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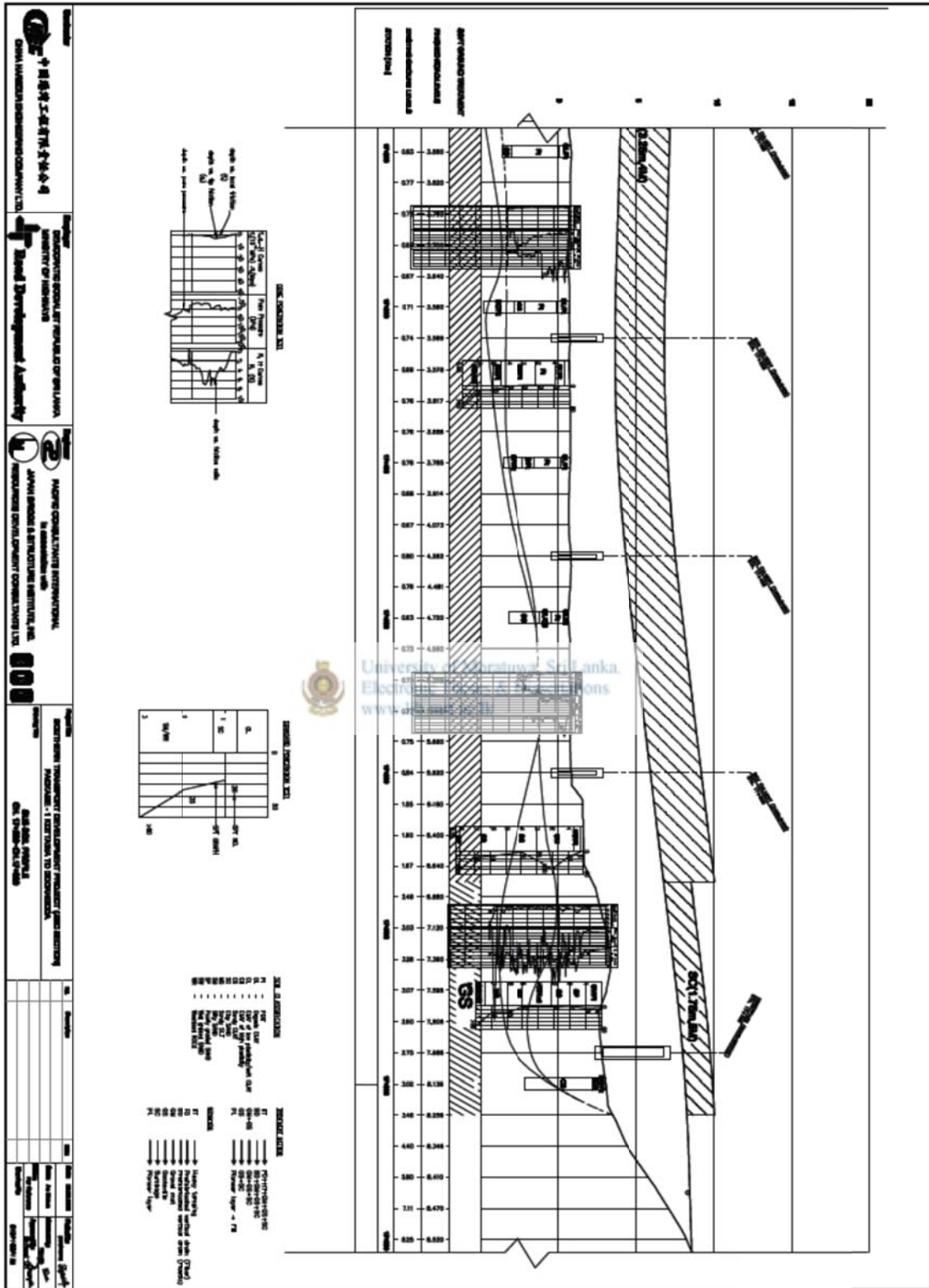
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APPENDIX A



<b>CHINA HARBOUR ENGINEERING COMPANY (GROUP)</b>	
REPRESENTATIVE OFFICE IN SRI LANKA	
 <p><b>SOUTHERN TRANSPORT DEVELOPMENT PROJECT</b>  <b>CONTRACT NO. RDA/STDP/JBIC/K-D2</b>  <b>JBIC FUNDED: KOTTAWA TO DODANGODA SECTION</b></p>	<b>Document No.</b>  <b>ITP- 15</b>  <b>Page 1</b>  <b>Revision 0</b>
<b>Inspection &amp; Test Plan</b>  <b>Title: Inspection &amp; Test Plan for Heavy Tamping Method</b>	

