Open Procurement Albania

Report

MILOT-BALLDREN ROAD
(PROJECT – IDEA PHASE)

Intro

1.1 General Project Presentation

The axis of the proposed route extends along the existing road axis linking Milot with the city of Lezha and diverted as a completely new road, from the node of the city of Lezha to Balldren, where it then connects to the existing road to Shkodra.

The proposed project includes the construction of the road segment "MILOT - BALLDREN", as well as the construction of the 1 portal tunnel in Mount Renc. The length of the Milot-Balldren highway is 17,263.75 km including the main motorway and the tunnel at the same length:

a) Main road 15 km + 570.35m
b) The 1-portal tunnel, 850m long
c) The Mat Bridge, 620 m long
d) The Drini Bridge, with a length of 223.4 m

Also proposed is the construction of a total of 9,500 m of secondary roads and joining roads to facilitate and facilitate the circulation of the inhabitants of this area.

The growing traffic from Tirana to the northwestern part of the country and also the conditions of existing infrastructure have brought about a reduction in the level of service in this area, especially in winter. Above all, the conditions under which the current Milot - Balldren road, its capacities, the lack of propagated standards with the capacity of the area have brought about the need for a new road project in this area.

The existing road linking Tirana with the district of Lezha represents an axis of 57.17 km. It follows the direction of Tirana - Fushe-Kruje - Lac - Milot - Lezhe.

In the context of continuous improvement of road infrastructure, which represents one from the main factors influencing the development of the country, began the first studies on the construction of the Milot-Balldren axis. The study involves the construction of this road segment Secondary roads will improve the infrastructure and will bring development to the Lezha district and to the entire north-western part of Albania. The construction of the Milot-Balldren road segment is of great importance, especially in the economic development of Milot and Lezha. This axis also facilitates communication with the rest of the north-west in Albania and the neighboring country of Montenegro.

This road simultaneously realizes the bypass of the city of Lezha which is very necessary for this city.

2 PROJECT

2.1 Goals / Objectives

The goals of this project are to improve the traffic situation and road infrastructure.

The proposed route extends along the existing road axis linking Milot with the city of Lezha and diverted as a completely new road, from the node of Lezha to Balldren, where it connects with the existing road to Shkodra.

A direct footprint, with the appropriate geometric standards, is supposed to improve the movement of traffic across the region affected by this construction, in particular the traffic flow along the North - South corridor. It will also have a completely positive impact on the entire transport network.

The main objectives of the project are:

1. Provide a suitable connection to the Adreatiko-Jonian highway
2. Facilitating traffic segment Milot - Lezhe- Balldren route also in the banu t a r a zone, which has often been made due to accidents.
3. Implementation of international standards in the implementation of this project (roads, bridges, tunnels) .

2.2 Objects and Work

The work that will be carried out for the realization of the road, according to the planning we have made extends in 3 stages.

Phase 1

The study and detailed implementation project in order to improve all roadside parameters or other elements constitutes this stage. At the same time, the expropriation of properties and objects affected by the project will be carried out.

Phase 2

The second phase is that of road construction. The work starts with the mobilization of the yards, personnel, and machinery. Point d is defined supply of inert, concrete, asphalt, etc. Landfills, waste, etc. are also designated. Deviation of traffic is carried out where needed and the implementation of the works begins. This phase closes with the completion of the works.

Phase 3

The final stage comprises maintaining the en route, such as: cleaning the channel and acts to drain the water. Possible repair of asphalt, protective barriers, signaling, etc.

2.3 Priorities, Assumptions and Limitations

Priorities

The proposal for the construction of the Milot - Balldren road segment is part of the Government's plan for infrastructure development through the One Billion Euro program. This is to be achieved by including private equity investment.

With the approval of the project, priority is given to the realization of the expropriation before the works are started so that there are no works prohibitions.

Assumptions:

It is assumed that the expropriation of the affected property will be carried out by the Government, prior to the commencement of the works.
It is assumed that banks will be involved in the investment of this project and with a low interest rate.
It is assumed that the Government will provide a guarantor for receiving loans from banks.

2.4 Strategic and Operational Benefits of the Project

The Milot-Balldren road project extends along the existing road axis linking Milot with the city of Lezha and diverted as a completely new road, from the city of Lezha to Balldren where it connects with the existing road to Shkodra. The road continues right up to the roundabout of Lezha and has a turning in front of the entrance to the tunnel.

The highway should provide the possibility of establishing a high capacity connection - high speed for north-south transit, integrating the retraining of the Milot - Lezhe-Balldren section as part of Autostrades Adriatiko - Jonian . The new highway will be in the urbanized areas of Milot , Lac - Lezhe , and will consist of 2 carriageways with 3 lanes .

The Albanian Government has paid attention to connecting roads in the north and northwest with Montenegro. In this segment, daily traffic also includes traffic to the beach of shengjin . The realization of this road has an important strategic dimension, as part of the Adriatic - Ionian corridor .

2.5 Technical Analysis (Technical Project / Technical Solution / Technical Feasibility

Expenditures Analysis

The analysis is carried out in order to investigate existing and future needs in the study area, covering

The geographic scope of the project and p e s instruction handled together

The trail starts from Milot , continues along the existing road axis linking Milot with the city of Lezha and deviates as a completely new road, from the node of the city of Lezha to Balldren, where it then connects to the existing road towards Shkodra.

The municipalities affected by the project footprint are: Lac, Lezhe.

The forecast trail passes mainly sore in the land of farmers, except by the part of some p s t where t certain areas and smaller urban affected.

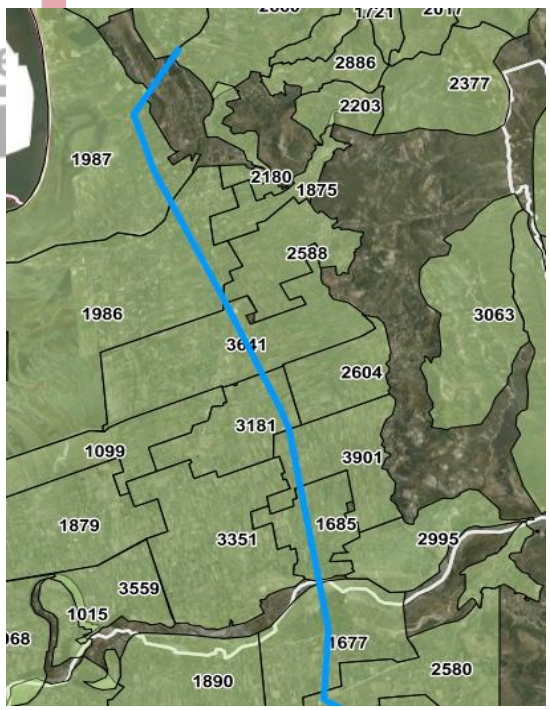
Types of Land Use

The value of land for expropriation is determined (in ALL / m2) by a Decision of the Council of Ministers, which approves the reference values by zones and categories in accordance with Law no. 9235, dated 29.07.2004 "On the Restitution and Compensation of Property" and DCM no. 658, dated 26.09.2012, "On the Approval of the Methodology for Valuation of Immovable Property in the Republic of Albania". Currently, the values are defined by DCM no. 89, date 03.02.2016 "On the definition of the land value mapping in Albania".

For this phase, the method of evaluation used is based on Guideline No. 3 dated 28.12.2016 "On approval of the average cost of construction by the National Housing Office for 2016".

Value Map

The trail covers some cadastral zones belonging to the territory of the municipalities of Lac, Lezha, for which we have presented a schematic overview of the cadastral zones and the relevant values map



Schematic representation to the track of the project on ss t cadastral areas affected

Technical Project Description

The length of the Milot-Balldren highway is 17,263.75 km including the main motorway and the tunnel at the same length:

a) Main road 15 km + 570.35m
b) The 1-portal tunnel, 850m long
c) The Mat Bridge, 620 m long
d) The Drini Bridge, with a length of 223.4 m

Also proposed is the construction of a total of 9,500 m of secondary roads and joining roads to facilitate and facilitate the circulation of the inhabitants of this area.

- The main motorway Milot-Balldren is proposed to be of the A highway category with the following parameters:

The wreath of the road

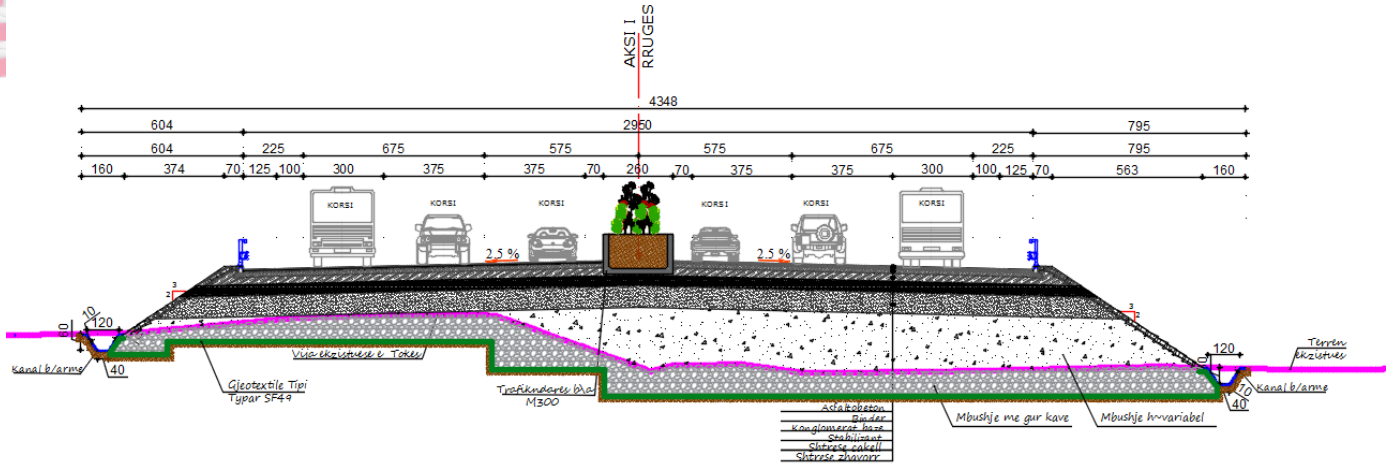
a. 2 x 3.75m +2 x 3.75m + 2 x 3 m Emergency lane + 2x1 + 2x1.25 (asphalted pavement) + 2x0.7 (traffic space)
b. Asphalting of the wreath s of road 26.9 m.
c. Width of the crown that way 29.5 m.

Road sections designed according to this proposal :

- Asphalt concrete layer
- binder
- Conglomerate base
- stabilizers
- Cakell machines
- gravel

The proposed types of sections are as follows:

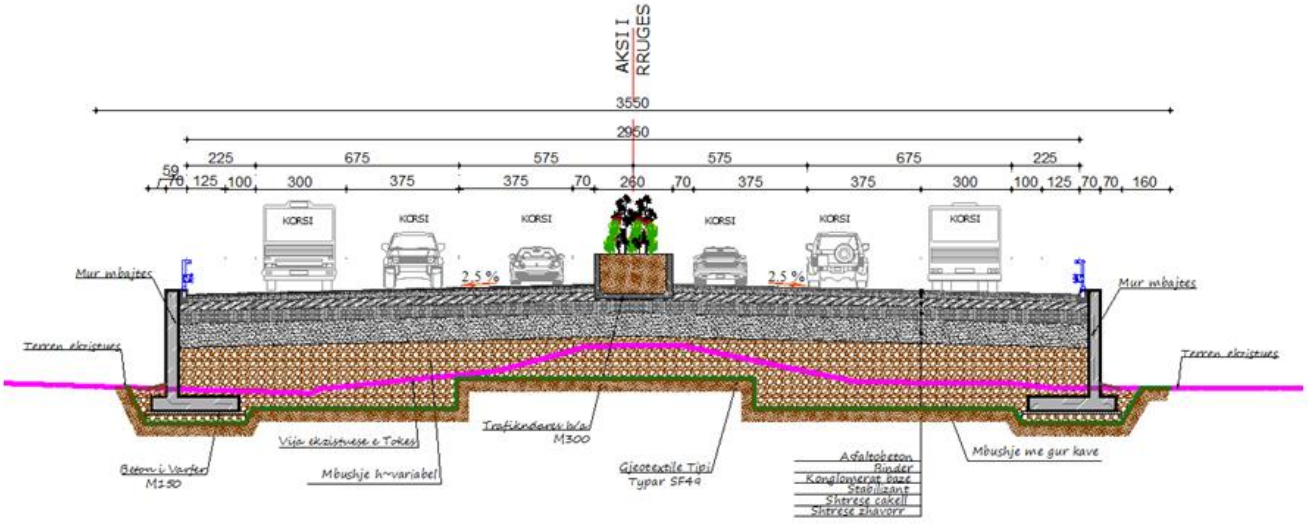
Section "T ip 1 ", ***Pk 1-Pk 465 (Drini Bridge)***



This section is applied from the first milestone to the peak no. 465 Drini bridge where it starts and gradual upgrading from 0.5 to 0.8m by filling the road . The existing route will be expanded with the emergency lanes as well as other elements (asphalt pavement etc.) as well as interventions in all existing works of art by anticipating their reconstruction.

