APPENDICES

- Appendices

Appendix 1 Regional Development Strategy

Table A1-1 Regional Development Strategy (Maritime Region) (1)

Maritime Region
(1) Agriculture
(Current Situation) ▪ Lower yields of major vegetable production (maize, cassava, peanut and cowpea), animal production, and fishery production due to mineral resources exploitation (phosphate) and to land insecurity in major production areas (Southeast/West), and to low access to inputs, credit, and to support services. ▪ Aging of the agricultural workforce and exodus of young people to urban centres. ▪ Low income households while the population continues to grow. ▪ Chronic food deficits, especially in meat products at the household level for a rural region which was once a large granary. (Strength and Weakness) ▪ Emergence of households which put intensification in agriculture based on the adoption of new technologies and agro development options conducting to triple yields (maize 800 kg/ha to 2,500 kg, cassava 10 tonnes/ha to 30 tonnes), ▪ Self-diffusion and gradual adaptation of the dynamic increase in hens and broilers breeders and fleshes of some OPA. ▪ Existence of untapped hydro-agricultural areas and water bodies for aqua farming/aquaculture and gradual adoption of integrated management technology of soil fertility. ▪ Existence of network of seed producers and willingness of farmers to move towards commercial agriculture and beginnings of reflection and tests on land security. ▪ Emergence of new projects in particular PARTAM Zio, PBVM in Lakes, PDC / AGAIB, PNIASA (PADAT, PASA WAAPP). ▪ Enthusiasm of youth and women for whom vegetable gardening is real income source. ▪ Existence of proven technologies for corn and installation of processing units of cassava into gari and tapioca. ▪ Increasing of maize demand on the markets with the existence of ANPAT, ANSAT, WFP and breeding farms and other economic operators), ▪ Setting up of cooperation framework through the Regional Committee Guidance and Control (CROP) of PNIASA grouping together regional representatives of ministerial departments, the local authorities, civil society, ridges of producer organisations chaired by DRAEP having sovereign prerogatives and can play the role of coordination. (Challenges) ▪ Strengthen the institutional framework (structure, staffs and logistics). ▪ Fight against land and natural resources degradation by reducing tenure-related constraints. ▪ Increase and diversify farm income by facilitating the adding value to products and access to markets. ▪ Creating conditions for sustainable rural self-help through accountability and professionalisation of emerging farmers' organisations. ▪ Ensure water control through the development water points and water bodies, the rainwater capture and the promotion of small-scale irrigation. ▪ Promote small engine. ▪ Facilitate well-structured farmer organizations to the access to mechanisation. ▪ Facilitate access to information and communication. (Action Plans) ▪ Facilitate the adoption and application of appropriate technologies, access to proximity credit to inputs especially vegetable seeds (maize, cassava, rice, soybeans and cowpea, vegetables), to breeding animals and agricultural equipment. ▪ Have a network of monitors capable of inducing endogenous dissemination of proven agro-pastoral technologies. ▪ Facilitate the integration of agriculture and livestock with access to inputs and livestock spawning performance, training of farmers and auxiliaries. ▪ Ensure access to land. ▪ Strengthen the institutional capacity of local micro-finance (cash or mutual endogenous) to facilitate access to credit for farmers and other economic actors in rural areas. ▪ Establish an annual regional agricultural fair. ▪ Promote speculation of promising crops such as maize, cassava, rice, soybeans, vegetable crops and horticultural (identification of the product to be valorised and the existing links in each sector). ▪ Develop and implement a strategy to influence the prices of agricultural products. ▪ Strengthen farmers' organizations in the marketing of products valuation of available infrastructure and access to proper equipment and credit. ▪ To study market agricultural products and put in place mechanisms and information tools on the flow of products and pricing and contracting. ▪ Strengthen the capacity building of processing groups. ▪ Provide groups of equipment or light processing units. ▪ Work has improved the quality and presentation of products. ▪ Train youth rural entrepreneurship.

Table A1-1 Regional Development Strategy (Maritime Region) (2)

(2) Industry

(Current Situation)

Except Lomé, the industrial fabric of the Maritime Region is not developed and is limited mainly the extraction of phosphates, operation and processing of limestone cement. Added to the establishment of export processing zones and units of production of mineral water, some private initiatives in the field of printing, the ginning of cotton. In the Maritime Region, there are the industrial units as follows:

- Operating unit and production unit of mineral water Vitale of Fiata.
- Operating unit and production unit of mineral water in Davie of Voltic.
- West African Cement (WACEM) at Tabligbo.
- Diamond Cement at Dalavé.
- Public Corporation of Phosphates, Togo.

(Strength)

- Availability of mineral and agricultural raw materials to be processed or exploited.
- Existence of an airport and a sea port in deepwater for import and export of the products.
- Availability of a skilled labour (unemployed young graduates).
- Existence of a favourable business climate, a code of favourable investment.
- Existence of intermediate organization including the CCIT and presence of intermediary organization dedicated to the promotion of industry such as SAZOF etc..

(Challenges)

- Improve the policy environment through implementation of institutional and constitutional reforms.
- Improve the business environment through establishment of a legal regulatory and institutional framework, favourable to the development of the industrial sector and the safety investment.
- Improving the competitiveness of the sector through use of comparative advantage, restructuring and the upgrading of international standard industrial units.
- Promoting renewable energy.

(3) Tourism

(Current Situation)

In the field of tourism, Maritime Region is a region particularly well in dowries infrastructure (hotels, motels and camps, restaurants and attractions). it is marked by varied and attractive websites which, although feeders, products used stimulus tourist activities. It is, among other things: the beach, the harbour, Lake Togo, Monument Independence, classified forest Togodo, the Mono river with hippos at Tokpli-Sikakondji, and the Reserve Bayeme, etc.

In addition, the cultural and artistic heritage of the region is very rich. In attests the existence many museums, festivals, dances in all prefectures of the region. The diagnosis of the tourism sector in the region revealed the constraints and advantages.

(Strength)

- Diversity of potential, regardless of the fact that they are related to the nature (flora, fauna, coastal) or to the history and culture (monuments, museums, crafts, music, folklore).
- Existence of the State and private institutions in tourism.
- Existence of a certain practice of consultation between governmental officials of tourism and private operators.
- Qualities of welcome and hospitality of the Togolese people.
- Existence of natural and cultural attractions.

(Challenges)

- Develop new and fine touristic products, which are very competitive in the framework of tourism promotion policy.
- Improve security arrangements to cope with the rise of terrorism, traffic accidents and diseases, etc.
- Restore the deteriorating heritage especially architectural of the colonial period and extend the tourist sites.
- Maintain traditional clientele and conquer new markets through implementation of a powerful marketing network.

(4) Transport Infrastructures

(Strength)

- Relatively flat topography facilitates the construction of land communication channels.
- Existence of land transport network connecting major cities.
- Opening of the Region favourable to the sea port facilities.
- Some waterway sites (Togo Lake).

(5) Hydro-Agriculture Infrastructure

(Strength)

- Existence of sub-sector in charge of the infrastructures.
- Existence of a policy based on the vision of water for agriculture.

Source: Study Team

Table A1-2 Regional Development Strategy (Plateaux Region) (1)

Plateaux Region

(1) Agriculture

(Current Situation)

- In general, the conditions for the development activities and potential projects that can support the growth of the local economy in the region and therefore those national are met.
- This sector presents itself as one of the priority sectors fort high growth potential.
- In the context of the search for niches of economic growth, it is urged that actions and projects to be supported consist with rational and sustainable exploitation of natural resources in the region which are naturally and potentially rich., actions to build a preventive resilient system is necessary for a sustainable development lest current threats to this agro-ecological area should create irreversible situations later and should not compromise the foundations of socio-economic development of the region. It is therefore necessary to seek and advocate in terms of corrective actions and the mitigation actions of natural shocks, economic and human activities on resources which are renewable or not.

(Strength)

- Predominantly agricultural population.
- Relatively rich and varied soils adapted to different types of crops (coffee, cocoa, cotton grain, vegetables, etc.).
- Existence of actors in the field (individual producers, in groups, cooperatives, and technical services), NGOs, IMF and NGO Network structured in thematic committees, traders, technical services, etc.).
- First region in agricultural production.
- Existence of lakes and ponds.
- Existence of lowlands suitable for cultivation.

(Challenges)

- Develop and increase logistics in support structures.
- Control street vendors of pesticides who are not appropriate.
- Strengthen the capacity of producers who do not have technically appropriate store space for products preservation ;
- Facilitate access to credits to young producers and their input supply.
- Enhance lowland.
- Support the organization of agricultural sectors (maize, soybeans, sorghum, yam, cassava, etc.).
- Strengthen the approximation and make fertilizer available at users' level and control their speculation.
- Raise awareness on the use of ameliorative plants.
- Strengthen the granting of credits inputs to producer groups.
- Develop and open access roads (Kpete Bena, Ikobi, Gobe, Egbo and Itotou) which carry transhumance to Togo.
- Exploit fishponds at Okou and Banali.
- Halt the destruction of crops by pests.
- Increase agricultural exploitation by mechanization.
- Protect the environment.
- Facilitate the processing of agricultural products by promoting creation of processing units.
- Provide better access to local markets.

(Action Plans)

- Support for groups with equipment and agricultural inputs.
- Increase awareness on the use of certified seed.
- Strengthen the granting of credits inputs to groups of producers.
- Arrange and open the access roads.
- Effective implementation of the Law on transhumance in Togo.
- Identify and put at the disposal of producers of appropriate against pests.
- Get a market available for vegetable producers and nursery of fine seed.
- Support for units and equipment s for food processing and conservation at the level of the producers especially youth and women.
- Strengthen capacities of women and young working for aqua farming for the exploitation of fish ponds and shoals of Okou and Banali.
- Support the organization of leading sectors such as fruits, tubers, ginger, rice, and by off-season crops.
- Open up the production areas.
- Strengthen the human capacity of producers in agricultural techniques; marketing and management.
- Increase cultivable areas in new production areas.
- Protect and restore the environment with the participation of populations.
- Design and implement a agricultural credit bank.
- Continue the renovation of cash crops (coffee and cacao beans).
- Prompt application of the law on transhumance in Togo.
- Rehabilitation, maintenance and strengthening of socioeconomic infrastructure.
- Support and training for young in vegetable grower and in forestry along the Mono River, and Ogou Ofe.

Table A1-2 Regional Development Strategy (Plateaux Region) (2)

(2) Industry

(Current Situation)

The Plateaux Region is a major supplier of raw materials mainly agricultural, with favourable natural conditions for agriculture and abundant and more or less rich farmland. This region is an immigration area of which the labours are increasing. But production areas are not sufficiently opened up, the players who don't have easy access to credit and for the most part they are not sufficiently equipped.

(Strength)

- Abundance of raw materials (mineral, agricultural and animal, etc.).
- Existence of certain units of production, processing, printing, etc.
- Existence of craft centres.

(Challenges)

- Compensate landowners whose spaces are occupied by palm industrial.
- Encourage food production (cassava, cabbage, maize and cowpea) to side of cash crops (coffee, cacao, pineapple).
- Rehabilitate the industrial units.
- Search for opportunities for agricultural and manufactured products.
- Decrease the competition of foreign products.
- Increase access to an appropriate technology; Increase the production of the raw material (aging of palm groves).

(3) Tourism

(Current Situation)

The Plateaux Region, by its geographical location, abundant tourist sites (forests, waterfalls ...), flora and fauna environment, diversity and variability of climate, may be classified among those who have a vocation of eco-tourist attraction. Unfortunately, these riches are still for the most part dormant. They deserve to be rationally exploited so that they'll be the pole of strategic growth for socio-economic development of the region. A detailed study is necessary to determine the technical feasibility of the project to promote eco-tourism in this sector. This sector is growing more in informal and is vital for a significant segment of the population. It is therefore necessary to transform gradually this sector into formal so as to contribute to employment of young people involved in crafts, hospitality associations, young volunteers and eco-tourism or in tourism, the world gradually accompany players to the formal.

(Strength)

- Existence of sites (forests, cascades, remains, etc.).
- Existence of hotel facilities.

(Challenges)

- Strengthen the fight against environmental deterioration.
- Secure the areas protected by residents.
- Promote the heritage tourism.
- Renew the equipment on sites.
- Enhance the identified sites so as to establish tour and eco-tour companies.

(Action Plans)

- Construct and prepare adequate access devices (mountaineering, etc.) to the apex; the cascade Aklowa and Ayomé.
- Creation/Strengthening of reception facilities (hotels, restaurants, hostels) and of infrastructure communications.
- Development of tourist sites and classified forests.
- Creation of traditional bars and restaurants with the services by means of traditional utensils.
- Protection of the eco floristic zones.
- Organization of fairs and crafts' and cultural weeks.
- Revaluation of traditional art.
- Creation of liaison office and exchange office with partners.

(4) Transport Infrastructures

(Current Situation)

Almost all trips in the region are carried by road. The rail networks, naval and aerial networks are virtually non-existent. Considering the geographically rugged terrain in most cases, the road network demands prompt and regular reshaping of roads and access roads. The existing road network technique deserves appropriate and regular maintenance to facilitate the flow of local products to local markets of the prefectures and in turn to prevent their flow to the markets at Beninese or Ghanaian border. The Plateaux Region, with no tollgate, shall organize better the transport-related merchants equipment (stations for roads, parking, etc.) to make a niche for mobilizing local financial resources.

Table A1-2 Regional Development Strategy (Plateaux Region) (3)

(Strength)
- Existence of a road network and a railway network.
- Existence of a regional and five sectors TP (Atakpamé, Notsè, Anié, Badou, Kpalimé).
- Existence of bus stations.
- Existence of parking areas.

(Challenges)
- Provide hardware and qualified staffs to ensure effective transportation network management of the region.
- Find a sustainable feed mechanism of the funding device to be implemented and its transparent management.
- Arrange tracks - reclassify some unpaved national roads in Akébou.
- Make the sector operational (provision of equipment and staff).

(Action Plans)
- Expansion of national and urban roads.
- Maintenance of critical points in time and localised rehabilitation on paved roads (paved or unpaved national roads) and tracks.
- Cleaning of ditches and minor roads.
- Creating of side ditches and divergences.
- Rehabilitation (RN5) and paving unpaved roads and trails.
- Rehabilitation - reclassification of some tracks.
- Need to make operational the materials support sector and technical support staffs.

(5) Hydro-Agriculture Infrastructure

(Current Situation)

The hydro-agricultural infrastructure in the Plateaux Region once referred to as " Water tour of Togo" is accountable at your fingertips. Compared to the possibilities offered by the region, the hydro-agricultural infrastructures are non-existent. A major effort is truly expected to make agriculture, the mainstay of economic growth in the Plateaux Region. To cope with capricious climate, exploitation of groundwater and surface water if possible for agricultural purposes would be an ideal solution for the sustainable development of this sector.

(Strength)
- Impressive Hydrographical network.
- Large area of irrigated land.
- Existence of low land to be exploited.
- Knowledge of techniques of water use in agriculture.
- Good rainfall (between 1300 and 1600 mm of rain per year).
- Some hydro-agricultural dams (Avetonou and Nangbeto, Kpélé-Akata developed lowland, etc.).

(Challenges)
- Establish hydro-agricultural infrastructures.
- Establish an optimal farm system.
- Pull the agricultural sector from randomness and its dependence on seasonal vagaries.
- Promote the lowlands appropriate to the hydro-agricultural development.
- Make the agricultural production areas geographically accessible.

(Action Plans)
- Establish hydro-agricultural infrastructures (construction of water reservoirs, dams, development of lowlands and marginal lands flood.
- Establishment of an optimal farm system.
- Organisation of actors around waterworks.
- Profitability of cultivable and cultivated farmlands.
- Exploitation of surface water and groundwater for agricultural purposes.
- Support for producers farm out their dependence rainwater.
- Road infrastructure development.

Source: Study Team

Table A1-3 Regional Development Strategy (Centrale Region) (1)

Centrale Region

(1) Agriculture

(Strength)

- An important land capital, more than 10 000 km² of exploitable soils.
- An availability of even fertile soils in the west: the plain of Mô (Sotouboua prefecture) and to the East: the Adélé Plateau (Blitta Prefecture).
- Environment (relief) favourable enough to the production of various types of crops.
- The soil balance remains globally positive and the soils of the region are suitable to the practice of a variety of crops: food and cash crops
- Enough rainfall and a dense hydrographical network favourable to the hydro-agricultural amenities, the aqua farming and the vegetable farming.
- A relatively important forest potential capable to be increased, although started appreciably.
- An important human capital: an active and dynamic population constitutes a certain pledge of the necessary farm work to be strengthened.
- An availability of grazing land in rainy season for cattle breeding.
- Existence of the framing structures.

(Challenges)

- How to improve the fertility management of soils to increase the productivity
- How to promote the local initiatives allowing the individuals, the farmers' organizations and the populations in general to arrange their surroundings, their environment and their living conditions.
- How to reinforce the capacities of the basic organizations, the farmers' organizations, and women and men who live by agriculture.
- How to create the jobs by processing of the agricultural products.
- How to reinforce the expertise of the framing structures of the agricultural sector and to improve their capacities of action.
- How to bring the local and regional authorities to take charge of the development of the agricultural sector.
- How to promote the entrepreneurship in the agricultural sector.
- How to improve the regional dimension of the planning system of the development and an approach of for regional development.
- How to improve the coordination about the actions for local development, the projects and programmes at the regional level.

(Action Plans)

- 183 campaigns of sensitization on the cultivation techniques (food crops, crops for export, vegetable farming) are organized in the cantons of the region per year (from 2012 to 2016).
- 2,000 agriculturists of the region are trained about the cultivation techniques every year (from 2013 to 2016).
- 100 packages of training are installed in the region per year (from 2013 to 2016).
- 3 agricultural technologies are identified and are popularised during 5 years (from 2012 to 2016).
- The outputs increased by an average of 50% during 5 years (from 2012 to 2016).
- The arable land increased by an average of 80% during the 5 years (from 2012 to 2016).
- 70% of the trained farmers adopted the popularized technologies during 5 years (from 2012 to 2016).
- 20 tractors are made available in the region during 5 years (from 2012 to 2016).
- The erosion regressed by 10% during 5 years (from 2012 to 2016).
- 200 ha of lowlands are provided in the region during 4 years (from 2013 to 2016).
- 80% of the provided lowlands are exploited annually for cultivation off-season crops during 4 years (from 2013 to 2016).
- The productivity of the lowlands increased by 50% during 4 years (from 2013 to 2016).
- 2 water sources are constructed per year in the region during 4 years (from 2013 to 2016).
- 2 aqua farming sites are constructed per year in the region during 4 years (from 2013 to 2016).
- The parcels for soybean and cashew nut cultivation increased by 50% during 5 years (from 2012 to 2016).
- 4 stores are constructed per year in the region during 4 years (from 2013 to 2016).
- 4 processing units of the agricultural products are installed per year in the region during (from 2013 to 2016).
- 3 improved methods of cattle breeding are popularized during 5 years in the region (from 2012 to 2016).
- 32 new and improved species of sheep and goat or poultry are introduced in the region during 5 years (from 2012 to 2016).
- 800 breeders adopted the new methods and species introduced during 5 years (from 2012 to 2016).
- 8 areas of slaughtering are constructed in the region from 2012 to 2016.
- 8 veterinary stations are created in farming environment in the region from 2012 to 2016.
- 60 roving agents in animal health are trained from 2012 to 2016.
- 750 persons responsible of regroupings of producers of the region are trained and formed per year about the management of a farmers' organization from 2013 to 2016.
- 200 km of farming tracks is drawn per year in the region from 2012 to 2016.
- 40 ha of plantation are put in place per year in the region from 2012 to 2016.

Table A1-3 Regional Development Strategy (Centrale Region) (2)

(2) Industry

(Strength)
- Diversity and quantity of the agricultural production.
- Specificity of the production of the cashew nut in the Central Region.
- Good representativeness of the private sector in the industrial sector.
- Existence of artisanal production units in every prefecture especially in the agro-food sector.
- A number of actors are in the artisanal sector (rural level as well as urban level), and varied by the nature of the services.
- Regulatory framework is incentive.
- Existence of the CRM and the CPM, the GIPATO, the CENATIS and organization unions.
- Effectiveness of the setting up of the Consular Regional antenna of the CCIT on (Chamber of Commerce and Industry of Togo) a regional level in Sokodé in 2011.
- Large diversity of the professional groups.

(Challenges)
- How to modernize the industrial structure.
- How to increase the projects to industrial vocation.
- How to professionalize the artisanal sector and to increase the incomes of the craftsmen.
- How to reorganize the sector with the structuring of the dialogue organs.

(Action Plans)
- The one-stop shop system is effectively operational in the region in 2014.
- 1 advocacy is led in the region per year for the creation of a support fund to the investors of the industrial sector from 2013 to 2015.
- 12 agro industrial sectors are delimited in the region from 2014 to 2016.
- 120 platforms are put in place and functional in the region from 2012 to 2016.
- 40 SME are reinforced per year about pooling of the means in the region from 2013 to 2016.
- 1 advocacy is led in the region for the setting up of a regional fund to support the craft skills in 2013 and 2015.
- 2 traditional centres are created in the region from 2013 to 2016 and the instructors are available.
- The region organized an industrial fair per year from 2013 to 2016.
- 600 craftsmen are alphabetized per year in the region from 2013 to 2016.
- 840 members of the professional groups of the CRM and CPM are trained per year from 2012 to 2016 on the legal texts, leadership, project management and strategies of advocacy and lobbying.
- 1 regional index of the craftsmen is available in 2014.

(3) Tourism

(Strength)
- Wealth of fauna and flora of the Fazao Park.
- Variety of the tourist sites to visit; diversity of the tourist products.
- Existence of the hotel infrastructures.
- Values of hospitality of the authorities and populations.

(Challenges)
- Planning of the National Park of Fazao-Malfakassa, of the Classified Forests, of the tourist and ecological sites.
- Building confidence between the private professionals and the representatives of the public sector.
- Professionalization of the agents of the sector.
- Planning and rehabilitation of roads and access roads and servicing in the sectors of high concentration of animals.
- Setting up of the infrastructures, of the hotels, of the campgrounds, of picnic areas and observation posts (watchtowers).
- Planning of the tracks for the pedestrian circuit (hikes) and creation of camps and camping.

(Action Plans)
- A regional direction/office for tourism is created in the region between 2013 and 2015.
- 1 sensitization campaign is organized per year at the regional level for the protection of the forests classified between 2013 and 2016.
- Preservation of the biologic diversity.
- 1 campaign against poaching is organized per year in the sensitive zones of the region from 2012 to 2016.
- 7 new species of animals are introduced in the Fazao Park between 2012 and 2016.
- 1 project for supporting the domestic cattle breeding is implemented in the zone of Fazao between 2012 and 2016.
- 10 groupings of weavers are supported per year in the region between 2013 and 2016.
- 10 groupings of weavers are equipped and are trained about combination of the methods and local and modern techniques between 2013 and 2016.
- A regional direction/office for tourism is created in the region between 2013 and 2015.
- 1 sensitization campaign is organized per year at the regional level for the protection of the forests classified between 2013 and 2016.
- Preservation of the biologic diversity.
- 1 campaign against poaching is organized per year in the sensitive zones of the region from 2012 to 2016.
- 7 new species of animals are introduced in the Fazao Park between 2012 and 2016.
- 1 project for supporting the domestic cattle breeding is implemented in the zone of Fazao between 2012 and 2016.
- 10 groupings of weavers are supported per year in the region between 2013 and 2016.

Table A1-3 Regional Development Strategy (Centrale Region) (3)

- 10 groupings of weavers are equipped and are trained about combination of the methods and local and modern techniques between 2013 and 2016.
- 1 parade / festival of the traditional fashion is organized per year in the region between 2012 and 2016.
- 1 regional fashion and traditional attire fair is organized per year in the region between 2012 and 2016.
- 1 index of the vestiges of the German combat outpost is available in 2014.
- 1 index of the historic cave dwelling of Boulowou is available in 2014.
- The European cemetery in Sokodé is demarcated in 2014.
- 1 internet site providing the information about regional tourism is created by the township of Sokodé in 2014.
- At least 5 cultural or ethnic groups participate in the festivals and other yearly traditional feasts of the region from 2013.
- At least 2 audio visual media of the traditional dances and music are achieved per year in the region from 2013.
- 1 multi ethnic and cultural committee is put in place to coordinate the diaspora's contribution to the cultural activities of the region from 2013.

(4) Transport Infrastructures

(Actions Plans)

- 30 km of national roads is reconstructed per year from 2012 to 2016.
- The Sokodé - Bassar road (57 Km) is reconstructed in 2014.
- 50,000 m² of national paved roads is rehabilitated per year from 2012 to 2016.
- 300 km of secondary roads (RNR, RNNR) is maintained by the road administrator per year from 2012 to 2016.
- 20,000 m^3 of reloading is repaired per year on the regional road from 2012 to 2016.
- 200 km of classified tracks are maintained by slight reprofiling with prompt loading per year from 2012 to 2016.
- 1,500 km of PRC and PRNC are maintained per year by the road administrator from 2012 to 2016.
- 10 km of urban streets is constructed per year in the region from 2012 to 2016.
- 16 traffic lights are installed in the cities of the region between 2012 and 2016.
- 10 km of urban streets is illuminated per year between 2012 and 2016.
- 40,000 m^2 of parking areas is constructed (with paved and lighting) in the region between 2013 and 2015.

(5) Hydro-Agriculture Infrastructure

(Current Situation)

In the Central Region, the hydro-agricultural infrastructures are very small and insufficient for the agricultural activities, cattle breeding and fishery production. In the whole region, there are only two water reservoirs more or less important in state of silting up, all two situated in the Sotouboua prefecture . The yard of the hydro-agricultural infrastructures is therefore completely virgin. The dams and restraints of water to multiple ends are or even insufficient inexistent and silted up often completely.

(Strength)

- Water system is fairly dense and favourable to the setting up of the hydro-agricultural infrastructures through the permanence of some rivers.
- Long rainy season (April-October) with a high rainfall;
- Existence of the important lowlands in the region.
- Topographical conditions encouraged by the small valleys watered by the abandoned rivers, which would reduce the length of the dams to be constructed.
- Favourable soil condition because of the dominance of argilo-muddy soils enabling to control infiltrations.
- Soil formation with groundwater with acceptable flow rates.
- Existence of the services of rural and agricultural waterworks.
- Existence of private initiatives succeeded in realization of small hydro-agricultural works for the vegetable farming and the aqua farming (Assoukoko, Tchalanidè, Sada, Sotouboua).
- Successful experiences of minimum facilities for lowlands with local materials in Kaniambou.

(Challenges)

- How to preserve some existing hydro-agricultural infrastructures.
- How to mobilize the indispensable resources for the planning of new hydro-agricultural infrastructures.
- How to secure the land management to encourage the private sector so as to invest in the sector of the hydro-agricultural infrastructures.
- How to fight against the climatic change to maintain a good rainfall.

(Action Plans)

- 2 studies on the hydro-geological, hydrological and socio-economic of some dams are carried out in the region from 2012 to 2014.
- 4 dams are cleaned in the region from 2013 to 2016.
- 4 lowlands are constructed in the region from 2013 to 2016.
- 40 individual contractors are equipped with kits for exploitation of the hydro-agricultural infrastructures from 2013 to 2016.
- 3 sensitization campaigns for rural populations about the management of the hydro-agricultural works are carried out in the region from 2013 to 2015.
- 1 management committee by infrastructure of the region is put in place from 2014.
- 12 hydro-agricultural sites of the region are reforested per year from 2013 to 2016.

Source: Study Team

Table A1-4 Regional Development Strategy (Kara Region) (1)

Kara Region

(1) Agriculture

(Strength)

- Competent human resources are available.
- Presence of the supporting public services, the NGO and the service providers.
- Consular chamber of agriculture under installation in PNIASA under implementation by PADAT, PASA and WAAP.
- Political will by the increase of the budget allocated to agriculture (10%).
- Organization of yearly forum of the Togolese farmers followed by the motivative actions (subsidy, donation.).
- Strong involvement of the whole periodic agriculture actors (executives, producers, NGO, etc.) for agricultural campaigns.
- Implementation of the PSAEG that equips and reinforces the capacities of the farmers' organizations.
- The demand in cereals is important at both national and under regional level
- Rehabilitation of 30 km of track per prefecture
- Resumption of cooperation with the bilateral and multilateral partners.
- Decentralization of the services.
- PNIASA under implementation by PASA.
- The acquirements of the projects: small ruminants, ASATO.
- Existence of the CVST (Village Committee for following the transhumance).
- Existence of vast markets.
- Existence of women organization that transforms the agricultural products at a small scale.
- Presence of areas at high agricultural potential (rice, cotton and cassava at Dankpen, peanuts, maize and beans at Doufelgou, Igname and rice at Binah, rice, yam and cotton at Kéran)
- Consular chamber of agriculture under installation.
- Existence of ZAAP.
- Spaces for the research stations available.

(Challenges)

- Based on this assessment, challenges to be noted for achieving organizational, technical, commercial and finaicial MDGs
- On the institutional plan, arrangements are necessary to be taked for a better valorization of the exploitation of the soils still suitable for cultivation (soils of Dankpen and Doufelgous), of the deteriorated soils (in the Kozah) and of the impoverished soils. A policy aiming at water control, the improvement of the cultivation system currently rudimentary as well as the promotion of the hydro-agricultural facilities, the lowlands and the water reservoirs are crucial to modernize agriculture and to alleviate the cultural practices having been too laborious. On the other hand, the animal production has to be promoted by innovative and adapted technologies in response to the needs of the local populations. Finally, an integration policy of very useful essences of the region (for example, shea butter, néré (Parkia biglobosa), palm, etc.) currently in a wild state would have the double interest of both in the promotion of the agro-forestry and in the regeneration of vegetal cover.
- On the organizational and technical plan, a multitude of non professional agricultural organizations still exists at the rudimentary stage. The professionalization of the cooperatives (cooperatives of seed company, of producers of maize, of cashew nuts, of vegetable farmers, of compost producers) will be able to constitute an alternative if one aims at making agriculture a real lever for development and a source of food security for the population of Kara. The mountain flanks can serve for example to the plantation of fruit trees such as the cashew trees,. The endowment of the technical means to the organizations as well as to the brave individuals and the follow-up of their activities until merchandising will be an asset to incite the young to reconsider the agricultural sector like source of employment.
- On the commercial plan, the price decision to the producers, until then recommended, is not a solution encouraging the producer in the pursuit of its engagement in favor of the promotion of the agricultural sector. The development of Market information System (MIS) managed by the producers themselves with the support of the agricultural purse could create a sustainable partnership between the agricultural professionals of Togo and other economic actors of the under-region.

(Action Plans)

- Capacity building of producers to controlling the efficient use of agricultural equipment (animal traction kit, motorized equipment).
- Equipment of producers as a means of production (kit of animal traction, motorized equipment) to increase the planted area and to alleviate the harshness of farming.
- Facilitating access to agricultural credit suitable for supporting the producers' activities and their organizations with a particular emphasis on the women.
- Capacity building of women in the field of processing, preservation, marketing and income management.,
- Capacity building of producers to controlling the efficient use of agricultural equipment (animal traction kit, motorized equipment).
- Equipment of producers as a means of production (kit of animal traction, motorized equipment) to increase the planted area and to alleviate the harshness of farming.
- Facilitating access to agricultural credit suitable for supporting the producers' activities and their organizations with a particular emphasis on the women.
- Capacity building of women in the field of processing, preservation, marketing and income management.
- Capacity building in cooperation for most vulnerable groups by providing appropriate services (inputs, training, credit, livestock animal, etc.) with a view to better contribution to improve productivity of their farms.

Table A1-4 Regional Development Strategy (Kara Region) (2)

- Bringing together of the producers to the inputs (fertilizers, improved seeds, pesticides) and implementation on a timely basis.
- Construction of livestock improvement centres for sheep and goats for the provision of efficient animal equipment to help to improve the productivity.
- Construction of a centre for seed production and plant material to help to improve the yields, productivity and competitiveness;
- Creation and development of permanent water points to vegetable production along the periurban rivers and rural areas (old dams, ponds, perched groundwater, etc.).
- Promotion of traditional food crops and preservation of genetic material (cereals, pulses, etc.).
- Construction of a nursery to deal with the chronic deficit in agricultural products.
- Promoting the development of Agricultural Enterprises Centres (PEA) as the ESOP by some NGOs or women's organizations;
- Acquisition, establishment of processing units and the market for agricultural products.
- Promotion of Integrated Soil Fertility Management (ISFM) to enhance the use and commercialize the organic compost.
- Development of water points, grazing, cattle tracks and transhumance corridors to help to improve the productivity of the national herd, to take advantage of the seasonal residence of foreign transhumant herds and avoid straying and trampling anarchic herds which are very harmful to the environment.
- Continued implementation of the recovery program of the cotton, peanut, soybean to improve their competitiveness and viability.
- Valuation of mountainsides and undeveloped areas by the promotion of fruits such as cashew, mango, shea, néré, etc.
- Identification of local intermediaries in charge of collecting information about available stocks as well as the prices.
- Strengthening the capacity of local intermediaries on the procedures for collecting information and information management (sends SMS and display the market prices).
- Equipment of local relay kit.
- Operationalizing of an appropriate information system of agricultural markets.
- Strengthening, with the support of NGOs, of the structuring of the rural world, the professionalization of the agricultural sector from the perspective of the consequence in Togolese rural agricultural and professional channels.
- Support to the implementation of the inter-professional organizations around the different agricultural sectors (cereals, tubers, legumes, cotton, livestock, fruits, etc.)
- Capacity building and equipment (hardware capacity, human capacity, financial capacity) of the services-decentralized region (statistical, DRAEP, ICAT, ITRA)
- Further strengthening of decentralized agricultural planning, programming, budgeting, monitoring and evaluation for better management actions implemented in the agricultural sector.
- Continuation of the construction and rehabilitation of storage facilities for food products.
- Establishment of a wise mechanism for constitution and for destocking which regulates the grain market.
- Organizational and entrepreneurial capacity building for women who are members of agricultural and professional organizations.
- Support for women for access to credit, means of production (huller, balance, etc.), storage and product processing.
- Support the creation of agricultural centres for women.
- Enlightenment of producer's and inter-producer's organizations against HIV / AIDS and communicable diseases.
- Facilitating access to land by women including widows and orphans.
- Protection of fragile ecosystems (mountains, rivers, etc.) by planting tree species.

(2) Industry

(Strength)

- Existence of commercial areas.
- Presence of some processing companies (brewery plant, cotton ginning plant, rice ginning and processing plant cashew nuts), some of which are currently out of service or underutilized.
- Region with a high production of marketable agricultural products, vegetable farming, crafts.
- Chamber of crafts.

(Challenges)

- The region of the Kara could act as relay centre for the Sahel countries if the opportunities that this region offers are exploited in an optimal way. To this effect, the creation of an environment favourable to the installation of the economic operators of all kind would be a big challenge. These economic operators could contribute to the setting up of small processing units of the agricultural products, to the creation of employments, to the development of the handicraft with the existing ores (for example: typical local architecture in stone instead of the cement) and also to the installation of big shopping malls of the manufactured products. Finally, re-launch of the activities of the SEM currently in closing could contribute to the restarting of the industrial sector of the region.

(Action Plans)

- Definition of incentives measures for the implementation of SEM in the region.
- Promotion of new industrial units specific to the region and a source of employment for youth.
- Rehabilitation of old and abandoned SME creates jobs such as Togo textile factory TEX, the Furniture and Joinery Company(SAM), the Togolese society for tires re-treading and Industrial bakery in Togo (BINTO).
- Continued development of the railway communication.
- Reduction of telephone communication fees and facilitating of access to the Internet coverage in all prefectures.
- Consolidation of professional groups structuring.
- Capacity building for production, management and marketing of the members of the professional groups.

Table A1-4 Regional Development Strategy (Kara Region) (3)

(3) Tourism

(Strength)

- Multiplicity of the traditional feasts, rituals, ceremonies and festival.
- The cultural and archaeological sites in very impressive number (+83).
- Existence of groups of traditional dance of the peoples (folklore) for the protection and the safeguard of the cultural heritage.
- Presence of 3 museums: the regional museum of Kara, the museum of the site of Koutammakou still embryonic and the private museum EYADEMA of Pya).
- Presence of art galleries: Kara hotel and CODHANI in Niamtougou.
- The atypical traditional architecture tata tamberma.
- Traditional and typical architecture in clay: round, oblong, square.
- Presence of about hundred artists of the song through the Kara that exploits the tradition and modernism.
- Existence of the traditional social structures.
- The gastronomy of the region is a very sought-after art of by the thin gourmets which leaves indifferent whoever tasted the dish and the calabash that are served in all localities.
- The religions, beliefs, thoughts.
- Presence of the sacred forests.
- Quality of the welcome and hospitality.

(Challenges)

- Rehabilitation of tourist sites.
- Development of advertising campaigns by heritage tourism and traditional architecture.
- Construction and rehabilitation of road network.
- Capacity building of the hotel staff and tourism.
- Control of statistical data of tourist sites visitors.
- Kara Region has high cultural and touristic potential which can attract a much more visitors if the assessed sites were developed and benefits from an appropriate policy of management and promotion.
- Challenges for re-launch tourism at the regional level include (i) reconstruction of tourist sites, (ii) valorization by advertising actions of tourism heritages and traditional architecture, (iii) construction and reconstruction of road network, (iv) capacity building of staffs in hotels and tourist reception and (v) mastery of statistic data of visitors to the sites.

(Action Plans)

- Development of an aggressive communication about facts.
- Implementation and capacity building of stakeholders in the tourism sector.
- Development of a communication and artistic activities around the tourist site.
- Implementation of local management committees and capacity building of committees' members.
- Hotel development through improving the living environment of hotels, attractions, museums, advertising around the sites and hotels and building welcoming staff's capacity of hotels and sites.
- Implementation and capacity building of folk groups organizing evening parties for valuation of folklore.
- Definition of incentives measures to encourage the development of tourist sites by the population.
- Increasing incomes of the population by AGR.
- Communication around tourist sites.

(4) Transport Infrastructures

(Strength)

- Presence of a Regional Direction of PW (DR-PW);
- Rehabilitation of 30km of tracks per prefectures.
- Development work and asphalting road of the Bassar – Kabou.
- Development work, sanitation works and asphalting of roads at Bafilo, Kara, Niamtougou by PAUT financed by the EU.
- Annual routine maintenance of the most important pathways.
- Creation of a regional direction for transport.
- Electrification of some roads.

(Challenges)

- The Regional Direction of Public Works (DR-TP) suffers greatly from a lack of qualified staffs, a lack of logistics, IT, rolling stock and old buildings. Its representation is also small in the prefectures. One of the challenges is to meet these needs in order to achieve better the assigned objectives, primarily those of the control and exploration.
  Considering the transport sector in general, there is no reliable statistic data, nor books and records of the geometric characteristics of the road allowing the control of the sector. The establishment of a database and road archives constitutes crucial tools for better planning and good follow-up (on the demands for urban and suburban transportation, traffic, road safety, etc.).

Table A1-4 Regional Development Strategy (Kara Region) (4)

- The road sector is facing a multiplicity of insecurity due to the cramped space and urban roads by vehicle breakdowns, bad driving especially those of motorcycle taxis whose driver does not have a driver's license and does not master the code, poor quality of communication channels, the absence of street lighting. The DR-TP in partnership with security officers will be responsible for setting place a mechanism to reduce accidents. The presence of a representative of the National Council for Shippers in Togo (NCTC) is an opportunity for the DR-TP to find a definitive solution to the broken down vehicles on the tracks. The requirement for a license for motorcycle could discipline its drivers. The integration of the parameter related to parking of vehicles is essential in the design of new roads especially roads with high traffic and heavy. Moreover, the continuation of the campaign electrification public roads will certainly have a positive impact on road safety at night.
- The development of urban and interurban public transport would be a good opportunity to sector development at the regional level. It is also necessary to encourage the private sectors to develop dramatically this initiative which will greatly reduce accidents on the tracks. Similarly, inter connection between the prefectures in the same region is a factor that may produce disparities between districts. Commit to roads asphalting which link the main seven (7) towns would lead to a certain and harmonious boom for some prefectures in the region.

(Action Plans)

- Development of a strategy document defining how autonomous management DR-T
- Capacity building (human, material and financial) of the DR
- Establishment of a strategy document outlining the conditions for autonomous management of the DR-TP.
- Capacity building (human, material and financial) of the DR-TP,
- Capacity building of institutions and local authorities (Municipality and Prefecture) to be initiated and take in charge of the development and maintenance projects of the urban road.
- Conducting a study to control statistical data in the field of infrastructure and road safety.
- Establishment of a planning monitoring and regional and prefectural evaluation of road infrastructure works.
- Inventory of existing quarries in the region, defining the terms of use careers and mentoring.
- Development of a partnership between the DR - TP, companies and supplier companies of materials (iron, cement, ...) in order to avoid stock-outs and increases costs.
- Strengthening capacity for business local.
- Continued construction of bridges (Kepezde, Martika and Agazou) and initiate construction / replacement of major crossings.
- Continued paving of pathways bypass (Alédjo, Défalé) and Route Kabou Guérin-Kouka.
- Construction of urban infrastructure (especially in the towns of prefectures) and rural areas to reduce the Road imbalances between prefectures.
- Planning and regular maintenance the inter-prefectural routes.
- Implement reforestation campaigns and rehabilitation campaign of quarries and riverbanks.
- Promote employment opting for work intensive labour (road and parking area paved in macadam, etc.).
- Creating a suitable environmental allowing the private sector to exploit the urban transport by the circulation of bus transit.
- Development and implementation of measures regulating the number and categories of costs to be borne by the 2 and 4 wheel-drive engines.
- Taxation of the securitization measures (driver's license, helmets, insurance, etc.) of motorcycle taxi drivers and passengers.
- Reduction of accidents by the implementation, in partnership with the CTC, a procedure release channels (clearance, taxation, etc.) in case of congestion as a result of breakdown.
- Extend and organize the bus stations / participation of private operators to management and operation of bus stations (management contract or concession regime).
- Promote the competitiveness of the transportation system by price control and tariff transport / Promote social fabric of stakeholders in transport (passengers, shippers, drivers, etc.).
- Organizing campaign about HIV/AIDS and STDs, the responsible behaviour and of the citizens in maintenance of sanitation and roads.
- Regulation of damage on public roads by users (Disregarding traffic lights, etc.) or uncontrolled individuals (at events)
- Implementation of toll stations on some major axes.

Table A1-4 Regional Development Strategy (Kara Region) (5)

(5) Mining

(Strength)

- Presence of an iron ore deposit in operating at Bassar.
- Operating materials construction.
- Rewrote Mining code.

(Challenges)

- The first challenge is updating the mining code defining the operating conditions (traditional or industrial) of the mineral resources which are sources of environmental pollution but also sources of employment. In the meantime, it must be ensured that the application of the law of 3 May 2011 which is a law adopted as an amendment of the Article 63 of the Mining Code which provides that the exploitation of mineral resources in a locality will contribute to local and regional development in order to avoid the frustrations of people mining areas, negative impacts on the environment and on communities residents.
- Another aspect to be considered is anarchic and uncontrolled opening quarries and denial by companies to pay mining royalties. A state inventory of existing careers / potential and operators of quarries is urgent not only for the security of local residents and workers but also to collect royalties, sources of income for the state. A partnership between the Department of Mines and of the tax will facilitate the implementation of texts governing the management of careers.
- The passage of wide-body vehicles makes the fragile pathways to careers. At this level arrangements should also be taken to ensure the maintenance of track in question.

(Action Plans)

- Acceleration of the drafting and submission to adoption of the Mining Code and elaboration of implementing legislation.
- Outreach to stakeholders (operators, workers, etc.) the content of the code.
- Operationalization of the compensation procedures for the residents for collected royalties.
- Inventory of careers and actors should lead to proposals about environmental protection measures.
- Implementation of security plans for workers and environmental protection.
- Development of the file for career operators, enlightenment and implementation of a procedure of tax collection.

Table A1-5 Regional Development Strategy (Savanes Region) (1)

Savanes Region

(1) Agriculture

(Strength)

a) Vegetable Production

- Availability of arable land.
- Existence of lowland to be developed for vegetal farming, rice and some irrigated cultures.
- Existence of farmers' and dairy organizations.
- Diversity of crops (cereals, legumes, vegetables, etc.).
- Existence of technical support services.
- Existence of local labour.
- Existence of agricultural inputs.
- Existence of producers.
- Soil suitable to agricultural mechanization.
- Practice of animal traction.
- Existence of rivers.
- Existence of OPA for agricultural products processing.
- Mastery of some traditional techniques of conservation and of agricultural products processing.
- Existence of plant protection services.
- Existence of deposits of pesticides.
- (Tône) Existence of a tomato processing unit.

b) Livestock

- Importance of livestock.
- Pastoral region.
- Existence of farmers organizations.
- Existence of many park for local farmers (cattle).
- Availability of land.
- Existence of veterinary services and veterinary practices.
- Existence of rivers, ponds and impoundments.
- Presence of AVE.
- Existence of veterinary products.
- (Oti) Existence of ranch Namièlé.

c) Fishery

- Existence of rivers, dams, ponds and impoundments.
- Existence of basic groups (Union of fishermen).
- Existence of the fish store.
- Existence of diversities of fish species.

(Action Plans)

- Development of a water control for agriculture.
- Development of technical conservation tillage and soil restoration promoting prevention, the judgment of the degradation of natural resources.
- Development of the capacities of farmers and producer groups by technical support and training for optimal use of production factors.
- Improvement of the preservation, processing, distribution of the agricultural product at all levels.
- Strengthening of financial and material support of the various structures.
- Development of water management for livestock.
- Capacity building of farmers and rancher groups by technical support and training.
- Strengthening of financial and material support of the various structures.
- Development of water control for a fishery.
- Development of the capacities of fishermen and fishermen's groups by technical support and training.
- Strengthening of financial and material support of the various structures.

(2) Industry

(Strength)

- Areas of predilection of shea nuts andnéré.
- Areas of rice production for excellence: availability of the Oti plain and lowlands.
- Areas of major productions of tomato.
- Area with a high legume production such as peanuts and soybeans.
- Areas of major productions of watermelon.
- Area with a high production of livestock and fish.
- Existence of the local workforce.

(Action Plans)

- Creation of a rice paddyin the Oti plain;
- Creation of a factory for shea butter and its derivatives;
- Strengthening of tomato processing units at Dapaong, Naki-Est and Kountoiré.

Table A1-5 Regional Development Strategy (Savanes Region) (2)

(3) Tourism

(Strength)

- Reconstruction of the history of the region.
- Existence of remains, attics, caves.
- (Oti) Construction of New pottery of Mango.

(Action Plans)

- Development of a strategy for protection of tourist sites and recovery tourism in the region.
- Creation in all prefectures functional supervisory structures.
- Strengthening the lobbying around regional tourism (advertising, creation web sites of the tourist sites, organization of annual hikes, etc.).
- Development of ecotourism on the backwaters of the Oti River.

(4) Transport Infrastructures

(Strength)

- Existence of a Regional Direction for Public Works.
- Existence of paved RN1.
- Existence of some roads being paved.
- Existences of some secondary roads and rural tracks.
- Existence of a main bus station and secondary bus stations.
- (Tône) Existence of an aerodrome at Dapaong.

(Action Plans)

- Construction of two brigades by public works.
- Landscaping and paving of highways and rural roads.
- Restart construction of the toll of Mango.
- Construction of bus stations in the main towns of the prefecture.
- Development of Bus Station of Dapaong.
- Redevelopment of city streets in the region by constructing the channels capable of draining rainwater.
- Improved means of crossing the Oti River.

(5) Hydro-Agriculture Infrastructure

(Strength)

- Availability of vast lowlands converted to rice production and off-season.
- Existence of technical support services.
- Existence of watercourses (rivers).
- Existence of vast irrigated plains.
- The Oti River and its tributaries through the two prefectures with availability lowland.

(Action Plans)

- Development of water management for agriculture, cattle breeding and fisheries
- Capacity building of communities on interviews for collective infrastructure (dikes of dams, downstream of water reservoir, etc.).

