

OBJEKTI: NDERTIM RRUGA KASHAR-NYJA VAQARR, FAZA II

BILL OF QUANTITIES/PREVENTIV

No.	Description	Unit	Quantity	Unit Price	Amount
CLEARING AND GRUBBING					SubTotal 1
1	Removal of trees and stumps	pcs.	600.00		
RELOCATION OF UTILITIES & SERVICES					SubTotal 2
2	Relocation of utilities & services (including water supply, underground installations, etc.)	km	3.60		
SUM OF BILL No.1 - SITE CLEARANCE (Price Excluding VAT)			SubTotal 1+2		

No.	Description	Unit	Quantity	Unit Price	Amount
METALLIC BARRIER (GUARDRAIL)					SubTotal 1
1	Side guardrails type N2/W5 (with 2 waves in one side + accessories)	m	3,938.00		
2	Side guardrails type H1/W5 (with 2 waves in one side + accessories)	m	950.00		
3	Side guardrail type H2/W4 (with 3 waves in one side + accessories)	m	850.00		
4	Side guardrail type H2/W5 (with 3 waves in one side + accessories)	m	1,952.00		
5	Side guardrail type H3/W3 (with 3 waves in one side + accessories)	m	400.00		
6	Side guardrail type H3/W4 (with 3 waves in one side + accessories)	m	575.00		
7	Side guardrail type H3/W5 (with 3 waves in one side + accessories)	m	750.00		
8	Side guardrail type H4/W3 (with 3 waves in one side + accessories)	m	200.00		
9	Side guardrail type H4/W4 (with 3 waves in one side + accessories)	m	180.00		
10	Side guardrail type H4/W5 (with 3 waves in one side + accessories)	m	905.00		
11	Side guardrail type H4b/W1 (with 3 waves in one side + wiremesh + accessories)	m	150.00		
12	Side guardrail type H4b/W4 (with 3 waves in one side + wiremesh + accessories)	m	50.00		
13	Side guardrail type H4b/W5 (with 3 waves in one side + wiremesh + accessories)	m	50.00		
CONCRETE BARRIER (NEW JERSEY)					SubTotal 2
14	New Jersey Barrier H4/W4 (at median, h=0.81m) - motorway	m	7,800.00		
15	New Jersey Barrier H4b/W1 (at bridges, h=0.81m)	m	150.00		
16	New Jersey Barrier H4b/W2 (at overpass middle pier + accessories, h=1.20m)	m	216.00		
CRUSH CUSHION					SubTotal 3
17	Crush Cushion Class 100	pcs.	1.00		
FENCING					SubTotal 4
18	Fencing (wire mesh + gates + accessories)	m	10,300.00		
SUM OF BILL No.2 - SAFETY BARRIERS (Price Excluding VAT)			SubTotal 1+2+3+4		

No.	Description	Unit	Quantity	Unit Price	Amount
ROADSIDE CHANNELS					SubTotal 1
Reinforced Concrete Lining					
1	Reinforced Concrete C20/25 lined channel trapezoidal base width 0.5m / height 0.5m / side slope 0.75:1	m	2,731.00		
2	Reinforced Concrete C20/25 lined channel trapezoidal 0.75/0.75/0.75:1	m	1,010.00		
3	Reinforced Concrete C20/25 lined channel trapezoidal 0.9/0.75/1:1	m	752.00		
4	Reinforced Concrete C20/25 lined channel trapezoidal 1.0/1.0/0.75:1	m	276.00		
Earthworks					
5	Excavation in soft or common soils + trans auto	m3	10,577.640		
6	Filling with excavated material and compacted	m3	505.510		
PAVEMENT DRAINAGE					SubTotal 2
Motorway Concrete Gutters					
7	RC Gutter Type-1 (b=0.95m; A=0.18m ² /m; Steel=15kg/m), Concrete C20/25, XC1	m	6,565.00		
8	Gutter Type-2 (b=1.55m; A=0.55m ² /m), Concrete C20/25, XC1	m	3,398.00		
STORM DRAIN					SubTotal 3
Storm Pipes					
9	DN300mm, HDPE corrugated SN8	m	1,164.00		
10	DN375mm, HDPE corrugated SN8	m	673.00		
11	DN450mm, HDPE corrugated SN8	m	835.00		
12	DN750mm, HDPE corrugated SN8	m	311.00		
13	DN900mm, HDPE corrugated SN8	m	679.00		
14	DN1050mm, HDPE corrugated SN8	m	13.00		
Inlets					
15	Dimensions 60x60cm, Height 1.5m	pcs.	29.00		
16	Dimensions 60x60cm, Height 1.6m	pcs.	17.00		
17	Dimensions 60x60cm, Height 1.7m	pcs.	20.00		
18	Dimensions 60x80cm, Height 1.85m	pcs.	51.00		
Access Holes					
19	Dimensions 60x60cm, Height 1.5m	pcs.	2.00		
20	Dimensions 60x60cm, Height 1.6m	pcs.	2.00		
21	Dimensions 80x80cm, Height 1.85m	pcs.	2.00		
22	Dimensions 100x100cm, Height 2.0m	pcs.	1.00		
Trench Drains					
23	20x30 (Width 20cm, Height 30cm)	m	584.00		
24	20x40 (Width 20cm, Height 40cm)	m	243.00		
25	25x40 (Width 25cm, Height 40cm)	m	243.00		
26	30x50 (Width 30cm, Height 50cm)	m	168.00		
27	30x60 (Width 30cm, Height 60cm)	m	150.00		
28	35x70 (Width 35cm, Height 70cm)	m	323.00		
29	40x80 (Width 40cm, Height 80cm)	m	327.00		
BRIDGE DRAINAGE					SubTotal 4
Bridge 02					
30	Storm Pipe DN300mm downspouts	m	310.00		
DETENTION BASINS					SubTotal 5

