SCHEDULE OF RATES for Variations

Bridge over the Ruver Dubnica on km 7+052.70 state road IB no.40 section: Vladicin Han - Surdulica

*__Item description__ is referenced on the item specified in Technical specification, which must be included in the unit price and total (lump-sum) price.

No.	Item description *	Type of works	UNIT OF MEASURE	QUANTITY	UNIT PRICE	TOTAL
I		**CONSTRUCTION WORKS ON THE BRIDGE**			**USD**	**USD**
1	**13.2.**	**Earth works**				
	13.2.1.	EXCAVATION OF THE FOUNDATION				
1.1	13.2.3.	Excavation of the trenches and channels with width of less than 1.5 m and depth less than 2.0m				
		0,70x1,05x14,0 = 10,29	m^3	8.00		
1.2	13.2.4.	Backfilling the foundation of the columns				
		by estimation	m^3	60.00		
1.3	13.2.5.	Making gravel wedges				
		by estimation	m^3	20.00		
1.4	13.2.6.	Excavation of foundations in sheet - pile walls and dike dams				
		In material 3. and 4. category:				
		on depth of 0-2 m				
		2,80x(4,00+2,62)x2,00 =37,07 2,40x(3,20+2,55)x2,00 =27,60				
		64.67	m^3	65.00		
		on depth of 2-4 m				
		2,80x(4,00+2,62)x2,00 =37,07 2,40x(3,20+2,55)x2,00 =27,60				
		64.67	m^3	65.00		
		on depth of 4-6 m				
		2,80x(4,00+2,62)x2,00 =37,07 2,40x(3,20+2,55)x1,30 =17,94				
		55.01	m^3	55.00		
		Total of earth works in USD:				
2	**13.3.**	**Wooden structure**				
2.1	13.3.1.	Scaffoldings and formworks				
		Formwork is not paid separately; Value of scaffolding is included within the proper position of concrete works				
2.2	13.3.2.	Making the sheet-pile walls and dike dams				
		by estimation	m^2	250.00		
		Total of wood works in USD:				

No.	Item description *	Type of works	UNIT OF MEASURE	QUANTITY	UNIT PRICE	TOTAL
3	**13.4.**	**Concrete works**				
	13.4.1.	PLAIN CONCRETE				
3.1	13.4.1.1.	Concreting the foundations of round heads CC 25 (MB25)				
		0,6125x14,00 = 8,58	m^3	7.00		
3.2	13.4.1.2.	Coating round heads - coating on clay flat and curved surfaces				
		b) coating with concrete slabs CC 30 (50□50□15 cm)				
		by estimation	m^2	25.00		
3.3	13.4.1.4.	Concreting of foundations in sheet - pile walls and dike dams CC 25				
		2,80x(4,00+2,62)x1,20 =22,24 2,40x(3,20+2,55)x1,20 =16,56				
		38.80	m^2	39.00		
	13.4.3.	REINFORCED CONCRETE STRUCTURE				
3.4	13.4.3.1.	Pier foundations, counter beams, bed plates, bolsters and pile cap:				
		CC 30 (C25/30)				
		2,20x(3,40+2,02)x0,80 = 9,54				
		1,20x(2,60+1,95)x0,80 = 4,37				
		13.91	m^3	14.00		
3.5	13.4.3.2.	Piers as supports of the flat span structures with different systems as well as supports of the above arc structure				
		Ɔ)Abutements CC 30 (C25/35)				
		(1,00+0,15)x(2,80x3,61+1,42x4,09) = 18,30				
		0,40x0,70x(2,82+1,42) = 1.19				
		1,00x(2,80+1,42)x0,70 = 2,95				
		(0,60x0,40+2,50x0,40/2)x2,50x2 = 3,70				
		(2,89x0,2x0,50+2,50x0,30x0,80)x2 = 1,78				
		0,09x0,30x(2,80+1,42) = 0,11				
		28.04	m^3	28.04		
		в)Piers CC 30 (C25/30)				
		0,766x4,58 = 3,51				
		0,506x4,80 = 2,43				
		5.94	m^3	6.00		
3.6	13.4.3.3.	Span structure of building made of reinforced concrete				
		Ɔ) Deck slab: CC 30 (C25/35)				
		73,677x0,60 = 44,21				
		0,50x0,20x28,54 = 2,85				