Appendix 2 Results of Road and Bridge Inventory Survey

Appendix 2-1 Results of Road Inventory Survey

PAVED OR UN PAVED ROAD INVENTORY (INVENTAIRE DE ROUTE REVETUES OU EN TERRE)

ROAD: AHEPE-AGBELOUVE (28, 220 KM): silt road

Regional Road

Du PK	Au PK	Long (Km)	Carriageway (Chaussée)							Shoulder (Accotement)			Road ** Condition
			Av. width (largeur)	Cracking* (Fissuration)			Potholing* (Spéléologie - Piste de sport)	Rutting* (en Rut - ornirage)	Raveling* (effilochage - dégradation totale)	Av. Width (largeur)	Type : paved / un paved	State of Shoulder (Etat d'accotement)	
				Longitudinal	Transverse	Alligator (en peau de Crocodile)							
0+000	0+100	0,10	8,50m				Moderate						Fair
0+100	3+100	3,00	6,50m				Moderate						Fair
3+100	3+600	0,50	7,70m										Good
3+600	8+600	2,20	5,00m						Severe				Poor
8+600	12+650	4,05	4,00m						Severe				Poor
12+650	14+600	1,95	3,50m										Good
14+600	15+640	1,04	4,00m						Severe				Poor
15+640	17+850	2,21	3,80m										Good
17+850	19+740	1,89	6,20m										Good
19+740	20+100	0,36	4,00m				Moderate						Fair
20+100	20+450	0,35	6,70m										Good
20+450	21+200	0,75	4,00m				Moderate						Fair
21+200	28+220	1,02	6,60m										Good

PAVED OR UN PAVED ROAD INVENTORY (INVENTAIRE DE ROUTE REVETUES OU EN TERRE)

ROAD: TEMEDJA-BADOU-FRE GHANA (88 KM): PAVED ROAD

RN15

Du PK	Au PK	Long (Km)	Carriageway (Chaussée)							Shoulder (Accotement)			Road ** Condition
			Av. width (largeur)	Cracking* (Fissuration)			Potholing* (Spéléologie - Piste de sport)	Rutting* (en Rut - ornirage)	Raveling* (effilochage - dégradation totale)	Av. Width (largeur)	Type : paved / un paved	State of Shoulder (Etat d'accotement)	
				Longitudinal	Transverse	Alligator (en peau de Crocodile)							
0+000	2+000	2,00	5,30m						MODERATE	NO SHOUIDER			Poor
2+000	4+500	2,50	4,30m						MODERATE	NO SHOUIDER			Poor
4+500	15+000	10,50	5,00m				MODERATE			NO SHOUIDER			Fair
15+000	26+500	11,50	4,50m						MODERATE	NO SHOUIDER			Poor
26+500	32+700	6,20	5,00m						MODERATE	NO SHOUIDER			Poor
32+700	41+500	8,80	5,00m				SEVERE			NO SHOUIDER			Fair
41+500	46+800	5,30	4,20m						MODERATE	NO SHOUIDER			Poor
46+800	65+000	18,20	4,50m						MODERATE	NO SHOUIDER			Poor
65+500	88+800	23,56	4,00m						SEVERE	NO SHOUIDER			Very Poor

PAVED OR UN PAVED ROAD INVENTORY (INVENTAIRE DE ROUTE REVETUES OU EN TERRE)

ROAD: SOKODE-BASSAR (57,500 KM): PAVED ROAD

RN17-a

Du PK	Au PK	Long (Km)	Carriageway (Chaussée)							Shoulder (Accotement)			Road ** Condition
			Av. width (largeur)	Cracking* (Fissuration)			Potholing* (Spéléologie - Piste de sport)	Rutting* (en Rut - ornirage)	Raveling* (effilochage - dégradation totale)	Av. Width (largeur)	Type : paved / un paved	State of Shoulder (Etat d'accotement)	
				Longitudinal	Transverse	Alligator (en peau de Crocodile)							
0+000	0+900	0,90	8,20m				MODERATE			2 x 1,7 m	PAVED	Fair	**Fair**
0+900	1+700	0,80	8,10m				MODERATE			NO SHOUIDER			**Fair**
1+700	9+000	7,30	6,30m				SEVERE			NO SHOUIDER			**Poor**
9+000	10+600	1,60	6,00m				MODERATE			NO SHOUIDER			**Fair**
10+600	16+000	5,40	5,00m				SEVERE			NO SHOUIDER			**Poor**
16+000	20+700	4,70	5,00m				MODERATE			NO SHOUIDER			**Fair**
20+700	23+600	2,90	6,30m							2 x 1,5 m	UNPAVED	Fair	**Good**
23+600	24+500	0,90	6,00m				MODERATE			NO SHOUIDER			**Fair**
24+500	24+750	0,25	6,00m							2 x 1,5 m	UNPAVED	Fair	**Good**
24+750	29+250	4,50	5,80m				MODERATE			NO SHOUIDER			**Fair**
29+250	29+550	0,30	6,60m							2 x 1,5 m	UNPAVED	Fair	**Good**
29+550	34+600	5,05	6,60m				M			NO SHOUIDER			**Fair**
34+600	35+000	0,40	5,60m				SEVERE			NO SHOUIDER			**Poor**
35+000	38+900	3,90	5,60m				MODERATE			NO SHOUIDER			**Fair**
38+900	39+250	0,35	5,60m				SEVERE			NO SHOUIDER			**Poor**
39+250	42+500	3,25	5,60m				MODERATE			NO SHOUIDER			**Fair**
42+500	46+000	3,50	6,60m							2 x 1,5 m	UNPAVED	Fair	**Good**
46+000	51+500	5,50	5,50m				SEVERE			NO SHOUIDER			**Poor**
51+500	52+150	0,65	6,50m				MODERATE			NO SHOUIDER			**Fair**
52+150	55+000	2,85	5,60m				SEVERE			NO SHOUIDER			**Poor**
55+000	57+500	2,50	6,20m				MODERATE			NO SHOUIDER			**Fair**

PAVED OR UN PAVED ROAD INVENTORY (INVENTAIRE DE ROUTE REVETUES OU EN TERRE)

ROAD: BASSAR-KABOU (23,00 KM): PAVED ROAD

RN17-b

Du PK	Au PK	Long (Km)	Carriageway (Chaussée)							Shoulder (Accotement)			Road ** Condition
			Av. width (largeur)	Cracking* (Fissuration)			Potholing* (Spéléologie - Piste de sport)	Rutting* (en Rut - ornirage)	Raveling* (effilochage - dégradation totale)	Av. Width (largeur)	Type : paved / un paved	State of Shoulder (Etat d'accotement)	
				Longitudinal	Transverse	Alligator (en peau de Crocodile)							
0+000	1+800	1,80	9,00m							2 x 2 m	CONCRETE	VERY GOOD	**VERY GOOD**
1+800	2+750	0,95	9,00m							2 x 2 m	PAVED	VERY GOOD	**VERY GOOD**
2+750	21+100	18,35	7,00m							2 x 1,5 m	PAVED	VERY GOOD	**VERY GOOD**
21+100	23+040	1,94	9,00m							2 x 2 m	PAVED	VERY GOOD	**VERY GOOD**

PAVED OR UN PAVED ROAD INVENTORY (INVENTAIRE DE ROUTE REVETUES OU EN TERRE)

ROAD: KABOU - GUERIN KOUKA (35, 610 km) : ROAD UNDER CONSTRUCTION

RN17-c

Du PK	Au PK	Long (Km)	Carriageway (Chaussée)							Shoulder (Accotement)			Road ** Condition
			Av. width (largeur)	Cracking* (Fissuration)			Potholing* (Spéléologie - Piste de sport)	Rutting* (en Rut - ornirage)	Raveling* (effilochage - dégradation totale)	Av. Width (largeur)	Type : paved / un paved	State of Shoulder (Etat d'accotement)	
				Longitudinal	Transverse	Alligator (en peau de Crocodile)							
0+000	0+740	0,74	9,00m						Base layer over	2 x 2 m	un paved	Good	**Good**
0+740	3+280	2,54	7,00m						Base layer over	1,5 x 2 m	un paved	Good	**Good**
3+280	3+610	0,33	7,00m						Base layer over	1,5 x 2 m	un paved	Poor	**Poor**
3+610	8+000	4,39	7,00m						Base layer over	NO SHOULDER			**Good**
8+000	11+100	3,10	7,00m						Finished foundation layer	NO SHOULDER			**Good**
11+100	13+300	2,20	13,00m						Foundation layer unfinished	NO SHOULDER			**Fair**
13+300	16+000	2,70	9,00m						Stripping	NO SHOULDER			**Poor**
16+000	22+500	6,50	7,00m						Stripping	NO SHOULDER			**Poor**
22+500	27+000	4,50	7,00m						Stripping	NO SHOULDER			**Poor**
27+000	35+610	8,61	5,00m						Stripping	NO SHOULDER			**Fair**

PAVED AND UNPAVED ROAD INVENTORY (INVENTAIRE DE ROUTE REVETUE OU NON REVETUE)

Road : GUERIN KOUKA - CARREFOUR KATCHAMBA (21,110 km) : Silt road

RN17-d

Du PK	Au PK	Long (Km)	Carriageway (Chaussée)							Shoulder (Accotement)			Road ** Condition
			Av. width (largeur)	Cracking* (Fissuration)			Potholing* (Spéléologie - Piste de sport)	Rutting* (en Rut - ornirage)	Raveling* (effilochage - dégradation totale)	Av. Width (largeur)	Type : paved / un paved	State of Shoulder (Etat d'accotement)	
				Longitudinal	Transverse	Alligator (en peau de Crocodile)							
0+000	2+490	2,49	6,00m				Moderate			NO SHOULDER			**Fair**
2+490	6+000	3,51	5,20m				Moderate			NO SHOULDER			**Fair**
6+000	7+500	1,50	5,20m							NO SHOULDER			**Good**
7+500	9+910	2,41	5,20m				Moderate			NO SHOULDER			**Fair**
9+910	12+800	2,89	4,70m						Severe	NO SHOULDER			**Poor**
12+800	13+500	0,70	4,10m						Moderate	NO SHOULDER			**Fair**
13+500	18+800	5,30	4,40m						Severe	NO SHOULDER			**Poor**
18+800	20+600	1,80	3,00m				Moderate			NO SHOULDER			**Fair**
20+600	21+110	0,51	4,00m						Severe	NO SHOULDER			**Poor**

PAVED OR UN PAVED ROAD INVENTORY (INVENTAIRE DE ROUTE REVETUES OU EN TERRE)

ROAD: CARREFOUR Katchamba-Sadori (59,640 km) : SILT ROAD

RN17-e

Du PK	Au PK	Long (Km)	Carriageway (Chaussée)							Shoulder (Accotement)			Road ** Condition
			Av. width (largeur)	Cracking* (Fissuration)			Potholing* (Spéléologie - Piste de sport)	Rutting* (en Rut - ornirage)	Raveling* (effilochage - dégradation totale)	Av. Width (largeur)	Type : paved / un paved	State of Shoulder (Etat d'accotement)	
				Longitudinal	Transverse	Alligator (en peau de Crocodile)							
0+00	5+500	5,50	2,60m				Moderate			NO SHOULDER			Fair
5+500	8+000	2,50	2,60m						Severe	NO SHOULDER			Poor
8+000	9+700	1,70	2,30m				Moderate			NO SHOULDER			Fair
9+700	11+700	2,00	3,00m						Severe	NO SHOULDER			Poor
11+700	12+740	1,04	2,30m				Moderate			NO SHOULDER			Fair
12+740	15+800	3,06	3,50m				Moderate			NO SHOULDER			Fair
15+800	24+000	8,20	2,70m						Moderate	NO SHOULDER			Fair
24+000	28+000	4,00	2,00m						Moderate	NO SHOULDER			Fair
28+000	31+000	3,00	2,10m						Severe	NO SHOULDER			Poor
31+000	37+000	6,00	2,60m						Severe	NO SHOULDER			Poor
37+000	42+000	5,00	2,10m						Severe	NO SHOULDER			Poor
42+000	48+800	6,80	2,50m						Severe	NO SHOULDER			Poor
48+800	54+040	5,24	2,50m						Severe	NO SHOULDER			Poor
54+040	59+640	5,60	2,80m						Severe (swampy area)	NO SHOULDER			Poor
59+640				End of section									

PAVED OR UN PAVED ROAD INVENTORY (INVENTAIRE DE ROUTE REVETUES OU EN TERRE)

ROAD: LANGABOU-YEGUE-FRE GHANA (66,650 KM): PAVED ROAD

RN27

Du PK	Au PK	Long (Km)	Carriageway (Chaussée)							Shoulder (Accotement)			Road ** Condition
			Av. width (largeur)	Cracking* (Fissuration)			Potholing* (Spéléologie - Piste de sport)	Rutting* (en Rut - ornirage)	Raveling* (effilochage - dégradation totale)	Av. Width (largeur)	Type : paved / un paved	State of Shoulder (Etat d'accotement)	
				Longitudinal	Transverse	Alligator (en peau de Crocodile)							
0+000	0+600	0,60	7,20m			SLIGHT	SEVERE			NO SHOUIDER			Poor
0+600	10+000	9,40	6,50m				MODERATE			NO SHOUIDER			Fair
10+000	12+900	2,90	7,70m			SLIGHT	MODERATE			NO SHOUIDER			Fair
12+900	20+000	7,10	6,30m			SLIGHT	MODERATE			NO SHOUIDER			Fair
20+000	24+500	4,50	6,30m			SLIGHT	SEVERE			NO SHOUIDER			Poor
24+500	30+500	6,00	6,30m			SLIGHT	MODERATE			NO SHOUIDER			Fair
30+500	31+500	1,00	6,30m			SLIGHT	SEVERE			NO SHOUIDER			Poor
31+600	36+000	4,40	6,30m			SLIGHT	MODERATE			NO SHOUIDER			Fair
36+000	40+500	4,50	6,30m			SLIGHT	SEVERE			NO SHOUIDER			Poor
40+500	44+000	3,50	6,30m			SLIGHT	MODERATE			NO SHOUIDER			Fair
44+000	50+000	6,00	6,30m			SLIGHT	SEVERE			NO SHOUIDER			Poor
50+000	63+000	13,00	6,30m			SLIGHT	MODERATE			NO SHOUIDER			Fair
63+000	65+000	1,55	6,30m			SLIGHT	SEVERE			NO SHOUIDER			Poor
65+000	66+550	3,25	5,00m			SLIGHT	MODERATE			NO SHOUIDER			Fair

Appendix 2-2 Results of Bridge Inventory Survey

TRONCON: TEMEDJA - BADOU

RN15

Pieces of work's Inventories

N°	PK	GPS Coordinates	Pieces of work's characteristic (buzzard, scupper, bridge) with measurements					Diagnostic (Deteriorations in abutment, roadway,...)	Accessories (parapet,.....)	illustration with pictures	Observations
			Pieces of work's types	L	l	h	Side walk (type and width)				
29	14+080	N7 32.587 E0 59.988	Bridge	5,40	6,60	5,00		good state			
80	55+900	N7 36.004 E0 43.376	Bridge	24,00	8,00	7,25		good state			
81	58+060	N7 36.158 E0 42.332	Bridge of 2 span	22,00	7,00	6,50		good state			
119	80+480	N7 34.881 E0 35.645	Bridge of 2 span	12,50	2,50	4,00		Restricted bodyguards swept			
123	82+830	N7 35.340 E0 34.518	Bridge	13,00	4,00		in ruins	one Span, insufficient section, abutments collapsed			
124	85+555	N7 35.285 E0 33.096	Bridge	11,00	4			good state			

TRONCON: SOKODE - BASSAR

RN17-a

Pieces of work's Inventories

N°	PK	GPS Coordinates	Pieces of work's characteristic (buzzard, scupper, bridge) with measurements					Diagnostic (Deteriorations in abutment, roadway,...)	Accessories (parapet,.....)	illustration with pictures	OBSERVATIONS
			Pieces of work's types	L	l	h	Sidewalk (type and width)				
19	16+260	N9 05.537 E1 02.884	Bridge of 5 span	56	7,00	10	l=0,75x2	Gabions in poor condition ; Washouts in the abutment			Rivière MÔ
22	19+400	N9 06.938 E1 02.049	Bridge of 4 span	45	7,00	6	l=0,75x2	Gabions in poor condition			Rivière BOUZALO
26	21+950	N9 07.560 E1 00.804	Bridge of 3 span	34	7,00	7	l=0,75x2	Gabions in poor condition			Rivière TCHANGUE
64	34+660	N9 10.157 E0 56.961	Bridge of 2 span	23	7,00	6	l=0,75x2	Gabions in poor condition			Rivière KOUBOUSONG
65	35+550	N9 10.194 E0 56.477	Bridge of 3 span	34	7,00	5	l=0,75x2	bed of the river adjustment ; obstruration at 75 % of the left shore section			Rivière KOUGOL
66	36+960	N9 10.336 E0 55.727	Bridge of 2 span	23	7,00	7	l=0,75x2	Washout in the abutment			Rivière AYABA BOUA
70	41 + 800	N9 11.158 E0 53.308	Bridge of 3 span	34	7,00	6	l=0,75x2	Unprotected slope			Rivière BOUNAKO
73	42 + 700	N9 11.307 E0 52.606	Bridge of 3 span	34	7,00	9	l=0,75x2	Good state	brocking raillings		Rivière KPIMPOUNG
79	50+400	N9 13.361 E0 49.414	Bridge of 3 span	34	7,00	6	l=0,75x2	Good state	brocking raillings		Rivière KASSOU
83	53+500	N9 14.784 E0 48.607	Bridge of 4 span	45	7,00	12	l=0,75x2	Good state	brocking raillings		Rivière KAMAKA

TRONCON: BASSAR - KABOU

RN17-b

Pieces of work's Inventories

N°	PK	GPS Coordinates	Pieces of work's characteristic (buzzard, scupper, bridge) with measurements					Diagnostic (Deteriorations in abutment, roadway,...)	Accessories (parapet,.....)	Illustration with pictures	Observations
			Pieces of work's types	L	l	h	Verge (type and width)				
28	18+050	N9 24.943 E0 48.680	Bridge of one bay	9,5	10	4	l=0,70 in stilted concrete	Good State	rallings + booking for cable		

TRONCON: KABOU - GUERIN KOUKA

RN17-c

Pieces of work's Inventories

N°	PK	GPS Coordinates	Pieces of work's characteristic (buzzard, scupper, bridge) with measurements					Diagnostic (Deteriorations in abutment, roadway,...)	Accessories (parapet,.....)	illustration with pictures	Observations
			Pieces of work's types	L	l	h	Sidewalk (type and width)				
28	28+540	N9 37.568 E0 37.680	Bridge	33	4,00	5,5	0,50 side walk	Good State			

TRONCON: GUERIN KOUKA - KATCHAMBA

RN17-d

Pieces of work's Inventories

N°	PK	GPS Coordinates	Pieces of work's characteristic (buzzard, scupper, bridge) with measurements					Diagnostic (Deteriorations in abutment, roadway,...)	Accessories (parapet,.....)	Illustration with pictures	Observations
			Pieces of work's types	L	l	h	Sidewalk (type and width)				
9	12+480	N9 47.908 E0 36.349	Bridge	10	3,3	0,8	No verge	Completely Obstrected	No rallings, Headwall		
11	15+110	N9 49.247 E0 35.981	Bridge	13	3,5	0,6	No verge	Completely Obstrected and burried	No rallings but headwall		

TRONCON: KATCHAMBA - SADORI

RN17-e

Pieces of work's Inventories

N°	PK	GPS Coordinates	Pieces of work's characteristic (buzzard, scupper, bridge) with measurements					Diagnostic (Deteriorations in abutment, roadway,...)	Accessories (parapet,.....)	illustration with pictures	Observations
			Pieces of work's types	L	l	h	Verge (type and width)				
3	2+15	N9 52.157 E0 34.576	submersible slab	87,6	3,05	1,2	no sidewalk	good state	Headwall ; no raillings		
4	10+500	N9 57.624 E0 34.064	Bridge	14,0	3,70	3,6	no sidewalk	abutment cracked	no raillings		
10	48+800-48+900		Koumongou's river								neccessity of bridge of 150 m

TRONCON: LANGABOU - YEGUE

RN27

Pieces of work's Inventories

N°	PK	GPS Coordinates	Pieces of work's characteristic (buzzard, scupper, bridge) with measurements					Diagnostic (Deteriorations in abutment, roadway,...)	Accessories (parapet,.....)	illustration with pictures	Observations
			Pieces of work's types	L	l	h	Sidewalk (type and width)				
9	12+370	N8 10.210 E1 02.096	Bridge	10,55	7	5,6	L=0,5x2	Good State	Returnwall + Raillings, Protection in enrockment		
22	20+900	N8 11.153 E0 57.690	Bridge of 5 spans	65	6,9	11	L=0,7x2 made of concrete	Good State, Protection of the embankments fissured			Found on the pickets
23	21+450	N8 11.224 E0 57.417	Bridge	10,6	7	5		Good state	Returnwall, raillings; Protection of the embankments in built meadow		
25	26+520	N8 12.000 E0 54.775	Bridge	16	7	6,5	L=0,4x2	Good state	Returnwall + Raillings,		
30	29+500	N8 12.440 E0 53.375	Bridge	10,55	6,8	6	L=0,4x2	Good state	Returnwall + raillings		
41	43+600	N8 14.146 E0 46.672	Bridge	10,55	7		L=0,40	Good state	Retaining wall of 10m on all sides; before and after the work;h=9,20		Coming down of water quoted right upstream
43	44+250	N8 14.221 E0 46.275	Bridge	8,2	7	5,4	L=0,4;	Good state	Retaining wall on 10m on all sides + Raillings		
44	49+900	N8 12.810 E0 43.689	Bridge of 2 spans	10,45	6,8		Stilted sidewalk	Good state	Support and apron in good state + raillings; Thickness of the apron 1m		
47	53+040	N8 12.197 E0 42.109	Bridge	16	7	9,2	L=0,4m; Stilted sidewalk	Good state	Returnwall of 13,80m of length; Raillings in good state		Abutment downstream fissured
50	60+00	N8 11.022 E0 38.872	Bridge of beam	16	7	10	L=0,40m	Good state	Returnwall length = 12m + raillings; Support and apron in good state		

TRONCON: AHEPE - AGBELOUVE

Regional Road

Pieces of work's Inventories

N°	PK	GPS Coordinates	Pieces of work's characteristic (buzzard, scupper, bridge) with measurements					Diagnostic (Deteriorations in abutment, roadway,...)	Accessories (parapet,.....)	illustration with pictures	Observations
			Pieces of work's types	L	l	h	Sidewalk (type and width)				
7	12+500	N6 39.791 E1 18.357	Haho bridge	42m	4m	5,5 m	no sidewalk	completely in ruin ; apron with wood ; the left raillings are in ruin			a new bridge in building at right side
8	12+650	N6 39.807 E1 18.225	bridge on affluent Haho	35m	4,40 m	4,50 m	no sidewalk	in ruin			
9	12+840	N6 39.806 E1 18.226	bridge of 5m	5	4,20 m	2,90 m	no sidewalk	ruin bridge, appui complètement fissurés	no rallings		
10	12+880	N6 39.816 E1 18.113	bridge of 4,90m	4,90 m	4,00 m	3,00 m	no sidewalk	ruin bridge, abutment completely cracked			
11	13+200	N6 39.834 E1 17.950	bridge of 9,10m	9,10 m	3,50 m		0,50 at the two sides	abutment cracked	Présence of gargoyle, no rallings		sidewalk cracked
12	15+350	N6 39.947 E1 16.821	bridge	6,00 m	4,00 m	2,00 m	no sidewalk	cracked wall, no raillings ; no sidewalk			

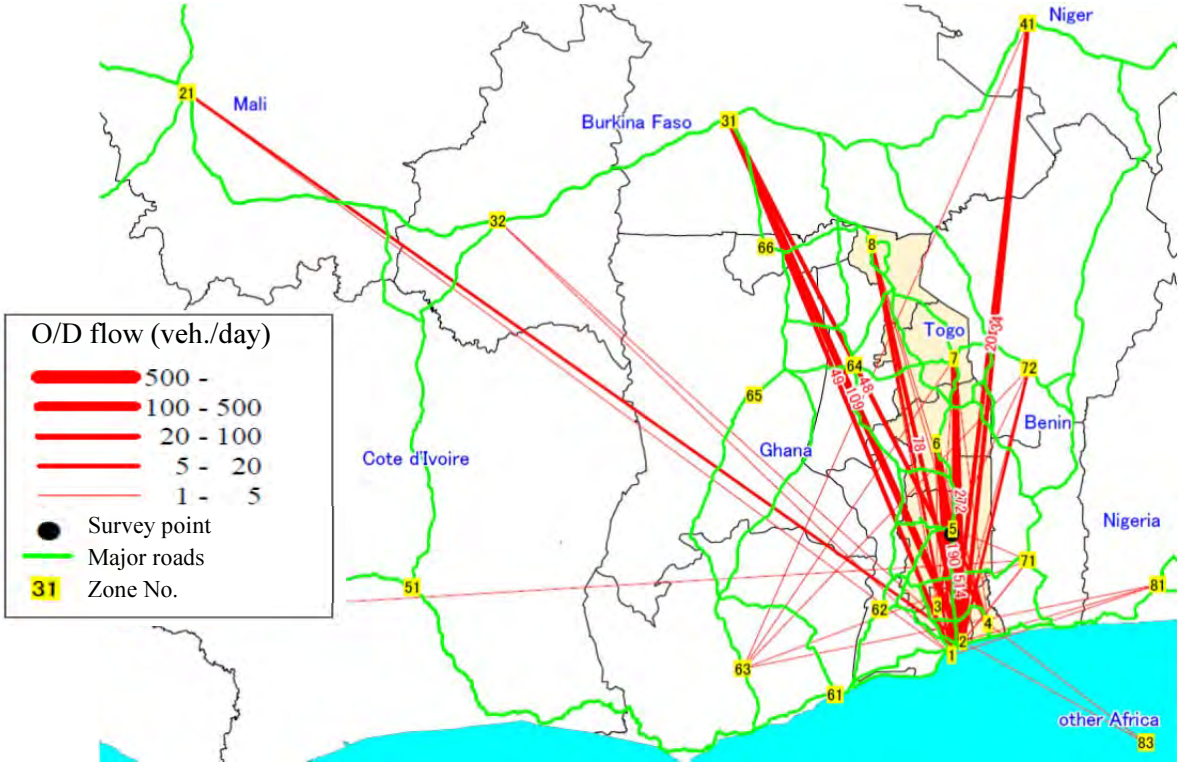
Appendix 3 Classification of Vehicles for the Traffic Survey

Table A3-1 Classification of Vehicle Types

Type of Vehicle	Example	Type of Vehicle	Example
Motorcycle		Passenger Car & Taxi	
Minibus		Bus	
Light Truck		Heavy Truck	
Trailer		Container Trailer	

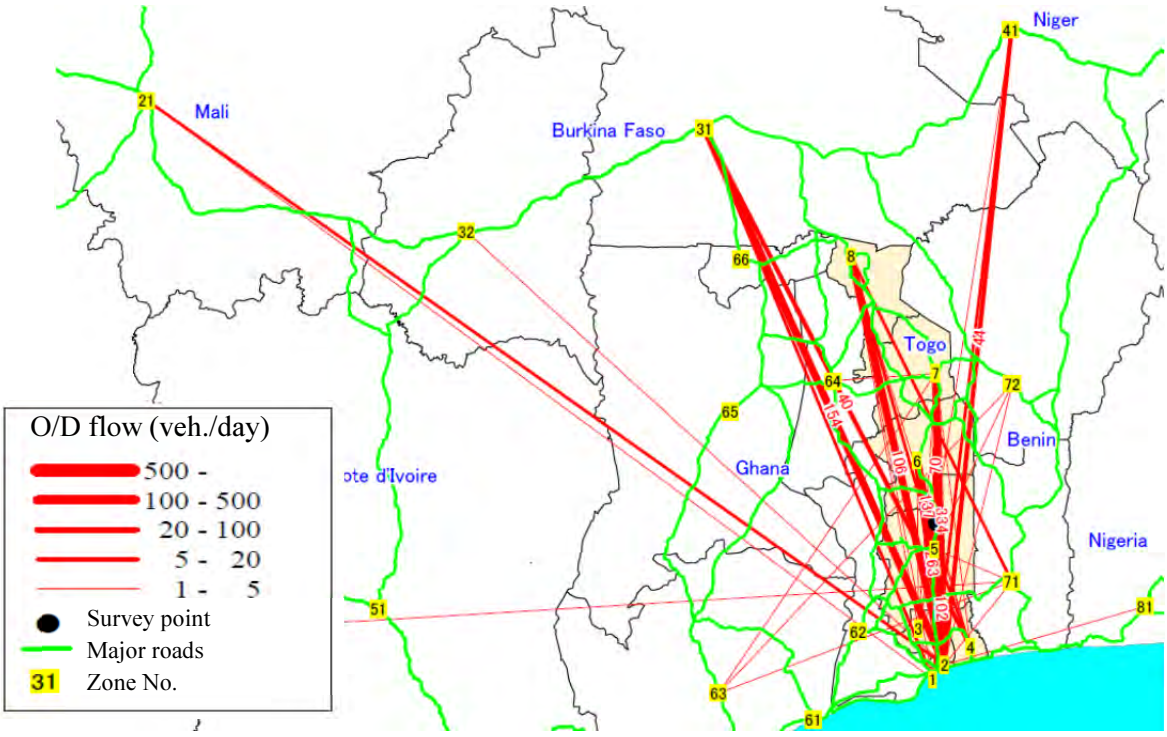
Note: Truck, Trailer and Container trailer were counted by number of axles.
Source: Study Team

Appendix 4 Results of O/D Interview Surveys



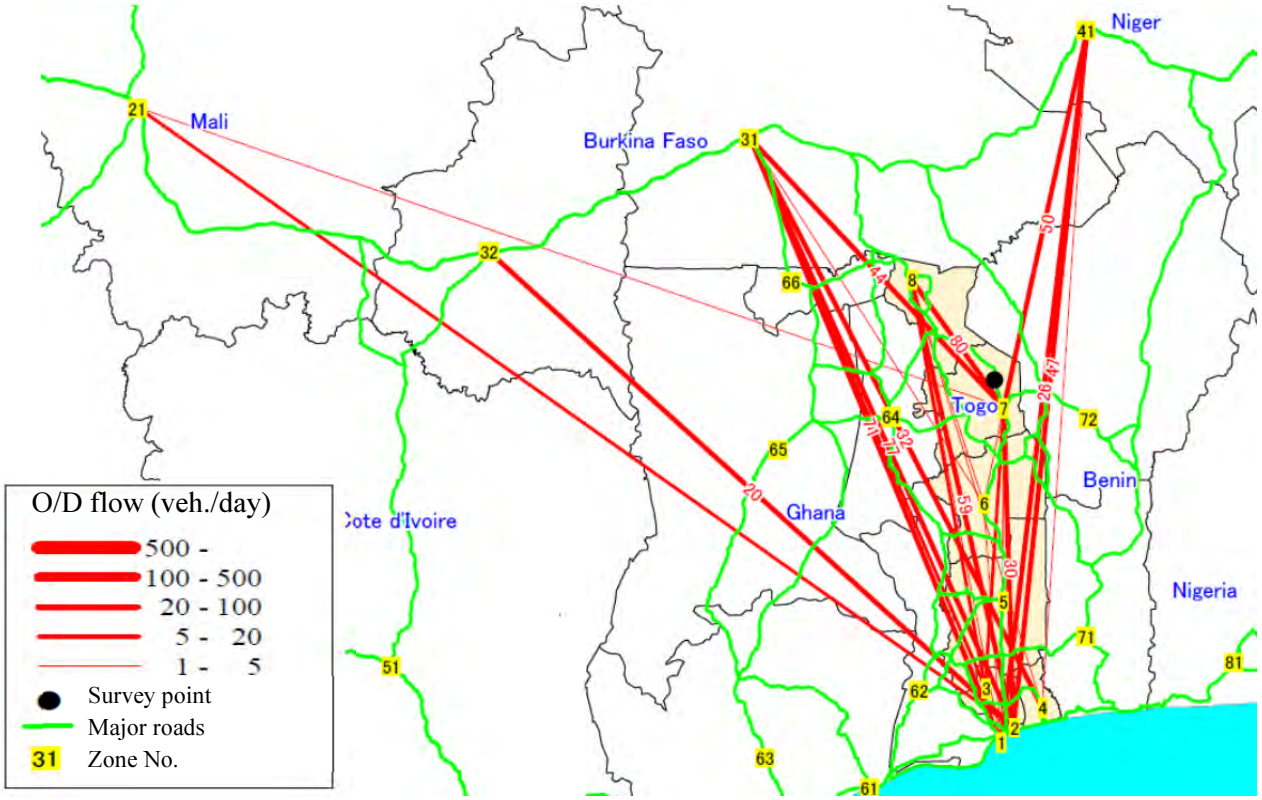
Note: O/D volumes of 20 or more are displayed.
Source: Study Team

Figure A4-1 Distribution of O/D at Survey Point No. 7 Atakpamé (RN1)



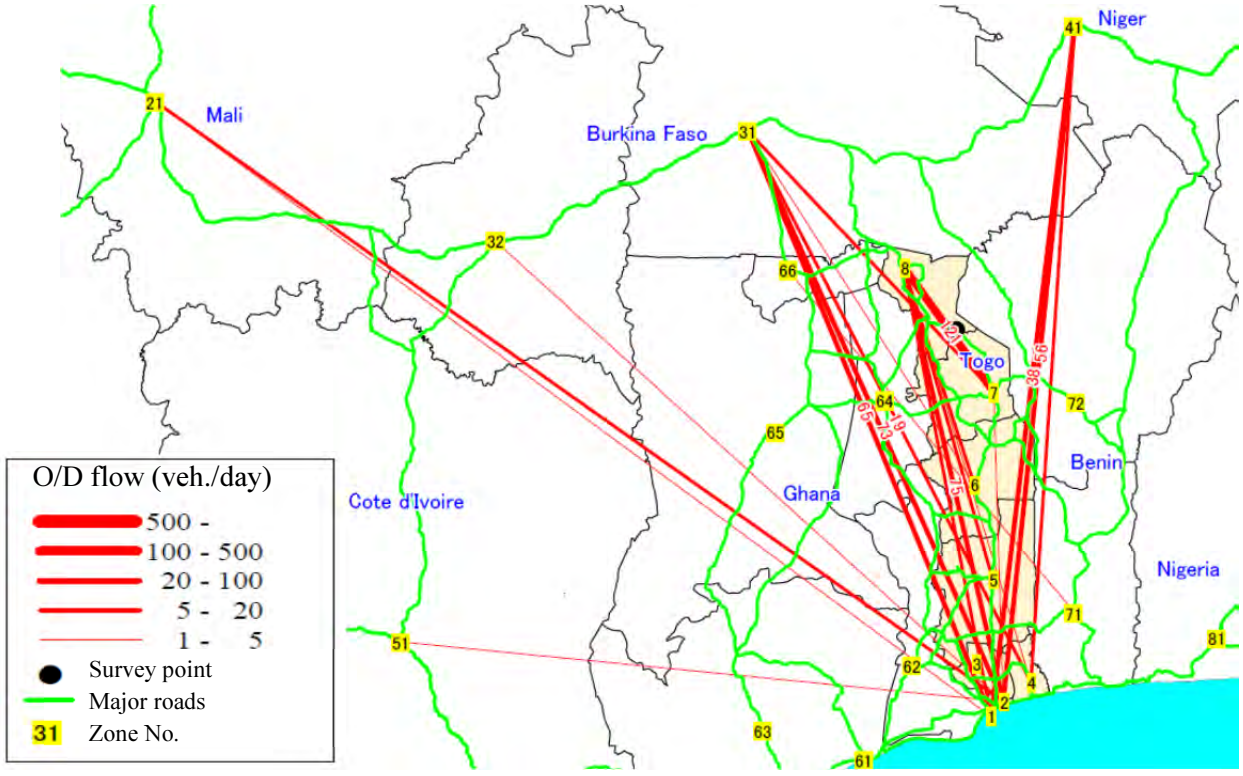
Note: O/D volumes of 20 or more are displayed.
Source: Study Team

Figure A4-2 Distribution of O/D at Survey Point No. 9 Anié (RN1)



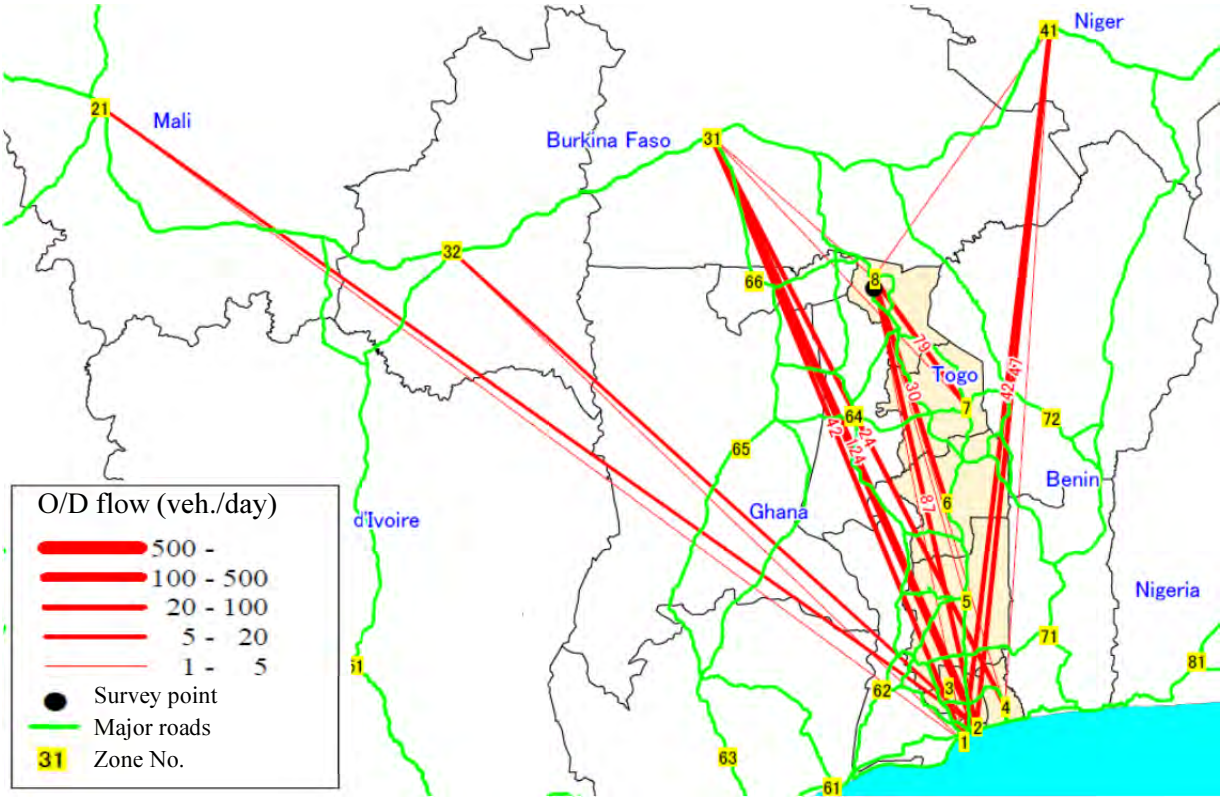
Note: O/D volumes of 20 or more are displayed.
Source: Study Team

Figure A4-3 Distribution of O/D at Survey Point No. 14 Niamtougou – Kandé (RN1)



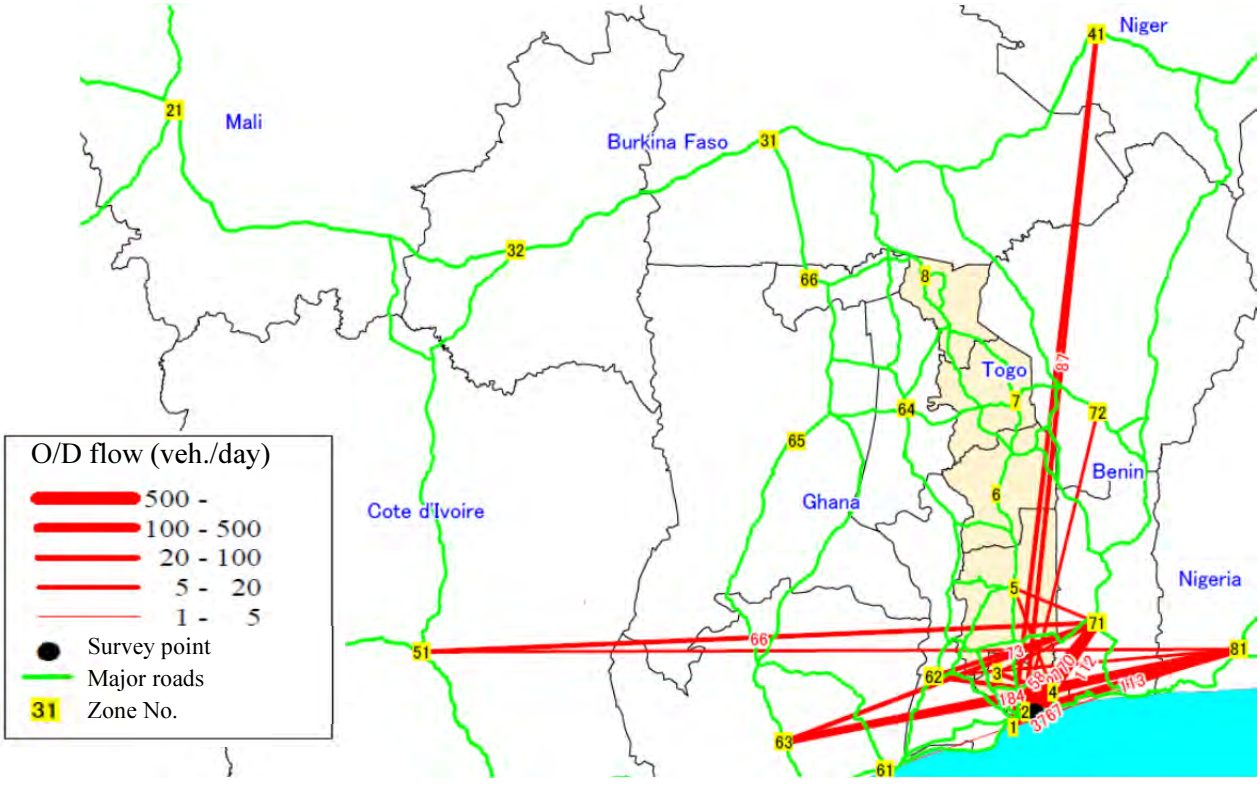
Note: O/D volumes of 20 or more are displayed.
Source: Study Team

Figure A4-4 Distribution of O/D at Survey Point No. 16 Kandé – Sansanné-Mango (RN1)



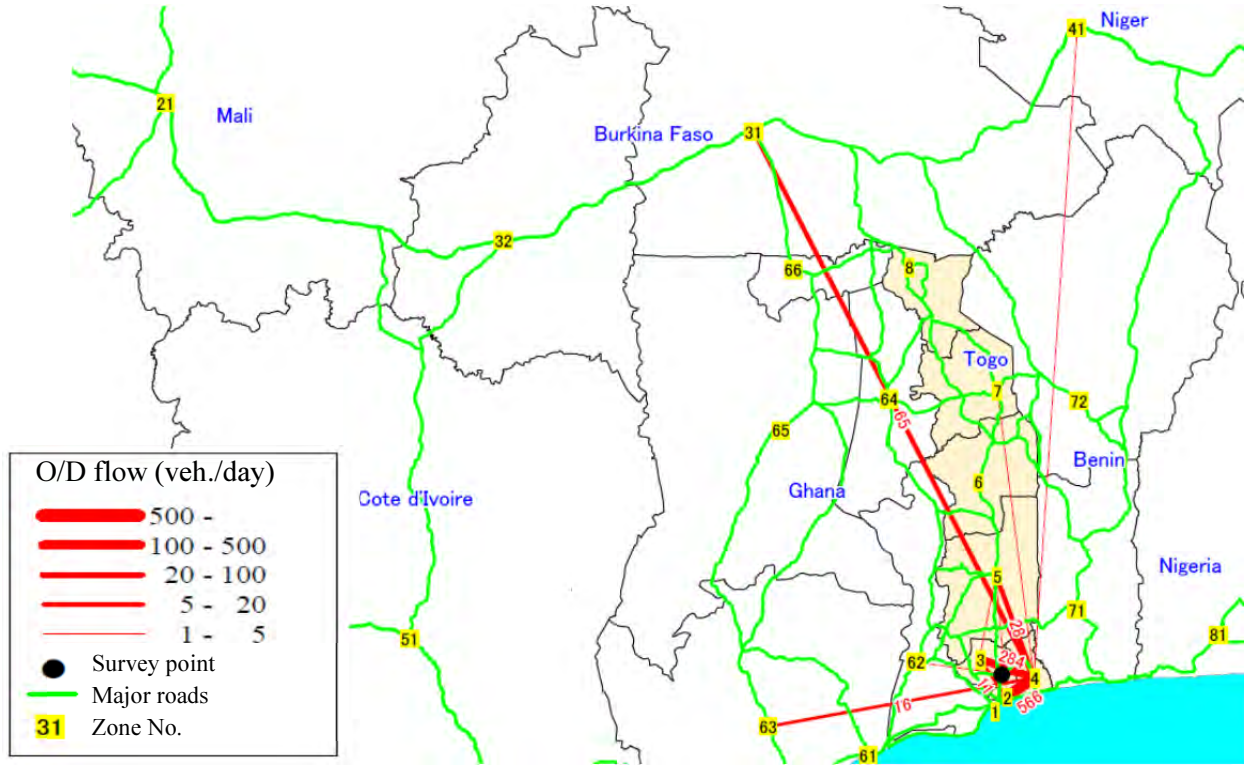
Note: O/D volumes of 20 or more are displayed.
Source: Study Team

Figure A4-5 Distribution of O/D at Survey Point No. 17 Dapaong (RN1)



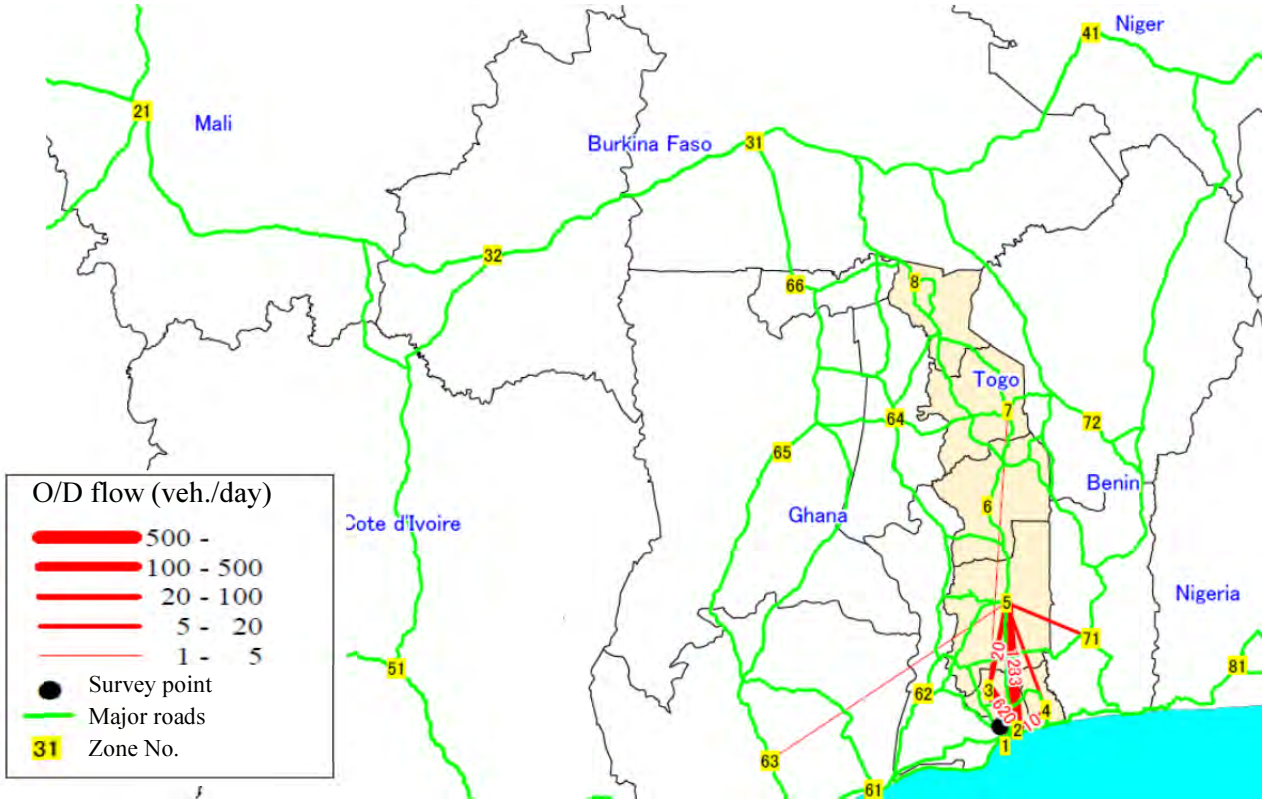
Note: O/D volumes of 20 or more are displayed.
Source: Study Team

Figure A4-6 Distribution of O/D at Survey Point No. 2 Kpémé (RN2)



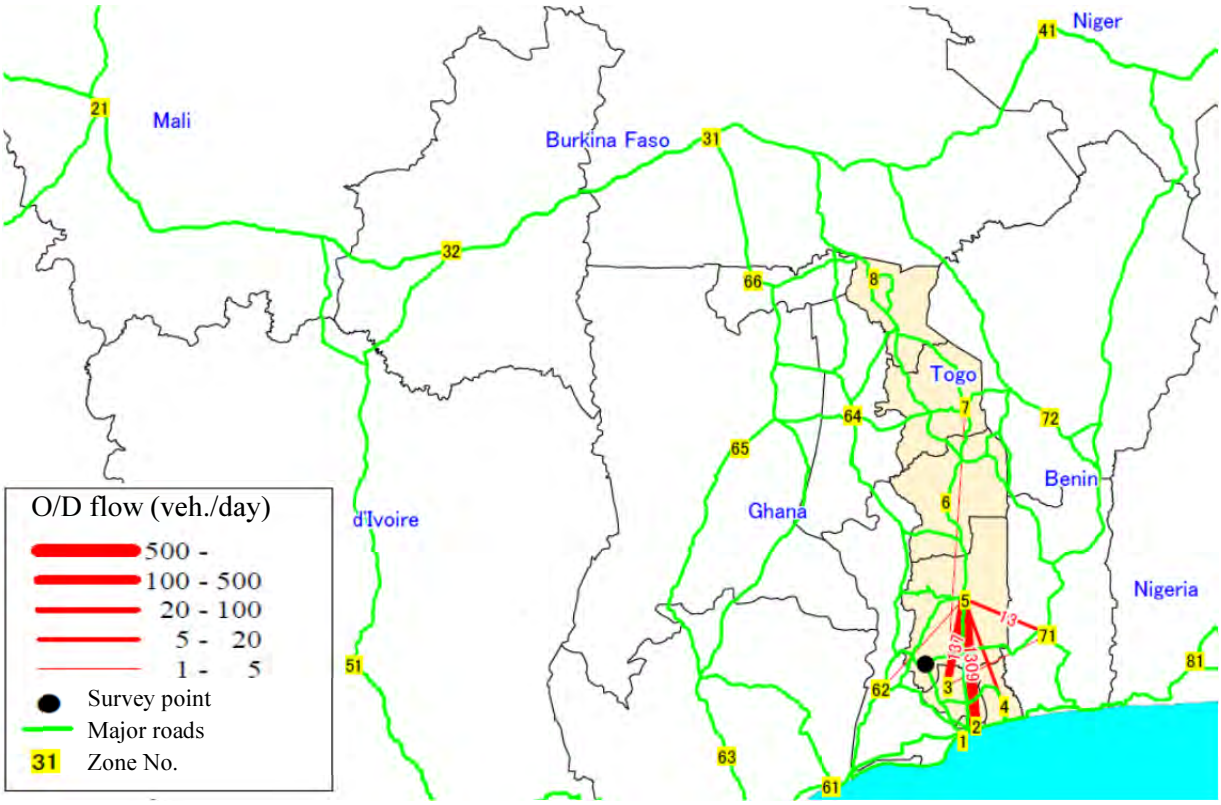
Note: O/D volumes of 20 or more are displayed.
Source: Study Team