Earthworks					
31		Excavation in soft or common soils + trans auto	m3	1,258.00	
32		Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	512.00	
33		Embankment for access ramp	m3	12.00	
34		Sedimentation basin embankment	m3	42.67	
35		Embankments slopes vegetation	m2	2,203.33	
36		Unpaved access road, width 5m	m	200.00	
CULVERTS				SubTotal 6	
Wingwalls					
37		Backfilling gravel or crushed stone	m3	1,764.45	
38		Concrete C30/37 for wingwalls	m3	381.73	
39		Steel reinforcement $\phi \geq 10$ mm for wingwalls	ton	30.56	
40		Blinding concrete C12/15 for wingwalls (t=15cm)	m2	42.55	
41		Compacted gravel base	m3	264.73	
42		Non absorbent joint filler	m3	0.54	
43		Sealing compound	L	46.68	
44		Bituminous coating of surfaces in contact with soils, for wingwalls and inlet-outlet bottom slab	m2	922.41	
45		Perforated corrugated HDPE drain pipes $\phi 200$ mm	m	121.73	
46		Lean Concrete C12/15 under drainage pipes	m3	112.27	
47		Granular material around drainage pipes	m3	20.09	
48		Geotextile around drainage pipe	m3	190.86	
Wingwall's Slab					
49		Concrete C30/37	m3	118.77	
50		Steel reinforcement $\phi \geq 10$ mm for wingwalls	ton	8.18	
51		Blinding concrete C12/15 for wingwall's slab (t=15cm)	m2	61.45	
52		Compacted gravel base	m3	361.64	
Drop Inlet					
53		Excavated material	m3	442.59	
54		Backfilling gravel or crushed stone	m3	325.59	
55		Drop Inlet Iron Step (Steps for Concrete)	pcs.	32.50	
56		Concrete C30/37 for drop inlet	m3	36.05	
57		Steel reinforcement $\phi \geq 10$ mm for drop inlet	ton	3.70	
58		Blinding concrete C12/15 for drop inlet (t=15cm)	m2	4.73	
59		Compacted gravel base	m3	22.45	
60		Waterstop at joints	m	34.27	
Scouring Protection					
61		Gabion mattress thickness 30cm	m2	53.18	
62		Gabion mattress thickness 50cm	m2	137.68	
63		Gabion box 1m3	m3	262.36	
64		Separation geotextile 280 gr/m2 (type Mactex H55.1 or equivalent)	m2	774.68	
ERZENI RIVER TRAINING WORKS				SubTotal 7	
Bridges Scour Protection					
Bridge 02					
65		Gabion mattress thickness 50cm	m2	1,811.00	
SUM OF BILL No.3 - DRAINAGE (Price Excluding VAT)				SubTotal	1+2+3+4+5+6+7

No.	Description	Unit	Quantity	Unit Price	Amount
EXCAVATION				SubTotal 1	

Motorway					
1		Excavate topsoil	m3	137,221.00	
2		Cut in soft material, free section + trans auto	m3	206,025.52	
3		Cut in medium material, free section + trans auto	m3	333,575.92	
4		Cut in hard material, free section + trans auto	m3	59,565.30	
FILLING				SubTotal 2	
Motorway					
5		Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	128,993.00	
6		Embankment with appropriate borrowed material, compacted up to 95% of modified AASHTO	m3	163,484.00	
7		Replacement of weak foundation soil with granular/rock material (50cm or 100cm thick, max. particle size $5\text{mm} \leq D \leq 100\text{mm}$), below the pavement structure in low cut sections (see the progressive cross section of motorway)	m3	47,479.00	
8		Separation geotextile 280 gr/m2 (type Mactex H55.1 or equivalent)	m2	92,558.00	
STABILISING MEASURES				SubTotal 3	
9		Earth fill for New Jersey	m3	10,571.40	
10		Perforated drainage pipe $\varnothing 200\text{mm}$ under New Jersey and along cut verges (incl. geotextile, fill material, sand/concrete layers)	m	7,545.45	
11		Slope protection measures with Polymeric Reinforced Geomat + hydroseeding (in cut slopes acc. geotechnical design report)	m2	500,793.00	
12		Slope protection measures with Steel Reinforced Geomat + hydroseeding (in cut slopes acc. geotechnical design report)	m2	86,768.00	
SUM OF BILL No.4 - EARTHWORKS AND STABILISING MEASURESE (Price Excluding VAT)				SubTotal 1+2+3	

No.	Description	Unit	Quantity	Unit Price	Amount
UNBOUND GRAVEL				SubTotal 1	
Motorway					
1	Crushed stone (5-40mm) compacted base course up to to 98% of modified AASHTO density on roadway, h=(15+15)cm	m2	143,016.00		
2	Crushed stone fine material (0-31.5mm), 98% of modified Proctor AASHTO density, h=(10+15)cm	m2	121,200.00		
3	Crushed stone fine material (0-31.5mm) for motorway verges	m3	7,889.00		
BITUMINOUS BOUND BASE COURSE (incl. prime coat)				SubTotal 2	
Motorway					
4	Thickness: 10 cm	m2	96,320.00		
BITUMINOUS BOUND BINDER COURSE (incl. tack coat)				SubTotal 3	
Motorway					
5	Thickness: 6 cm	m2	96,320.00		
WEARING COURSE BITUMINOUS CONCRETE (incl. tack coat)				SubTotal 4	

Motorway						
6		Thickness: 4 cm	m2	96,320.00		
SUM OF BILL No.5 - PAVEMENTS (Price Excluding VAT)				SubTotal 1+2+3+4		

