

## APPENDIX E

### Chance Find Procedure

#### **Purpose of the chance find procedure**

The chance find procedure is a project-specific procedure that outlines actions required if previously unknown heritage resources, particularly archaeological resources, are encountered during project construction or operation. A Chance Find Procedure, as described in IFC Performance Standard 8 and EBRD Performance Requirement 8 and law on Cultural Heritage of Georgia, is a process that prevents chance finds from being disturbed until an assessment by a competent specialist is made and actions consistent with the requirements are implemented.

#### **Scope of the chance find procedure**

This procedure is applicable to all activities conducted by the personnel, including contractors, that have the potential to uncover a heritage item/site. The procedure details the actions to be taken when a previously unidentified and potential heritage item/site is found during construction activities. Procedure outlines the roles and responsibilities and the response times required from both project staff, and any relevant heritage authority.

#### **Induction/Training**

All personnel, especially those working on earth movements and excavations, are to be inducted on the identification of potential heritage items/sites and the relevant actions for them with regards to this procedure during the Project induction and regular toolbox talks.

#### **Chance find procedure**

If any person discovers a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction, the following steps shall be taken:

1. Stop all works in the vicinity of the find, until a solution is found for the preservation of these artefacts, or advice from the relevant authorities is obtained;
2. Immediately notify a foreman. The foreman will then notify the Construction Manager and the Environment Officer (EO)/Environmental Manager (EM);
3. Record details in Incident Report and take photos of the find;
4. Delineate the discovered site or area; secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities take over;
5. Preliminary evaluation of the findings by archaeologists. The archaeologist must make a rapid assessment of the site or find to determine its importance. Based on this assessment the appropriate strategy can be implemented. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage such as aesthetic, historic, scientific or research, social and economic values of the find;
6. Sites of minor significance (such as isolated or unclear features, and isolated finds) should be recorded immediately by the archaeologist, thus causing a minimum disruption to the work schedule of the Contractor. The results of all archaeological work must be reported to the Ministry/Agency, once completed.
7. In case of significant find the Agency/Ministry (Agency for Protection of National Heritage or Archaeological Research Centre, hereinafter referred to as Heritage team) should be informed immediately and in writing within 7 days from the find (ref.law on heritage protection).
8. The onsite archaeologist provides the Heritage team with photos, other information as relevant for identification and assessment of the significance of heritage items.

9. The Ministry must investigate the fact within 2 weeks from the date of notification and provide response in writing.
10. Decisions on how to handle the finding shall be taken by the responsible authorities. This could include changes in the layout (such as when finding an irremovable remain of cultural or archaeological importance) conservation, preservation, restoration and salvage;
11. Construction works could resume only after permission is granted from the responsible authorities.
12. In case no response received within the 2 weeks period mentioned above, this is considered as authorisation to proceed with suspended construction works.

One of the main requirements of the procedure is record keeping. All finds must be registered. Photolog, copies of communication with decision making authorities, conclusions and recommendations/guidance, implementation reports – kept.

### **Additional information**

#### **Management options for archaeological site**

- **Site avoidance.** If the boundaries of the site have been delineated attempt must be made to redesign the proposed development to avoid the site. (The fastest and most cost-effective management option)
- **Mitigation.** If it is not feasible to avoid the site through redesign, it will be necessary to sample it using data collection program prior to its loss. This could include surface collection and/or excavation. (The most expensive and time-consuming management option.)
- **Site Protection.** It may be possible to protect the site through the installation of barriers during the time of the development and/or possibly for a longer term. This could include the erection of high visibility fencing around the site or covering the site area with a geotextile and then capping it with fill. The exact prescription would be site- specific.

#### **Management of replicable and non-replicable heritage**

Different approaches for the finds apply to replicable and non-replicable heritage.

#### **Replicable heritage**

Where tangible cultural heritage that is replicable<sup>26</sup> and not critical is encountered, mitigation measures will be applied.

The mitigation hierarchy is as follows:

- Avoidance;
- Minimization of adverse impacts and implementation of restoration measures, in situ;
- Restoration of the functionality of the cultural heritage, in a different location;
- Permanent removal of historical and archaeological artefacts and structures ;
- Compensation of loss - where minimization of adverse impacts and restoration not feasible.

#### **Non-replicable heritage**

Most cultural heritage is best protected by in situ preservation, since removal is likely to result in irreparable damage or even destruction of the cultural heritage.

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<sup>26</sup> Replicable cultural heritage is defined as tangible forms of cultural heritage that can themselves be moved to another location or that can be replaced by a similar structure or natural features to which the cultural values can be transferred by appropriate measures. Archaeological or historical sites may be considered replicable where the particular eras and cultural values they represent are well represented by other sites and/or structures.

Nonreplicable cultural heritage<sup>27</sup> must not be removed unless all of the following conditions are met:

- There are no technically or financially feasible alternatives to removal;
- The overall benefits of the project conclusively outweigh the anticipated cultural heritage loss from removal; and

Any removal of cultural heritage must be conducted using the best available technique advised by relevant authority and supervised by archaeologist.

### **Human Remains Management Options**

The handling of human remains believed to be archaeological in nature requires communication according to the same procedure described above.

There are two possible courses of action:

- **Avoid.** The development project is redesigned to completely avoid the found remains. An assessment should be made as to whether the remains may be affected by residual or accumulative impacts associated with the development, and properly addressed by a comprehensive management plan.
- **Exhume.** Exhumation of the remains in a manner considered appropriate by decision makers. This will involve the predetermination of a site suitable for the reburial of the remains. Certain ceremonies or procedures may need to be followed before development activities can recommence in the area of the discovery.

### **EMERGENCY CONTACTS**

#### **Ministry of Culture and Monument Protection**

Address: 4 Sanapiro Street, 0105, Tbilisi, Georgia; Fax: 995 32 2999966, 2932235;

E-Mail: culturegovge@gmail.com

#### **National Agency for Cultural Heritage of Georgia**

27 Atoneli street, 0105 Tbilisi, Georgia: tel/fax: +(99532) 2932411

E mail: info@heritagesites.ge

#### **Archaeological Research Centre under the Georgian National Museum**

3, Rustaveli Avenue 0105 Tbilisi, Georgia

Tel: +(995 32) 2998022; Fax: +(995 32) 2982133

E-Mail: info@museum.ge

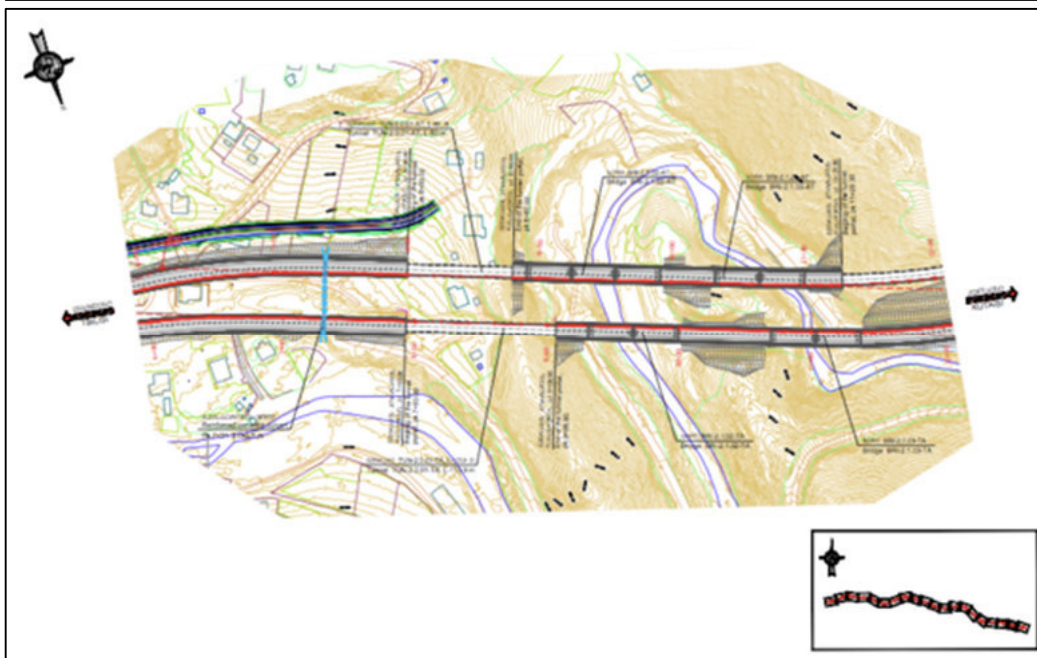
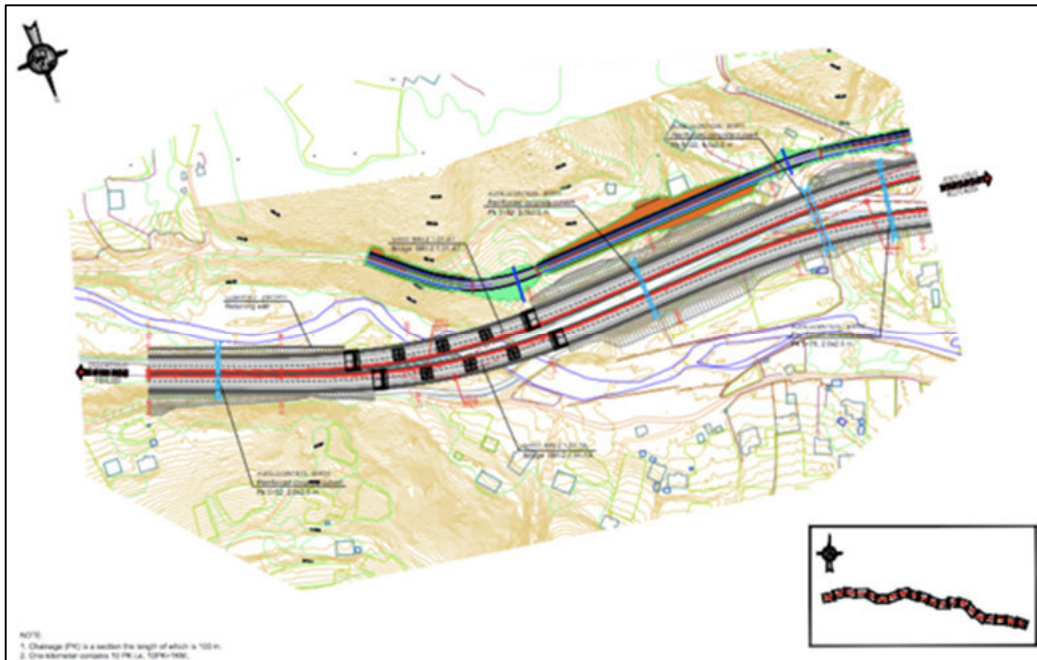
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<sup>27</sup> Nonreplicable cultural heritage may relate to the social, economic, cultural, environmental, and climatic conditions of past peoples, their evolving ecologies, adaptive strategies, and early forms of environmental management, where the (i) cultural heritage is unique or relatively unique for the period it represents, or (ii) cultural heritage is unique or relatively unique in linking several periods in the same site. Examples of non-replicable cultural heritage may include an ancient city or temple, or a site unique in the period that it represents.