Figure A4-7 Distribution of O/D at Survey Point No. 5 Tsévié (RN4)



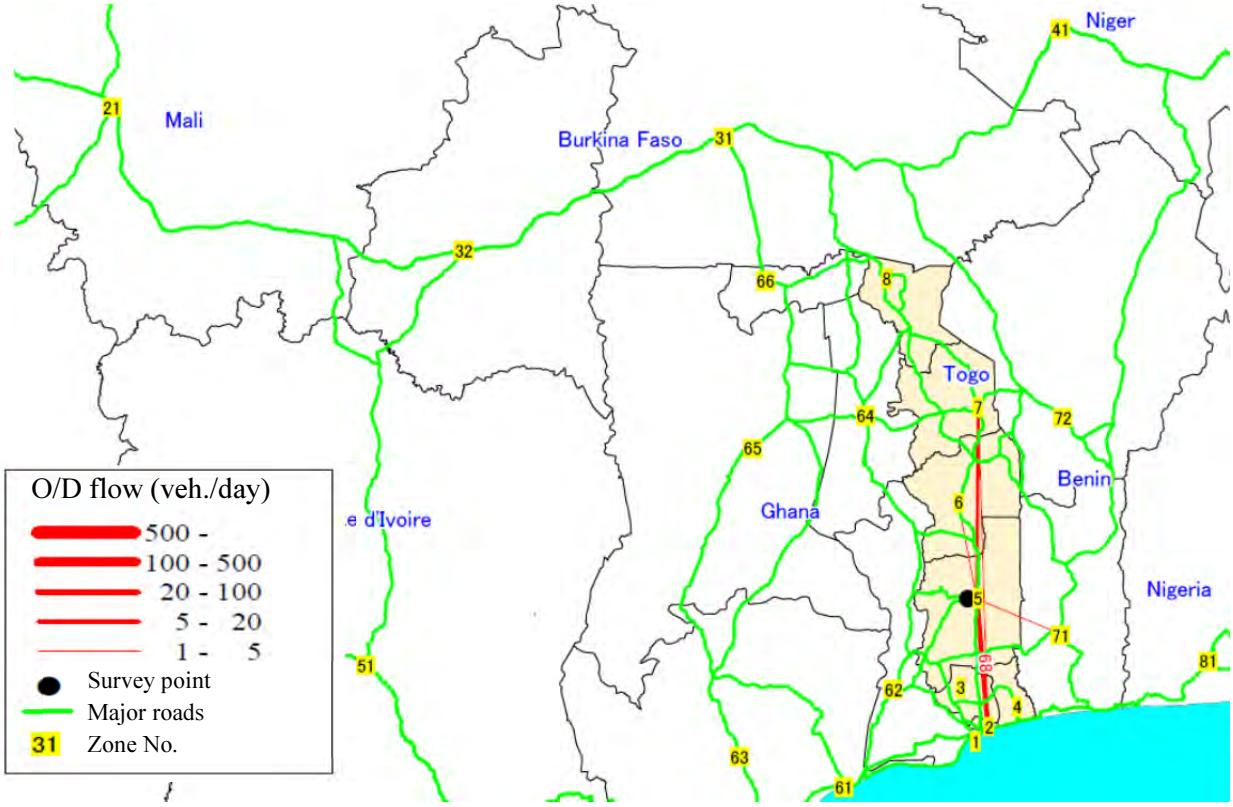
Note: O/D volumes of 20 or more are displayed.
Source: Study Team

Figure A4-8 Distribution of O/D at Survey Point No. 4 Sanguera (RN5)



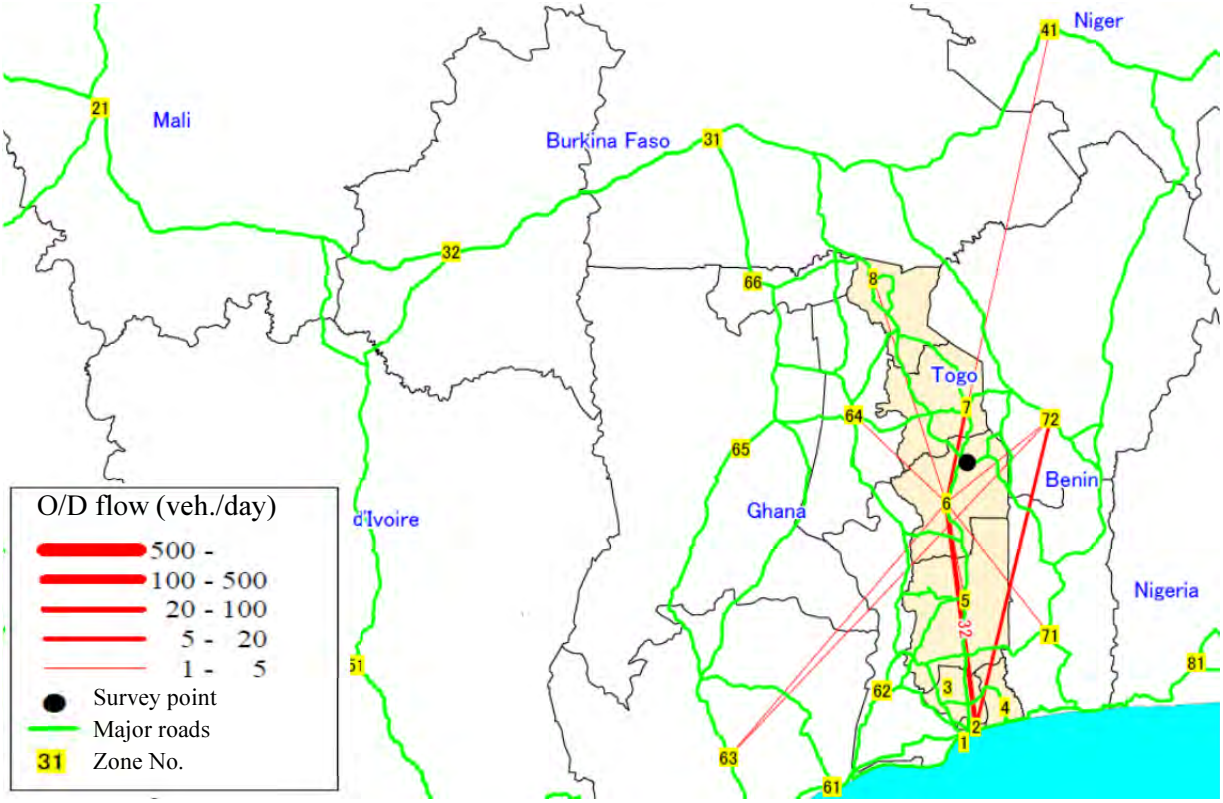
Note: O/D volumes of 20 or more are displayed.
Source: Study Team

Figure A4-9 Distribution of O/D at Survey Point No. 6 Gadjagan (RN5)



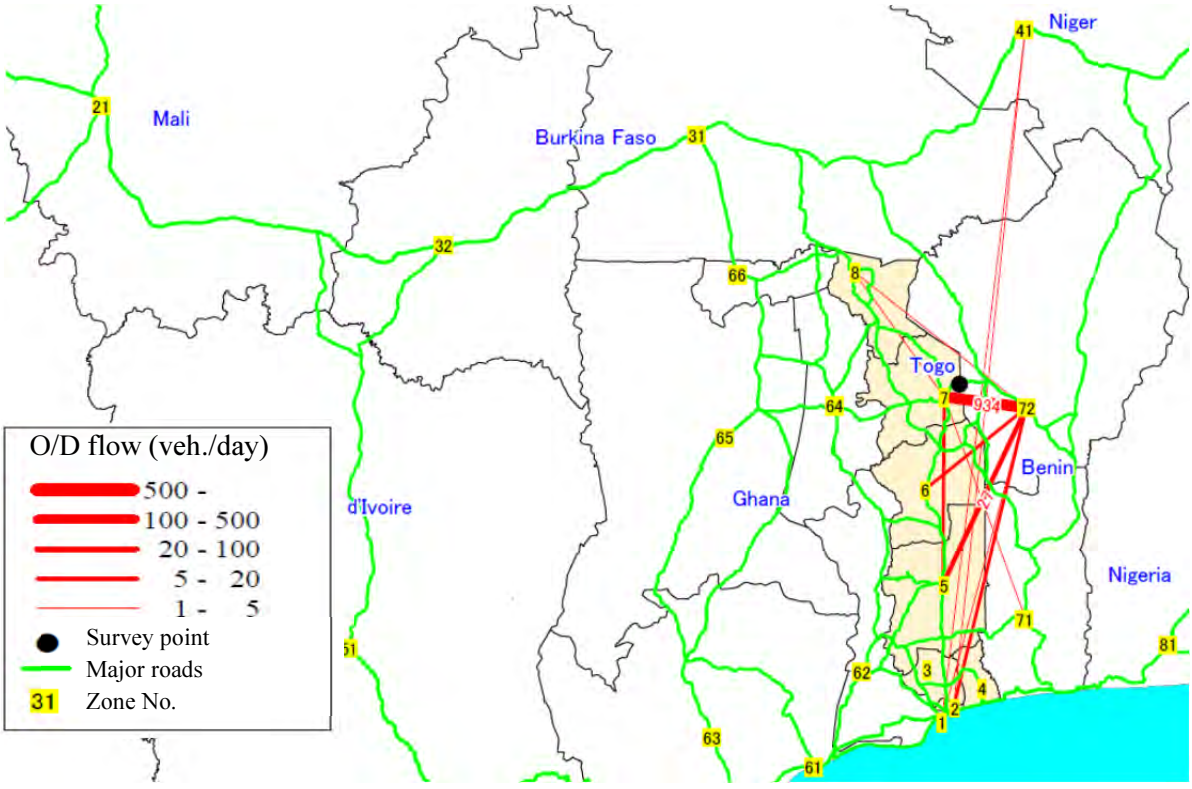
Note: O/D volumes of 20 or more are displayed.
Source: Study Team

Figure A4-10 Distribution of O/D at Survey Point No. 8 Atakpamé (RN5)



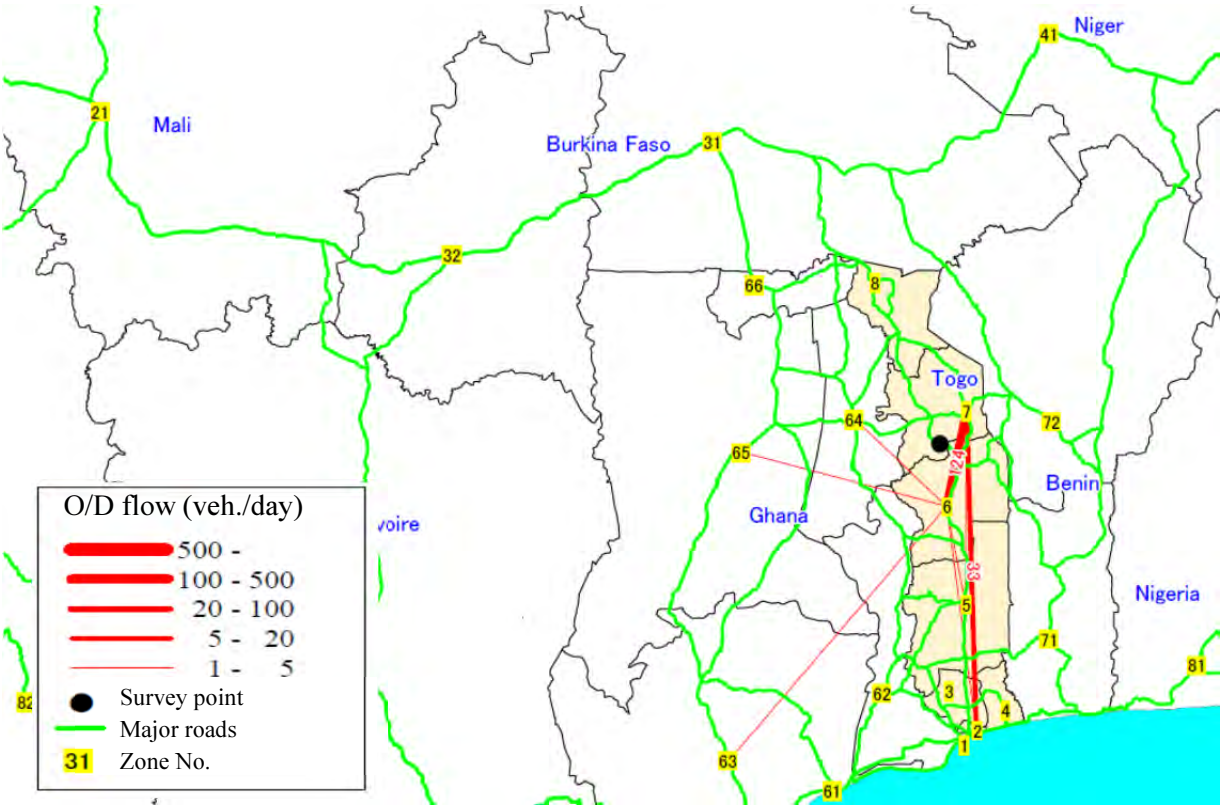
Note: O/D volumes of 20 or more are displayed.
Source: Study Team

Figure A4-11 Distribution of O/D at Survey Point No. 10 Sokodé – Tchamba (RN14)



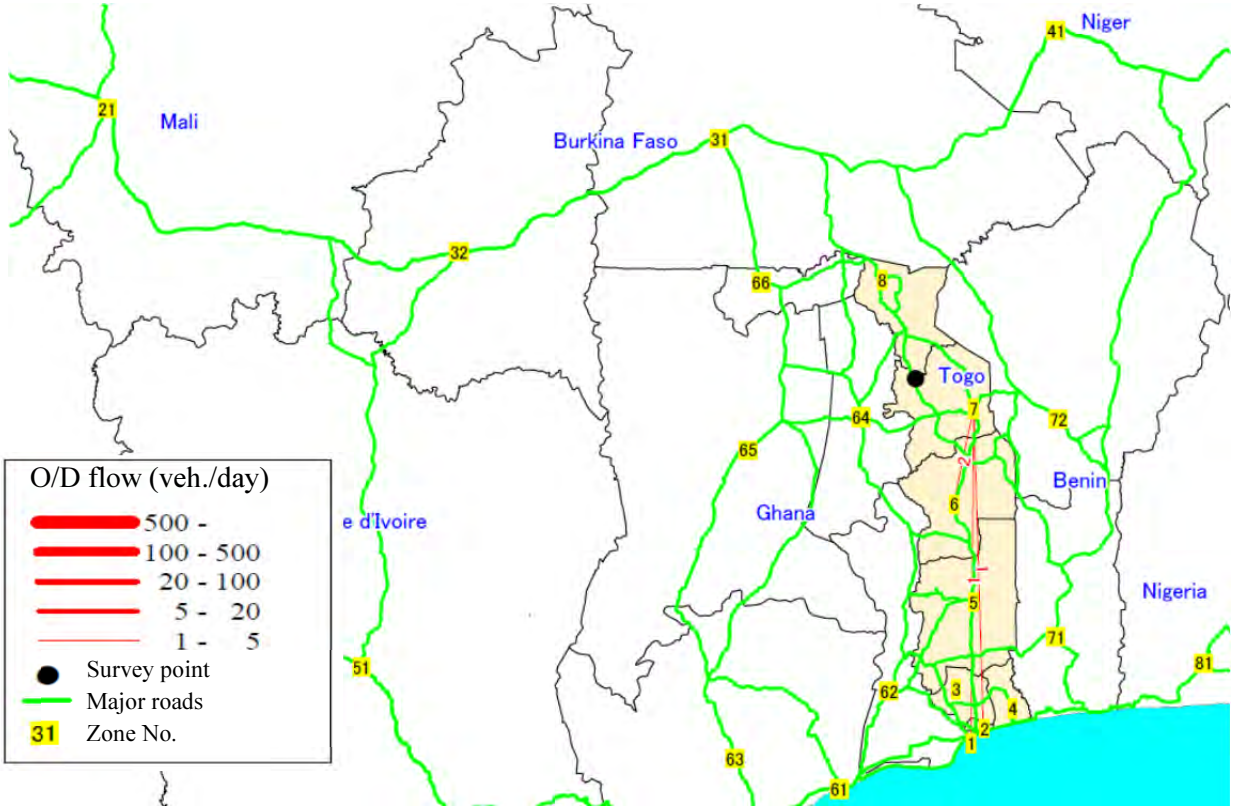
Note: O/D volumes of 20 or more are displayed.
Source: Study Team

Figure A4-12 Distribution of O/D at Survey Point No. 13 Frontière Togo – Bénin (RN16)



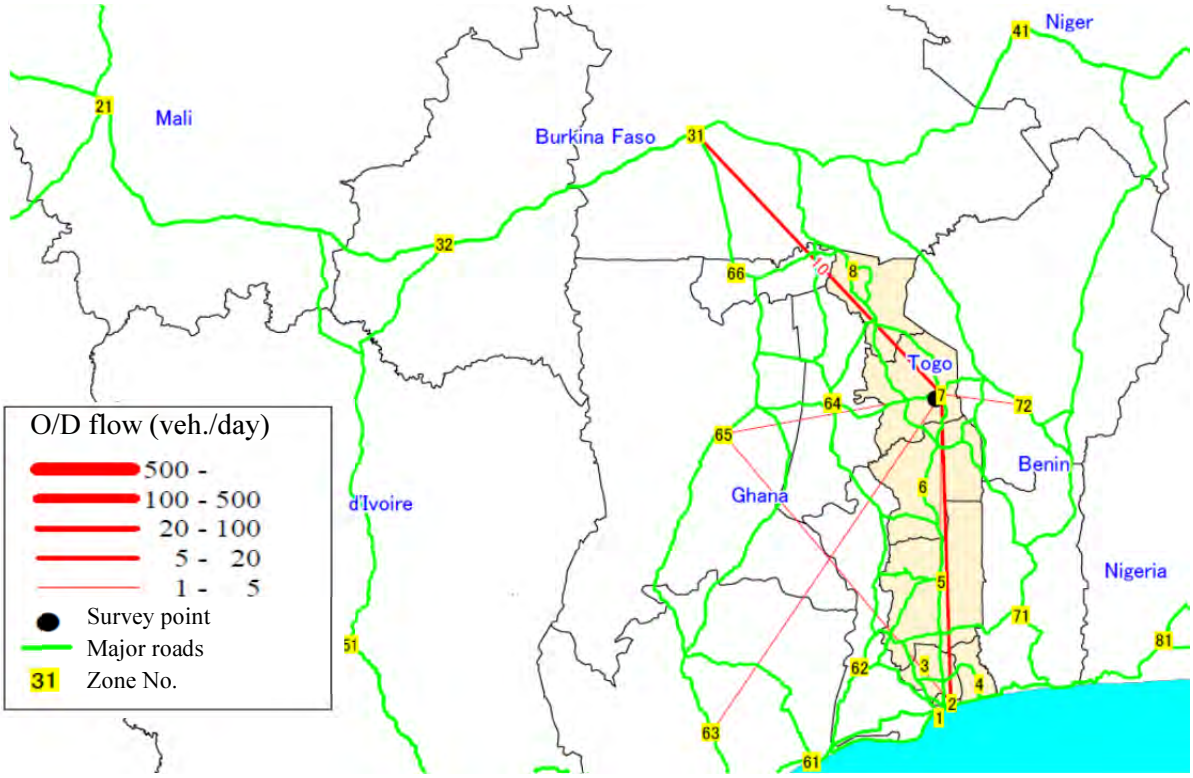
Note: O/D volumes of 20 or more are displayed.
Source: Study Team

Figure A4-13 Distribution of O/D at Survey Point No. 11 Sokodé – Bassar (RN17)



Note: O/D volumes of 20 or more are displayed.
Source: Study Team

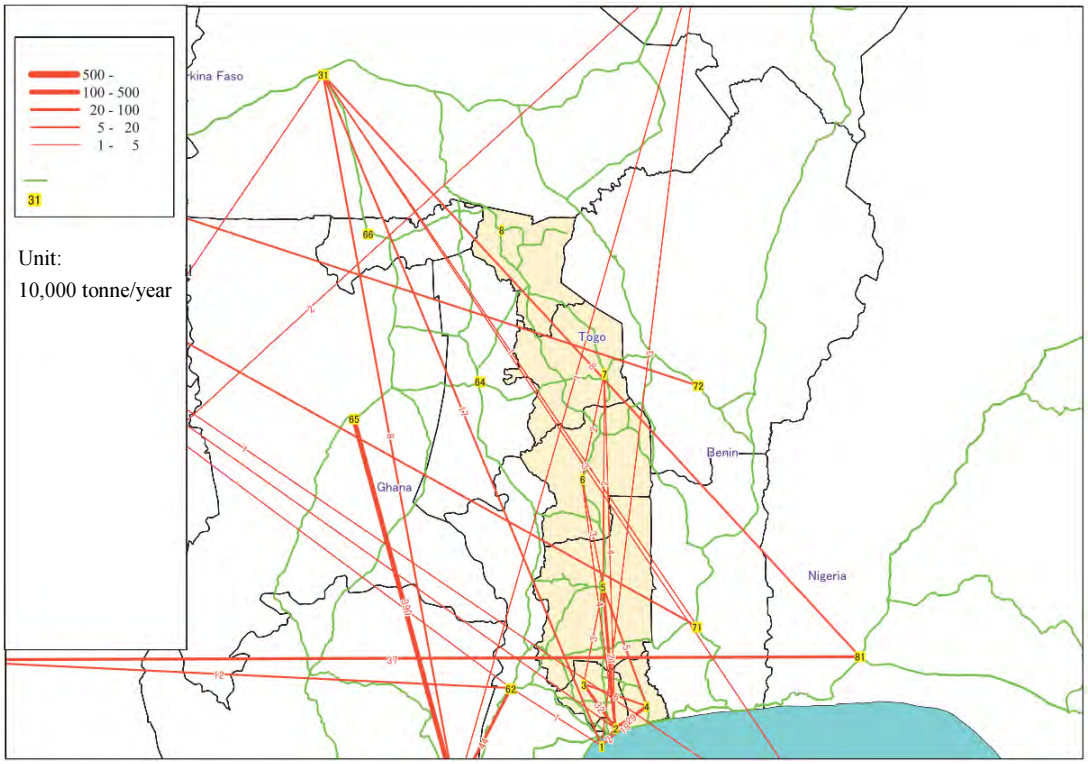
Figure A4-14 Distribution of O/D at Survey Point No. 15 Katchamba (RN17)



Note: O/D volumes of 20 or more are displayed.
Source: Study Team

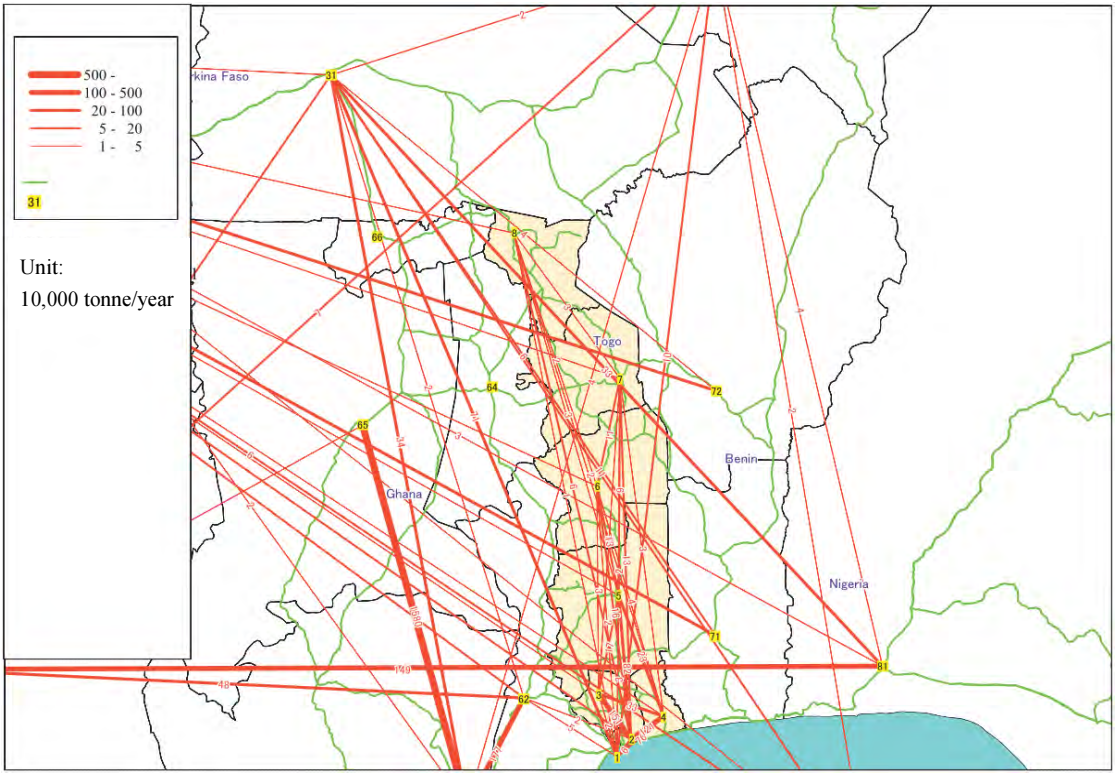
Figure A4-15 Distribution of O/D at Survey Point No. 12 Kara – Kabou (RN19)

