

OBJEKTI: NDERTIM RRUGA KASHAR-NYJA VAQARR, FAZA I

BILL OF QUANTITIES/PREVENTIV

SITE CLEARANCE						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
CLEARING AND GRUBBING					SubTotal 1	
1		Removal of trees and stumps	pcs.	600		
DEMOLITION OF EXISITNG BUILDINGS					SubTotal 2	
2		Demolition of private buildings (single story including basement)	m2	1,700		
3		Demolition of private buildings (multi story including basement)	m2	903		
4		Demolition of industrial buildings	m2	7,636		
5		Demolition of greenhouses	m2	2,950		
DEMOLITION OF EXISTING PAVEMENT					SubTotal 3	
6		Demolition of existing asphalt pavement	m2	2,500		
DEMOLITION OF EXISTING CONCRETE STRUCTURES					SubTotal 4	
7		Demolition of existing bridges and culverts	m3	200		
8		Demolition of other existing concrete structures (booths, sidewalks, surrounding walls etc.)	m3	60		
RELOCATION OF UTILITIES & SERVICES					SubTotal 5	
9		Relocation of utilities & services (including water supply, underground installations, etc.)	km	4.1		
SUM OF BILL No.1 - SITE CLEARANCE (Price Excluding VAT)					SubTotal 1+2+3+4+5	

SAFETY BARRIERS						
No.	TS Code	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	425		
2		Side guardrails type H1/W5 (with 2 waves in one side + accessories)	m	200		
3		Side guardrail type H2/W4 (with 3 waves in one side + accessories)	m	895		
4		Side guardrail type H2/W5 (with 3 waves in one side + accessories)	m	4,020		
5		Side guardrail type H3/W4 (with 3 waves in one side + accessories)	m	675		
6		Side guardrail type H3/W5 (with 3 waves in one side + accessories)	m	975		
7		Side guardrail type H4/W4 (with 3 waves in one side + accessories)	m	175		
8		Side guardrail type H4/W5 (with 3 waves in one side + accessories)	m	820		
9		Side guardrail type H4b/W1 (with 3 waves in one side + wiremesh + accessories)	m	106		
10		Side guardrail type H4b/W4 (with 3 waves in one side + wiremesh + accessories)	m	115		

11		Side guardrail type H4b/W5 (with 3 waves in one side + wiremesh + accessories)	m	235		
		CONCRETE BARRIER (NEW JERSEY)			SubTotal 2	
12		New Jersey Barrier H4/W4 (at median, h=0.81m) - motorway	m	8,185		
13		New Jersey Barrier H4b/W1 (at bridges, h=0.81m)	m	106		
14		New Jersey Barrier H4b/W2 (at overpass middle pier + accessories, h=1.20m)	m	210		
		FENCING			SubTotal 3	
15		Fencing (wire mesh + gates + accessories)	m	10,000		
SUM OF BILL No.2 - SAFETY BARRIERS (Price Excluding VAT)					SubTotal 1+2+3	

DRAINAGE						
No.	TS Code	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	4,322		
2		Reinforced Concrete C20/25 lined channel trapezoidal 0.75/0.75/0.75:1	m	810		
3		Reinforced Concrete C20/25 lined channel trapezoidal 0.9/0.75/1:1	m	168		
Earthworks						
4		Excavation in soft or common soils + trans auto	m3	11,755.4		
5		Filling with excavated material and compacted	m3	561.8		
PAVEMENT DRAINAGE					Subtotal 2	
Motorway Concrete Gutters						
6		RC Gutter Type-1 (b=0.95m; A=0.18m ² /m; Steel=15kg/m), Concrete C20/25, XC1	m	1,741		
7		Gutter Type-2 (b=1.55m; A=0.55m ² /m), Concrete C20/25, XC1	m	657		
8		Gutter at cut berms (b1=1.00m; b2=0.50m; A=0.18m ² /m), Concrete C20/25, XC1	m	1,812		
STORM DRAIN					Subtotal 3	
Storm Pipes						
9		DN300mm, HDPE corrugated SN8	m	1,326		
10		DN375mm, HDPE corrugated SN8	m	767		
11		DN450mm, HDPE corrugated SN8	m	950		
12		DN600mm, HDPE corrugated SN8	m	4,610		
13		DN750mm, HDPE corrugated SN8	m	354		
14		DN900mm, HDPE corrugated SN8	m	773		
Inlets						
15		Dimensions 60x60cm, Height 1.5m	pcs.	32		
16		Dimensions 60x60cm, Height 1.6m	pcs.	20		
17		Dimensions 60x60cm, Height 1.7m	pcs.	23		
18		Dimensions 60x80cm, Height 1.85m	pcs.	59		
19		Dimensions 60x100cm, Height 2.0m	pcs.	17		
Access Holes						
20		Dimensions 60x60cm, Height 1.5m	pcs.	2		
21		Dimensions 60x60cm, Height 1.6m	pcs.	1		
22		Dimensions 60x60cm, Height 1.7m	pcs.	1		
23		Dimensions 80x80cm, Height 1.85m	pcs.	1		

24	Dimensions 100x100cm, Height 2.0m	pcs.	1		
Trench Drains					
25	20x30 (Width 20cm, Height 30cm)	m	666		
26	20x40 (Width 20cm, Height 40cm)	m	277		
27	25x40 (Width 25cm, Height 40cm)	m	277		
28	25x50 (Width 25cm, Height 50cm)	m	290		
29	30x50 (Width 30cm, Height 50cm)	m	192		
30	30x60 (Width 30cm, Height 60cm)	m	170		
31	35x70 (Width 35cm, Height 70cm)	m	367		
32	40x80 (Width 40cm, Height 80cm)	m	373		
BRIDGE DRAINAGE					
Bridge 01					
33	Storm Pipe DN300mm downspouts	m	25		
34	Storm Pipe DN100mm scupper connection	m	15		
35	Storm Pipe DN300mm	m	88		
36	Scupper 20cmx20cm	pcs.	11		
DETENTION BASINS					
Earthworks					
37	Excavation in soft or common soils + trans auto	m3	1,887		
38	Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	768		
39	Embankment for access ramp	m3	18		
40	Sedimentation basin embankment	m3	64		
41	Embankments slopes vegetation	m2	3,305		
42	Unpaved access road, width 5m	m	300		
Appurtenances					
43	Riser outlet structure, reinforced concrete C20/25	m3	14		
44	Trash galvanized grate on riser	ton	1.55		
45	Emergency spillway, reinforced concrete C20/25	m3	35		
46	Access Hole 1.0x1.0m, height variable, reinforced concrete C20/25	m3	27		
47	Access Hole 1.2x1.2m, height variable, reinforced concrete C20/25	m3	16		
48	Anti seep collar, for pipe DN750mm	pcs.	2		
49	Anti seep collar, for pipe DN900mm and DN1050mm	pcs.	4		
Inlet and Outlet Piping					
50	DN750mm, HDPE corrugated SN8	m	106.52		
51	DN900mm, HDPE corrugated SN8	m	70.11		
Scour Protection					
52	Gabion mattress t=20cm, inside basin	m2	210		
53	Gabion mattress t=20cm, outside basin	m2	65		
Retaining Wall					
54	Concrete retaining wall at Detention Basin nr.3 (L=43m; h=3-6m)	L.S.	1		
CULVERTS					
Barrel					
55	Excavated material for culvert in soft or common soils + trans auto	m3	12,700		
56	Backfilling with sand-gravel compacted to 98% Mod. Proctor	m3	19,340		
57	Concrete C30/37 for barrel	m3	3,930		
58	Steel reinforcement $\phi \geq 10$ mm for barrel	ton	434.76		
59	Blinding concrete C12/15 (t=15cm)	m2	513		
60	Waterstop at CJ	m	1,959		
61	Geotextile	m2	10,290		
Subtotal 4					
Subtotal 5					
Subtotal 6					

Drainage Channel (at Culvert St.1+575)				
106		Excavation in soft or common soils + trans auto	m3	2,325
107		Filling	m3	375
108		Reinforced concrete C20/25 lining	m3	441
109		Gravel layer under lining	m3	237
Reservoir Inflow (Kus)				
110		Excavation in soft or common soils + trans auto	m3	3,150
111		Initial sand filling	m3	370
112		Backfilling	m3	2,615
113		DN1050mm, HDPE corrugated SN8	m	140
114		Reinforced concrete access hole 1.2x1.2m, height variable	m3	42
115		Gabion box, outlet scour protection	m3	56
Limuthi Creek Cut Off				
116		Excavation in soft or common soils + trans auto	m3	3,540
RIVER TRAINING WORKS				Subtotal 8
Bridges Scour Protection				
Bridge 01				
117		Gabion mattress thickness 50cm	m2	1,350
SUM OF BILL No.3 - DRAINAGE (Price Excluding VAT)				SubTotal 1+2+3+4+5+ 6+7+8

EARTHWORKS AND STABILISING MEASURES						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
EXCAVATION					SubTotal 1	
Motorway						
1		Excavate topsoil	m3	85,429.02		
2		Cut in soft material, free section + trans auto	m3	61,712.94		
3		Cut in medium material, free section + trans auto	m3	101,644.84		
4		Cut in hard material, free section + trans auto	m3	18,150.86		
FILLING					SubTotal 2	
Motorway						
5		Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	319,033.23		
6		Embankment with appropriate borrowed material, compacted up to 95% of modified AASHTO	m3	478,549.84		
7		Replacement of weak foundation soil with granular/rock material (50cm or 100cm thick, max. particle size 5mm≤D≤100mm), below the pavement structure in low cut sections (see the progressive cross section of motorway)	m3	13,441.02		
8		Separation geotextile 280 gr/m2 (type Mactex H55.1 or equivalent)	m2	188,931.37		
9						
10						
11		STABILISING MEASURES			SubTotal 3	
12		Earth fill for New Jersey	m3	11,312.425		
13		Perforated drainage pipe Ø200mm under New Jersey and along cut verges (incl. geotextile, fill material, sand/concrete layers)	m	6,917.65		
14		Slope protection measures with Polymeric Reinforced Geomat + hydroseeding (in cut slopes acc. geotechnical design report)	m2	504,222.35		