N of this part have made and full interference on the existing road to Upgrade the Suar it fully and Upgrade of collecting details full niveleten in this way, are provided and the layer of ballast machinery that was forecasted in the previous version.

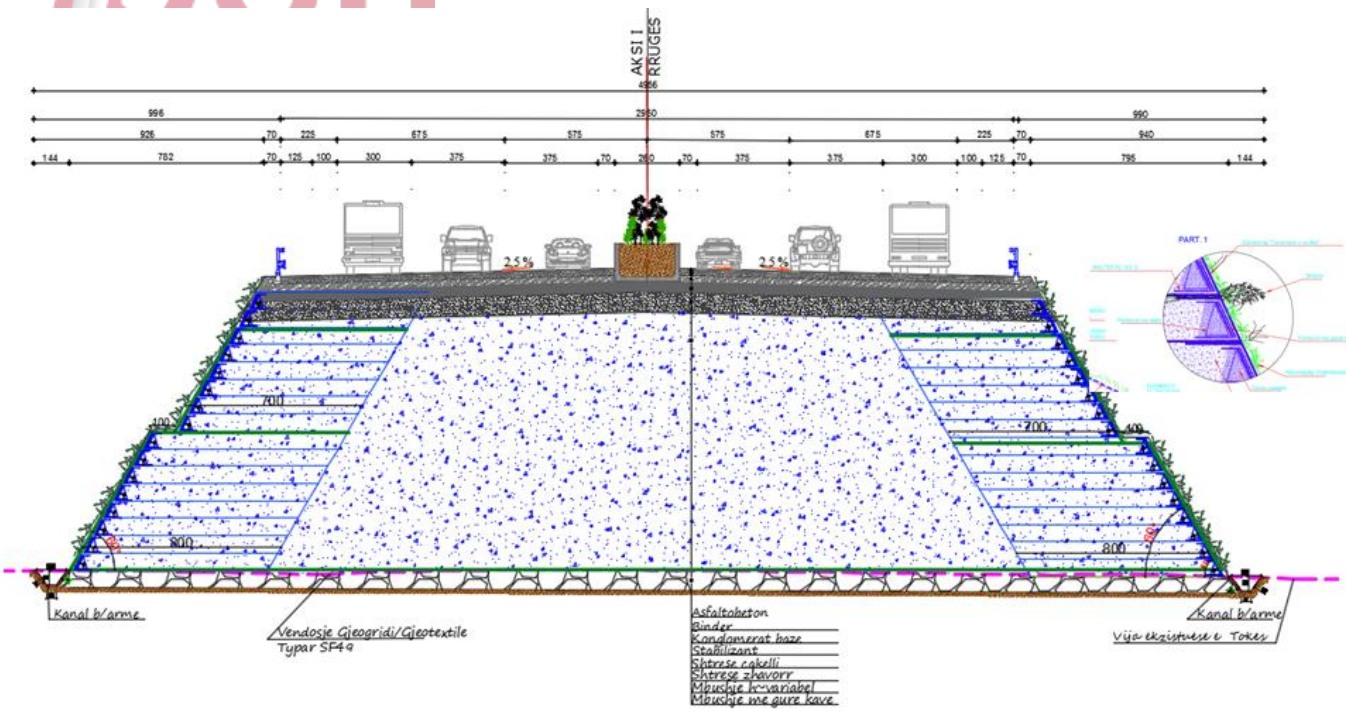
Section "T ip 2" ***Pk .475 (after the Drini Ures) ÷ Pk.510 (Pathway) (875m):***



I applied 475 from Pk after Drini Ures to Pk to 510 Entry-exit node in Lezhe and Shengjin .

In the road segment after the Drini slope up to the roundabout of Lezha, the section with retaining walls (L = 875m) will be applied due to the limited space as a result of the existing facilities along the road on both sides , in order to avoid their breakup and expropriation.

Section "T ip 3", ***Genetic Zone, Pk .475 (Slack Knot) ÷ Pk.619 (Tunnel):***



I applied from the entry-exit node in the Lezhe Shengjin to peak .nr 619 where the tunnel area starts , which is the whole bay area .

According to many studies in the Lezha area, it has been shown that tidal waters have damaged the shoreline of Shengjin-Kune-Vain-Tale-Patok. At certain periods the tide has gone 120-140 cm (80 cm above normal quotients). Although measures have been taken by raising embankments to protect the inhabited areas, there are areas where during the 30 years the sea is introduced 300 meters deep. The Mat River has been removed by many inert, which has reduced the lateral floods, but the floods brought by this river on the coastline have been diminished and coastal floods have been added. Lezha has a lot of surface below sea level, the Kune-Vainin marsh is for example below sea level. The kennel has dropped 2 meters, 2000 ha are usually under water, and 600 ha are never dry. Because we are in an area with unfavorable geological conditions it is necessary to take the engineering measures as below, to improve the basement where the road will cross.

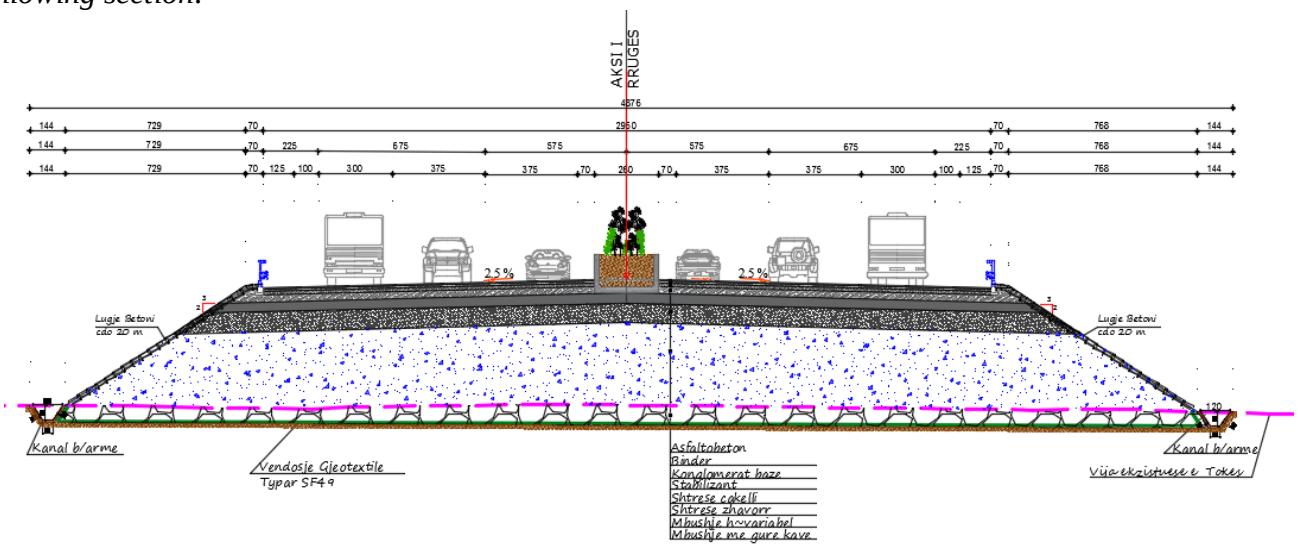
In this segment, the road extends along the Kune- **Vainen shingle (length of the marshy area = 2325m).** Since it is a weak basement area due to the presence of groundwater and surface waters, saline but not aggressive as well as due to the increase of the elevation of the road, conditioned by the design requirements of the tunnel, in this segment are take engineering measures as follows:

- **Increasing the depth of germination, which reaches 1.5 ~ 2.0 m for removing the vegetal soil and achieving a more stable base**
- **Chopped coffee filling of the harvested part, in order to filter and circulate the water and avoid damage to the body of the road**
- **Laying the geogrid layer to improve the resistance of the body to deformations**
- **Setting up a geotextile to store the floor filler material**

- **The realization of the skarpata will be made with terra-armata, to reduce the angle of the skarpata as well as the width of the stretch of the road, since in this section the road has filling height that goes up to 12m, at the same time provides a greater stability and longevity of the body of the road. Terraarmata also has a good response to seismicity .**

- **For the drainage and drainage of the drainage channels, there are foreseen tombino perpendicular to the body of the road**

Considering that the part from the exit of the tunnel to the connection with the existing road to Shkodra is a problematic area with the level of the water (this area is part of Torovice) it is proposed to apply the following section:

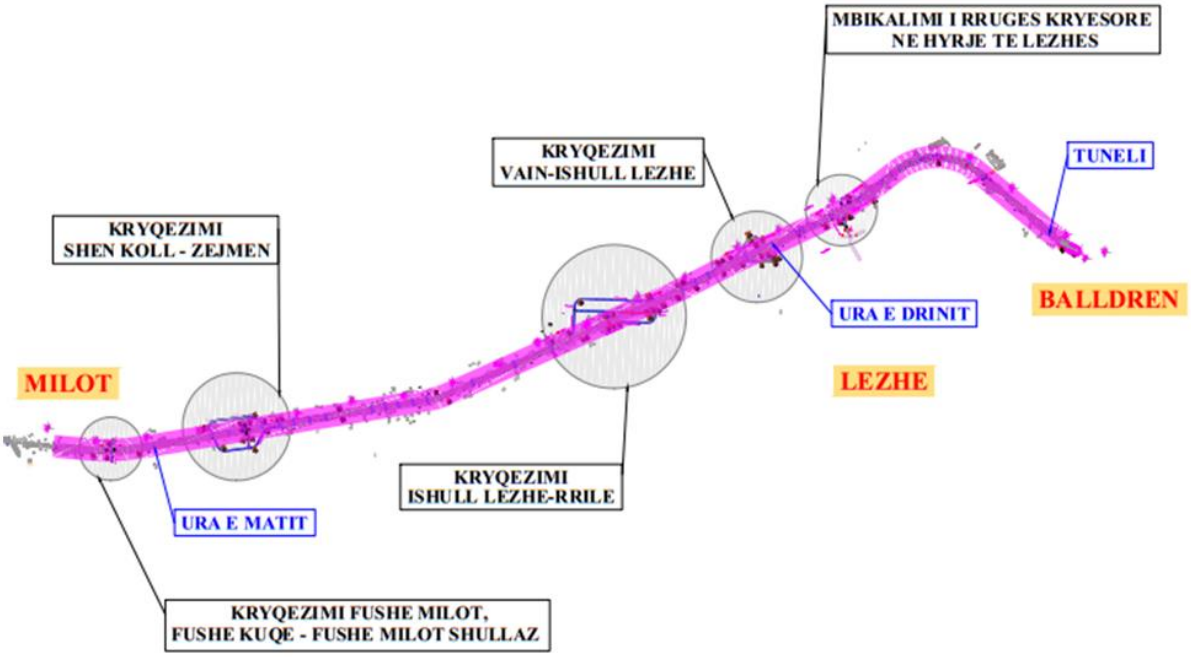


Terthor Section " Tip 4 " ***, Link Road, Pk .661 (Tunnel Exit) ÷ Pk.692 (Existing Road):***

For the part of the connecting road from the exit of the tunnel (L = 750m) to the connection with the existing road in the direction of Shkodra is proposed to apply the section type as follows:

