BILL OF QUANTITIES
MAIN DESIGN OF LANDSLIDE REMEDY
ON THE STATE ROAD OF II A, SECTION: GORNJI GAJTAN - GAZDARE,
from km 124+410 to km 124+440,

No	WORKS DESCRIPTION	Unit	Quantity	Unit price	Total dinars
	I PRELIMINARY WORKS				
1	Forming of construction site, construction and installation of temporary structures, delivery and mounting of ancilliary facilities and equipment, etc.	lump sum	1		
2	Surveying	lump sum	1		
3	Clearing of undergrowth and small vegetation.	lump sum	1		
			TOTAL:		
	II EARTH AND DRAINAGE WORKS				
4	Excavation of earth from 3rd to 4th category for the purpose of constructing retaining wall. The excavation is to be done 80% mechanically, and 20% manually. The excavation is to be done with supporting. After the excavation, grade the pit bottom with accuracy of ±1.5cm and compact the subsoil to the compressibility module of Ms=15.0MPa. Transportation of excavated soil to be done up to a distance of 5km to a disposal determined by the Supervisor. Calculation per m3 of removed material.	m3	165.00		
5	Excavation of earth of 3rd and 4th category for the purpose of building stone formations along the riverbed. The excavation is to be done 80% mechanically, and 20% manually. After the excavation, grade the pit bottom and compact the subsoil to the compressibility module of Ms=15.0MPa. Transportation of excavated soil to be done up to a distance of 5km to a disposal determined by the Supervisor. Calculation per m3 of removed material.	m3	231.25		
6	Supply, filling and compaction of the sub base from gravel material to compaction degree of Ms=25MPa in a 10 cm thick layer over previously planed and compacted subsoil of the foundation joint of the RC wall. Unit price covers all necessary work, material, machinery and transportation of necessary material. 2.35*20.0=47.0m3 Calculation per m2 of constructed layer.	m2	47.00		

No	WORKS DESCRIPTION	Unit	Quantity	Unit price	Total dinars
7	Supply, transportation and incorporation of non-woven geotextile of the type 300 (300gr/m2) as a filter layer of the drainage filling behind the RC wall, in order to protect against siltation. 7.68*20=153.6m2 Calculation per m2 of incorporated material.	m2	153.60		
8	Supply and laying of HDPE corrugated double layer drain pipe, with a diameter of 300mm on the bottom of the drainage filling. The pipes are perforated on the upper side, and they are supplied with all fittings and joining material. Introduce the pipe into the RC pipe of Ø400 of the outlet of the drainage pipe. Calculation per m' of laid pipe.	m	27.30		
9	Construction of filling behind the wall from crushed stone. The size of the incorporated stone is dmax= 15cm. Tip the crushed stone, spread, arrange as good as possible, and compact in the end. The stone must be firm and clean and resistant to frost, with compressive strength of >100MPa and with good resistance properties φ>35° and granulation of Cu > 9-30. Compaction to be done by appropriate mechanical means in layers of 50-80cm. The compaction degree of the layers must be fully in accordance with SPRS U. E1.010 and designed technical requirements. The works cover the supply of material, spreading, rough and fine grading, wetting and compacting of the embankment. 2.84*20=56.8m3 Calculation per m3 of constructed embankment.	m3	56.80		
			TOTAL:		
	III CONCRETE WORKS				
10	Supply of material and construction of lean layer of concrete from unreinforced MB20 concrete with the thickness of 10 cm. Lean concrete is placed over the layer of compacted gravel. Unit price covers all necessary works, transportation and material. 2.15*20.0=43.0m3 Calculation per m2 of incorporated concrete.	m2	43.00		
11	Supply, transportation and incorporation of MB30 concrete, M100, into the foundation of the retaining wall with mechanical compaction and according to the regulations for this kind of works. The reinforcement is not calculated separately. 0.15*0.50*20.0=21.50m3 Calculation per m3 of incorporated concrete.	m3	21.50		

No	WORKS DESCRIPTION	Unit	Quantity	Unit price	Total dinars
12	Supply, transportation and incorporation of MB30 concrete, M100, into preprepared double-sided formwork for reinforced-concrete retaining wall in layers, with mechanical compaction of each layer according to applicable regulations for this kind of works. In addition to the listed, unit price also includes all preliminary works, building of formwork with all necessary works and material for its assembly and disassembly, with stiffening and transportation, weep holes and all other works, tools and material necessary for the execution of works. 1.13*20.0=22.60m3 Reinforcement is calculated separately. Calculation per m3 of incorporated concrete.	m3	22.60		
13	Construction of the RC edge cornice along the edge of crown of the retaining wall fully in accordance with the details from graphic documentation, from MB40 concrete, with frost resistance of M150. Supply of material, preparation and incorporation of reinforcement are calculated separately. 0.336*20=6.72m3 Calculation per m3 of incorporated concrete.	m3	6.72		
14	Supply of material and construction of the concrete lining of the riverbed from unreinforced MB20 concrete with the thickness of 10 cm. The concrete of the lining is placed over the layer of compacted gravel. Unit price covers all necessary works, transportation and material. This item also includes all works on the fitting of the canal with the outlet head of the existing culvert. 4.828*40.30=194.57m2 Calculation per m2 of incorporated concrete.	m2	194.57		
15	Supply of material and construction of concrete sills b/d=40/60cm in locations according to the design, from unreinforced MB20 concrete. Unit price covers all necessary works, transportation and material. 4*2.834*0.40=4.53m3 Calculation per m3 of incorporated concrete.	m3	4.53		
16	Construction of the pipe culvert from Ø400 drain pipe. The item covers the supply and laying of the Ø400 pipe fully in accordance with the SRPS U.N1.054 standard. The outlet head is constructed in accordance with the SRPS U.S4.032 standard. The quality of the pipe must comply with the SRPS U.N1.050 standard. Calculation per m' of constructed culvert.	m	1.00		