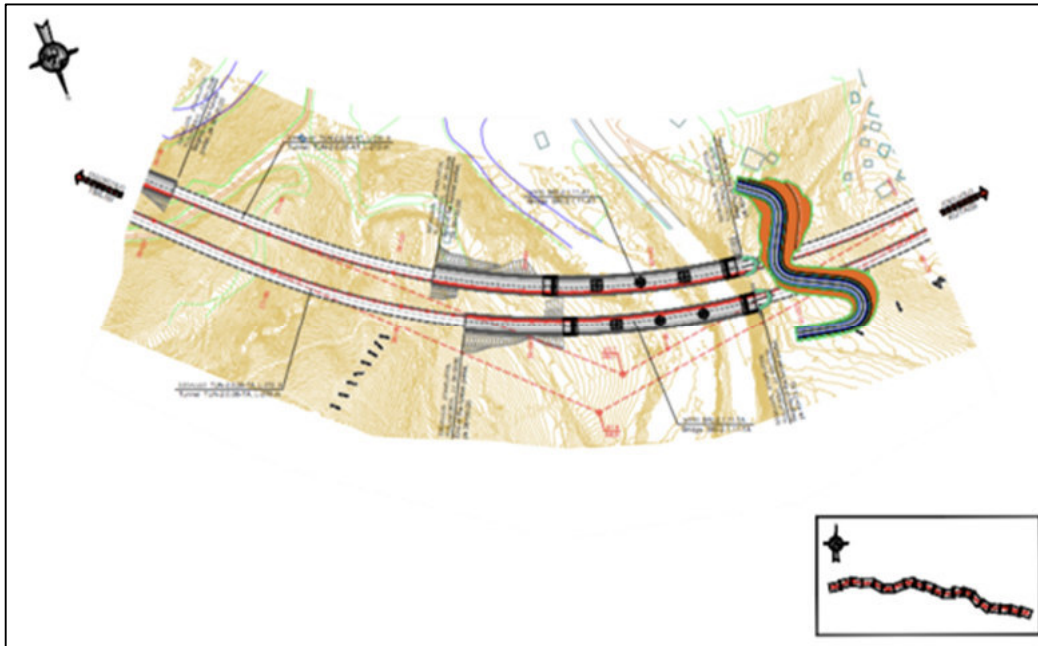
## APPENDIX F

### Access Roads

#### Access Road 1



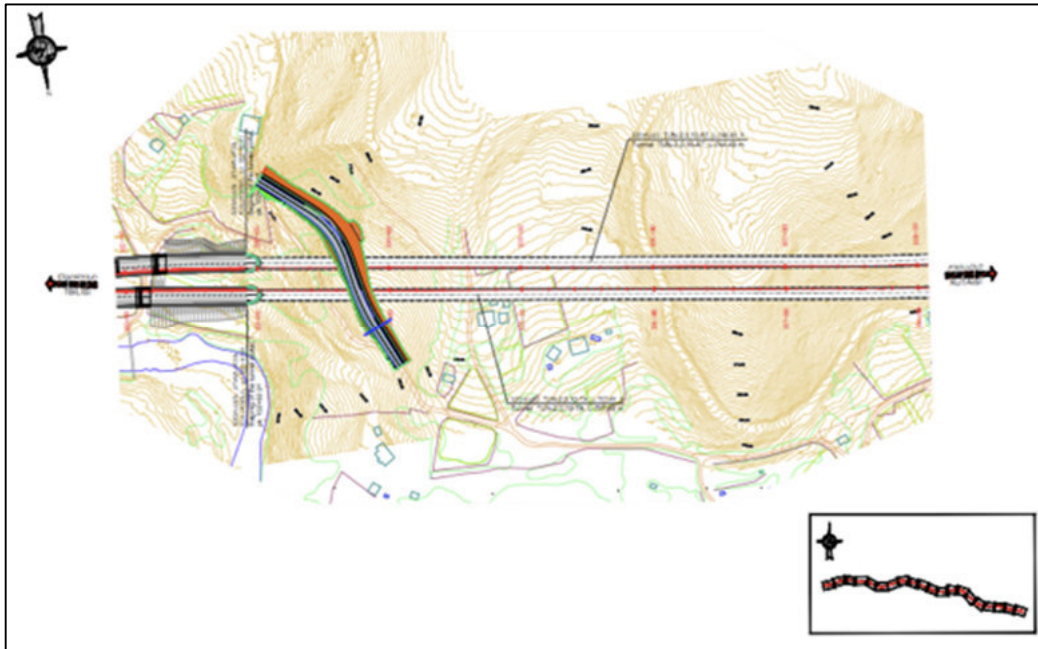
**Access Road 2**



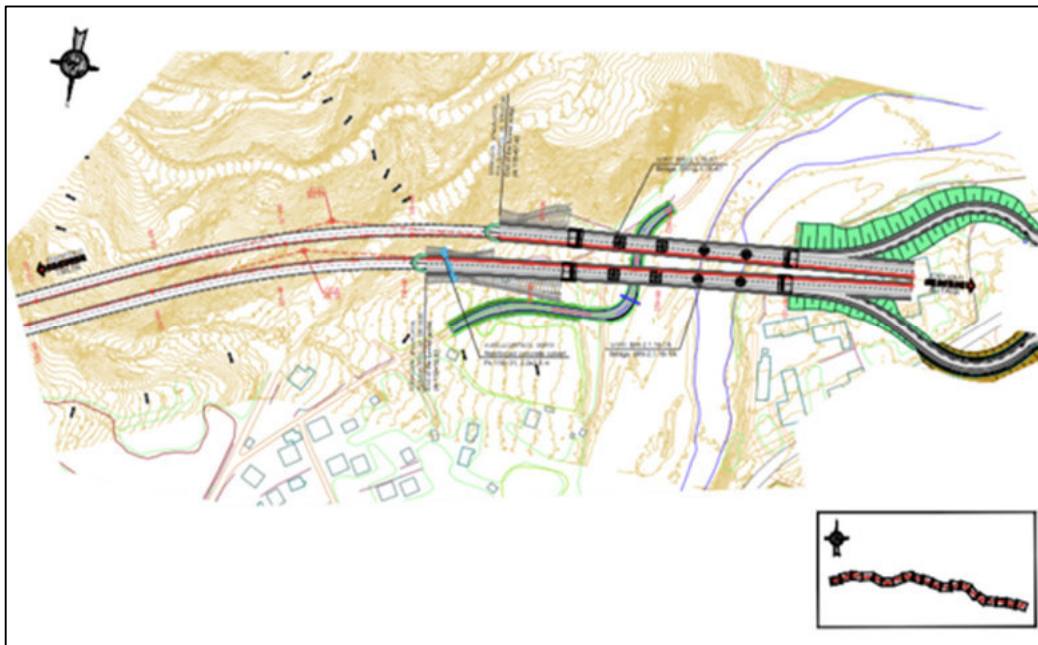
**Access Road 3**



### Access Road 4



### Access Road 5





**APPENDIX G**  
**State Forest Fund**



### Trees over 8cm in Diameter

Area (m2)	Sub-section	Carpinus Caucasica	Quercus Iberica	Acer Campestre	Tilia Caucasica	Alnus Barbata	Castanea Sativa	Carpinus Orientalis
		Hornbeam	Georgian Oak	Maple	Lime	Alder (LC)	Chestnut (GEO Redlist)	Oriental Hornbeam
9,306	1	67	2	4	11		7	57
4,041	2	89	12	14	9	23		42
11,021	3	74	61			18	9	306
6,753	4	316	211			152		324
1,187	5	2	22					
1,323	6	10	41					44
14,404	7	109	440	1		1		595
3,478	8		15					28
10,110	9							280
478	10	4				7		
1	11							
1,327	12							84
12,119	13	59			2	2		514
<b>75,548</b>		<b>730</b>	<b>804</b>	<b>19</b>	<b>22</b>	<b>203</b>	<b>16</b>	<b>2,274</b>

### Trees over 8cm in Diameter

Area (m2)	Sub-section	Fraxinus Exelsior	Accacia Dealbata	Ficus Carica	Diospyros Lotus	Crataegus Microphylus	Populus Pyramidalis	Juglans Regia
		European Ash	Accacia	Common Fig	Date Plum	Crataegus Microphylus	Poplar	English Walnut (NT/ GEO Redlist)
9,306	1		5		6	5		
4,041	2		16		3			
11,021	3							
6,753	4							
1,187	5						4	
1,323	6							
14,404	7					1		
3,478	8		4	1	3			
10,110	9		378					2
478	10	6	4					
1	11							
1,327	12		14					
12,119	13	10	245					
<b>75,548</b>		<b>16</b>	<b>666</b>	<b>1</b>	<b>12</b>	<b>6</b>	<b>4</b>	<b>2</b>

### Trees over 8cm in Diameter

Area (m2)	Sub-section	Prunus Insitia	Cerasus Avium	Maulus Sylvestris	Gleditsia Triacanthos	Pinus Nigra	Ailanthus Altissima	Fagus Orientalis	Fraxinus Excelsior
		Damson Plum	Sweet Cherry	European Crab Apple	Honey Locust	Austrian Pine (LC)	Tree of heaven	Oriental Beech	European Ash
9,306	1		1					34	
4,041	2								8
11,021	3		2			2			3
6,753	4								
1,187	5								
1,323	6							5	
14,404	7	1						44	
3,478	8			7					
10,110	9					10			
478	10						4		
1	11								
1,327	12								
12,119	13								
75,548		1	3	7	-	12	4	83	11