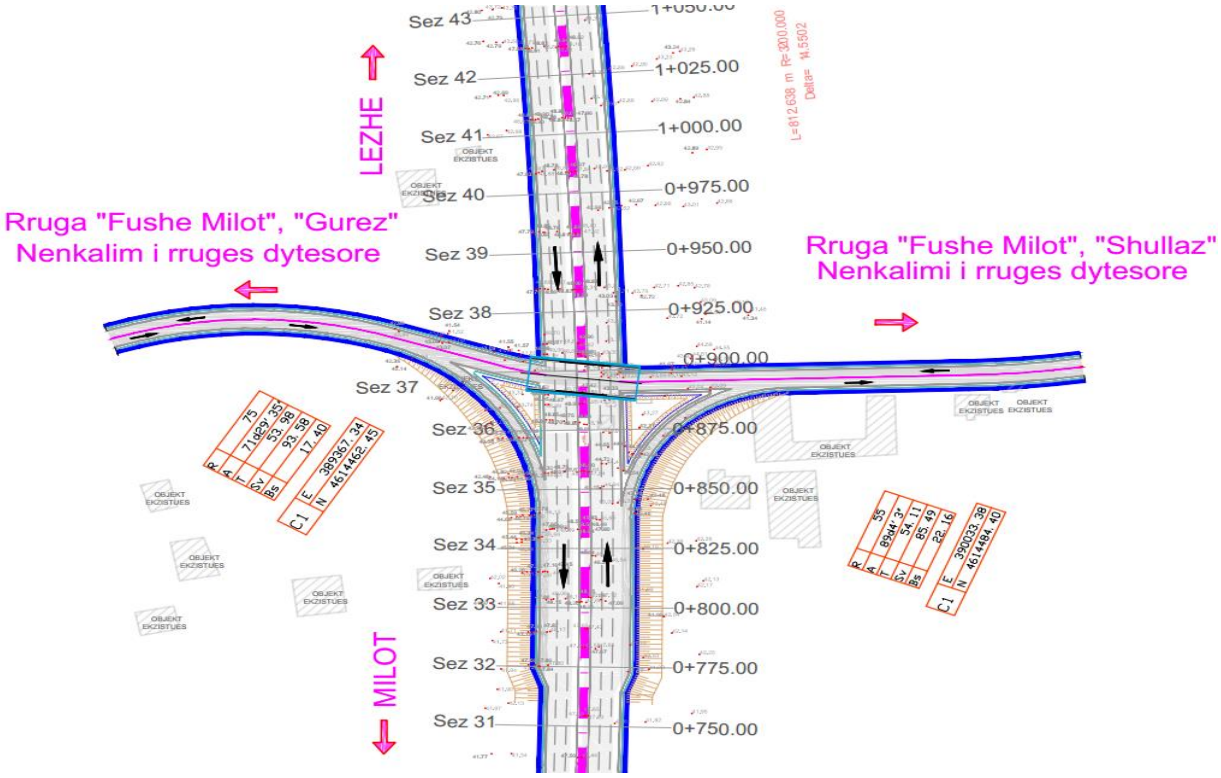
The depth of the germination section in this part of the road reaches 1m and the filling layer height is variable.

- **Throughout the length of the road is planned the construction of 5 intersections (linkages with urban areas)**



1- Main Road Overpass at the Fushe Milot Intersection, Fushe Kuqe - Fushe Milot Shullaz

Overpass Surrounds In Pk. 37 (Km 0 + 900).

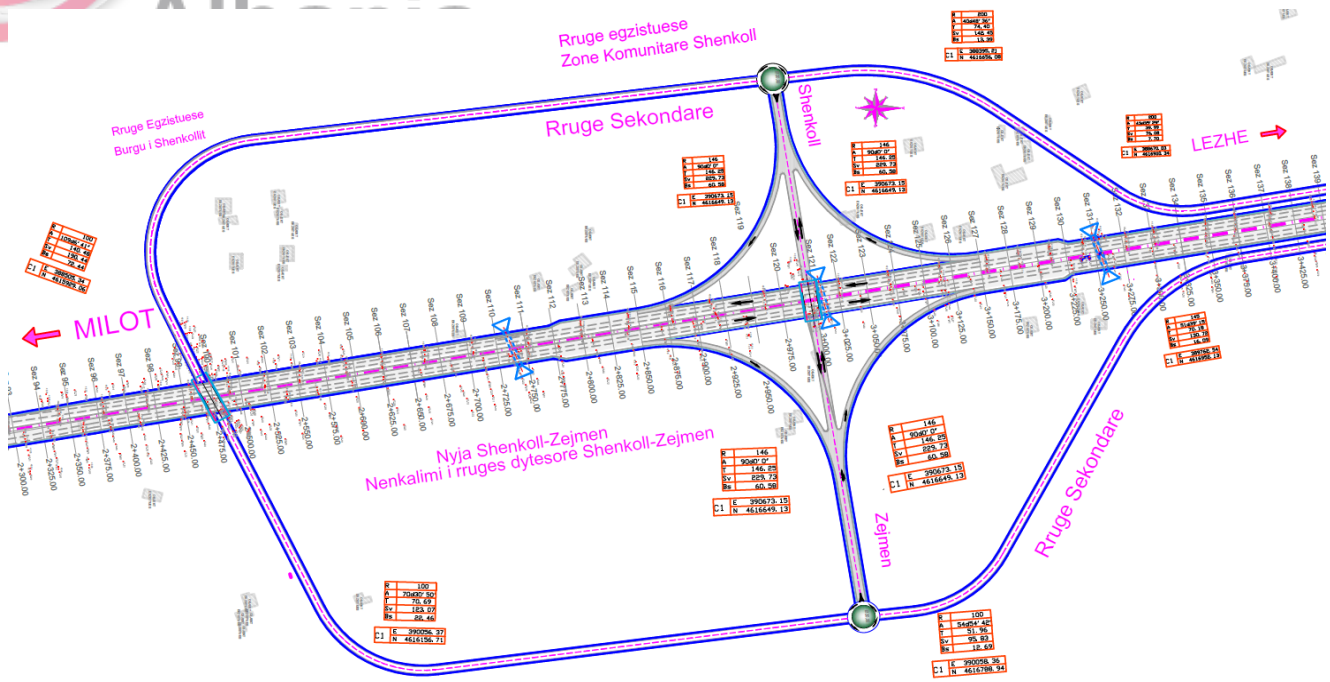


2 Overpass of the Main Street in the Cross St. Koll Zejmen, Pk 112-130 (Km 2 + 775-3 + 225)

The distance between the Shenkoll-Zejmen node with the intersection 1 is 550m

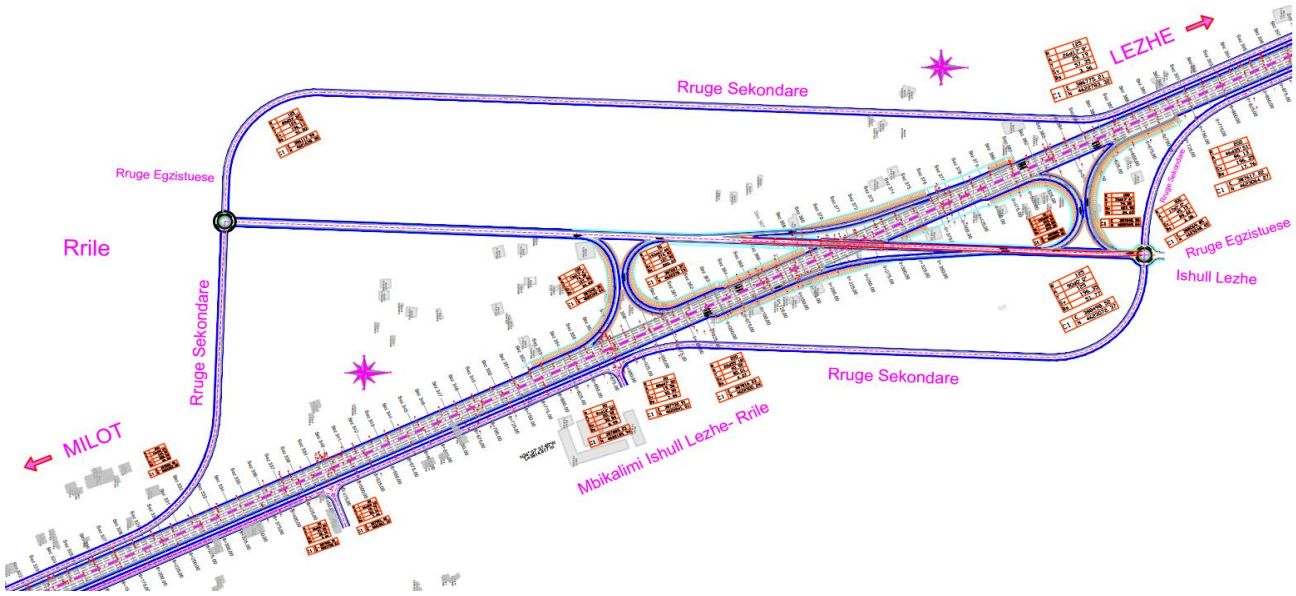
The distance between the Shenkoll-Zejmen node with the crossing Tale is 1500m

The distance between the Shenkoll-Zejmen node with the island Lezhe-Rrile is 6250m



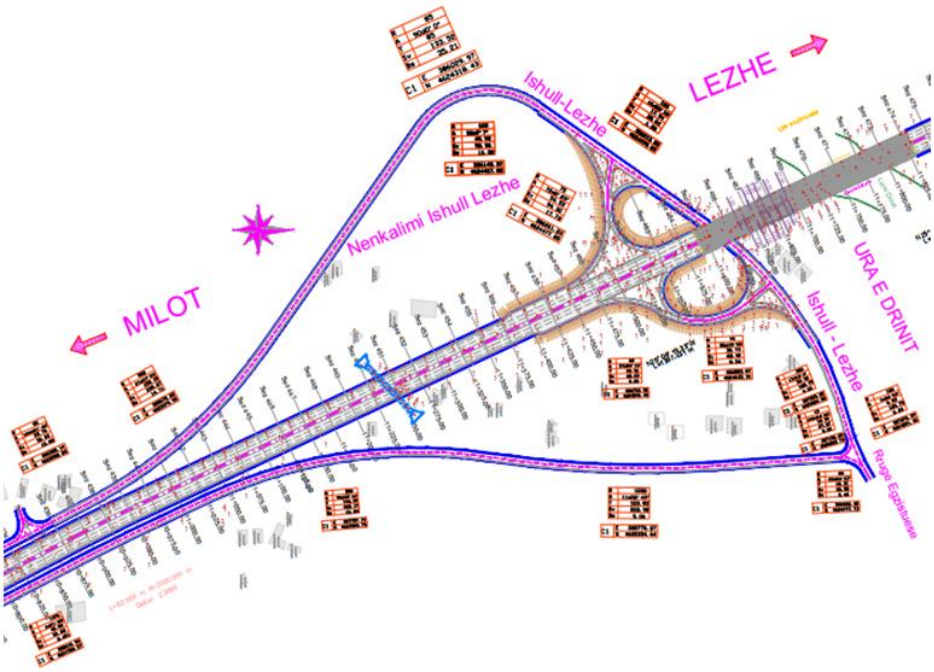
3- The Road Overpass main intersection in the Lezha Island-Rrile Pk 352-390 (Km 8 + 775-9 + 725)

