

**REPUBLIC OF THE UNION OF MYANMAR
MINISTRY OF CONSTRUCTION
DEPARTMENT OF BRIDGE**

**DETAILED DESIGN STUDY ON
THE BAGO RIVER BRIDGE
CONSTRUCTION PROJECT
FINAL REPORT ATTACHMENTS
DRAFT TENDER DOCUMENT (FINAL VERSION)**

PACKAGE 2

Volume - II

BILL OF QUANTITIES

OCTOBER 2017

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

NIPPON KOEI CO., LTD.

ORIENTAL CONSULTANTS GLOBAL CO., LTD.

METROPOLITAN EXPRESSWAY COMPANY LIMITED.

CHODAI CO., LTD.

NIPPON ENGINEERING CONSULTANTS CO., LTD.

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**BAGO RIVER BRIDGE CONSTRUCTION PROJECT
BILL OF QUANTITIES FOR PACKAGE 2**

PAY ITEM NO.	ITEM DESCRIPTION	UNIT	Total QUANTITY	RATE		AMOUNT		
				Local (MMK)	Foreign (JPY)	Local (MMK)	Foreign (JPY)	Converted to Yen (JPY)
DIVISION 01 GENERAL SPECIFICATIONS								
01100	Contractor's Mobilisation							
01100-01	Mobilization	L.S.	1.0					
01100-02	Project Information Signs	Nos.	6.0					
01110	Temporary Facilities							
01110-01	Temporary Site Compounds	L.S.	1.0					
01150	Contractor's Submittals							
01150-01	Contractor's Submittals including As-Built Drawings of all the Permanent Works Executed by the Contractor	L.S.	1.0					
01600	Maintenance and Control of Traffic							
01600-01	Maintenance and Control of Traffic	month	28.0					
01650	Navigation Control and Safety Works on River							
01650-01	Temporary Navigation Beoy	L.S.	1.0					
01650-02	Navigation Control	L.S.	1.0					
01700	Environmental Management							
01700-01	Environmental Management	L.S.	1.0					
01950	Soil Investigation							
01950-01	Soil Investigation for Bridge Foundation	Nos.						
01950-02	Soil Investigation for Soft Soil Improvement	Nos.						
DIVISION 02 SITE WORKS								
02100	Site Clearing							
02100-01	Clearing and Grubbing	m2						
02200	Demolition & Removal of Existing Structures & Obstructions							
02200-01	Removal of Unreinforced Concrete Structures	m3						
02200-02	Removal of Reinforced Concrete Structures	m3						
02200-03	Removal of Pavement and Footpath	m3						
DIVISION 03 EARTHWORKS								
03100	Common Excavation							
03100-01	Soil Excavation	m3	25141.2					
03100-02	Unsuitable Material Excavation (Waste Excavation)	m3						
03200	Structural Excavation							
03200-01	Structural Excavation for Suitable Soil	m3						
03200-02	Structural Excavation with Cofferdam for Suitable Soil	m3						
03200-03	Structural Excavation for Unsuitable Soil	m3						
03200-04	Structural Excavation with Cofferdam for Unsuitable Soil	m3						
03200-05	Structural Excavation with Cofferdam type-A for Unsuitable Soil	m3	1588.6					
03200-06	Structural Excavation with Cofferdam type-B for Unsuitable Soil	m3	957.9					
03200-07	Structural Excavation - (Inside cofferdam (Steel pipe Sheet Piles))	m3	8558.2					
03200-08	Backfill with Borrow Material	m3	6648.8					
03200-09	Bliding Stone	m3	832.0					
03400	Embankment Construction							
03400-01	Subgrade Construction	m3						
03400-02	Embankment Construction	m3	87143.0					
03500	Mechanically-Stabilised Earth Wall							
03500-01	Mechanically-Stabilised Earth Wall	m2	1036.6					
03600	Reinforced Concrete Retaining Wall							
03500-01	L Type Retaining Wall	lm						
03800	Aggregate Base							
03800-01	Aggregate Subbase Course	m3	5146.0					
03800-02	Aggregate Base Course	m3	2906.2					
03900	Soft Soil Improvement Measures							
03900-01	Soil Cement Columns (Working Pile)including Field Test	lm	24326.0					
03900-02	Soil Cement Colmuns(Preliminary Test Colums; Non-working Pile) including Field Test	lm	46.0					
03910	Soft Soil Improvement by Shallow Improvement							
03910-01	Shallow Improvement	m3	11585.3					
03950	Soft Soil Improvement by Preloading							
03950-01	Sand mat	m3	61308.0					