### Trees under 8cm in Diameter

Area (m2)	Sub-section	Total Number
9,306	1	1,974
4,041	2	1,754
11,021	3	2,077
6,753	4	4,763
1,187	5	329
1,323	6	4,285
14,404	7	22,409
3,478	8	341
10,110	9	4,780
478	10	178
1	11	6
1,327	12	149
12,119	13	3,049
<b>Total</b>		<b>46,094</b>

## **APPENDIX H**

### **Noise Barrier Cost Estimate**

Section F2 of the Khevi-Ubisa-Shorapani-Argveta Road (E60 Highway)  
 Environmental Impact Assessment

description of works	Unit price		quantity for meter					cost/m
	UNIT	\$	L	l	h	n.	q.ty	
"B A R R I E R AND ANTI-NOISE BARRIERS ANTIRUMOR BARRIER COMPOSED BY ALUMINUM PANELS- SUPPLY AND INSTALLATION OF THE COMPLETE BARRIER "	mq	\$ 338,02			4		4	\$1.352,08
WORKS OF ART FOUNDATIONS - DIAPHRAGMS - PALI MEDIEPALI TRIVELLATI IN CEMENTITIOUS CONGLOMERATE - WITH TUBE SHAPE OF 600 MM EXTERNAL DIAMETER	mc	\$ 78,32	10	0,2826		0,25	0,7065	\$ 55,33
"WORKS OF ART MURATURES - CONGLOMERATES CEMENT - STRUCTURAL CONCRETE FOR FONDAZIONE WORKS IN C.A. O C.A.P. - C28 / 35 RESISTANCE CLASS (RCK> = 35 N / mmq) "	mc	\$ 136,18	10	0,2826		0,25	0,7065	\$ 96,21
"ARTWORK STEELS AND STEEL STRUCTURES STEEL IN ROUND BARS B450C IMPROVED BARS "	kg	\$ 1,18			56,52	0,25	14,13	\$ 16,74
"ARTWORK FORMWORK - ARMORIES - CENTI NATURE HORIZONTAL OR VERTICAL PLAN COREBOXES FOR CEMENTIZED CONGLOMERATES "	mq	\$ 24,43	0,8		4	0,25	0,8	\$ 19,54
"WORKS OF ART MURATURES - CONGLOMERATES CEMENT - STRUCTURAL CONCRETE FOR FONDAZIONE WORKS IN C.A. O C.A.P. - C28 / 35 RESISTANCE CLASS (RCK> = 35 N / mmq) "	mc	\$ 136,18	0,8	0,8	0,5	0,25	0,08	\$ 10,89
"ARTWORK STEELS AND STEEL STRUCTURES STEEL IN ROUND BARS B450C IMPROVED BARS "	kg	\$ 1,18			6,4	0,25	1,6	\$ 1,90
<b>total cost for 1m noise barrier for funfation considering one pile each 4 meters</b>								<b>\$ 200,61</b>

## APPENDIX I

### Bridge Piers

Figure AI-1: For steel-concrete bridges – type 1:

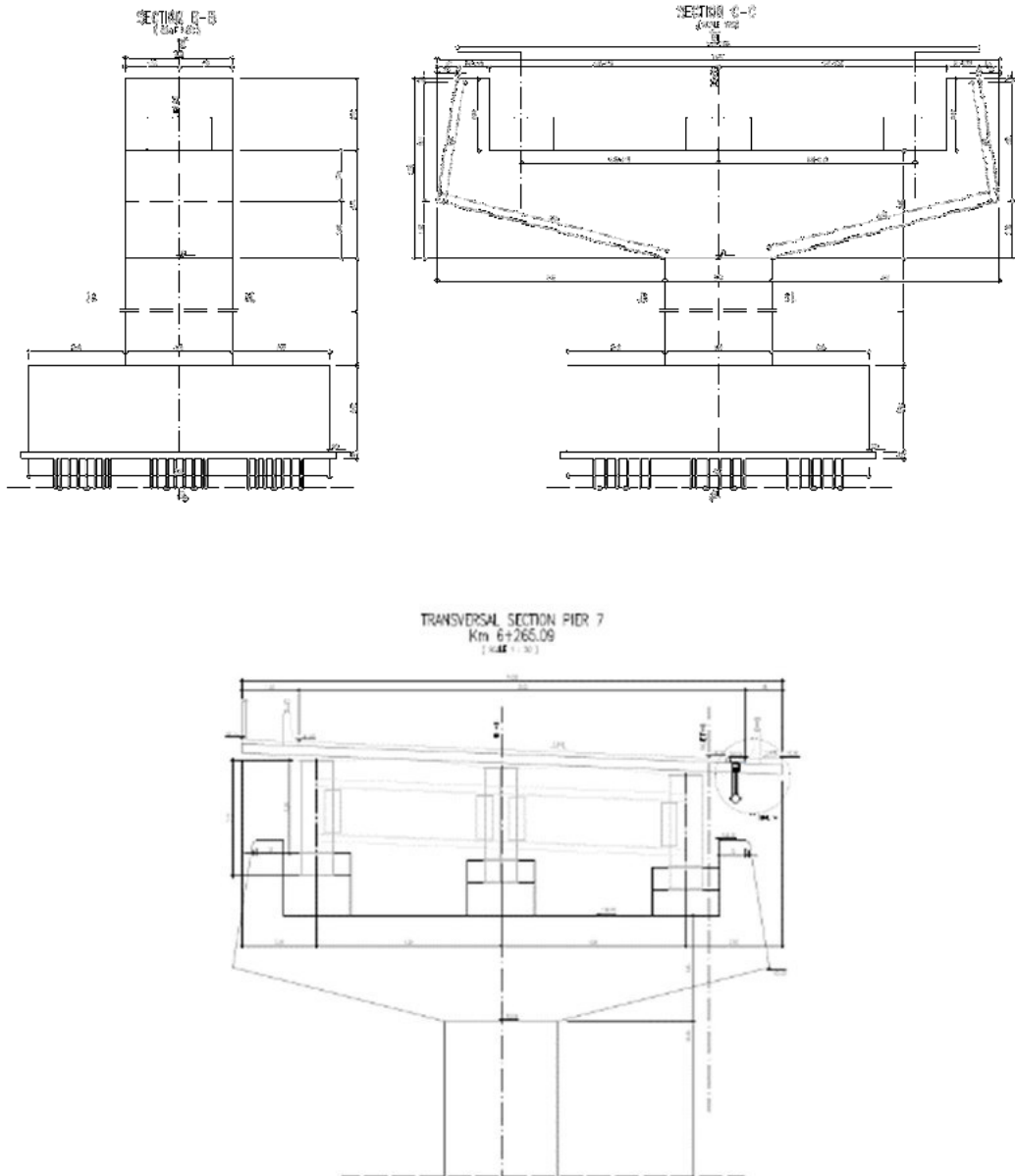
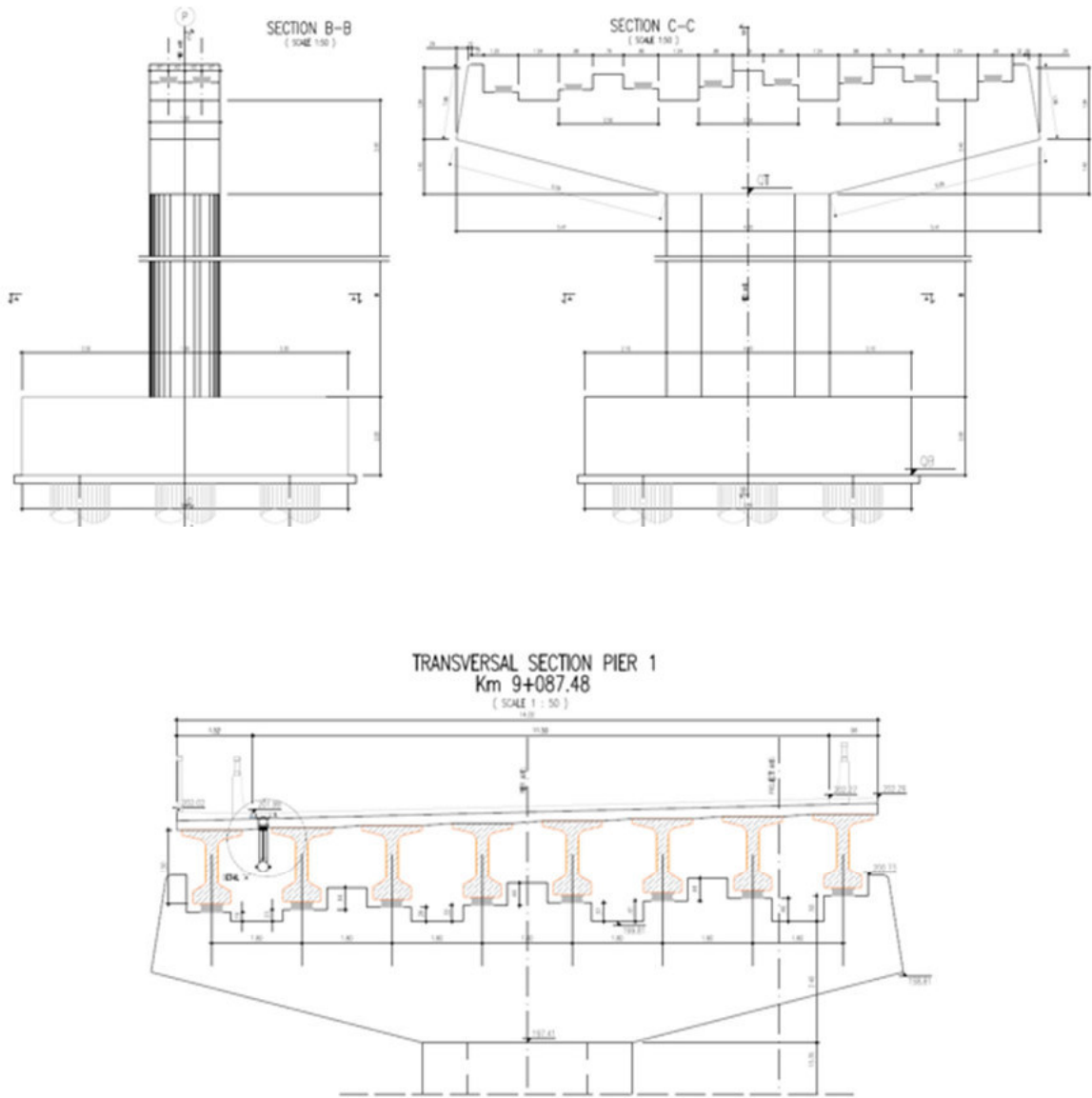