The distance between the Lezha-Rrile island node with the Lezha node is 2325 m



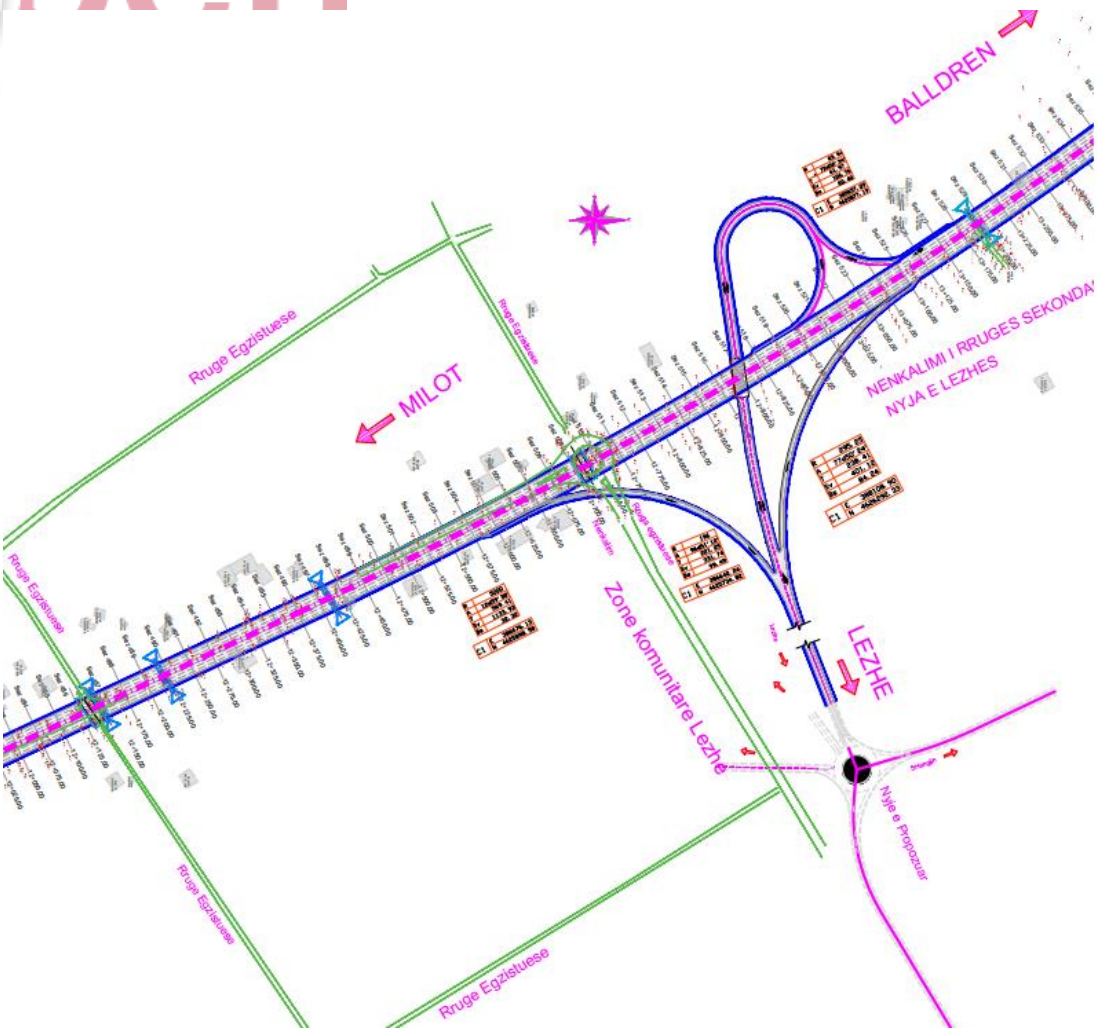
4, the main road overpass, the n-k ryqezimin Vain island Lezhe. Pk. 456-465 (Km 11 + 400-11 + 600)

The distance between the Lezha Island node with the roundabout of Lezha is 1325 m



5-The Road Overpass Page n Introduction to the Pk505 Pk-529 Clarendon (Km 12 + 600-13 + 200) With a Stretch Of 600 m.

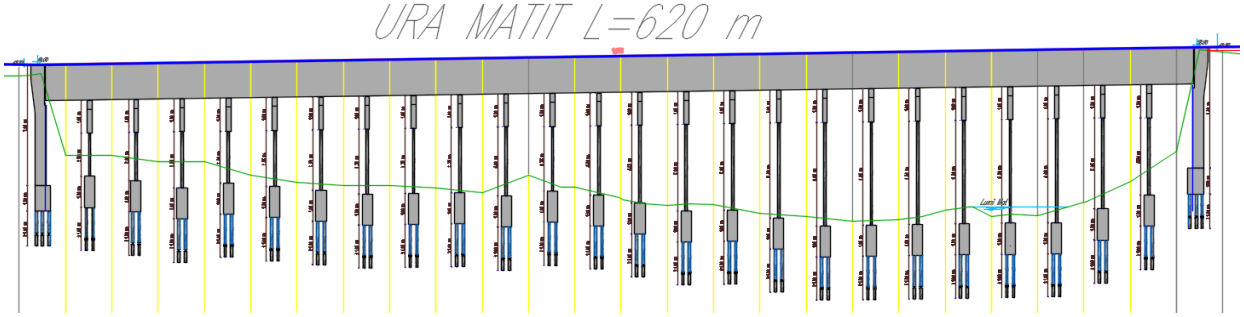
Distance between the roundabout of Lezha to the entrance of the tunnel = 2575 m

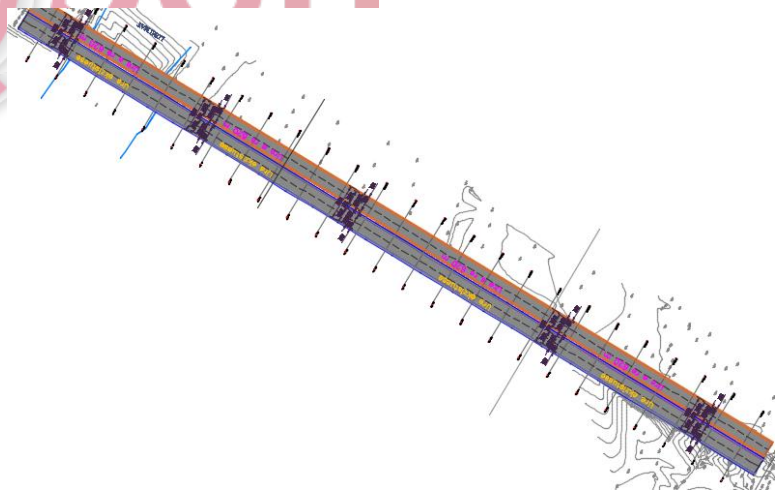


- **The construction of two big bridges is foreseen:**

- **PATTERN ARROW**

The existing bridge over the Mat River is a two-way bridge which will be maintained and parallel to it will be constructed a new bridge with the same length L = 620 m and cross-section as in the figure below:





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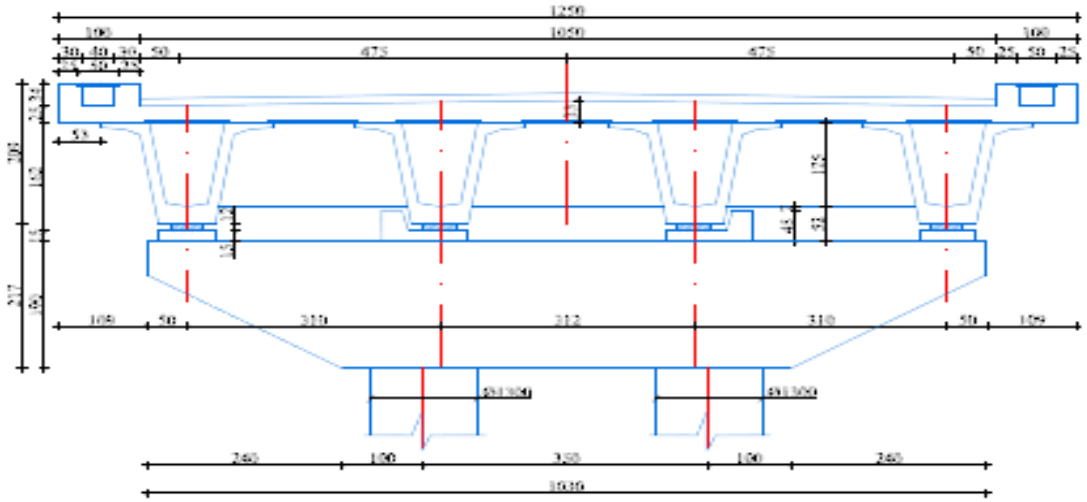
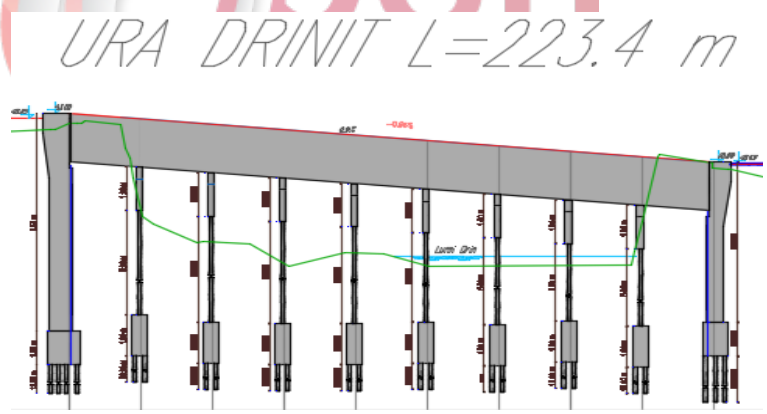
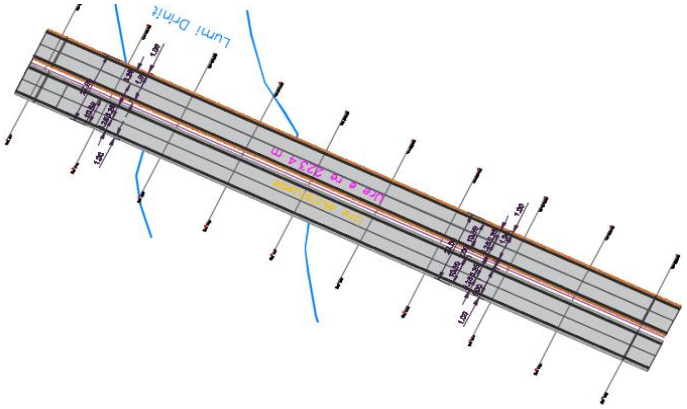


- **DRIN BRIGDE**

The existing bridge over the Drin River is a two-way bridge which will be maintained and parallel to it will be constructed a new bridge with the same length L = 223.4 m and cross-section as follows:





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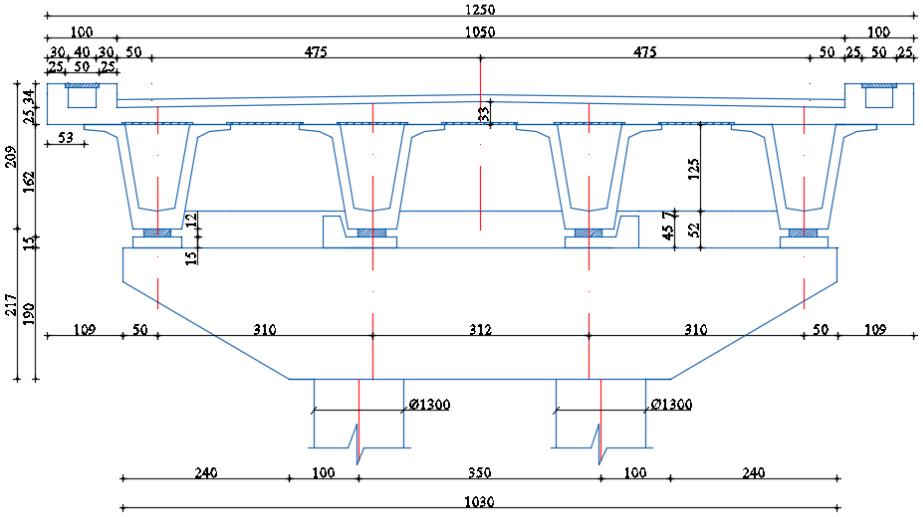


- **The construction of secondary roads and joining roads (Shenkoll-Zejmen, Lezha-Rrile Island, Lezha Island, Drini Bridge etc.) has been planned, with a length of 9 500 ml as the necessity of facilitating and facilitating the safety of vehicles. this zone .**

.

- The average daily traffic is more than 1000 unit vehicles.
- - Speed in km / h
- V max = 100 km / h V min = 40 km / h
- Maximum inclination 7 (%)
- Minimum limit [m]: 45

These secondary and connecting roads are category F2, with parameters as follows:

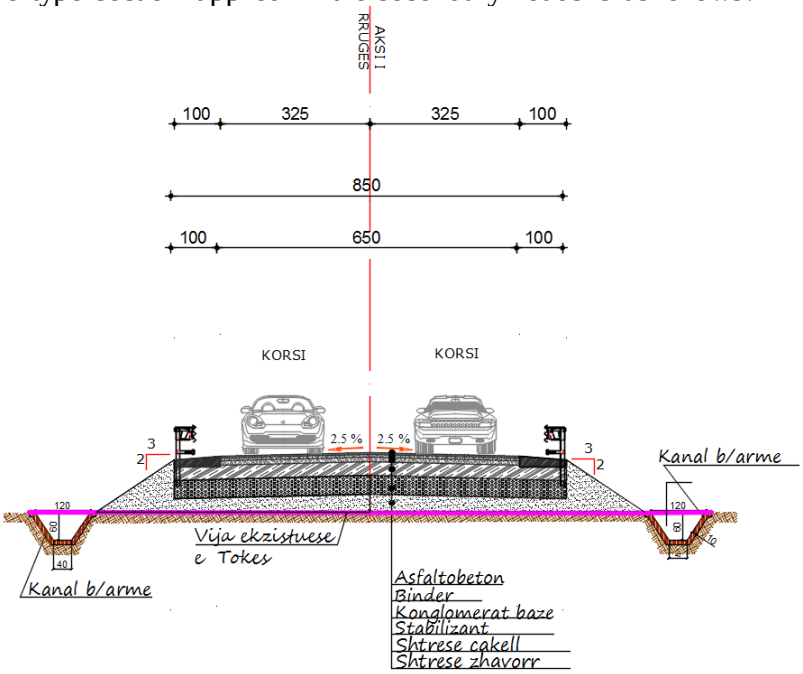
a. 2 x 3.25m (lane crossing) + 2 x 1m (bankine)
b. Asphalt width 6.5 m
c. The width of the wreath of the road 8.5 m.