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DIVISION 04 WATERWAY WORKS								
04100	Open Ditches							
04100-01	Side Ditch Type U-500 x 500 with Concrete Cover	lm						
04100-02	Side Ditch Type U-500 x 850 with Concrete Cover	lm						
04100-03	Side Ditch Type U-800 x 800 with Concrete Cover	lm						
04100-04	Side Ditch Type U-1000 x 1500	lm						
04100-05	Side Ditch Type U-1500 x 1500	lm						
04100-06	Side Ditch Type U-1500 x 1700	lm						
04100-07	Concrete Cover Type A	lm						
04100-08	Concrete Cover Type B	lm						
04100-09	U-Ditch Type A	lm						
04100-10	U-Ditch Type B	lm						
04100-11	U-Ditch Type C	lm						
04100-12	Side Ditch Type U-300 x 300	lm	26.2					
04100-13	Side Ditch Type U-300 x 300 TYPE V	lm						
04100-14	Side Ditch Type U-500 x 500	lm						
04100-15	Side Ditch Type U-800 x 800	lm						
04100-16	Side Ditch Type U-1000 x 1000	lm						
04100-17	Side Ditch Type U-800 x 1000 with Concrete Cover	lm						
04100-18	Side Ditch Type U-1000 x 1200 with Concrete Cover	lm						
04100-19	Side Ditch Type U-1000 x 1500 with Concrete Cover	lm						
04100-20	Side Ditch Type U-1500 x 1500 with Concrete Cover	lm						
04100-21	Side Ditch Type U-1500 x 2500 with Concrete Cover	lm	1111.6					
04310	Concrete Pipe Culverts							
04310-01	Concrete Pipe Culvert φ300 (CON. 360°) TYPE A	lm	102.1					
04310-02	Concrete Pipe Culvert φ300 (CON. 360°) TYPE B	lm	358.1					
04310-03	Concrete Pipe Culvert φ900 (CON. 360°)	lm						
04320	Concrete Box Culverts							
04320-01	Box Culvert Type 1500 x 1500	lm						
04320-02	Box Culvert Type 1500 x 1000	lm						
04320-03	Box Culvert Type 1000 x 1000	lm						
04330	Catch Basins/Pits, Inlets, Outlets, Manholes							
04330-01	Catch Pit (C=DITCH) Type A	Nos.	32.0					
04330-02	Catch Pit (C=DITCH) Type B	Nos.	4.0					
04330-03	Catch Pit 600 x 600 x 1100	Nos.	4.0					
04330-04	Catch Pit 500 x 500 x 500	Nos.						
04330-05	Catch Pit (C=DITCH) Type C	Nos.	17.0					
04330-06	Catch Pit (C=DITCH) Type D	Nos.	2.0					
04330-07	Catch Pit 700 x 700 x 1050	Nos.						
04330-08	Catch Pit 700 x 700 x 1850	Nos.						
04330-09	Catch Pit 700 x 700 x 2250	Nos.						
04330-10	Catch Pit 1000 x 1000 x 1350	Nos.						
04330-11	Catch Pit 1200 x 1200 x 1600	Nos.						
04400	Vertical Drain							
04400-01	Vertical Drain Type A UPVC Pipe φ200mm	lm	66.2					
04400-02	Vertical Drain Type A Joint (90°) φ200mm	Nos.	17.0					
04400-03	Vertical Drain Type B U-Ditch Section A-A	lm	2.6					
04400-04	Vertical Drain Type B U-Ditch Section B-B	lm	13.9					
04400-05	Vertical Drain Type B U-Ditch Section C-C	lm	1.1					
04400-06	Vertical Drain Type C UPVC Pipe φ150mm	lm						
04500	Drainage Outlet							
04500-01	Drainage Outlet Type A (Left Side)	Nos.						
04500-02	Drainage Outlet Type A (Right Side)	Nos.						
04500-03	Drainage Outlet Type A Flap Gate 1000 x 1000	Nos.						
04500-04	Drainage Outlet Type B (Left Side)	Nos.	1.0					
04500-05	Drainage Outlet Type B (Right Side)	Nos.	1.0					
04500-06	Drainage Outlet Type B Flap Gate 2000 x 1500	Nos.	2.0					
DIVISION 05 PAVEMENTS								
05100	Prime Coat and Tack Coat							
05100-01	Prime Coat	m2	10651.9					
05100-02	Tack Coat	m2	30190.6					
05300	Asphalt Concrete Binder and Surface Courses							
05300-01	Asphalt Concrete Surface Course (t=4cm)	m2	5392.0					
05300-02	Asphalt Concrete Surface Course (t=5cm)	m2	10855.6					
05300-03	Asphalt Concrete Binder Course (t=4cm)	m2	5392.0					
05300-04	Asphalt Concrete Binder Course (t=5cm)	m2	10614.7					
05300-05	A/C Surface Course for Bridge using PMB Type II (t=4cm)	m2	13943.0					
05300-06	A/C Surface Course for Bridge using PMB Type III (t=4cm)	m2	13943.0					
05300-07	Waterproofing Membrane for Steel Deck	m2	13943.0					
05700	Cement Concrete Pavement							
05700-01	Concrete Pavement, Type C, thickness 25cm	m2	3982.0					
05700-02	Concrete Pavement, Type CS, thickness 20cm	m2						
DIVISION 06 CONCRETE WORKS								
06100	Structural Concrete							
06100-01	Concrete Class A for Cross Beam in Pier Table (CIP) and Key Segment (CIP) of PC Box Girder	m3	304.0					
06100-02	Concrete Class CI-1 (30 MPa) for Cross Beam and Connection of Main Girder (PC-I Girder)	m3						
06100-03	Concrete Class CI-2 (30 MPa) for RC Deck Slab in Composite Deck Slab (PC-I Girder)	m3						
06100-04	Concrete Class CI-3 (30 MPa) for Pier (Column)	m3	8261.8					
06100-05	Concrete Class DI-1 (24 MPa) for RC Deck Slab of Steel Bridge	m3						