Figure AI-2: For PSC beams bridges – type 2



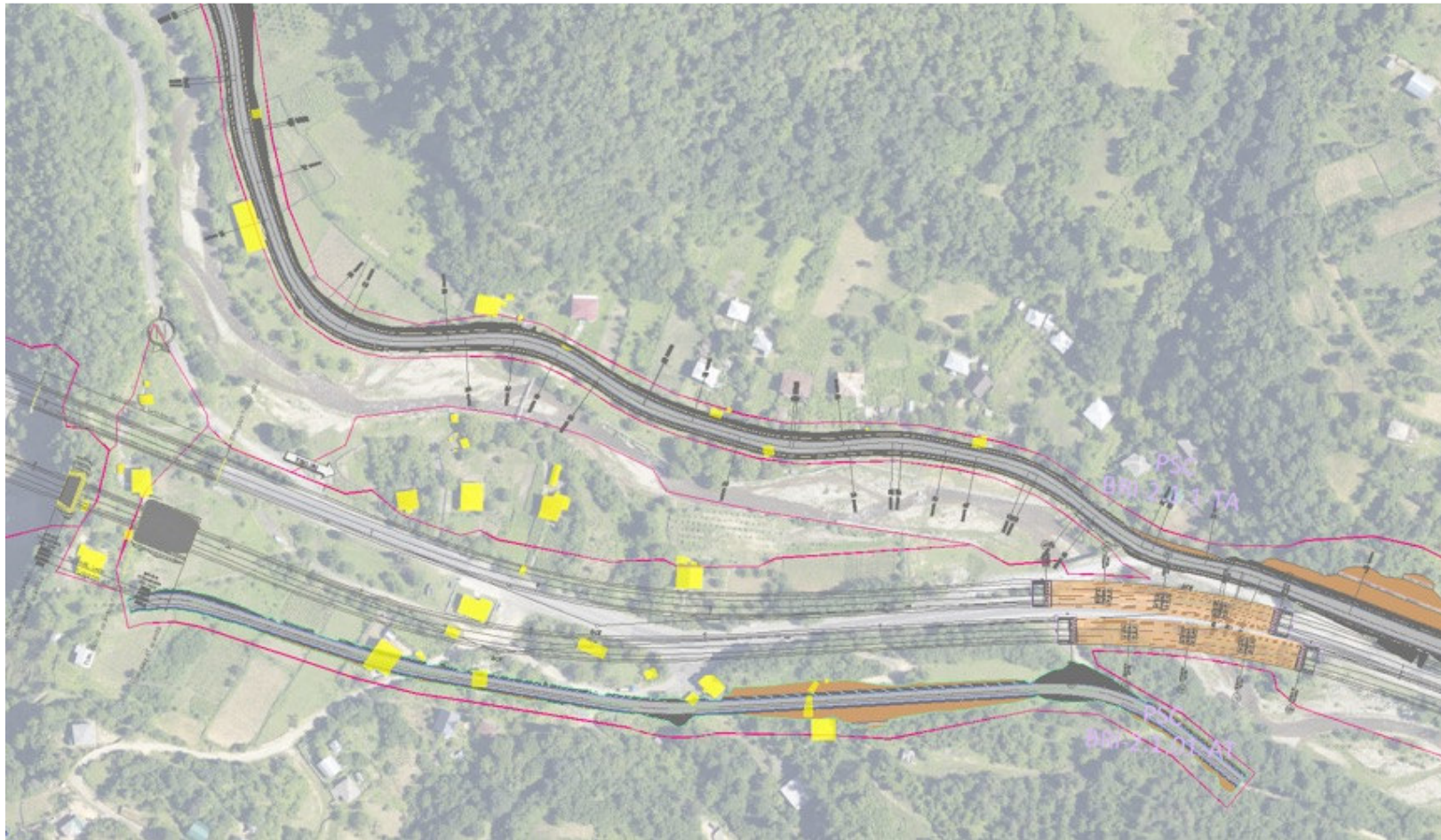


**APPENDIX J**  
**Properties to be Expropriated**

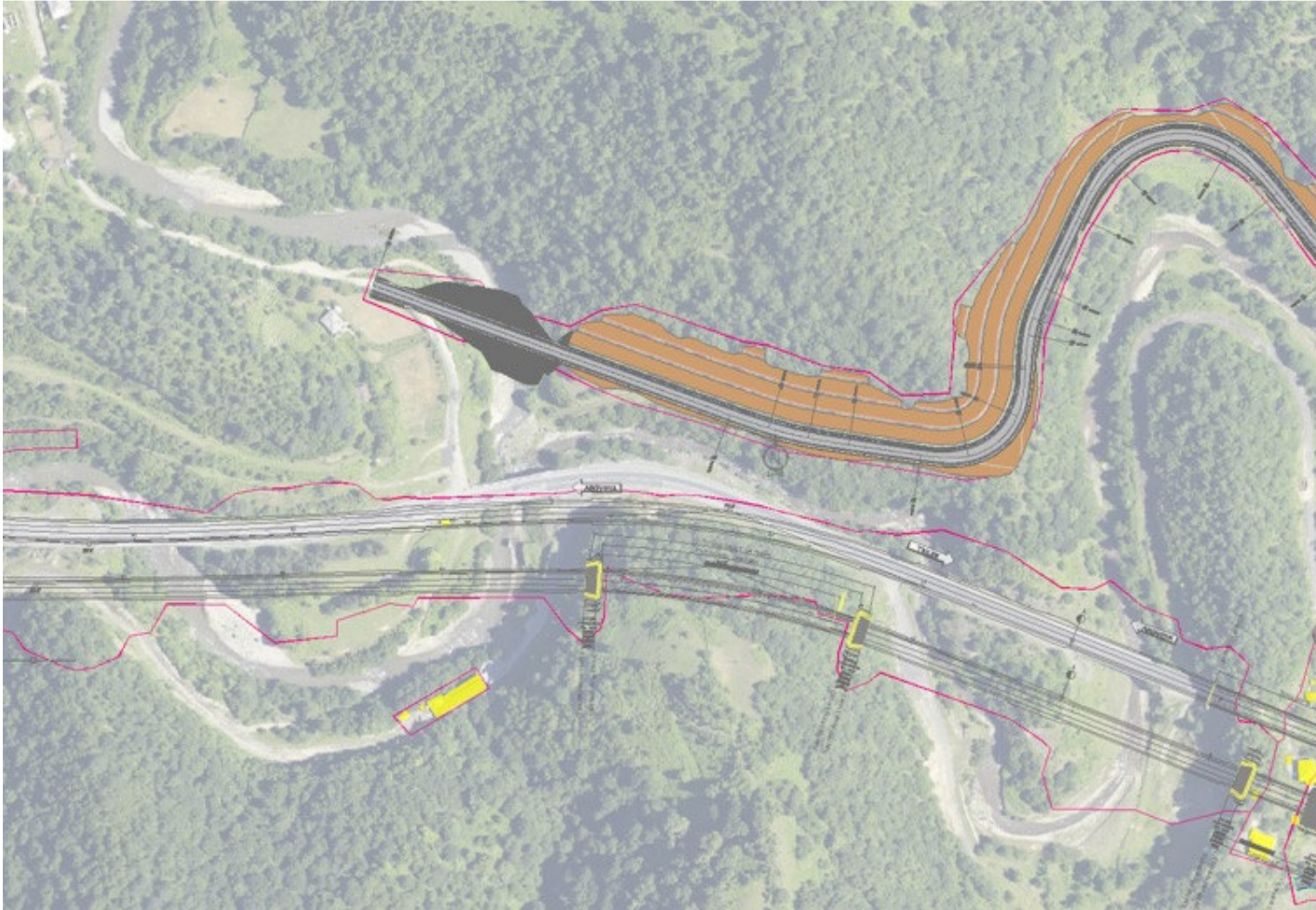
Indicated in yellow quadrants

Section F2 of the Khevi-Ubisa-Shorapani-Argveta Road (E60 Highway)  
Environmental Impact Assessment

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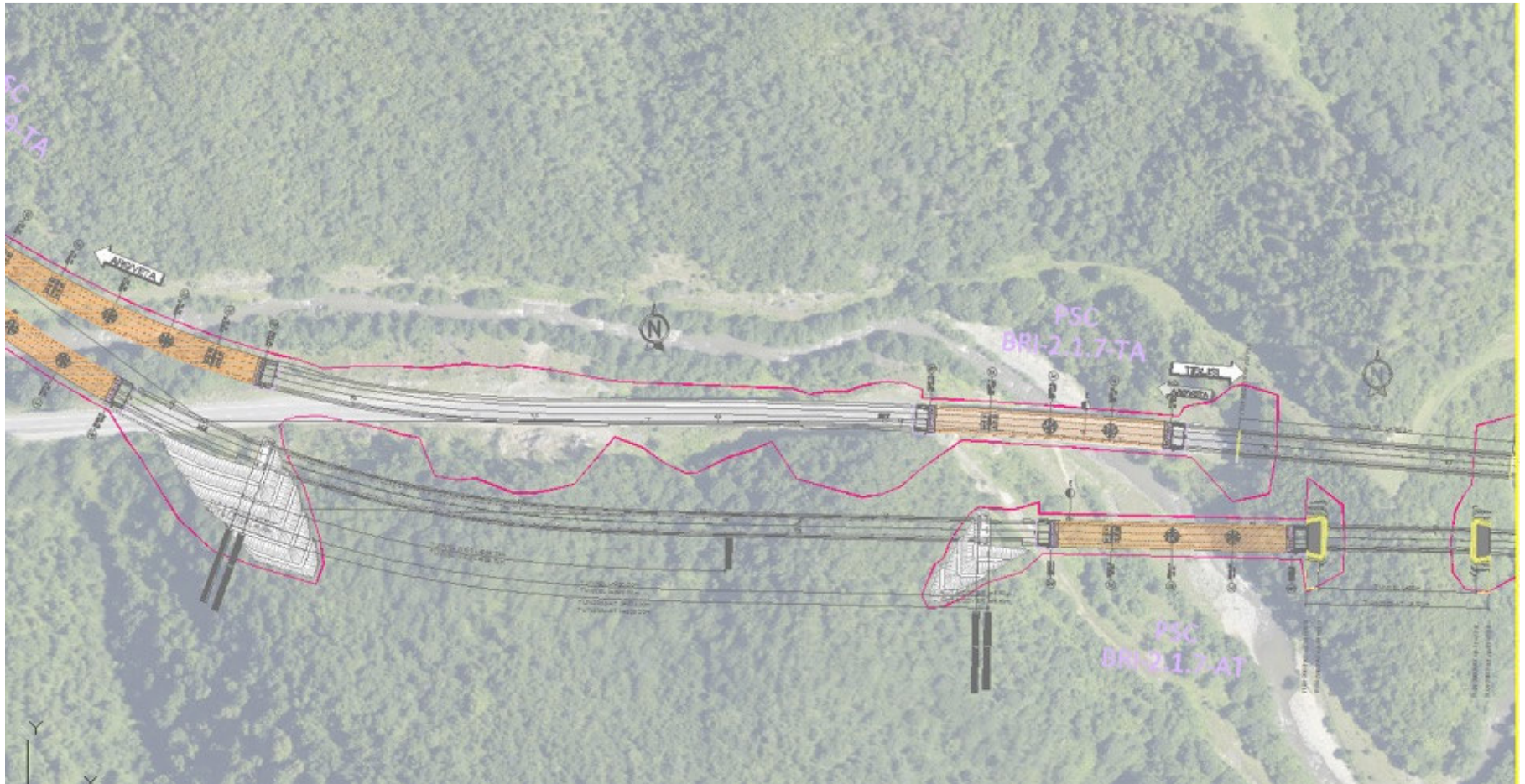