No.	Item description *	Type of works	UNIT OF MEASURE	QUANTITY	UNIT PRICE	TOTAL
		parts which is concreted after: 0,355x28,54 = 10,13				
		57.19	m^3	58.00		
		Leveling layer on the existing bridge - by estimation				
		13.00	m^3	13.00		
		в) Footways: CC 40 MPa (C35/45)				
		(1,50x0,29-0,0095x4)x34,44 = 13,67	m^3	14.00		
		Footways on the existing bridge				
		(0,08x0,45+0,07x0,18+0,16x1,0)x34,00+ 0,40x1,66/2x34,44 = 18,53	m^3	19.00		
3.7	13.4.3.5.	Transition slab, MB 30				
		0,20□3,00□1,60 = 0,96	m^3	1		
3.8	13.4.5.2.	Leveling layer bellow the foundation				
		CC 20 (C16/20)				
		(3,00x(4,10+2,72)+2,60x(3,30+2,65))x0,10 = 3,59	m^3	4.00		
3.9	13.4.6.	Demolition of structures and the entire bridges made of concrete and reinforced concrete				
		by estimation	m^3	20.00		
		Total of concrete works in USD:				
4	**13.5.**	**Steel works**				
4.1	13.5.1.	Reinforcement of concrete elemenets and structures				
		B500B				
		d <= Ø12 mm	kg	4,000.00		
		d > Ø 12 mm	kg	14,500.00		
		Welded wire mesh MAG500/560 Q335	kg	450.00		
4.2	13.8.	Steel fences on bridges according to the project				
		в) others from pipes or profiles				
		33,50+34,0 = 67,50	m'	70.00		
	13.9.	BEARINGS ON THE BRIDGES				
4.3	13.9.1.	Reinforced elastomeric bearings				
		The neoprene tape with width of 60mm and thickness of 10mm (n = 1)				
		2,8+1,42 = 4,22	m'	4.22		
		Total of steel works in USD:				

No.	Item description *	Type of works	UNIT OF MEASURE	QUANTITY	UNIT PRICE	TOTAL
5	**13.10.**	**Final and other works on the bridges**				
5.1	13.10.1.	Stone curbs				
		⊙) dimension 18/24 cm				
		34,00+34,44 = 68,44	m'	69.00		
5.2	13.10.2.	Installing insulation of the upper surface of the concrete deck slab				
		7,90x28,54 = 225,47	m^2	226.00		
5.3	13.10.3.	Covering concrete surfaces with bitumen				
		by estimation	m^2	50.00		
5.4	13.10.4.	Pavement of asphalt concrete with thickness of 9 cm				
		7,10x29,44 = 209,02	m^2	209.02		
5.5	13.10.5.	Testing the completed bridge	Lump-sum	1		
5.6	13.10.6.	Photo recording during the construction of the bridge	Lump-sum	1		
5.7	13.10.7.	Creating and embedding of the plaque with a year of bridge completion	Lump-sum	1		
5.8	13.10.8.	Making and closing the joints on asphalt with curbs and edge ranges on footpaths				
		5x34,44=172,20	m'	173.00		
		Total of final works in USD:				
6	**13.11.**	**Special works**				
6.1	13.11.1.	Placing plastic pipes with diameter of Ø 110 mm in footpaths				
		34,44x4 = 137,76	m'	138.00		
6.2	13.11.2.	Protective coating of concrete surfaces				
		by estimation	m^2	360.00		
		-protective cover of pedestrian footpaths				
		by estimation	m^2	115.00		
6.3	13.11.4.	Thormajoint expansion joints (asphalt termal expansion joint)				
		7,10x2 = 14,20	m'	14.20		
6.4	13.11.3.	Removing the pavement layer from the existing bridge				
		6,00x34,0 = 204,00	m^2	204.00		
6.5	13.11.3.	Removing the fence from the existing bridge				
		34,0x2 = 68,00	m'	68.00		
6.6	13.11.3.	Removal of the curbs from the bridge				
		34,0x2 = 68,00	m'	68.00		
6.7	13.11.3.	Removal of the casted asphalt on pedestrian footways of the bridge				