No.	Description	Unit	Quantity	Unit Price	Amount
RESERVED LINES					
				SubTotal 1	
1	Corrugated PVC flexible pipe with double isolation, heavy type, Ø160 mm	m	30,390.00		
SUM OF BILL No.6 - CURBS, FOOTWAYS AND PAVED AREAS (Price Excluding VAT)				SubTotal 1	

No.	Description	Unit	Quantity	Unit Price	Amount
TRAFFIC SIGNS					
				SubTotal 1	
Directional and Informative Signs					
1	Informative panel 260x350cm, Al-CI3	pcs.	1		
2	Informative panel 300x400cm, Al-CI3	pcs.	1		
Warning and Regulatory Signs					
3	Circular Sign D=90cm, Al-CI3	pcs.	6		
4	Triangular Sign A=120cm, Al-CI3	pcs.	2		
5	Square Sign 90x90 cm Al-CI3 (for chevrons)	pcs.	35		
6	Square Sign 90x90 cm Al-CI3 (for bridges)	pcs.	2		
7	Square Sign 90x90 cm Al-CI3 (for lane addition or reduction)	pcs.	1		
8	Progressive distance signals of LxH 135x35cm, Al-CI3 (near highway exits)	pcs.	3		
Steel Gantry					
9	Steel gantry system L-shape	pcs.	1		
10	Steel gantry system U-shape	pcs.	1		
ROAD MARKINGS				SubTotal 2	
Painting Line Markings					
11	White thermoplastic road marking continuous line (Type A), width 25cm	m	15,300		
12	White thermoplastic road marking on central carriageway discontinues line (Type B_7.5x4.5) width 15cm (converted in continuous line)	m	1,750		
13	White thermoplastic road marking on central carriageway discontinues line (Type C_4.5x3) width 15cm (converted in continuous line)	m	1,830		
14	White thermoplastic road marking discontinues line (Type D_3x3) width 25cm (converted in continuous line)	m	40		
Painting of Marked Areas					
15	White bicomponent paint for traffic islands and zebra	m2	175.84		
Painting of Arrows or Lettering					
16	White bicomponent paint for straightway arrow (7.5m)	pcs.	27.00		
17	White bicomponent paint for left/right turn arrow (7.5m)	pcs.	11.00		
18	White bicomponent paint for straightway and left/right turn arrow (7.5m)	pcs.	4.00		

19		White bicomponent paint for fast left/right turn arrow	pcs.	8.00		
20		White bicomponent paint for road text/sign markings	m2	125.00		
Road Studs						
21		Aluminum 10x10cm Road Studs (Cat eyes) one direction, mounted in centerline of carriageway every 25m	pcs.	650.00		
SUM OF BILL No.7 - TRAFFIC SIGNS AND ROAD MARKINGS				SubTotal 1+2		
(Price Excluding VAT)						

No.	Description	Unit	Quantity	Unit Price	Amount
EARTHWORKS					
					SubTotal 1
1	Cutting for foundations in soft or common soils	m3	1,200.00		
2	Backfill of foundations	m3	480.00		
3	Backfill adjoining to abutments and walls	m3	6,866.00		
4	Filter layer behind abutment and walls (Granular filler)	m3	9.00		
5	Geotextile	m2	33.00		
					SubTotal 2
DRAINAGE					
6	Drain Ø200mm behind abutment or walls	m	100.00		
					SubTotal 3
DEEP FOUNDATIONS					
7	Drilling of Piles Ø. 1000mm	m	1,440.00		
8	Concrete C25/30 for Bored Piles	m3	1,159.00		
9	Reinforcement of Piles	t	205.00		
					SubTotal 4
CONCRETE AND REINFORCEMENT					
Concrete					
10	Lean/Blinding Concrete C8/10.	m2	1,624.00		
11	Concrete C8/10 for filling adjoining to abutment and pile foundations.	m3	1,400.00		
12	Concrete C25/30 for foundations.	m3	1,429.00		
13	Concrete C30/37 for pier and abutment elevation	m3	1,738.00		
14	Concrete C30/37 for approach slabs and sidewalks.	m3	161.00		
15	Concrete C30/37 for deck slabs and cross-beams.	m3	740.00		
16	Reinforcement rebars B500C	t	933.00		
					SubTotal 5
PRECAST UNITS					
PRE or POST-TENSIONED GIRDER					
17	Precast prestressed Girders: length 29.00m	pcs	64.00		
					SubTotal 6
WATERPROOFING					
18	Bituminous coating of surfaces in contact with soils	m2	3,291.00		
19	Waterproofing for deck or top slab	m2	2,860.00		
					SubTotal 7
EQUIPMENT					
Elastomeric bearings					
20	Of type E-Link C2E 400x800x(156) or equivalent	pcs	32.00		
21	Of type E-Link C2E 400x400x(84) or equivalent	pcs	96.00		
22	Of type AGFLEXJ 250 or equivalent	m	48.00		
Sum of Bill 8.1 - Structures - Bridge No.02 (Price Excluding VAT)				SubTotal	
				1+2+3+4+5+6+7	