**PLAN FROM KM 0 TO KM 0.8**



**PLAN FROM KM 0.8 TO KM 1.6**

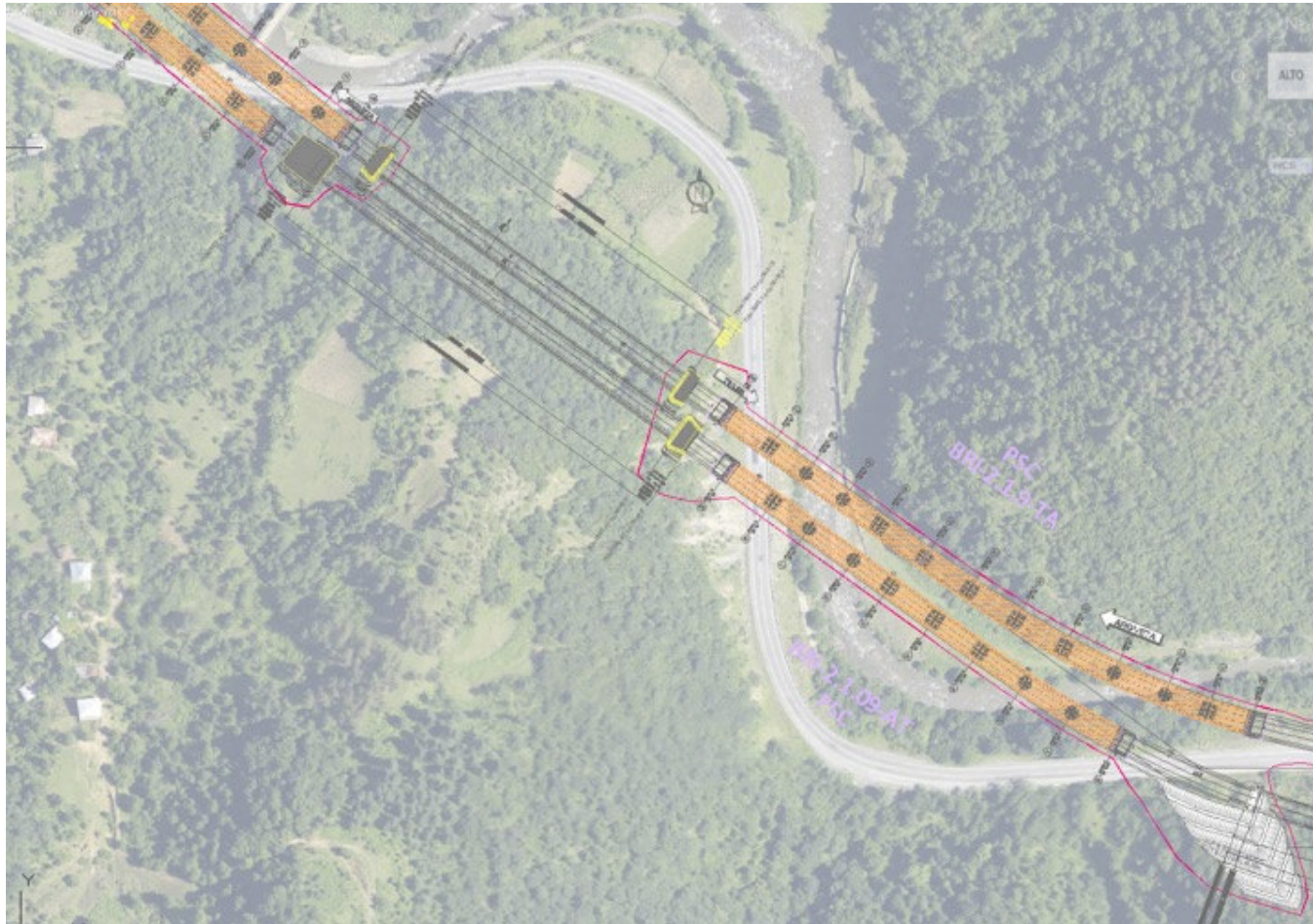
Section F2 of the Khevi-Ubisa-Shorapani-Argveta Road (E60 Highway)  
Environmental Impact Assessment



FROM KM 1.6 to KM2.6

Section F2 of the Khevi-Ubisa-Shorapani-Argveta Road (E60 Highway)  
Environmental Impact Assessment

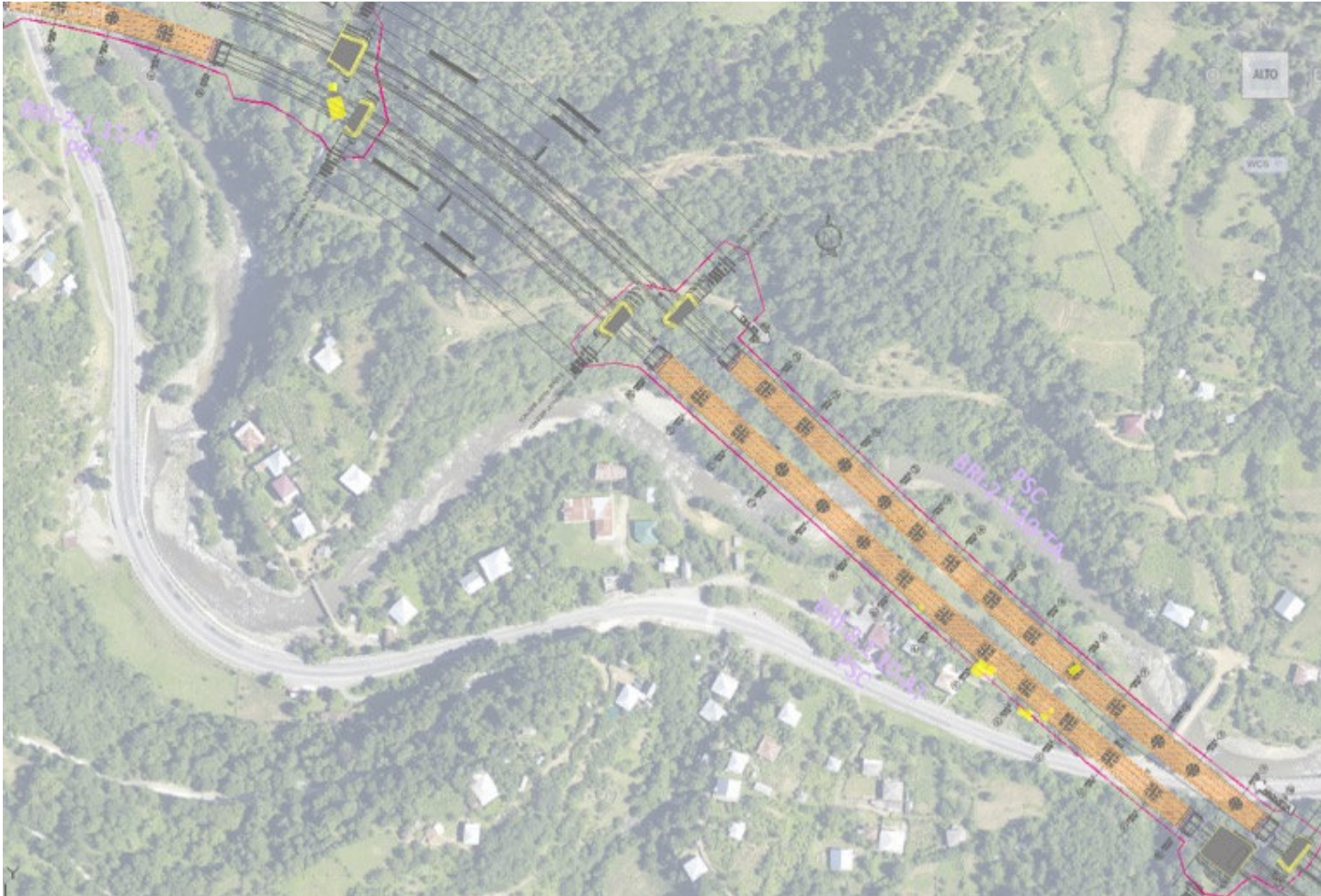
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**FROM KM 2.4 to KM 3.2**