15		Slope protection measures with Steel Reinforced Geomat + hydroseeding (in cut slopes acc. geotechnical design report)	m2	82,824.00		
SUM OF BILL No.4 - EARTHWORKS AND STABILISING MEASURES (Price Excluding VAT)					SubTotal	
					1+2+3	

PAVEMENTS						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
UNBOUND GRAVEL						
Motorway						
1		Crushed stone (5-40mm) compacted base course up to to 98% of modified AASHTO density on roadway, h=(15+15)cm	m2	133,710.00		
2		Crushed stone fine material (0-31.5mm), 98% of modified Proctor AASHTO density, h=(10+15)cm	m2	110,106.00		
3		Crushed stone fine material (0-31.5mm) for motorway verges	m3	8,370.00		
BITUMINOUS BOUND BASE COURSE (incl. prime coat)						
Motorway						
4		Thickness : 10 cm	m2	108,738		
Motorway						
5		Thickness : 6 cm	m2	106,563		
WEARING COURSE BITUMINOUS CONCRETE (incl. tack coat)						
Motorway						
6		Thickness : 4 cm	m2	106,563		
SUM OF BILL No.5 - PAVEMENTS (Price Excluding VAT)					SubTotal	
					1+2+3	

CURBS, FOOTWAYS AND PAVED AREAS						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
RESERVED LINES						
1		Corrugated PVC flexible pipe with double isolation, heavy type, Ø160 mm	m	34,610		
SUM OF BILL No.6 - CURBS, FOOTWAYS AND PAVED AREAS (Price Excluding VAT)					SubTotal	
					1	

TRAFFIC SIGNS AND ROAD MARKINGS						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
TRAFFIC SIGNS						
Directional and Informative Signs						
1		Informative panel 300x120cm, Al-Cl3	pcs.	1		
2		Informative panel 300x400cm, Al-Cl3	pcs.	1		
Warning and Regulatory Signs						
SubTotal					1	

3		Circular Sign D=90cm, AI-CI3	pcs.	5		
4		Triangular Sign A=120cm, AI-CI3	pcs.	2		
5		Square Sign 90x90 cm AI-CI3 (for chevrons)	pcs.	20		
6		Square Sign 90x90 cm AI-CI3 (for bridges)	pcs.	2		
		ROAD MARKINGS				SubTotal 2
		Painting Line Markings				
7		White thermoplastic road marking continuous line (Type A), width 25cm	m	17,000		
8		White thermoplastic road marking on central carriageway discontinues line (Type B_7.5x4.5) width 15cm (converted in continuous line)	m	2,750		
9		White thermoplastic road marking on central carriageway discontinues line (Type C_4.5x3) width 15cm (converted in continuous line)	m	480		
		Road Studs				
10		Aluminum 10x10cm Road Studs (Cat eyes) one direction, mounted in centerline of carriageway every 25m	pcs.	340		
SUM OF BILL No.7 - TRAFFIC SIGNS AND ROAD MARKINGS (Price Excluding VAT)					SubTotal 1+2	

STRUCTURES

STRUCTURES - BRIDGE No. 01						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		EARTHWORKS				subtotal 1
1		Cutting for foundations in soft or common soils	m3	1,202		
2		Backfill of foundations	m3	916		
3		Backfill adjoining to abutments and walls	m3	4,947		
		DRAINAGE				subtotal 2
4		Drain Ø200mm behind abutment or walls	m	65		
		DEEP FOUNDATIONS				subtotal 3
5		Drilling of Piles Ø. 1000mm	m	1,950		
6		Concrete C25/30 for Bored Piles	m3	1,577		
7		Reinforcement of Piles	t	278		
		CONCRETE AND REINFORCEMENT				subtotal 4
		Concrete				
8		Lean/Blinding Concrete C8/10.	m2	1,069		
9		Concrete C8/10 for filling adjoining to abutment and pile foundations.	m3	295		
10		Concrete C25/30 for foundations.	m3	584		
11		Concrete C30/37 for pier and abutment elevation & pier pilecap	m3	1,162		
12		Concrete C30/37 for approach slabs and sidewalks.	m3	103		
13		Concrete C30/37 for deck slabs and cross-beams.	m3	1,278		
		WATERPROOFING				subtotal 5
14		Bituminous coating of surfaces in contact with soils	m2	511		
15		Waterproofing for deck or top slab	m2	1,216		
		EQUIPMENT				subtotal 6
		Elastomeric bearings				
16		Of type Agom E-Link C3 300x600x126(99) or equivalent	pcs	142.56		
		Expansion joint				
17		Of type AGOM AGJF 100 or equivalent	m	47.6		

						SubTotal	
Structures - Bridge No.01 (Price Excluding VAT)						1+2+3+4+5+	-
						6	

STRUCTURES - OVERPASS No. 01							
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount	
EARTHWORKS						subtotal 1	
1		Cutting for foundations in soft or common soils	m3	263			
2		Backfill of foundations	m3	61.5			
3		Backfill adjoining to abutments and walls	m3	2,300			
DRAINAGE						subtotal 2	
4		Drain Ø200mm behind abutment or walls	m	44			
DEEP FOUNDATIONS						subtotal 3	
5		Drilling of Piles Ø. 1000mm	m	474			
6		Concrete C25/30 for Bored Piles	m3	374.0			
7		Reinforcement of Piles	t	119.5			
CONCRETE AND REINFORCEMENT						subtotal 4	
Concrete							
8		Lean/Blinding Concrete C8/10.	m2	327.6			
9		Concrete C8/10 for filling adjoining to abutment and pile foundations.	m3	78.24			
10		Concrete C25/30 for foundations.	m3	468			
11		Concrete C30/37 for pier and abutment elevation & pier pilecap	m3	740.15			
12		Concrete C30/37 for approach slabs and sidewalks.	m3	68			
13		Concrete C30/37 for deck slabs and cross-beams.	m3	409.1			
Reinforcement							
14		Reinforcement rebars B500C	t	327.5			
WATERPROOFING						subtotal 5	
15		Bituminous coating of surfaces in contact with soils	m2	1,105.86			
16		Waterproofing for deck or top slab	m2	380.07			
EQUIPMENT						subtotal 6	
Elastomeric bearings							
17		Elastomeric bearings type Agom E-Link C3 500x600x(99)	pcs	6			
Expansion joint							
18		Of type AGOM AGJF 100 or equivalent	m	29.86			
Structures - Overpass No. 01 (Price Excluding VAT)						SubTotal	
						1+2+3+4+5+	
						6	

STRUCTURES - UNDERPASS 01 AND WINGWALLS						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount

		EARTHWORKS			subtotal 1	
1		Cutting for foundations in soft or common soils	m ³	92		
2		Top Soil Removal	m ³	2000		
3		Backfill adjoining to box structure	m ³	2918		
4		Backfill adjoining to wingwalls	m ³	1013		
5		Road construction backfill	m ³	15809		
6		Ground improvement layer, compacted gravel layer under box structure, wingwalls and inlet-outlet bottom slab	m ³	239		
7		Geotextile	m ²	674		
		DRAINAGE			subtotal 2	
8		Filling material of drainage system	m ³	10		
9		Filling material of drainage system for Wingwalls	m ³	6		
10		Geotextile of drainage system	m ²	185		
11		Geotextile of drainage system for Wingwalls	m ²	53		
12		Drain Ø200mm behind walls	m	74		
13		Drain Ø200mm behind walls for Wingwalls	m	31		
14		Lean/Blinding Concrete C12/15 for filling under drain	m ³	220		
15		Lean/Blinding Concrete C12/15 for filling under drain of Wingwalls.	m ³	43		
		CONCRETE AND REINFORCEMENT			subtotal 3	
		Concrete				
16		Lean/Blinding Concrete C12/15 under approach slabs (t=15cm)	m ²	224		
17		Lean/Blinding Concrete C12/15 under box structure (t=15cm)	m ²	392		
18		Lean/Blinding Concrete C12/15 under wingwalls foundation and inlet-outlet bottom slab (t=15cm)	m ²	277		
19		Concrete C30/37 for approach slabs	m ³	56		
20		Concrete C30/37 for box structure	m ³	713		
21		Concrete C30/37 for wingwalls and inlet-outlet bottom slab	m ³	200		
		Reinforcement				
22		Reinforcement rebars B500C for box structure	t	148.71		
23		Reinforcement rebars B500C for approach slab	t	10.14		
24		Reinforcement rebars B500C for wingwalls and inlet-outlet bottom slab	t	20.48		
		WATERPROOFING			subtotal 4	
25		Waterproofing for top slab	m ²	537		
26		Concrete C20/25 for the protecting of waterproofing (min7cm) with galvanized weldedmesh	m ³	27		
27		Surface finish for inside box	m ²	727		
28		Antipollution coating for inside box	m ²	727		
29		Bituminous coating of surfaces in contact with soils, for approach slabs	m ²	284		
30		Bituminous coating of surfaces in contact with soils, for box structures	m ²	372		

31		Bituminous coating of surfaces in contact with soils, for wingwalls and inlet-outlet bottom slab	m ²	295		
32		Waterstop at Construction joints	m	148		
		Expansion joint				subtotal 5
33		Joint sealing material	l	26		
34		Non absorbent joint filler	m ³	0.51		
35		Waterstop	m	34		
Structures - Underpass No.01 and Wingwalls (Price Excluding VAT)					SubTotal	
					1+2+3+4+5	