No.	Description	Unit	Quantity	Unit Price	Amount
EARTHWORKS					SubTotal 1
1	Cutting for foundations in soft or common soils	m ³	562.00		
2	Top Soil Removal	m ³	1120.00		
3	Backfill adjoining to box structure	m ³	4511.00		
4	Backfill adjoining to wingwalls	m ³	1013.00		
5	Road construction backfill	m ³	11757.00		
6	Ground improvement layer, compacted gravel layer under box structure, wingwalls and inlet-outlet bottom slab	m ³	239.00		
7	Geotextile	m ²	508.00		
DRAINAGE					SubTotal 2
8	Filling material of drainage system	m ³	10.00		
9	Filling material of drainage system for Wingwalls	m ³	6.00		
10	Geotextile of drainage system	m ²	179.00		
11	Geotextile of drainage system for Wingwalls	m ²	53.00		
12	Drain Ø200mm behind walls	m	72.00		
13	Drain Ø200mm behind walls for Wingwalls	m	31.00		
14	Lean/Blinding Concrete C12/15 for filling under drain	m ³	141.00		
15	Lean/Blinding Concrete C12/15 for filling under drain of Wingwalls.	m ³	43.00		
CONCRETE AND REINFORCEMENT					SubTotal 3
Concrete					
16	Lean/Blinding Concrete C12/15 under approach slabs (t=15cm)	m ²	448.00		
17	Lean/Blinding Concrete C12/15 under box structure (t=15cm)	m ²	380.00		
18	Lean/Blinding Concrete C12/15 under wingwalls foundation and inlet-outlet bottom slab (t=15cm)	m ²	277.00		
19	Concrete C30/37 for approach slabs	m ³	112.00		
20	Concrete C30/37 for box structure	m ³	691.00		
21	Concrete C30/37 for wingwalls and inlet-outlet bottom slab	m ³	200.00		
Reinforcement					
22	Reinforcement rebars B500C for box structure	t	137.60		
23	Reinforcement rebars B500C for approach slab	t	22.49		
24	Reinforcement rebars B500C for wingwalls and inlet-outlet bottom slab	t	20.48		
WATERPROOFING					SubTotal 4
25	Waterproofing for top slab	m ²	520.00		
26	Concrete C20/25 for the protecting of waterproofing (min7cm) with galvanized weldedmesh	m ³	26.00		
27	Surface finish for inside box	m ²	705.00		
28	Antipollution coating for inside box	m ²	705.00		
29	Bituminous coating of surfaces in contact with soils, for approach slabs	m ²	567.00		
30	Bituminous coating of surfaces in contact with soils, for box structures	m ²	362.00		
31	Bituminous coating of surfaces in contact with soils, for wingwalls and inlet-outlet bottom slab	m ²	295.00		
32	Waterstop at Construction joints	m	144.00		
Expansion joint					
33	Joint sealing material	l	26.00		

34		Non absorbent joint filler	m ³	0.51		
35		Waterstop	m	34.00		
Sum of Bill 8.2- Structures - Underpass No.06 and Wingwalls (Price Excluding VAT)			SubTotal 1+2+3+4			

No.	Description	Unit	Quantity	Unit Price	Amount	
EARTHWORKS						
					SubTotal 1	
1	Cutting for foundations in soft or common soils	m ³	917.40			
2	Backfill adjoining to retaining walls	m ³	975.48			
3	Filter layer behind walls (Granular filler)	m ³	130.68			
4	Ground improvement layer, compacted gravel layer under retaining wall foundation	m ³	291.60			
DRAINAGE						
					SubTotal 2	
5	Filling material of drainage system	m ³	42.00			
6	Geotextile of drainage system	m ²	330.00			
7	Drain Ø200mm behind walls	m	63.00			
8	Drain Ø100mm for walls	m	38.40			
10	Lean/Blinding Concrete C12/15 for filling under drain	m ³	69.60			
CONCRETE AND REINFORCEMENT						
					SubTotal 3	
Concrete						
11	Lean/Blinding Concrete C12/15 under retaining wall foundation (t=15cm)	m ²	240.00			
12	Concrete C30/37 for retaining wall	m ³	303.60			
Reinforcement						
13	Reinforcement rebars B500C for box structure	t	22.38			
WATERPROOFING						
					SubTotal 4	
14	Bituminous coating of surfaces in contact with soils, for box structures	m ²	596.40			
15	Waterstop at Construction joints	m	12.70			
Expansion joint						
16	Joint sealing material	l	30.00			
17	Non absorbent joint filler	m ³	0.49			
18	Waterstop	m	30.80			
Sum of Bill 8.3- STRUCTURES - RETAINING WALL - 06 (Price Excluding VAT)			SubTotal 1+2+3+4			

No.	Description	Unit	Quantity	Unit Price	Amount
EARTHWORKS					
					SubTotal 1
1	Cutting for foundations in soft or common soils	m ³	924.00		
2	Backfill adjoining to retaining walls	m ³	1,367.52		
3	Filter layer behind walls (Granular filler)	m ³	121.44		
4	Ground improvement layer, compacted gravel layer under retaining wall foundation	m ³	264.00		

		DRAINAGE			SubTotal 2	
5		Filling material of drainage system	m ³	33.60		
6		Geotextile of drainage system	m ²	264.00		
7		Drain Ø200mm behind walls	m	50.40		
8		Drain Ø100mm for walls	m	12.00		
9		Lean/Blinding Concrete C12/15 for filling under drain	m ³	67.20		
		CONCRETE AND REINFORCEMENT			SubTotal 3	
		Concrete				
10		Lean/Blinding Concrete C12/15 under retaining wall foundation (t=15cm)	m ²	230.40		
11		Concrete C30/37 for retaining wall	m ³	379.20		
		Reinforcement				
12		Reinforcement rebars B500C for box structure	t	30.38		
		WATERPROOFING			SubTotal 4	
13		Bituminous coating of surfaces in contact with soils, for box structures	m ²	600.00		
14		Waterstop at Construction joints	m	10.65		
		Expansion joint				
15		Joint sealing material	l	29.00		
16		Non absorbent joint filler	m ³	0.47		
17		Waterstop	m	26.70		
		Sum of Bill 8.4 - STRUCTURES - RETAINING WALL - 07 (Price Excluding VAT)			SubTotal 1+2+3+4	