Street pavements designed for the secondary road are comprised of :

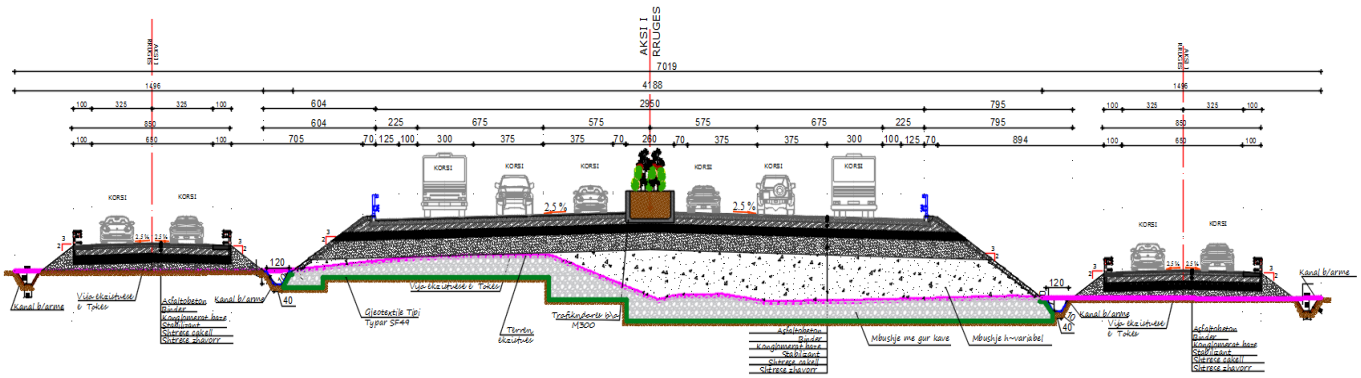
- Asphalt or concrete
- binder
- Conglomerate base

- stabilizers
- Cakell machinery
- gravel

The type section applied in the secondary roads is as follows:



As it is presented in the general plan of this object there are sections where secondary roads are partially parallel to the main road .
In these cases the type section proposed to be implemented will be as follows:



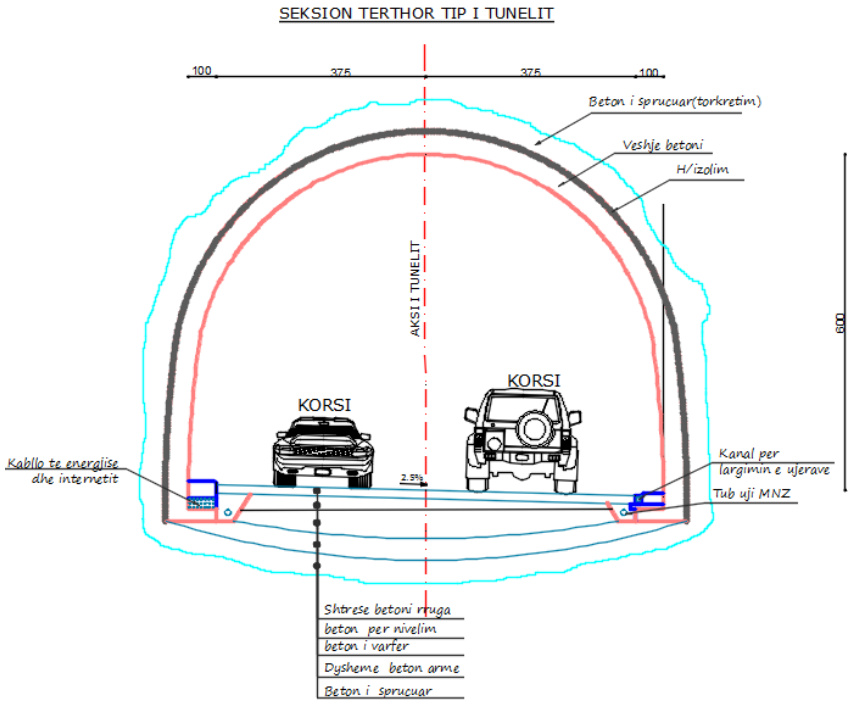
- **Tunnel parameters :**

- The tunnel section will have dimensions: 2x3.75m (crossing lane) + 2x1.0m (sidewalks). The maximum tunnel height will be 6.0m and the usable height will be 5.0m.

- Longitudinal tunnel slope shall be 0.5%

- The design speed in the tunnel is 80-100 km / h.

- The tuning beam of the entrance to the tunnel is R = 1000 m ensuring high visibility and avoidance of accidents on the tunnel portals.

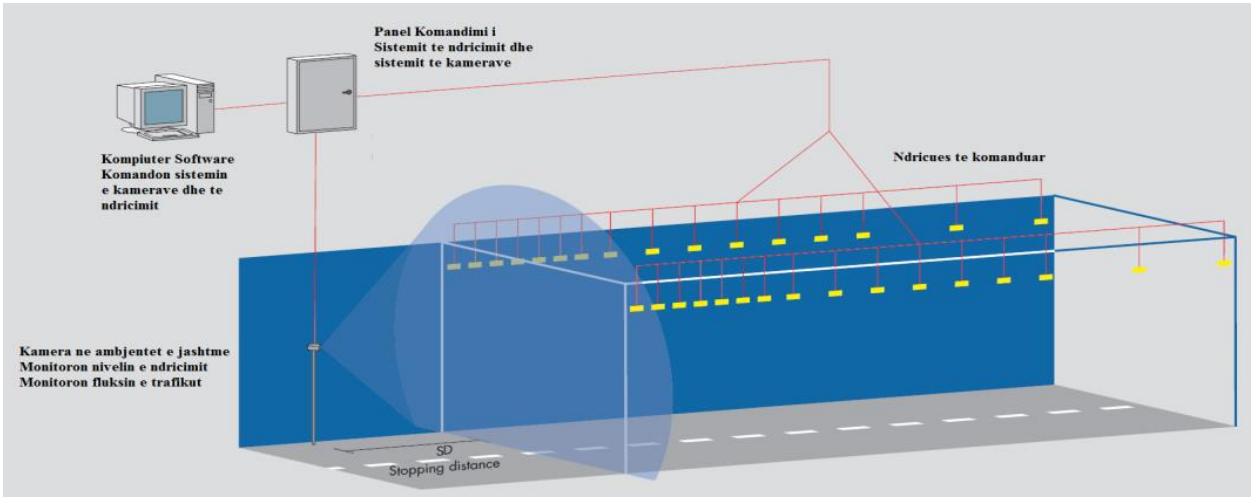


The services to be provided by the tunnel:

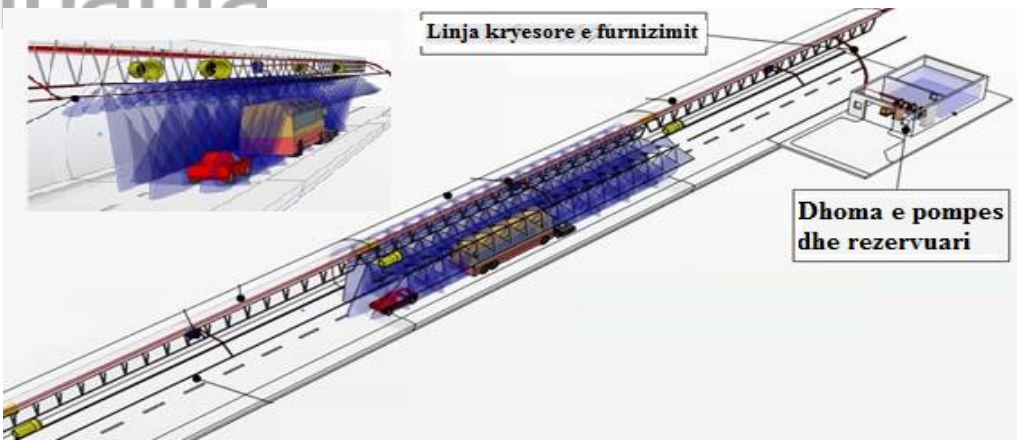
1. Emergency stations are planned every 150-250m (including fire and telephone installation)

2. Dedicated drainage (canal channel) for fuels and hazardous substances is foreseen.

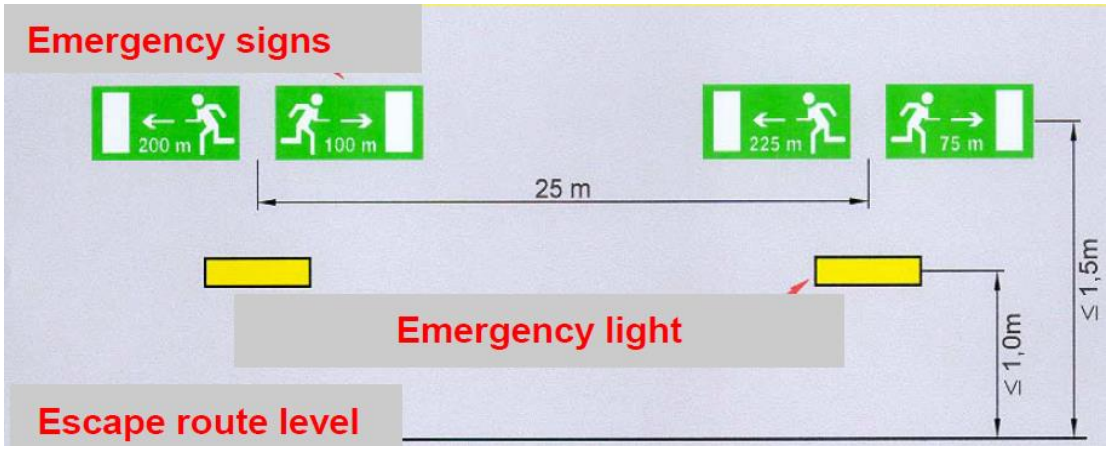
3. Tunnel lighting and emergency generator equipment are provided.



4. Water supply point for fire extinguishers every 250 m.

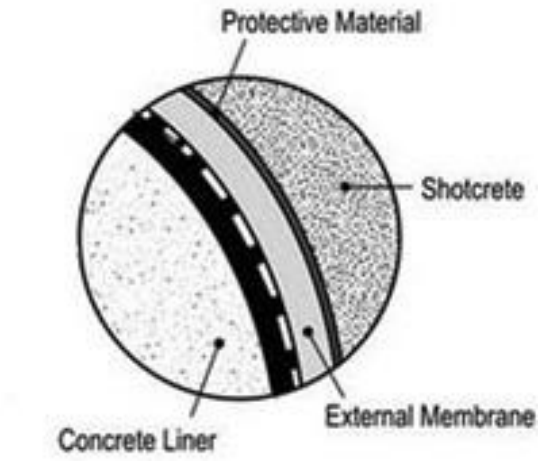


5. Signaling does not tunnel



- ***The tunnel will be realized with two layers*** , *an* initial layer of concrete that will be realized immediately after germination and the final layer that will be made of reinforced concrete.
- ***The initial layer*** that will be implemented immediately, with high pressure spray concrete, will have fiberglass content, to increase the carrying capacity and will be effective in closing the gaps and stopping the ground motion.
- ***Steel bows*** used as a fastener after shredding will serve to realize the profile of the tunnel, increase the safety during the work and reinforce the initial layer of concrete with spraying.
- ***Calculation of the final layer*** is made without taking into account the initial coating capacity and provisional holders. Completion of the final layer will be poured into place.
- ***The type of holders*** that are intended to be used for reinforcement of the pit and the continuous reinforcement of the germination front will be mechanically bolted bolts or bolted bolts by means of resins.

The layers used in the tunnel are as in the figure below:



Usually the sprayed concrete layer is of a minimum thickness of 150 mm but depending on the type of rock it can be up to 50 cm , then it comes with a waterproofing layer of 2-5 mm thick and finally if viewed necessary concrete coating with minimum thickness 150 mm and if the rope is soft this layer is also larger.