STRUCTURES - UNDERPASS 02 AND WINGWALLS						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		EARTHWORKS				subtotal 1
1		Cutting for foundations in soft or common soils	m ³	62		
2		Top Soil Removal	m ³	1,710		
3		Backfill adjoining to box structure	m ³	1,490		
4		Backfill adjoining to wingwalls	m ³	598		
5		Road construction backfill	m ³	12,888		
6		Ground improvement layer, compacted gravel layer under box structure, wingwalls and inlet-outlet bottom slab	m ³	213		
7		Geotextile	m ²	434		
		DRAINAGE				subtotal 2
8		Filling material of drainage system	m ³	9		
9		Filling material of drainage system for Wingwalls	m ³	5		
10		Geotextile of drainage system	m ²	163		
11		Geotextile of drainage system for Wingwalls	m ²	46		
12		Drain Ø200mm behind walls	m	65		
13		Drain Ø200mm behind walls for Wingwalls	m	28		
14		Lean/Blinding Concrete C12/15 for filling under drain	m ³	169		
15		Lean/Blinding Concrete C12/15 for filling under drain of Wingwalls.	m ³	29		
		CONCRETE AND REINFORCEMENT				subtotal 3
		Concrete				
16		Lean/Blinding Concrete C12/15 under approach slabs (t=15cm)	m ²	224		
17		Lean/Blinding Concrete C12/15 under box structure (t=15cm)	m ²	263		
18		Lean/Blinding Concrete C12/15 under wingwalls foundation and inlet-outlet bottom slab (t=15cm)	m ²	246		
19		Concrete C30/37 for approach slabs	m ³	56		
20		Concrete C30/37 for box structure	m ³	471		
21		Concrete C30/37 for wingwalls and inlet-outlet bottom slab	m ³	146		
		Reinforcement				
22		Reinforcement rebars B500C for box structure	t	100.43		
23		Reinforcement rebars B500C for approach slab	t	10.12		
24		Reinforcement rebars B500C for wingwalls and inlet-outlet bottom slab	t	14.25		

WATERPROOFING					
					subtotal 4
25		Waterproofing for top slab	m ²	388	
26		Concrete C20/25 for the protecting of waterproofing (min7cm) with galvanized weldedmesh	m ³	18	
27		Surface finish for inside box	m ²	459	
28		Antipollution coating for inside box	m ²	459	
29		Bituminous coating of surfaces in contact with soils, for approach slabs	m ²	284	
30		Bituminous coating of surfaces in contact with soils, for box structures	m ²	228	
31		Bituminous coating of surfaces in contact with soils, for wingwalls and inlet-outlet bottom slab	m ²	244	
32		Waterstop at Construction joints	m	130	
		Expansion joint			subtotal 5
33		Joint sealing material	l	22	
34		Non absorbent joint filler	m ³	0.40	
35		Waterstop	m	26	
Structures - Underpass No.02 and Wingwalls (Price Excluding VAT)					SubTotal 1+2+3+4+5

STRUCTURES - UNDERPASS 03 AND WINGWALLS						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		EARTHWORKS				subtotal 1
1		Cutting for foundations in soft or common soils	m ³	355		
2		Top Soil Removal	m ³	1,609		
3		Backfill adjoining to box structure	m ³	2,582		
4		Backfill adjoining to wingwalls	m ³	984		
5		Road construction backfill	m ³	12,905		
6		Ground improvement layer, compacted gravel layer under box structure, wingwalls and inlet-outlet bottom slab	m ³	539		
7		Geotextile	m ²	559		
		DRAINAGE				subtotal 2
8		Filling material of drainage system	m ³	9		
9		Filling material of drainage system for Wingwalls	m ³	4		
10		Geotextile of drainage system	m ²	164		
11		Geotextile of drainage system for Wingwalls	m ²	43		
12		Drain Ø200mm behind walls	m	66		
13		Drain Ø200mm behind walls for Wingwalls	m	24		
14		Lean/Blinding Concrete C12/15 for filling under drain	m ³	175		

15		Lean/Blinding Concrete C12/15 for filling under drain of Wingwalls.	m ³	38		
		CONCRETE AND REINFORCEMENT				subtotal 3
		Concrete				
16		Lean/Blinding Concrete C12/15 under approach slabs (t=15cm)	m ²	192		
17		Lean/Blinding Concrete C12/15 under box structure (t=15cm)	m ²	348		
18		Lean/Blinding Concrete C12/15 under wingwalls foundation and inlet-outlet bottom slab (t=15cm)	m ²	255		
19		Concrete C30/37 for approach slabs	m ³	48		
20		Concrete C30/37 for box structure	m ³	632		
21		Concrete C30/37 for wingwalls and inlet-outlet bottom slab	m ³	184		
		Reinforcement				
22		Reinforcement rebars B500C for box structure	t	128.40		
23		Reinforcement rebars B500C for approach slab	t	9.37		
24		Reinforcement rebars B500C for wingwalls and inlet-outlet bottom slab	t	19.14		
		WATERPROOFING				subtotal 4
25		Waterproofing for top slab	m ²	476		
26		Concrete C20/25 for the protecting of waterproofing (min7cm) with galvanized welded mesh	m ³	24		
27		Surface finish for inside box	m ²	640		
28		Antipollution coating for inside box	m ²	640		
29		Bituminous coating of surfaces in contact with soils, for approach slabs	m ²	243		
30		Bituminous coating of surfaces in contact with soils, for box structures	m ²	325		
31		Bituminous coating of surfaces in contact with soils, for wingwalls and inlet-outlet bottom slab	m ²	277		
32		Waterstop at Construction joints	m	132		
		Expansion joint				subtotal 5
33		Joint sealing material	l	23		
34		Non absorbent joint filler	m ³	0.52		
35		Waterstop	m	34		
Structures - Underpass No.03 and Wingwalls (Price Excluding VAT)					SubTotal	
					1+2+3+4+5	

STRUCTURES - UNDERPASS 04 AND WINGWALLS						
No.		Description	Unit	Quantity	Unit Price	Amount

		EARTHWORKS				subtotal 1
1		Cutting for foundations in soft or common soils	m ³	51		
2		Top Soil Removal	m ³	2,055		
3		Backfill adjoining to box structure	m ³	2,659		
4		Backfill adjoining to wingwalls	m ³	598		
5		Road construction backfill	m ³	19,221		
6		Ground improvement layer, compacted gravel layer under box structure, wingwalls and inlet-outlet bottom slab	m ³	813		
7		Geotextile	m ²	569		
		DRAINAGE				subtotal 2
8		Filling material of drainage system	m ³	10		
9		Filling material of drainage system for Wingwalls	m ³	5		
10		Geotextile of drainage system	m ²	180		
11		Geotextile of drainage system for Wingwalls	m ²	46		
12		Drain Ø200mm behind walls	m	72		
13		Drain Ø200mm behind walls for Wingwalls	m	28		
14		Lean/Blinding Concrete C12/15 for filling under drain	m ³	173		
15		Lean/Blinding Concrete C12/15 for filling under drain of Wingwalls.	m ³	29		
		CONCRETE AND REINFORCEMENT				subtotal 3
		Concrete				
16		Lean/Blinding Concrete C12/15 under approach slabs (t=15cm)	m ²	224		
17		Lean/Blinding Concrete C12/15 under box structure (t=15cm)	m ²	291		
18		Lean/Blinding Concrete C12/15 under wingwalls foundation and inlet-outlet bottom slab (t=15cm)	m ²	246		
19		Concrete C30/37 for approach slabs	m ³	56		
20		Concrete C30/37 for box structure	m ³	520		
21		Concrete C30/37 for wingwalls and inlet-outlet bottom slab	m ³	146		
		Reinforcement				
22		Reinforcement rebars B500C for box structure	t	108.31		
23		Reinforcement rebars B500C for approach slab	t	10.12		
24		Reinforcement rebars B500C for wingwalls and inlet-outlet bottom slab	t	14.25		
		WATERPROOFING				subtotal 4
25		Waterproofing for top slab	m ²	430		

26		Concrete C20/25 for the protecting of waterproofing (min7cm) with galvanized weldedmesh	m ³	20		
27		Surface finish for inside box	m ²	508		
28		Antipollution coating for inside box	m ²	508		
29		Bituminous coating of surfaces in contact with soils, for approach slabs	m ²	284		
30		Bituminous coating of surfaces in contact with soils, for box structures	m ²	252		
31		Bituminous coating of surfaces in contact with soils, for wingwalls and inlet-outlet bottom slab	m ²	244		
32		Waterstop at Construction joints	m	144		
		Expansion joint				subtotal 5
33		Joint sealing material	l	22		
34		Non absorbent joint filler	m ³	0.40		
35		Waterstop	m	26		
Structures - Underpass No.04 and Wingwalls (Price Excluding VAT)					SubTotal	
					1+2+3+4+5	

STRUCTURES - UNDERPASS 05 AND WINGWALLS						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		EARTHWORKS				subtotal 1
1		Cutting for foundations in soft or common soils	m ³	70		
2		Top Soil Removal	m ³	1,003		
3		Backfill adjoining to box structure	m ³	12,359		
4		Backfill adjoining to wingwalls	m ³	956		
5		Road construction backfill	m ³	15,530		
6		Ground improvement layer, compacted gravel layer under box structure, wingwalls and inlet-outlet bottom slab	m ³	1,451		
7		Geotextile	m ²	935		
		DRAINAGE				subtotal 2
8		Filling material of drainage system	m ³	11		
9		Filling material of drainage system for Wingwalls	m ³	3		
10		Geotextile of drainage system	m ²	213		
11		Geotextile of drainage system for Wingwalls	m ²	32		
12		Drain Ø200mm behind walls	m	85		
13		Drain Ø200mm behind walls for Wingwalls	m	16		
14		Lean/Blinding Concrete C12/15 for filling under drain	m ³	489		