No.	Description	Unit	Quantity	Unit Price	Amount	
		EARTHWORKS			SubTotal 1	
1	Cutting for foundations in soft or common soils	m ³	805.00			
2	Backfill adjoining to retaining walls	m ³	1,199.80			
3	Filter layer behind walls (Granular filler)	m ³	115.78			
4	Ground improvement layer, compacted gravel layer under retaining wall foundation	m ³	235.61			
		DRAINAGE			SubTotal 2	
5	Filling material of drainage system	m ³	38.57			
6	Geotextile of drainage system	m ²	303.05			
7	Drain Ø200mm behind walls	m	57.86			
8	Drain Ø100mm for walls	m	32.80			
10	Lean/Blinding Concrete C12/15 for filling under drain	m ³	63.34			
		CONCRETE AND REINFORCEMENT			SubTotal 3	
		Concrete				
11	Lean/Blinding Concrete C12/15 under retaining wall foundation (t=15cm)	m ²	208.47			
12	Concrete C30/37 for retaining wall	m ³	333.29			
		Reinforcement				
13	Reinforcement rebars B500C for box structure	t	26.07			
		WATERPROOFING			SubTotal 4	

14	Bituminous coating of surfaces in contact with soils, for box structures	m ²	560.35		
15	Waterstop at Construction joints	m	12.35		
Expansion joint					
16	Joint sealing material	l	40.00		
17	Non absorbent joint filler	m ³	0.60		
18	Waterstop	m	34.60		
Sum of Bill 8.5 - STRUCTURES - RETAINING WALL - 08 (Price Excluding VAT)			SubTotal 1+2+3+4		

No.	Description	Unit	Quantity	Unit Price	Amount
EARTHWORKS					
					SubTotal 1
1	Cutting for foundations in soft or common soils	m ³	118.70		
2	Backfill adjoining to retaining walls	m ³	75.54		
3	Filter layer behind walls (Granular filler)	m ³	22.78		
4	Ground improvement layer, compacted gravel layer under retaining wall foundation	m ³	43.38		
DRAINAGE					
					SubTotal 2
5	Filling material of drainage system	m ³	7.63		
6	Geotextile of drainage system	m ²	59.95		
7	Drain Ø200mm behind walls	m	11.45		
8	Drain Ø100mm for walls	m	5.45		
9	Lean/Blinding Concrete C12/15 for filling under drain	m ³	10.90		
CONCRETE AND REINFORCEMENT					
					SubTotal 3
Concrete					
10	Lean/Blinding Concrete C12/15 under retaining wall foundation (t=15cm)	m ²	32.00		
11	Concrete C30/37 for retaining wall	m ³	38.37		
Reinforcement					
12	Reinforcement rebars B500C for box structure	t	2.88		
WATERPROOFING					
					SubTotal 4
13	Bituminous coating of surfaces in contact with soils, for box structures	m ²	81.75		
Sum of Bill8.6 - STRUCTURES - RETAINING WALL - 09 (Price Excluding VAT)			SubTotal 1+2+3+4		
Sum of Bill NR. 8- STRUCTURES - (Price Excluding VAT)			SubTotal (8.1+8.2+8.3+8.4+8.5+8.6)		

No.	Description	Unit	Quantity	Unit Price	Amount
REINFORCED EARTH RETAINING WALLS (RE)					
					SubTotal
Reinforced Earth Retaining Wall (RE02) - TMS		Left	Quantity	SubTotal 1	
Side (Ch. 4+200 - Ch. 4+400)					

1		Blocks of TMS 3x2x1 (including C-rings + Lacing wire + geotextile 180gr/m2)	pcs.	964.40		
2		Geogrid 150kN/m2	m2	11,592.00		
3		Geogrid 300kN/m2	m2	4,992.00		
4		Excavation for RE retaining wall in soft or common soils + trans auto	m3	7,208.00		
5		Foundation improvement layer for RE retaining wall (min. 0.5m thick, max. particle size D ≤ 80mm)	m3	1,208.00		
6		Backfill material behind RE retaining wall (stones size 10mm ≤ Dgab ≤ 200mm)	m3	15,072.00		
7		Filling with quarries material / previously excavated material (similar to road body)	m3	1,756.00		
8		Configuration concrete C20/25	m3	508.00		
9		Monitoring Instruments (movement markers, 3D targets, steel anchoring plate, etc.)	L.S.	1.00		
Reinforced Earth Retaining Wall (RE03) - TMS			Left Side	Quantity	SubTotal 2	
				(Ch. 4+605 - Ch. 4+760)		
10		Blocks of TMS 3x2x1 (including C-rings + Lacing wire + geotextile 180gr/m2)	pcs.	743.00		
11		Geogrid 150kN/m2	m2	8,830.00		
12		Geogrid 300kN/m2	m2	3,670.00		
13		Geogrid 500kN/m2	m2	380.00		
14		Excavation for RE retaining wall in soft or common soils + trans auto	m3	4,780.00		
15		Foundation improvement layer for RE retaining wall (min. 0.5m thick, max. particle size D ≤ 80mm)	m3	1,000.00		
16		Backfill material behind RE retaining wall (stones size 10mm ≤ Dgab ≤ 200mm)	m3	11,900.00		
17		Filling with quarries material / previously excavated material (similar to road body)	m3	900.00		
18		Configuration concrete C20/25	m3	310.00		
19		Monitoring Instruments (movement markers, 3D targets, steel anchoring plate, etc.)	L.S.	1.00		
Reinforced Earth Retaining Wall (RE04) - TMS			Left Side	Quantity	SubTotal 3	
				(Ch. 7+150 - Ch. 7+325)		
20		Blocks of TMS 3x2x1 (including C-rings + Lacing wire + geotextile 180gr/m2)	pcs.	571.00		
21		Geogrid 150kN/m2	m2	8,010.00		
22		Geogrid 300kN/m2	m2	660.00		
23		Excavation for RE retaining wall in soft or common soils + trans auto	m3	9,580.00		
24		Foundation improvement layer for RE retaining wall (min. 0.5m thick, max. particle size D ≤ 80mm)	m3	1,370.00		
25		Backfill material behind RE retaining wall (stones size 10mm ≤ Dgab ≤ 200mm)	m3	8,270.00		
26		Filling with quarries material / previously excavated material (similar to road body)	m3	3,570.00		
27		Configuration concrete C20/25	m3	440.00		
28		Monitoring Instruments (movement markers, 3D targets, steel anchoring plate, etc.)	L.S.	1.00		
Reinforced Earth Retaining Wall (RE05) - TMS			Right	Quantity	SubTotal 4	
				(Ch. 8+084 - Ch. 8+275)		
37		Blocks of TMS 3x2x1 (including C-rings + Lacing wire + geotextile 180gr/m2)	pcs.	1,175.00		
38		Geogrid 150kN/m2	m2	12,780.00		
39		Geogrid 300kN/m2	m2	2,360.00		
40		Geogrid 500kN/m2	m2	3,330.00		
41		Excavation for RE retaining wall in soft or common soils + trans auto	m3	18,310.00		
42		Foundation improvement layer for RE retaining wall (min. 0.5m thick, max. particle size D ≤ 80mm)	m3	1,590.00		