- ***Works of art***

The anticipated construction of Shte culverts and boxes of different dimensions (Ø 1 5 00 Ø 1000, Ø 800, Box 2x2, Box 4x2, box 5x2) , existing and new and new sub-projects and reconstruction of the Drini River and Matrix Bridge and some other bridges along the road that range from light space 19 m to 30 m , since the reconstruction in the object most of them were in a state of amortization and need intervention .

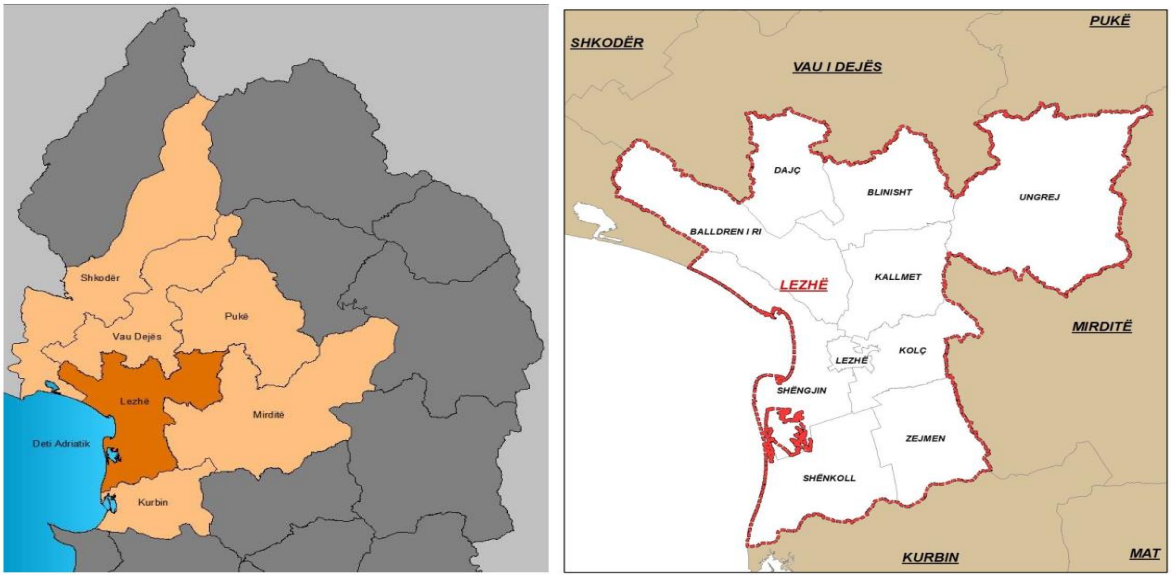
also is envisaged the construction of retaining beto ni masonry or reinforced concrete with a height up to H = 6.5 m, and the substantial length especially from Drini bridge begins filling up to the ankle incoming-Dalsa the Lezhes and Shengjinit, and the stakes which will Secondary roads or connecting joints are constructed .

Data on geology and hydrology of the area

This paragraph provides a general description of the data for Geology, Geotechnics and Hydrology of this project.

Geology

The territory of Lezha is constructed from rocks and geologic ages from Triasiku to Kuaternar belonging to the facial phenomena "Mirdita", Nenzona "Krasta", "Kruja" and "The Near Upland" (UPA).

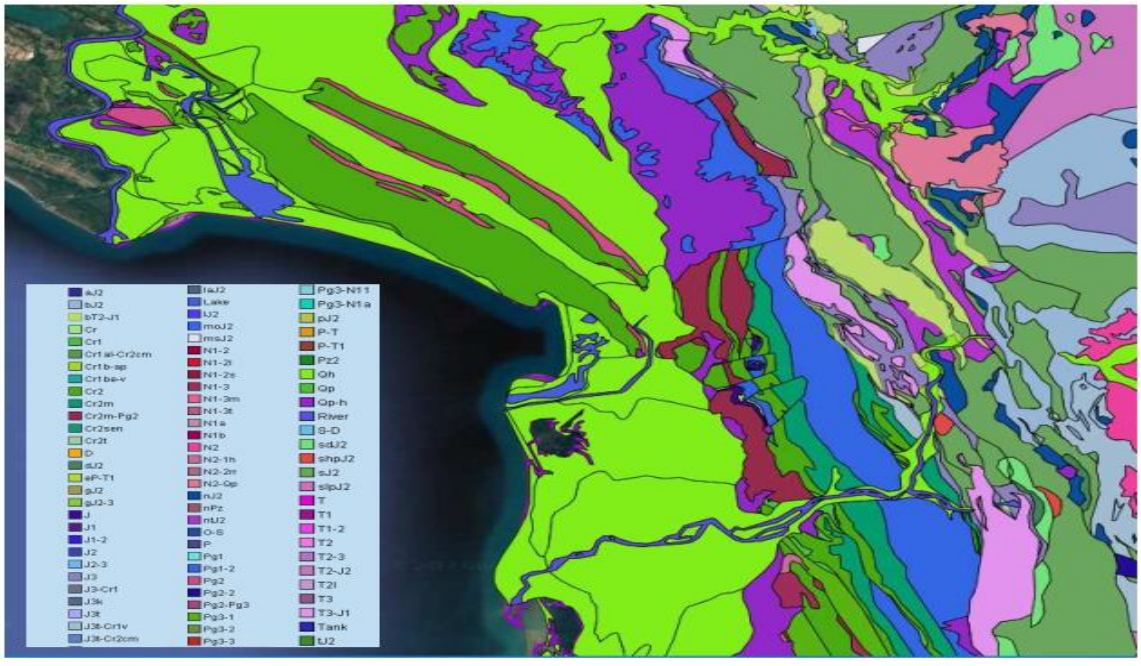


The geological-litologo-engineering classification is given in Table 4 and is done according to Proof.Dr. Konomi with convex adapters. I. Findings (2002) and fillings of engraving. M.Lamaj (2014). In this classification the rocks are divided into three groups:

1. strong rocks;
2. average rocks;
3. soft rocks.

The criterion for their separation is the resistance to a axial pressure (Rsh).
While the soils are classified into three groups:

1. land without cohesion
2. soil with healing connection
3. soil with special properties



Soil separation criteria are: cohesion (c), (binding forces between the granules) and the internal friction angle (φ).

a- Existing Hydrological Conditions

1- Information analysis

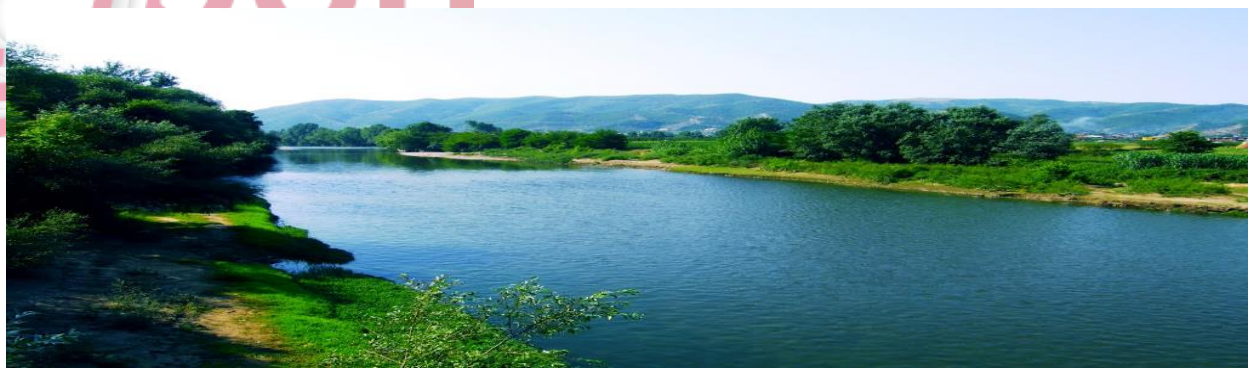
Surface waters

As the Milot-Balldren segment is interrupted by leaks, streams, rivers and canals. The body of the road interrupts some of them.

The Lezha water system consists of several rivers, where among the most important are the Mat River, which limits the Municipality of Lezha from Bash kia e Kurbinit, Drini i Lezhës, which comes from the North and passes near the city of Lezh flows to the Sea Adriatic in the Drini Bay. It should be mentioned here that the river of the Drini River, which later diverted to the north, joined the bed of the river and joined Bun about 2 km below Shkodra. Since the Buna Bed can convey about 1500 m³ / s, which is also the main cause of flooding in the area of the Mother Mountain , there has been a project that some of the Drin's waters would pass to Drini i Lëndës, which would impact on reducing the consequences of flooding but also improving from the point of view of the environmental conditions of Drini i Lezhës. Other less important rivers are the rivers Gjadër, which lies in the north of Lezha and moves eastward to the west, the Great Fani and the Little Fans originating from the North (Malak, Puka) and the Northeast (Domg jon, Mirdita), meet each other near Rubik and jointly pour into the M River . The latter is the most important river for the supply of underground waters of Lezha and F rosewood aquifers .

Drini of Lezha today plays the role of a drainage channel that sums up all the waters of Zadrima and pour into the sea.

• It should be emphasized that the change of the Drin river bed is one its common characteristic. Along with changing the bed (even without changing it) the process of changing the mouth of the Drin-Buna River also occurs. So as we mentioned there has been a displacement of the bed in the northwest of today's Buna and Drin outlet (on the territory of Montenegro where it forms a beach near Ulcinj).
• The return of all Drin river waters together with the waters of the Gjadër River in the direction Buna has led to Drini headed towards Lezha not to function as a river but just like a collector collecting the drainage waters of the Zadrima field in the Kakariq field and mountain stream waters. This reduces the transportation activity of Drin of Lezha by bring up bedding and flooding, but especially the reduction of alluviums in the direction of the Lezha estuary and the change of coastal processes in favor of erosion the banks of the delta in Lezha.



River Mat

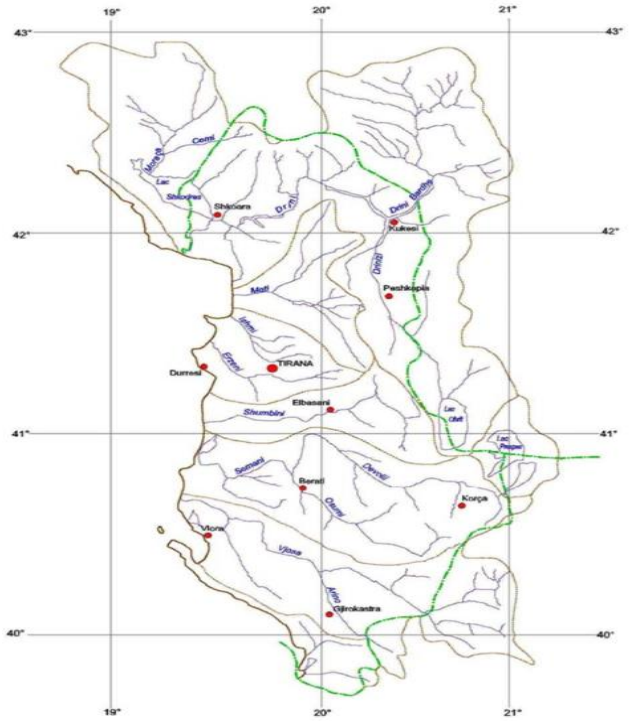
The Mat River is a river in the north of Albania. Its source is near Martanesh, in the district of Dibra. It flows west to the Mat district, from which it also named the river name, and northwest through the cities of Klos and Burrel. About 10 km from Burrel flows into a large reservoir (Ulza Lake). After passing through a hydroelectric dam, it flows through a smaller reservoir (Shkopeti Lake) and forms a narrow nose through the mountain range dividing the Mati district from the coastal plains. He enters the plains between Milot and Zejmen.

This river has a length of 144 km and a surface of the watershed of 2441 km2. The width of the bed near Milot is about 1250m, while at the 1000-1200m. The average annual flow rate in the Mat River varies from 85 to 103 m³ / s.

Part of the water passes for the irrigation of the soil, especially in the lower stream, where two large watering canals

a) Mat-Thumanë,
b) Mat-Lezha.

This has led to a steady decline in solid material behavior on the coast and reflection of coastline shortage reduction



Hydrographic Map of Albania

Design Criteria

a- Road Classification

Recently new Road Design Standards have been adopted: "The Albanian Road Design Manual - MShPRr", where a MShPRr-2 module, includes "Geometric Design of Roads". The following tables give the main indicators of road traffic calcification in terms of traffic and tables with the main parameters of width, symbol and other street names in the Republic of Albania. These parameters are used to configure the proposed path parameters in this feasibility study given the accumulated experience in recent years not only for roads but especially in relation to the design and implementation of tunnels that have already been constructed like that of Kalimash or Kerrabes tunnel.