No.	Item description *	Type of works	UNIT OF MEASURE	QUANTITY	UNIT PRICE	TOTAL
		0,85x34,00x2 = 57,80	m^2	58.00		
6.8	13.11.11.	Drilling holes for anchors Ø30				
		30x0,5+72x0,30+82x2x0,30 = 85,80	m'	86.00		
6.9	13.11.12.	Setting anchors with filling the holes with exmal				
		30+72+82x2 = 266	pcs.	266.00		
6.10	13.11.14.	Injecting cracks - on the lower surface on the concrete slab of the bridge after the cleaning of concrete - on the upper surface of the bridge slab after removal of waterproofing and asphalt				
		by estimation	m'	60.00		
6.11	13.11.15.	Rehabilitation of damaged protective layers of concrete structures where reinforcement is not damaged				
		by estimation	m^2	25.00		
6.12	13.11.16.	Rehabilitation of damaged protective layers of concrete structures where reinforcement is damaged				
		by estimation	m^2	10.00		
6.1	13.11.18.	Rehabilitation of damaged protective layers of piers where reinforcement is not damaged				
		by estimation	m^2	10.00		
6.1	13.11.21.	Cleaning of concrete surfaces				
		by estimation	m^2	450.00		
6.2	13.11.22.	Geodetic surveillance of upper surface of the bridge's slab (after removal of asphalt and waterproofing) and marking survey during the execution of work	Lump-sum	1		
6.2	13.11.23.	Concreting under the existing foundations with drilling and instalation of anchors - if it shows that the foundation of the existing bridge are on a higher level than the anticipated	Lump-sum	1		
6.2	13.11.24.	Temporary removal and placing back the existing instalations on the bridge	Lump-sum	1		

No.	Item description *	Type of works	UNIT OF MEASURE	QUANTITY	UNIT PRICE	TOTAL
6.2	13.11.25.	Cleaning the space under the bridge and removal of vegetation and deposited trash	Lump-sum.	1		
		Total of special works in USD:				
		Recapitulation of construction works on the bridge				
1		EARTH WORKS				
2		WOOD WORKS				
3		CONCRETE WORKS				
4		STEEL WORKS				
5		FINAL AND OTHER WORKS				
6		SPECIAL WORKS				
		TOTAL I - Construction works on the Bridge:				

II		**Riverbed regulation works**				
1		**Earth works**				
1.1		Excavation of materials for planning the riverbed	m^3	238.00		
1.2		Embedding the sand - base (10 cm) below the regulated riverbed	m^3	19.50		
		Total: Earth works				
2		**Stone works in concrete**				
2.1		Preparation of the coating and the thresholds made of stone in cement mortar with the thickness of slope d = 35 cm and bottom d = 40cm	m^3	60.00		
		Total: Stone works in concrete				
3		**Works on the construction of drains**				
3.1		Supply, transport and installation of polypropylene drain pipe ø400	pcs.	2.00		
3.2		Supply, transport and installation of drain gratings 450, with capacity of 400KN.	pcs.	4.00		

No.	Item description *	Type of works	UNIT OF MEASURE	QUANTITY	UNIT PRICE	TOTAL
3.3		Supply, transport, carrying along the trench and in a trench assembly of PVC sewer pipes with an integrated cap, class SN 8. Pipes should be manufactured in accordance with EN13476 - 2, and all in accordance with the designed diameters and specification. Pipes should be carefully laid on the prepared bed of sand, when laying pipes and installing control that they have been positioned in the designed decline without horizontal and vertical fractures. Control of falling perform with surveilling instruments in the presence of the Supervisory Authority. Perform all works in accordance with the technical regulations of the intended pipe, or in accordance with the requirements of EN 1610, in the manner intended by the manufacturer and tubes in accordance with the instructions of the Supervisory Authority.				
3.3.1		**DN/OD200**	m'	25.00		
3.4		Concreting with CC35 the base of drain latticse and outlets	m^3	3.00		
3.5		Quantity of reinforcement for the grout of drain grating	kg	120.00		
		Total: Works on making the drains				
4		**Other works:**				
4.1		Geodetic marking of points on the ground. Before beginning works, make a surveiling net. Is to be paid per m of the recorded track.	m	64.00		
		Total: Other works				
1		Earth works				
2		Stone works in concrete				
3		Works on the construction of drains				
4		Other works				
		TOTAL II Riverbed regulation works(USD)				