43		Backfill material behind RE retaining wall (stones size 10mm ≤ Dgab ≤200mm)	m3	20,660.00		
44		Filling with quarries material / previously excavated material (similar to road body)	m3	8,420.00		
45		Configuration concrete C20/25	m3	360.00		
46		Monitoring Instruments (movement markers, 3D targets, steel anchoring plate, etc.)	L.S.	1.00		
SUM OF BILL No.9 - REINFORCED EARTH RETAINING WALLS (MSEW)				SubTotal 1+2+3+4		
(Price Excluding VAT)						

No.	Description	Unit	Quantity	Unit Price	Amount
LANDSCAPING ON MOTORWAY BODY				SubTotal 1	
1	Placing top soil and applying grass seed on the embankment slopes and rolling	m2	38,291.00		
2	Planting decorative shrubs over New Jersey (Juniperus V.18 group of 3 every 6.6m)	pcs.	584.00		
PLANTING TREES				SubTotal 2	
3	Planting decorative trees along the sidewalks of local roads (Tilia Cordata, d=16-18cm, every 6m)	pcs.	126.00		
PLANTING GREEN AREAS				SubTotal 3	
4	Planting decorative flower seedings	pcs.	334.00		
5	Planting decorative trees	pcs.	252.00		
6	Planting decorative shrubs Oleander (Nerium oleander)	pcs.	262.00		
7	Planting clambering plant	pcs.	669.00		
8	Planting trees (Abies alba, d~10cm)	pcs.	187.00		
SUM OF BILL No.10 - LANDSCAPING (Price Excluding VAT)				SubTotal 1+2+3	

No.	Description	Unit	Quantity	Unit Price	Amount
NOISE BARRIER PANELS				SubTotal 1	
1	Noise barriers on motorway embankment	m2	3,600.00		
NOISE BARRIER FOUNDATION				SubTotal 2	
2	Pile drilling with machinery φ600, L=6m in soft soil of road embankment	m	1,605.00		
3	Excavation for foundations in soft or common soils	m3	150.00		
4	Transport of excavated material up to 5km	m3	455.00		
5	Steel reinforcement B500C for piles	ton	50.60		
6	Steel reinforcement B500C for pile cap	ton	37.90		
7	Concrete structures C30/37 for driven pile	m3	455.00		
8	Concrete structures C30/37 for pile cap	m3	395.00		
9	Concrete structures C12/15	m3	65.00		
SUM OF BILL No.11 - NOISE BARRIERS (Price Excluding VAT)				SubTotal 1+2	

No.	Description	Unit	Quantity	Unit Price	Amount
SITE CLEARANCE				SubTotal 1	
Clearing & Grubbing					

1		General site clearance and grubbing	m2	3,705.00		
SAFATY BARRIERS				SubTotal 2		
Metallic Barrier (Guardrail)						
2		Side guardrails type N1/W2 (with 2 waves in one side + accessories)	ml	156.00		
DRAINAGE				SubTotal 3		
Culverts						
Barrel						
3		Excavated material	m3	712.88		
4		Backfilling with sand-gravel compacted to 98% Mod. Proctor	m3	164.45		
5		Concrete C 30/37 for barrel	m3	118.87		
6		Steel reinforcement $\phi \geq 10$ mm for barrel	ton	15.10		
7		Blinding concrete C12/15 thickness 15cm	m3	19.92		
8		Waterstop-at CJ	m	72.00		
9		Geotextile mesh	m2	221.20		
10		Double asphalt coating for barrel	m2	110.40		
11		Waterproofing with special waterproofing membrane	m2	194.89		
12		Concrete C20/25 for the protection of waterproofing (min 7cm) with galvanized welded mesh	m3	9.18		
13		Perforated Concrete drain pipes $\phi 200$ mm	m	72.00		
14		Lean Concrete C12/15 under drainage pipe	m3	39.54		
15		Granular material around drainage pipe	m3	12.24		
16		Geotextile around drainage pipe	m2	126.00		
Apex						
17		Concrete C 30/37 for apex	m3	0.21		
18		Steel reinforcement $\phi \geq 10$ mm for apex	ton	0.02		
Approach Slab						
19		Steel reinforcement $\phi \geq 10$ mm for slab	ton	2.00		
20		Concrete C 30/37 for slab	m3	26.10		
21		Blinding concrete C12/15 thickness 15cm	m3	15.70		
22		Double asphalt coating for slab	m ²	112.90		
Wingwalls						
23		Backfilling gravel or crushed stone	m3	105.84		
24		Concrete C30/37 for wingwalls	m3	30.04		
25		Steel reinforcement $\phi \geq 10$ mm for wingwalls	ton	1.88		
26		Blinding concrete C12/15	m3	3.32		
27		Compacted gravel base	m3	21.48		
28		Non absorbent joint filler	m3	0.06		
29		Sealing compound	L	4.92		
30		Double asphalt coating for walls	m2	81.08		
31		Perforated Concrete drain pipes $\phi 200$ mm	ml	12.28		
32		Lean Concrete C12/15 under drainage pipes	m3	7.84		
33		Granular material around drainage pipes	m3	2.04		
34		Geotextile around drainage pipe	m3	18.72		
Wingwall's Slab						
35		Concrete C30/37	m3	16.36		
36		Steel reinforcement $\phi \geq 10$ mm for wingwalls	ton	1.15		
37		Blinding concrete C12/15	m3	8.47		
38		Compacted gravel base	m3	50.63		
EARTHWORKS				SubTotal 4		
Excavation						
39		Excavate topsoil (30cm)	m3	2,322.50		
40		Cut in hard material, free section + trans auto	m3	1,055.70		
41		Cut in medium material, free section + trans auto	m3	5,278.28		
42		Cut in soft material, free section + trans auto	m3	4,222.62		
Filling						