Referring to the design standards, the Milot-Balldre axis is of the A highway category with these parameters:

The wreath of the road

d. 2 x 3.75m +2 x 3.75m + 2 x 3 m Emergency lane + 2x1 + 2x1.25 (asphalted pavement) + 2x0.7 (traffic space)

e. Asphalt pavement of the road corridor 26.9 m.

f. The width of the road wrap is 29.5 m.

— **The incidence of motion in both directions in perspective as the annual average of 24 hours (TMD)**
The average daily traffic is more than 12,000 ÷ 15,000 unit vehicles.

— **Speed engineered in km / h on field ground**
V max = 140 km / h
V min = 120 km / h

— **Speed Designed in km / h on hilly terrain**
V max = 120 km / h
V min = 110 km / h

— **Maximum longitudinal inclination 4 (%)**

— **Minimum limit [m] :**

AUTOSTRADE SUBURBAN R = 45-339m
AUTOSTRADE URBANE R = 51-252m

— **Referring to the entry and exit passageways at the junctions where the highway will be intersected with existing roads are designed in such a way as to respect the rays described above in the design standards and to ensure turning visibility.**

Tunnel design standards.

The width of the tunnel paths depends on the speed of the design and the load anticipated traffic for light vehicles, buses and trucks that will cross the tunnel. In general , how, international recommendations (eg PIARC) suggest that the lanes of the movement have a width not less than 3.50 - 3.75 m when the tunnel keeps the movement of heavy vehicles. In two-way tunnels, signs for dividing the two lanes of motion should be two continuous line lines for stopping strictly any overtaking. In these cases, it is recommended that the sign traffic lane dividers in the center of being a trafficker set up to avoid it so the head-to-head collision in the cases of propagation of the lane in the opposite direction . For sensitive cargo tunnels of heavy vehicles (buses and trucks) rule Austrian technicians RVS 9.23 provide, as follows, the width minimum roadway for two lane tunnels and one directional movement (one way):

Number of trucks and of buses per hour	Projected speed (km / h)		
	Less than 50 km / h	50-80 km / h	80-100 km / h
Article 50	5.50 m	6.00 m	6.50 m
50 - 150	6.00 m	6.50 m	7.00 m

Over 150	6.50 m	7.00 m	7.50 m

Table: Recommended Road Width for Two Lane Tunnels and One Turning Lane

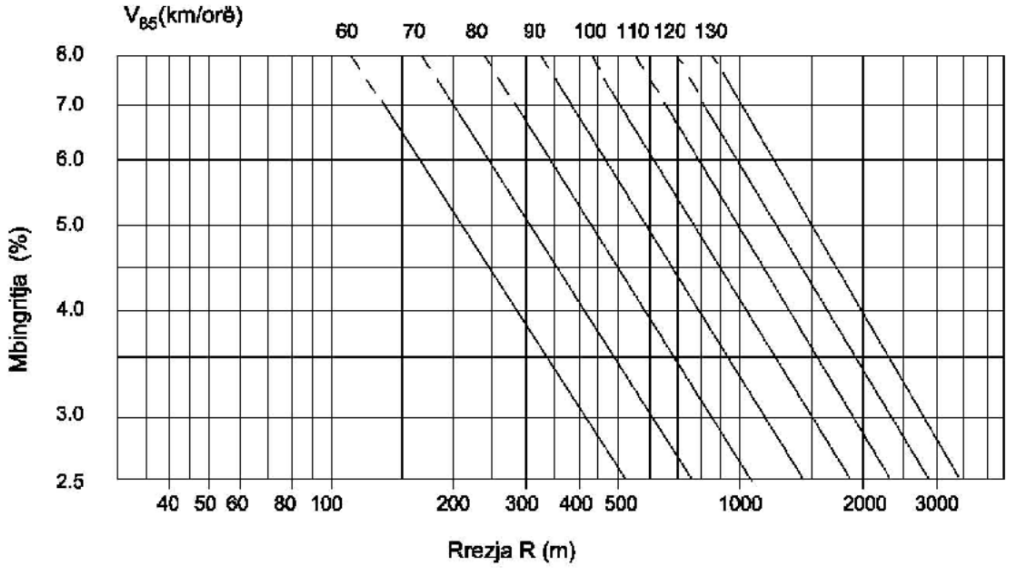
In addition to the width given above, the width of the carriageway should be included in the space restrictive edges (bananas) with a minimum width of 25 cm on either side of the lane The normal pedestrian movement is not permitted in the tunnels. For emergency and emergency purposes maintenance, sidewalks are provided on each side of the road. They should be raised 0.15 m from the surface of the road with a minimum swath (normal slope to the axis of the tunnel) of 2%. The minimum sidewall space should be 0.85 m wide and 2.0 m vertical space. However, the practical width of pavements should be more, because of the space they want cable ducts placed beneath the pavements.

The minimum dimensions of the cable ducts are those that condition the practical width of pavements. The minimum sidewall slope of street pavements should be 2%. The transverse slope should be maintained in one direction, in order to facilitate the removal of water from the carriageway (which is run by a drainage channel and drainage pipe located only on one side of the tunnel). In special cases, different dimensions of the inner tunnel space may be applied. These cases include Reduced Dimensions, commonly used in urban tunnels and non-moving heavy vehicles (trucks) and larger size tunnels (eg tunnels equipped with emergency lane or with a parking area emergency). the internal tunnel space in such cases should be determined as well part of the project and approved by ARA institutions.

The plan of the tunnel short if possible should be right. In tunnels longitudinal sections of straight lines should not exceed 4.0 km to avoid loss of focus on vehicle drivers, resulting from street monotony. Horizontal balances should also be designed for sections in the long tunnel exit, at in order to eliminate the psychological effects that have the difference of a point of light at the exit of the tunnel

to the use of tunnels.

The longitudinal slope on the road and on the free entrance and exit tunnels must be kept on maximum 4% to avoid the impact of dust rising from ventilation. The following recommendation is given for the minimum horizontal radius in the tunnels, depending from the speed and from the longitudinal slope of the road.



While the above recommendation gives a maximum slope of 7% in open roads, the minimum radius for a speed of 100 km / h is 500 m. In tunnels, where the maximum recommended slope is 4%, the minimum radius for a calculation speed of 100 km / h is 1000 m.
If bends are needed, their minimum radius is determined by the safety distance and the slope relative to the calculation speed. The effect of long descent on the safety distance can be distinguished particularly in the tunnel sections where the height is higher large truck driver eye estimates misalignment and speed of the truck can reach very quickly or even exceed the speeds of passenger cars. Exit ramps should be placed at least 350 m away from the tunnel exit port, to allow a sufficient distance for indicating signals and space for changing lane from the vehicle. Horizontal and vertical spaces are usually not sufficient for placing indicator signals inside the tunnel sections.

The tunnels should not allow tilt slopes in the areas close to the surface and preferably the entrances must be positioned with a normal sloping slope angle. In port areas, should be avoided if high walls or large debris are possible, but the cover should grow very quickly during the first tunnel, which helps the terrain work around the tunnel. Whenever possible, the extension of the tunnel under the building should be avoided if the height of the ground cover is less than 4 to 5 in diameter of the tunnel.

Vertical outflow is influenced by the cost of construction and the cost of operation and maintenance. The slope of the tunnel road, the length of the tunnel, the tunnel height, the speed of the vehicles and the volume of movement must have a significant impact on the ventilation requirements of the tunnel. In general, the maximum slope of 3% is necessary to maintain a reasonable speed of the truck and to meet the practical ventilation requirements.

The following maximum slope rating for the length of the tunnel can be used during initial studies or early stages of the project to provide general guidance for maintaining an economic balance between construction costs, investment in electro-mechanical services and maintenance and operation costs:

—For tunnels **3,500 m** or longer, the slope maximum should not be more than **1.5%.**

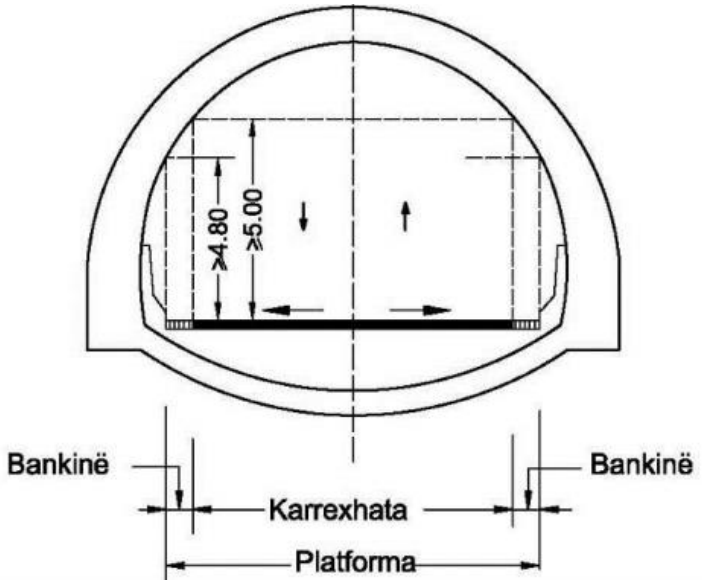
—For tunnels with a shorter length than **3,500 m**, the maximum slope should not exceed **3.0%** and preferably a sloping slope if the length approaches to 3,500m.

—*For **1,000 m** or smaller tunnels , the maximum slope may increase up to **4.0%** if required ,* and for very short tunnels, 200 m or less, the maximum slope may approach the maximum recommended slope for the roadside at the entrance or exit of the tunnel or the free way

—Minimum tunnel slope should be **0.5%.**

For the ridges and the grooved parts, minimum vertical vertical rays are recommended as follows:

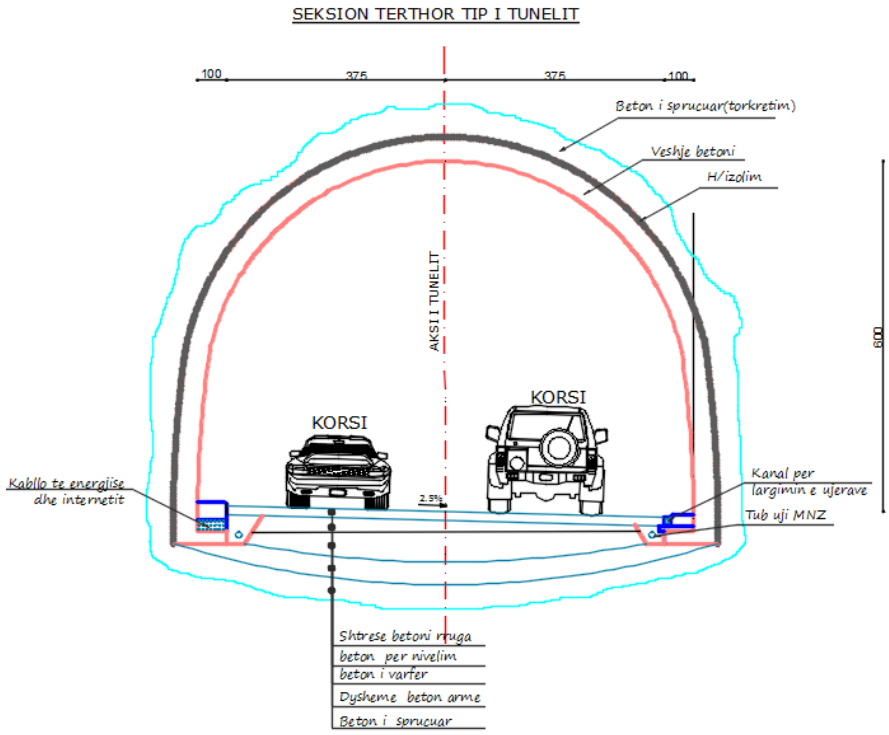
Speed in km / h	ridge Minimum beam in m	Myspace Area Minimal beam in
100	12500	5000
120	20000	8000
140	35000	12000



Horizontal and vertical tolerances of tunnel movement

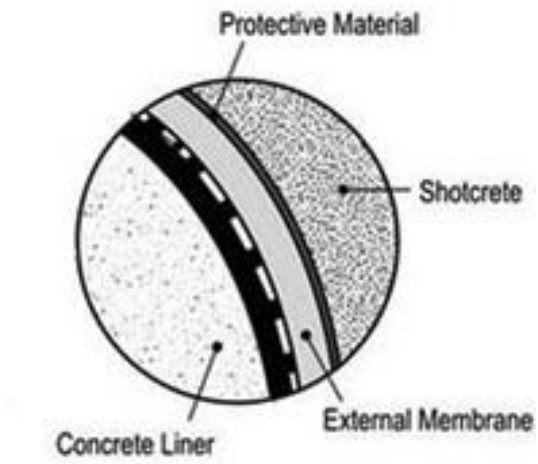
More detailed information on the methodology for tunnel construction will be found in Annex 1 of this volume.