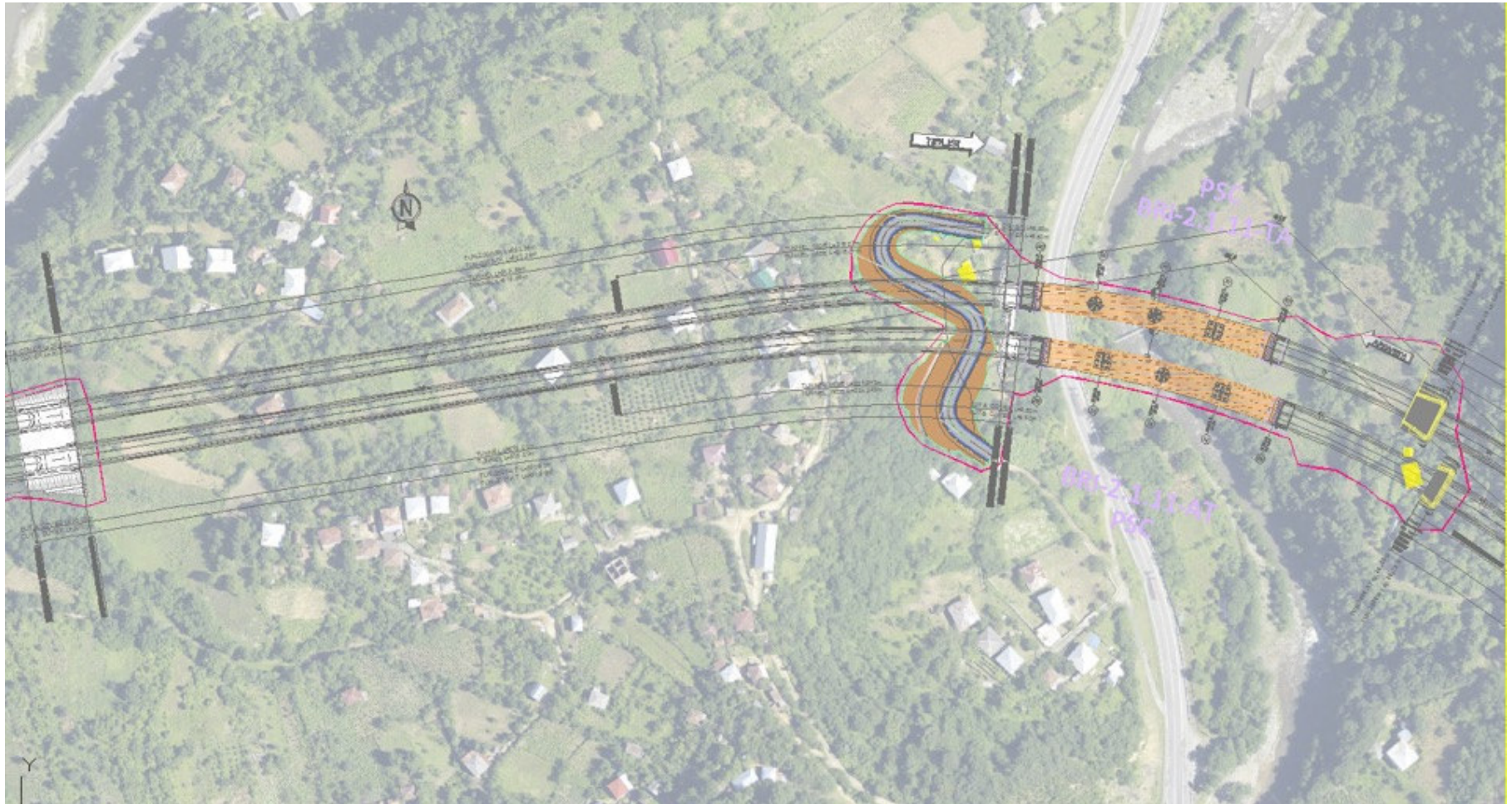
Section F2 of the Khevi-Ubisa-Shorapani-Argveta Road (E60 Highway)  
Environmental Impact Assessment

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FROM KM 3.0 to KM 3.8

Section F2 of the Khevi-Ubisa-Shorapani-Argveta Road (E60 Highway)  
Environmental Impact Assessment



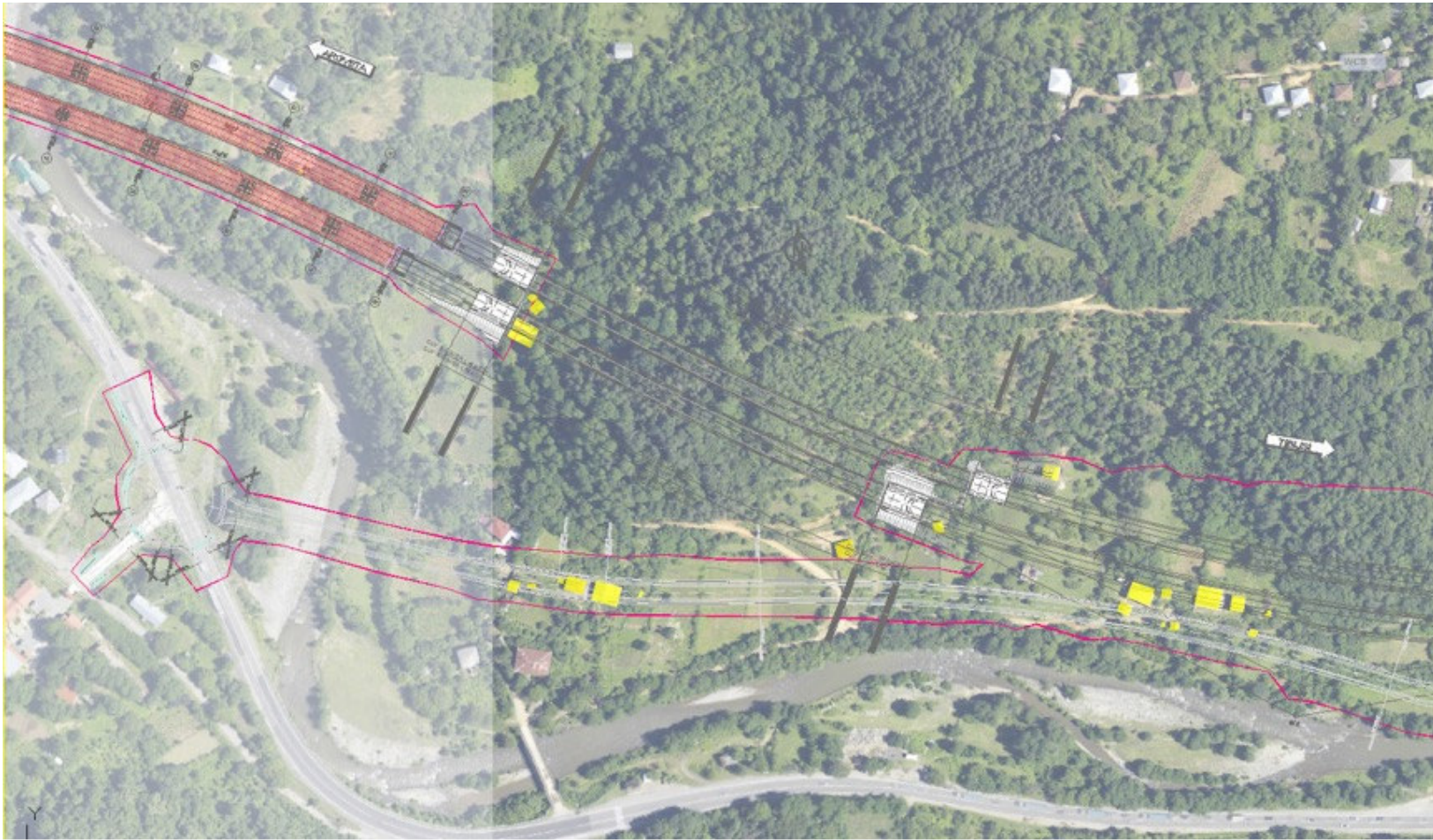
FROM KM 3.8 to KM 4.5

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Environmental Impact Assessment



FROM KM 4.5 to KM 5.4





**FROM KM 5.4 to KM 6.0**

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Environmental Impact Assessment

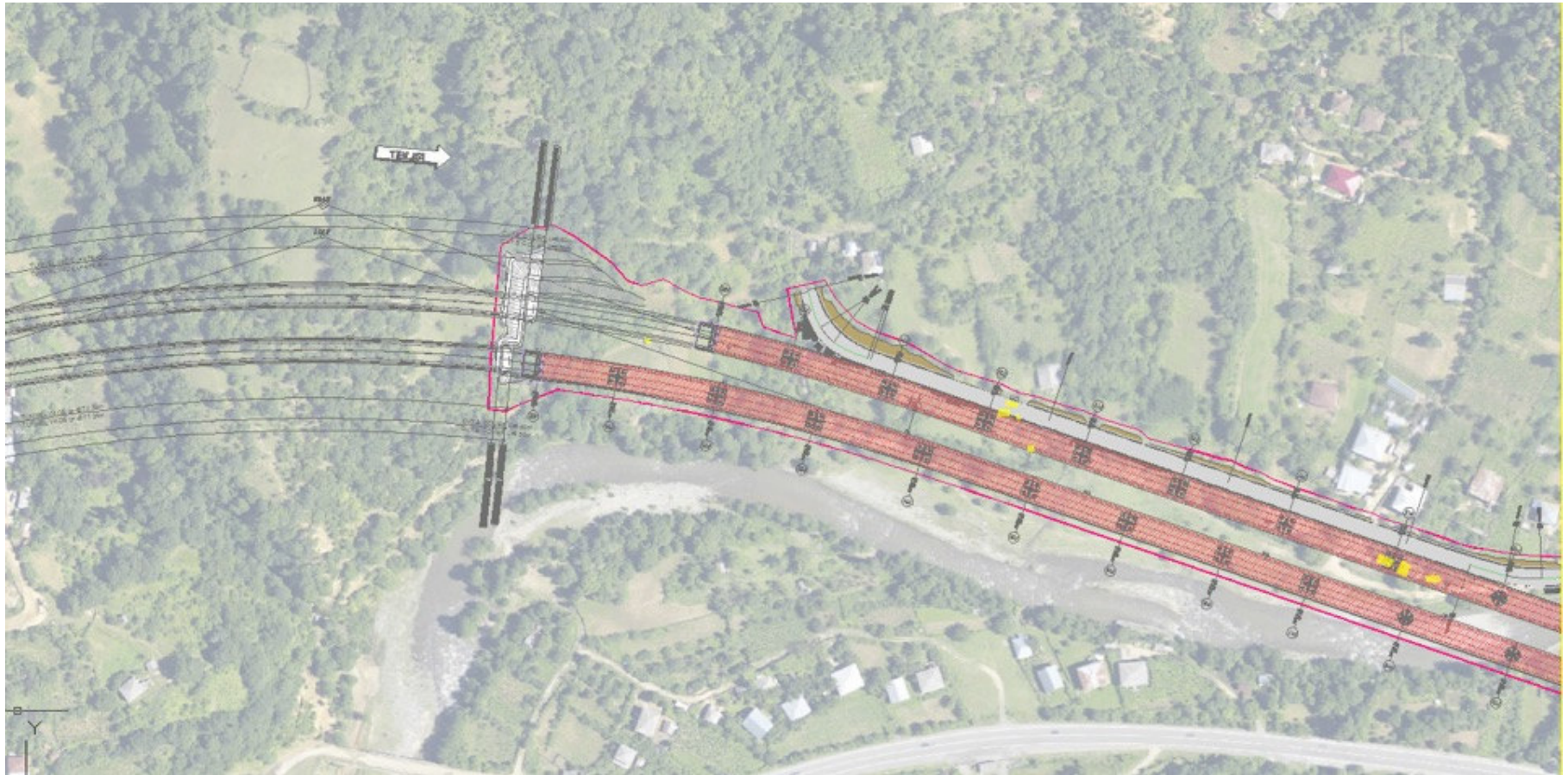
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FROM KM 6.0 to KM 6.8