Appendix 5 Forecast of Future Freight Flow



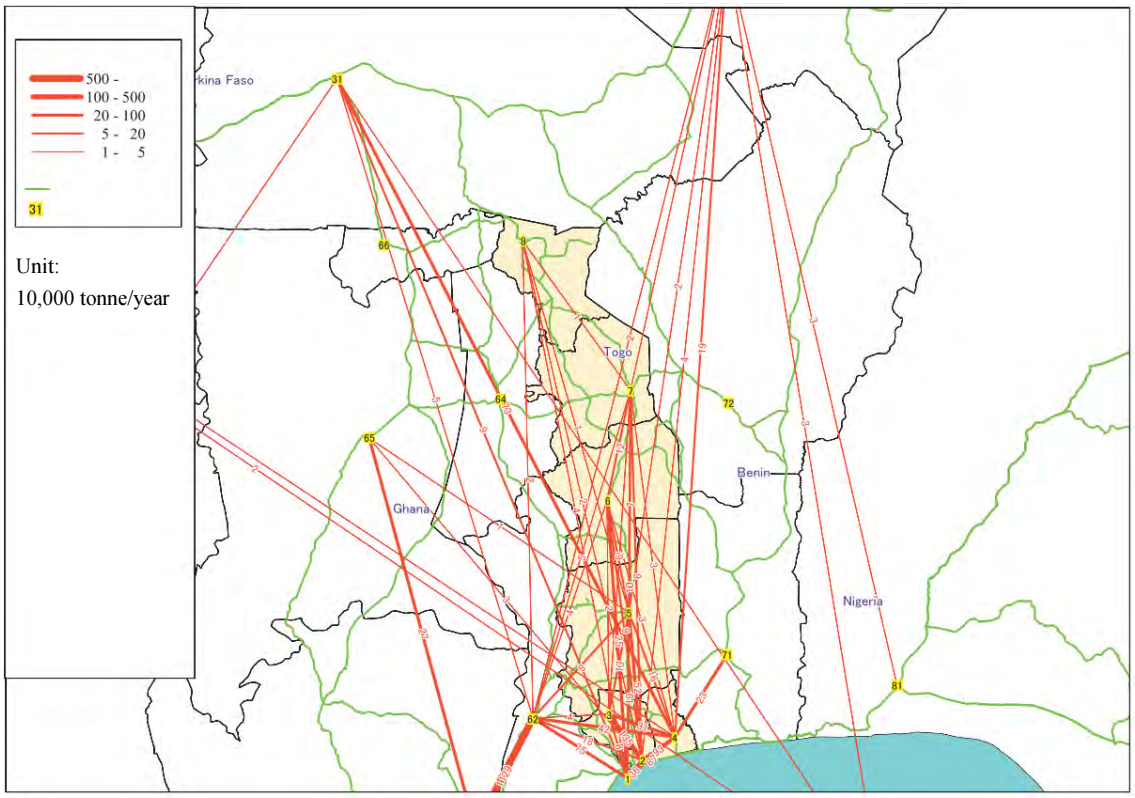
Source: Study Team

Figure A5-1 Freight Demand 2012, HS27 Mineral Fuel and Oil



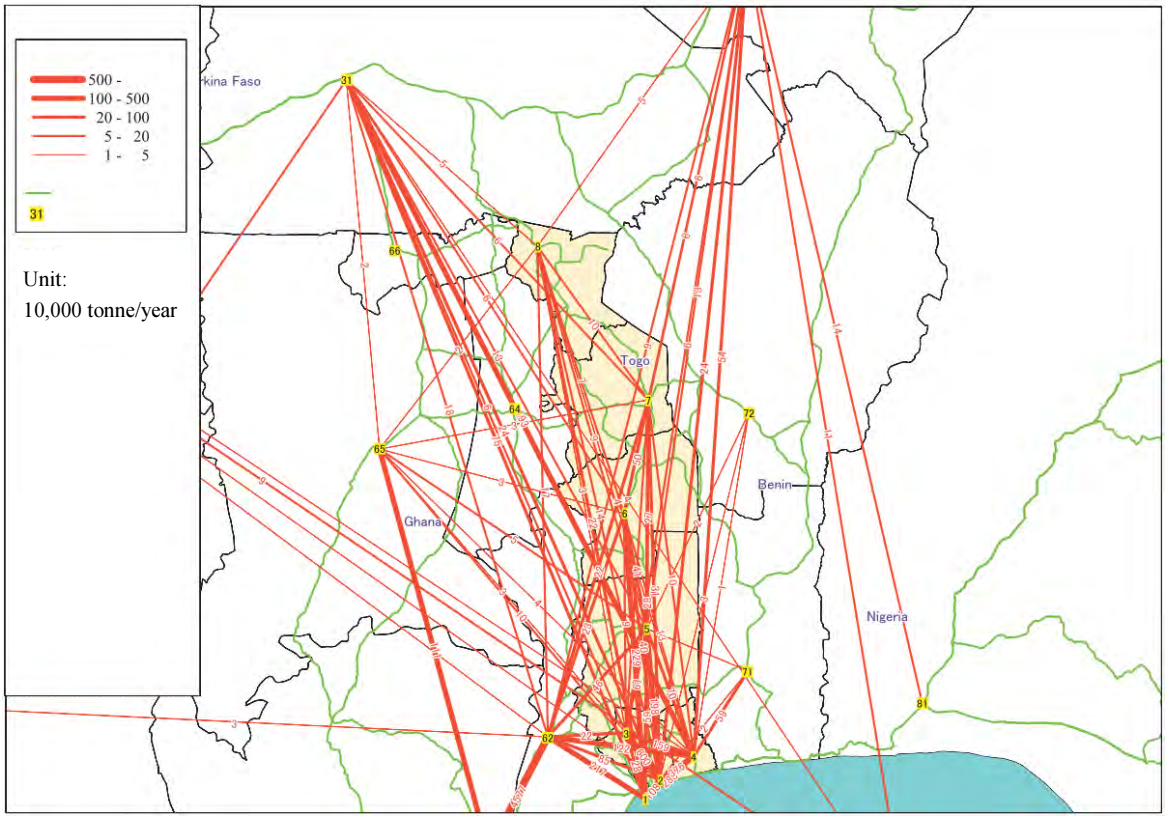
Source: Study Team

Figure A5-2 Freight Demand 2030, HS27 Mineral Fuel and Oil



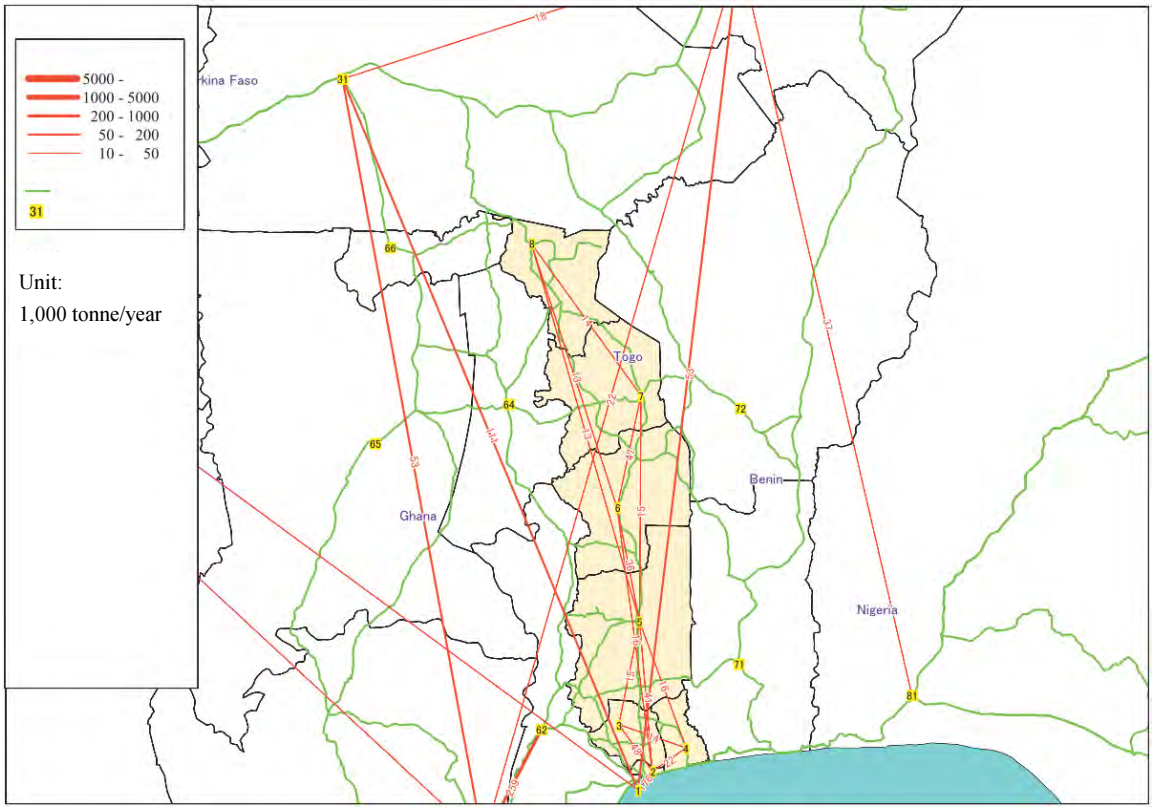
Source: Study Team

Figure A5-3 Freight Demand 2012, HS25 Salt and Cement



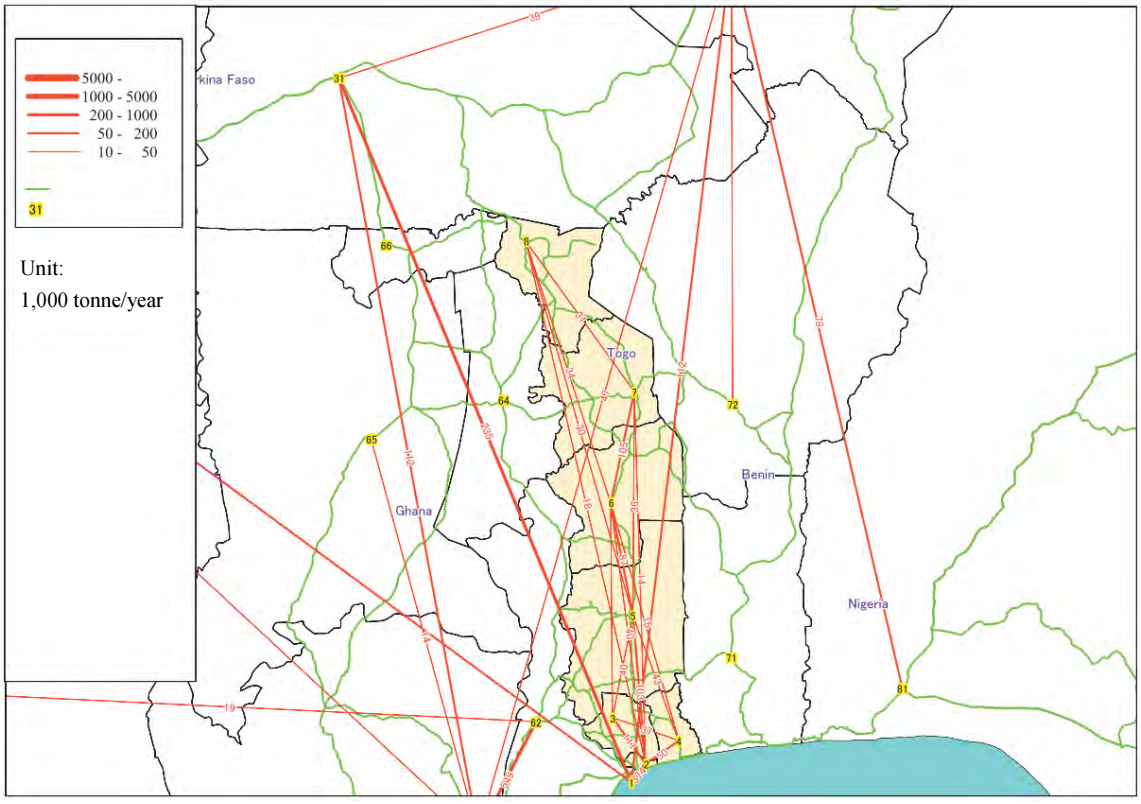
Source: Study Team

Figure A5-4 Freight Demand 2030, HS25 Salt and Cement



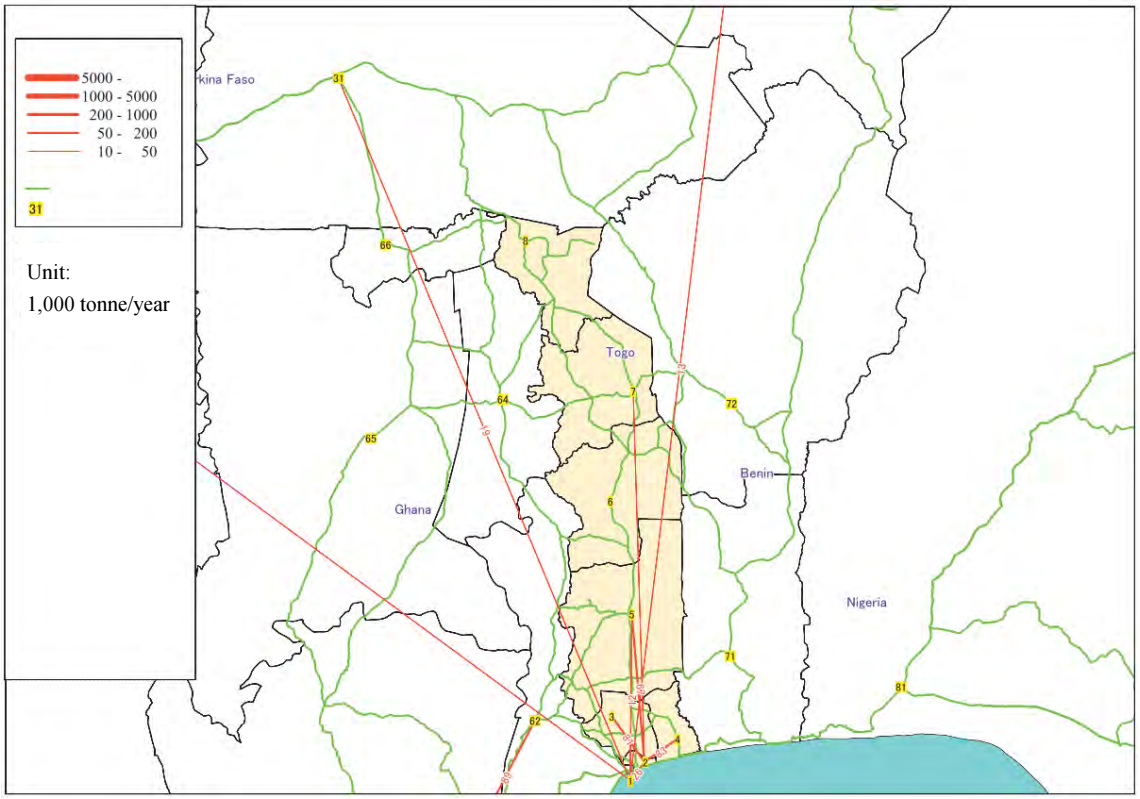
Source: Study Team

Figure A5-5 Freight Demand 2012, HS10 Cereals



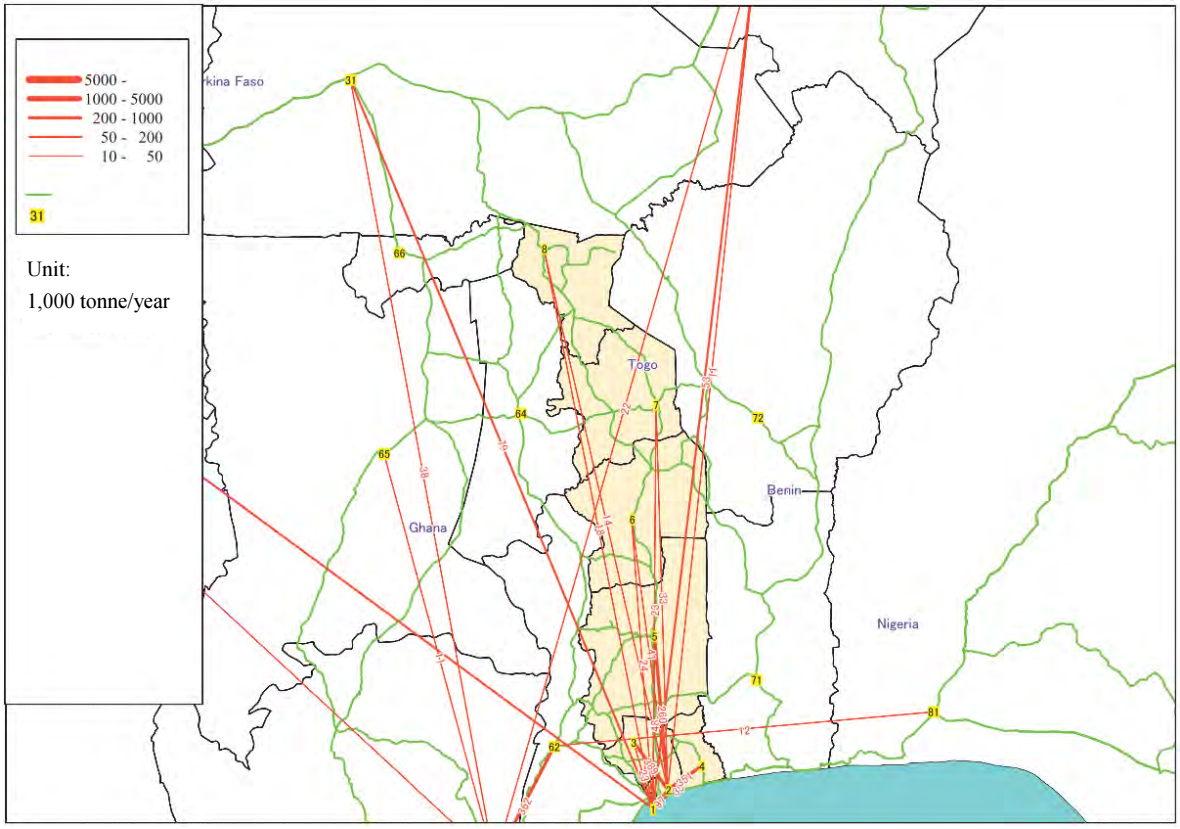
Source: Study Team

Figure A5-6 Freight Demand 2030, HS10 Cereals



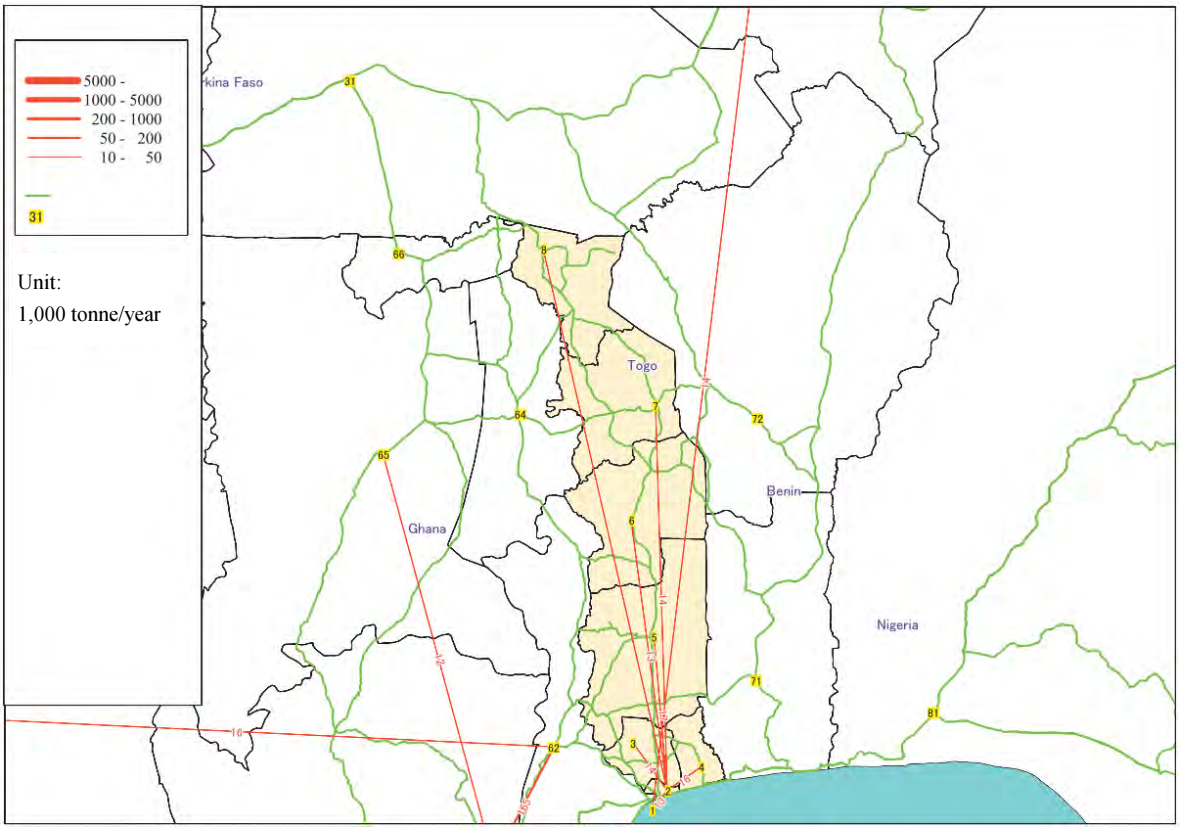
Source: Study Team

Figure A5-7 Freight Demand 2012, HS17 Sugar and Candies



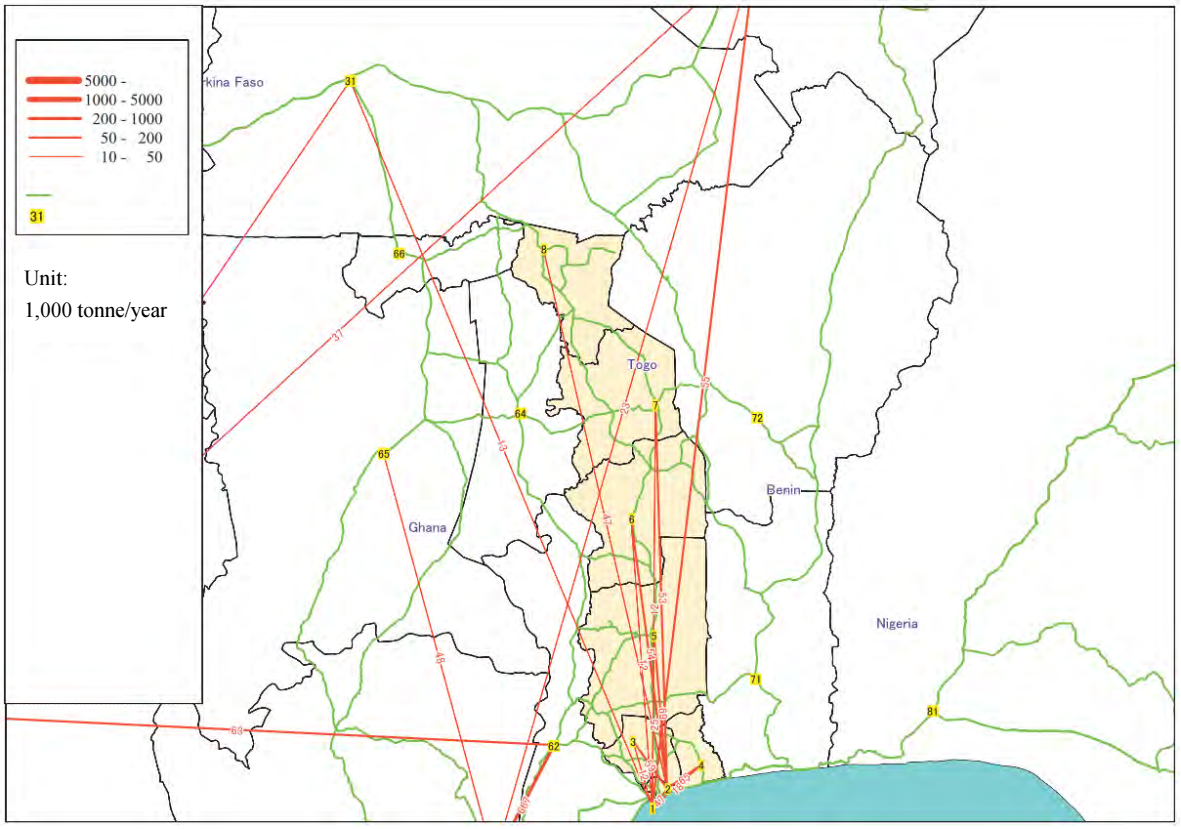
Source: Study Team

Figure A5-8 Freight Demand 2030, HS17 Sugar and Candies



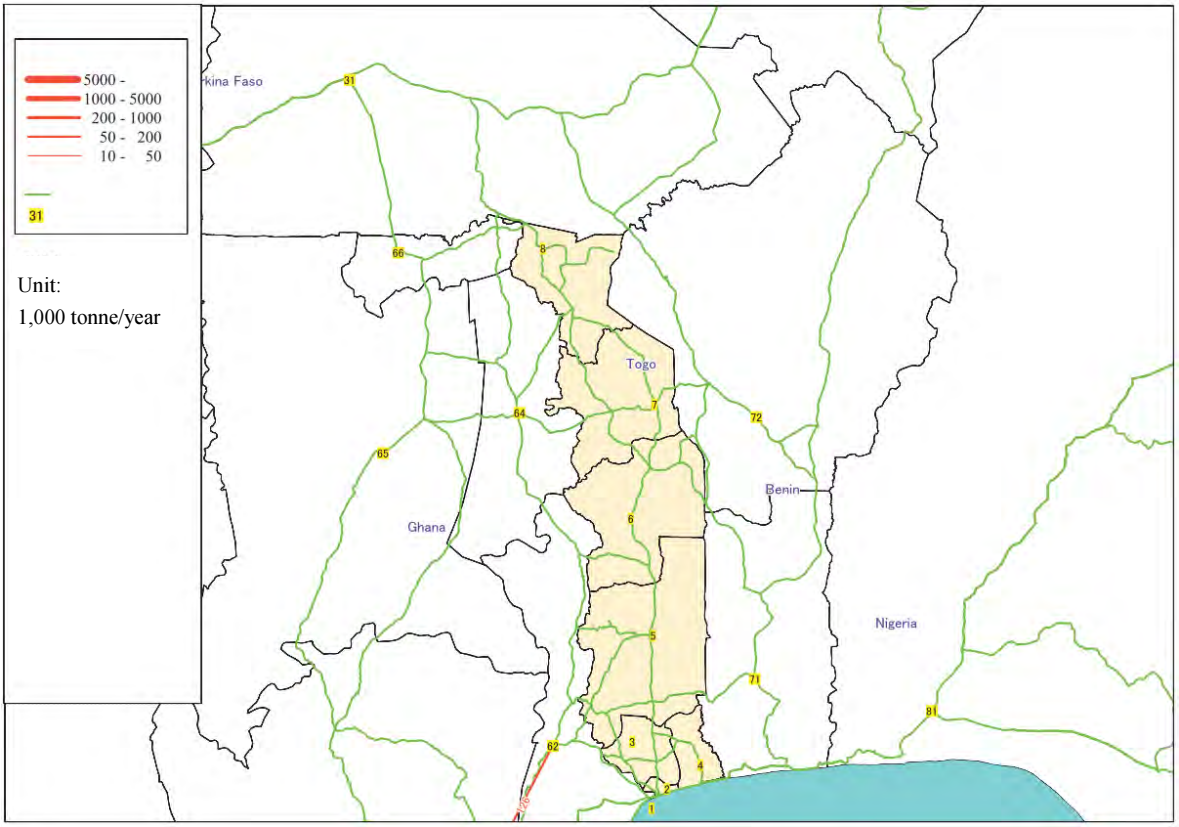
Source: Study Team

Figure A5-9 Freight Demand 2012, HS15 Fats and Oils



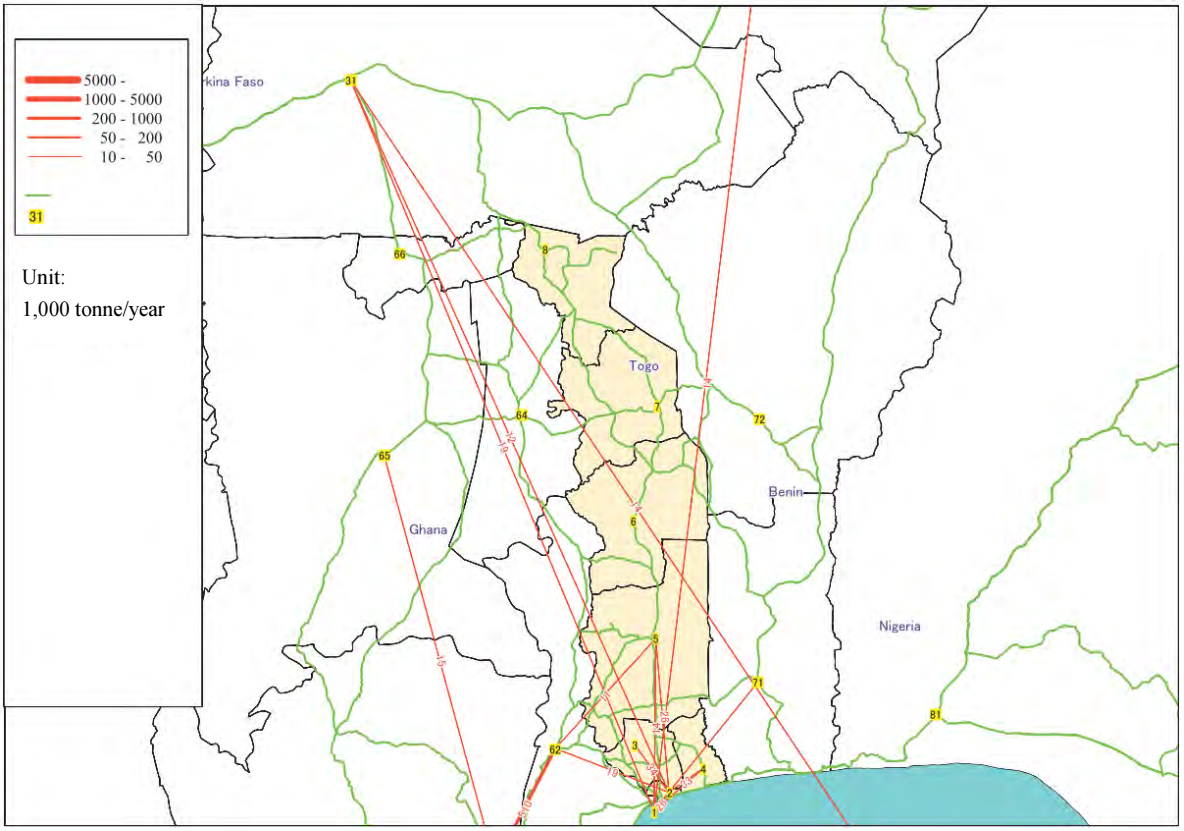
Source: Study Team

Figure A5-10 Freight Demand 2030, HS15 Fats and Oils



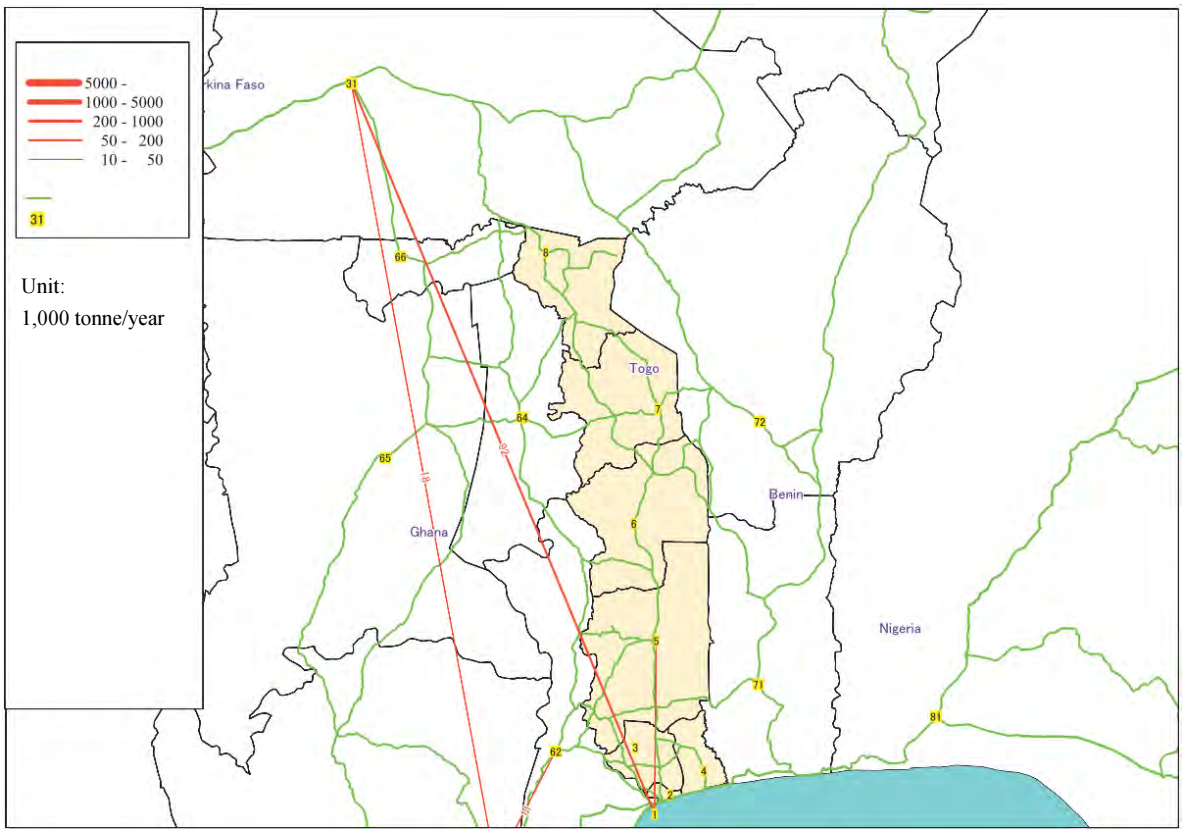
Source: Study Team

Figure A5-11 Freight Demand 2012, HS22 Beverages



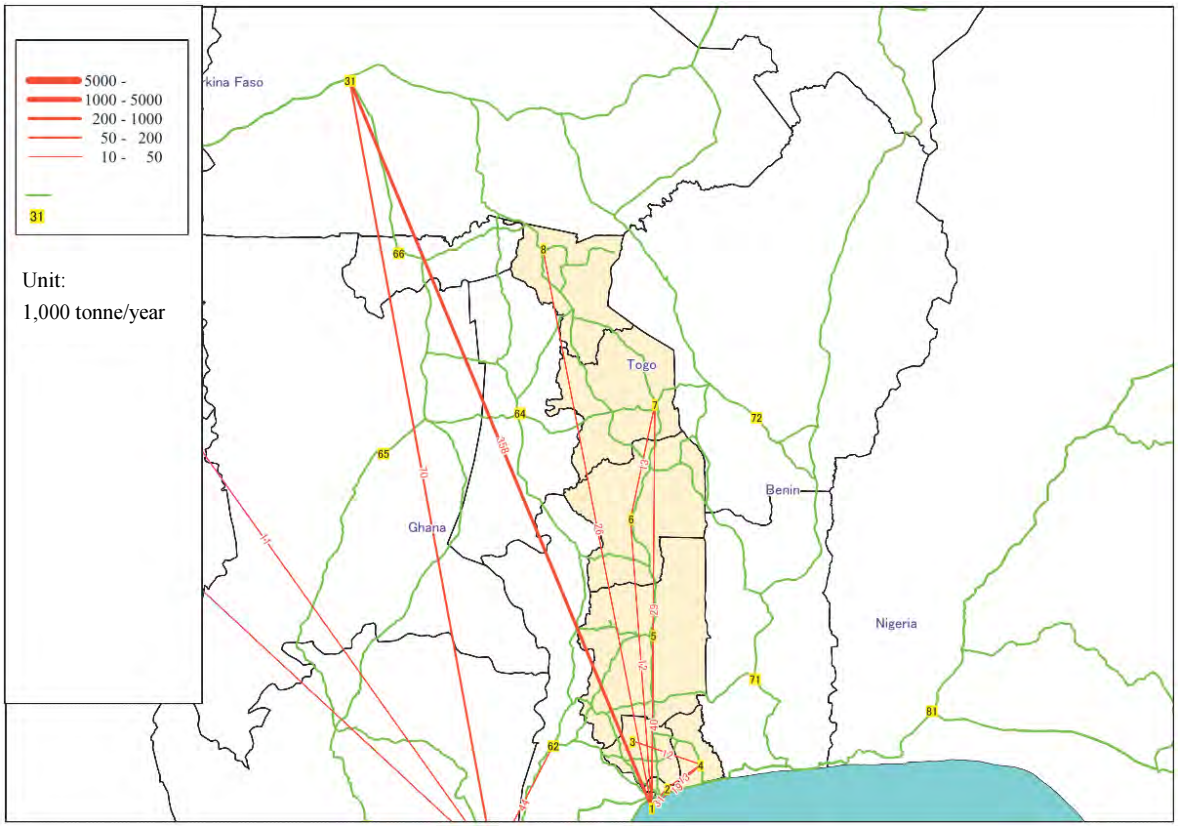
Source: Study Team

Figure A5-12 Freight Demand 2030, HS22 Beverages



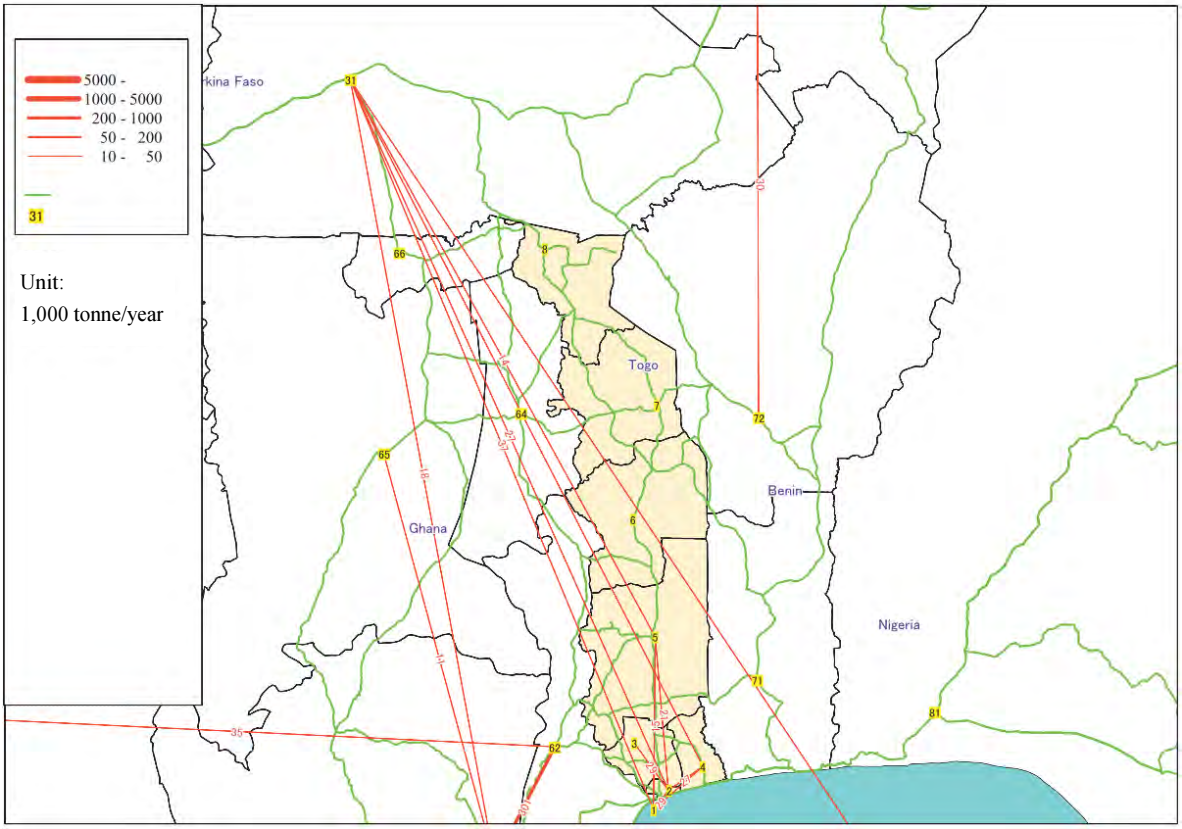
Source: Study Team

Figure A5-13 Freight Demand 2012, HS52 Cotton



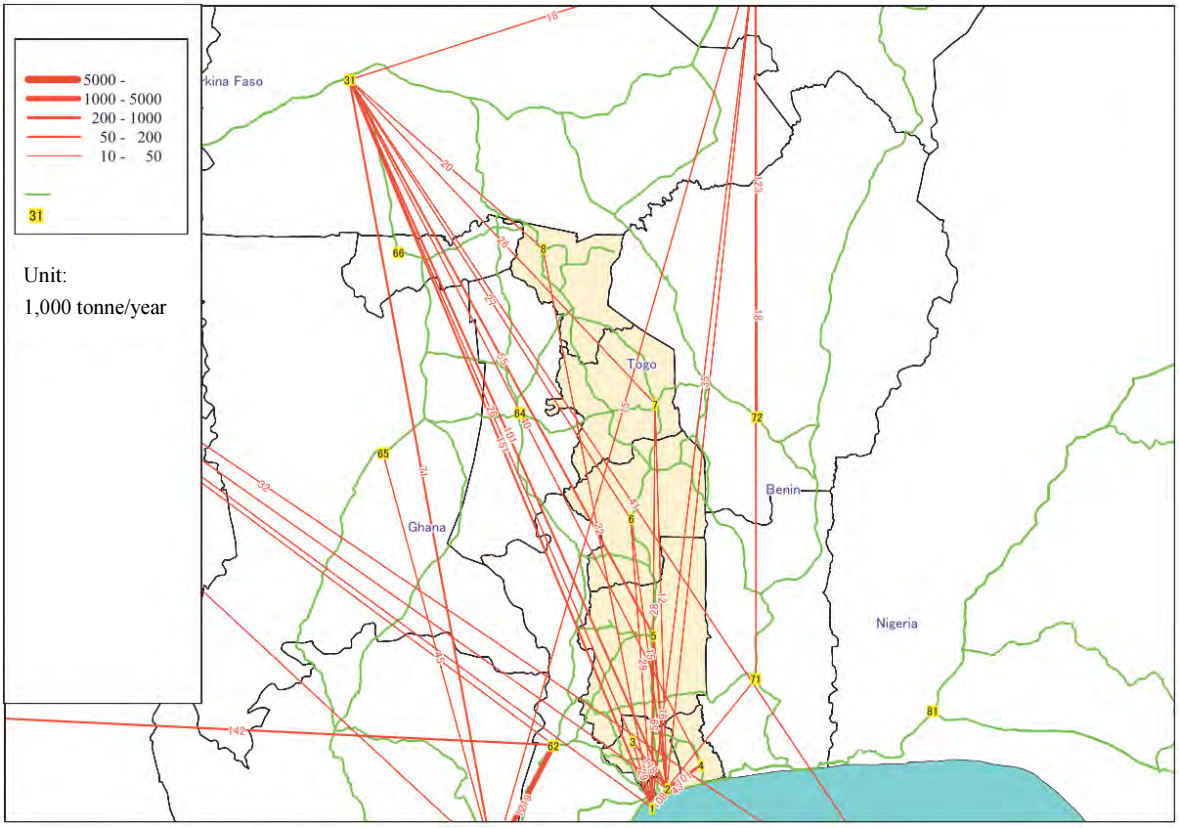
Source: Study Team

Figure A5-14 Freight Demand 2030, HS52 Cotton



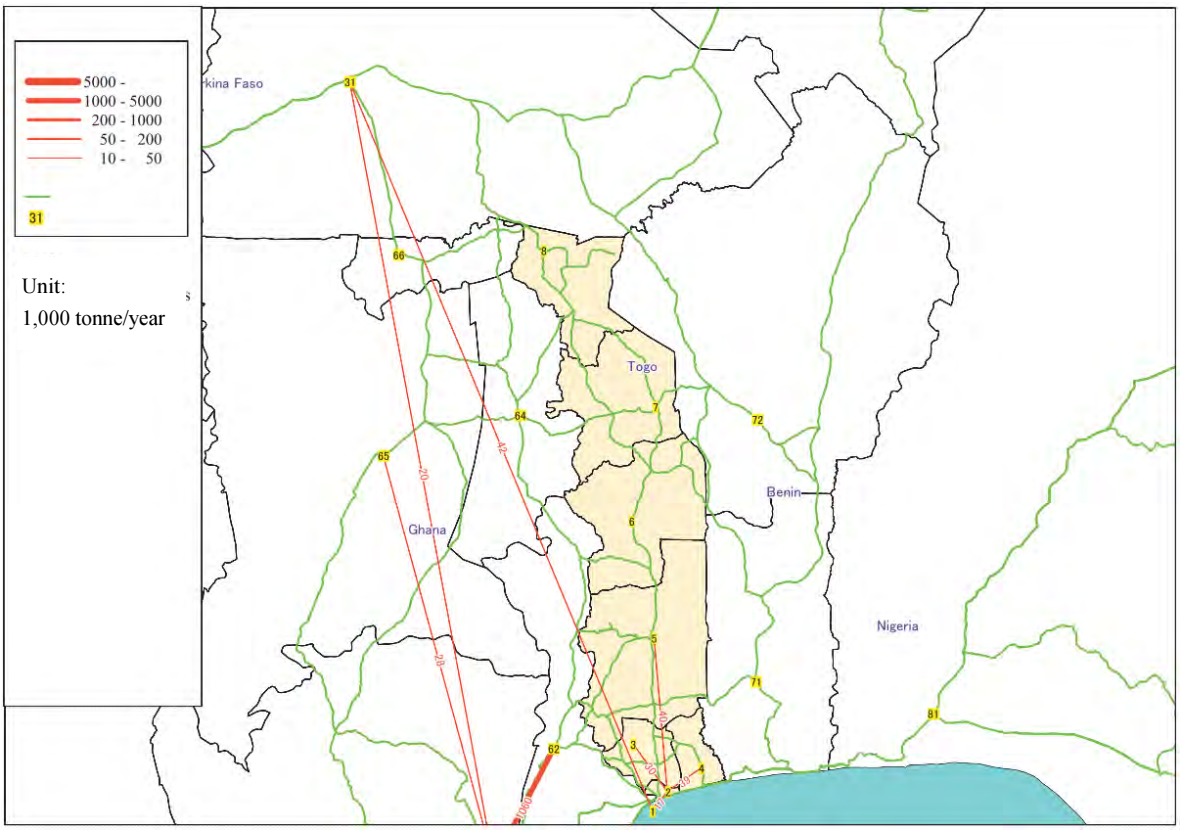
Source: Study Team

Figure A5-15 Freight Demand 2012, HS72 Iron and Steel



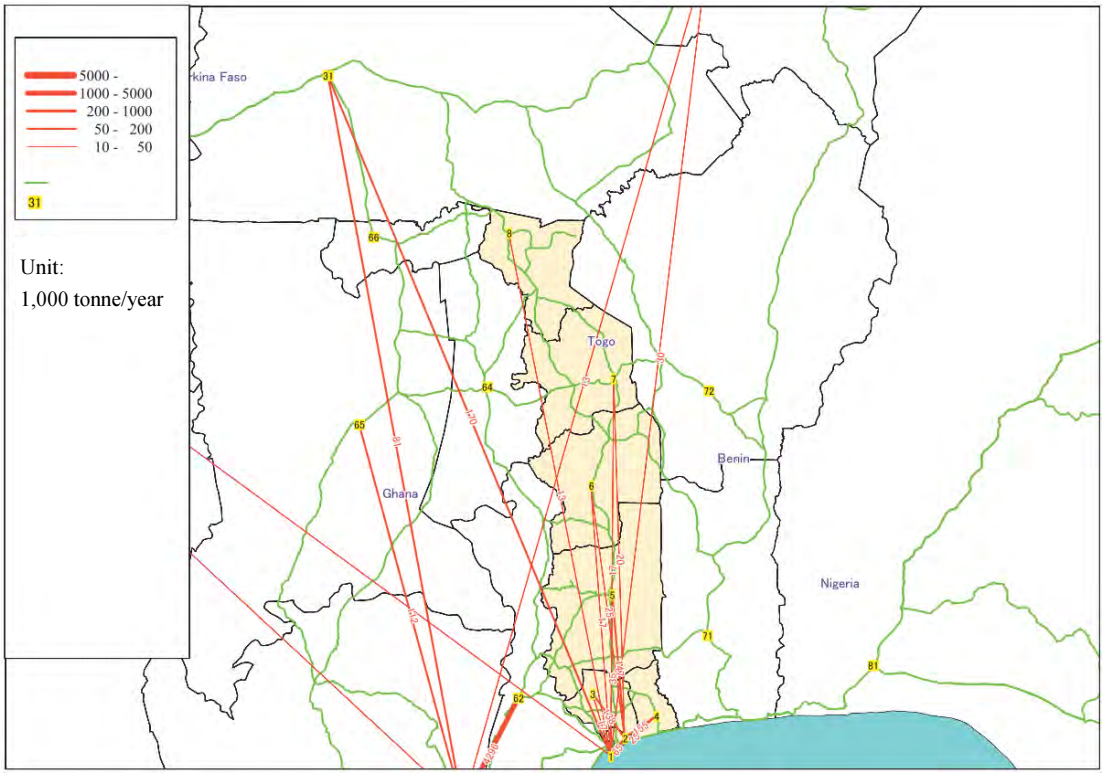
Source: Study Team

Figure A5-16 Freight Demand 2030, HS72 Iron and Steel



Source: Study Team

Figure A5-17 Freight Demand 2012, HS87 Vehicles and Parts



Source: Study Team

Figure A5-18 Freight Demand 2030, HS87 Vehicles and Parts

Appendix 6 O/D Matrices

Appendix 6-1 Present O/D Matrices

Table A6-1 O/D Matrix of All Vehicle Types in 2012 (Except motorcycles)

(Unit: AADT, veh./day)

Origin			Destination	1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		128	30	252	51	28	28	10	18	151		37		4	0	8	0	0	0			2			746
		Maritime (Lomé)	2	29	108,016	1,119	1,029	825	168	169	27	11	70	4	39	0	27	0	125	0	0	0	1,158	14	63			112,892
		Maritime (West)	3	6	1,096	1,697	223	140	23	23	3	1	0		2	0	6	0	32	0	0	0	1	0				3,253
		Maritime (East)	4	10	1,006	223	5,936	201	38	38	6	4	137		39	0	12	0	46	0	0	0	77	1	10			7,781
		Plateaux	5	16	813	142	203	18,349	123	108	15	2	1		5	0	10	0	39	0	0	0	18	18	0			19,861
		Centrale	6	45	165	24	39	126	2,384	129	10	1	0		2	0	0	1	3	0	0	0	2	4	0			2,935
		Kara	7	9	164	23	38	107	123	3,474	13	1	10		17	0	0	1	8	0	0	0	2	453	0			4,443
		Savanes	8	6	26	4	6	15	9	15	241	0	0		1	0	0	1	1	0	0	0	6	2	0			335
	Mali		21		6	0	0	0	0	0	0		12	55	9	75	65	0	91	0	0	0	6	0	0	8	2	330
	Burkina Faso	East	31	31	39	2	5	5	3	3	1	2			80	43	10	5	55	0	5	0	15	0	4	0	1	310
		West	32	0	1	0	0	0	0	0	0	78			3	69	1	0	3	0	0	0				0	0	158
	Niger		41	2	21	0	0	0	0	0	0	6	85	2		13	5	4	31	0	3	0	52	326	486	11	1	1,049
	Côte d'Ivoire		51		2	0	0	1	0	0	0	232	81	96	33	2,740	4	0	0	0	0	0	30	0	24	0		3,244
	Ghana	Port Tema	61	24	80	16	70	15	0	0	0	59	42	1	12	4	0	1,508	9,831	0	195	64						11,921
		South East	62	0	6	1	3	2	0	1	0	0	0	0	0	0	1,438	10,329	6,105	7	32	0	10		0	0		17,935
		South	63	6	138	30	78	39	0	0	0	128	32	0	10	0	3,525	6,400	151	18	419	254	11	1	56			11,296
		North East	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	61	0	17	0						81
		North	65	0	0	0	0	0	0	0	0	1	4	0	2	0	212	7	459	0	391	101		0				1,177
		Upper East	66	0	0	0	0	0	0	0	0	0	0	0	0	0	139	4	229	0	124	0						496
	Bénin	South	71	17	1,429	9	71	16	2	3	2	39	60	0	163	48		59	23		0	1	678	601	302	1		3,526
		North	72		1	0	0	11	8	444	0	20	3	0	690	0		1			0		256					1,435
	Nigeria		81		9	0	1	1	0	1	0	0	18	1	339	99		11	112				267					860
	Other West African Countries		82									2	1	0	5			0							16		1	24
	Other Countries		83									27	18	1	14											1		60
	Total			201	113,148	3,319	7,955	19,906	2,909	4,435	330	633	725	161	1,501	3,093	5,458	18,333	17,412	25	1,186	420	2,589	1,421	963	20	5	206,147

Note: Without railway

Source: Study Team

Table A6-2 O/D Matrix of Passenger Cars and Taxies in 2012

(Unit: AADT, veh./day)

Origin			Destination	1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1			11	11	7	7	5			50		1		0	0	1	0	0	0			2			95
		Maritime (Lomé)	2		90,693	735	677	550	112	114	17	3	33	4	14		0	0	63	0	0	0	1,106	11	62			94,194
		Maritime (West)	3		735	1,420	146	93	15	15	2						0	0	14	0	0	0						2,441
		Maritime (East)	4		677	146	4,976	136	26	26	4		1				0	0	24	0	0	0	29		10			6,055
		Plateaux	5	1	550	93	136	15,319	81	72	9						0	0	16	0	0	0	17	1				16,295
		Centrale	6	2	112	15	26	81	1,967	79	5						0	0	3	0	0	0		1				2,291
		Kara	7	1	114	15	26	72	79	2,896	8		10				0	0	8	0	0	0	1	375				3,605
		Savanes	8	3	17	2	4	9	5	8	138						0	0	1	0	0	0	6	1				195
	Mali		21		1								6	34	2	25							2			6		76
	Burkina Faso	East	31		18										31	20	0	0	4	0	0	0	7		3			82
		West	32									46				26	0	0	0	0	0	0						72
	Niger		41	1	10							3	50	1		2	0	0	0	0	0	0	36	315	447		1	866
	Côte d'Ivoire		51		1								19	22	1		0	0	0	0	0	0	10		10			63
	Ghana	Port Tema	61	0	0	0	0	0	0	0	0	0	6	0	0	0	0	778	5,884	0	4	4						6,677
		South East	62	0	6	1	3	2	0	0	0	0	0	0	0	0	739	4,334	2,520	0	16	0	10					7,631
		South	63	1	108	23	58	31	0	0	0	0	6	0	0	0	1,975	2,495	112	8	104	33	10		39			5,004
		North East	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0						8
		North	65	0	0	0	0	0	0	0	0	0	0	0	0	0	117	7	104	0	122	11						361
		Upper East	66	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	23	0	18	0						49
	Bénin	South	71	17	1,364	8	61	13		3	2		6		42	32		54	23			1		341	274	1		2,243
		North	72		1			2	4	371					681								154					1,214
	Nigeria		81		7								1		305	21		7	82				246					670
	Other West African Countries		82										1												16		1	17
	Other Countries		83																							1		1
	Total			25	94,414	2,471	6,124	16,315	2,297	3,590	186	52	189	61	1,078	126	2,835	7,679	8,887	8	268	49	1,635	1,046	862	8	1	150,204

Note: No railway is operating

Source: Study Team

Table A6-3 O/D Matrix of Buses in 2012

(Unit: AADT, veh./day)

Origin			Destination	1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1			2	3	2	2	1			5		4		0	0	1	0	0	0						20
		Maritime (Lomé)	2		15,952	153	175	152	31	31	4	4	35		16		0	0	43	0	0	0	49		1			16,645
		Maritime (West)	3		153	250	33	25	4	4	1						0	0	14	0	0	0						484
		Maritime (East)	4		175	33	875	37	7	7	1		1		2		0	0	12	0	0	0	5					1,155
		Plateaux	5	0	152	25	37	2,694	22	20	2						0	0	19	0	0	0		16				2,989
		Centrale	6	0	31	4	7	22	346	20	1						0	0	0	0	0	0	1	2				436
		Kara	7	0	31	4	7	20	20	509	2				14		0	0	0	0	0	0		77				686
		Savanes	8	1	4	1	1	2	1	2	41						0	0	0	0	0	0						54
	Mali		21		4								1	12	4	14	0	0	1	0	0	0	3					39
	Burkina Faso	East	31	2	12		2					1			40	17	0	0	2	0	0	0	3		1			80
		West	32		1							13			2	41	0	0	0	0	0	0						57
	Niger		41	1	11							4	34	1		9	0	0	1	0	0	0	14	6	14			96
	Côte d'Ivoire		51									28	32	45	21		0	0	0	0	0	0	20		13			159
	Ghana	Port Tema	61	0	0	0	0	0	0	0	0	0	0		0	0	0	334	1,979	0	0	0						2,313
		South East	62	0	0	0	0	0	0	1	0	0	0		0	0	257	5,282	3,181	0	4	0						8,726
		South	63	0	15	4	5	6	0	0	0	3	6		3	0	963	3,126	33	8	84	48	1	1	17			4,324
		North East	64	0	0	0	0	0	0	0	0	0	0		0	0	0	3	5	0	0	0						8
		North	65	0	0	0	0	0	0	0	0	0	0		0	0	0	0	127	0	117	20						264
		Upper East	66	0	0	0	0	0	0	0	0	0	0		0	0	0	0	20	0	16	0						36
	Bénin	South	71		63		10	2	1			6	5		11	15		5						84	28			229
		North	72					10	3	72					6								69					160
	Nigeria		81												8	10			30				21					68
	Other West African Countries		82												5													5
	Other Countries		83																									
	Total			5	16,605	477	1,155	2,973	439	668	54	59	119	58	135	106	1,220	8,750	5,467	8	221	68	187	186	75			39,034

Note: No railway is operating

Source: Study Team

Table A6-4 O/D Matrix of Light Trucks in 2012

(Unit: AADT, veh./day)

Origin				Destination																									
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		26	2	26	5	2	2	2	3	15		6		0	0	0	0	0	0						89
		Maritime (Lomé)	2	2	198	29	22	16	3	3	1	1	1		1	0	0	0	4	0	0	0	1	0				282
		Maritime (West)	3	0	29	5	6	3	1	1	0	0	0		0	0	0	0	2	0	0	0	0	0				48
		Maritime (East)	4	1	21	6	14	4	1	1	0	0	10		3	0	0	0	1	0	0	0	3	0				65
		Plateaux	5	1	17	4	5	79	4	3	1	0	0		0	0	0	0	2	0	0	0	0	0	0			117
		Centrale	6	3	4	1	1	5	21	7	1	0	0		0	0	0	1	0	0	0	0	0	0	0			45
		Kara	7	1	3	1	1	3	4	15	1	0	0		0	0	0	1	0	0	0	0	0	0	0			29
		Savanes	8	0	1	0	0	1	1	1	23	0	0		0	0	0	1	0	0	0	0	0	0	0			29
	Mali		21		0	0	0	0	0	0	0		1	2	1	5							0	0	0	0	0	10
	Burkina Faso	East	31	1	2	0	1	1	0	1	0	0			3	1	0	5	25	0	3	0	1	0	0	0	0	45
		West	32	0	0	0	0	0	0	0	0	2			0	0										0	0	3
	Niger		41	0	0	0	0	0	0	0	0	0	0	0		0	0	4	16	0	2	0	0	1	6	3	0	32
	Côte d'Ivoire		51		0	0	0	0	0	0	0	44	6	6	2	587	0	0	0	0	0	0	0	0	0	0		647
	Ghana	Port Tema	61	0	0	0	0	0	0	0	0	1	7		6	0	0	173	759	0	18	0						964
		South East	62	0	0	0	0	0	0	0	0	0	0		0	0	124	504	197	0	0	0	0		0	0		825
		South	63	0	0	0	0	0	0	0	0	1	5		4	0	196	447	6	0	89	12						759
		North East	64	0	0	0	0	0	0	0	0	0	0		0	0	0	0	41	0	10	0						51
		North	65	0	0	0	0	0	0	0	0	0	3		2	0	5	0	87	0	55	32		0				184
		Upper East	66	0	0	0	0	0	0	0	0	0	0		0	0	0	0	23	0	0	0						23
	Bénin	South	71		0	0	0	0	0	0	0	3	11	0	24	0		0			0		109	28				177
		North	72		0	0	0	0	0	0	0	2	0	0	1	0		0			0		5					8
	Nigeria		81		0	0	0	0	0	0	0	0	2	0	7	7		1					0					18
	Other West African Countries		82									0	0	0	0			0										0
	Other Countries		83									5	4	0	3													11
	Total			10	303	48	78	117	37	34	29	63	65	8	64	601	325	1,136	1,163	0	177	44	120	30	7	3	1	4,463

Note: No railway is operating

Source: Study Team

Table A6-5 O/D Matrix of Heavy Trucks in 2012

(Unit: AADT, veh./day)

Origin				Destination																									
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		43	6	100	16	8	8	4	4	28		8		4	0	0	0	0	0						229
		Maritime (Lomé)	2	12	540	94	72	49	10	10	2	2	1		4	0	27	0	3	0	0	0	1	1				828
		Maritime (West)	3	2	84	10	18	8	1	1	0	0	0		1	0	6	0	1	0	0	0	0	0				133
		Maritime (East)	4	4	62	18	33	11	2	2	0	2	60		16	0	12	0	1	0	0	0	19	0				243
		Plateaux	5	6	43	9	12	119	7	6	1	1	0		2	0	10	0	1	0	0	0	1	0	0			218
		Centrale	6	18	8	1	2	8	23	11	1	0	0		1	0	0	0	0	0	0	0	0	0	0			75
		Kara	7	3	8	1	2	6	9	25	1	0	0		1	0	0	0	0	0	0	0	0	0	0			57
		Savanes	8	1	2	0	0	1	1	1	18	0	0		0	0	0	0	0	0	0	0	0	0	0			26
	Mali		21		0	0	0	0	0	0	0		2	4	1	13	2	0	6	0	0	0	0	0	0	1	1	31
	Burkina Faso	East	31	11	4	1	1	2	1	1	0	0			2	2	10	0	25	0	2	0	2	0	0	0	0	64
		West	32	0	0	0	0	0	0	0	0	8			0	1	1	0	3	0	0	0				0	0	14
	Niger		41	0	0	0	0	0	0	0	0	0	0	0		0	5	0	13	0	1	0	1	2	8	3	0	35
	Côte d'Ivoire		51		0	0	0	0	0	0	0	73	11	10	4	973	4	0	0	0	0	0	0	0	0	0		1,076
	Ghana	Port Tema	61	1	12	3	6	5	0	0	0	7	28	1	6	4	0	125	337	0	48	31						615
		South East	62	0	0	0	0	0	0	0	0	0	0	0	0	0	195	104	88	7	7	0	0		0	0		401
		South	63	0	0	0	0	0	0	0	0	4	15	0	3	0	120	152	0	2	27	11						334
		North East	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	3	0						9
		North	65	0	0	0	0	0	0	0	0	0	1	0	0	0	10	0	26	0	17	9		0				64
		Upper East	66	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	16	0	11	0						34
	Bénin	South	71		1	0	0	0	0	0	0	14	17	0	39	0		0			0		263	69				404
		North	72		0	0	0	0	0	0	0	9	1	0	1	0		0			0		12					23
	Nigeria		81		1	0	0	0	0	0	0	0	7	1	9	29		1					0					48
	Other West African Countries		82									1	0	0	0			0										1
	Other Countries		83									10	6	1	5													22
	Total			58	808	145	246	227	62	66	28	135	178	17	103	1,024	413	383	527	9	116	51	299	73	9	4	1	4,983

Note: No railway is operating

Source: Study Team

Table A6-6 O/D Matrix of Trailers in 2012

(Unit: AADT, veh./day)

Origin		Destination		Destination 1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		43	7	101	17	8	9	4	4	28		8		0	0	5	0	0	0						231
		Maritime (Lomé)	2	12	545	95	72	50	10	10	2	2	1		4	0	0	0	12	0	0	0	1	1				817
		Maritime (West)	3	2	85	11	18	9	1	1	0	0	0		1	0	0	0	2	0	0	0	0	0				130
		Maritime (East)	4	4	63	18	33	11	2	2	0	2	61		17	0	0	0	7	0	0	0	19	0				238
		Plateaux	5	6	44	9	12	120	7	6	1	1	0		2	0	0	0	1	0	0	0	1	0	0			210
		Centrale	6	18	9	1	2	8	23	11	1	0	0		1	0	0	0	0	0	0	0	0	0	0			75
		Kara	7	3	8	1	2	6	9	25	1	0	0		1	0	0	0	0	0	0	0	0	0	0			57
		Savanes	8	1	2	0	0	1	1	1	18	0	0		0	0	0	0	0	0	0	0	0	0	0			26
	Mali		21		0	0	0	0	0	0	0		2	4	1	14	63	0	84	0	0	0	0	0	0	1	1	169
	Burkina Faso	East	31	11	4	1	1	2	1	1	0	0			2	2							2	0	0	0	0	28
		West	32	0	0	0	0	0	0	0	0	8			0	1										0	0	10
	Niger		41	0	0	0	0	0	0	0	0	0	0	0		0							1	2	8	3	0	15
	Côte d'Ivoire		51		0	0	0	0	0	0	0	73	11	10	4	982	0	0	0	0	0	0	0	0	0	0		1,082
	Ghana	Port Tema	61	22	68	12	64	10	0	0	0	51				0	0	98	872	0	125	29						1,352
		South East	62	0	0	0	0	0	0	0	0	0				0	123	105	119	0	5	0	0		0	0		352
		South	63	5	15	3	14	2	0	0	0	120				0	271	180	0	0	115	150						875
		North East	64	0	0	0	0	0	0	0	0	0				0	0	0	5	0	0	0						5
		North	65	0	0	0	0	0	0	0	0	0				0	80	0	115	0	80	29		0				304
		Upper East	66	0	0	0	0	0	0	0	0	0				0	128	0	147	0	79	0						354
	Bénin	South	71		1	0	0	0	0	0	0	14	17	0	39	0		0			0		265	69				408
		North	72		0	0	0	0	0	0	0	9	1	0	1	0		0			0		12					24
	Nigeria		81		1	0	0	0	0	0	0	0	7	1	9	29		1					0					49
	Other West African Countries		82									1	0	0	0			0										1
	Other Countries		83									10	6	1	5													22
	Total			84	886	158	321	237	63	66	28	296	135	15	95	1,029	665	385	1,368	0	404	208	302	74	9	4	1	6,835

Note: No railway is operating

Source: Study Team

Table A6-7 O/D Matrix of Container Trailers in 2012

(Unit: AADT, veh./day)

Origin				Destination																								
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		17	2	11	4	2	2	1	7	26		11													83
		Maritime (Lomé)	2	3	87	13	10	8	1	1	0	0	0		0	0							0	0				125
		Maritime (West)	3	1	10	2	2	1	0	0	0	0	0		0	0							0	0				17
		Maritime (East)	4	1	8	2	5	1	0	0	0	0	3		1	0							1	0				25
		Plateaux	5	2	6	1	2	19	1	1	0	0	0		0	0							0	0	0			32
		Centrale	6	4	1	0	0	1	4	2	0	0	0		0	0							0	0	0			12
		Kara	7	1	1	0	0	1	1	4	0	0	0		0	0							0	0	0			10
		Savanes	8	1	0	0	0	0	0	0	3	0	0		0	0							0	0	0			5
	Mali		21		0	0	0	0	0	0	0		0	0	0	4							0	0	0	0	0	5
	Burkina Faso	East	31	6	1	0	0	0	0	0	0	0			1	1							1	0	0	0	0	11
		West	32	0	0	0	0	0	0	0	0	1			0	0										0	0	2
	Niger		41	0	0	0	0	0	0	0	0	0	0	0		0							0	0	2	1	0	4
	Côte d'Ivoire		51		0	0	0	0	0	0	0	14	2	2	1	198							0	0	0	0		217
	Ghana	Port Tema	61																									
		South East	62																				0		0	0		0
		South	63																									
		North East	64																									
		North	65																					0				0
		Upper East	66																									
	Bénin	South	71		0	0	0	0	0	0	0	2	4	0	8	0		0			0		41	10				65
		North	72		0	0	0	0	0	0	0	1	0	0	0	0		0			0		3					5
	Nigeria		81		0	0	0	0	0	0	0	0	1	0	2	4		0					0					7
	Other West African Countries		82									0	0	0	0			0										0
	Other Countries		83									1	1	0	1													4
	Total			20	133	20	31	36	10	11	6	28	38	2	25	207		1			0		46	11	3	1	0	629

Note: No railway is operating

Source: Study Team

Table A6-8 O/D Matrix of Motorcycles in 2012

(Unit: AADT, veh./day)

Origin				Destination																									
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1			36	25	10	7	5																		83
		Maritime (Lomé)	2		422,649	2,416	1,500	795	118	109	13																	427,601
		Maritime (West)	3		2,416	6,616	438	160	17	15	2																	9,664
		Maritime (East)	4		1,500	438	23,190	202	27	25	3																	25,385
		Plateaux	5	1	795	160	202	71,388	117	88	8																	72,759
		Centrale	6	2	118	17	27	117	9,169	178	6																	9,634
		Kara	7	1	109	15	25	88	178	13,495	11																	13,922
		Savanes	8	2	13	2	3	8	6	11	487																	532
	Mali		21																									
	Burkina Faso	East	31																									
		West	32																									
	Niger		41																									
	Côte d'Ivoire		51																									
	Ghana	Port Tema	61																									
		South East	62																									
		South	63																									
		North East	64																									
		North	65																									
		Upper East	66																									
	Bénin	South	71																									
		North	72																									
	Nigeria		81																									
	Other West African Countries		82																									
	Other Countries		83																									
	Total			6	427,601	9,700	25,410	72,768	9,640	13,926	530																	559,579

Note: No railway is operating

Source: Study Team

Table A6-9 O/D Matrix of Passengers in 2012

(Unit: AADT, people/day)

Origin		Destination		1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1			131	125	74	67	46			423		18										2			887
		Maritime (Lomé)	2		1,236,618	8,841	7,524	5,616	1,075	1,070	154	181	1,868	7	867							4		4,955	65	266			1,269,110
		Maritime (West)	3		8,841	19,357	1,726	986	150	146	20									36								31,261
		Maritime (East)	4		7,524	1,726	67,852	1,392	247	246	36		42		23					117				92		39			79,335
		Plateaux	5	9	5,616	986	1,392	208,872	827	712	85							36						46	86				218,667
		Centrale	6	15	1,075	150	247	827	26,827	880	49									15				1	17				30,103
		Kara	7	7	1,070	146	246	712	880	39,485	81		12		43						19			5	2,014				44,720
		Savanes	8	23	154	20	36	85	49	81	1,880													26	9				2,362
	Mali		21		198								9	436	169	552								71			31		1,467
	Burkina Faso	East	31	59	84		5					52			833	805								25		7			1,871
		West	32		3							486			82	1,222													1,792
	Niger		41	6	308							128	308	6		258								395	1,509	1,765		2	4,685
	Côte d'Ivoire		51		5							1,048	1,932	1,470	898	24,845								1,199		391			31,789
	Ghana	Port Tema	61																										
		South East	62		53	47	121											16,647			16,597			212		3,041	83		36,801
		South	63			11	557	6	11	7					3									82	64	968			1,709
		North East	64																										
		North	65						4	15								21,013			631								21,664
		Upper East	66																										
	Bénin	South	71	59	6,900	25	290	44	22	5	2	189	208		350	797		302	68			2	25,049	2,732	1,185	3		38,231
		North	72		1			66	58	1,703					3,039								1,564					6,431
	Nigeria		81		37								1		1,236	328		1,750	1,604				671		3			5,630
	Other West African Countries		82										1		155										27	45	1	229
	Other Countries		83																							1		1
	Total			178	1,268,485	31,440	80,121	218,679	30,216	44,396	2,307	2,085	4,804	1,919	7,716	28,807		39,749	1,825	15	17,251	2	34,395	6,495	7,696	163	3	1,828,745

Note: No railway is operating

Source: Study Team

Table A6-10 O/D Matrix of Freight in 2012

(Unit: 1,000 tonnes/year)

Origin		Destination		Destination																								
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		641	88	1,256	224	104	116	55	104	537		180			767										4,073
		Maritime (Lomé)	2	162	7,060	1,206	925	643	129	126	27	24	9		51	1		148			23		15	12				10,560
		Maritime (West)	3	32	1,069	137	226	109	16	15	3	5	2		10	0		30			5		3	2				1,663
		Maritime (East)	4	54	796	226	426	140	25	24	4	20	731		200	0		423			7		231	4				3,312
		Plateaux	5	87	561	115	149	1,574	94	77	13	12	4		25	1		75			11		7	6	0			2,810
		Centrale	6	237	111	18	28	108	309	141	14	5	2		11	0		34			5		3	3	0			1,029
		Kara	7	48	99	15	24	74	118	329	14	6	2		13	2		39			6		4	3	0			797
		Savanes	8	19	21	4	6	16	11	20	251	2	1		4	1		12			2		1	1	0			373
	Mali		21		4	1	1	2	1	1	0		22	43	10	191	11	7			0		4	1	1	8	11	318
	Burkina Faso	East	31	175	51	11	17	27	13	14	5	4			34	31	33	48			15		23	2	0	1	6	511
		West	32	2	2	1	1	1	1	1	0	100			5	12	5	4			2					0	1	137
	Niger		41	0	0	0	0	0	0	0	0	0	5	0		6		74			1		9	27	117	50	2	290
	Côte d'Ivoire		51		5	1	2	2	1	1	0	982	146	140	54	13,205		230			5		1	0	5	0		14,780
	Ghana	Port Tema	61									39	257	14	76			18,625			450							19,461
		South East	62		69	14	23	35	16	19	6	48	107		53	16	379						0		2	0		786
		South	63																									
		North East	64																									
		North	65		8	2	3	4	2	2	1	0	11		3	2	4,284							0				4,320
		Upper East	66																									
	Bénin	South	71		11	2	4	6	3	3	1	178	235	2	526	3		4			1		3,432	890				5,300
		North	72		2	0	1	1	0	1	0	109	15	1	14	2		3			0		165					314
	Nigeria		81		9	2	3	5	2	2	1	2	87	7	116	368		18					3					625
	Other West African Countries		82									8	0	0	0			0										9
	Other Countries		83									134	85	7	69													295
	Total			816	10,520	1,842	3,095	2,972	844	891	394	1,782	2,256	215	1,454	13,842	4,712	20,541			533		3,901	951	124	59	19	71,762