15		Lean/Blinding Concrete C12/15 for filling under drain of Wingwalls.	m ³	33		
		CONCRETE AND REINFORCEMENT				subtotal 3
		Concrete				
16		Lean/Blinding Concrete C12/15 under approach slabs (t=15cm)	m ²	384		
17		Lean/Blinding Concrete C12/15 under box structure (t=15cm)	m ²	343		
18		Lean/Blinding Concrete C12/15 under wingwalls foundation and inlet-outlet bottom slab (t=15cm)	m ²	233		
19		Concrete C30/37 for approach slabs	m ³	96		
20		Concrete C30/37 for box structure	m ³	618		
21		Concrete C30/37 for wingwalls and inlet-outlet bottom slab	m ³	169		
		Reinforcement				
22		Reinforcement rebars B500C for box structure	t	148.76		
23		Reinforcement rebars B500C for approach slab	t	23.26		
24		Reinforcement rebars B500C for wingwalls and inlet-outlet bottom slab	t	17.80		
		WATERPROOFING				subtotal 4
25		Waterproofing for top slab	m ²	508		
26		Concrete C20/25 for the protecting of waterproofing (min7cm) with galvanized welded mesh	m ³	23		
27		Surface finish for inside box	m ²	600		
28		Antipollution coating for inside box	m ²	600		
29		Bituminous coating of surfaces in contact with soils, for approach slabs	m ²	108		
30		Bituminous coating of surfaces in contact with soils, for box structures	m ²	298		
31		Bituminous coating of surfaces in contact with soils, for wingwalls and inlet-outlet bottom slab	m ²	259		
32		Waterstop at Construction joints	m	170		
		Expansion joint				subtotal 5
33		Joint sealing material	l	17		
34		Non absorbent joint filler	m ³	0.45		
35		Waterstop	m	26		
Structures - Underpass No.05 and Wingwalls (Price Excluding VAT)					SubTotal	
					1+2+3+4+5	

STRUCTURES - RETAINING WALL - 01						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		EARTHWORKS			Subtotal 1	
1		Cutting for foundations in soft or common soils	m ³	1,737.12		
2		Backfill adjoining to retaining walls	m ³	2,570.94		
3		Filter layer behind walls (Granular filler)	m ³	228.31		
4		Ground improvement layer, compacted gravel layer under retaining wall foundation	m ³	496.32		
		DRAINAGE			Subtotal 2	
5		Filling material of drainage system	m ³	63.17		
6		Geotextile of drainage system	m ²	496.32		
7		Drain Ø200mm behind walls	m	94.75		
8		Drain Ø100mm for walls	m	12.00		
10		Lean/Blinding Concrete C12/15 for filling under drain	m ³	126.34		
		CONCRETE AND REINFORCEMENT			Subtotal 3	
		Concrete				
11		Lean/Blinding Concrete C12/15 under retaining wall foundation (t=15cm)	m ²	433.16		
12		Concrete C30/37 for retaining wall	m ³	712.90		
		Reinforcement				
13		Reinforcement rebars B500C for box structure	t	57.122		
		WATERPROOFING			Subtotal 4	
14		Bituminous coating of surfaces in contact with soils, for box structures	m ²	1,128.00		
15		Waterstop at Construction joints	m	24.85		
		Expansion joint			Subtotal 5	
16		Joint sealing material	l	66.92		
17		Non absorbent joint filler	m ³	1.11		
18		Waterstop	m	62.30		
STRUCTURES - RETAINING WALL - 01 (Price Excluding VAT)					SubTotal	
					1+2+3+4+5	

STRUCTURES - RETAINING WALL - 02						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount

		EARTHWORKS			Subtotal 1	
1		Cutting for foundations in soft or common soils	m ³	859.32		
2		Backfill adjoining to retaining walls	m ³	1,271.79		
3		Filter layer behind walls (Granular filler)	m ³	112.94		
4		Ground improvement layer, compacted gravel layer under retaining wall foundation	m ³	245.52		
		DRAINAGE			Subtotal 2	
5		Filling material of drainage system	m ³	31.25		
6		Geotextile of drainage system	m ²	245.52		
7		Drain Ø200mm behind walls	m	46.87		
8		Drain Ø100mm for walls	m	12.00		
10		Lean/Blinding Concrete C12/15 for filling under drain	m ³	62.50		
		CONCRETE AND REINFORCEMENT			Subtotal 3	
		Concrete				
11		Lean/Blinding Concrete C12/15 under retaining wall foundation (t=15cm)	m ²	214.27		
12		Concrete C30/37 for retaining wall	m ³	352.66		
		Reinforcement				
13		Reinforcement rebars B500C for box structure	t	28.257		
		WATERPROOFING			Subtotal 4	
14		Bituminous coating of surfaces in contact with soils, for box structures	m ²	558.00		
15		Waterstop at Construction joints	m	10.65		
		Expansion joint			Subtotal 5	
16		Joint sealing material	l	29.00		
17		Non absorbent joint filler	m ³	0.47		
18		Waterstop	m	26.70		
STRUCTURES - RETAINING WALL - 02 (Price Excluding VAT)					SubTotal 1+2+3+4+5	

STRUCTURES - RETAINING WALL - 03						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		EARTHWORKS				
					Subtotal 1	

1		Cutting for foundations in soft or common soils	m ³	1,592.25		
2		Backfill adjoining to retaining walls	m ³	2,829.75		
3		Filter layer behind walls (Granular filler)	m ³	189.75		
4		Ground improvement layer, compacted gravel layer under retaining wall foundation	m ³	465.00		
		DRAINAGE				Subtotal 2
5		Filling material of drainage system	m ³	52.50		
6		Geotextile of drainage system	m ²	412.50		
7		Drain Ø200mm behind walls	m	78.75		
8		Drain Ø100mm for walls	m	13.60		
10		Lean/Blinding Concrete C12/15 for filling under drain	m ³	112.50		
		CONCRETE AND REINFORCEMENT				Subtotal 3
		Concrete				
11		Lean/Blinding Concrete C12/15 under retaining wall foundation (t=15cm)	m ²	385.00		
12		Concrete C30/37 for retaining wall	m ³	712.50		
		Reinforcement				
13		Reinforcement rebars B500C for box structure	t	55.275		
		WATERPROOFING				Subtotal 4
14		Bituminous coating of surfaces in contact with soils, for box structures	m ²	1,050.00		
15		Waterstop at Construction joints	m	22.80		
		Expansion joint				Subtotal 5
16		Joint sealing material	l	64.00		
17		Non absorbent joint filler	m ³	1.14		
18		Waterstop	m	60.60		

STRUCTURES - RETAINING WALL - 03 (Price Excluding VAT)					SubTotal 1+2+3+4+5	
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STRUCTURES - RETAINING WALL - 04						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		EARTHWORKS				Subtotal 1

1		Cutting for foundations in soft or common soils	m ³	1,347.50		
2		Backfill adjoining to retaining walls	m ³	1,994.30		
3		Filter layer behind walls (Granular filler)	m ³	177.10		
4		Ground improvement layer, compacted gravel layer under retaining wall foundation	m ³	385.00		
		DRAINAGE				Subtotal 2
5		Filling material of drainage system	m ³	49.00		
6		Geotextile of drainage system	m ²	385.00		
7		Drain Ø200mm behind walls	m	73.50		
8		Drain Ø100mm for walls	m	12.00		
10		Lean/Blinding Concrete C12/15 for filling under drain	m ³	98.00		
		CONCRETE AND REINFORCEMENT				Subtotal 3
		Concrete				
11		Lean/Blinding Concrete C12/15 under retaining wall foundation (t=15cm)	m ²	336.00		
12		Concrete C30/37 for retaining wall	m ³	553.00		
		Reinforcement				
13		Reinforcement rebars B500C for box structure	t	44.310		
		WATERPROOFING				Subtotal 4
14		Bituminous coating of surfaces in contact with soils, for box structures	m ²	875.00		
15		Waterstop at Construction joints	m	17.75		
		Expansion joint				Subtotal 5
16		Joint sealing material	l	48.00		
17		Non absorbent joint filler	m ³	0.79		
18		Waterstop	m	44.50		
STRUCTURES - RETAINING WALL - 04 (Price Excluding VAT)					SubTotal	
					1+2+3+4+5	

STRUCTURES - RETAINING WALL - 05						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		EARTHWORKS				
					Subtotal 1	

1		Cutting for foundations in soft or common soils	m ³	955.35		
2		Backfill adjoining to retaining walls	m ³	1,697.85		
3		Filter layer behind walls (Granular filler)	m ³	113.85		
4		Ground improvement layer, compacted gravel layer under retaining wall foundation	m ³	279.00		
		DRAINAGE				Subtotal 2
5		Filling material of drainage system	m ³	31.50		
6		Geotextile of drainage system	m ²	247.50		
7		Drain Ø200mm behind walls	m	47.25		
8		Drain Ø100mm for walls	m	13.60		
10		Lean/Blinding Concrete C12/15 for filling under drain	m ³	67.50		
		CONCRETE AND REINFORCEMENT				Subtotal 3
		Concrete				
11		Lean/Blinding Concrete C12/15 under retaining wall foundation (t=15cm)	m ²	231.00		
12		Concrete C30/37 for retaining wall	m ³	427.50		
		Reinforcement				
13		Reinforcement rebars B500C for box structure	t	33.165		
		WATERPROOFING				Subtotal 3
14		Bituminous coating of surfaces in contact with soils, for box structures	m ²	630.00		
15		Waterstop at Construction joints	m	11.40		
		Expansion joint				Subtotal
16		Joint sealing material	l	32.00		
17		Non absorbent joint filler	m ³	0.57		
18		Waterstop	m	30.30		
STRUCTURES - RETAINING WALL - 05 (Price Excluding VAT)					SubTotal	1+2+3+4+5

SUM OF BILL No.8 - STRUCTURES					Sum of all Structures	
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REINFORCED EARTH RETAINING WALLS (MSEW)						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount

REINFORCED EARTH RETAINING WALLS (RE)				
Reinforced Earth Retaining Wall (RE01) - TMS Left Side (Ch. 3+680 - Ch. 3+840)				SubTotal (RE01)
1	Blocks of TMS 3x2x1 (including C-rings + Lacing wire + geotextile 180gr/m2)	pcs.	635	
2	Geogrid 150kN/m2	m2	9,890	
3	Excavation for RE retaining wall in soft or common soils + trans auto	m3	5,730	
4	Foundation improvement layer for RE retaining wall (min. 0.5m thick, max. particle size D ≤ 80mm)	m3	1,090	
5	Backfill material behind RE retaining wall (stones size 10mm ≤ Dgab ≤ 200mm)	m3	8,950	
6	Filling with quarries material / previously excavated material (similar to road body)	m3	1,140	
7	Configuration concrete C20/25	m3	440	
8	Monitoring Instruments (movement markers, 3D targets, steel anchoring plate, etc.)	L.S.	1	
REINFORCED EARTH RETAINING WALLS (MSEW) (Price Excluding VAT)				SubTotal 1