No	WORKS DESCRIPTION	Unit	Quantity	Unit price	Total dinars
17	Supply, transportation and installation of prefabricated elements of channels with a tooth for draining water from the gutters, from MB30 concrete, resistant to frost M-100. Calculation per m' of canal.	m	1.00		
	TOTAL:				
	IV REINFORCEMENT WORKS				
18	Supply, delivery, cleaning, streightening, cutting, bending and installation of B500B reinforcement in accordance with the SRPS EN10080 standard, fully according to the specifications and reinforcement schedules given in the design. 2814.66+611.48=3426.14kg Calculation per kg of incorporated reinforcement.	kg	3,426.14		
	TOTAL:				
	V STONE WORKS				
19	Supply and construction of stone formation along the right bank of the riverbed with the slope inclination of 1:1, from crushed stone, with the grain size of 30-50cm. 4.0*2.0=8.0m3 Calculation per m3 of incorporated material.	m3	373.00		
20	Construction of the riverbed lining from crushed stone with the size of 20 cm in 10 cm thick concrete. Calculation of concrete quantities is given separately. 4.828*40.30=194.57m2 Calculation per m2 of constructed lining.	m2	194.57		
	TOTAL:				
	VI OTHER WORKS				
21	Demolition of existing pavement of the road in the section planned by the design for the replacement of the pipe culvert, i.e. along the egde of the front of material replacement. The item includes the following: demolition, loading and transportation of demolished material to a disposal determined by the Supervisor within 5km. 2.70*30.0=81.0m2 Calculation per m² of demolished pavement.	m2	81.00		
22	Supply, transportation and incorporation of lower bearing course of the pavement from crushed stone aggregate of 0/31mm of continuous granulometric composition, with a thickness of 15cm in compacted state. 0.15*81.0=12.15m3 Calculation per m3 of incorporated material.	m3	12.15		

No	WORKS DESCRIPTION	Unit	Quantity	Unit price	Total dinars
23	Supply, transportation and incorporation of lower bearing course of the pavement from crushed stone aggregate of 0/63mm of continuous granulometric composition, with a thickness of 25cm in compacted state. 0.25*81.0=20.25m3 Calculation per m3 of incorporated material.	m3	20.25		
24	Supply, transportation and incorporation of the upper bitumenous base course from BNS22 (6cm thick). Calculation per m2 of completed course.	m2	81.00		
25	Supply, transportation and incorporation of wearing course of the carriageway from AB11 asphalt with the thickness of 5cm in the part of the road section which is being reconstructed and fitting into the existing carriageway. Calculation per m2 of completed course.	m2	81.00		
26	Construction of shoulders from selected material from excavation. 1.3*10.0=13.0m2 Calculation per m2 of constructed shoulder.	m2	13.00		
			TOTAL:		
VII TRAFFIC SIGNALIZATION AND ROAD FURNITURE					
28	**Horizontal signalization**				
	White unbroken line with the width of 0.12m	m2	20.00		
29	**Road furniture**				
	Guardrail H1W5	m	148.00		
	H1W5 on the structure	m	20.00		
	Oblique guradrail endinngs H1W5 L=12m	pcs.	2.00		
	Reflective studs (catadiopters)	pcs.	7.00		
30	**Temporary traffic signalization**	lump sum	1.00		
			TOTAL:		

SUMMARY:

GROUP OF WORKS	TOTAL	
I PRELIMINARY WORKS		
II EARTH AND DRAINAGE WORKS		
III CONCRETE WORKS		
IV REINFORCEMENT WORKS		
V STONE WORKS		
VI OTHER WORKS		
VII TRAFFIC SIGNALIZATION AND ROAD FURNITURE		
TOTAL:		

PRICED BILL OF QUANTITIES - MONTAGE OF THE SIGNBOARDS

Scetch of signboard and method statement for montage
attached

No	DESCRIPTION	UoM	Quantity	Unit Price	TOTAL RSD
I	**PRIPREMNO ZAVRŠNI RADOVI**				
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		
	UKUPNO PRIPREMNO ZAVRŠNI RADOVI				
II	**ZEMLJANI RADOVI**				
	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	0.5		
	UKUPNO ZEMLJANI RADOVI				
III	**BETONSKI RADOVI**				
	Manufacture of the unreinforced concrete foundation mark MB20;Hight of fuondation is 80cm and other two dimensions 90x60cm. 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	0.45		
	UKUPNO BETONSKI RADOVI				
IV	**MONTAŽERSKI RADOVI**				
	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 4m, of which 80cm is anchored into the concrete, and the lower angle of table is at a height of 2.2m above ground level. Calculated per peace of installed signboard	kom	1		
	UKUPNO MONTAŽERSKI RADOVI				

	TOTAL MONTAGE OF SIGNBOARDS WORK				

TOTAL

BoQ FOR REMEDY OF VUČJE LANDSLIDE

GAZDARE,

SECTION: VUČJE - VLADIČIN HAN

from km 124+410 to km 124+440,

I	WORKS ON REMEDIATION OF THE LANDSLIDES	
II	MONTAGE OF THE SIGNBOARDS	
	UKUPNO	