Note: No railway is operating

Source: Study Team

Appendix 6-2 Future O/D Matrices in 2018

Table A6-11 O/D Matrix of All Vehicle Types in 2018 (Except motorcycles)

(Unit: AADT, veh./day)

Origin		Destination		Destination																								
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		149	34	291	59	32	32	16	24	211		50		5		9						2			914
		Maritime (Lomé)	2	28	133,515	1,945	1,539	1,167	240	241	91	15	108	5	60	0	37		166				1,579	18	86			140,840
		Maritime (West)	3	7	1,905	4,164	467	278	46	45	16	2	4		5	0	8		43				1	1				6,991
		Maritime (East)	4	11	1,506	467	10,742	342	65	65	24	5	146		44	0	16		60				91	1	13			13,599
		Plateaux	5	18	1,150	281	346	29,610	200	175	55	4	9		10	0	13		52				25	25	0			31,973
		Centrale	6	95	237	47	67	205	3,943	210	34	2	4		5	0		1	4				3	6	0			4,860
		Kara	7	11	234	45	66	174	202	5,684	50	2	18		25	1		1	11				3	618	0			7,143
		Savanes	8	10	88	17	25	56	33	52	806	1	3		3	0		1	2				9	2	0			1,107
	Mali		21		8	0	0	1	0	0	0		16	75	11	123	79		113		21		8	0	0	11	4	472
	Burkina Faso	East	31	85	54	3	8	8	4	4	2	3			108	62	15	8	71		5		23	1	5	0	2	470
		West	32	1	2	0	0	0	0	0	0	110			4	95	2		4		0					0	0	218
	Niger		41	3	29	0	0	0	0	0	0	9	116	3		18	8	5	40		3		71	445	666	16	2	1,434
	Côte d'Ivoire		51		3	0	0	1	0	0	0	334	114	134	47	4,062	5						41	0	32	0		4,775
	Ghana	Port Tema	61	35	119	23	104	22				72	57	1	17	6		1,902	12,159		272	91						14,882
		South East	62	0	8	2	4	2	1	1	1						1,989	13,418	7,929	7	39		13		1	0		23,413
		South	63	8	184	40	105	52				150	45	1	15		4,570	8,218	189	23	569	347	15	2	76			14,608
		North East	64															4	100		26							130
		North	65									11	6	0	4		316	10	733		527	136		0				1,743
		Upper East	66														194	5	372		177							749
	Bénin	South	71	23	1,949	12	98	22	3	5	3	59	86	1	232	65		81	32		0	1	1,021	841	412	1		4,947
		North	72		2	0	0	16	11	605	0	31	4	0	941	1		1			0		359					1,970
	Nigeria		81		13	1	1	1	1	1	0	1	26	2	463	146		16	152				364					1,189
	Other West African Countries		82									3	1	0	7			0							22		1	33
	Other Countries		83									27	18	1	14											1		60
	Total			335	141,155	7,081	13,862	32,017	4,780	7,121	1,099	862	990	223	2,065	4,580	7,257	23,669	22,240	30	1,638	574	3,627	1,960	1,317	30	8	278,522

Note: No railway is operating

Source: Study Team

Table A6-12 O/D Matrix of Passenger Cars and Taxies in 2018

(Unit: AADT, veh./day)

Origin			Destination	1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1			11	11	7	7	5			68		1				2						2			114
		Maritime (Lomé)	2		112,077	1,281	1,012	777	160	162	60	3	45	5	19				88				1,508	15	84			117,298
		Maritime (West)	3		1,281	3,488	308	186	31	31	11								19									5,355
		Maritime (East)	4		1,012	308	9,006	232	45	45	17		1						33				40		13			10,752
		Plateaux	5	1	777	186	232	24,727	133	117	37								23				23	2				26,257
		Centrale	6	2	160	31	45	133	3,261	130	21								4					2				3,787
		Kara	7	1	162	31	45	117	130	4,740	33		13						11				2	511				5,796
		Savanes	8	3	60	11	17	37	21	33	559								2				8	2				752
	Mali		21		2								9	46	2	34							2			8		104
	Burkina Faso	East	31		24										42	27			5				10		3			112
		West	32									63				35			0									98
	Niger		41	2	13							3	68	1		3			1				49	429	609		1	1,181
	Côte d'Ivoire		51		1								26	30	2								13		13			85
	Ghana	Port Tema	61									0	8	0	0			1,040	7,644		5	5						8,704
		South East	62	0	8	2	4	2									982	5,701	3,309		21		13					10,043
		South	63	1	141	30	76	41				0	8	0	0		2,562	3,272	141	10	135	41	13		53			6,525
		North East	64																5		5							10
		North	65														148	10	135		159	14						466
		Upper East	66														5	5	28		22							61
	Bénin	South	71	23	1,860	11	83	18		4	3		9		57	43		73	32			1		464	374	1		3,057
		North	72		1			2	6	506					929								211					1,655
	Nigeria		81		10								2		416	28		10	112				335					913
	Other West African Countries		82										1												22		1	23
	Other Countries		83																							1		1
	Total			31	117,590	5,389	10,839	26,279	3,793	5,773	741	71	257	83	1,470	172	3,698	10,111	11,595	10	348	61	2,228	1,426	1,175	11	2	203,152

Note: No railway is operating

Source: Study Team

Table A6-13 O/D Matrix of Buses in 2018

(Unit: AADT, veh./day)

Origin			Destination	1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1			2	3	2	2	1			7		5				1									23
		Maritime (Lomé)	2		19,713	267	262	215	44	44	16	5	48		21				59				67		2			20,762
		Maritime (West)	3		267	613	69	51	9	8	3								19									1,039
		Maritime (East)	4		262	69	1,584	64	12	12	4		2		2				17				7					2,035
		Plateaux	5	0	215	51	64	4,349	37	32	10								26					21				4,805
		Centrale	6	0	44	9	12	37	574	33	6												2	3				719
		Kara	7	0	44	8	12	32	33	834	9				20									105				1,098
		Savanes	8	1	16	3	4	10	6	9	98																	147
	Mali		21		5								1	16	6	19			1				5					54
	Burkina Faso	East	31	3	16		2					2			55	23			2				4		2			109
		West	32		1							18			3	56			0									77
	Niger		41	1	15							5	46	1		13			2				19	8	20			131
	Côte d'Ivoire		51									38	44	62	28								27		17			216
	Ghana	Port Tema	61															446	2,578									3,024
		South East	62						1	1	1						346	6,887	4,173		5							11,415
		South	63	0	20	5	7	8				4	8		4		1,247	4,102	42	10	111	60	2	2	23			5,655
		North East	64															4	6									10
		North	65																165		153	25						342
		Upper East	66																25		20							44
	Bénin	South	71		86		13	2	2			9	6		15	20		7						114	38			313
		North	72					13	5	98					8								95					219
	Nigeria		81												11	14			40				28					93
	Other West African Countries		82												6													6
	Other Countries		83																									
	Total			6	20,705	1,028	2,033	4,783	723	1,074	147	80	162	79	184	145	1,594	11,446	7,157	10	289	85	255	254	102			52,338

Note: No railway is operating

Source: Study Team

Table A6-14 O/D Matrix of Light Trucks in 2018

(Unit: AADT, veh./day)

Origin				Destination																									
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		27	2	30	5	2	3	2	3	18		7				0									100
		Maritime (Lomé)	2	2	253	50	34	23	5	5	2	1	2		2	0			4				1	0				383
		Maritime (West)	3	0	49	11	13	6	1	1	0	0	1		0	0			2				0	0				85
		Maritime (East)	4	1	31	12	24	7	1	1	0	0	11		3	0			1				4	0				98
		Plateaux	5	1	25	7	8	119	5	4	2	0	1		1	0			2				1	0	0			177
		Centrale	6	6	6	1	2	8	31	10	2	0	1		0	0		1					0	0	0			69
		Kara	7	0	4	1	1	4	6	22	2	0	1		0	0		1					0	0	0			44
		Savanes	8	0	2	1	1	2	1	2	39	0	0		0	0		1					0	0	0			51
	Mali		21		0	0	0	0	0	0	0		1	3	1	8							0	0	0	0	1	14
	Burkina Faso	East	31	4	3	1	1	1	1	1	0	0			4	1		8	32		3		1	0	0	0	0	61
		West	32	0	0	0	0	0	0	0	0	3			1	1										0	0	5
	Niger		41	0	0	0	0	0	0	0	0	0	0	0		1		5	21		2		1	1	9	5	0	44
	Côte d'Ivoire		51		0	0	0	0	0	0	0	62	9	9	3	843							0	0	0	0		928
	Ghana	Port Tema	61									2	11		9			182	754		20							978
		South East	62														185	580	214				0		0	0		979
		South	63									1	7		6		260	483	7		96	10						871
		North East	64																69		17							85
		North	65									1	4		3		12		138		65	37		0				261
		Upper East	66																31									31
	Bénin	South	71		1	0	0	0	0	0	0	5	15	0	34	0		0			0		157	41				254
		North	72		0	0	0	0	0	0	0	3	1	0	1	0		0			0		7					13
	Nigeria		81		1	0	0	0	0	0	0	0	3	0	10	10		1					0					26
	Other West African Countries		82									1	0	0	0			0										1
	Other Countries		83									5	4	0	3													11
	Total			15	403	86	115	176	55	50	50	87	90	12	90	865	456	1,262	1,275		204	47	173	43	10	5	1	5,570

Note: No railway is operating

Source: Study Team

Table A6-15 O/D Matrix of Heavy Trucks in 2018

(Unit: AADT, veh./day)

Origin				Destination																									
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		45	7	111	18	8	9	5	5	38		10		5		0									261
		Maritime (Lomé)	2	10	678	162	108	70	14	14	6	3	6		8	0	37		3				2	1				1,123
		Maritime (West)	3	3	144	24	36	16	2	2	1	1	2		2	0	8		1				0	0				242
		Maritime (East)	4	4	94	36	59	18	3	3	1	2	64		18	0	16		1				20	0				341
		Plateaux	5	6	62	17	20	191	12	9	3	1	4		4	0	13		1				1	1	0			345
		Centrale	6	39	12	3	4	13	36	17	2	1	2		2	0							0	0	0			131
		Kara	7	3	11	2	3	9	15	40	3	1	2		2	0							0	0	0			93
		Savanes	8	2	4	1	1	3	2	4	51	0	1		1	0							0	0	0			72
	Mali		21		0	0	0	0	0	0	0		3	5	1	27	3		7		0		0	0	0	1	1	50
	Burkina Faso	East	31	29	5	1	2	3	1	2	1	0			3	4	15		31		2		3	0	0	0	1	103
		West	32	0	0	0	0	0	0	0	0	12			0	1	2		4		0					0	0	20
	Niger		41	0	0	0	0	0	0	0	0	0	1	0		1	8		17		1		1	3	12	5	0	48
	Côte d'Ivoire		51		0	0	0	0	0	0	0	106	16	15	6	1,454	5						0	0	0	0		1,604
	Ghana	Port Tema	61	2	18	5	9	7				9	37	1	7	6		132	329		69	34						666
		South East	62														284	126	95	7	6		0		0	0		518
		South	63									5	21	1	4		132	164		2	34	13						375
		North East	64																12		4							16
		North	65									1	2	0	0		24		39		21	12		0				99
		Upper East	66														13		23		15							51
	Bénin	South	71		1	0	0	1	0	0	0	21	25	0	57	0		0			0		399	103				609
		North	72		0	0	0	0	0	0	0	13	2	0	1	0		0			0		20					38
	Nigeria		81		1	0	0	0	0	0	0	0	10	1	12	44		2					0					72
	Other West African Countries		82									1	0	0	0			0										1
	Other Countries		83									10	6	1	5													22
	Total			98	1,077	260	353	352	95	101	74	193	241	24	147	1,538	564	424	564	9	153	59	447	110	13	6	2	6,904

Note: No railway is operating

Source: Study Team

Table A6-16 O/D Matrix of Trailers in 2018

(Unit: AADT, veh./day)

Origin		Destination		Destination 1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		45	7	112	18	8	9	5	5	38		10				5									262
		Maritime (Lomé)	2	10	684	164	109	71	14	14	6	3	7		8	0			12				2	1				1,104
		Maritime (West)	3	3	146	24	36	17	2	2	1	1	2		2	0			2				0	0				238
		Maritime (East)	4	4	94	37	60	19	3	3	1	2	65		19	0			7				20	0				334
		Plateaux	5	6	62	17	20	193	12	10	3	1	4		4	0			1				1	1	0			334
		Centrale	6	40	12	3	4	13	36	17	2	1	2		2	0							0	0	0			132
		Kara	7	3	11	2	3	9	15	41	3	1	2		2	0							0	0	0			94
		Savanes	8	2	4	1	1	3	2	4	52	0	1		1	0							0	0	0			73
	Mali		21		0	0	0	0	0	0	0		3	5	1	27	75		105		20		0	0	0	1	1	240
	Burkina Faso	East	31	29	5	1	2	3	1	2	1	0			3	4							3	0	0	0	1	57
		West	32	0	0	0	0	0	0	0	0	12			0	1										0	0	15
	Niger		41	0	0	0	0	0	0	0	0	0	1	0		1							1	3	12	5	0	23
	Côte d'Ivoire		51		0	0	0	0	0	0	0	107	16	16	6	1,467							0	0	0	0		1,614
	Ghana	Port Tema	61	33	101	18	95	15				61						102	853		178	52						1,509
		South East	62														191	124	137		6		0		0	0		458
		South	63	8	23	4	22	3				140					369	197			193	224						1,182
		North East	64																8									8
		North	65									10					133		255		129	48		0				575
		Upper East	66														177		265		119							561
	Bénin	South	71		1	0	0	1	0	0	0	22	25	0	58	0		0			0		402	104				615
		North	72		0	0	0	0	0	0	0	13	2	0	2	0		0			0		20					38
	Nigeria		81		1	0	0	0	0	0	0	0	10	1	12	44		2					0					73
	Other West African Countries		82									1	0	0	0			0										1
	Other Countries		83									10	6	1	5													22
	Total			137	1,192	280	464	366	96	102	74	390	182	22	136	1,547	945	425	1,649		646	324	452	111	13	6	2	9,562

Note: No railway is operating

Source: Study Team

Table A6-17 O/D Matrix of Container Trailers in 2018

(Unit: AADT, veh./day)

Origin		Destination		Destination																								
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		33	4	24	9	4	5	4	12	42		18													154
		Maritime (Lomé)	2	6	110	22	16	11	2	2	1	0	0		1	0							0	0				171
		Maritime (West)	3	1	18	4	5	2	0	0	0	0	0		0	0							0	0				31
		Maritime (East)	4	2	13	5	9	3	0	0	0	0	4		1	0							1	0				39
		Plateaux	5	5	9	2	3	31	2	1	0	0	0		0	0							0	0	0			55
		Centrale	6	7	2	0	1	2	6	2	0	0	0		0	0							0	0	0			21
		Kara	7	3	2	0	0	1	2	7	0	0	0		0	0							0	0	0			17
		Savanes	8	2	1	0	0	0	0	1	7	0	0		0	0							0	0	0			12
	Mali		21		0	0	0	0	0	0	0		0	0	0	8							0	0	0	0	0	10
	Burkina Faso	East	31	21	1	0	0	1	0	0	0	0			1	2							1	0	0	0	0	28
		West	32	0	0	0	0	0	0	0	0	2			0	0										0	0	3
	Niger		41	0	0	0	0	0	0	0	0	0	0	0		0							0	1	4	2	0	7
	Côte d'Ivoire		51		0	0	0	0	0	0	0	21	3	3	1	297							0	0	0	0		327
	Ghana	Port Tema	61																									
		South East	62																				0		0	0		0
		South	63																									
		North East	64																									
		North	65																					0				0
		Upper East	66																									
	Bénin	South	71		0	0	0	0	0	0	0	3	6	0	11	0		0			0		63	15				99
		North	72		0	0	0	0	0	0	0	2	0	0	0	0		0			0		6					8
	Nigeria		81		0	0	0	0	0	0	0	0	1	0	2	6		1					0					11
	Other West African Countries		82									0	0	0	0			0										0
	Other Countries		83									1	1	0	1													4
	Total			48	189	38	58	61	18	20	14	42	59	3	38	314		1			0		72	16	4	2	1	996

Note: No railway is operating

Source: Study Team

Table A6-18 O/D Matrix of Motorcycles in 2018

(Unit: AADT, veh./day)

Origin				Destination																									
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1			36	25	10	7	5																		83
		Maritime (Lomé)	2		522,305	4,209	2,243	1,123	169	155	47																	530,251
		Maritime (West)	3		4,209	16,253	924	318	35	31	9																	21,780
		Maritime (East)	4		2,243	924	41,968	345	47	43	13																	45,583
		Plateaux	5	1	1,123	318	345	115,233	192	143	33																	117,388
		Centrale	6	2	169	35	47	192	15,195	293	24																	15,957
		Kara	7	1	155	31	43	143	293	22,090	43																	22,799
		Savanes	8	2	47	9	13	33	24	43	2,604																	2,775
	Mali		21																									
	Burkina Faso	East	31																									
		West	32																									
	Niger		41																									
	Côte d'Ivoire		51																									
	Ghana	Port Tema	61																									
		South East	62																									
		South	63																									
		North East	64																									
		North	65																									
		Upper East	66																									
	Bénin	South	71																									
		North	72																									
	Nigeria		81																									
	Other West African Countries		82																									
	Other Countries		83																									
	Total			6	530,251	21,816	45,608	117,397	15,962	22,803	2,773																	756,616

Note: No railway is operating

Source: Study Team

Table A6-19 O/D Matrix of Passengers in 2018

(Unit: AADT, people/day)

Origin		Destination		Destination																								
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1			131	125	74	67	46			423		18										2			887
		Maritime (Lomé)	2		1,528,196	15,405	11,252	7,932	1,538	1,522	544	181	1,868	7	867						4		4,955	65	266			1,574,602
		Maritime (West)	3		15,405	47,555	3,639	1,963	303	293	102								36									69,295
		Maritime (East)	4		11,252	3,639	122,794	2,380	427	424	153		42		23				117				92		39			141,380
		Plateaux	5	9	7,932	1,963	2,380	337,156	1,353	1,158	342							36					46	86				352,460
		Centrale	6	15	1,538	303	427	1,353	44,459	1,449	202									15			1	17				49,779
		Kara	7	7	1,522	293	424	1,158	1,449	64,633	328		12		43						19		5	2,014				71,907
		Savanes	8	23	544	102	153	342	202	328	7,620												26	9				9,348
	Mali		21		198								9	436	169	552							71			31		1,467
	Burkina Faso	East	31	59	84		5					52			833	805							25		7			1,871
		West	32		3							486			82	1,222												1,792
	Niger		41	6	308							128	308	6		258							395	1,509	1,765		2	4,685
	Côte d'Ivoire		51		5							1,048	1,932	1,470	898	24,845							1,199		391			31,789
	Ghana	Port Tema	61																									
		South East	62		53	47	121											16,647			16,597		212		3,041	83		36,801
		South	63			11	557	6	11	7					3								82	64	968			1,709
		North East	64																									
		North	65						4	15								21,013			631							21,664
		Upper East	66																									
	Bénin	South	71	59	6,900	25	290	44	22	5	2	189	208		350	797		302	68			2	25,049	2,732	1,185	3		38,231
		North	72		1			66	58	1,703					3,039								1,564					6,431
	Nigeria		81		37								1		1,236	328		1,750	1,604				671		3			5,630
	Other West African Countries		82										1		155										27	45	1	229
	Other Countries		83																							1		1
	Total			178	1,573,977	69,473	142,167	352,472	49,893	71,583	9,292	2,085	4,804	1,919	7,716	28,807		39,749	1,825	15	17,251	2	34,395	6,495	7,696	163	3	2,421,958

Note: No railway is operating

Source: Study Team

Table A6-20 O/D Matrix of Freights in 2018

(Unit: 1,000 tonnes/year)

Origin			Destination	1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		790	117	1,486	281	131	145	89	148	782		259			769										4,995
		Maritime (Lomé)	2	165	8,860	2,078	1,387	916	186	181	75	34	80		101	2		264			31		20	16				14,394
		Maritime (West)	3	40	1,845	314	460	211	31	29	11	9	21		25	0		69			8		4	4				3,081
		Maritime (East)	4	64	1,202	465	771	238	42	40	15	25	774		223	1		482			12		241	6				4,600
		Plateaux	5	105	805	221	252	2,533	153	123	39	18	44		54	1		147			17		9	9	0			4,532
		Centrale	6	514	161	35	48	170	483	221	33	8	20		25	1		67			8		4	4	0			1,802
		Kara	7	62	142	30	42	120	193	536	42	10	23		29	3		78			9		5	5	0			1,329
		Savanes	8	41	57	12	17	42	29	49	673	6	15		18	2		48			6		3	3	0			1,020
	Mali		21		5	1	2	3	1	2	1		30	60	12	382	24	10			0		6	2	2	15	19	577
	Burkina Faso	East	31	499	73	17	26	41	19	21	11	6			47	63	71	75			23		46	2	0	2	9	1,052
		West	32	3	4	1	1	2	1	1	1	152			7	20	12	6			3					0	1	214
	Niger		41	0	0	0	0	0	0	0	0	1	7	0		9		112			1		13	41	177	75	3	439
	Côte d'Ivoire		51		7	1	2	4	2	2	1	1,439	216	208	82	19,720		349			8		2	1	7	0		22,050
	Ghana	Port Tema	61									56	375	21	109			28,113			680							29,352
		South East	62		96	24	35	53	24	28	16	73	161		80	24	575						0		3	0		1,191
		South	63																									
		North East	64																									
		North	65		11	3	4	6	3	3	2	0	16		4	3	6,501							0				6,556
		Upper East	66																									
	Bénin	South	71		15	4	6	8	4	4	2	270	343	3	773	5		6			1		5,207	1,333				7,985
		North	72		3	1	1	1	1	1	0	166	22	2	20	3		4			0		283					508
	Nigeria		81		13	3	4	7	3	4	1	3	132	11	165	559		28					4					937
	Other West African Countries		82									12	0	0	0			1										13
	Other Countries		83									196	129	11	104													440
	Total			1,494	14,089	3,327	4,546	4,635	1,305	1,391	1,010	2,631	3,189	315	2,136	20,799	7,183	30,626			805		5,849	1,424	189	92	32	107,067

Note: No railway is operating

Source: Study Team

Appendix 6-3 Future O/D Matrices in 2030

Table A6-21 O/D Matrix of All Vehicle Types in 2030 (Except motorcycles)

(Unit: AADT, veh./day)

Origin				Destination																									
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		281	54	426	110	57	57	40	54	491		117		4	0	10	0	0	0			5			1,704
		Maritime (Lomé)	2	37	289,504	3,831	3,493	2,605	568	491	248	35	249	11	139	1	27	0	232	0	0	0	3,381	41	184			305,077
		Maritime (West)	3	9	3,731	6,679	917	533	93	79	38	4	12		12	0	6	0	60	0	0	0	2	2				12,176
		Maritime (East)	4	14	3,399	918	23,367	762	153	132	66	12	363		109	0	12	0	82	0	0	0	210	3	29			29,632
		Plateaux	5	24	2,550	539	769	63,046	466	350	147	9	28		28	1	10	0	74	0	0	0	53	54	0			68,148
		Centrale	6	395	554	95	156	474	9,447	445	94	4	13		13	0	0	1	5	0	0	0	6	12	0			11,716
		Kara	7	14	472	79	133	349	434	10,108	124	5	42		56	2	0	1	16	0	0	0	6	1,322	0			13,163
		Savanes	8	12	237	39	67	147	91	126	3,155	4	11		11	1	0	1	2	0	0	0	20	6	0			3,929
	Mali		21		19	1	1	1	1	1	1		32	156	23	253	65	0	91	0	0	0	18	1	1	24	8	698
	Burkina Faso	East	31	193	124	9	19	21	10	11	6	7			232	131	10	5	60	0	5	0	49	1	12	1	4	910
		West	32	1	4	0	1	1	0	1	0	249			9	203	1	0	3	0	0	0				0	1	476
	Niger		41	7	62	0	0	0	0	0	0	19	248	6		39	5	4	33	0	3	0	154	957	1,447	44	4	3,031
	Côte d'Ivoire		51		7	1	1	2	1	1	0	802	260	305	109	10,318	4	0	0	0	0	0	88	0	70	0		11,970
	Ghana	Port Tema	61	24	80	16	70	15	0	0	0	60	48	1	12	4	0	2,388	15,107	0	198	66						18,088
		South East	62	0	10	2	6	3	1	2	1	0	0	0	0	0	2,207	17,062	10,072	7	47	0	29		1	0		29,450
		South	63	6	239	52	130	70	0	0	0	131	42	1	13	0	5,462	10,329	231	29	547	296	32	4	163			17,776
		North East	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	67	0	20	0						92
		North	65	0	0	0	0	0	0	0	0	1	4	0	2	0	278	13	614	0	556	117		0				1,585
		Upper East	66	0	0	0	0	0	0	0	0	0	0	0	0	0	141	7	249	0	141	0						538
	Bénin	South	71	49	4,173	26	209	48	6	11	8	153	206	2	550	140		174	68		0	2	2,605	1,913	882	3		11,229
		North	72		4	0	1	33	23	1,295	0	83	12	1	2,015	2		2			0		782					4,253
	Nigeria		81		29	2	3	4	2	2	1	2	70	5	996	368		37	326				781					2,626
	Other West African Countries		82									7	2	0	14			0							47		2	71
	Other Countries		83									92	70	6	57											2		226
	Total			784	305,480	12,343	29,769	68,225	11,354	13,111	3,928	1,728	2,203	493	4,515	11,464	8,232	30,029	27,405	36	1,517	482	8,216	4,317	2,841	74	19	548,564

Note: No railway is operating

Source: Study Team

Table A6-22 O/D Matrix of Passenger Cars and Taxies in 2030

(Unit: AADT, veh./day)

Origin			Destination	1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1			11	11	7	7	5			145		2				3						5			196
		Maritime (Lomé)	2		242,182	2,379	2,190	1,665	365	317	159	7	95	11	42				128				3,228	33	181			252,981
		Maritime (West)	3		2,379	5,569	573	342	61	52	25								28									9,030
		Maritime (East)	4		2,190	573	19,522	497	102	89	45		3						48				85		29			23,183
		Plateaux	5	1	1,665	342	497	52,527	299	228	96								33				49	4				55,742
		Centrale	6	2	365	61	102	299	7,811	267	58								5					4				8,974
		Kara	7	1	317	52	89	228	267	8,400	78		28						16				4	1,095				10,575
		Savanes	8	3	159	25	45	96	58	78	2,256								2				18	4				2,745
	Mali		21		4								19	98	5	73							5			18		223
	Burkina Faso	East	31		51										90	58			7				21		7			236
		West	32									135				75			0									210
	Niger		41	4	29							7	146	3		7			1				106	919	1,304		2	2,528
	Côte d'Ivoire		51		3								55	65	4								29		29			183
	Ghana	Port Tema	61									0	12	0	1			1,395	9,818		7	6						11,240
		South East	62	0	10	2	6	3									1,299	7,432	4,277		28		28					13,086
		South	63	1	196	42	106	57				0	11	0	1		3,281	4,234	173	13	172	50	29		114			8,479
		North East	64																7		7							14
		North	65														183	13	174		206	17						594
		Upper East	66														6	7	34		27							74
	Bénin	South	71	49	3,981	25	178	39		8	7		18		123	93		157	68			2		994	801	3		6,545
		North	72		3			5	13	1,084					1,988								451					3,543
	Nigeria		81		21								4		891	60		21	239				718					1,955
	Other West African Countries		82										2												47		2	50
	Other Countries		83																							2		2
	Total			60	253,556	9,081	23,319	55,766	8,983	10,529	2,724	151	538	177	3,146	367	4,770	13,258	15,062	13	447	75	4,770	3,054	2,516	23	4	412,387

Note: No railway is operating

Source: Study Team

Table A6-23 O/D Matrix of Buses in 2030

(Unit: AADT, veh./day)

Origin			Destination	1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1			2	3	2	2	1			14		10				2									37
		Maritime (Lomé)	2		42,598	496	566	460	100	86	42	10	103		45				86				143		3			44,738
		Maritime (West)	3		496	980	128	93	17	14	7								28									1,763
		Maritime (East)	4		566	128	3,434	137	28	24	12		4		5				24				14					4,376
		Plateaux	5	0	460	93	137	9,239	83	63	26								37					46				10,184
		Centrale	6	0	100	17	28	83	1,374	69	16												4	6				1,696
		Kara	7	0	86	14	24	63	69	1,478	22				42									225				2,022
		Savanes	8	1	42	7	12	26	16	22	671																	796
	Mali		21		12								2	35	13	41			2				10					114
	Burkina Faso	East	31	6	34		5					3			118	49			3				9		4			232
		West	32		3							38			6	119			0									166
	Niger		41	3	33							11	99	3		27			3				41	18	42			279
	Côte d'Ivoire		51									81	94	132	61								58		37			463
	Ghana	Port Tema	61															597	3,320									3,917
		South East	62						1	2	1						465	8,917	5,392		7							14,785
		South	63	0	28	8	10	11				6	12		5		1,594	5,316	51	13	144	73	3	4	49			7,329
		North East	64															5	8									13
		North	65																212		198	31						440
		Upper East	66																29		24							53
	Bénin	South	71		184		28	5	4			18	13		32	44		14						245	81			669
		North	72					28	10	210					18								202					468
	Nigeria		81												23	29			87				61					199
	Other West African Countries		82												14													14
	Other Countries		83																									
	Total			10	44,641	1,745	4,375	10,147	1,702	1,968	796	168	340	170	391	309	2,060	14,850	9,285	13	373	104	546	544	217			94,755

Note: No railway is operating

Source: Study Team

Table A6-24 O/D Matrix of Light Trucks in 2030

(Unit: AADT, veh./day)

Origin			Destination	1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		43	4	48	10	5	5	5	6	40		14		0	0	0	0	0	0						180
		Maritime (Lomé)	2	2	669	117	91	60	14	12	7	2	6		4	0	0	0	4	0	0	0	3	1				993
		Maritime (West)	3	0	114	22	30	14	2	2	1	0	1		1	0	0	0	2	0	0	0	1	0				192
		Maritime (East)	4	1	85	29	64	18	4	3	2	1	27		9	0	0	0	1	0	0	0	9	0				252
		Plateaux	5	1	64	16	21	256	14	10	5	1	3		2	0	0	0	2	0	0	0	1	1	0			397
		Centrale	6	28	15	3	5	17	65	21	5	1	2		1	0	0	1	0	0	0	0	1	0	0			164
		Kara	7	0	11	2	3	9	15	44	4	1	2		1	0	0	1	0	0	0	0	1	0	0			95
		Savanes	8	0	6	1	2	5	4	5	69	0	1		1	0	0	1	0	0	0	0	1	0	0			97
	Mali		21		0	0	0	0	0	0	0		3	5	2	19							0	0	0	1	1	33
	Burkina Faso	East	31	10	7	1	2	4	2	2	1	0			8	4	0	5	25	0	3	0	3	0	0	0	1	79
		West	32	0	0	0	0	0	0	0	0	9			1	2										0	0	13
	Niger		41	0	0	0	0	0	0	0	0	0	0	0		1	0	4	16	0	2	0	2	2	25	12	0	65
	Côte d'Ivoire		51		1	0	0	1	0	0	0	141	22	21	9	2,053	0	0	0	0	0	0	0	0	1	0		2,250
	Ghana	Port Tema	61	0	0	0	0	0	0	0	0	1	7		6	0	0	173	759	0	18	0						964
		South East	62	0	0	0	0	0	0	0	0	0	0		0	0	124	504	197	0	0	0	0		0	0		825
		South	63	0	0	0	0	0	0	0	0	1	5		4	0	196	447	6	0	89	12						759
		North East	64	0	0	0	0	0	0	0	0	0	0		0	0	0	0	41	0	10	0						51
		North	65	0	0	0	0	0	0	0	0	0	3		2	0	5	0	87	0	55	32		0				184
		Upper East	66	0	0	0	0	0	0	0	0	0	0		0	0	0	0	23	0	0	0						23
	Bénin	South	71		1	0	0	1	0	0	0	13	35	0	77	1		1			0		386	100				617
		North	72		0	0	0	0	0	0	0	8	2	0	1	0		1			0		20					33
	Nigeria		81		2	0	1	1	0	0	0	0	7	1	21	27		4					0					65
	Other West African Countries		82									2	0	0	0			0										2
	Other Countries		83									16	15	1	11													43
	Total			43	1,019	198	268	397	125	105	98	204	180	29	176	2,109	325	1,140	1,163	0	177	44	428	106	27	13	2	8,377

Note: No railway is operating

Source: Study Team

Table A6-25 O/D Matrix of Heavy Trucks in 2030

(Unit: AADT, veh./day)

Origin				Destination																									
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		74	13	143	31	15	16	11	10	93		23		4	0	0	0	0	0						432
		Maritime (Lomé)	2	10	1,869	392	300	194	41	35	19	7	22		23	0	27	0	3	0	0	0	3	3				2,949
		Maritime (West)	3	3	348	50	87	39	6	5	2	2	5		5	0	6	0	1	0	0	0	1	1				559
		Maritime (East)	4	4	260	88	161	51	9	8	4	5	159		46	0	12	0	1	0	0	0	49	1				859
		Plateaux	5	6	168	41	53	473	33	23	9	4	12		12	0	10	0	1	0	0	0	2	2	0			847
		Centrale	6	172	34	7	10	35	91	41	7	2	6		6	0	0	0	0	0	0	0	1	1	0			412
		Kara	7	3	27	5	8	23	38	85	9	2	6		6	1	0	0	0	0	0	0	1	1	0			215
		Savanes	8	2	13	2	4	9	7	10	72	1	5		5	0	0	0	0	0	0	0	1	1	0			132
	Mali		21		1	0	0	1	0	0	0		4	8	1	52	2	0	6	0	0	0	1	0	0	2	3	85
	Burkina Faso	East	31	72	14	3	5	8	4	4	2	1			7	8	10	0	25	0	2	0	6	0	0	0	2	174
		West	32	0	1	0	0	0	0	0	0	32			1	3	1	0	3	0	0	0				0	0	42
	Niger		41	0	0	0	0	0	0	0	0	0	1	0		2	5	0	13	0	1	0	2	8	33	13	0	80
	Côte d'Ivoire		51		1	0	0	1	0	0	0	261	40	40	16	3,732	4	0	0	0	0	0	0	0	1	0		4,099
	Ghana	Port Tema	61	1	12	3	6	5	0	0	0	7	28	1	6	4	0	125	337	0	48	31						615
		South East	62	0	0	0	0	0	0	0	0	0	0	0	0	0	195	104	88	7	7	0	0		0	0		402
		South	63	0	0	0	0	0	0	0	0	4	15	0	3	0	120	152	0	2	27	11						334
		North East	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	3	0						9
		North	65	0	0	0	0	0	0	0	0	0	1	0	0	0	10	0	26	0	17	9		0				64
		Upper East	66	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	16	0	11	0						34
	Bénin	South	71		3	1	1	2	1	1	1	57	62	1	144	1		1			0		1,025	267				1,566
		North	72		1	0	0	0	0	0	0	35	4	0	4	1		1			0		48					94
	Nigeria		81		2	1	1	1	1	1	0	1	28	2	28	118		5					1					188
	Other West African Countries		82									2	0	0	0			0										2
	Other Countries		83									35	25	2	20													82
	Total			273	2,829	605	780	872	246	230	137	467	518	55	355	3,922	413	388	527	9	116	51	1,141	285	35	16	6	14,275

Note: No railway is operating

Source: Study Team

Table A6-26 O/D Matrix of Trailers in 2030

(Unit: AADT, veh./day)

Origin				Destination																									
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		74	13	144	31	15	16	11	10	94		23		0	0	5	0	0	0						436
		Maritime (Lomé)	2	10	1,886	395	303	196	42	36	19	7	22		23	0	0	0	12	0	0	0	3	3				2,957
		Maritime (West)	3	3	351	51	88	39	6	5	2	2	5		5	0	0	0	2	0	0	0	1	1				560
		Maritime (East)	4	4	262	89	162	51	10	8	4	5	161		47	0	0	0	7	0	0	0	50	1				860
		Plateaux	5	6	169	41	53	477	33	23	9	4	12		12	0	0	0	1	0	0	0	2	2	0			845
		Centrale	6	174	35	7	10	35	91	42	7	2	6		6	0	0	0	0	0	0	0	1	1	0			416
		Kara	7	3	28	5	8	23	39	86	9	2	6		6	1	0	0	0	0	0	0	1	1	0			217
		Savanes	8	2	14	2	4	9	7	10	73	1	5		5	0	0	0	0	0	0	0	1	1	0			134
	Mali		21		1	0	0	1	0	0	0		4	9	2	52	63	0	84	0	0	0	1	0	0	2	3	224
	Burkina Faso	East	31	72	14	3	5	8	4	4	2	1			7	8							6	0	0	0	2	139
		West	32	0	1	0	0	0	0	0	0	32			1	3										0	0	38
	Niger		41	0	0	0	0	0	0	0	0	0	1	0		2							2	8	33	13	0	61
	Côte d'Ivoire		51		1	0	0	1	0	0	0	264	41	40	16	3,767	0	0	0	0	0	0	0	0	1	0		4,133
	Ghana	Port Tema	61	22	68	12	64	10	0	0	0	51				0	0	98	872	0	125	29						1,352
		South East	62	0	0	0	0	0	0	0	0	0				0	123	105	119	0	5	0	0		0	0		353
		South	63	5	15	3	14	2	0	0	0	120				0	271	180	0	0	115	150						875
		North East	64	0	0	0	0	0	0	0	0	0				0	0	0	5	0	0	0						5
		North	65	0	0	0	0	0	0	0	0	0				0	80	0	115	0	80	29		0				304
		Upper East	66	0	0	0	0	0	0	0	0	0				0	128	0	147	0	79	0						354
	Bénin	South	71		3	1	1	2	1	1	1	57	63	1	145	1		1			0		1,034	269				1,580
		North	72		1	0	0	0	0	0	0	35	5	0	4	1		1			0		48					95
	Nigeria		81		2	1	1	1	1	1	0	1	28	2	28	119		5					1					190
	Other West African Countries		82									2	0	0	0			0										2
	Other Countries		83									35	25	2	21													83
	Total			301	2,926	623	859	887	248	232	139	631	477	54	350	3,954	665	390	1,368	0	404	208	1,151	288	35	16	6	16,213

Note: No railway is operating

Source: Study Team

Table A6-27 O/D Matrix of Container Trailers in 2030

(Unit: AADT, veh./day)

Origin				Destination																								
				1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		90	11	77	28	14	14	14	28	104		44													423
		Maritime (Lomé)	2	15	300	52	43	30	6	5	3	1	1		2	0							0	0				459
		Maritime (West)	3	3	43	8	11	5	1	1	0	0	0		0	0							0	0				73
		Maritime (East)	4	6	35	11	24	7	1	1	1	0	9		3	0							3	0				102
		Plateaux	5	10	25	6	7	73	5	3	1	0	1		1	0							0	0	0			133
		Centrale	6	18	5	1	1	5	15	6	1	0	0		0	0							0	0	0			53
		Kara	7	7	4	1	1	3	5	14	1	0	0		0	0							0	0	0			38
		Savanes	8	4	2	0	1	1	1	1	13	0	0		0	0							0	0	0			25
	Mali		21		0	0	0	0	0	0	0		0	0	0	16							0	0	0	1	1	19
	Burkina Faso	East	31	33	3	1	1	2	1	1	0	0			2	3							2	0	0	0	0	50
		West	32	1	0	0	0	0	0	0	0	4			0	1										0	0	6
	Niger		41	0	0	0	0	0	0	0	0	0	0	0		1							1	1	10	5	0	18
	Côte d'Ivoire		51		0	0	0	0	0	0	0	54	8	8	3	766							0	0	0	0		842
	Ghana	Port Tema	61																									
		South East	62																				0		0	0		0
		South	63																									
		North East	64																									
		North	65																					0				0
		Upper East	66																									
	Bénin	South	71		1	0	0	0	0	0	0	7	14	0	29	0		0			0		160	39				252
		North	72		0	0	0	0	0	0	0	4	1	0	1	0		0			0		12					19
	Nigeria		81		1	0	0	0	0	0	0	0	4	0	6	15		2					0					29
	Other West African Countries		82									1	0	0	0			0										1
	Other Countries		83									6	6	0	4													16
	Total			97	510	91	168	156	49	47	34	108	150	9	96	802		2			0		180	41	11	6	1	2,557

Note: No railway is operating

Source: Study Team

Table A6-28 O/D Matrix of Motorcycles in 2030

(Unit: AADT, veh./day)

Origin		Destination		Destination 1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1			36	25	10	7	5																		83
		Maritime (Lomé)	2		1,128,622	7,818	4,854	2,406	385	303	124																	1,144,513
		Maritime (West)	3		7,818	25,954	1,720	586	68	52	20																	36,219
		Maritime (East)	4		4,854	1,720	90,976	740	106	84	35																	98,515
		Plateaux	5	1	2,406	586	740	244,788	432	277	87																	249,318
		Centrale	6	2	385	68	106	432	36,403	605	66																	38,068
		Kara	7	1	303	52	84	277	605	39,148	104																	40,574
		Savanes	8	2	124	20	35	87	66	104	7,967																	8,404
	Mali		21																									
	Burkina Faso	East	31																									
		West	32																									
	Niger		41																									
	Côte d'Ivoire		51																									
	Ghana	Port Tema	61																									
		South East	62																									
		South	63																									
		North East	64																									
		North	65																									
		Upper East	66																									
	Bénin	South	71																									
		North	72																									
	Nigeria		81																									
	Other West African Countries		82																									
	Other Countries		83																									
	Total			6	1,144,513	36,255	98,540	249,327	38,073	40,578	8,402																	1,615,694

Note: No railway is operating

Source: Study Team

Table A6-29 O/D Matrix of Passengers in 2030

(Unit: AADT, people/day)

Origin			Destination	1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1			131	125	74	67	46			423		18										2			887
		Maritime (Lomé)	2		3,302,202	28,615	24,352	16,993	3,499	2,978	1,438	181	1,868	7	867						4		4,955	65	266			3,388,291
		Maritime (West)	3		28,615	75,937	6,770	3,616	592	493	231								36									116,290
		Maritime (East)	4		24,352	6,770	266,185	5,107	973	831	404		42		23				117				92		39			304,935
		Plateaux	5	9	16,993	3,616	5,107	716,219	3,052	2,246	895							36					46	86				748,306
		Centrale	6	15	3,499	592	973	3,052	106,511	2,985	562									15			1	17				118,223
		Kara	7	7	2,978	493	831	2,246	2,985	114,542	784		12		43						19		5	2,014				126,962
		Savanes	8	23	1,438	231	404	895	562	784	30,756												26	9				35,128
	Mali		21		198								9	436	169	552							71			31		1,467
	Burkina Faso	East	31	59	84		5					52			833	805							25		7			1,871
		West	32		3							486			82	1,222												1,792
	Niger		41	6	308							128	308	6		258							395	1,509	1,765		2	4,685
	Côte d'Ivoire		51		5							1,048	1,932	1,470	898	24,845							1,199		391			31,789
	Ghana	Port Tema	61																									
		South East	62		53	47	121											16,647			16,597		212		3,041	83		36,801
		South	63			11	557	6	11	7					3								82	64	968			1,709
		North East	64																									
		North	65						4	15								21,013			631							21,664
		Upper East	66																									
	Bénin	South	71	59	6,900	25	290	44	22	5	2	189	208		350	797		302	68			2	25,049	2,732	1,185	3		38,231
		North	72		1			66	58	1,703					3,039								1,564					6,431
	Nigeria		81		37								1		1,236	328		1,750	1,604				671		3			5,630
	Other West African Countries		82										1		155										27	45	1	229
	Other Countries		83																							1		1
	Total			178	3,387,665	116,468	305,721	748,318	118,337	126,638	35,073	2,085	4,804	1,919	7,716	28,807		39,749	1,825	15	17,251	2	34,395	6,495	7,696	163	3	4,991,321

Note: No railway is operating

Source: Study Team

Table A6-30 O/D Matrix of Freights in 2030

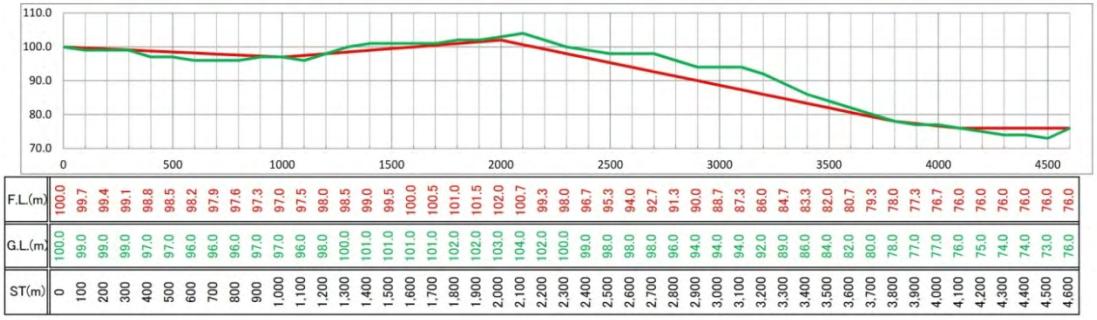
(Unit: 1,000 tonnes/year)

Origin			Destination	1	2	3	4	5	6	7	8	21	31	32	41	51	61	62	63	64	65	66	71	72	81	82	83	Total
Origin	Togo	Lomé Port	1		1,591	238	2,291	587	280	294	235	340	1,928		624			777										9,183
		Maritime (Lomé)	2	239	24,399	5,010	3,861	2,515	536	458	240	89	265		277	4		731			82		44	42				38,791
		Maritime (West)	3	53	4,431	655	1,110	500	79	64	30	20	61		62	1		170			19		8	9				7,272
		Maritime (East)	4	89	3,333	1,119	2,094	652	122	102	49	63	1,930		562	1		1,221			31		597	15				11,980
		Plateaux	5	148	2,175	523	682	6,217	424	299	119	48	145		148	4		404			45		20	22	0			11,423
		Centrale	6	2,148	448	86	133	451	1,206	534	96	23	70		71	2		194			22		9	10	0			5,503
		Kara	7	88	356	66	105	294	495	1,130	121	24	72		73	8		200			23		10	11	0			3,074
		Savanes	8	56	177	32	53	122	87	127	987	19	57		57	5		155			17		8	8	0			1,966
	Mali		21		14	3	5	8	4	4	3		53	104	21	733	43	27			0		16	5	4	32	43	1,120
	Burkina Faso	East	31	1,096	194	43	69	108	52	54	32	16			100	122	131	192			58		92	6	1	4	23	2,395
		West	32	6	9	2	3	5	2	3	2	402			15	45	22	14			7					0	3	541
	Niger		41	0	1	0	0	0	0	0	0	1	19	1		23		298			4		35	108	472	201	7	1,171
	Côte d'Ivoire		51		19	4	6	10	4	5	2	3,544	549	536	215	50,564		917			20		5	1	20	0		56,421
	Ghana	Port Tema	61									128	925	51	264			73,895			1,786							77,050
		South East	62		257	58	95	140	67	70	48	191	412		213	64	1,534						1		7	0		3,157
		South	63																									
		North East	64																									
		North	65		30	7	11	16	8	8	6	0	41		12	9	17,353							0				17,499
		Upper East	66																									
	Bénin	South	71		41	9	15	22	10	11	7	722	856	8	1,942	14		17			2		13,355	3,452				20,484
		North	72		7	2	3	4	2	2	1	443	60	5	48	8		10			1		664					1,261
	Nigeria		81		35	7	12	18	8	10	4	8	351	29	379	1,492		75					11					2,440
	Other West African Countries		82									32	1	0	1			1										35
	Other Countries		83									456	341	28	279													1,105
	Total			3,924	37,516	7,864	10,547	11,669	3,386	3,173	1,980	6,572	8,136	763	5,363	53,101	19,082	79,297			2,118		14,875	3,690	504	238	76	273,874

Note: No railway is operating

Source: Study Team

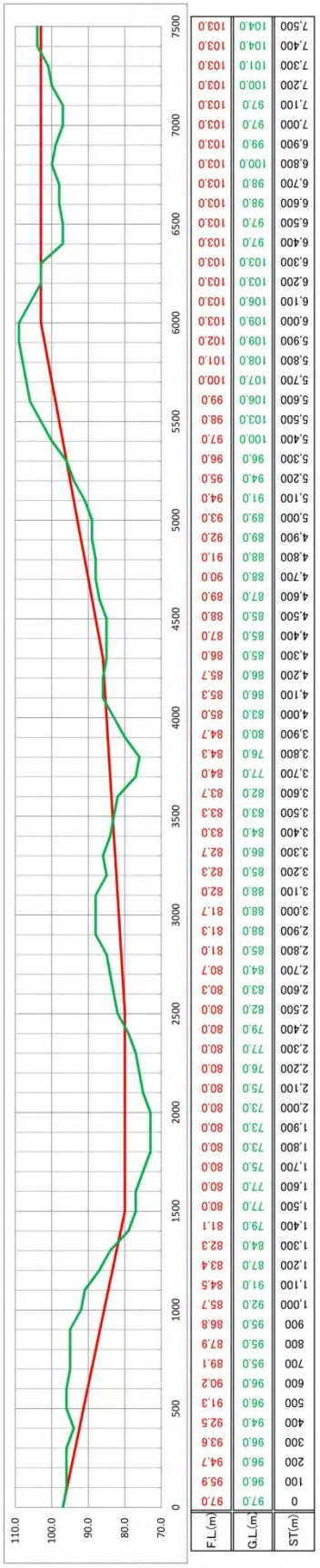
Appendix 7 Proposed Alignment of Railway