Legends Used:		CHEC = China Harbour Engineering Company Contractor	PO = Procurement Officer	SA = Site Agent	TS = Technical Specification					
		SC = Sub-contract	QE = Quality Engineer	H = Hold Point	GS = General Specification					
		PS = Conditions of Particular Application	ENG = Engineer	W = Witness Point	SEP = Site Engineer / Foreman					
Item No.	Description of works item on which the Inspection and/or Testing Activity shall be carried out	Applicable specification and clause reference	Inspection(s) and/or Test(s) required	Acceptance Criteria	Frequency of inspection and/or testing	The verifying record(s) is	Level of witness required for inspection and/or testing			Responsibility for signature(s) on verifying record(s)
							SC	CHEC	ENG	
1	Preparation of hardcore platform	Refer Method Statement for Earth Work	Visual Inspection	N/A	Prior to Start	RICF		W	W	SEP/ENG
2	Installation of Settlement Plates on Existing Ground	Prescribed Procedure & Specification (PPS) by Engineer	Sec: 2.4.1 of PPS Survey Check-Elevations and alignment	Reading Data (Survey Record) on top of base plate & top of Rod	As referred in Sec:2.4.2 of PPS	RSCF		W	W	SURVEYOR / ENG
2	Setting out of axes and mid point of print locations	Prescribed Procedure & Specification (PPS) by Engineer	Survey Check	Lay out Dimensions	Not Required	RSCF		H	H	SURVEYOR / ENG
3	Heavy Tamping by 80.0 Ton Crane	PPS	Sec: 2.4.3 of PPS- CPT Visual Inspection--after 10 Blows	Minimum of 10 No blows per single point	Before and after heavy tamping at selected print point	RICF /		W	W	SEP / ENG
4	Installation of Settlement Plates and Monitoring	Prescribed Procedure & Specification (PPS) by Engineer	Sec: 2.4.1 of PPS Survey Check-Elevations and alignment	Reading Data (Survey Record) Reading Data (Survey Record) on top of base plate & top of Rod	As referred in Sec:2.4.2 of PPS	RCSF		W	W	SURVEYOR / ENG
5	Installation of Piezometers & Monitoring	PPS	Sec: 2.4.1 of PPS Monitoring Data	Reading Data	As referred in Sec: 2.4.2 of PPS	RCSF		W	W	SURVEYOR / ENG
6	Surcharge Fill	Refer MS for Earth work	Sec: 2.2 Cl- 3.6 of Specification Moisture Content Degree of Compaction	Degree of Compaction	Each Layer	RICF/Lab Testing		H	H	SEP/ENG

Form\_QF02\_Proforma of Inspection and Test Plan (ITP)

APPENDIX C

VO No. 14A - Valuation for Heavy Tamping Work												
<b>Item B(2)</b>												
<b>Tamping Area and Energy Level Summary</b>												
Item No.	Chainage		Treated Area					Quantity	CHE C Letter Ref.	Letter Date	PCI Letter Ref.	Letter Date
	From	To	Length	Width	Area	Applied Energy	Factor	t - m <sup>2</sup>				
			A	B	C = A x B	D	E	F = C x D X E				
<b>Completed Area :</b>												
1	17+670	17+660	10.00	40.50	405.00	64	1	25,920.00	003355	30-Mar-07		
2	17+660	17+600	60.00	40.50	2,430.00	300	1	729,000.00	003355	30-Mar-07		
3	17+600	17+540	60.00	40.50	2,430.00	360	1	874,800.00	003355	30-Mar-07		
4	17+540	17+476	64.00	38.50	2,464.00	300	1	739,200.00	003355	30-Mar-07		
5	17+476	17+430	46.00	38.50	1,771.00	300	1	531,300.00	003542	03-May-07		
6	16+960	16+930	30.00	38.50	1,155.00	201	1	232,155.00	003542	03-May-07		
7	16+960	17+020	60.00	40.50	2,430.00	120.8	1	293,544.00	003776	06-Jun-07		
8	17+300	17370A	18.75	15.00	281.25	200	1	56,250.00	003776	06-Jun-07		