Reinforced Earth Retaining Wall (RE02) - TMS Left Side (Ch. 3+940 - Ch. 4+200)					SubTotal (RE02)
9	Blocks of TMS 3x2x1 (including C-rings + Lacing wire + geotextile 180gr/m2)	pcs.	1,447		
10	Geogrid 150kN/m2	m2	17,388		
11	Geogrid 300kN/m2	m2	7,488		
12	Excavation for RE retaining wall in soft or common soils + trans auto	m3	10,812		
13	Foundation improvement layer for RE retaining wall (min. 0.5m thick, max. particle size D ≤ 80mm)	m3	1,812		
14	Backfill material behind RE retaining wall (stones size 10mm ≤ Dgab ≤ 200mm)	m3	22,608		
15	Filling with quarries material / previously excavated material (similar to road body)	m3	2,634		
16	Configuration concrete C20/25	m3	762		
REINFORCED EARTH RETAINING WALLS (MSEW) (Price Excluding VAT)				SubTotal 2	
SUM OF BILL No.9 - REINFORCED EARTH RETAINING WALLS (MSEW) (Price Excluding VAT)				SubTotal 1+2	

LANDSCAPING						
No.	TS Code	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	43,700		
2		Planting decorative shrubs over New Jersey (Juniperus V.18 group of 3 every 6.6m)	pcs.	680		
PLANTING TREES						SubTotal 2
3		Planting decorative trees along the sidewalks of local roads (Tilia Cordata, d=16-18cm, every 6m)	pcs.	160		
PLANTING GREEN AREAS						SubTotal 3
4		Planting decorative flower seedings	pcs.	390		
5		Planting decorative trees	pcs.	320		
6		Planting decorative shrubs Oleander (Nerium oleander)	pcs.	320		
7		Planting clambering plant	pcs.	800		
8		Planting trees (Abies alba, d~10cm)	pcs.	260		

SUM OF BILL No.10 - LANDSCAPING (Price Excluding VAT)	SubTotal 1+2+3
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ELECTRICAL LIGHTING						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		DISMANTLING AND RELOCATION OF ELECTRIC POWER LINES			SubTotal 1	
1		Dismantling and relocation of high voltage overhead power Line with double circuit 220kV, included: - Dismantling and relocation of 1 normal suspension tower 220kV with double circuit - Dismantling and relocation of overhead line conductor with double circuit with length L=0.21km - Transport, excavation, backfilling, concrete works for the base of the HV tower, autocrane, stringing and restringing of conductor, earthing testing, commissioning of high voltage overhead line	L.S.	1		
2		Dismantling and relocation of high voltage overhead power Line with double circuit 110kV, included: - Dismantling and relocation of 1 normal suspension tower 110kV with double circuit - Dismantling and relocation of overhead line conductor with double circuit with length L=0.23km - Transport, excavation, backfilling, concrete works for the base of the HV tower, autocrane, stringing and restringing of conductor, earthing system, testing, commissioning of high voltage overhead line	L.S.	1		
3		Dismantling and relocation of medium/low voltage power linea, included: - Dismantling and relocation of 314 concrete columns with different heights 8, 9, 10 dhe 12m, completed with all accessories (insulators, crossarms, collar - Dismantling and relocation of medium/low voltage power lines with length approximately L=2.4km - Transport, excavation, backfilling, concrete works for the base of the MV/LV concrete column, autocrane, stringing and restringing of conductor, earthing system, testing and commissioning of medium/low voltage power lines	L.S.	1		
SUM OF BILL No.11 - ELECTRICAL LIGHTING					SubTotal 1	

NOISE BARRIERS						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		NOISE BARRIER PANELS			SubTotal 1	
1		Noise barriers on motorway embankment	m2	3,200.00		
		NOISE BARRIER FOUNDATION			SubTotal 2	
4		Pile drilling with machinery ø600, L=6m in soft soil of road embankment	m	1,605.00		
5		Excavation for foundations in soft or common soils	m3	150.00		
6		Transport of excavated material up to 5km	m3	455.00		
7		Steel reinforcement B500C for piles	ton	50.60		
8		Steel reinforcement B500C for pile cap	ton	37.90		
9		Concrete structures C30/37 for driven pile	m3	455.00		
10		Concrete structures C30/37 for pile cap	m3	395.00		
11		Concrete structures C12/15	m3	65.00		
SUM OF BILL No.12 - NOISE BARRIERS (Price Excluding VAT)					SubTotal 1+2	

LOCAL ROADS

LOCAL ROAD 01

No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		DRAINAGE			SubTotal 1	
		Culverts				
		Barrel				
6		Excavated material	m3	39.50		
7		Backfilling with sand-gravel compacted to 98% Mod. Proctor	m3	7.90		
8		Concrete C 30/37 for barrel support	m3	10.50		
9		Concrete C 30/37 for barrel	m3	3.10		
10		Steel reinforcement $\phi \geq 10$ mm for barrel	ton	0.25		
11		Blinding concrete C12/15 thickness 15cm	m3	2.40		
12		Waterstop-at CJ	m	28.00		
13		Geotextile mesh	m2	35.00		
14		Double asphalt coating for barrel	m2	25.20		
15		Waterproofing with special waterproofing membrane	m2	26.60		
16		Concrete C20/25 for the protection of waterproofing (min 7cm) with galvanized welded mesh	m3	0.60		
17		Perforated Concrete drain pipes $\phi 200$ mm	m	28.00		
18		Lean Concrete C12/15 under drainage pipe	m3	12.32		
19		Granular material around drainage pipe	m3	4.76		
20		Geotextile around drainage pipe	m2	49.00		
		EARTHWORKS			SubTotal 2	
		Excavation				
21		Cut in hard material, free section + trans auto	m3	32.30		
22		Cut in medium material, free section + trans auto	m3	161.30		
23		Cut in soft material, free section + trans auto	m3	129.05		
		Filling				
24		Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	51.68		
25		Embankment with appropriate borrowed material, compacted up to 95% of modified AASHTO	m3	34.46		
		PAVEMENTS			SubTotal 3	
		Unbound Gravel				
26		Crushed stone fine material (0-31.5mm), 98% of modified Proctor AASHTO density, h=15cm	m2	1,235.30		
27		Crushed stone (5-40mm) compacted base course up to to 98% of modified AASHTO density on roadway, h=(10+15)cm	m2	1,490.24		
28		Crushed stone fine material (0-31.5mm) for verges	m3	65.60		
		Bituminous Bound Binder Course (incl. tack coat)				
29		Thickness : 6 cm	m2	1,443.06		
		Wearing Course Bituminous Concrete (incl. tack coat)				
30		Thickness : 4 cm	m2	1,423.70		
		TRAFFIC SIGNS AND ROAD MARKINGS			SubTotal 4	
		Warning And Regulatory Signs				
31		Circular Sign D=40cm, Al-CI2	pcs.	2.00		
		Painting Line Markings				
32		White thermoplastic road marking continuous line (Type A), width 12cm	ml	579.00		

33		White thermoplastic road marking discontinues line (Type D_1x1) width 12cm (converted in continuous line)	ml	11.00		
		ELECTRICAL LIGHTING				SubTotal 5
		Electrical Lighting of Underpass UP01				
34		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	16.00		
35		S.I Concrete manhole for groundin system, with dim 40x40x40 cm, with cast iron covering heavy type	pcs	1.00		
36		S.I Guain flexible electric pipe with double isolation Ø = 16 mm	ml	10.00		
37		S.I Earthing electrode H=2.0 ml, 50x50x5mm, galvanised for grounding of electric lighting panel	pcs	6.00		
38		S.I Bare copper conductor S=1x25 mm ²	ml	40.00		
39		S.I External Earthing clamp, tape-electrode-conductor up to section S = 25 mm ²	pcs	6.00		
40		S.I Derivation box, alluminium type, dim. (L.130xW.59xH.44) mm, IP65, completed with fittings and insulating gel for storage of insulation	pcs	12.00		
41		S.I Rigid steel metallic conduit, for surface installation, Ø = 25 mm, completed with installation accessories (elbows, couplings, metal straps, metal expansion plug, screws etc.,)	ml	100.00		
42		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		
43		S.I Low voltage multicore copper cable, G16 rubber insulated, PVC sheathed, Un = 0,6/1 kV, FG16OR16 type, S = 5x2.5 mm ²	ml	100.00		
44		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	50.00		
45		S.I Low Voltage Road lighting distribution electrical panel, IP 66, with door and includes all accessories, and corpuscular relay	pcs	1.00		
46		Excavation of Low Voltage cable route channel as detail	m3	12.00		
47		Backfilling with existing materials for Low Voltage cables in the channel route	m3	10.00		
SUM OF LOCAL ROAD 01 (Price Excluding VAT)						SubTotal 1+2+3+4+5

LOCAL ROAD 02						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		SITE CLEARANCE				SubTotal 1
		Clearing & Grubbing				
1		General site clearance and grubbing	m2	1,950.00		
		DRAINAGE				SubTotal 2
		Culverts				
		Barrel				
2		Excavated material	m3	42.30		
3		Backfilling with sand-gravel compacted to 98% Mod. Proctor	m3	8.46		

