48,656

(£860,666 x 5.65%)

MUDFA DELAY & DISRUPTION CALCULATION
Preliminaries Breakdown

Traffic Management				Site Transport			
Work sector Preliminaries - Line 1				Contract Preliminaries - Line 1			
		May'09	Sep'08		May'09	Sep'08	
Item 6	TM Night supervision	£79,097	£51,221	Item F12	£36,921	£24,241	
	Labour Proportion	£144,242	£93,406	Recovery in Period			£12,680
	Plant Proportion	£29,100	£18,915	Lifting/Hoisting Plant			
	Equipment Proportion	£58,430	£38,017	Contract Preliminaries - Line 1			
		£310,869	£201,558		May'09	Sep'08	
Work sector Preliminaries - Line 2				Item F13	£19,800	£13,000	
				Recovery in Period			£6,800
Item 6	TM Night supervision	£37,906	£25,610	Road Cleaning Brush			
	Labour Proportion	£69,121	£46,701	Contract Preliminaries - Line 1			
	Plant Proportion	£13,968	£9,458		May'09	Sep'08	
	Equipment Proportion	£28,094	£19,010	Item F20	£49,500	£32,500	
		£149,089	£100,779	Recovery in Period			£17,000
Total (Line 1 & line 2)		£459,958	£302,337				
Recovery in Period			£157,621				

Contract Facilities					
Accommodation Running Costs (Yard & Buildings)		Applicable			
Land Rent & Rates	£1,019				
Main Offices	£1,431				
Site Portakabins	£190	£190			
Sec Systems	£5				
Main Office Services	£467				
Other	£38				
Photo Copies & Consumables	£366				
Survey Equipment	£45	£45			
Canteen Consumables	£72	£72			
IT	£2,166	£5,799	£307		
News Letters	£2,736	already excluded			
			Factor 0.053		
			May'09	Sep'08	
			Item D2	£649,522	£458,145
			Recovery in Period		(x factor) £10,135

MUDFA DELAY & DISRUPTION CALCULATION

Reinstatement Portion

Calculated utilising values from Work Order Build-ups

	Nett Values	Portion Reinstatement	
1A-01-01	£1,849,825	£214,590	
1B-01-01	£1,865,031	£228,228	
1B-01-02	£1,900,659	£152,083	
1C-01-01	£360,079	£33,105	
1C-03-01	£1,254,248	£86,324	
1C-04-01	£1,049,589	£62,900	
1C-05-01	£997,499	£66,414	
1D-01-01	£888,424	£62,237	
2A-01-01	£247,276	£16,312	
5B	£380,756	£6,330	
5C	£1,050,154	£27,596	
Total	£11,843,540	£956,119	
		% Reinstatement	8.07%

MUDFA DELAY & DISRUPTION CALCULATION

Work Section 2A 03.01										Average
Work Order Proposal	Labour (£)	Plant (£)	Total (£)	Total (M)	L&P (£/M)	No of 3 man team Days	Hrs/Day	Day Rate	productivity output	
Work Order Values	60,003	66,750	126,753	927	136.73 (a)	171	8hrs	740.53	5.42	
Increase day rate cost of Labour £20-£14.89 plus 7% inflation	25.53%	15,319								
Adjusted Work Order Values	75,322	66,750	142,072	927	153.26	171	8hrs	830.03	5.42	
Adjustment for 10 hr Shift										
Increase day rate for 10hr working day	75,322	66,750	142,072	927	153.26	137	10hrs	1,037.53	(a) 6.77	
Actual Team Days Worked based hrs/3man team/10hrs/day for Oct 08 to Apr 09						Work Site Specific Labour 422.7 (hrs from allocation sheets)				
						Hiab Drivers (not included in Work Site Allocation Sheets) 42.27 (@10% calc from WO Build-ups)				
						Total 465.0				
Average Actual Work Section Output						1,064 (b) (detailed in Payment Certificate)	465.01			(b) 2.29
Factor									(c) 2.96	(c)
New Rate						£153.26 (d) =				£853.48 (d)
Entitlement Calculation										
Total Cost based on a 10hr day rate									(d * (c))	£882,460
Add for Reinstatement D&O (see separate build-up)									(add 8.07%)	£38,935
Less actual fm multiplied by Works Order (WO) rate/fm									(e * (c))	£345,486
Sub-Total										£375,909
Less Amount recovered in Change Control							(Labour & plant nett value of Change Control 47.82%)			£65,028
Sub-Total										£310,881
Add for price fluctuations 7%										£21,762
Sub-Total										£332,642
Add MUDFA Markup 8.8%										£29,273
Total										£361,915