The tunnel type section is proposed to be as follows:



Referring to the above standards, the Tunnel section with 1 portal is:
2x3.75 (crossing lane) + 2x1.00 (sidewalk) and 6 m height with internal height ~ 5 m.

Usually layers for use in tunnels as in the figure the meposht m of:



The tunnel is right in the orientation VL-JP d he longitudinal slope 0.5%. The longitudinal slope for the road areas at the entrance to the exit is 0.5%. The design speed in the tunnel is 80-100 km / h. The tuning beam in the tunnel is R = 20000 m ensuring high visibility and avoidance of accidents on the tunnel portals.

Plan of Implementation Project

A Current Construction Methodology is intended to select the right organization for the construction of the Milot-Balldren Motorway , in accordance with the best engineering practices and standards, the time available and the budget allocated.

Appropriate assessments are provided in respect of:

- Type and Sequence of activities to be performed throughout the Autostrada stretch
- Traffic diversion management system in accordance with main and secondary road crossings intersected;
- Geotechnical problems
- Environmental Issues Created by Execution of Works.
- Number of sites, size and location, including internal affairs.
- Determination within the area of all quarries, Copper Plants, Asphalt and Concrete mix production plants, including the number, location, production capacity and distance from the Site.
- Awareness of the potential concerns that may arise from the implementation of the works

All suggested measures are subject to the National Standards and Codes applied for Designing Public Works and their implementation within Albanian territory.

National law of the work will be applicable to all matters relating to the labor force involved for the execution of works. The proposed Work Program is based on 6 working days per week and 8 working days per day.
It is assumed that the process of expropriation of properties and removal of waste will be completed before the start of the works.
That recently assumed a close coordination with local authorities to raise citizens' awareness of the inevitable concerns during the construction period and the assistance of traffic police in relieving the inevitable traffic restrictions

a- Project Data

The purpose of the project consists in the construction of a new highway filling, Class A connecting Milot with , Bal l drenin , according to the following criteria for each traffic direction:

- 1.25 the width of the paved bank including guard rail protection when needed
- 1.00 Kunete
- 3.00m Cord length Emergency
- 3.75m of High Speed Chassis Width
- 3.75m Width of the Overpass Corsage
- 0.70m in width of unfinished domestic bank

b- Expected Main Activities

The main activities expected to be carried out in the construction of Highway A are summarized below:

1) Construction of the new road along the existing road axis from Milot to the roundabout of Lezha, making the road body rise which varies from 0.5m ~ 0.8m from the existing road level to the first milestones. The filling height reaches up to 7 m at the Lezha Node.

2) Construction of the new road axis, from the roundabout of Lezha to the entrance of the Balldene tunnel, passing through Kune-Vain

3) Construction of the road segment to link the existing road to Shkodra

4) Construction of secondary roads and connecting nodes, with approximate lengths of 9500 ml, to facilitate and increase safety in vehicle traffic around the area.

5) Build intersections and interfaces in existing intersections to make possible the connection of the motorway with urban areas

6) Building the tunnel with a Balldren portal

7) Construction of the Drini and Mat Bridge, parallel to the existing bridges

8) Construction of some submarines and three bridges with a length of 19m to 30m

9) Construction of grids to enable surface water circulation

10) Construction of retaining walls

c- Deviation of traffic during the execution of works - Guidance Criteria

Taking into account that Class A Milot - Balldren Highway , including the existing road link to residential areas stretching along this axis in the hollow phase of the works, will be the existing axis and all the adjacent joints his.

The construction of secondary roads will continue in order to cope with the traffic of vehicles towards the inhabited areas,

This will make it possible to absorb the entire flow of the tools. There will be traffic diversions only at specific points represented mainly by local and minor roads that outline the structure of Autostrade.

The existing operational path that will withstand the alleged traffic flow to be absorbed by the complete completion of the Autostrade will be:

Existing overpasses will be functional in the first phase .

It will intervene for the emergence of new overpasses by building short access roads and in concrete terms will be:

Main Road Overpass at the Fushe Milot Intersection, Fushe Kuqe - Fushe Milot Shullaz

Overpass of the Main Street in the Cross St. Koll Zejmen,
Overpass the main road in the intersection Island Lezha-Rrile
Overpass the main street, in the intersection Vain-island Lezha.
Overpass of the Main Street in the Lezha Access

In the second phase, the drift of the axle will drive the flow of vehicles in the secondary road and in all existing nodes throughout the axle.
All existing and existing agricultural roads will be used.

The point at which the deviation of traffic will be of organized during highway construction period will be mirestudjuara and more specific. According to a detailed traffic deviation plan

For main road niches, the concrete structure will be applied along the main trajectory, creating a parallel parallel deviation to cope with the uninterrupted traffic flow.

For agricultural purposes, the concrete structure, with a limited dimension (3.20mx 5.00 net) will be applied in parallel to the existing road, keeping traffic along the existing trace.

Temporary deviations will be removed immediately after completion of the designed structure.

Similar criteria will apply to IC Overpass / Signals and Entry / Exit Ramps.

d- Traffic Deviation Management System

The lead principle for the traffic diversion management system will be specified as follows:

1. Full traffic avoidance near the areas that will be under construction.
2. Determining (as far as possible) a smooth flow of Autostrade traffic by simplifying it at the entry and exit of single vehicles in the existing trace
3. Determining a suitable way, during and after work, for means that move in the opposite direction
4. Minimizing the use of signalers and special signaling
5. Maximize the use of the existing alternative route

6. Minimizing the wear and consumption of the existing alternative route
7. Minimizing the temporary expropriation of agricultural land for the construction of the deviation

It has also been argued that the final solutions to the deviation before the realization will be negotiated with the local competent authorities, with the cooperation of the Road Police and in accordance with all rules and legislation regarding the warning signal .

e- High Voltage Electric Lines

During the observation works carried out along the proposed route for the A1 Highway, the interference with the existing HV line segments was noted .

A reconstruction of the HV electric line will be negotiated and agreed with the competent authorities, in order to prevent the prolonged overlap of the HV cables with the Route of Autostrade, while the metal towers falling within the highway will be shifted.

f- Environmental Issues

Various environmental problems will be avoided by the implementation of works for the construction of the A-Class highway.

The most serious problems, according to the impact level, are listed below:

- Identify the source of the selected material
- Construction of traffic diversion routes
- Construction of construction sites
- Quarrying
- Installation and use of grinding plants
- Installation and use of concrete production plants
- Installation and use of asphalt production plants.

Construction of the deviation routes

Deviation of traffic to be performed in respect of class A highway honors can be classified into two categories, each subdivided into two sub-categories, namely:

❖·Provisional deviations that determine the execution of permanent structures:

- Unpaved in the case of Agricultural Inventions
- Asphalted in case of interference with already paved main roads

Both sub-categories of temporary deviations will be removed after the completion of temporary structures to be included within the body of the motorway.

❖·Interim interventions aimed at defining the local road after the end of the motorway:

- Unpaved - in the case of new road design of rural roads
- Asphalted in case of secondary rehabilitation to provide village connections or reconnections of asphalted secondary roads.

The final placement of the sub-categories of permanent deviations will be negotiated and agreed with the Local Authorities competent for the area.

g- Maintenance of the road

Maintenance works will consist of:

a. Periodic maintenance of the road, aimed at avoiding its degradation, such as drainage works on roads, asphaltic roofs, etc.
b. Routine maintenance, which serves to maintain optimum road function by performing road / asphalt repair of erosion / waterways, cleaning of the road, filling cracks / cracks in the asphalt, cutting the vegetation on the side of the road, etc. . , as well as Winter Maintenance

Winter Maintenance

Milot Street - Ballard passes on a coastal and humid terrain and the area where the road will be built often during winter is flooded with numerous rainfall, which requires special attention to their winter maintenance. The snowfall is rare in the area where the road will be built. The purpose of Winter Maintenance will be to guarantee a safe movement of people and motor vehicles on these roads, meeting the challenges of special frosts and extreme rainfall that often carry flooding in the Lezha area and therefore will be taken the right mast in at any time for the maintenance of side channels in full function simultaneously in heavy rainfall cases will be installed motorbike stations that will enable the removal of water from the road body. In the event of snow falls or frosts that occur rarely but can occur our company is prepared to put special snow-cleaning machines, other suitable tools, as well as necessary materials such as salt, fine granules, etc. so that the road at any time be in its technical parameters.

P mobilization of r mir the retention

The road will be the good and held continuously for the entire period after construction until the end of the concession period.

3.2 Assessment of Social and Environmental Impact

In principle, the environmental impact assessment for a proposed project is the process of identifying its compatibility with the environmental legislation in force, the natural resources found in the project area, and how it will be affected during the project implementation phases. In the p of rmjet identification t of t impacts of possible negative t of t implementation of it, that 's in the stage of the design, Value and Impact simi in the environment to the one of the project aims:

- T and inform key role in formulating the site p and r t environmental consequences of the project 's proposed;
- T 's slate of p and upgrade the necessary technological liefs that with the beginning alleviating or reducing its pasojavete p and the rshtatjen held with capacity of st the environment received the s;
- T and promote the environmental TEQ development of ndru of m and friends of sor.

The EIA p and r road segment Milot - Balldren represents one of p 's SUMMARY t of t the f the existing nave and information on the environmental conditions where will the project implemented by p of rfshir the physical, atmospheric conditions, to the water resources, biological, socio-cultural facilities and social-economic situation t of the area of s.

The detailed environmental impact assessment report includes:

- Legal Framework
- Identification of environmental issues
- Description of methodology

- Description of the Project
- Analysis of the selected trace
- Description of the state of the environment in the project area
- Identification of possible negative impacts on the environment
- Possible Social and Economic Impacts
- Plan of environmental management and measures to prevent and mitigate the impact
- Plan of environmental monitoring
- Conclusions

During the worth of tion to the n influence of t environment of the project and presented p and nd r the a-tion to the axis of the new road Milot - Balldren was reached in the k the to p of the conclusions:

1. This road will be a very important component of the national road network, which will connect not only a wide region with tourist and economic opportunities in the northwestern part but also with the neighboring country. The project is in line with the national strategy for development of poor areas, approved by DCM no. 773, dated 14.11.2007 "On the adoption of the general strategy of regional development during 2008-2013", which includes the area development project and the relevant regional plans .

2. Since a part of the project segment is completely new, the main negative impact on the environment created by project implementation is to change the natural state of the surface of the land it passes.

3. The project will affect natural habitats by removing a recognizable surface of natural vegetation. Consultations with the Ministry of Environment and its structures during the decision-making process are essential to the success of the project. Faunal worries will be of long-term impacts and accidents will occur for different species (reptiles, amphibians, birds and mammals). The above-recommended measures for fauna protection will be a guarantee against irreversible and long-term damage to land fauna (especially the ecosystem communication network).

4. The road will be crossed with two rivers, Drin and Mat. This will be accompanied by temporary impacts on aquatic habitats and the possible addition of solid materials to these aquatic environments. These effects are temporary and controllable thanks to modern construction technologies and mitigation measures for environmental impacts. Mitigation measures will be implemented during the construction phase.

5. By the duplication of the existing road and the opening of the new trail, considerable soil and rock masses will be created, which will be used partly for filling purposes. The remainder will be deposited in the appropriate locations and in accordance with the criteria that guarantee environmental protection (as stated in the report). Their abandonment and mismanagement carries legal responsibility for the builder.
6. The proposed new road will boost the economic growth of the area as it creates the possibility of using its resources and will develop the prospect of the development of the area's tourism. It will create a good relation of the region with the rest of the country and will improve the quality of life throughout the area.

7. Construction activities should be monitored in accordance with the above program and data should be reported regularly to the Environmental Development Directorate. They should be accessible to the public and interest groups.

Note: Apart the data summarized in this Report as well as those of the bidding Documents, the Contracting Authority suggests that Economic Operators make their field verifications which should be considered during the preparation of the Technical Bid. In the event of any breach of this report, the standards established / adopted in accordance with the legislation in force prevail, as well as good practices.