43		Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	838.71		
44		Embankment with appropriate borrowed material, compacted up to 95% of modified AASHTO	m3	559.14		
PAVEMENTS				SubTotal 5		
Unbound Gravel						
45		Crushed stone fine material (0-31.5mm), 98% of modified Proctor AASHTO density, h=15cm	m2	2,518.90		
46		Crushed stone (5-40mm) compacted base course up to to 98% of modified AASHTO density on roadway, h=(10+10)cm	m2	4,019.90		
47		Crushed stone fine material (0-31.5mm) for verges	m3	107.00		
Bituminous Bound Binder Course (incl. tack coat)						
48		Thickness: 6 cm	m2	2,331.53		
Bituminous Bound Wearing Course (incl. tack coat)						
49		Thickness: 4 cm	m2	2,296.67		
TRAFFIC SIGNS AND ROAD MARKINGS				SubTotal 6		
Warning And Regulatory Signs						
50		Circular Sign D=40cm, Al-CI2	pcs.	3.00		
51		STOP sign D=60 cm Al-CI2	pcs.	1.00		
52		Triangular Sign A=60cm, Al-CI2	pcs.	4.00		
Painting Line Markings						
53		White thermoplastic road marking continuous line (Type A), width 12cm	ml	1,136.00		
TOTAL Sum of Bills Nr.12.1 LR 07a (Price Excluding VAT)				SubTotal 1+2+3+4+5+6		

No.	Description	Unit	Quantity	Unit Price	Amount
SITE CLEARANCE				SubTotal 1	
Clearing & Grubbing					
1	General site clearance and grubbing	m2	5,550.00		
SAFATY BARRIERS				SubTotal 2	
Metallic Barrier (Guardrail)					
2	Side guardrails type N1/W2 (with 2 waves in one side + accessories)	ml	457.00		
DRAINAGE				SubTotal 3	
Culverts					
Barrel					
3	Excavated material	m3	507.68		
4	Backfilling with sand-gravel compacted to 98% Mod. Proctor	m3	101.53		
5	Concrete C 30/37 for barrel	m3	105.73		
6	Steel reinforcement $\phi \geq 10$ mm for barrel	ton	9.64		
7	Blinding concrete C12/15 thickness 15cm	m3	15.74		
8	Waterstop-at CJ	m	82.00		
9	Geotextile mesh	m2	179.10		
10	Double asphalt coating for barrel	m2	118.22		
11	Waterproofing with special waterproofing membrane	m2	154.96		
12	Concrete C20/25 for the protection of waterproofing (min 7cm) with galvanized weldedmesh	m3	6.44		
13	Perforated Concrete drain pipes $\phi 200$ mm	m	82.00		
14	Lean Concrete C12/15 under drainage pipe	m3	40.70		
15	Granular material around drainage pipe	m3	13.94		

16		Geotextile around drainage pipe	m2	143.50		
Approach Slab						
17		Steel reinforcement $\phi \geq 10\text{mm}$ for slab	ton	1.72		
18		Concrete C 30/37 for slab	m3	22.00		
19		Blinding concrete C12/15 thickness 15cm	m3	13.20		
20		Double asphalt coating for slab	m ²	93.60		
Wingwalls						
21		Backfilling gravel or crushed stone	m3	52.47		
22		Concrete C30/37 for wingwalls	m3	13.74		
23		Steel reinforcement $\phi \geq 10\text{mm}$ for wingwalls	ton	6.53		
24		Blinding concrete C12/15	m3	34.66		
25		Compacted gravel base	m3	9.32		
26		Non absorbent joint filler	m3	0.03		
27		Sealing compound	L	2.22		
28		Double asphalt coating for walls	m2	26.30		
29		Perforated Concrete drain pipes $\phi 200\text{mm}$	ml	5.55		
30		Lean Concrete C12/15 under drainage pipes	m3	3.58		
31		Granular material around drainage pipes	m3	0.92		
32		Geotextile around drainage pipe	m3	8.60		
Wingwall's Slab						
33		Concrete C30/37	m3	3.29		
34		Steel reinforcement $\phi \geq 10\text{mm}$ for wingwalls	ton	2.23		
35		Blinding concrete C12/15	m3	1.70		
36		Compacted gravel base	m3	10.32		
Drop Inlet						
38		Excavated material	m3	78.60		
39		Backfilling gravel or crushed stone	m3	17.66		
40		Drop Inlet Step Irons (Steps for Concrete)	pcs	27.00		
41		Concrete C30/37 for drop inlet	m3	23.45		
42		Steel reinforcement $\phi \geq 10\text{mm}$ for drop inlet	ton	3.01		
43		Blinding concrete C12/15	m3	3.24		
44		Compacted gravel base	m3	21.22		
45		Waterstop-at CJ	ml	28.40		
EARTHWORKS				SubTotal 4		
Excavation						
46		Excavate topsoil (30cm)	m3	2,734.70		
47		Cut in hard material, free section + trans auto	m3	638.30		
48		Cut in medium material, free section + trans auto	m3	3,191.50		
49		Cut in soft material, free section + trans auto	m3	2,553.20		
Filling						
50		Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	1,062.00		
51		Embankment with appropriate borrowed material, compacted up to 95% of modified AASHTO	m3	708.00		
PAVEMENTS				SubTotal 5		
Unbound Gravel						
52		Crushed stone fine material (0-31.5mm), 98% of modified Proctor AASHTO density, h=15cm	m2	3,649.10		
53		Crushed stone (5-40mm) compacted base course up to to 98% of modified AASHTO density on roadway, h=(10+10)cm	m2	5,292.00		
54		Crushed stone fine material (0-31.5mm) for verges	m3	159.77		
Bituminous Bound Binder Course (incl. tack coat)						
55		Thickness:6 cm	m2	3,423.72		
Bituminous Bound Wearing Course (incl. tack coat)						
56		Thickness: 4 cm	m2	3,371.78		