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06100-06	Concrete Class DI-2 (24 MPa) for Pier and Abutment (Column, Pile Cap)	m3	1897.0					
06100-07	Concrete Class DI-3 (24 MPa) for Approach Slab	m3	50.3					
06100-08	Concrete Class DI-4 (24 MPa) for Mechanically-Stabilised Earth Wall, L-type Wall and Gravity Retaining Wall	m3	288.7					
06100-09	Concrete Class DI-5 (24 MPa) for Concrete Kerb, Concrete Barrier, Median and Foundation of Lighting Pole	m3	1035.7					
06100-10	Concrete Class DII-1 (24 MPa) for SPSP: Top slab concrete	m3	4170.9					
06100-11	Concrete Class DE-1 (18 MPa) for SPSP: Bottom slab concrete	m3	2098.2					
06100-12	Concrete Class DE-2 (18MPa) for SPSP: Concrete Filling to Steel Pipe	m3	2434.4					
06100-13	Concrete Class EI (18 MPa) for Leveling Concrete on Deck Slab	m3						
06100-14	Concrete Class EII (18 MPa) for Lean Concrete on Pile Cap and Approach Slab	m3	83.3					
06100-15	Concrete Class P (min. flexural strength = 5 MPa) for reinforced Concrete Pavement	m3						
06200	Reinforcing Steel							
06200-01	Reinforcement Bar (D <= 13mm), SD345	ton	80.9					
06200-02	Reinforcement Bar (13mm < D <= 25mm), SD345	ton	715.4					
06200-03	Reinforcement Bar (25mm < D <= 32mm), SD345	ton	335.3					
06200-04	Reinforcement Bar (D = 35mm), SD345	ton	42.9					
06200-05	Reinforcement Bar (D = 38mm), SD345	ton						
06200-06	Reinforcement Bar (D = 51mm), SD345	ton	190.2					
06200-07	Reinforcement Bar (13mm < D <= 25mm), SD390	ton						
06200-08	Reinforcement Bar (25mm < D <= 32mm), SD390	ton	81.2					
06200-09	Reinforcement Bar (D = 35mm), SD390	ton						
06200-10	Reinforcement Bar (D = 38mm), SD390	ton	527.8					
06200-11	Mechanical Splice for D32mm	nos.						
06200-12	Mechanical Splice for D35mm	nos.						
06200-13	Mechanical Splice for D38mm	nos.	4136.0					
06200-14	Mechanical Splice for D51mm	nos.	534.0					
06300	Cast-in-Place Piles							
06300-01	Cast-In-Place Concrete Pile (D 1.500m)	lm	567.0					
06300-02	Cast-In-Place Concrete Pile (D 2.000m)	lm	3760.0					
06300-03	Static Loading Test (D 1.500m)	Nos.	1.0					
06300-04	Sonic Test	Nos.	50.0					
06300-05	Ultrasonic Drilling Monitor Test	Nos.	50.0					
06300-06	Core Testing	Nos.	50.0					
06400	Prestressed Concrete							
06400-1	External Prestressing Steel Strand (Seven-wire, ECF) – SWPR7BL 19S15.2mm (Grade 1850MPa) for longitudinal prestressing of PC Box Girder	ton	101.7					
06400-2	Internal Prestressing Steel Strand (Seven-wire) – SWPR7BL 12S15.2mm (Grade 1850MPa) for longitudinal prestressing of PC Box Girder	ton	73.3					
06400-3	Internal Prestressing Steel Strand (Seven-wire) – SWPR7BL 4S15.2mm (Grade 1850MPa) for Crossbeams of PC Box Girder	ton	0.5					
06400-4	Internal Prestressing Steel Strand (Seven-wire) – SWPR7BL 4S15.2mm (Grade 1850MPa) for Crossbeams of PC-I Girder	ton						
06400-5	Internal Prestressing Steel Strand (Seven-wire) – SWPR7BL 3S12.7mm (Grade 180MPa) for deck slab of PC Box Girder	ton	2.1					
06400-6	Prestressing Steel Bar - SBPR930/1080 Dia. 32mm for Crossbeams of PC Box Girder	ton	9.3					
06400-7	Prestressing Steel Bar - SBPR930/1080 Dia. 32mm for Crossbeams of PC-I Girder	ton						
06410	Prestressed Concrete I Girder							
06410-1	Fabrication and Transportation of PC-I Girder (L=28.6m, H=2.1m)	Nos.						
06410-2	Erection of PC-I Girder (L=28.6m, H=2.1m)	Nos.						
06410-3	Fabrication and Transportation of PC-I Girder (L=29.1 to 30.6m, H=1.9m)	Nos.						
06410-4	Erection of PC-I Girder (L=29.1 to 30.6m, H=1.9m)	Nos.						
06410-5	Fabrication and Transportation of PC-I Girder (L=29.8m, H=2.0m)	Nos.						
06410-6	Erection of PC-I Girder (L=29.8m, H=2.0m)	Nos.						
06420	Prestressed Concrete Plate							
06420-1	Fabrication, Transportation and Erection of PC Plate (Standard Part, w=2680mm, L=998mm)	Nos.						
06420-2	Fabrication, Transportation and Erection of PC Plate (Adjustment Part, w= 2680mm, L=770mm to 970mm)	Nos.						
06420-3	Fabrication, Transportation and Erection of PC Plate (Standard Part, w=2380mm, L=998mm)	Nos.						
06420-4	Fabrication, Transportation and Erection of PC Plate (Adjustment Part, w=2380mm, L=616mm to 950mm)	Nos.						
06430	Precast Concrete Segment							
06430-1	Fabrication and Transportation of Precast Segment (Standard Segment, L= 2.5 to 3.0m, H = 2.7m, W = 9.8m)	Nos.	192.0					
06430-2	Fabrication and Transportation of Precast Segment (Pier Table, L= 2.6 to 3.3m, H = 2.7m, W = 9.8m)	Nos.	14.0					
06430-3	Erection of Precast Segment (Standard Segment, L= 2.5 to 3.0m, H = 2.7m, W = 9.8m)	Nos.	192.0					
06430-4	Erection of Precast Segment (Pier Table, L= 2.6 to 3.3m, H = 2.7m, W = 9.8m)	Nos.	14.0					