4	Concrete C 30/37 for barrel support	m3	11.31		
5	Concrete C 30/37 for barrel	m3	3.30		
6	Steel reinforcement $\phi \geq 10$ mm for barrel	ton	0.27		
7	Blinding concrete C12/15 thickness 15cm	m3	2.56		
8	Waterstop-at CJ	m	30.00		
9	Geotextile mesh	m2	37.50		
10	Double asphalt coating for barrel	m2	27.00		
11	Waterproofing with special waterproofing membrane	m2	28.50		
12	Concrete C20/25 for the protection of waterproofing (min 7cm) with galvanized welded mesh	m3	0.60		
13	Perforated Concrete drain pipes $\phi 200$ mm	m	30.00		
14	Lean Concrete C12/15 under drainage pipe	m3	13.20		
15	Granular material around drainage pipe	m3	5.10		
16	Geotextile around drainage pipe	m2	52.50		
	EARTHWORKS				SubTotal 3
	Excavation				
17	Excavate topsoil (30cm)	m3	659.60		
18	Cut in hard material, free section + trans auto	m3	71.56		
19	Cut in medium material, free section + trans auto	m3	357.83		
20	Cut in soft material, free section + trans auto	m3	286.26		
	Filling				
21	Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	61.50		
22	Embankment with appropriate borrowed material, compacted up to 95% of modified AASHTO	m3	41.00		
	PAVEMENTS				SubTotal 4
	Unbound Gravel				
23	Crushed stone fine material (0-31.5mm), 98% of modified Proctor AASHTO density, h=(10+10)cm	m2	2,146.45		
24	Crushed stone (5-40mm) compacted base course up to to 98% of modified AASHTO density on roadway, h=(15+15)cm	m2	2,119.92		
	TRAFFIC SIGNS AND ROAD MARKINGS				SubTotal 5
	Warning And Regulatory Signs				
25	Circular Sign D=40cm, Al-CI2	pcs.	2.00		
	ELECTRICAL LIGHTING				SubTotal 6
	Electrical Lighting of Underpass UP02				
26	S.I Industrial LED luminaries, 58 W, 7274lm, 4000K, CR180, 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 50.000h to 80% L80B20 - Lifetime:	pcs	8.00		
27	S.I Concrete manhole for groundin system, with dim 40x40x40 cm, with cast iron covering heavy type	pcs	1.00		
28	S.I Guain flexible electric pipe with double isolation $\phi = 16$ mm	ml	4.00		
29	S.I Earthing electrode H=2.0 ml, 50x50x5mm, galvanised for grounding of electric lighting panel	pcs	6.00		
30	S.I Bare copper conductor S=1x25 mm ²	ml	40.00		
31	S.I External Earthing clamp, tape-electrode-conductor up to section S = 25 mm ²	pcs	6.00		
32	S.I Derivation box, alluminium type, dim. (L.130xW.59xH.44) mm, IP65, completed with fittings and insulating gel for storage of insulation	pcs	7.00		

33		S.I Rigid steel metallic conduit, for surface installation, Ø = 25 mm, completed with installation accessories (elbows, couplings, metal straps, metal expansion plug, screws etc.,)	ml	60.00		
34		S.I Low voltage multicore copper cable, G16 rubber insulated, PVC sheathed, Un = 0,6/1 kV, FG16OR16 type, S = 3x4 mm ²	ml	200.00		
35		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	60.00		
36		S.I Low Voltage Road lighting distribution electrical panel, IP 66, with door and includes all accessories, and corpuscular relay	pcs	1.00		
37		Excavation of Low Voltage cable route channel as detail	m3	12.00		
38		Backfilling with existing materials for Low Voltage cables in the channel route	m3	10.00		
SUM OF LOCAL ROAD 02 (Price Excluding VAT)					SubTotal 1+2+3+4+5+ 6	

LOCAL ROAD 03a						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		DRAINAGE				
		Culverts				
		Barrel				
1		Excavated material	m3	49.35		
2		Backfilling with sand-gravel compacted to 98% Mod. Proctor	m3	9.87		
3		Concrete C 30/37 for barrel support	m3	13.12		
4		Concrete C 30/37 for barrel	m3	3.85		
5		Steel reinforcement φ≥10mm for barrel	ton	0.32		
6		Blinding concrete C12/15 thickness 15cm	m3	2.98		
7		Waterstop-at CJ	m	35.00		
8		Geotextile mesh	m2	43.80		
9		Double asphalt coating for barrel	m2	31.50		
10		Waterproofing with special waterproofing membrane	m2	33.25		
11		Concrete C20/25 for the protection of waterproofing (min 7cm) with galvanized weldedmesh	m3	0.70		
12		Perforated Concrete drain pipes φ200mm	m	35.00		
13		Lean Concrete C12/15 under drainage pipe	m3	15.40		
14		Granular material around drainage pipe	m3	5.95		
15		Geotextile around drainage pipe	m2	61.30		
		EARTHWORKS				
		Excavation				SubTotal 2
16		Cut in hard material, free section + trans auto	m3	68.60		
17		Cut in medium material, free section + trans auto	m3	342.90		
18		Cut in soft material, free section + trans auto	m3	274.35		
		Filling				
19		Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	42.40		
20		Embankment with appropriate borrowed material, compacted up to 95% of modified AASHTO	m3	28.30		
		PAVEMENTS				
		Unbound Gravel				SubTotal 3
21		Crushed stone fine material (0-31.5mm), 98% of modified Proctor AASHTO density, h=15cm	m2	1,553.00		

22	Crushed stone (5-40mm) compacted base course up to to 98% of modified AASHTO density on roadway, h=(10+15)cm	m2	2,344.20		
23	Crushed stone fine material (0-31.5mm) for verges	m3	49.50		
	Bituminous Bound Binder Course (incl. tack coat)				
24	Thickness : 6 cm	m2	1,569.00		
	Bituminous Bound Wearing Course (incl. tack coat)				
25	Thickness : 4 cm	m2	1,545.00		
	TRAFFIC SIGNS AND ROAD MARKINGS				SubTotal 4
	Warning And Regulatory Signs				
26	Circular Sign D=40cm, Al-CI2	pcs.	2.00		
	Painting Line Markings				
27	White thermoplastic road marking continuous line (Type A), width 12cm	ml	660.00		
28	White thermoplastic road marking discontinues line (Type D_1x1) width 12cm (converted in continuous line)	ml	8.00		
	ELECTRICAL LIGHTING				SubTotal 5
	Electrical Lighting of Underpass UP03				
29	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	14.00		
30	S.I Concrete manhole for groundin system, with dim 40x40x40 cm, with cast iron covering heavy type	pcs	1.00		
31	S.I Guain flexible electric pipe with double isolation Ø = 16 mm	ml	10.00		
32	S.I Earthing electrode H=2.0 ml, 50x50x5mm, galvanised for grounding of electric lighting panel	pcs	6.00		
33	S.I Bare copper conductor S=1x25 mm ²	ml	40.00		
34	S.I External Earthing clamp, tape-electrode-conductor up to section S = 25 mm ²	pcs	6.00		
35	S.I Derivation box, alluminium type, dim. (L.130xW.59xH.44) mm, IP65, completed with fittings and insulating gel for storage of insulation	pcs	9.00		
36	S.I Rigid steel metallic conduit, for surface installation, Ø = 25 mm, completed with installation accessories (elbows, couplings, metal straps, metal expansion plug, screws etc.,)	ml	100.00		
37	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		
38	S.I Low voltage multicore copper cable, G16 rubber insulated, PVC sheathed, Un = 0,6/1 kV, FG16OR16 type, S = 5x2.5 mm ²	ml	80.00		
39	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	40.00		
40	S.I Low Voltage Road lighting distribution electrical panel, IP 66, with door and includes all accessories, and corpuscular relay	pcs	1.00		

41		Excavation of Low Voltage cable route channel as detail	m3	12.00		
42		Backfilling with existing materials for Low Voltage cables in the channel route	m3	10.00		
SUM OF LOCAL ROAD 03a (Price Excluding VAT)					SubTotal	
					1+2+3+4+5	

LOCAL ROAD 03b						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
SITE CLEARANCE						
Clearing & Grubbing						SubTotal 1
1		General site clearance and grubbing	m2	1,726.00		
EARTHWORKS						
Excavation						SubTotal 2
2		Excavate topsoil (30cm)	m3	665.62		
3		Cut in hard material, free section + trans auto	m3	53.84		
4		Cut in medium material, free section + trans auto	m3	269.22		
5		Cut in soft material, free section + trans auto	m3	215.37		
Filling						
6		Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	175.90		
7		Embankment with appropriate borrowed material, compacted up to 95% of modified AASHTO	m3	117.26		
PAVEMENTS						
Unbound Gravel						SubTotal 3
8		Crushed stone fine material (0-31.5mm), 98% of modified Proctor AASHTO density, h=15cm	m2	1,220.80		
9		Crushed stone (5-40mm) compacted base course up to to 98% of modified AASHTO density on roadway, h=(10+10)cm	m2	1,849.06		
10		Crushed stone fine material (0-31.5mm) for verges	m3	51.07		
Bituminous Bound Binder Course (incl. tack coat)						
11		Thickness : 6 cm	m2	1,113.70		
Bituminous Bound Wearing Course (incl. tack coat)						
12		Thickness : 4 cm	m2	1,096.75		
TRAFFIC SIGNS AND ROAD MARKINGS						SubTotal 4
Painting Line Markings						
13		White thermoplastic road marking continuous line (Type A), width 12cm	ml	545.00		
SUM OF LOCAL ROAD 03b (Price Excluding VAT)					SubTotal	
					1+2+3+4	

LOCAL ROAD 04a						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
SITE CLEARANCE						
Clearing & Grubbing						SubTotal 1
1		General site clearance and grubbing	m2	1,300.00		