APPENDIX D

Southern Transport Development Project					
JBIC Funded Section - Kottawa to Kurundugahahetekma					
Package 1 - Kottawa to Dodangoda					
<b>VO No. 14A - Valuation for Heavy Tamping Trial Area at CH 17+370 - 17+430</b>					
Item No.	Description	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
<b>A</b>	<b><u>Mobilisation Charge ( Not taken into account for tamping operation rate assessment )</u></b>				
A1	Mobilization & Demobilization Charges at current rate:				
A1.1	80ton Crane Mobilization (Sanken Lanka Invoice)		Sum		785,000.00
A1.2	25ton Mobile Crane (Sanken Lanka Invoice) Transport		Sum		110,000.00
A1.2a	25ton Mobile Crane (Sanken Lanka Invoice) Transport		Sum		110,000.00
A1.3	15ton Pounder (Chamara Traders Invoice)		Sum		1,682,410.00
A1.4	Adapting Pounder for releasing clamp		Sum		86,900.00
A1.5	Lifting and releasing clamp for 15ton Pounder (Link Eng. Ltd.)		Sum		240,000.00
A1.6	Generator cost welding (Pounder to adapting/releasing clamp)		Sum		18,750.00
A1.7	Generator	1	Day	3,750.00	3,750.00
	Sub-total :				3,036,810.00
	Add 27% Overhead :				819,938.70
	Sub-total :				3,856,748.70
	Add 5% Profit :				192,837.44
	Sub-total (A) :				4,049,586.14
	<b><u>Tamping Operation Running Cost</u></b>				
<b>B</b>	<b><u>Plant Cost as per Invoices</u></b>				
	<b>@ Current Rates</b>				
B1.1	80ton Crawler Crane Hiring Charges	373	Hr	12,000.00	4,476,000.00
B1.2	Backhoe Loader JCB Hiring Charges	442	Hr	1,250.00	552,500.00
	Sub-total (B) :				5,028,500.00
<b>C</b>	<b><u>Labour Cost</u></b>				



C1.1	Un-skilled labourer - Normal hours	927	Hr	334.00	309,618.00
C1.2	Un-skilled labourer - Overtime (334 ÷ 8 x 1.5)	418	Hr	62.63	26,177.25
C1.3	Foreman - Normal hours	493	Hr	724.00	356,932.00
C1.4	Foreman - Overtime (724 ÷ 8 x 1.5)	182	Hr	135.75	24,706.50
	Sub-total :				717,433.75
	Less 2.9% Discount :				(20,805.58)
	Sub-total (C) :				696,628.17
<b>D</b>	<b><u>Other Cost</u></b>				
D1.1	Diesel as per records	6,962	ltr.	60.10	418,416.20
D1.2	Supervision (as per records for night works)				34,460.00
D1.3	Lighting (as per records for night works)				34,125.00
D1.4	Generator (as per records for night works)				89,375.00
	Sub-total (D) :				576,376.20
<b>E</b>	<b><u>Risk Factor for idling (Excluding weather) hours of Plant</u></b>				
E1.1	80ton Crawler Crane Hiring Charges (373 Hr x 22.4%)	83.6	Hr	12,000.00	1,003,200.00
	Sub-total (E) :				1,003,200.00
	Sub-total (B, C, D & E) :				7,304,704.37
	Add 27% Overhead :				1,972,270.18
	Sub-total :				9,276,974.55
	Add 5% Profit (for B, C & D only) :				315,075.22
	Total Cost for the Trial Area (2,400 sq.m) (using 162 tonne m) :				9,592,049.77
	Add VAT 15% :				1,438,807.47
	<b>Total :</b>				<b>11,030,857.24</b>

APPENDIX E

Southern Transport Development Project					
JBIC Funded Section - Kottawa to Kurundugahahetekma					
Package 1 - Kottawa to Dodangoda					
<b><u>Rate Assessment for Tamping Operation Only</u></b>					
Item No.	Description	Quantity	Unit	Rate ( Rs. )	Amount ( Rs. )
<b>Note : The following data are from the Heavy Tamping Trial Area at CH17+370 - CH17+430 and used as reference for the Rate Assessment.</b>					
<b><u>Mobilisation Charge ( Not taken into account for tamping operation rate assessment )</u></b>					
<b>A</b>					
A1	Mobilization & Demobilization Charges at current rate				
A1.1	80ton Crane Mobilization (Sanken Lanka Invoice)		Sum		785,000.00
A1.2	25ton Mobile Crane (Sanken Lanka Invoice) Transport		Sum		60,000.00
A1.3	15ton Pounder (Chamara Traders Invoice)		Sum		1,682,410.00
A1.4	Adapting Pounder for releasing clamp		Sum		86,900.00
A1.5	Lifting and releasing clamp for 15ton Pounder (Link Eng. Ltd.)		Sum		240,000.00
A1.6	Generator cost welding (Pounder to adapting/releasing clamp)		Sum		18,750.00
A1.7	Generator	1	Day	3,750.00	3,750.00
	Sub-total :				2,876,810.00
	Add 27% Overhead :				776,738.70
	Sub-total :				3,653,548.70
	Add 5% Profit :				182,677.44
	Sub-total (A) :				3,836,226.14
<b><u>Tamping Operation Running Cost</u></b>					
<b>B <u>Plant Cost as per Invoices</u></b>					