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06500	Bridge Bearings							
06500-01	Elastomeric Rubber Bearing 920 x 920 x 224 (G10) for PC Box Girder	Nos.	4.0					
06500-02	Elastomeric Rubber Bearing 920 x 920 x 210 (G10) for PC Box Girder	Nos.	4.0					
06500-03	Elastomeric Rubber Bearing 920 x 920 x 180 (G10) for PC Box Girder	Nos.						
06500-04	Elastomeric Rubber Bearing 1220 x 1220 x 210 (G10) for PC Box Girder	Nos.	4.0					
06500-05	Elastomeric Rubber Bearing 1220 x 1220 x 180 (G10) for PC Box Girder	Nos.	12.0					
06500-06	Elastomeric Rubber Bearing 1220 x 1220 x 150 (G10) for PC Box Girder	Nos.	4.0					
06500-07	Elastomeric Rubber Bearing 600 x 400 x 100 (Pad Type, G10) for On-ramp Bridge	Nos.						
06500-08	Elastomeric Rubber Bearing 600 x 400 x 80 (Pad Type, G10) for On-ramp Bridge	Nos.						
06500-09	Elastomeric Rubber Bearing 600 x 400 x 60 (Pad Type, G10) for On-ramp Bridge	Nos.						
06500-11	Rubber Bearing 970x970x354 for Steel Box Girder	Nos.						
06500-12	Rubber Bearing 920x920x274 for Steel Box Girder	Nos.						
06500-13	Rubber Bearing 920x970x342 for Steel Box Girder	Nos.						
06500-21	Steel Pivot Bearing for P11 and P12	Nos.						
06500-22	Steel Pin Roller Bearing for P11 and P12	Nos.						
06500-23	Steel Horizontal Bearing for P10 and P13	Nos.						
06500-24	Steel Rocking Bearing for P10 and P13	Nos.						
06500-31	Rubber Bearing 820x870x311	Nos.	4.0					
06500-32	Rubber Bearing 920x920x184	Nos.	8.0					
06500-33	Rubber Bearing 920x920x188	Nos.	16.0					
06500-34	Rubber Bearing 820x820x311	Nos.	4.0					
06500-41	Rubber Bearing 520x470x92	Nos.						
06500-42	Rubber Bearing 520x520x112	Nos.						
06500-43	Rubber Bearing 520x520x142	Nos.						
06500-44	Rubber Bearing 510x510x238	Nos.						
06500-45	Rubber Bearing 710x710x305	Nos.						
06500-46	Rubber Bearing 810x760x356	Nos.						
06500-47	Rubber Bearing 1210x1210x524	Nos.						
06510	Anchor Bar							
06510-01	Anchor Bar (S35CN) (Dia. 25mm ~ 100mm)	kg	5600.0					
06520	Bridge Expansion Joints							
06520-01	Modular-type Bridge Expansion Joint at P5	lm						
06520-02	Modular-type Bridge Expansion Joint at P10	lm						
06520-03	Modular-type Bridge Expansion Joint at P13	lm						
06520-04	Modular-type Bridge Expansion Joint at P20	lm	20.4					
06520-05	Modular-type Bridge Expansion Joint at A1	lm						
06520-06	Modular-type Bridge Expansion Joint at A2	lm	20.4					
06520-07	Steel Finger Joint at AO1	lm						
06520-08	Aluminum Expansion Joint Type 80	lm						
06520-09	Aluminum Expansion Joint Type 110	lm						
06520-10	Aluminum Expansion Joint Type 160	lm						
06520-11	Aluminum Expansion Joint Type 230	lm						
06520-12	Aluminum Expansion Joint Type 320	lm						
06530	Bridge Floor Waterproofing							
06530-01	Waterproofing Membrane for Concrete Deck	m2	5392.0					