		SAFATY BARRIERS			SubTotal 2	
		Metallic Barrier (Guardrail)				
2		Side guardrails type N1/W2 (with 2 waves in one side + accessories)	ml	140.00		
		DRAINAGE			SubTotal 2	
		Culverts				
		Barrel				
3		Excavated material	m3	26.40		
4		Backfilling with sand-gravel compacted to 98% Mod. Proctor	m3	5.28		
5		Concrete C 30/37 for barrel support	m3	12.24		
6		Steel reinforcement $\phi \geq 10$ mm for barrel	ton	1.47		
7		Blinding concrete C12/15 thickness 15cm	m3	3.96		
8		Waterstop-at CJ	m	24.00		
9		Geotextile mesh	m2	30.00		
10		Double asphalt coating for barrel	m2	20.40		
11		Waterproofing with special waterproofing membrane	m2	34.32		
12		Concrete C20/25 for the protection of waterproofing (min 7cm) with galvanized welded mesh	m3	1.68		
13		Perforated Concrete drain pipes $\phi 200$ mm	m	24.00		
14		Lean Concrete C12/15 under drainage pipe	m3	10.56		
15		Granular material around drainage pipe	m3	4.08		
16		Geotextile around drainage pipe	m2	42.00		
		EARTHWORKS			SubTotal 3	
		Excavation				
17		Excavate topsoil (30cm)	m3	582.20		
18		Cut in hard material, free section + trans auto	m3	15.74		
19		Cut in medium material, free section + trans auto	m3	78.70		
20		Cut in soft material, free section + trans auto	m3	63.00		
		Filling				
21		Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	1,177.13		
22		Embankment with appropriate borrowed material, compacted up to 95% of modified AASHTO	m3	784.80		
		PAVEMENTS			SubTotal 4	
		Unbound Gravel				
23		Crushed stone fine material (0-31.5mm), 98% of modified Proctor AASHTO density, h=15cm	m2	787.60		
24		Crushed stone (5-40mm) compacted base course up to to 98% of modified AASHTO density on roadway, h=(10+10)cm	m2	1,109.65		
25		Crushed stone fine material (0-31.5mm) for verges	m3	37.48		
		Bituminous Bound Binder Course (incl. tack coat)				
26		Thickness : 6 cm	m2	876.95		
		Bituminous Bound Wearing Course (incl. tack coat)				
27		Thickness : 4 cm	m2	864.61		
		TRAFFIC SIGNS AND ROAD MARKINGS			SubTotal 5	
		Warning And Regulatory Signs				
28		Circular Sign D=40cm, AI-CI2	pcs.	2.00		
29		STOP sign D=60 cm AI-CI2	pcs.	1.00		
30		Triangular Sign A=60cm, AI-CI2	pcs.	1.00		

Painting Line Markings						
31		White thermoplastic road marking continuous line (Type A), width 12cm	ml	405.00		
32		White thermoplastic road marking discontinues line (Type D_3x3) width 12cm	ml	203.00		
33		White thermoplastic road marking discontinues line (Type D_1x1) width 12cm (converted in continuous line)	ml	16.00		
ELECTRICAL LIGHTING						
Electrical Lighting of Underpass UP04						
34		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	9.00		
35		S.I Concrete manhole for groundin system, with dim 40x40x40 cm, with cast iron covering heavy type	pcs	1.00		
36		S.I Guain flexible electric pipe with double isolation Ø = 16 mm	ml	4.00		
37		S.I Earthing electrode H=2.0 ml, 50x50x5mm, galvanised for grounding of electric lighting panel	pcs	6.00		
38		S.I Bare copper conductor S=1x25 mm ²	ml	40.00		
39		S.I External Earthing clamp, tape-electrode-conductor up to section S = 25 mm ²	pcs	6.00		
40		S.I Derivation box, alluminium type, dim. (L.130xW.59xH.44) mm, IP65, completed with fittings and insulating gel for storage of insulation	pcs	7.00		
41		S.I Rigid steel metallic conduit, for surface installation, Ø = 25 mm, completed with installation accessories (elbows, couplings, metal straps, metal expansion plug, screws etc.,)	ml	60.00		
42		S.I Low voltage multicore copper cable, G16 rubber insulated, PVC sheathed, Un = 0,6/1 kV, FG16OR16 type, S = 3x4 mm ²	ml	200.00		
43		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	70.00		
44		S.I Low Voltage Road lighting distribution electrical panel, IP 66, with door and includes all accessories, and corpuscular relay	pcs	1.00		
45		Excavation of Low Voltage cable route channel as detail	m3	12.00		
46		Backfilling with existing materials for Low Voltage cables in the channel route	m3	10.00		
SUM OF LOCAL ROAD 04a (Price Excluding VAT)					SubTotal	
					1+2+3+4+5+	
					6	

LOCAL ROAD 04b						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
DRAINAGE						
Culverts						
Barrel						
1		Excavated material	m3	53.58		
2		Backfilling with sand-gravel compacted to 98% Mod. Proctor	m3	10.72		

3		Concrete C 30/37 for barrel support	m3	14.32		
4		Concrete C 30/37 for barrel	m3	4.18		
5		Steel reinforcement $\phi \geq 10$ mm for barrel	ton	0.34		
6		Blinding concrete C12/15 thickness 15cm	m3	3.23		
7		Waterstop-at CJ	m	38.00		
8		Geotextile mesh	m2	47.50		
9		Double asphalt coating for barrel	m2	34.20		
10		Waterproofing with special waterproofing membrane	m2	36.10		
11		Concrete C20/25 for the protection of waterproofing (min 7cm) with galvanized welded mesh	m3	0.76		
12		Perforated Concrete drain pipes $\phi 200$ mm	m	38.00		
13		Lean Concrete C12/15 under drainage pipe	m3	16.72		
14		Granular material around drainage pipe	m3	6.46		
15		Geotextile around drainage pipe	m2	66.50		
		EARTHWORKS				SubTotal 2
		Excavation				
16		Excavate topsoil (30cm)	m3	933.80		
17		Cut in hard material, free section + trans auto	m3	38.60		
18		Cut in medium material, free section + trans auto	m3	192.95		
19		Cut in soft material, free section + trans auto	m3	154.36		
		Filling				
20		Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	497.25		
21		Embankment with appropriate borrowed material, compacted up to 95% of modified AASHTO	m3	331.50		
		PAVEMENTS				SubTotal 3
		Unbound Gravel				
22		Crushed stone fine material (0-31.5mm), 98% of modified Proctor AASHTO density, h=(10+10)cm	m2	2,252.00		
23		Crushed stone (5-40mm) compacted base course up to to 98% of modified AASHTO density on roadway, h=(15+15)cm	m2	2,527.20		
		SUM OF LOCAL ROAD 04b (Price Excluding VAT)				SubTotal 1+2+3

LOCAL ROAD 05a						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		SAFETY BARRIERS				SubTotal 1
		Metallic Barrier (Guardrail)				
1		Side guardrails type N1/W2 (with 2 waves in one side + accessories)	ml	98.00		
		DRAINAGE				SubTotal 2
		Culverts				
		Barrel				
2		Excavated material	m3	33.84		
3		Backfilling with sand-gravel compacted to 98% Mod. Proctor	m3	6.77		
4		Concrete C 30/37 for barrel support	m3	9.05		
5		Concrete C 30/37 for barrel	m3	2.64		
6		Steel reinforcement $\phi \geq 10$ mm for barrel	ton	0.21		
7		Blinding concrete C12/15 thickness 15cm	m3	2.04		
8		Waterstop-at CJ	m	24.00		
9		Geotextile mesh	m2	30.00		
10		Double asphalt coating for barrel	m2	21.60		
11		Waterproofing with special waterproofing membrane	m2	22.80		

12		Concrete C20/25 for the protection of waterproofing (min 7cm) with galvanized welded mesh	m3	0.48		
13		Perforated Concrete drain pipes ϕ 200mm	m	24.00		
14		Lean Concrete C12/15 under drainage pipe	m3	10.56		
15		Granular material around drainage pipe	m3	4.08		
16		Geotextile around drainage pipe	m2	42.00		
		Drop Inlet				
17		Excavated material	m3	8.38		
18		Backfilling gravel or crushed stone	m3	2.35		
19		Drop Inlet Step Irons (Steps for Concrete)	pcs	8.00		
20		Concrete C30/37 for drop inlet	m3	3.72		
21		Steel reinforcement $\phi \geq 10$ mm for drop inlet	ton	0.50		
22		Blinding concrete C12/15	m3	0.54		
23		Compacted gravel base	m3	4.00		
24		Waterstop-at CJ	ml	6.40		
		EARTHWORKS				
		Excavation				
25		Cut in hard material, free section + trans auto	m3	140.10		
26		Cut in medium material, free section + trans auto	m3	700.60		
27		Cut in soft material, free section + trans auto	m3	560.45		
		Filling				
28		Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	77.60		
29		Embankment with appropriate borrowed material, compacted up to 95% of modified AASHTO	m3	51.80		
		PAVEMENTS				
		Unbound Gravel				
30		Crushed stone fine material (0-31.5mm), 98% of modified Proctor AASHTO density, h=15cm	m2	1,668.80		
31		Crushed stone (5-40mm) compacted base course up to to 98% of modified AASHTO density on roadway, h=(10+15)cm	m2	1,780.60		
32		Crushed stone fine material (0-31.5mm) for verges	m3	61.79		
		Bituminous Bound Binder Course (incl. tack coat)				
33		Thickness : 6 cm	m2	1,522.33		
		Bituminous Bound Wearing Course (incl. tack coat)				
34		Thickness : 4 cm	m2	1,499.23		
		TRAFFIC SIGNS AND ROAD MARKINGS				
		Warning And Regulatory Signs				
35		STOP sign D=60 cm Al-CI2	pcs.	1.00		
36		Triangular Sign A=60cm, Al-CI2	pcs.	2.00		
		Painting Line Markings				
37		White thermoplastic road marking continuous line (Type A), width 12cm	ml	675.00		
SUM OF LOCAL ROAD 05a (Price Excluding VAT)						SubTotal 1+2+3+4+5