	@ Current Rates				
B1.1	80ton Crawler Crane Hiring Charges	373	Hr	12,000.00	4,476,000.00
B1.2	Backhoe Loader JCB Hiring Charges	442	Hr	1,250.00	552,500.00
	Sub-total (B) :				5,028,500.00
<b>C</b>	<b>Labour Cost</b>				
C1.1	Un-skilled labourer - Normal hours	927	Hr	334.00	309,618.00
C1.2	Un-skilled labourer - Overtime (334 ÷ 8 x 1.5)	418	Hr	62.63	26,177.25
C1.3	Foreman - Normal hours	493	Hr	724.00	356,932.00
C1.4	Foreman - Overtime (724 ÷ 8 x 1.5)	182	Hr	135.75	24,706.50
	Sub-total :				717,433.75
	Less 2.9% Discount :				(20,805.58)
	Sub-total (C) :				696,628.17
<b>D</b>	<b>Other Cost</b>				
D1.1	Diesel as per records	6,962	ltr.	60.10	418,416.20
D1.2	Supervision (as per records for night works)				34,460.00
D1.3	Lighting (as per records for night works)				34,125.00
D1.4	Generator (as per records for night works)				89,375.00
	Sub-total (D) :				576,376.20
<b>E</b>	<b>Risk Factor for idling (Excluding weather) hours of Plant</b>				
E1.1	80ton Crawler Crane Hiring Charges (373 Hr x 22.4%)	83.6	Hr	12,000.00	1,003,200.00
	Sub-total (E) :				1,003,200.00
	Sub-total (B, C, D & E) :				7,304,704.37
	Add 27% Overhead :				1,972,270.18
	Sub-total :				9,276,974.55
	Add 5% Profit (for B, C & D only) :				315,075.22
	Total Cost for the Trial Area (2,400 sq.m) (using 162 tonne m) :				9,592,049.77
	Rate per sq.m (using 162 tonne m) :				3,996.69
	Say :				4,000.00
	<b>Rate per tonne m per sq.m (4,000 ÷ 162) :</b>				<b>24.69</b>
					<b>PCI Assessed Rate</b>

Table: 06																	
CHINA HARBOUR ENGINEERING COMPANY (GROUP)																	
Contract No. RDA/STDP/JBIC/K-D.2																	
Southern Transport Development Project( JBIC Section )																	
Package 1 - Kottawa to Dodangoda																	
<b>Proposed Rate and Summary of Actual Resources Used in Heavy Tamping 1st Stage Trial at CH17+370 - CH17+430</b>																	
Record No.	Date	Activity Description	Labour						Plant with Operator							Material Soil (cube)	
			Unskilled L. (h)	O.T.Unskilled (h)	Skilled L. (h)	O.T.Skilled (h)	Forman (h)	O.T.Forman (h)	JCB(1) (h)	80t Crane (h)	80t Min.8h (h)	Tipper 2.5 cube (h)	Tipper 3.5 cube (h)	Loader (h)	D4 Dozer (h)		Generator (h)
39	4/29/2006	Trial for H.T			8.00	2.00	8.00	2.00			5.50	8.00					
40	4/30/2006	Trial for H.T	16.00	2.00	8.00	1.00	8.00	1.00			3.50	8.00					
43	5/2/2006	Trial for H.T	16.00	2.00			8.00	1.00			9.00	9.00					
44	5/3/2006	Trial for H.T	8.00	1.00	8.00	1.00	8.00	1.00	9.00								
45	5/3/2006	Trial for H.T	8.00	1.00			8.00	1.00			9.00	9.00					
46	5/4/2006	Trial for H.T	8.00	2.00	8.00	2.00	8.00	2.00	40.00								
47	5/4/2006	Trial for H.T	8.00	2.00	8.00	2.00			5.00	10.00	10.00						
48	5/5/2006	Trial for H.T	16.00	4.00	8.00	2.00	8.00	2.00	30.00					10.00			
49	5/5/2006	Trial for H.T	8.00	2.00			8.00	2.00			9.00	9.00					
50	5/6/2	Trial for H.T	24.00	4.50	16.00	3.00			9.50								