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DIVISION 07 STEEL WORKS								
07100	Steel Structure							
07100-01	Shop Fabrication & Transport of Steel Box Girders (Package3)	ton						
07100-02	Shop Fabrication & Transport of Steel I-Girders (Package3)	ton						
07100-03	Shop Fabrication & Transport of Steel Box Girders (Package1)	ton						
07100-04	Shop Fabrication & Transport of Steel Box Girders for Cable Stayed Bridge (Package1)	ton						
07100-05	Shop Fabrication & Transport of Steel Pylons (Package1)	ton						
07100-06	Shop Fabrication & Transport of Steel Box Girders (Package2)	ton	8734.0					
07100-07	Erection of Steel Box Girders (Package3)	ton						
07100-08	Erection of Steel I-Girders (Package3)	ton						
07100-09	Erection of Steel Box Girders (Package1)	ton						
07100-10	Erection of Steel Box Girders for Cable Stayed Bridge (Package1)	ton						
07100-11	Erection of Steel Pylons (Package1)	ton						
07100-12	Erection of Steel Box Girders (Package2)	ton	9046.0					
07210	Bridge Rail, Wheel Guard and Median							
07210-01	Bridge Handrail	lm	3104.0					
07210-02	Median at Cable Stayed Bridge	m2						
07210-03	Median at Steel Box Girder Bridge	m2	50.3					
07220	Miscellaneous Metals							
07220-04	Entrance Hatch of the PC Box Girder	Nos.	4.0					
07220-05	Inspection Facilities	L.S.	1.0					
07400	Bridge Drainage							
07400-01	Catch Pit Type 1 (400 x320, L=360mm)	Nos.						
07400-02	Catch Pit Type 2 (400 x320, L=200mm)	Nos.	152.0					
07400-03	Catch Pit Type 3 (400 x320, L=260mm)	Nos.						
07400-04	Catch Pit Type 4 (400 x320, L=530mm)	Nos.						
07400-05	Catch Pit Type 5 (400 x320, L=360mm) for PC Box Girder Bridge	Nos.	30.0					
07400-06	Catch Pit Type 6 (400 x320, L=400mm) for On-ramp Bridge	Nos.						
07400-07	PVC Pipe (VP) φ200mm	lm	290.0					
07400-08	PVC Pipe (VP) φ200mm for Elbow and Branch Connections	Nos.						
07550	Steel Pipe Sheet Pile Foundation							
07550-01	Steel Pipe Sheet Pile (Permanent Part)	ton	6027.7					
07550-02	Steel Pipe Sheet Pile (Cutting Part)	ton	1665.4					
07550-03	Mortar Filling of Steel Joint Pipes	m3	500.4					
07550-04	Reinforcing Bar Stud	ton	72.4					
07550-05	Dynamic Load test on D1.2 m Steel Pipe Sheet Pile	nos.	18.0					
07750	Stay Cable (For Package 1 Only)							
07750-01	Stay Cables	ton						
07750-02	Stay Cable Damping Devices	set						