ST(m)	0	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100	4,200	4,300	4,400	4,500	4,600
F.L.(m)	100.0	99.7	99.4	99.1	98.8	98.5	98.2	97.9	97.6	97.3	97.0	97.5	98.0	98.5	99.0	99.5	100.0	100.5	101.0	101.5	102.0	100.7	99.3	98.0	96.7	95.3	94.0	92.7	91.3	90.0	88.7	87.3	86.0	84.7	83.3	82.0	80.7	79.3	78.0	77.3	76.7	76.0	76.0	76.0	76.0	76.0	76.0
G.L.(m)	100.0	99.0	99.0	99.0	97.0	97.0	96.0	96.0	96.0	97.0	97.0	96.0	98.0	100.0	101.0	101.0	101.0	101.0	102.0	102.0	103.0	104.0	102.0	100.0	99.0	98.0	98.0	98.0	96.0	94.0	94.0	94.0	92.0	89.0	86.0	84.0	82.0	80.0	78.0	77.0	77.0	76.0	75.0	74.0	74.0	73.0	76.0

Source: Study Team

Figure A7-1 Proposed Railway Alignment at Tsévié



ST(m)	G.L.(m)	F.L.(m)
0	97.0	97.0
100	96.0	95.9
200	96.0	94.7
300	96.0	93.6
400	94.0	92.5
500	96.0	91.3
600	96.0	90.2
700	95.0	89.1
800	95.0	87.9
900	95.0	86.8
1,000	92.0	85.7
1,100	91.0	84.5
1,200	87.0	83.4
1,300	84.0	82.3
1,400	79.0	81.1
1,500	77.0	80.0
1,600	77.0	80.0
1,700	75.0	80.0
1,800	73.0	80.0
1,900	73.0	80.0
2,000	73.0	80.0
2,100	75.0	80.0
2,200	76.0	80.0
2,300	77.0	80.0
2,400	79.0	80.0
2,500	82.0	80.0
2,600	83.0	80.3
2,700	84.0	80.7
2,800	85.0	81.0
2,900	88.0	81.3
3,000	88.0	81.7
3,100	88.0	82.0
3,200	85.0	82.3
3,300	86.0	82.7
3,400	84.0	83.0
3,500	83.0	83.3
3,600	82.0	83.7
3,700	77.0	84.0
3,800	76.0	84.3
3,900	80.0	84.7
4,000	83.0	85.0
4,100	86.0	85.3
4,200	86.0	85.7
4,300	85.0	86.0
4,400	85.0	87.0
4,500	85.0	88.0
4,600	87.0	89.0
4,700	88.0	90.0
4,800	88.0	91.0
4,900	89.0	92.0
5,000	89.0	93.0
5,100	91.0	94.0
5,200	94.0	95.0
5,300	96.0	96.0
5,400	100.0	97.0
5,500	103.0	98.0
5,600	106.0	99.0
5,700	107.0	100.0
5,800	108.0	101.0
5,900	109.0	102.0
6,000	109.0	103.0
6,100	106.0	103.0
6,200	103.0	103.0
6,300	103.0	103.0
6,400	97.0	103.0
6,500	97.0	103.0
6,600	98.0	103.0
6,700	98.0	103.0
6,800	100.0	103.0
6,900	99.0	103.0
7,000	97.0	103.0
7,100	97.0	103.0
7,200	100.0	103.0
7,300	101.0	103.0
7,400	104.0	103.0
7,500	104.0	103.0

Figure A7-2 Proposed Railway Alignment at Amakpavé

Source: Study Team

Figure A7-3 Proposed New Railway Route Alignment (1)

Figure A7-3 Proposed New Railway Route Alignment (2)

Appendix 8 Plans and Profile of the Malfakassa Bypass

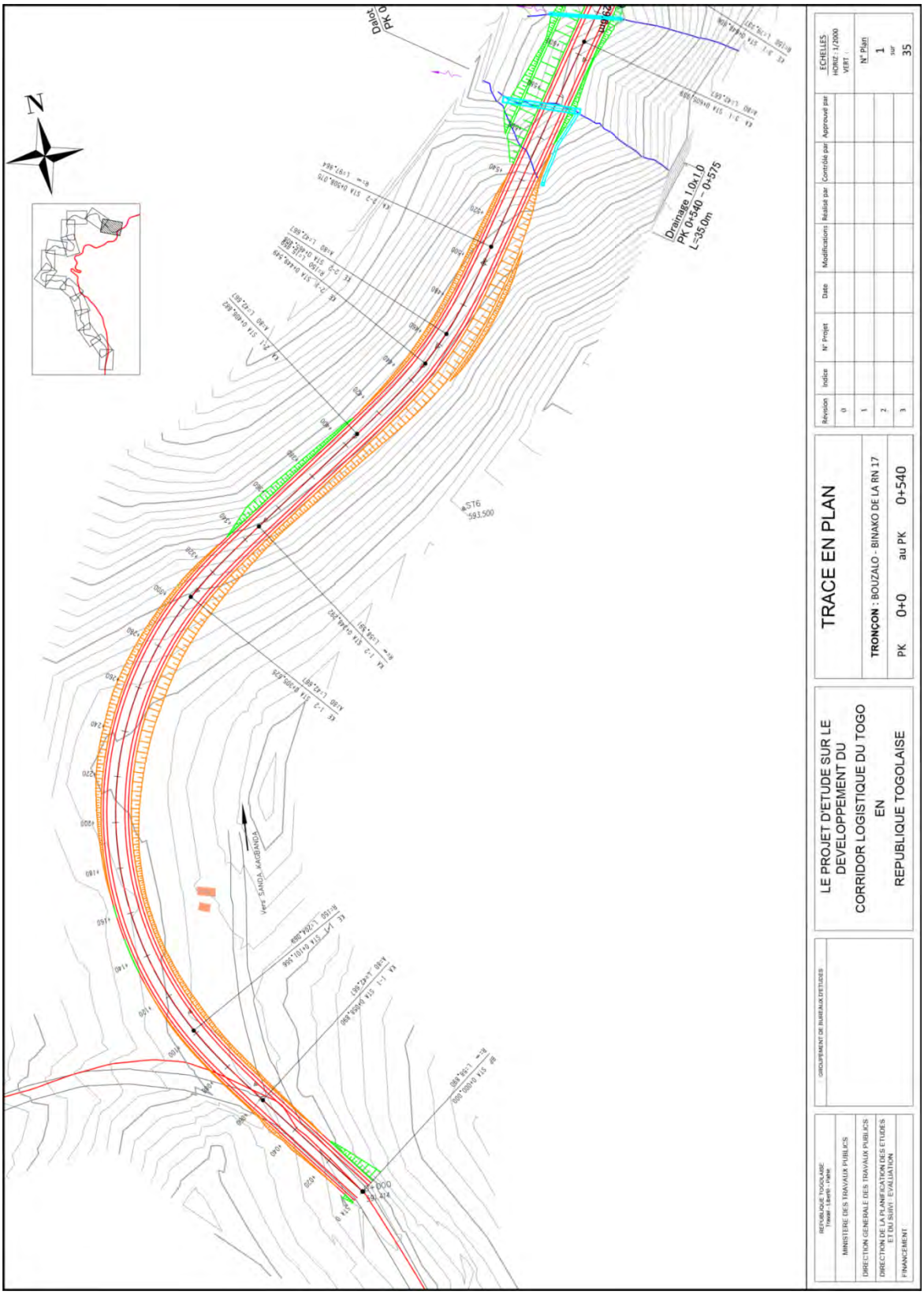


Figure A8-1 Plan of Malfakassa Bypass (1)

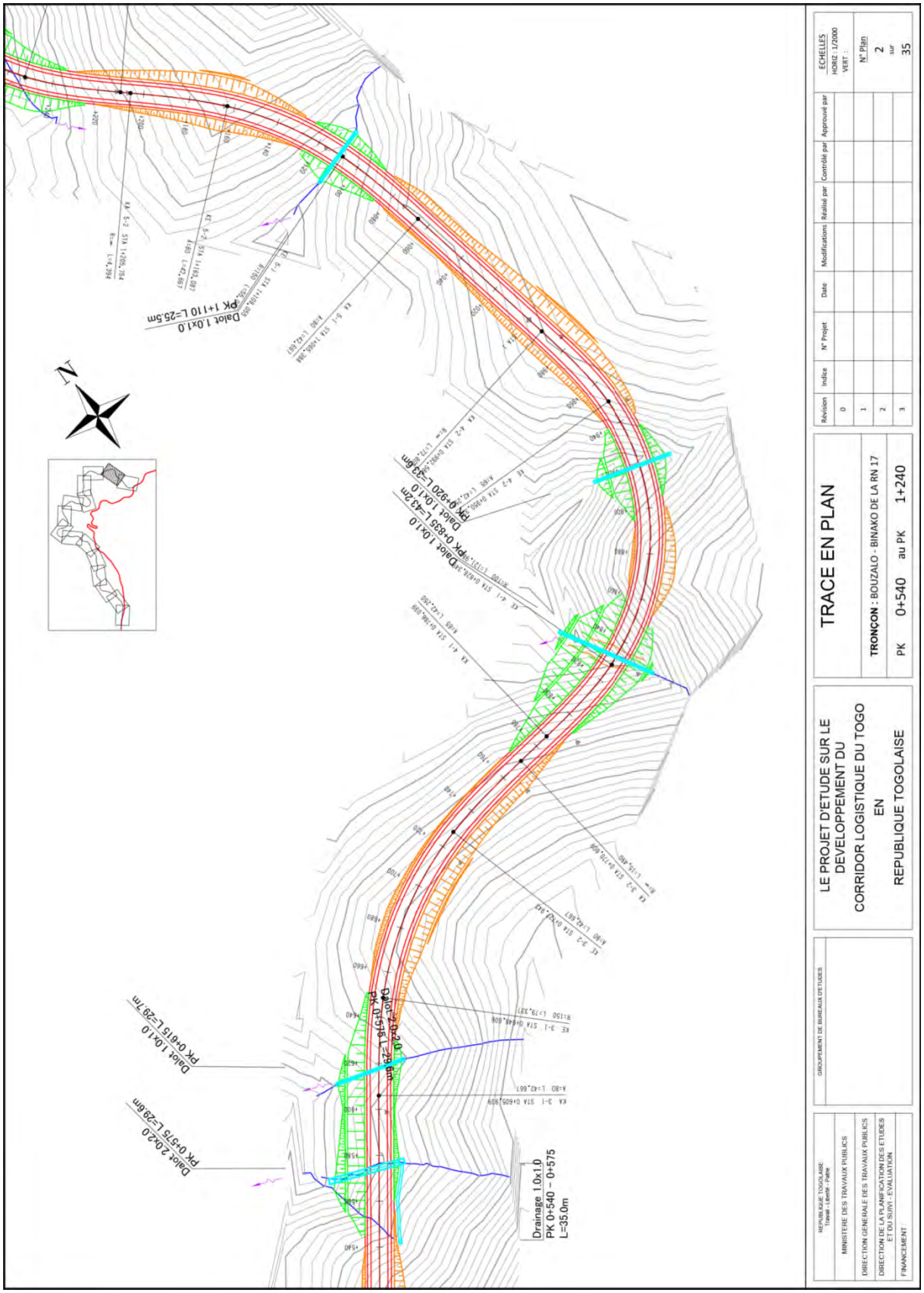


Figure A8-1 Plan of Malfakassa Bypass (2)

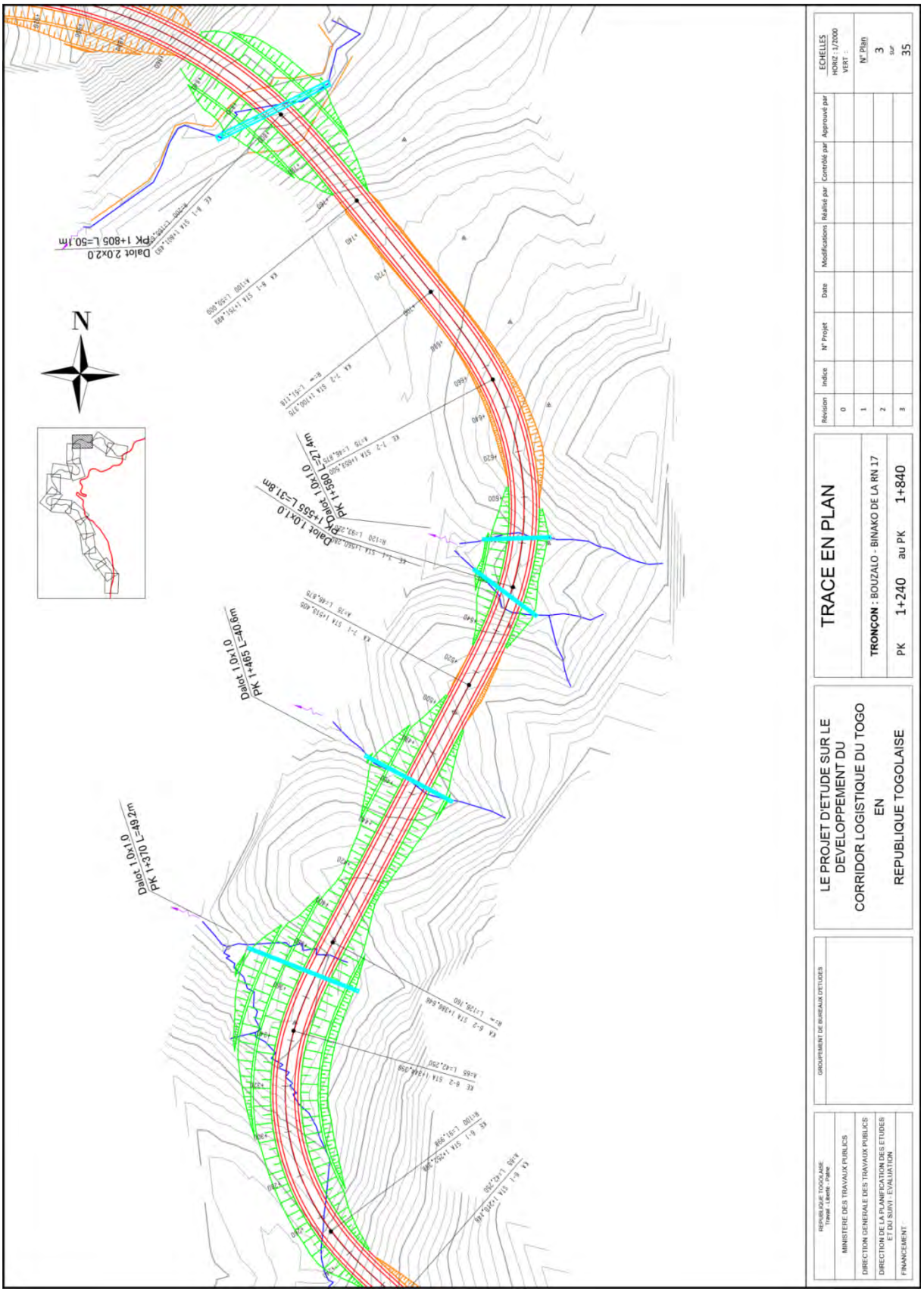


Figure A8-1 Plan of Malfakassa Bypass (3)

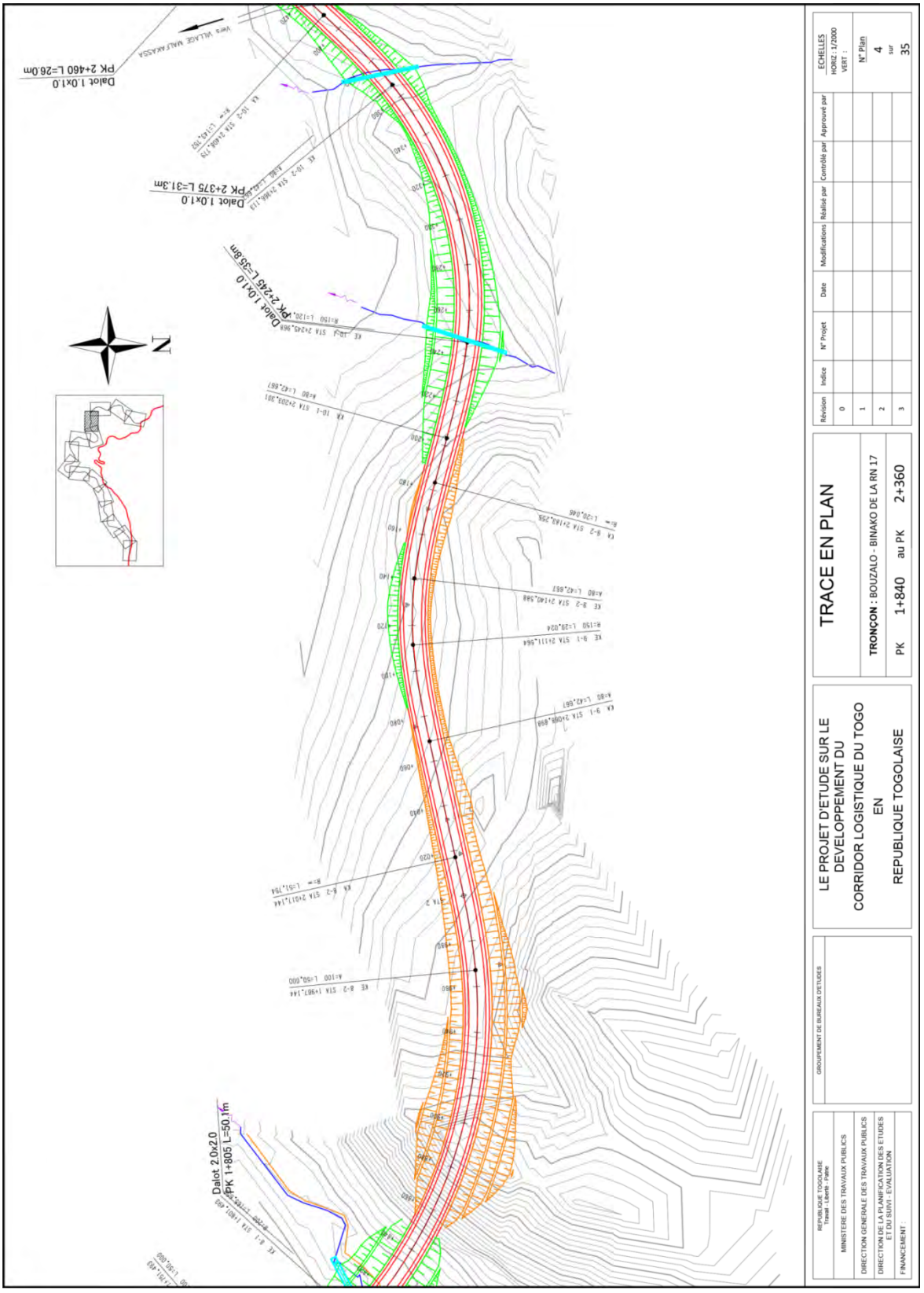


Figure A8-1 Plan of Malfakassa Bypass (4)

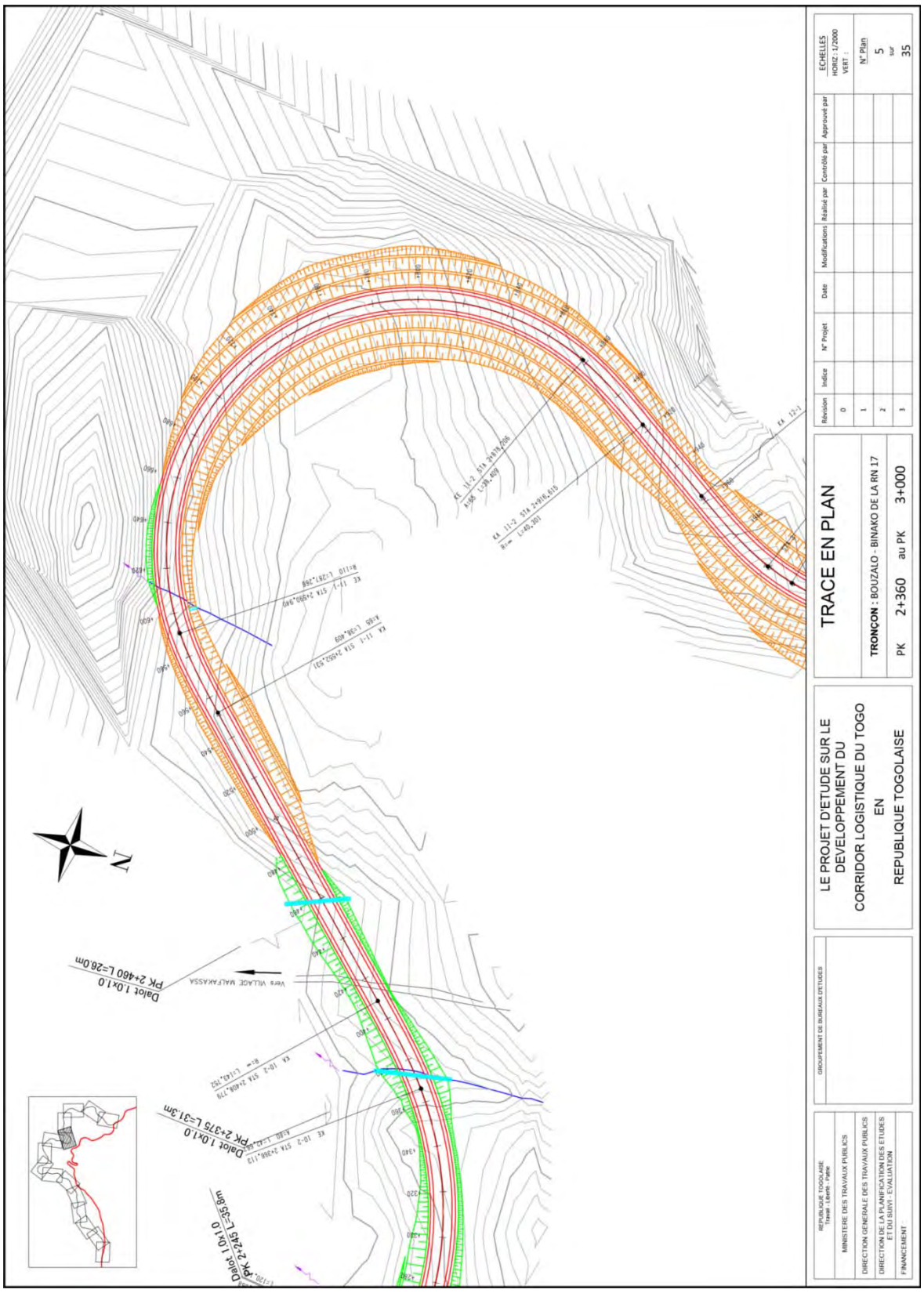


Figure A8-1 Plan of Malfakassa Bypass (5)

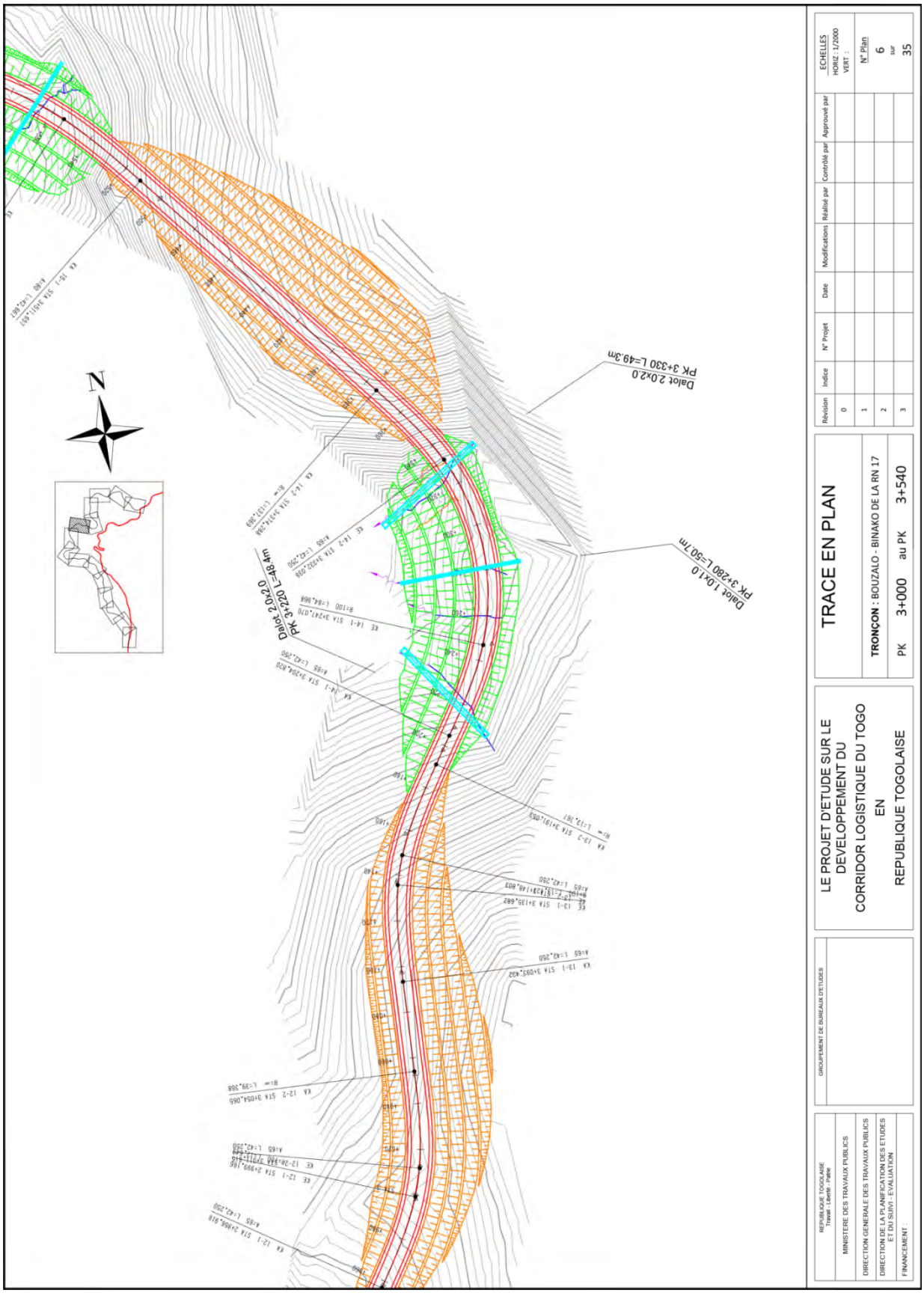


Figure A8-1 Plan of Malfakassa Bypass (6)

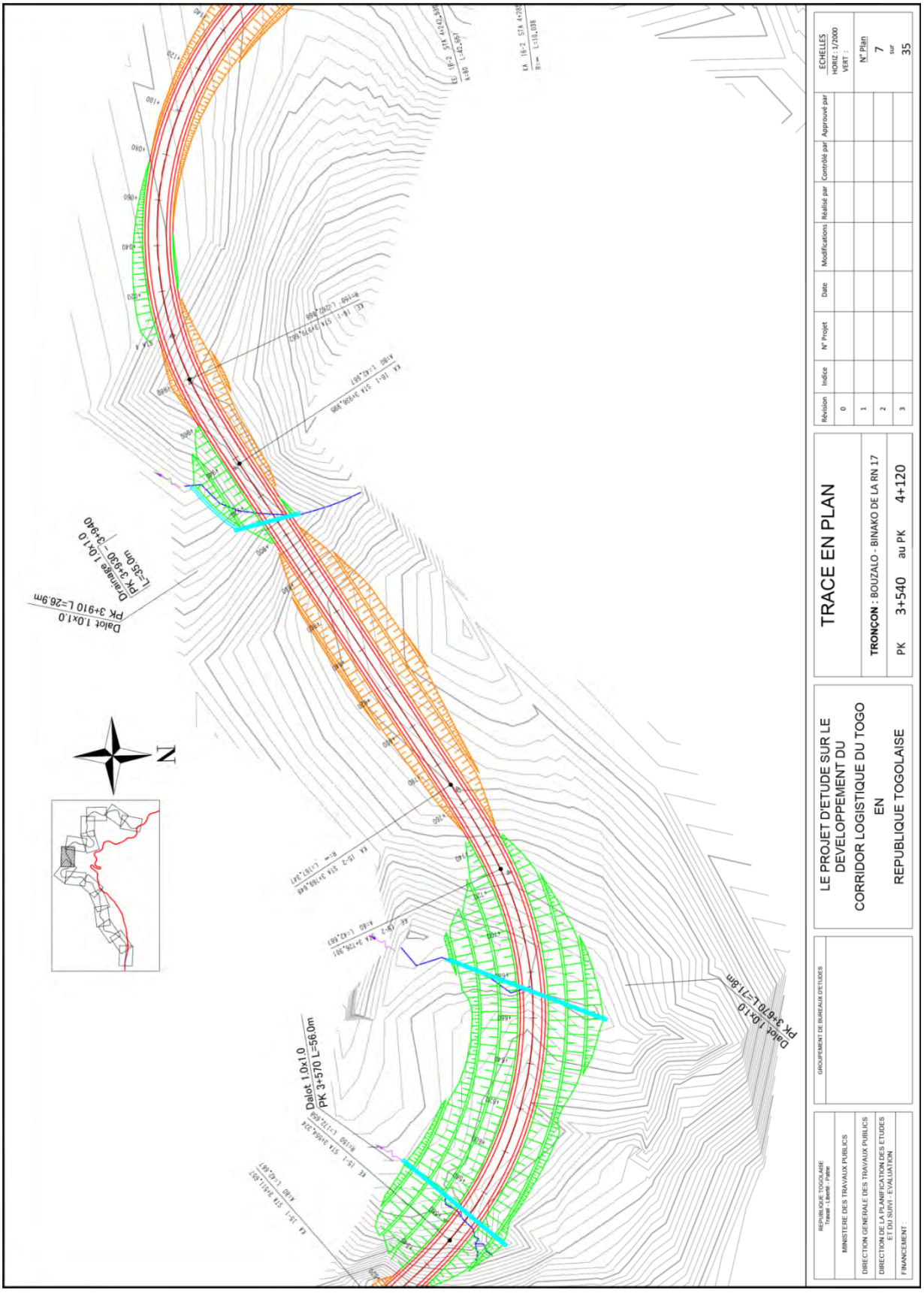


Figure A8-1 Plan of Malfakassa Bypass (7)

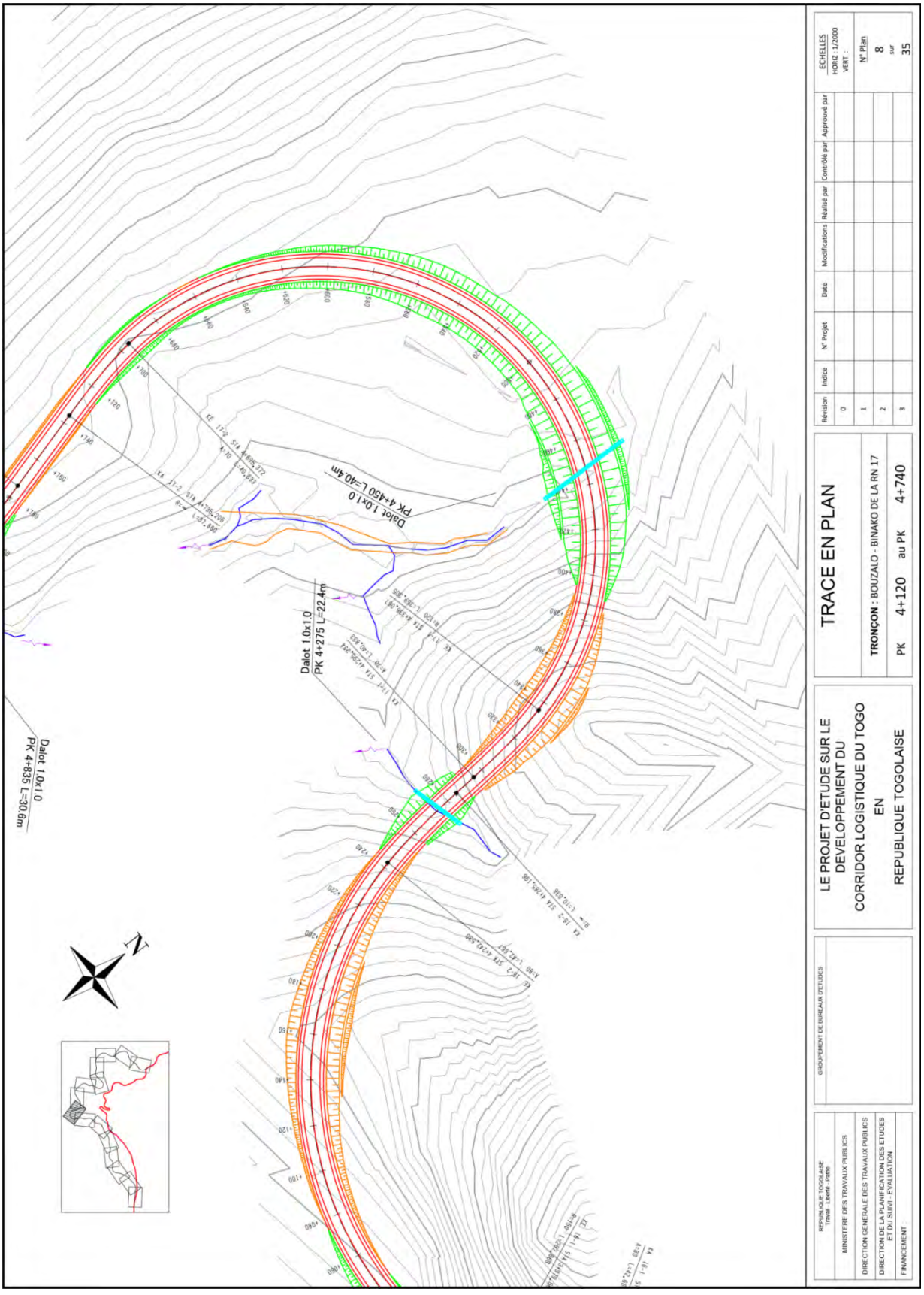


Figure A8-1 Plan of Malfakassa Bypass (8)

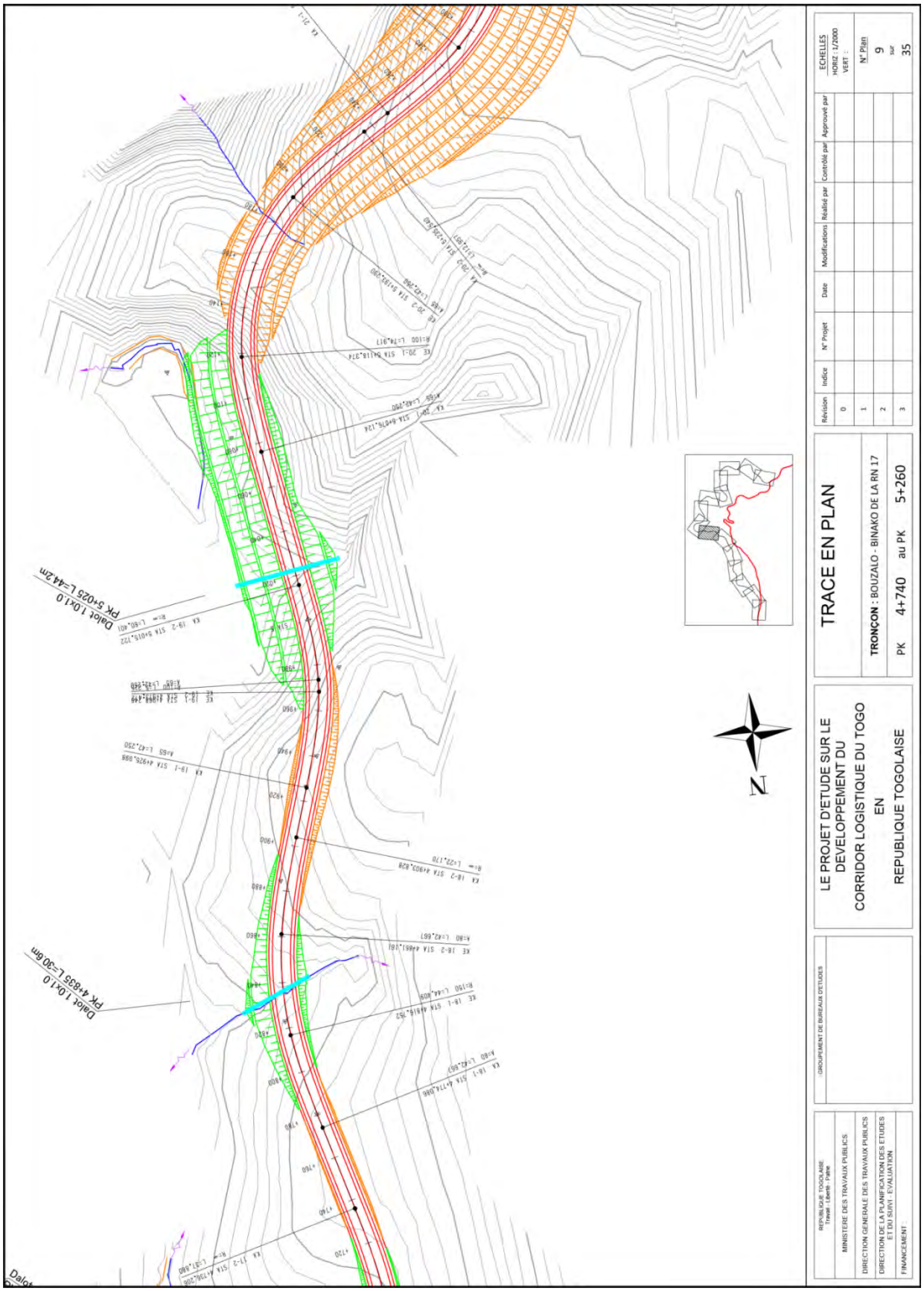
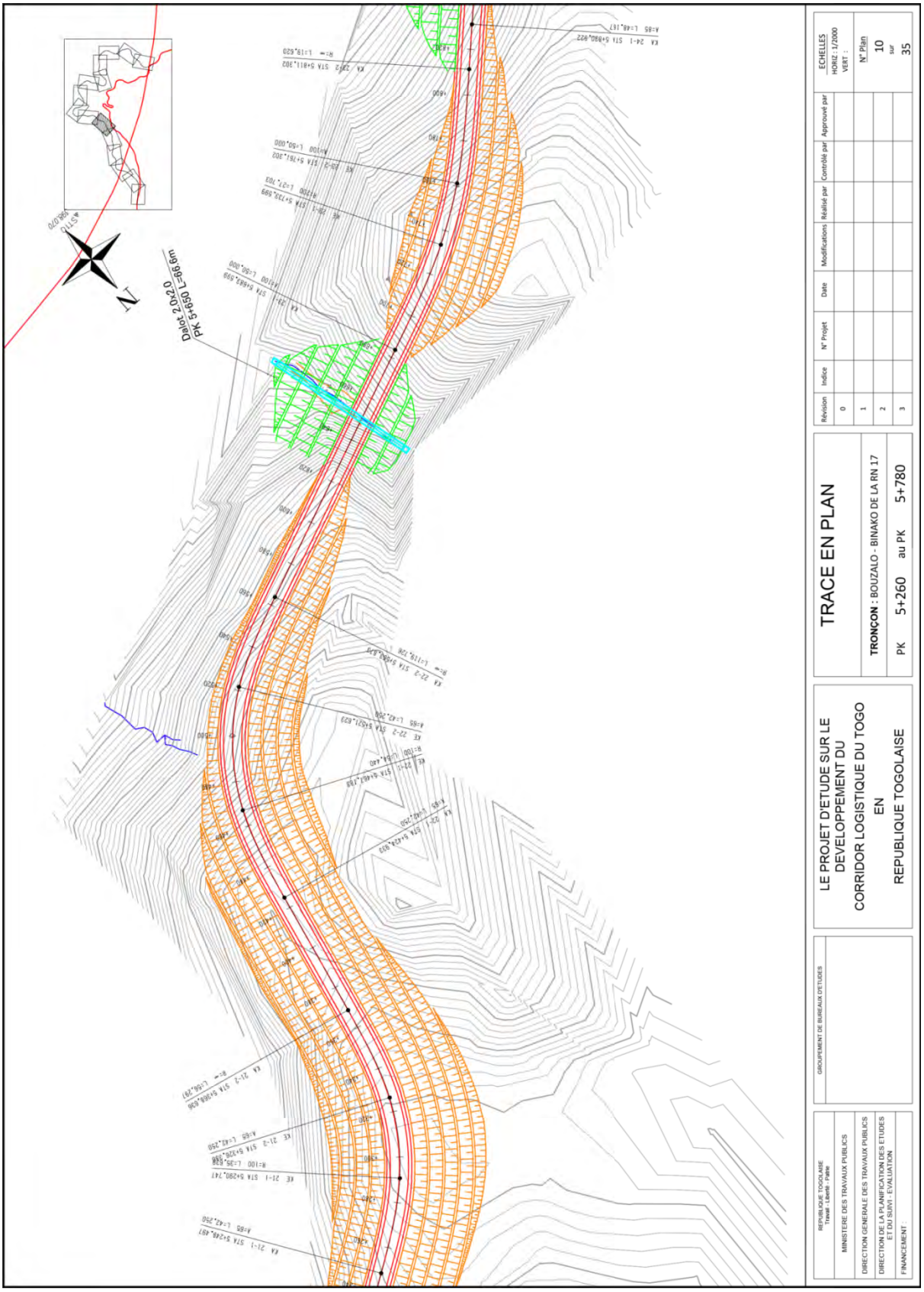


Figure A8-1 Plan of Malfakassa Bypass (9)



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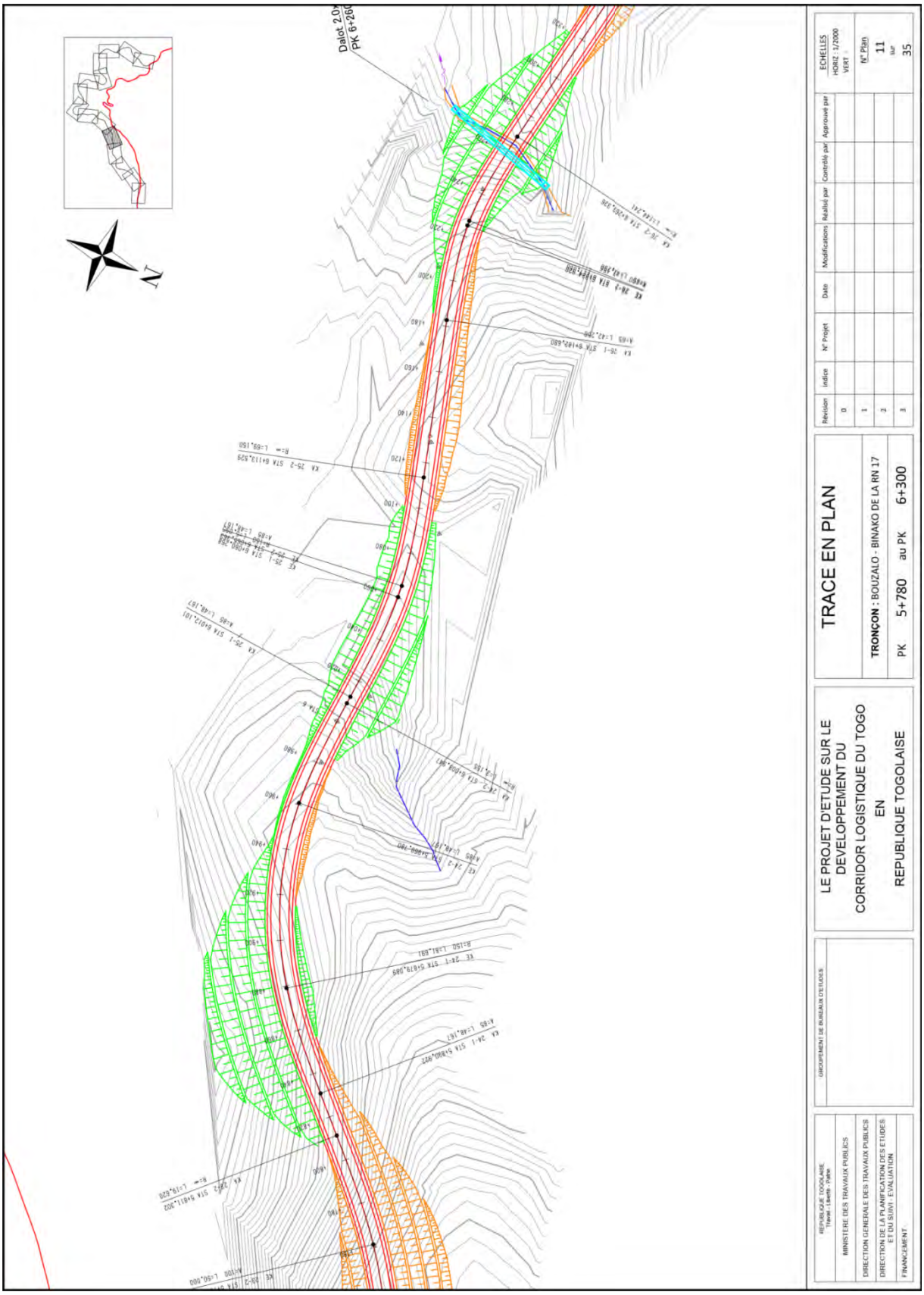

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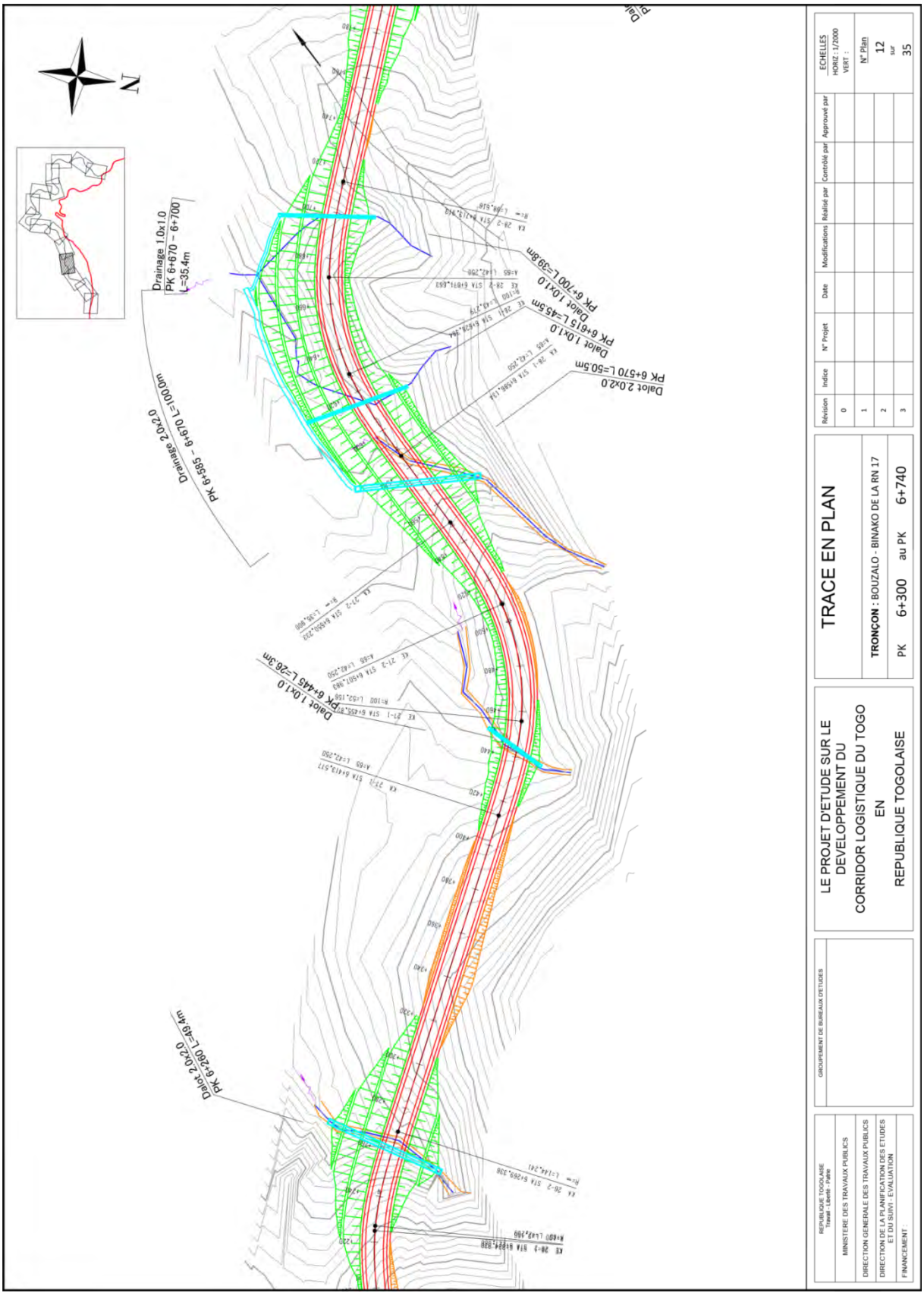


Figure A8-1 Plan of Malfakassa Bypass (12)