No.	Item description *	Type of works	UNIT OF MEASURE	QUANTITY	UNIT PRICE	TOTAL
III		**Road adjustment**				
		1 . Preparatory works				
1.1	1.06	Demolishing of existing road structure				
		- by individual BOQ	m^2	16.66		
1.2	1.07	Demolishing of existing gutters				
		- by individual BOQ	m	9.00		
1.3	1.12	Scraping of the exsting asphalt pavement with width of 5 cm	m^3	18.32		
		Total preparatory works (USD):				
		2. Earth works				
2.1	2.01	Mechanical excavation of top soil d=20cm				
		- by individual BBQ	m^3	28.71		
2.2	2.01	Mechanical excavation of the soil				
		- by individual BBQ	m^3	38.14		
2.3	2.05	Mechanical compacting of under soil				
		- by individual BBQ	m^2	92.74		
2.4	2.06	Making of embankments from the sandy gravel materials				
		- by individual BBQ	m^3	2.80		
2.5	2.11	Topsoiling of slopes by the detail from the design				
		- by individual BBQ	m^2	79.16		
		Total earth works(USD) :				

No.	Item description *	Type of works	UNIT OF MEASURE	QUANTITY	UNIT PRICE	TOTAL
		3. Pavement Sub-base				
3.1	3.01	Finishing layer of the embankment made from stone material 0/63 d =30cm				
		- by individual BBQ	m^3	39.73		
3.2	3.01	Developing the lower supporting layer made from				
		the crushed stone aggregate granularity 0-31mm				
		- by individual BBQ	m^3	13.56		
		Total pavement sub-base (USD):				
		4. Superstructure				
4.1	7.1.1.	Supply and installation of concrete				
		curbs 18/24 on a concrete base				
		- by individual BBQ	m	34.27		
4.2	7.2	Making concrete gutter with thickness of 75 cm				
		by special BBQ	m	9.00		
		Total superstructure (USD)				
		5. Asphalt pavement				
5.1	3.05	Making upper supporting layer from the bituminous				
		aggregate (BNS 32ϕ)				
		- by individual BBQ				
		width d= 10cm	m^2	64.57		
5.2	3.06	Making the road surface from the asphalt concrete AC 11s				
		- by individual BBQ				
		thickness d=5cm	m^2	688.34		
		Total asphalt pavement (USD) :				

No.	Item description *	Type of works	UNIT OF MEASURE	QUANTITY	UNIT PRICE	TOTAL
		6. Making pedestrian footpath				
6.1	3.15	Curbs 12/18 - billing and payment	m	27.84		
6.2	3.01	The lower supporting layer made of unbound stone material 0/31mm	m^3	12.06		
6.3	3.06	Road surface made of asphalt concrete, AC 8 d=3 cm	m^2	60.29		
6.4	3.08	Making the layer made of concrete CC 20 d=10 cm	m^2	60.29		
		Total pedestrian footpath(RSD) :				
		Road adjustment - Recapitulation of the works				
1		PREPARATORY WORKS				
2		EARTH WORKS				
3		LOWER SUPPORTING LAYER				
4		SUPERSTRUCTURE				
5		ASPHALT PAVEMENT				
6		MAKING PEDESTRIAN FOOTPATH				
		TOTAL III- Road adjustment				
IV		**TRAFFIC SIGNALISATION AND EQUIPMENT**				
IV.1		**Temporary traffic signalisation**				
		Temporary traffic signalisation and equipment (by specification-attached)	Lump-sum	1.00		
		Total temporary traffic signalisation USD)				

No.	Item description *	Type of works	UNIT OF MEASURE	QUANTITY	UNIT PRICE	TOTAL
IV.2		**Permanent traffic signalization and equipment**				
1		**Vertical signalization**				
1.1		Informative signs				
		Informative signs foils class 2				
		Sign "River" III-61				
		III-61 (Du.)	pcs.	2.00		
1.2		Traffic signs carriers				
		Two column pipes (m)				
		3.6	pcs.	2.00		
		Total vertical signalisation				
1.3		**Road markings**				
		White line b 0,12	m^2	20.00		
		White line b 0,12 (1+1)	m^2	2.00		
		Total road markings (RSD)				
		Total Permanent traffic signalisation (USD)				
		TOTAL IV-Traffic signalisation and equipment (USD)				