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DIVISION 08 MISCELLANEOUS								
08150 Sodding and Planting								
08150-01	Sodding	m2	2527.4					
08150-02	Shrubs/Trees	each						
08200 Topsoil								
08200-01	Furnishing and Placing Top Soil	m2						
08200-02	Filling for Topsoil	m3						
08300 Monuments, Markers, Guide and Guard Posts								
08300-02	Kilometer Posts	each						
08300-05	Concrete Guard Posts	each						
08400 Signboard								
08400-01	Regulatory Signs	Nos.						
08400-02	Warning Signs	Nos.						
08400-03	Informatory Signboards-TypeA(Arrm2.5m)	Nos.						
08400-04	Informatory Signboards-TypeB(Arrm1.0m)	Nos.						
08400-05	Informatory Signboards-TypeC	Nos.						
08500 Guardrail								
08500-01	Box Beam	lm						
08500-02	Guard Fence	lm						
08500-03	Metal type(GR-A)	lm	634.2					
08500-04	Metal type(GR-Am)	lm						
08500-05	Metal type(GR-B)	lm						
08500-06	Guard Pipe(GP-A)	lm						
08600 Road Markings								
08600-01	Road Markings Solid Line (W=80mm)	lm						
08600-02	Road Markings Solid Line (W=100mm)	lm	5989.9					
08600-03	Road Markings Solid Line (W=150mm)	lm	17.4					
08600-04	Road Markings Solid Line (W=300mm)	lm	14.0					
08600-05	Road Markings Solid Line (W=450mm)	lm	25.0					
08600-06	Road Markings Broken Line (W=80mm)	lm						
08600-07	Road Markings Broken Line (W=100mm)	lm						
08600-08	Speed Limit Marks	Nos.						
08600-09	Toll Ahead Marks	Nos.	4.0					
08600-010	Arrow Marks	Nos.	9.0					
08800 Fences and Gates								
08800-01	Boundary Fence	lm						
08800-02	Fence Gate	each						
08910 Sidewalks								
08910-01	Precast Concrete Sidewalk	m2	362.7					
08910-02	Expose Aggregate Finished Footpath	m2						
08920 Concrete Kerb								
08920-01	Concrete Kerb Type A-1	lm	607.4					
08920-02	Concrete Kerb Type A-2	Nos.						
08920-03	Concrete Kerb Type A-3	lm						
08920-04	Concrete Kerb Type A-4	Nos.						
08920-05	Concrete Kerb Type A-5	lm						
08920-06	Concrete Kerb Type B-1	lm						
08920-07	Concrete Kerb Type B-2	Nos.						
08920-08	Concrete Kerb Type B-3	lm						
08920-09	Concrete Kerb Type C	lm						
08920-10	Concrete Kerb Type D	lm						
08920-11	Concrete Kerb Type E	lm	95.3					
08920-12	Concrete Seal (t = 100 mm, with Wire Net)	m2	1241.8					
08920-13	Concrete Seal (t = 70 mm)	lm	45.0					
08920-14	Median Type A	lm	81.6					
08920-15	Median Type B	lm	165.3					
08920-16	Median Type C	lm						
08950 Arrangement and Validation of Measuring Devices for Simplified Monitoring								
08950-01	Simplified Monitoring System for Package1	L.S.						
08950-02	Simplified Monitoring System for Package2	L.S.	1.0					