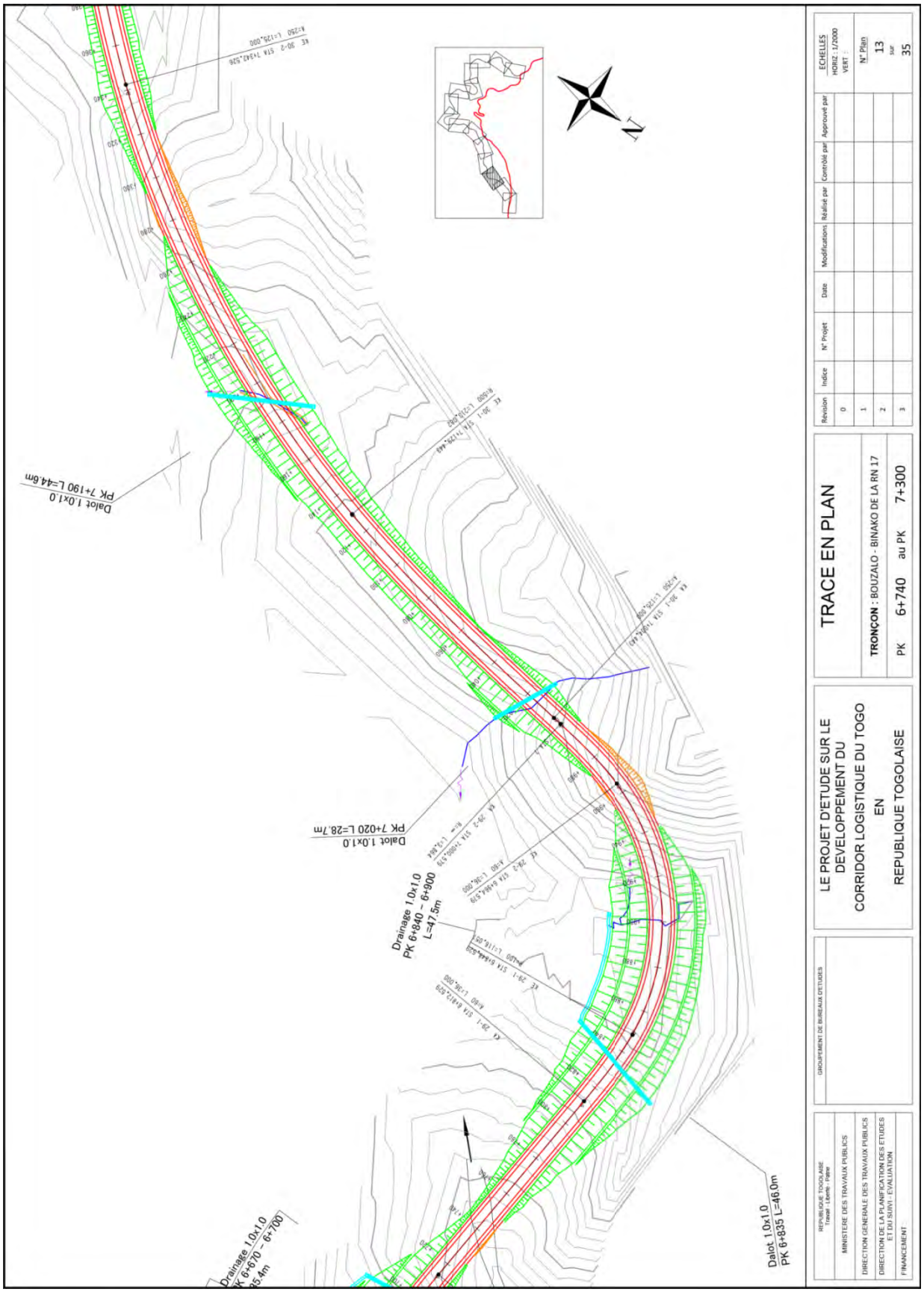
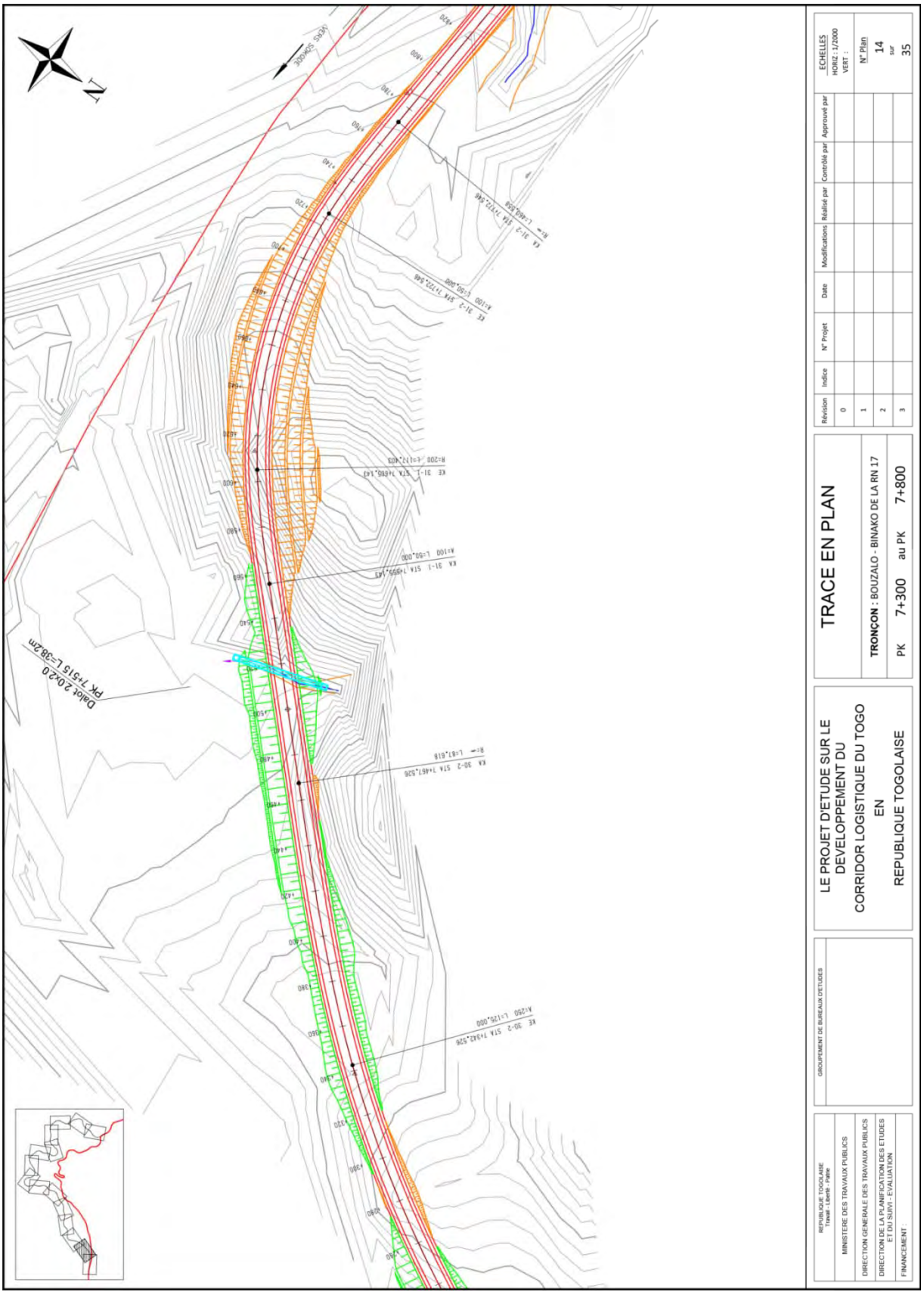


Figure A8-1 Plan of Malfakassa Bypass (13)



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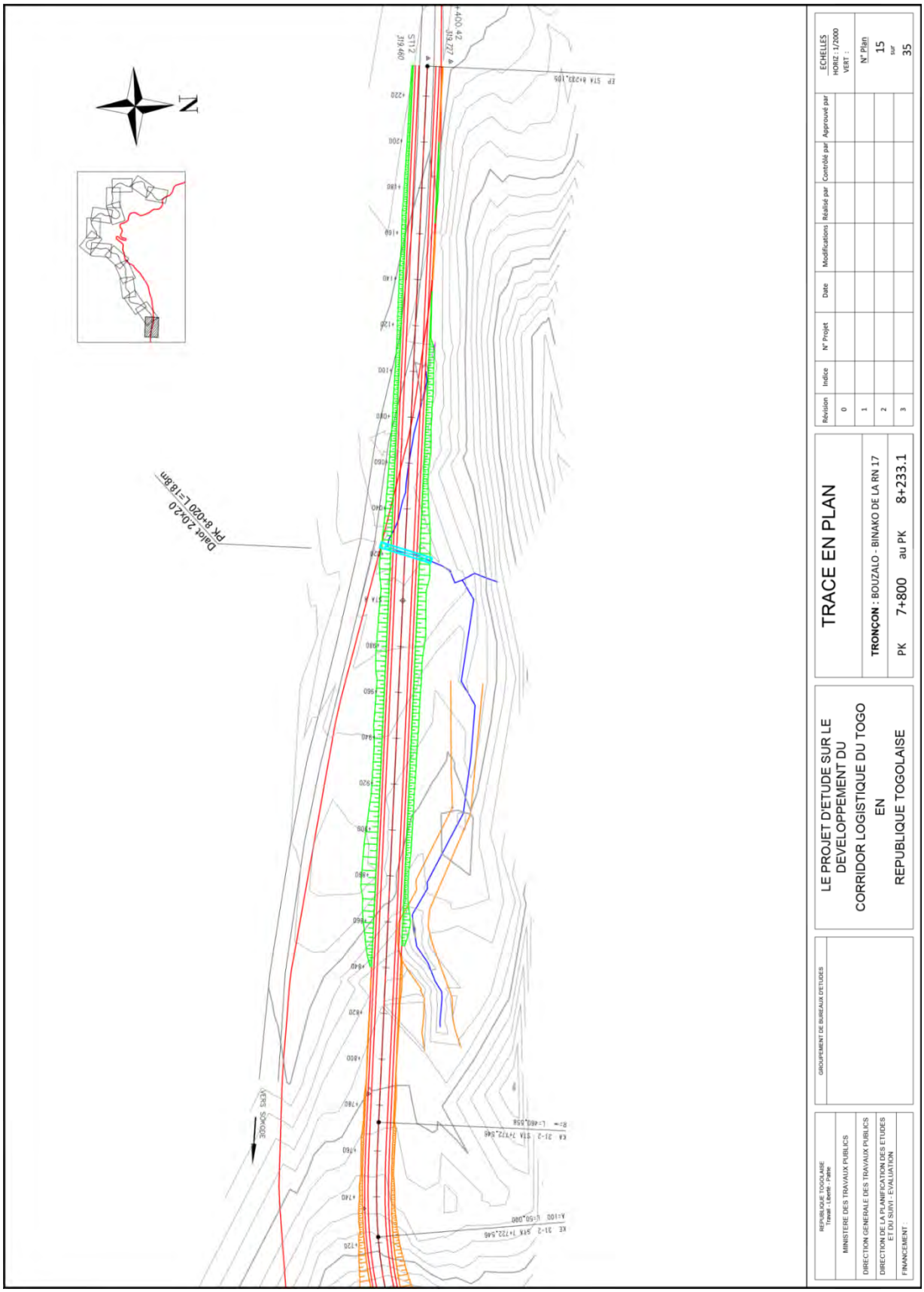


Figure A8-1 Plan of Malfakassa Bypass (15)

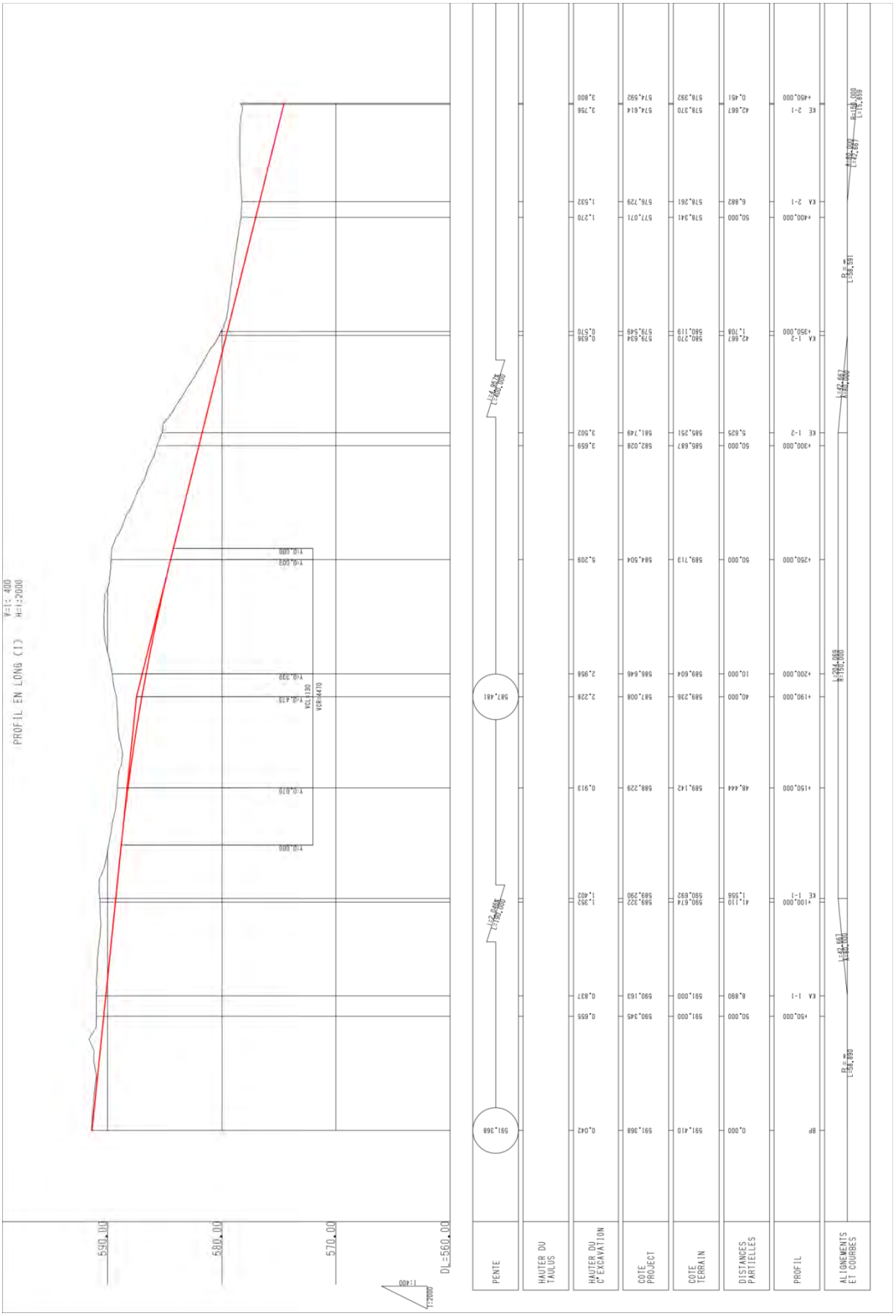
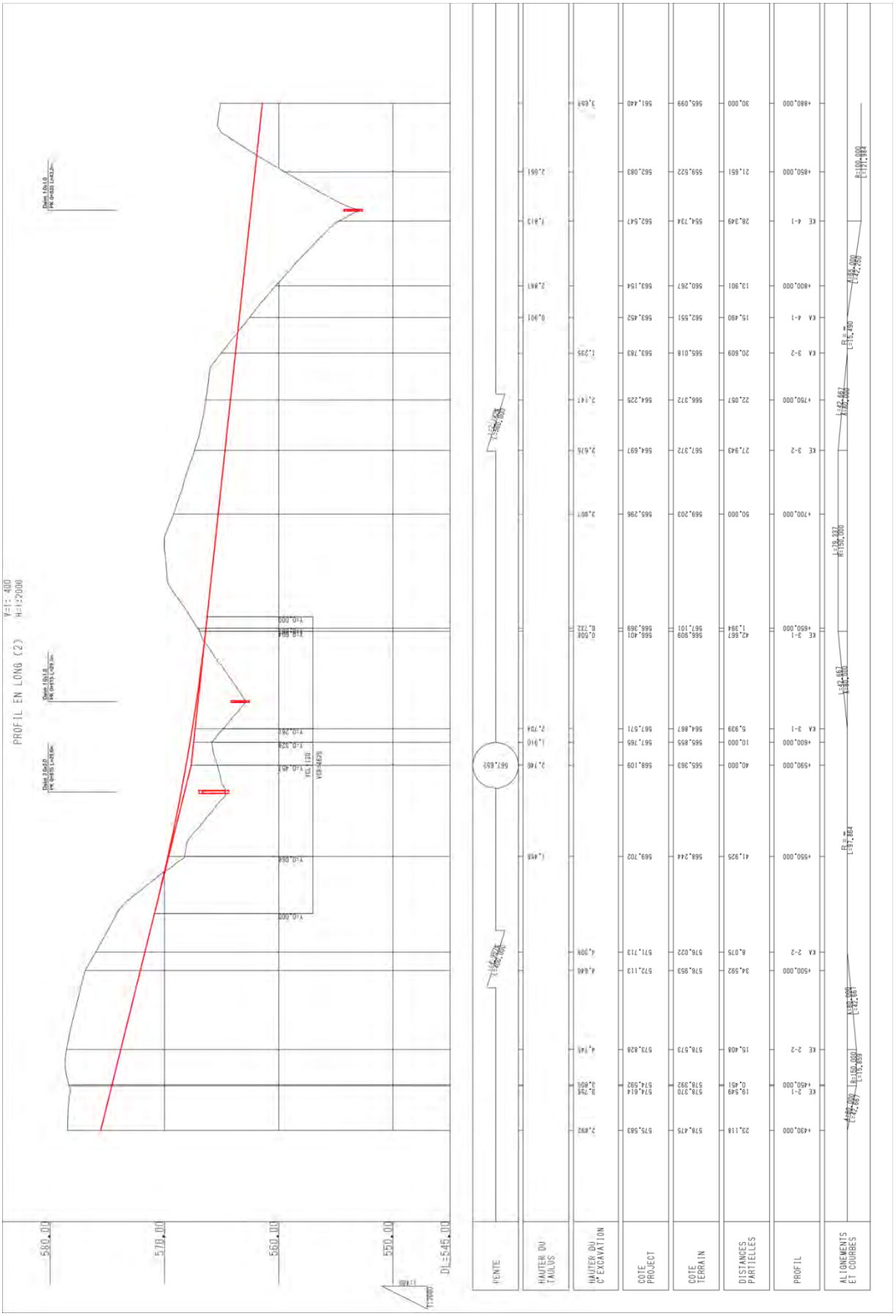


Figure A8-2 Profile of Malfakassa Bypass (1)



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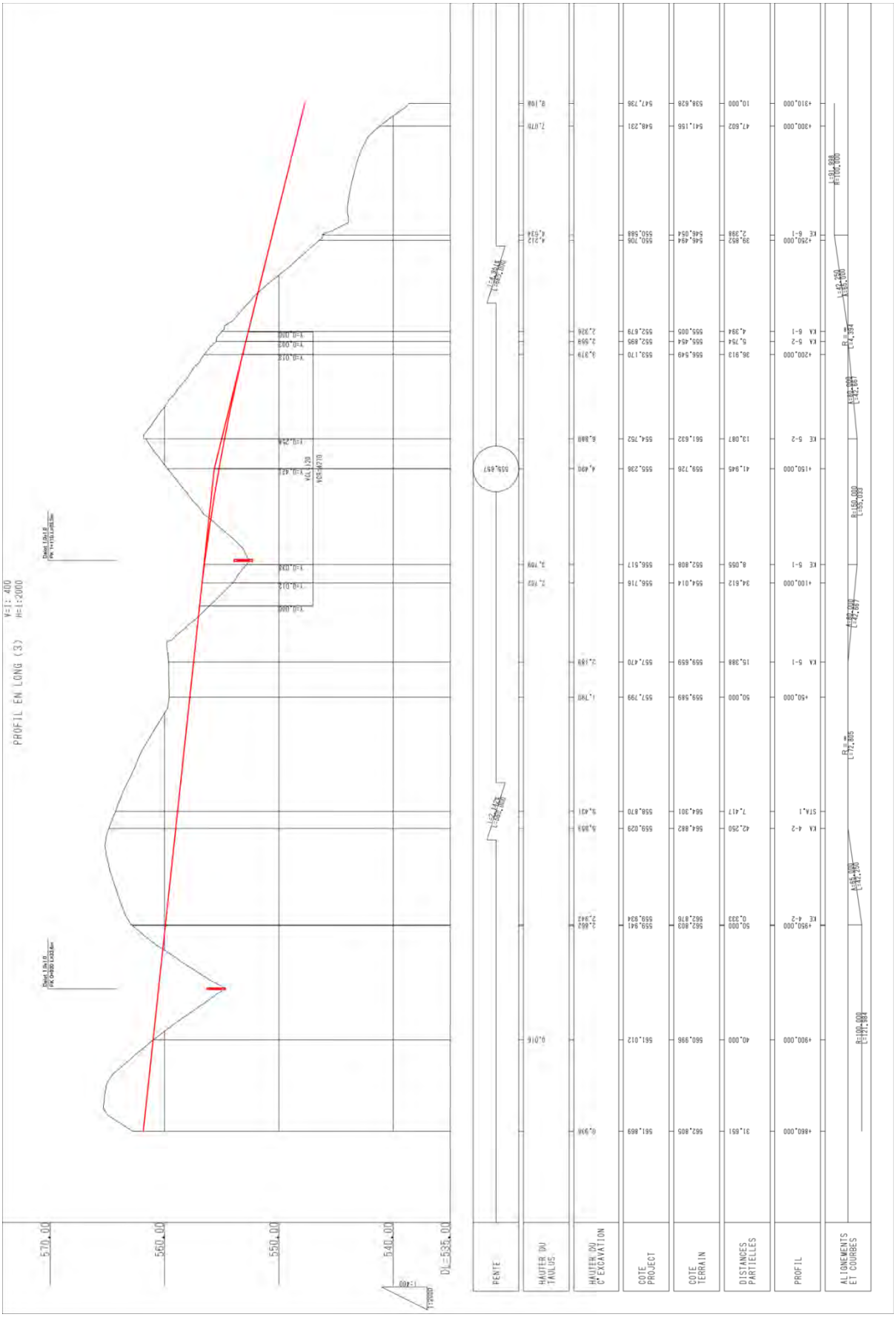

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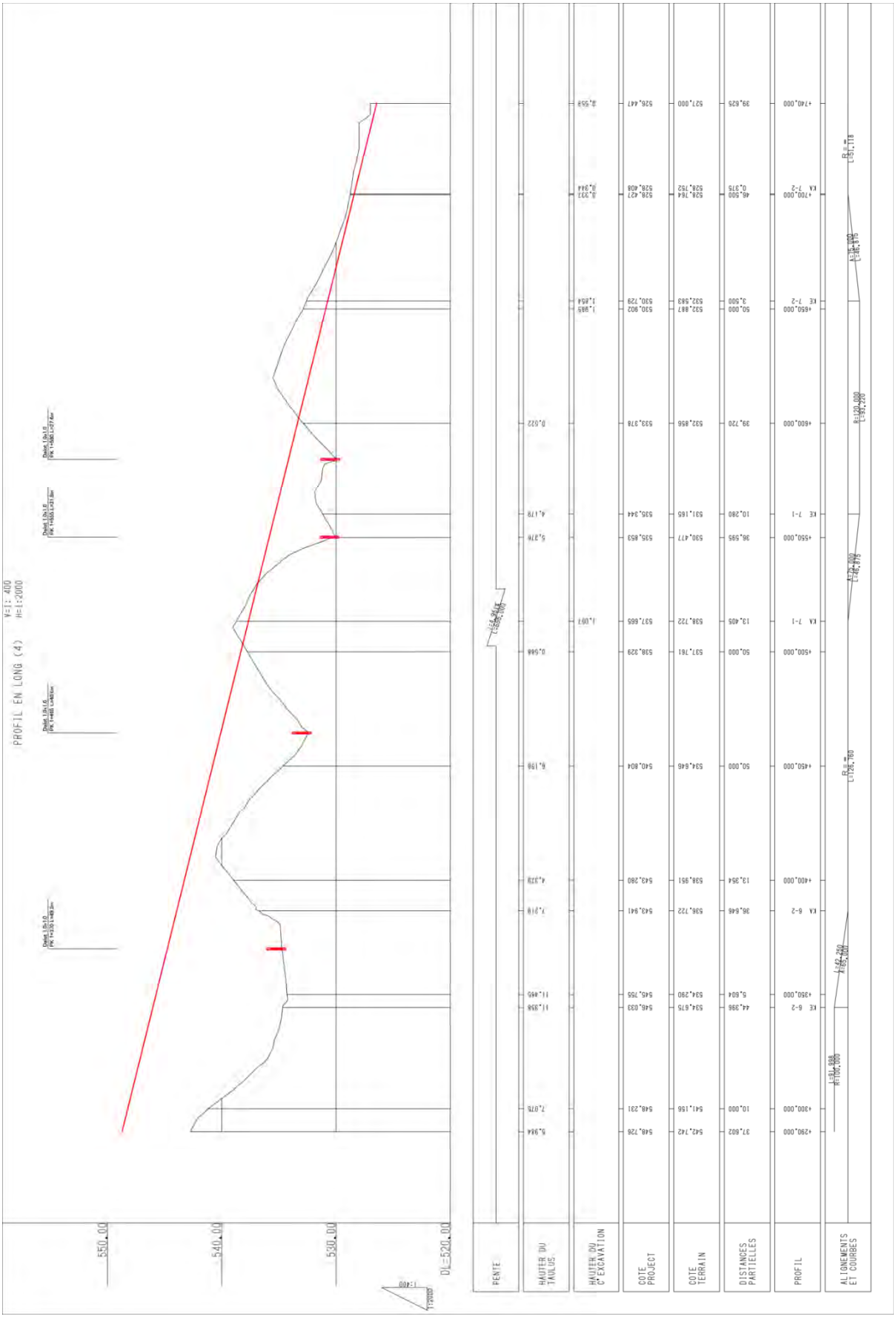

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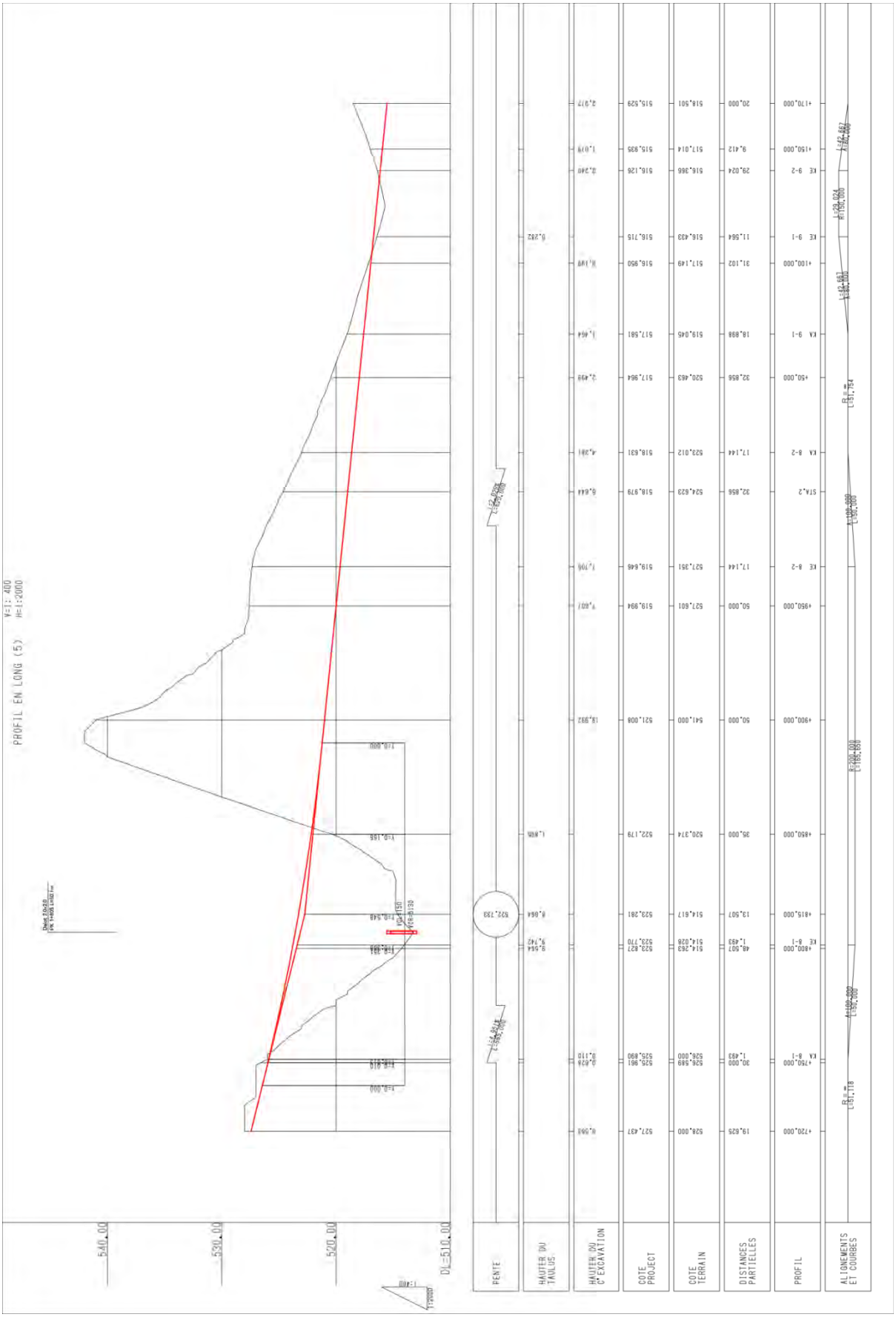
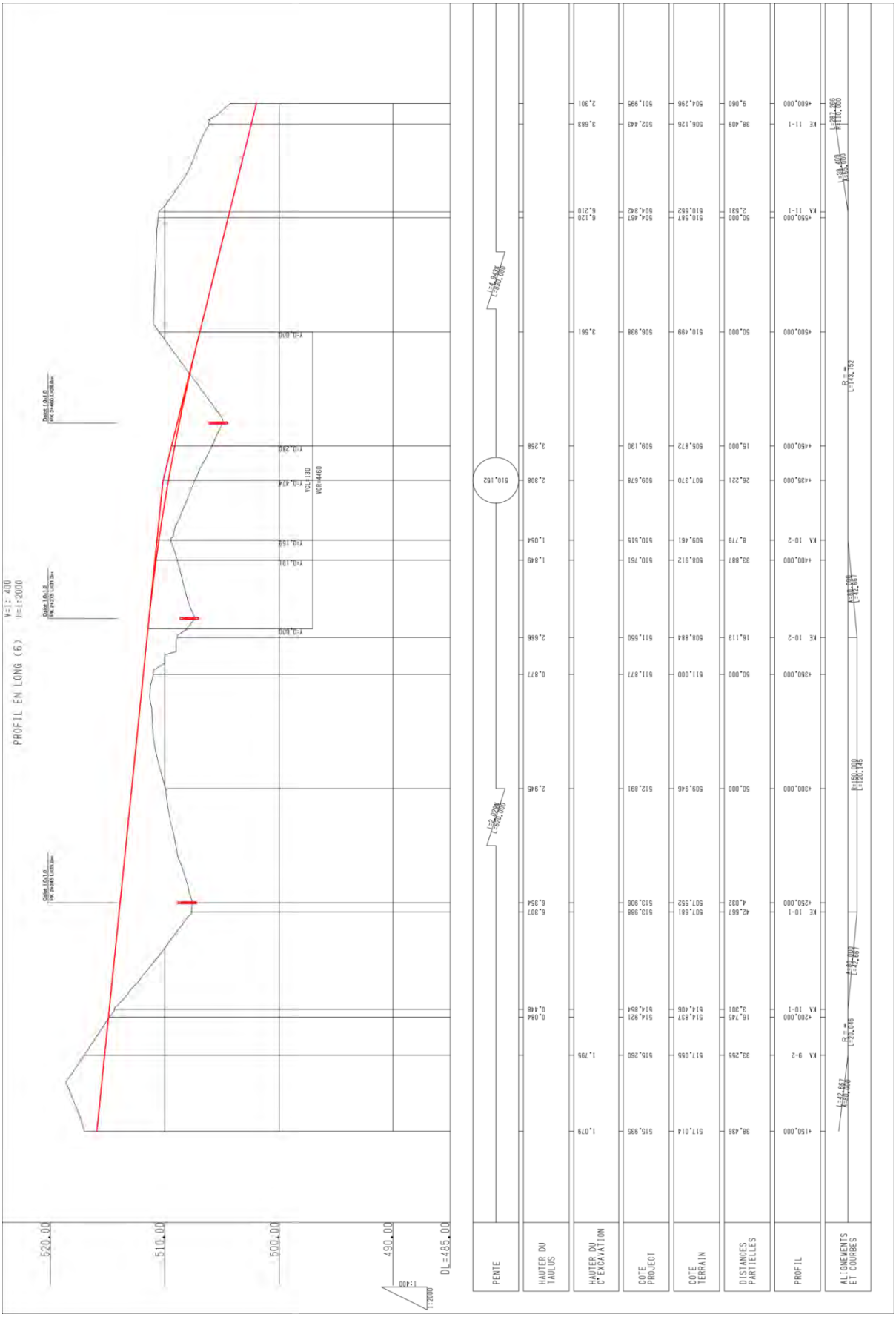


Figure A8-2 Profile of Malfakassa Bypass (5)



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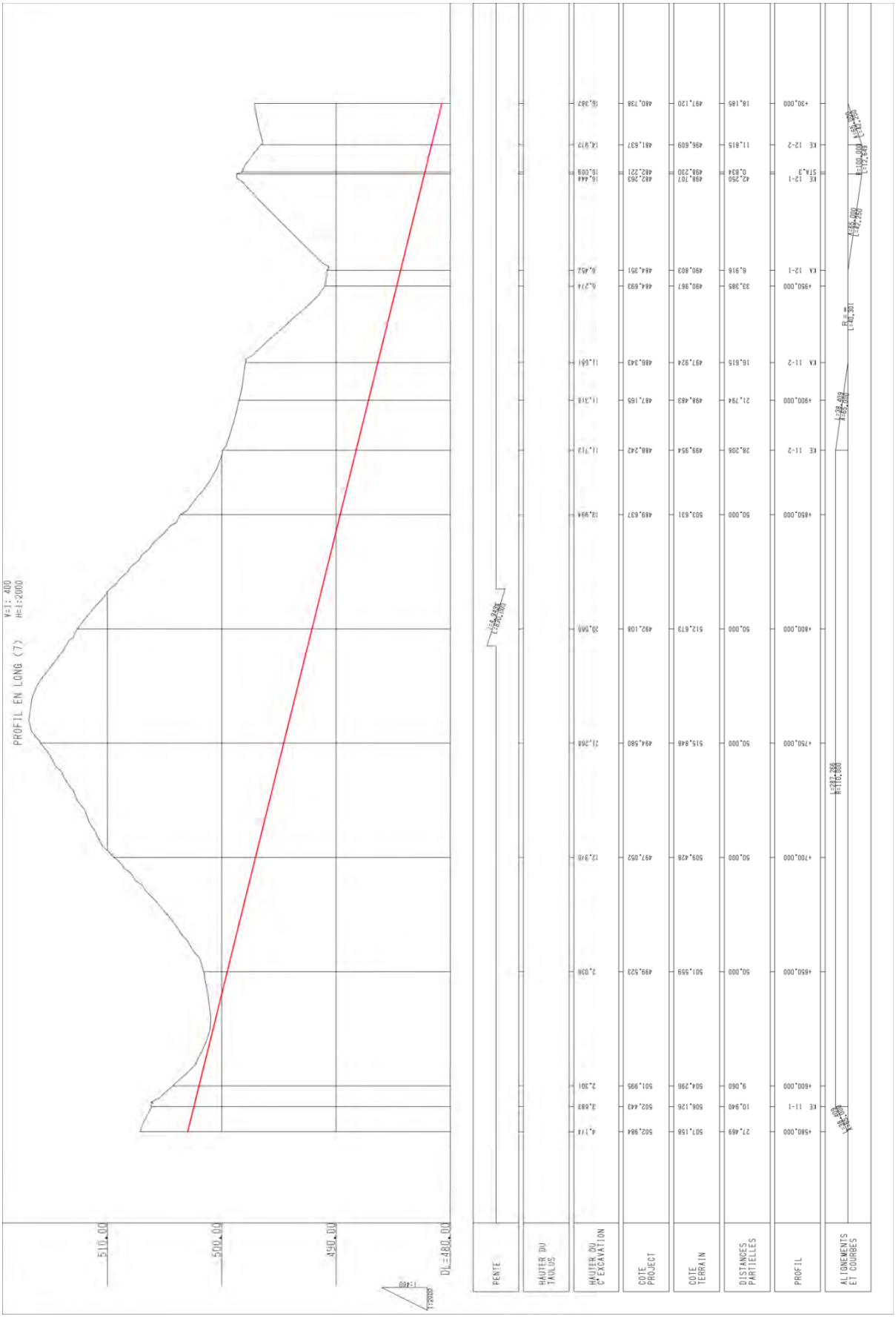


Figure A8-2 Profile of Malfakassa Bypass (7)

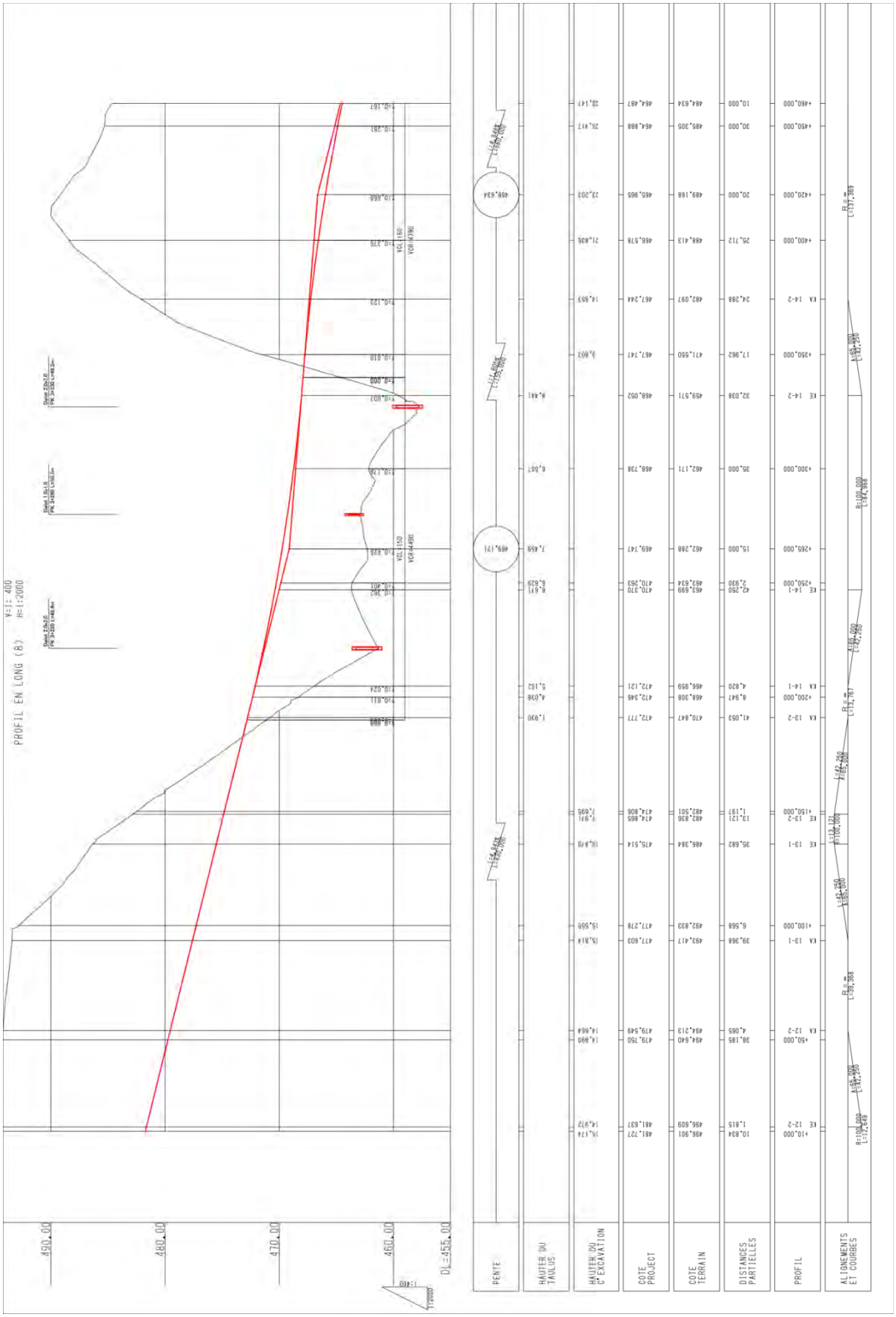
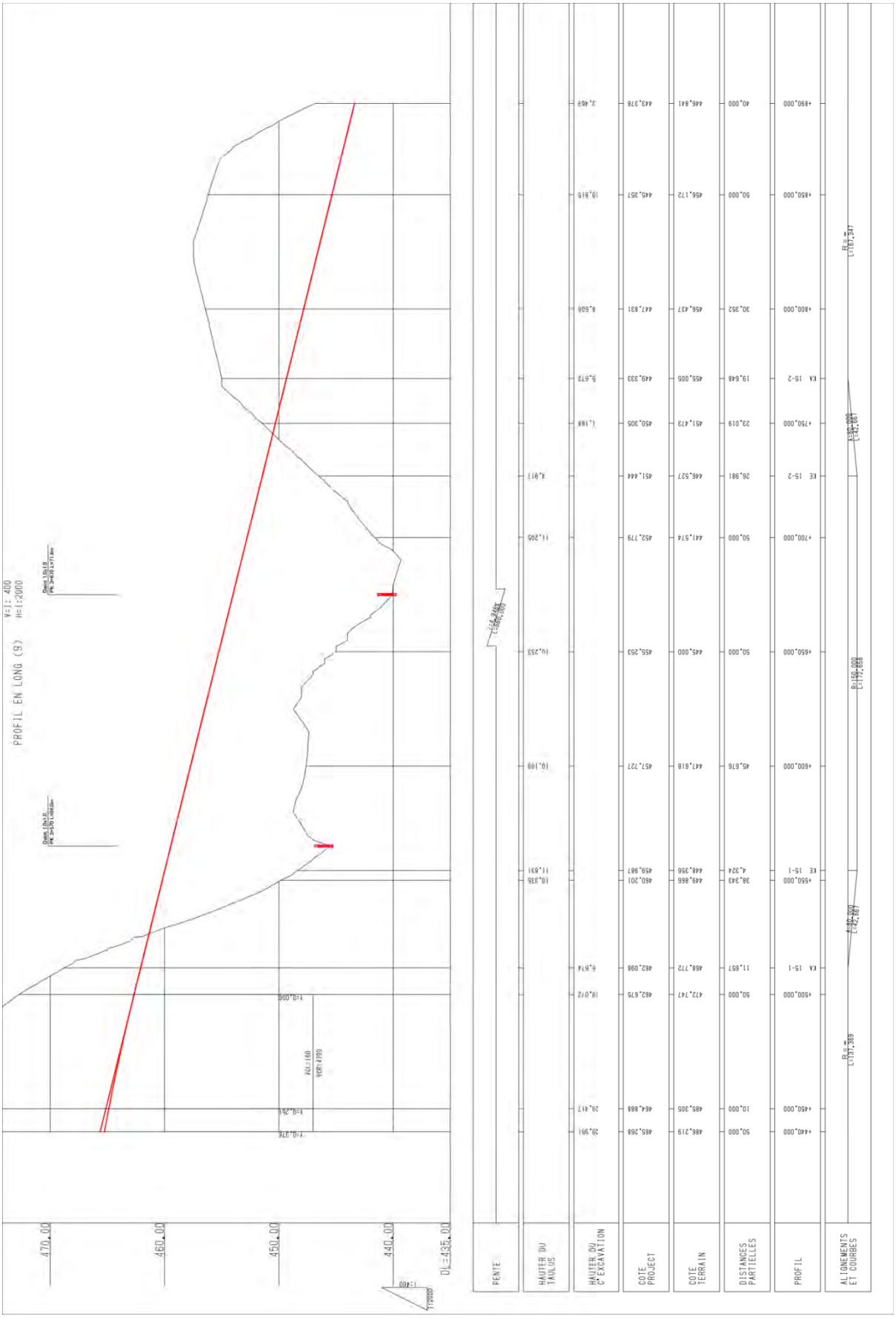


Figure A8-2 Profile of Malfakassa Bypass (8)



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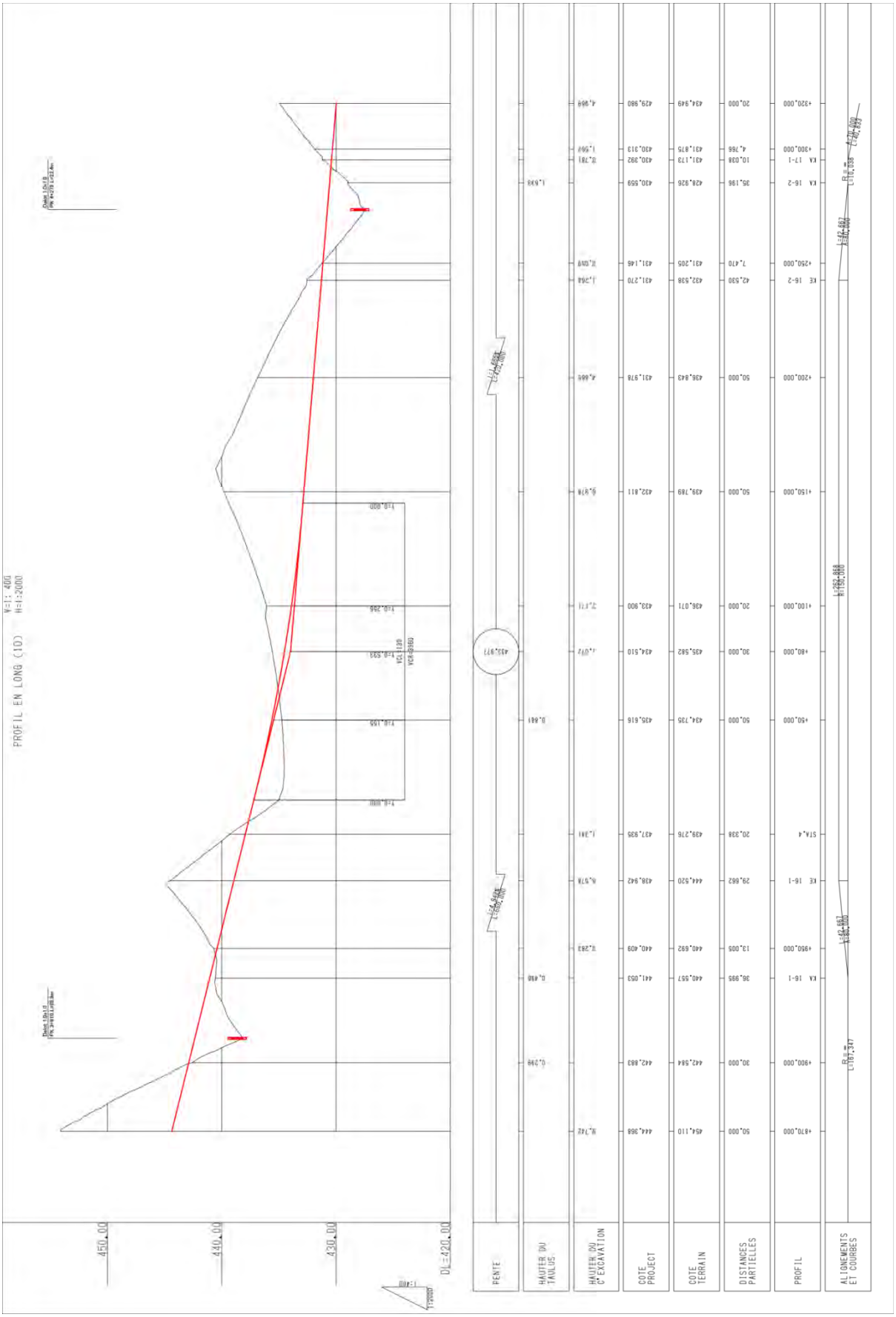