APPENDIX G

VO No. 14A - Valuation for Heavy Tamping Work								
<b>Item B(2)</b>								
<b><u>Tamping Area and Energy Level Summary</u></b>								
Item No.	Chainage		Treated Area					Quantity
	From	To	Length in meter	Width in meter	Area	Applied Energy	factor	t - m2
			A	B	C = A x B	D	E	F = C x D X E
<b><u>Completed Area :</u></b>								
1	17+670	17+660	10.00	40.50	405.00	64	1	25,920.00
2	17+660	17+600	60.00	40.50	2,430.00	300	1	729,000.00
3	17+600	17+540	60.00	40.50	2,430.00	360	1	874,800.00
4	17+540	17+476	64.00	38.50	2,464.00	300	1	739,200.00
5	17+476	17+430	46.00	38.50	1,771.00	300	1	531,300.00
6	16+960	16+930	30.00	38.50	1,155.00	201	1	232,155.00
7	16+960	17+020	60.00	40.50	2,430.00	120.8	1	293,544.00
8	17+300	17370A	18.75	15.00	281.25	200	1	56,250.00
9	17+300	17370B	21.75	33.00	717.75	224	1	160,776.00
10	17+300	17370C	18.75	18.00	337.50	200	1	67,500.00
11	17+300	17370D	40.50	30.00	1,215.00	200	1	243,000.00
12	16+960	17+020	60.00	40.50	2,430.00	180.8	1	439,344.00
13	16+960	17+020	60.00	40.50	2,430.00	140.8	1	342,144.00
14	17+024	17+090	65.00	40.50	2632.5	124	1	326,430.00
15	17+305	17+239	66.00	39.00	2574	140.8	1	362,419.20
16	17+239	17+201	38.00	39.00	1482	140.8	1	208,665.60
17	17+201	17+138			2457			

			63.00	39.00		140.8	1	345,945.60
18	16+928	16+881	47.00	39.00	1833	180.8	1	331,406.40
19	16+818	16+758	60.00	39.00	2340	180.8	1	423,072.00
20	16+461	16+398	63.00	45.00	2835	174.20	1	493,857.00
21	15+628	15+661	33.00	33.00	1089	140.00	1	152,460.00
22	15+661	15+691	30.00	33.00	990	167.50	1	165,825.00
23	16+335	16+398	63.25	45.50	2877.875	201.4	1	579,604.03
24	16+670	16+721	51.00	39.00	1989	180.8	1	359,611.20
25	17+090	17+138	48.00	39.00	1872	140.8	1	263,577.60
26	15+691	15+721	30.00	33.00	990	180.8	1	178,992.00
27	16+721	16+758	37.00	42.00	1554	219.6	1	341,258.40
28	15+721	15+781	60.25	33.00	1988.25	180.8	1	359,475.60
29	26+600	26+660	60.00	44.49	2669.6	160.8	1	429,271.68
30	26+860	26+920	60.00	44.48	2668.97	124.2	1	331,486.07
31	26+250	26+310	60.00	44.48	2668.7	140.8	1	375,752.96
32	16+243	16+335	92.00	45.00	4140	220.7	1	913,698.00
Total length of road segments- shaded (In between 16+670km to 17+820km)			805				Sub-total (A) :	11,677,741.34

APPENDIX H

CHINA HARBOUR ENGINEERING COMPANY (GROUP)																																		
Southern Transport Development Project																																		
JBIC Funded Section - Kottawa to Kurundugahahetekma																																		
Package 1 - Kottawa to Dodangoda																																		
PVO No. 1.1 - Heavy Tamping at Chainage CH16+670 to CH17+820																																		
Summary of Actual Resources Used																																		
Labour														Plant with Operator													Material							
Re cord No.	Date	Activity Description	Unskilled	O.T. Unskilled	Skilled	O.T. Skilled	Forman	O.T. Skilled	JCB(1)	JCB(2)	Tipper 3.5 cu	Tipper 2.5 cu	Dumper 4	Dumper 8	P.C. 40 Ex.	Concrete 20 Ex.	S.K. 20 Ex.	S.K. 10 Ex.	P.C. 12 Ex.	Hitachi 120	80t Crane	Tipper 2.5 cu be	Tipper 3.5 cu be	Tipper 5 cu be	Loader	S.K. 20 Ex.	P.C. 40 Ex.	Concrete 320	Dumper 8	Dumper 4	Generator	Roller	Soil (cu be)	
			(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(h)	(cu be)
27	4/1/2006	Site pre.	16	4	8	2	8	2	5.1	4.3	40	10																						71
28	4/2/2006	Site pre.	24	6	8	2	8	2	6.9		50	10	3.7																					160.5
29	4/3/2006	Site pre.	24	6	8	2	8	2			60	10	9.1		7.9																			402.5

APPENDIX I