BAGO RIVER BRIDGE CONSTRUCTION PROJECT
BILL OF QUANTITIES FOR PACKAGE 2

PAY ITEM NO.	ITEM DESCRIPTION	UNIT	Total QUANTITY	RATE		AMOUNT		
				Local (MMK)	Foreign (JPY)	Local (MMK)	Foreign (JPY)	Converted to Yen (JPY)
DIVISION 09 LIGHTING AND ELECTRICAL WORKS								
09100	Road Lighting System							
09100-01	Lighting Pole Type A (Mounted Type, H=11m)	Nos.						
09100-02	Lighting Pole Type B (H=12m,)	Nos.	64.0					
09100-03	Lighting Pole Type C (H=9m)	Nos.						
09100-04	Flood Light Pole (H=25m)	Nos.	2.0					
09100-05	LED Lamp (51W)	Nos.						
09100-06	LED Lamp (140W)	Nos.	64.0					
09100-07	LED Lamp (150W)	Nos.						
09100-08	LED Lamp (380W)	Nos.	16.0					
09100-09	HID Lamp (360W)	Nos.						
09100-10	Lighting Panel Type A (17 lines)	Nos.	3.0					
09100-11	Lighting Panel Type B (4 lines)	Nos.						
09100-12	Pull Box Type A (450 x 350 x 250)	Nos.	64.0					
09100-13	Pull Box Type B (550 x 200 x 600)	Nos.						
09100-14	Pull Box Type C (400 x 300 x 200)	Nos.						
09100-15	Pull Box Type D (300 x 350 x 175)	Nos.						
09100-16	Grounding Plate	Nos.	5.0					
09100-17	4 Core/XLPE 80 sq. mm Electric Wire Cable	lm	260.0					
09100-18	4 Core/XLPE 35 sq. mm Electric Wire Cable	lm	3918.0					
09100-19	4 Core/XLPE 25 sq. mm Electric Wire Cable	lm	672.0					
09100-20	4 Core/XLPE 16 sq. mm Electric Wire Cable	lm	190.0					
09100-21	4 Core/XLPE 10 sq. mm Electric Wire Cable	lm						
09100-22	4 Core/XLPE 8 sq. mm Electric Wire Cable	lm	260.0					
09100-23	4 Core/XLPE 6 sq. mm Electric Wire Cable	lm						
09100-24	4 Core/XLPE 4 sq. mm Electric Wire Cable	lm	2184.0					
09100-25	HDPE Pipe (25mm dia.)	lm						
09100-26	HDPE Pipe (50mm dia.)	lm	16420.0					
09100-27	HDPE Pipe (100mm dia.)	lm	400.0					
09100-28	FEP Pipe (25mm dia.)	lm						
09100-29	FEP Pipe (50mm dia.)	lm						
09100-30	FEP Pipe (100mm dia.)	lm	96.0					
09100-31	Steel Conduit (100mm dia.)	lm						
09100-32	Handhole (600 x 600 x 1200)	Nos.						
09100-33	Handhole (600 x 600 x 600)	Nos.	12.0					
09100-34	Incoming Power Receiving Pole (H=15m)	Nos.	1.0					
09100-35	Power Receiving Panel (100kva)	Nos.						
09100-36	Power Receiving Panel (200kva)	Nos.	1.0					
09100-37	Emergency Engine Generator (50kva)	Nos.						
09100-38	Emergency Engine Generator (200kva)	Nos.	1.0					
09100-39	Main Power Distribution Panel (300AF/ 50AF)	Nos.	1.0					
09100-40	Boundary Fence (H=1.2m)	lm						
09100-41	Warning Light	Nos.	1.0					
09100-42	Aviation Obstruction Lights (LED 25W White)	Nos.						
09100-43	Control Panel for Aviation Obstruction Lights	Nos.						
09100-44	CV 0.75sq.mm x 2c	lm						
09100-45	CV 2.0sq.mm x 2c	lm						
09100-46	CV 5.5sq.mm x 1c	lm						
09100-47	CV 6.6sq.mm x 2c	lm						
09100-48	CV 16sq.mm x 2c	lm						
09100-49	CVV 2.0sq.mm x 4c x 3	lm						
09100-50	CVV 2.0sq.mm x 6c	lm						
09100-51	Navigation Lateral Marks (Left) with LED Signal Light	Nos.						
09100-52	Navigation Lateral Marks (Right) with LED Signal Light	Nos.						
09100-53	Navigation Lateral Marks (Centre) with LED Signal Light	Nos.						
09100-54	Control Panel for Navigation Lateral Marks	Nos.						
09100-55	Joint Box (200 x 200 x 150)	Nos.						
09100-56	Lightning Rod	Nos.						
09100-57	Copper Wire (30 sq.mm)	lm						
09100-58	Conductor Drawn Terminal	Nos.						
09100-59	Conductor Water Stopper Terminal	Nos.						
09100-60	Conductor Connector	Nos.						