LOCAL ROAD 05b						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount

		SITE CLEARANCE			SubTotal 1	
		Clearing & Grubbing				
1		General site clearance and grubbing	m2	809.00		
		DRAINAGE			SubTotal 2	
		Culverts				
		Barrel				
2		Excavated material	m3	31.50		
3		Backfilling with sand-gravel compacted to 98% Mod. Proctor	m3	6.30		
4		Concrete C 30/37 for barrel support	m3	8.33		
5		Concrete C 30/37 for barrel	m3	2.24		
6		Steel reinforcement $\phi \geq 10$ mm for barrel	ton	0.29		
7		Blinding concrete C12/15 thickness 15cm	m3	1.40		
8		Waterstop-at CJ	m	14.00		
9		Geotextile mesh	m2	17.50		
10		Double asphalt coating for barrel	m2	16.80		
11		Waterproofing with special waterproofing membrane	m2	14.00		
12		Concrete C20/25 for the protection of waterproofing (min 7cm) with galvanized welded mesh	m3	0.35		
13		Perforated Concrete drain pipes $\phi 200$ mm	m	14.00		
14		Lean Concrete C12/15 under drainage pipe	m3	6.16		
15		Granular material around drainage pipe	m3	2.38		
16		Geotextile around drainage pipe	m2	24.50		
		Wingwalls				
17		Backfilling gravel or crushed stone	m3	15.35		
31		Concrete C30/37 for wingwalls	m3	5.62		
32		Steel reinforcement $\phi \geq 10$ mm for wingwalls	ton	0.62		
33		Blinding concrete C12/15	m3	1.25		
34		Compacted gravel base	m3	3.95		
35		Non absorbent joint filler	m3	0.01		
36		Sealing compound	L	0.99		
37		Double asphalt coating for walls	m2	6.06		
38		Perforated Concrete drain pipes $\phi 200$ mm	ml	2.48		
39		Lean Concrete C12/15 under drainage pipes	m3	1.62		
40		Granular material around drainage pipes	m3	0.41		
41		Geotextile around drainage pipe	m3	3.90		
		Wingwall's Slab				
42		Concrete C30/37	m3	0.00		
43		Steel reinforcement $\phi \geq 10$ mm for wingwalls	ton	0.00		
44		Blinding concrete C12/15	m3	0.00		
45		Compacted gravel base	m3	0.00		
		Drop Inlet				
46		Excavated material	m3	19.30		
47		Backfilling gravel or crushed stone	m3	4.83		
48		Drop Inlet Step Irons (Steps for Concrete)	pcs	9.00		
49		Concrete C30/37 for drop inlet	m3	6.72		
50		Steel reinforcement $\phi \geq 10$ mm for drop inlet	ton	0.81		
51		Blinding concrete C12/15	m3	0.86		
52		Compacted gravel base	m3	5.83		
53		Waterstop-at CJ	ml	8.40		
		EARTHWORKS			SubTotal 3	
		Excavation				
54		Excavate topsoil (30cm)	m3	532.400		
55		Cut in hard material, free section + trans auto	m3	315.020		
56		Cut in medium material, free section + trans auto	m3	1,575.120		
57		Cut in soft material, free section + trans auto	m3	1,260.100		
		Filling				

58		Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	99.180		
59		Embankment with appropriate borrowed material, compacted up to 95% of modified AASHTO	m3	66.120		
		PAVEMENTS				
		Unbound Gravel				
62		Crushed stone fine material (0-31.5mm), 98% of modified Proctor AASHTO density, h=(10+10)cm	m2	708.00		
65		Crushed stone (5-40mm) compacted base course up to to 98% of modified AASHTO density on roadway, h=(15+15)cm	m2	825.20		
SUM OF LOCAL ROAD 05b (Price Excluding VAT)					SubTotal	
					1+2+3+4	

LOCAL ROAD 06						
No.	TS Code	Description	Unit	Quantity	Unit Price	Amount
		SITE CLEARANCE				
		Clearing & Grubbing				
1		General site clearance and grubbing	m2	5,000.00		
		SAFATY BARRIERS				
		Metallic Barrier (Guardrail)				
2		Side guardrails type N1/W2 (with 2 waves in one side + accessories)	ml	490.00		
3		Side guardrails type H1/W2 (with 2 waves in one side + accessories)	ml	199.00		
		DRAINAGE				
		Culverts				
		Barrel				
4		Excavated material	m3	610.26		
5		Backfilling with sand-gravel compacted to 98% Mod. Proctor	m3	121.13		
6		Concrete C 30/37 for barrel	m3	95.19		
7		Steel reinforcement $\phi \geq 10$ mm for barrel	ton	6.37		
8		Blinding concrete C12/15 thickness 15cm	m3	14.30		
9		Waterstop-at CJ	m	102.00		
10		Geotextile mesh	m2	185.10		
11		Double asphalt coating for barrel	m2	138.94		
12		Waterproofing with special waterproofing membrane	m2	123.41		
13		Concrete C20/25 for the protection of waterproofing (min 7cm) with galvanized welded mesh	m3	4.86		
14		Perforated Concrete drain pipes $\phi 200$ mm	m	102.00		
15		Lean Concrete C12/15 under drainage pipe	m3	48.00		
16		Granular material around drainage pipe	m3	17.34		
17		Geotextile around drainage pipe	m2	178.50		
		Apex				
18		Concrete C 30/37 for apex	m3	1.37		
19		Steel reinforcement $\phi \geq 10$ mm for apex	ton	0.12		
		Approach Slab				
20		Steel reinforcement $\phi \geq 10$ mm for slab	ton	1.82		
21		Concrete C 30/37 for slab	m3	23.80		
22		Blinding concrete C12/15 thickness 15cm	m3	14.30		
23		Double asphalt coating for slab	m2	102.50		

		Wingwalls				
24		Backfilling gravel or crushed stone	m3	57.16		
25		Concrete C30/37 for wingwalls	m3	18.23		
26		Steel reinforcement $\phi \geq 10$ mm for wingwalls	ton	1.61		
27		Blinding concrete C12/15	m3	3.33		
28		Compacted gravel base	m3	13.27		
29		Non absorbent joint filler	m3	0.04		
30		Sealing compound	L	3.21		
31		Double asphalt coating for walls	m2	32.40		
32		Perforated Concrete drain pipes $\phi 200$ mm	ml	8.03		
33		Lean Concrete C12/15 under drainage pipes	m3	5.20		
34		Granular material around drainage pipes	m3	1.33		
35		Geotextile around drainage pipe	m3	12.38		
		Wingwall's Slab				
36		Concrete C30/37	m3	2.41		
37		Steel reinforcement $\phi \geq 10$ mm for wingwalls	ton	0.18		
38		Blinding concrete C12/15	m3	1.25		
39		Compacted gravel base	m3	7.73		
		EARTHWORKS				
		Excavation				SubTotal 4
40		Excavate topsoil (30cm)	m3	4,986.02		
41		Cut in hard material, free section + trans auto	m3	662.26		
42		Cut in medium material, free section + trans auto	m3	3,311.31		
43		Cut in soft material, free section + trans auto	m3	2,649.05		
		Filling				
44		Embankment from cutting material, compacted up to 95% of modified AASHTO	m3	4,400.19		
45		Embankment with appropriate borrowed material, compacted up to 95% of modified AASHTO	m3	2,933.46		
		PAVEMENTS				SubTotal 5
		Unbound Gravel				
46		Crushed stone fine material (0-31.5mm), 98% of modified Proctor AASHTO density, h=(10+10)cm	m2	4,786.10		
47		Crushed stone (5-40mm) compacted base course up to to 98% of modified AASHTO density on roadway, h=(15+15)cm	m2	4,667.38		
		TRAFFIC SIGNS AND ROAD MARKINGS				SubTotal 6
		Warning And Regulatory Signs				
48		Circular Sign D=40cm, AI-C12	pcs.	2.00		
		STRUCTURES				SubTotal 7
		Earthworks				
49		Excavated material	m3	2,066.82		
50		Backfilling with gravel or crushed stone	m3	2,087.43		
51		Filling with gravel or crushed stone	m3	356.52		
52		Granular material around drainage pipe	m3	110.60		
53		Compacted gravel base, t=85cm	m3	621.30		
54		Geotextile around drainage pipe	m2	110.60		
		Drainage				
55		Drain $\phi 200$ mm behind abutment or walls	ml	191.10		
		Pvc Pipe				
56		PVC Pipe $\phi 100$ mm	ml	72.50		

		Concrete				
57		Blinding concrete C12/15 for leveling tmin 50 cm	m3	172.35		
58		Lean Concrete C12/15 under foundation t=15 cm	m3	86.62		
59		Concrete C 30/37 retaining wall	m3	724.44		
		Reinforcement				
60		Steel reinforcement $\phi \geq 10$ mm for retaining wall	t	56.26		
		Joints				
61		Sealing compound	L	0.09		
62		Waterstop-at vertical joint (Flexible soft PVC Waterbars)	m	88.10		
63		Waterstop-at horizontal joint (Flexible soft PVC Waterbars)	m	31.95		
		ELECTRICAL LIGHTING				
		Electrical Lighting of Underpass UP05				
64		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	11.00		
65		S.I Concrete manhole for groundin system, with dim 40x40x40 cm, with cast iron covering heavy type	pcs	1.00		
66		S.I Guain flexible electric pipe with double isolation $\phi = 16$ mm	ml	6.00		
67		S.I Earthing electrode H=2.0 ml, 50x50x5mm, galvanised for grounding of electric lighting panel	pcs	6.00		
68		S.I Bare copper conductor S=1x25 mm ²	ml	40.00		
69		S.I External Earthing clamp, tape-electrode-conductor up to section S = 25 mm ²	pcs	6.00		
70		S.I Derivation box, alluminium type, dim. (L.130xW.59xH.44) mm, IP65, completed with fittings and insulating gel for storage of insulation	pcs	8.00		
71		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	80.00		
72		S.I Low voltage multicore copper cable, G16 rubber insulated, PVC sheathed, Un = 0,6/1 kV, FG16OR16 type, S = 3x4 mm ²	ml	200.00		
73		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	90.00		
74		S.I Low Voltage Road lighting distribution electrical panel, IP 66, with door and includes all accessories, and corpuscular relay	pcs	1.00		
75		Excavation of Low Voltage cable route channel as detail	m3	12.00		
76		Backfilling with existing materials for Low Voltage cables in the channel route	m3	10.00		
SUM OF LOCAL ROAD 06 (Price Excluding VAT)					SubTotal	
					1+2+3+4+5+	
					6+7+8	
SUM OF BILL No.13 - TOTAL Sum of LOCAL ROADS (Price Excluding VAT)						

SUBTOTAL (BILL 1 ÷ BILL 13):	
Contingencies and Risks 5% :	
SUBTOTAL INCLUDING 5%:	

VAT at 20% :	
GRAND TOTAL (including Contingencies 5% and VAT 20%)	