VISIBILITY OF THE DONOR SIGNBOARDS

Scetch of signboard and method statement for montage attached

No	DESCRIPTION	UoM	Quantity	Unit Price USD	TOTAL USD
I	**PREPARATORY WORKS**				
1	Mounting and dismounting of the metal pipe scaffold, fully according to standing regulations and PP measures. The scaffold shall be structurally stable, and properly grounded. Working platforms made of 5cm boards shall be placed at 2.00m of height. From the exterior, 5cm boards shall be placed vertically as guards. The scaffold shall be used throughout the montage of the signboard and untill concrete foundation reaches70% of its load bearing capacity.Same scaffold is to be used for mantage of all signboards. Calculated per m2 of vertical projection of the assembled scaffold.	m2	10.00		
	TOTAL PREPARATORY WORKS				
II	**EARTH WORKS**				
	Manual excavation of 3rd category soil for signboard foundations. The excavation shall be executed and levelled according to the design and provided elevation points. The sides shall be clean and verticaly cut and the bottom levelled. Excavated soil shall be wheelbarrowed, poured and the terrain levelled or loaded onto a lorry and transported to the town landfill. Calculated per m3 of soil, measured in autochthonous state.	m3	0.30		
	TOTAL				
III	**CONCRETE WORKS**				
	Manufacture of the unreinforced concrete foundation mark MB20;Hight of fuondation is 60cm and other two dimensions 90x40cm. Concrete should be poured over the gravel layer thickness 10cm The top surface shall be floated and the concrete shall be cured according the regulations. Unit price shall consider gravel layr and all neccessary formwork Calculated per m3 of foundation.	m3	0.22		
	TOTAL				
IV	**MONTAGE WORKS**				
	Installation of steel plates for marking of donor.Table is rectangular in shape, dimensions and materialization according to the sketch , mounted on a steel substructure consisting of steel profiles 80x80x4mm , and metal sheet d = 1mm . The total height of the table is 3m, of which 60cm is anchored into the concrete, and the lower angle of table is at a height of 1.4m above ground level. Calculated per peace of installed signboard	kom	1.00		
	TOTAL				

	TOTAL MONTAGE OF SIGNBOARDS WORK			**USD**	

Bridge over the Dubnica river on km.7+052.70 state road IB no.40
section: Vladicin Han - Surdulica

	RECAPITULATION	USD
I	CONSTRUCTION WORKS	
II	RIVERBED REGULATION WORKS	
III	ROAD ADJUSTMENT	
IV	TRAFFIC SIGNALISATION AND EQUIPMENT	
V	VISIBILITY SIGNBOARDS	

TOTAL USD:

Bridge over the river Dubnica
on the km 7+052.70 state road order no. 40
Temporary traffic signalisation and equipment

BILL OF MATERIALS

Serial number	Item description	Code and content	Unit of measure	Pieces
	VERTICAL SIGNALIZATION			
2.0	**Standard traffic signs**			
2.1	**Standard traffic signs class 2**			
	Triangle a=90 cm	I - 5.1	pcs./ ¢tsdʒ	1
		I - 5.2	pcs./ ¢tsdʒ	1
		I - 19	pcs./ ¢tsdʒ	2
	Round ϕ60 cm	II - 28	pcs./ ¢tsdʒ	2
		II - 30 (30km/h)	pcs./ ¢tsdʒ	2
		II - 30 (50km/h)	pcs./ ¢tsdʒ	2
		II - 33	pcs./ ¢tsdʒ	1
		II - 43.1	pcs./ ¢tsdʒ	1
		II - 45	pcs./ ¢tsdʒ	1
		II - 45.1	pcs./ ¢tsdʒ	1
		III - 17	pcs./ ¢tsdʒ	2
	Square ʘ=60cm			
		III - 1	pcs./ ¢tsdʒ	1
	Supplemental sign 60/25cm	IV - 1 (400m)	pcs./ ¢tsdʒ	2
4.0	**Carriers of traffic signs**			
4.1.1	One column pipes (m)			
		2.0m	pcs./ ¢tsdʒ	8
		2.1m	pcs./ ¢tsdʒ	2
		2.6m	pcs./ ¢tsdʒ	2
	Total traffic signalization			
6.0	**ROAD EQUIPMENT**			
6.1	Barriers			
	Veritcal barriers			
	Vertical barriers VII-3.2 - onesided		pcs./ ¢tsdʒ	5
	Vertical barriers VII-3.1, VII-3.2 - bothsided		pcs./ ¢tsdʒ	16
6.1.2	Frontal barrier VII-2		pcs./ ¢tsdʒ	6
6.2	Blinkers			
	Blinkers on traffic signs TS-2		pcs./ ¢tsdʒ	10
	Blinkers on traffic signs TS-3		pcs./ ¢tsdʒ	5
	Blinkers on traffic signs TS-4		pcs./ ¢tsdʒ	2
	Foundation of vertical barriers		pcs./ ¢tsdʒ	21
	Foundation for standard signs		pcs./ ¢tsdʒ	12
	Total traffic equipment			