Section F2 of the Khevi-Ubisa-Shorapani-Argveta Road (E60 Highway)  
Environmental Impact Assessment

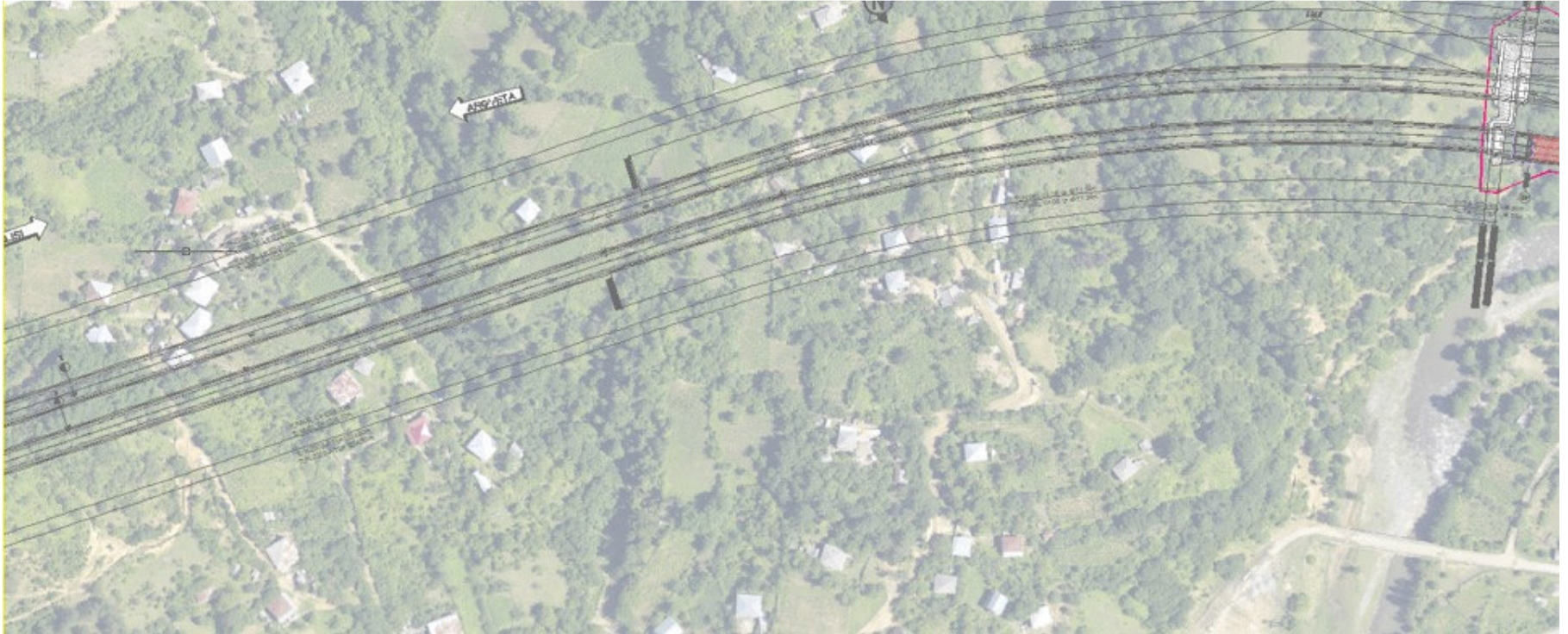
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FROM KM 6.7 to KM 7.5

Section F2 of the Khevi-Ubisa-Shorapani-Argveta Road (E60 Highway)  
Environmental Impact Assessment

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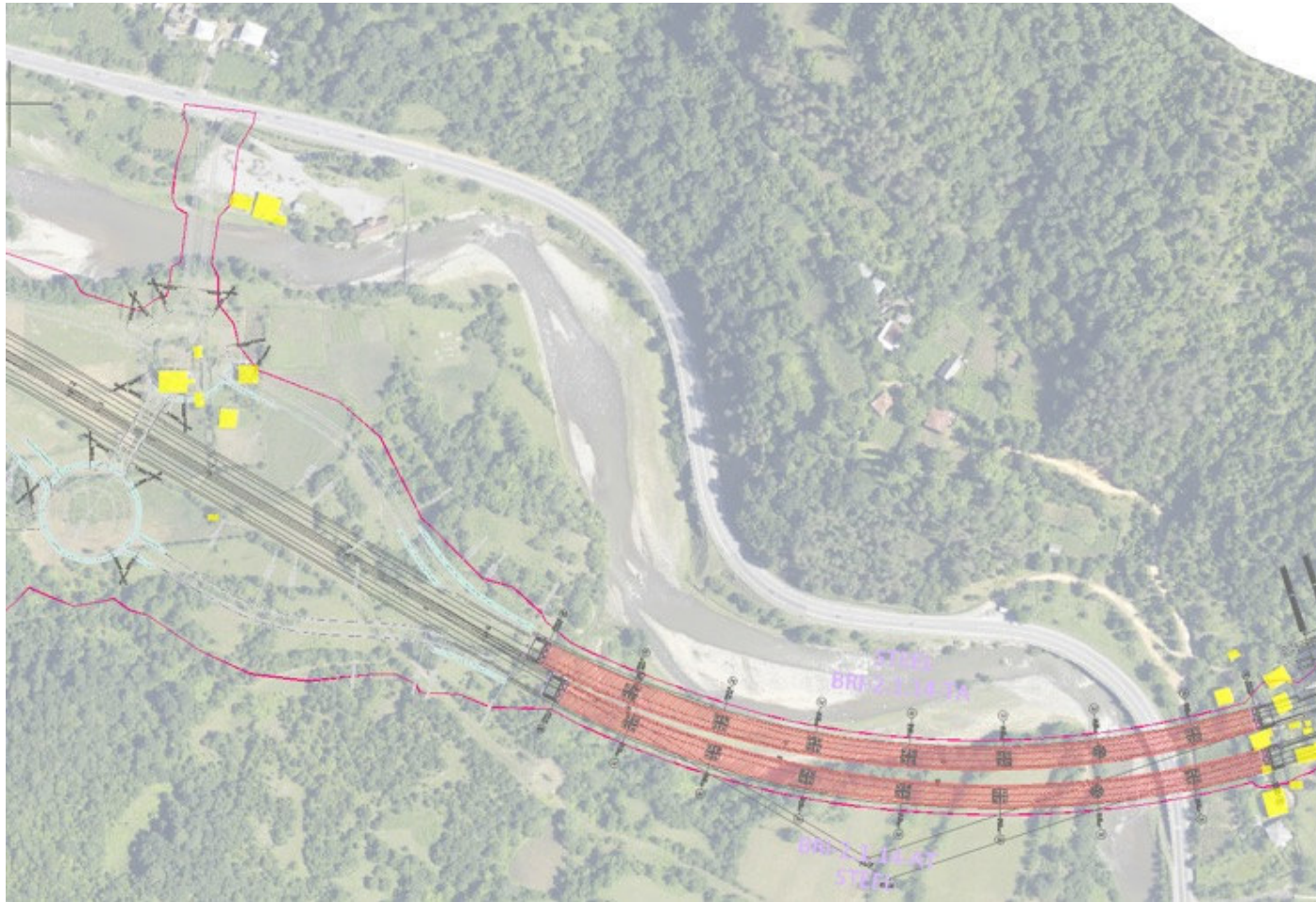
FROM KM 7.3 to KM 8.1



**FROM KM 7.8 to KM 8.7**

Section F2 of the Khevi-Ubisa-Shorapani-Argveta Road (E60 Highway)  
Environmental Impact Assessment

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FROM KM 8.5 to KM 9.4

Section F2 of the Khevi-Ubisa-Shorapani-Argveta Road (E60 Highway)  
Environmental Impact Assessment