TRAFFIC SIGNS AND ROAD MARKINGS					SubTotal 6	
Warning And Regulatory Signs						
57		Circular Sign D=40cm, Al-Cl2	pcs.	4.00		
58		Triangular Sign A=60cm, Al-Cl2	pcs.	4.00		
Painting Line Markings						
59		White thermoplastic road marking continuous line (Type A), width 12cm	ml	1,661.00		
60		White thermoplastic road marking discontinues line (Type D_1x1) width 12cm (converted in continuous line)	ml	20.00		
ELECTRICAL LIGHTING					SubTotal 7	
Electrical Lighting of Underpass UP06						
61		S.I Industrial LED luminaries, 58 W, 7274lm, 4000K, CRI80, IP65, IK08, with dimension (L.1593 x W.190 x H92) mm, 230V, Ta -40°C +55°C, with silicone rubber gasket. Diffuser: In 5 mm thick, shock resistant, tempered glass - Painting: In polyester powder - Lifetime: 50.000h to 80% L80B20	pcs	39.00		
62		S.I Concrete manhole for groundin system, with dim 40x40x40 cm, with cast iron covering heavy type	pcs	1.00		
63		S.I Guain flexible electric pipe with double isolation $\phi = 16$ mm	ml	30.00		
64		S.I Earthing electrode H=2.0 ml, 50x50x5mm, galvanised for grounding of electric lighting panel	pcs	6.00		
65		S.I Bare copper conductor S=1x25 mm ²	ml	40.00		
66		S.I External Earthing clamp, tape-electrode-conductor up to section S = 25 mm ²	pcs	6.00		
67		S.I Derivation box, alluminium type, dim. (L.130xW.59xH.44) mm, IP65, completed with fittings and insulating gel for storage of insulation	pcs	26.00		
68		S.I Rigid steel metallic conduit, for surface installation, $\phi = 25$ mm, completed with installation accessories (elbows, couplings, metal straps, metal expansion plug, screws etc..)	ml	330.00		
69		S.I Low voltage multicore copper cable, G16 rubber insulated, PVC sheathed, Un = 0,6/1 kV, FG16OR16 type, S = 4x2.5 mm ²	ml	200.00		
70		S.I Low voltage multicore copper cable, G16 rubber insulated, PVC sheathed, Un = 0,6/1 kV, FG16OR16 type, S = 3x2.5 mm ²	ml	340.00		
71		S.I Low Voltage Road lighting distribution electrical panel, IP 66, with door and includes all accessories, and corpuscular relay	pcs	1.00		
72		Excavation of Low Voltage cable route channel as detail	m3	12.00		
73		Backfilling with existing materials for Low Voltage cables in the channel route	m3	10.00		
TOTAL Sum of Bills No.12.2 (Local Road 07b)(Price Excluding VAT)				SubTotal 1+2+3+4+5+6+7		

No.	Description	Unit	Quantity	Unit Price	Amount
SITE CLEARANCE					SubTotal 1
Clearing & Grubbing					
1	General site clearance and grubbing	m2	498.00		
EARTHWORKS					SubTotal 2
Excavation					
2	Excavate topsoil (30cm)	m3	176.40		
3	Cut in hard material, free section + trans auto	m3	15.30		

4		Cut in medium material, free section + trans auto	m3	76.18		
5		Cut in soft material, free section + trans auto	m3	60.95		
Filling						
6		Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	112.02		
7		Embankment with appropriate borrowed material, compacted up to 95% of modified AASHTO	m3	74.68		
CURBS, FOOTWAYS AND PAVED AREAS					SubTotal 3	
Concrete Curbing						
8		Concrete C20/25, for concrete curb (a=0.3m; b=0.2; V=0.0589m3/ml)	m3	566.40		
9		Concrete C20/25, for concrete curb foundation (a=0.15m; b=0.42; V=0.0845m3/ml)	m3	562.74		
TOTAL Sum of Bills NO.12.3 (LR 07c) (Price Excluding VAT)				SubTotal 1+2+3		
TOTAL Sum of Bills NO.12 . (LR 07c) (Price Excluding VAT)				SubTotal 12.1+12.2+12.3		
SUBTOTAL : Subtotal (N0.1 - N0.12)						
Contingencies and Risks 5% of Subtotal :						
SUBTOTAL (including Contingencies 5%):						
VAT at 20%						
GRAND TOTAL (including Contingencies 5% and VAT 20%)						