**BAGO RIVER BRIDGE CONSTRUCTION PROJECT
BILL OF QUANTITIES FOR PACKAGE 2**

PAY ITEM NO.	ITEM DESCRIPTION	UNIT	Total QUANTITY	RATE		AMOUNT		
				Local (MMK)	Foreign (JPY)	Local (MMK)	Foreign (JPY)	Converted to Yen (JPY)
09200	Traffic Signal Control System							
09200-01	Traffic Signal Pole	Nos.						
09200-02	Pedestrian Signal Pole	Nos.						
09200-03	Traffic Signal Head	Nos.						
09200-04	Arrow Signal Head	Nos.						
09200-05	Pedestrian Signal Head and Push Button	Nos.						
09200-06	Handhole (600 x 600 x 800)	Nos.						
09200-07	Traffic Signal Controller	Nos.						
09200-08	Distribution Panel (3 branches)	No.						
09200-09	HDPE Pipe (50mm dia.)	lm						
09200-10	HDPE Pipe (25mm dia.)	lm						
09200-11	SVV-SS 2.0sq.mm x 15c	lm						
09200-12	SVV-SS 2.0sq.mm x 18c	lm						
09200-13	SVV-SS 2.0sq.mm x 21c	lm						
09200-14	SVV-SS 2.0sq.mm x 33c	lm						
09200-15	SVV-SS 2.0sq.mm x 36c	lm						
09200-16	SVV-2.0sq.mm x 4c	lm						
09200-17	SVV-2.0sq.mm x 8c	lm						
09200-18	Joint Box (36 Terminal)	Nos.						
DIVISION 10	TOLL COLLECTION FACILITY							
10100	Toll Collection Facility							
10100-01	Toll Plaza Facility, Toll Island (1.8m x 25.0m)	set	7.0					
10100-02	Toll Plaza Facility, Toll Island (2.2m x 25.0m)	set	2.0					
10100-03	Toll Plaza Facility, Steel Large Roof (12.0m x 50.8m)	set	1.0					
10100-04	Toll Plaza Facility, Steel Booth (1.2m x 3.9m)	set	9.0					
10100-05	Toll Plaza Facility, Steel Booth (1.4m x 6.0m)	set	1.0					
10100-06	Toll Plaza Facility, Steel Staircase (Height: 3.6m)	L.S.	1.0					
10100-07	Administrative Office, Building / Equipment	L.S.	1.0					

**BAGO RIVER BRIDGE CONSTRUCTION PROJECT
BILL OF QUANTITIES FOR PACKAGE 2**

PAY ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	RATE		MARK UP	AMOUNT	
				Local (MMK)	Foreign (JPY)		Local (MMK)	Foreign (JPY)
DIVISION 01 GENERAL SPECIFICATIONS								
01100	Contractor's Mobilisation							
01100-03	Payment to the Employer's General Staffs	P.S.	Item			15%		
01920	Prevention of HIV/AIDS							
01920-01	Prevention of HIV/AIDS	P.S.	Item			15%		
DIVISION 02 SITE WORKS								
02100	Site Clearing							
02100-02	Removal of trees (girth greater than 300mm at 1 m above ground)	P.S.	Item			15%		
02300	Diversion and Protection of Existing Utilities							
02300-01	Assist Utility Authority for the Relocation Works	P.S.	Item			15%		
02300-02	Relocation of Utilities as Per Requirements of the Utility Authority and the Employer	P.S.	Item			15%		
02300-03	Reinstatement of Road as Directed by the Engineer	P.S.	Item			15%		
DIVISION 07 STEEL WORKS								
07220	Miscellaneous Metals							
07220-01	Bridge's Name Plaque	P.S.	Item					
07220-02	Bridge Record Plaque	P.S.	Item					
07220-03	ODA Symbol Mark Plaque	P.S.	Item					