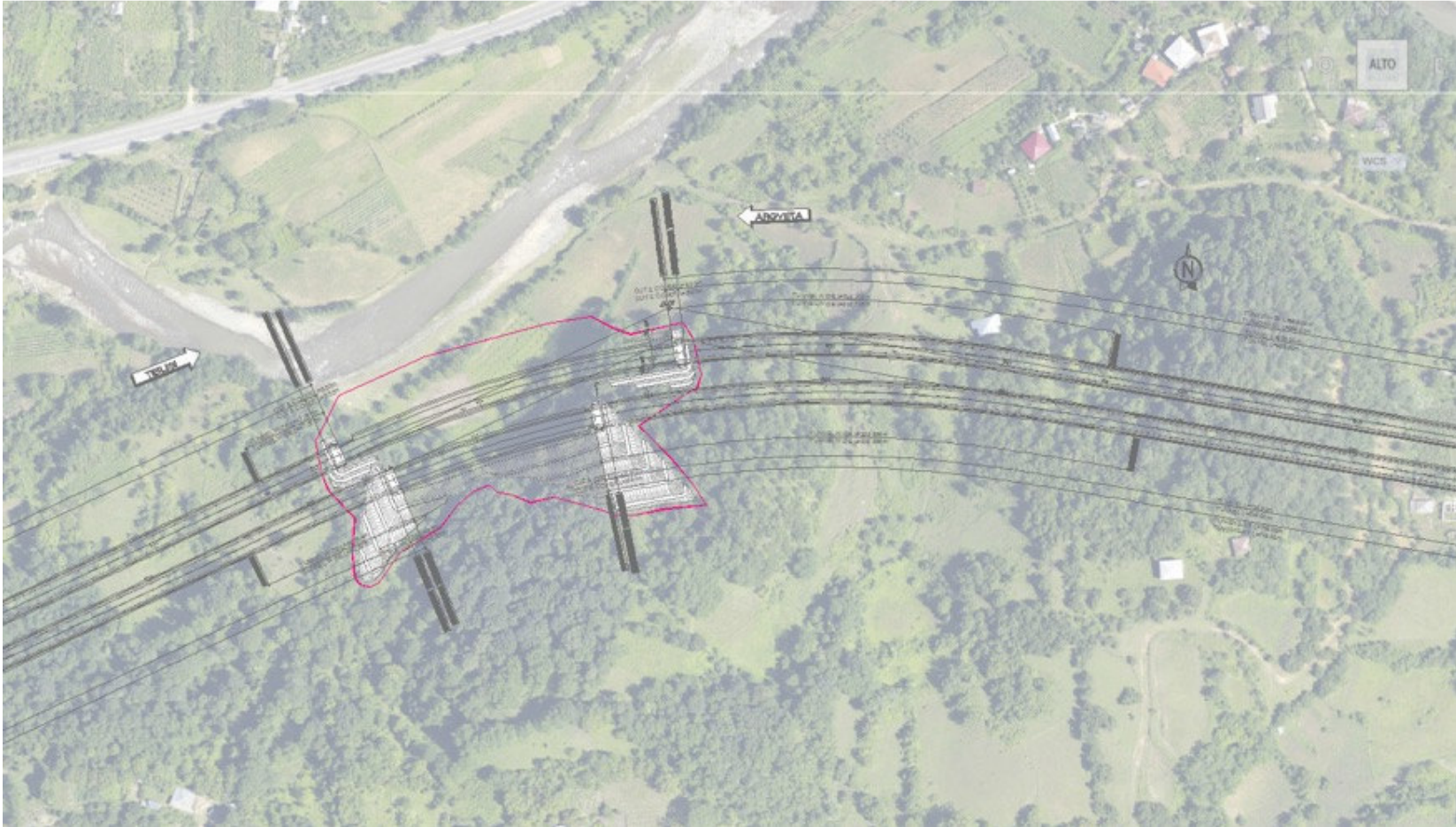
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**FROM KM 9.4 to KM 10.1**

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Environmental Impact Assessment

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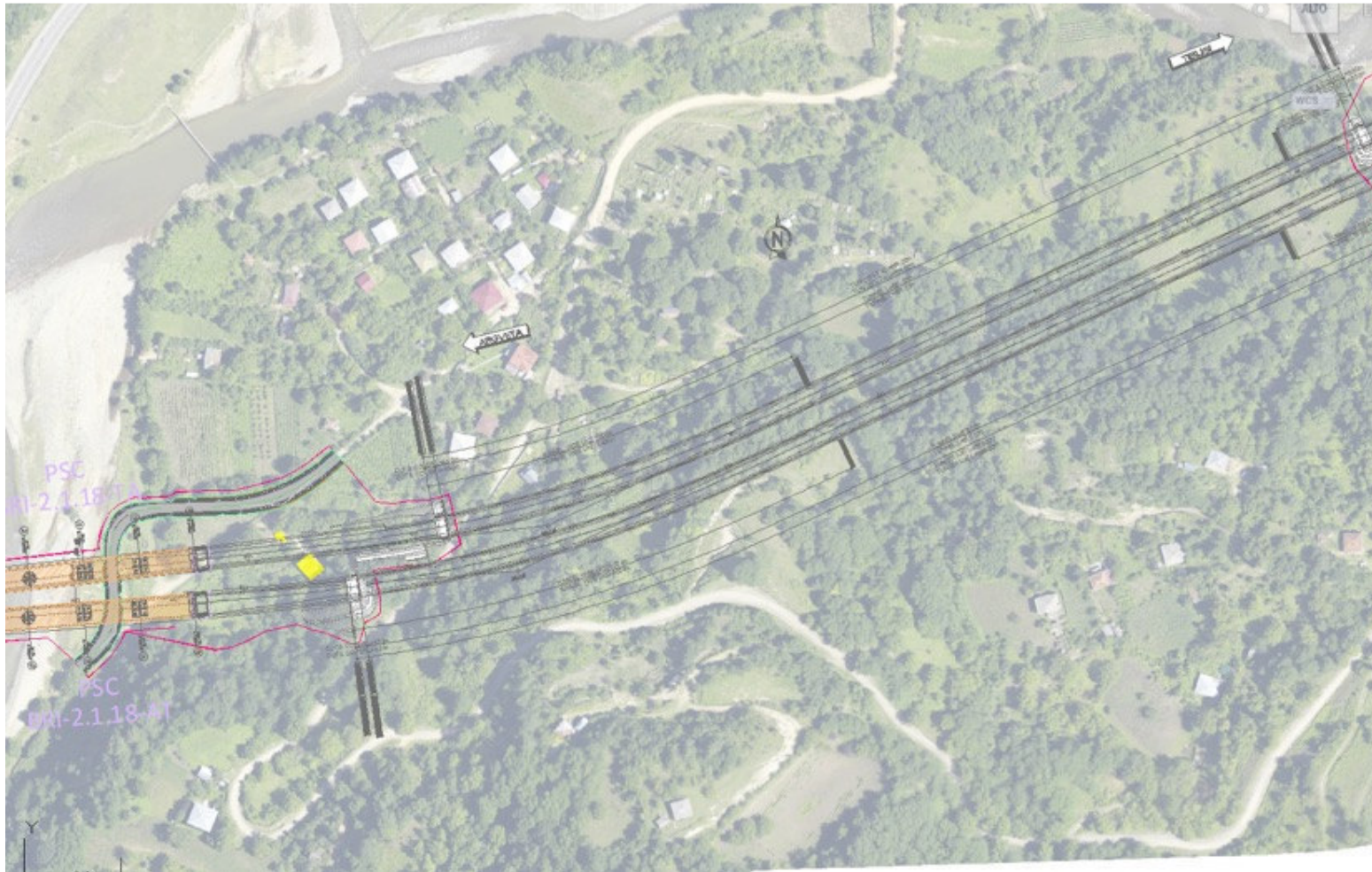


FROM KM 10.2 to KM 11.1



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Environmental Impact Assessment

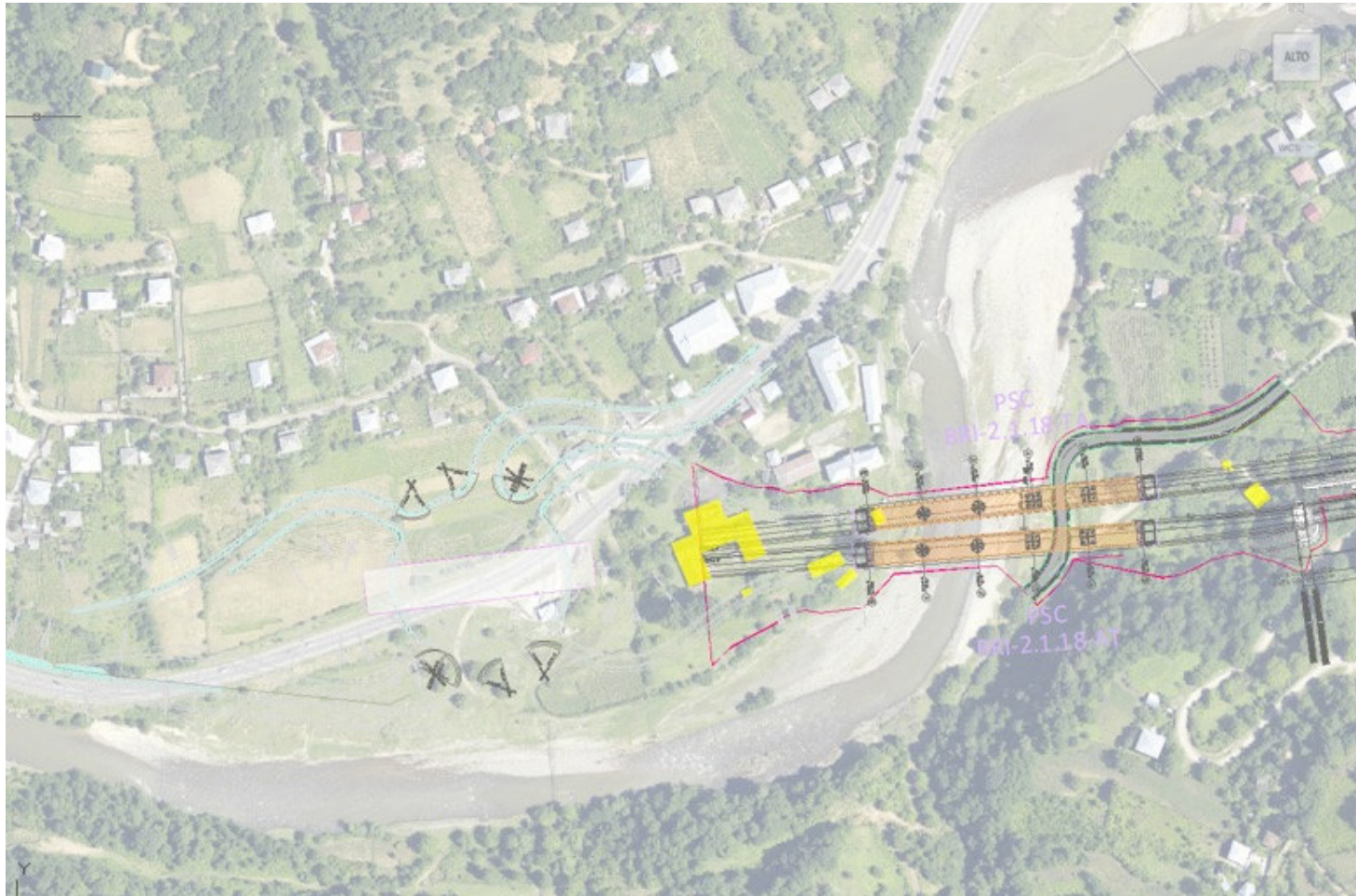
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**FROM KM 11.1 to KM 12.0**

Section F2 of the Khevi-Ubisa-Shorapani-Argveta Road (E60 Highway)  
Environmental Impact Assessment

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**FROM KM 11.7 to KM 12.1**