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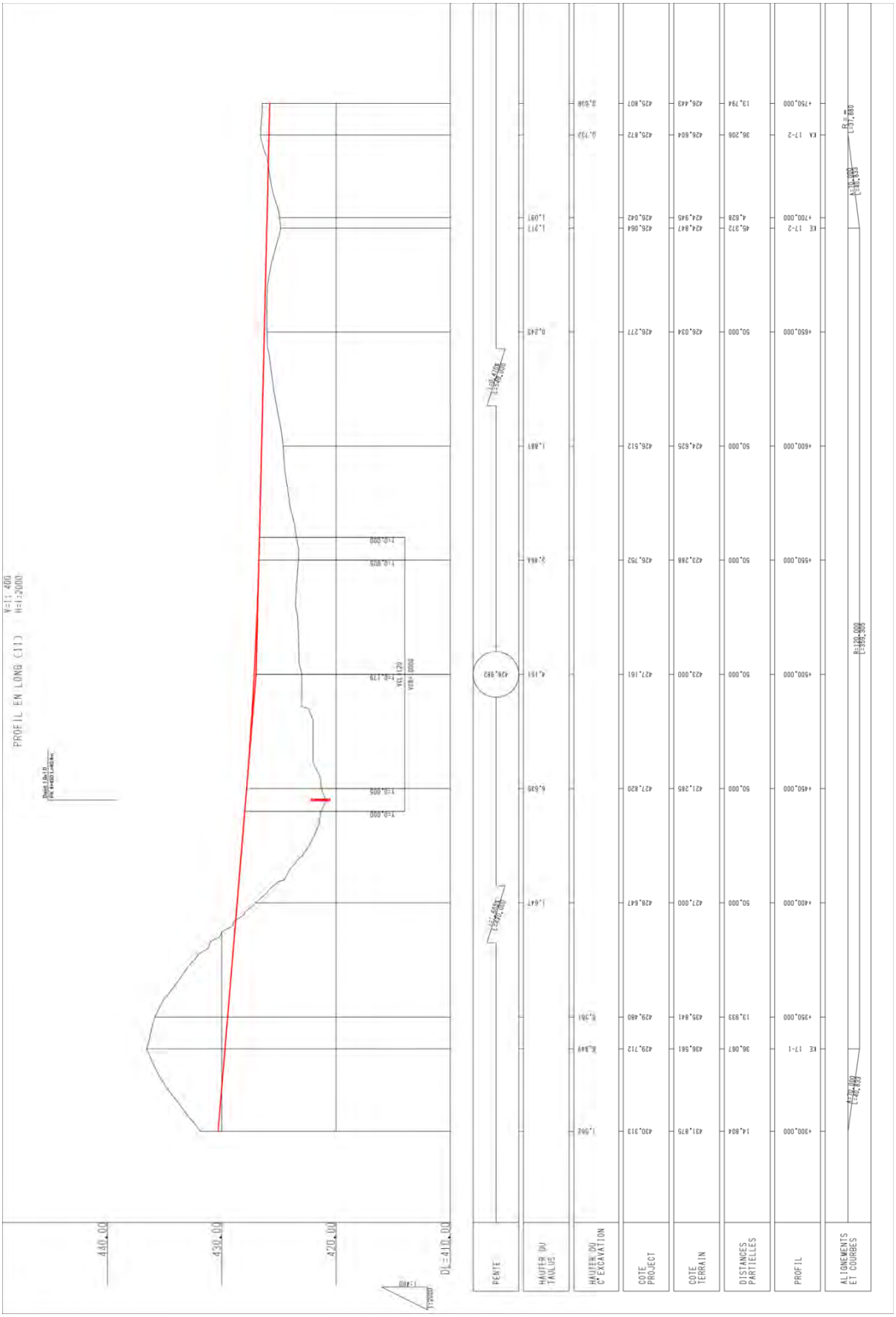
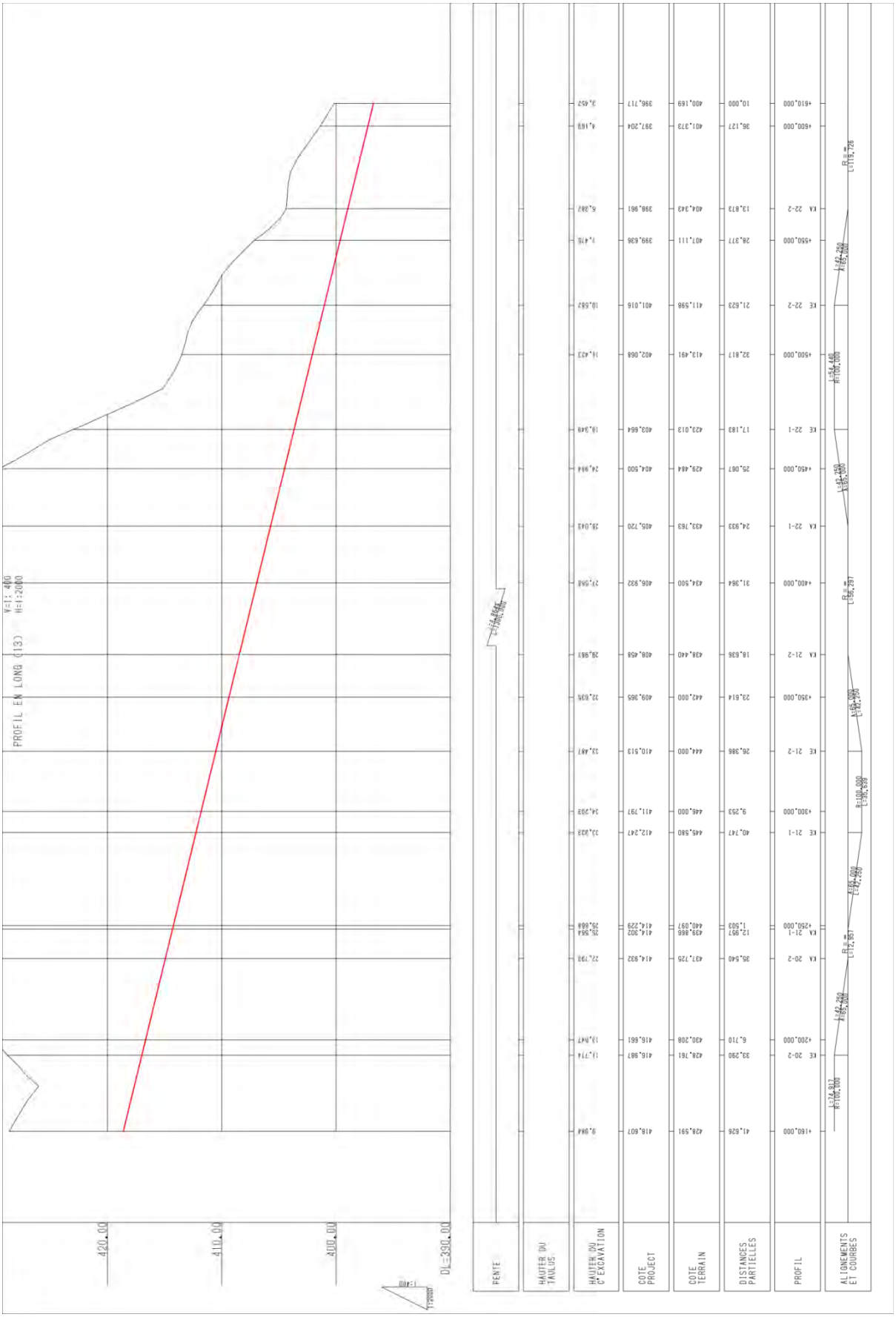


Figure A8-2 Profile of Malfakassa Bypass (11)

Figure A8-2 Profile of Malfakassa Bypass (12)



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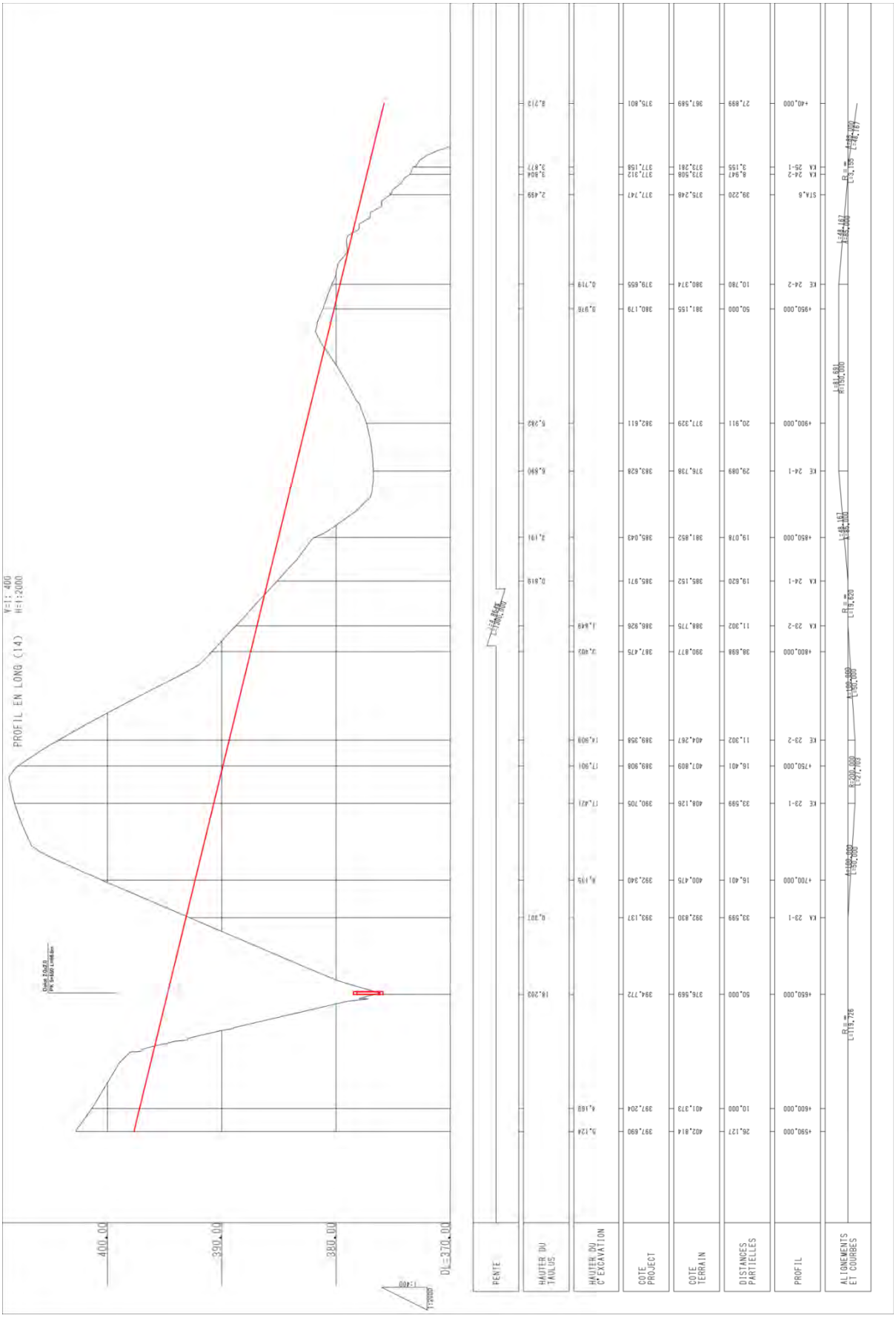

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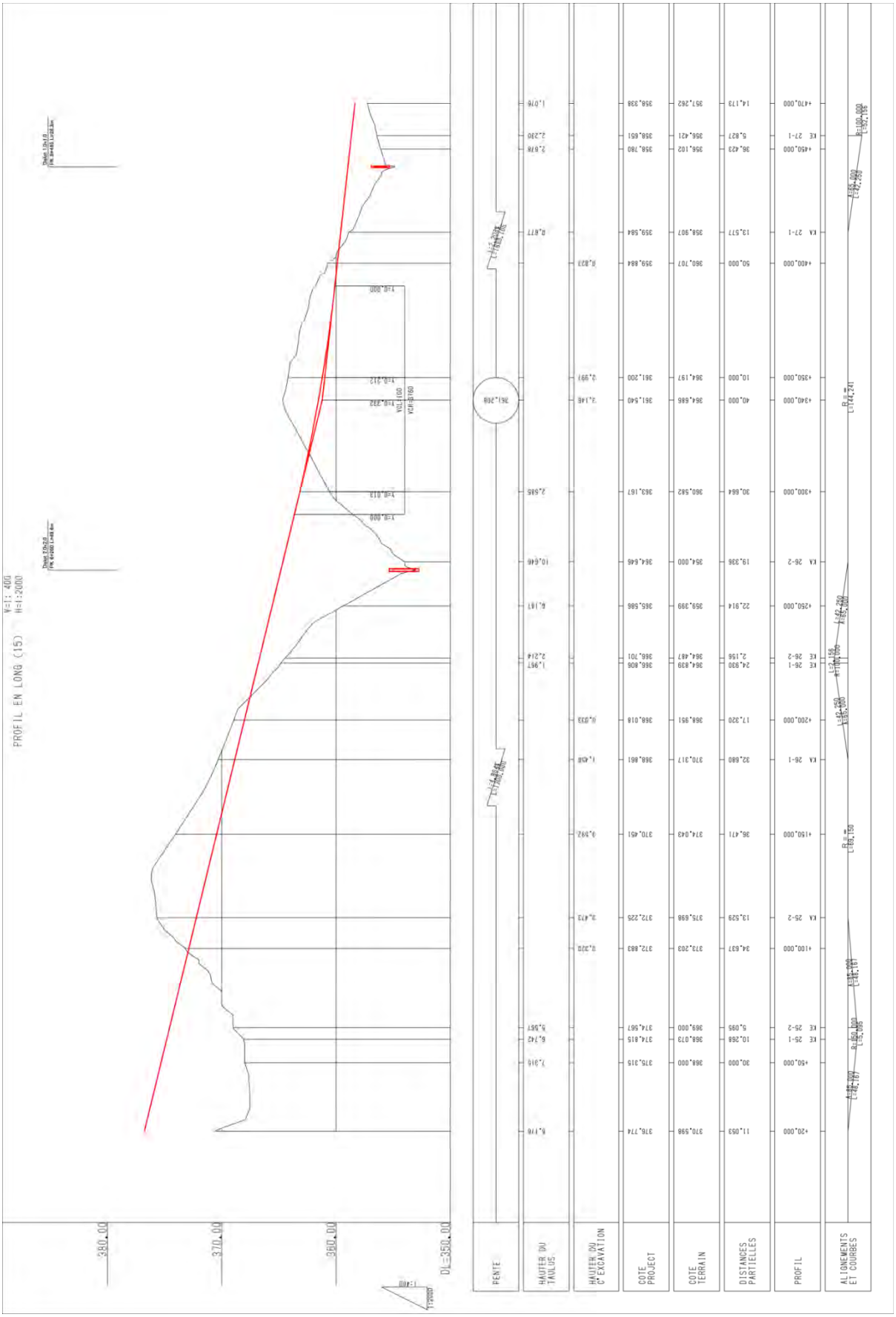

Figure A8-2 Profile of Malfakassa Bypass (15)

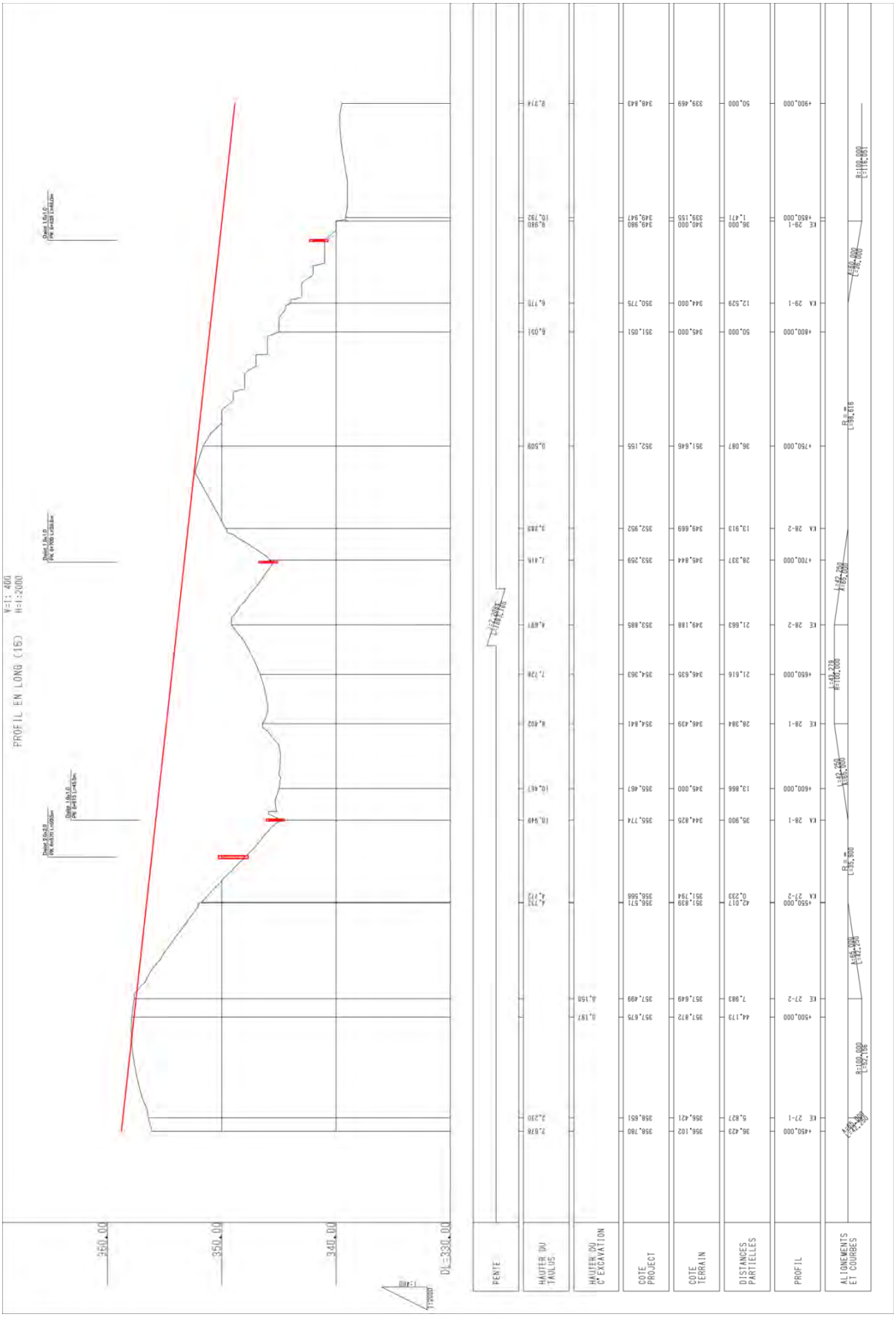

Figure A8-2 Profile of Malfakassa Bypass (16)

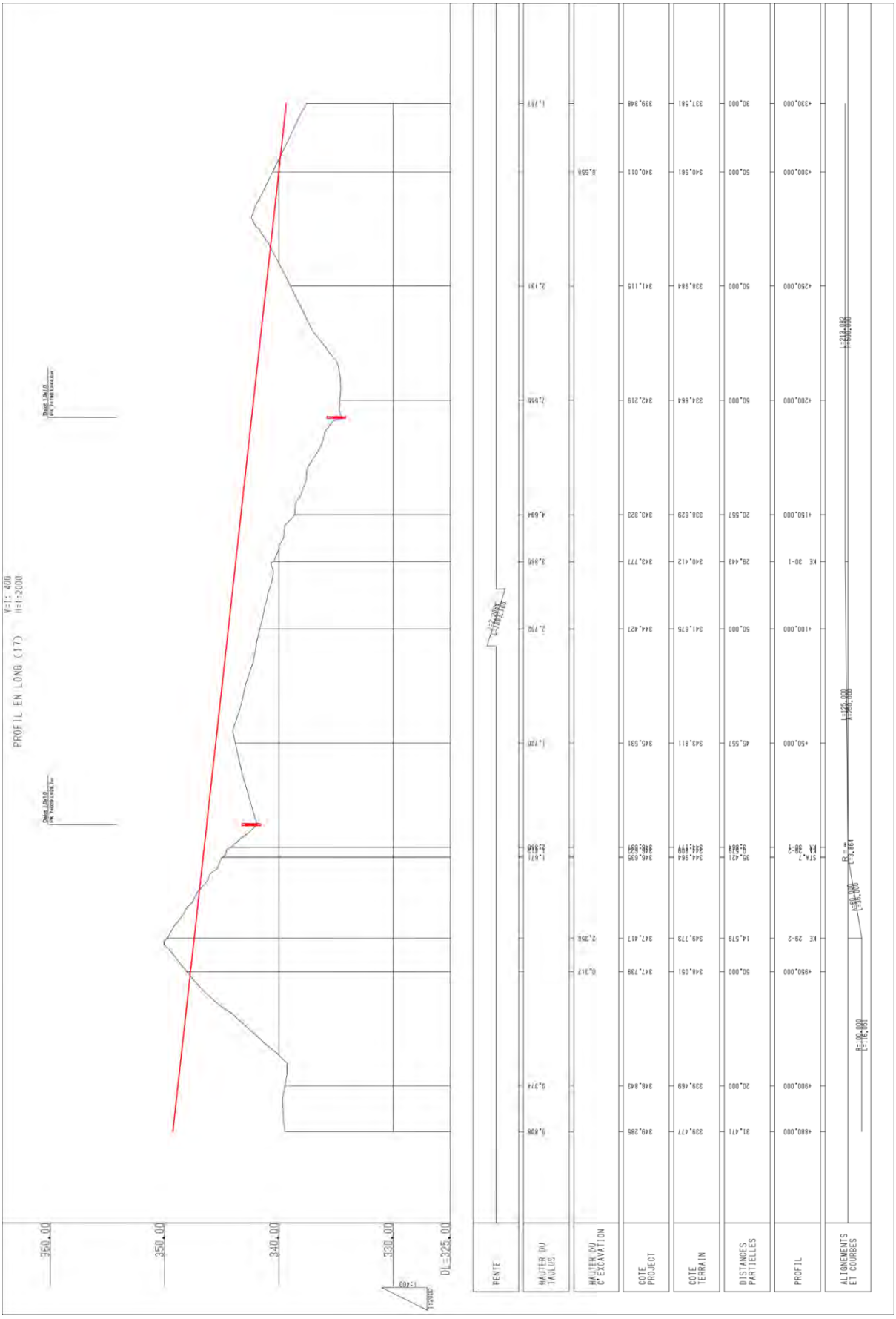

Figure A8-2 Profile of Malfakassa Bypass (17)

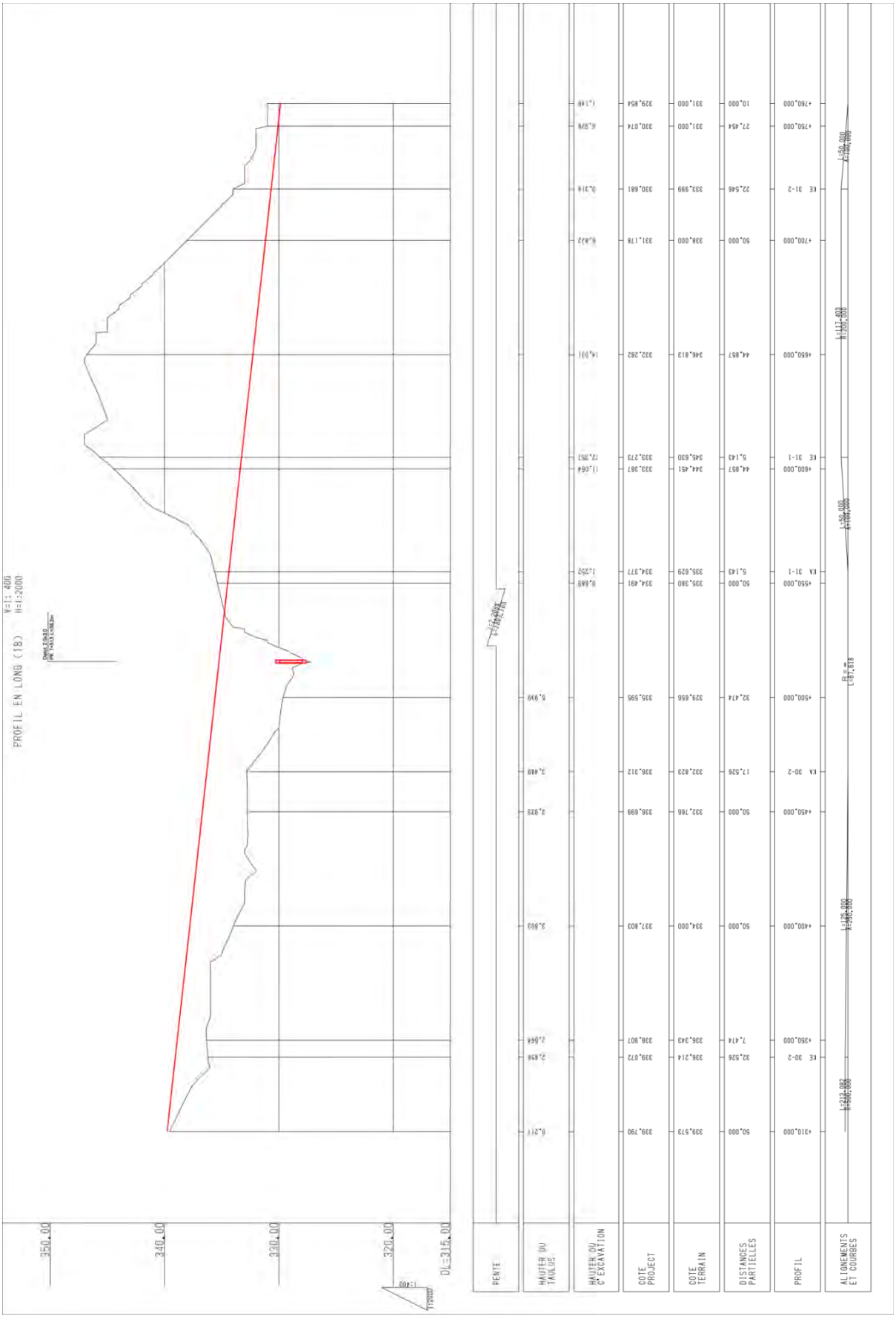

Figure A8-2 Profile of Malfakassa Bypass (18)

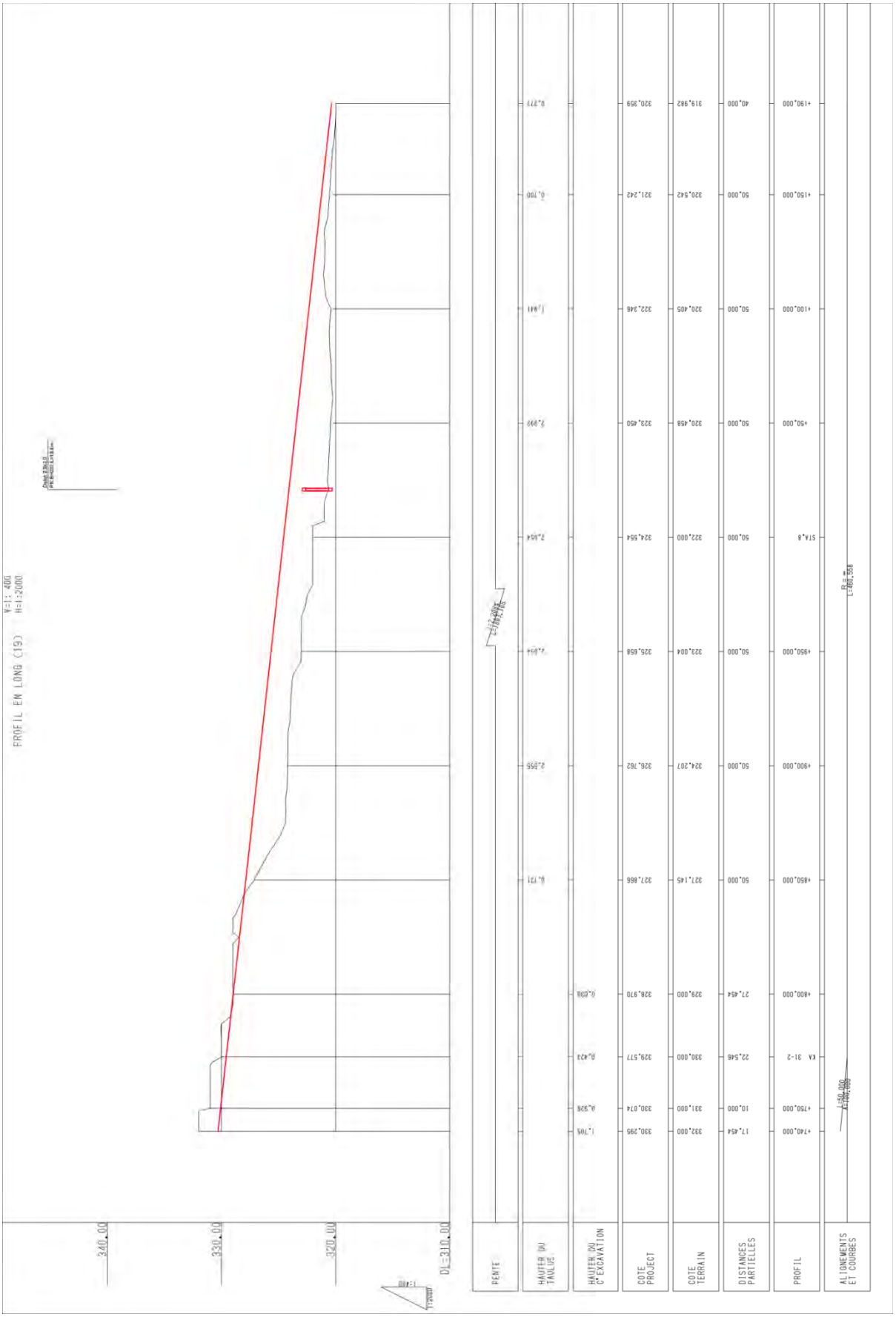

Figure A8-2 Profile of Malfakassa Bypass (19)

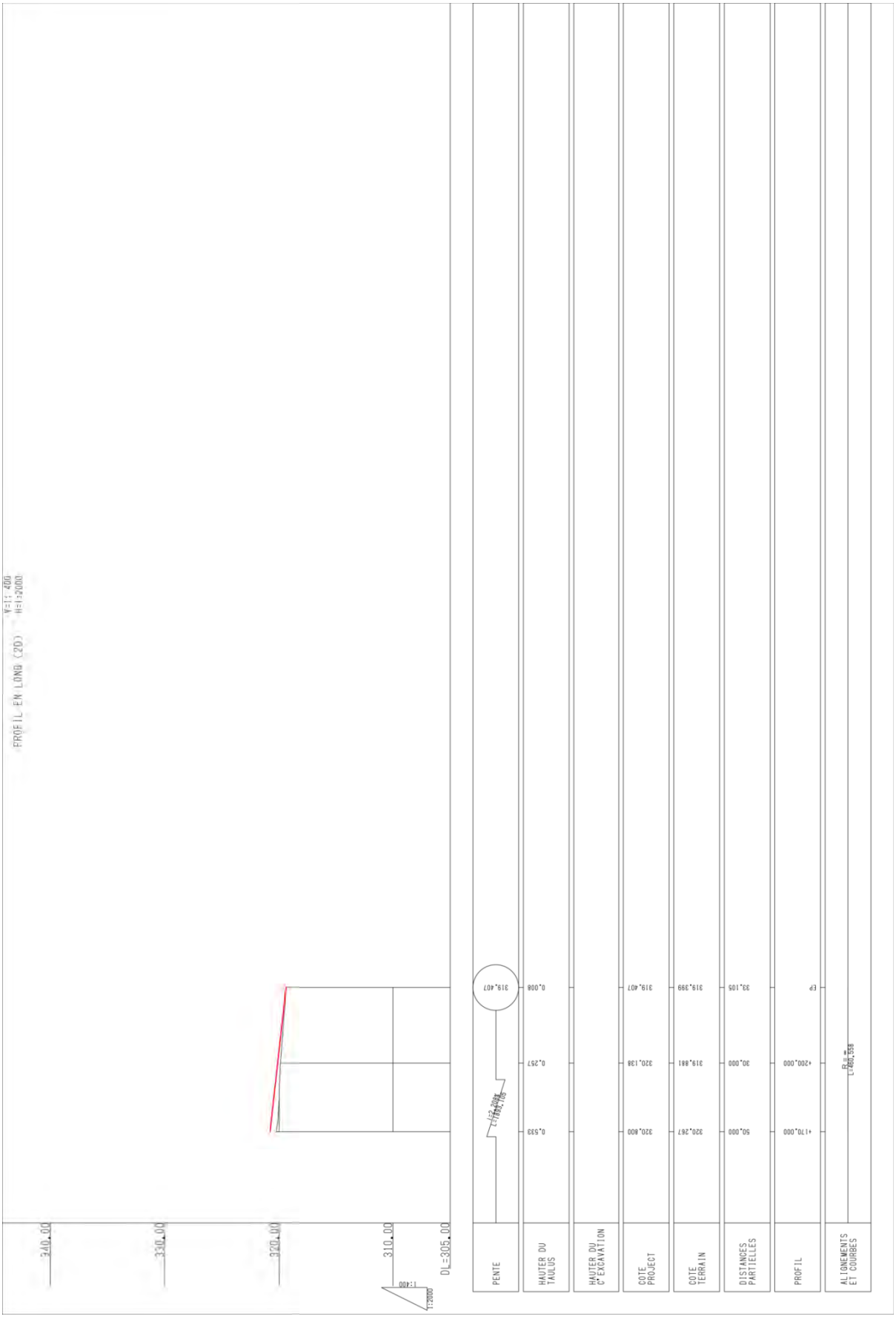

Figure A8-2 Profile of Malfakassa Bypass (20)

Appendix 9 Superstructure and Substructure Designs of Bridges

Appendix 9-1 Superstructure and Substructure Designs of Bridge Across the Kara River

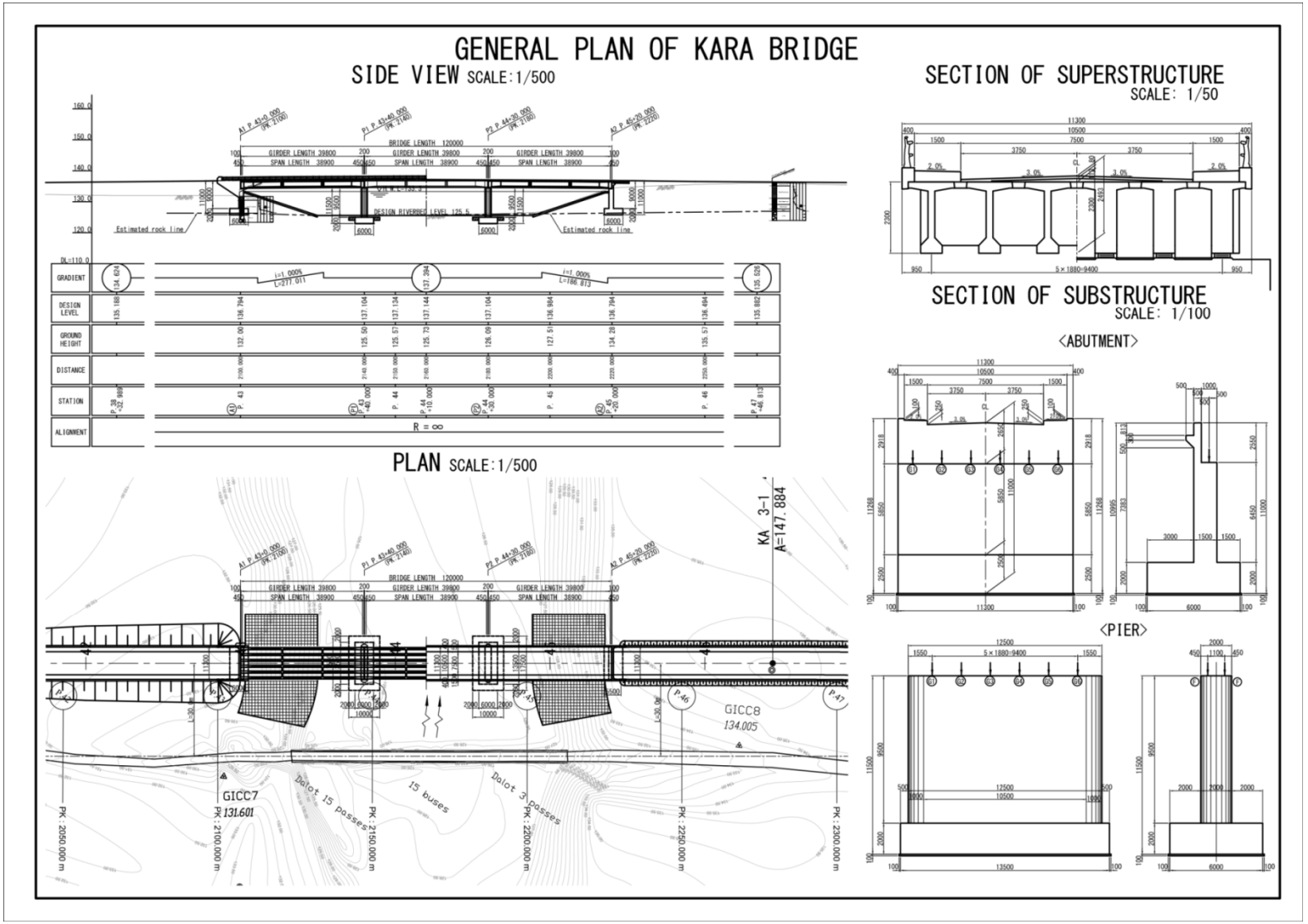

Figure A9-1 General Plan of Bridge across the Kara River

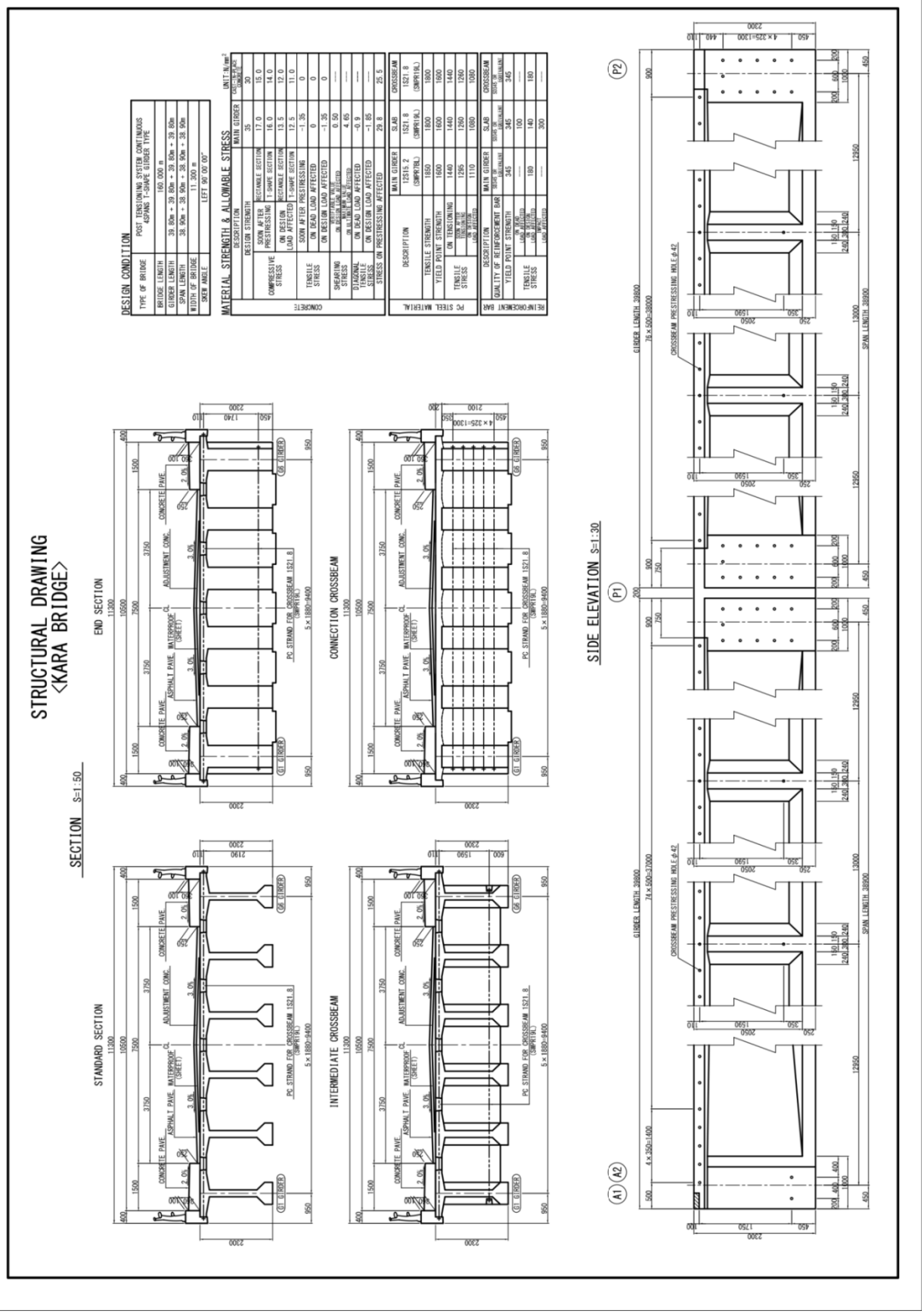

Figure A9-2 Structural Drawing of Superstructure of Bridge across the Kara River

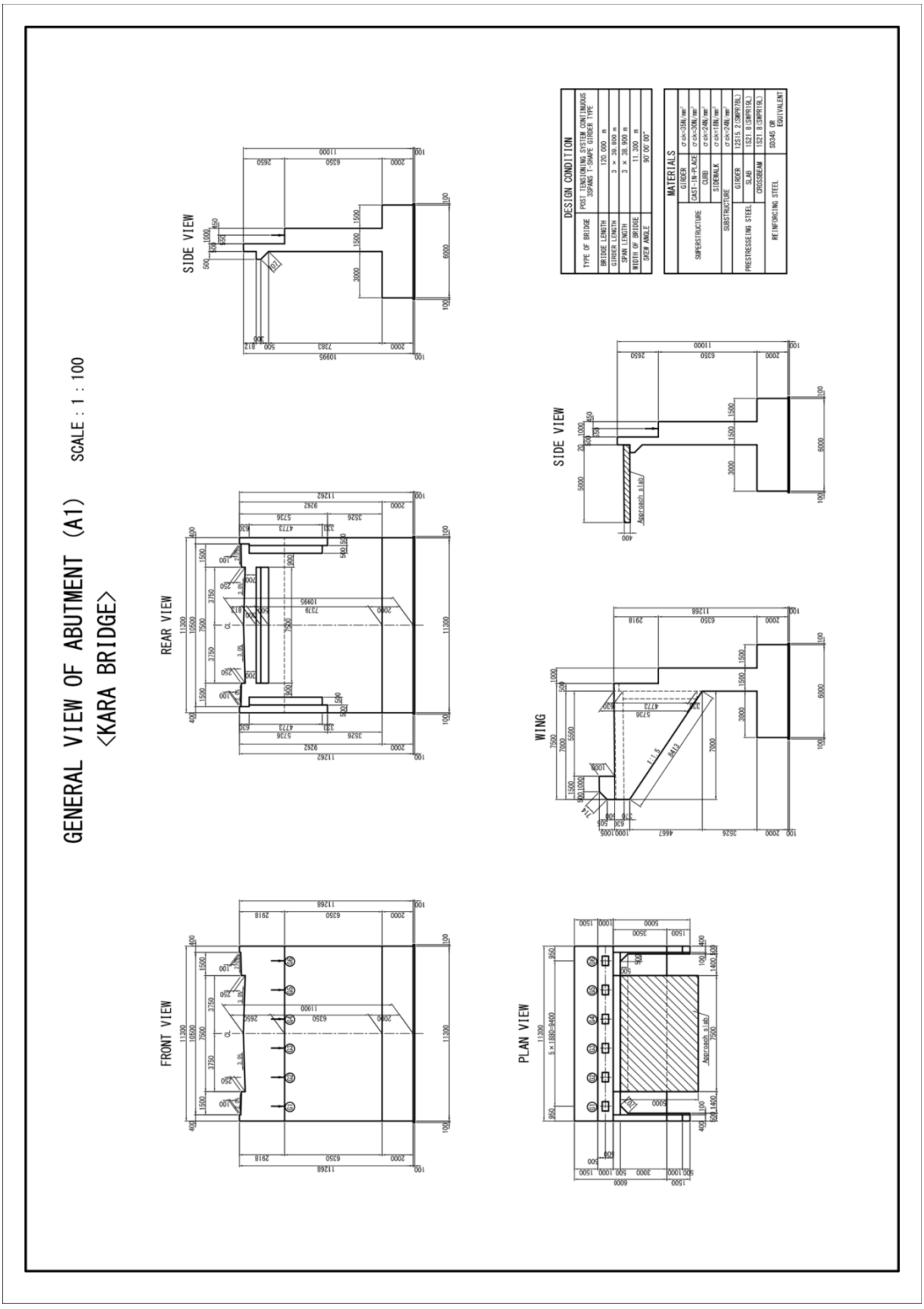

Figure A9-3 Structural Drawing of Substructure of Bridge across the Kara River (1)

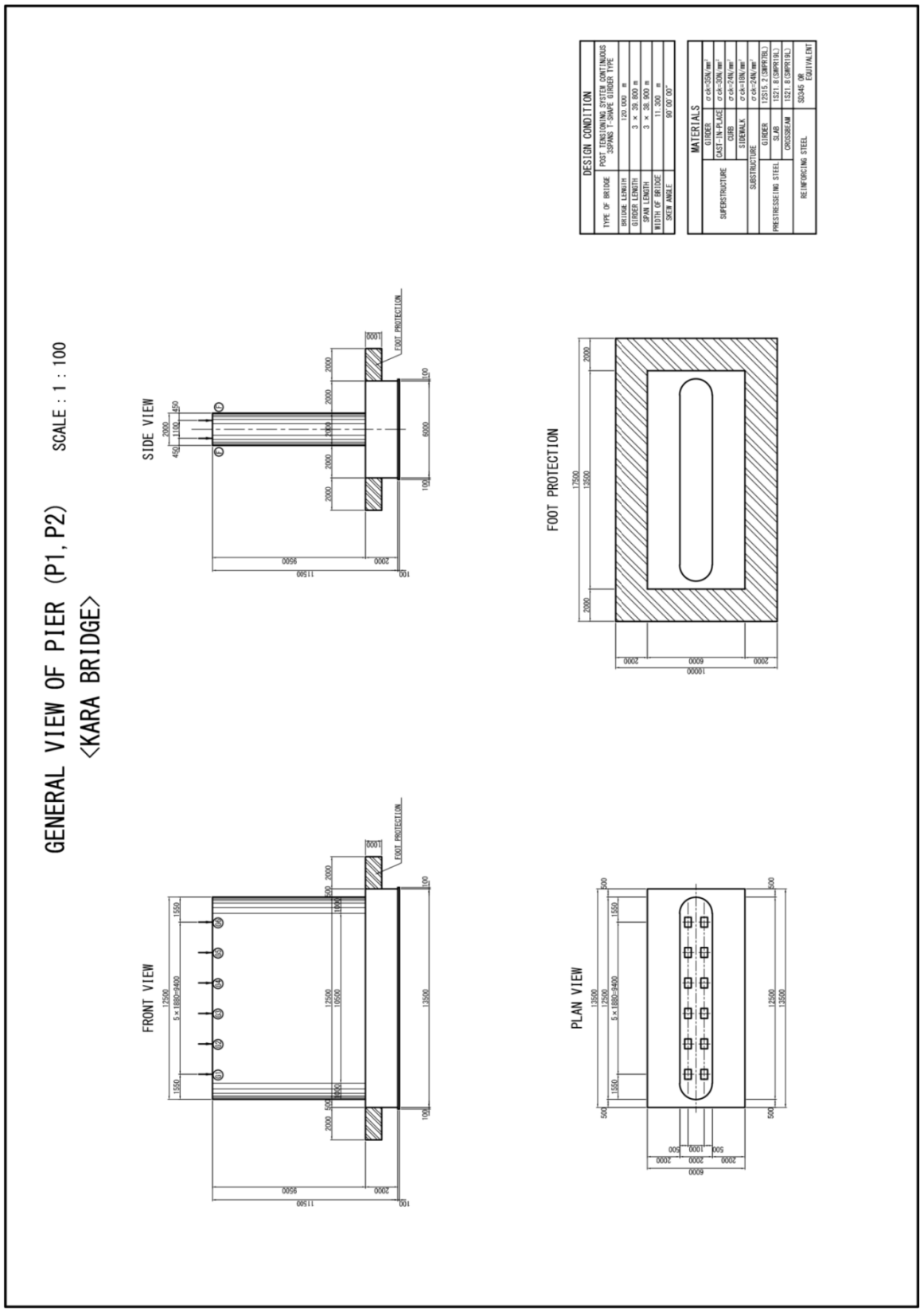

Figure A9-3 Structural Drawing of Substructure of Bridge across the Kara River (2)

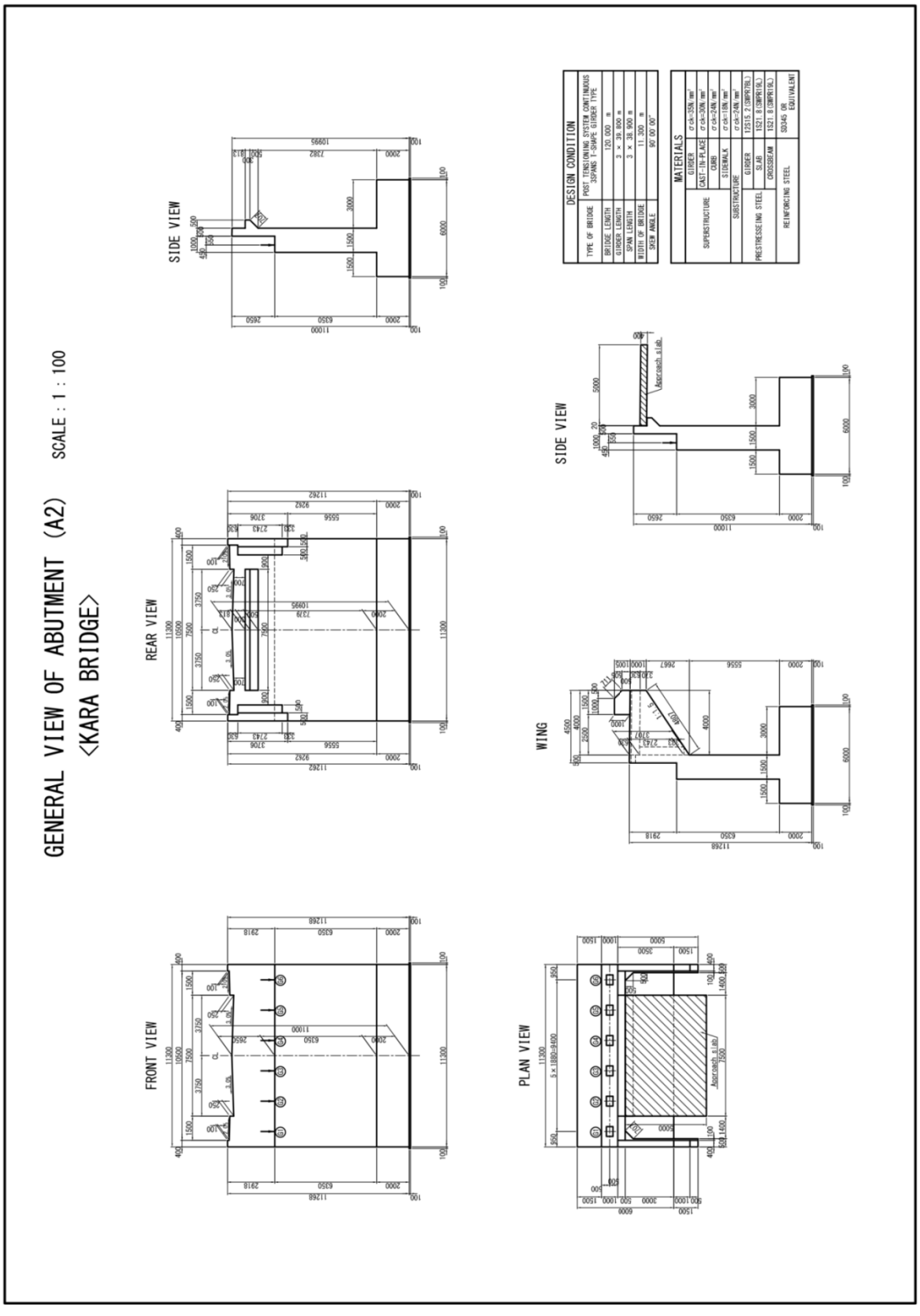

Figure A9-3 Structural Drawing of Substructure of Bridge across the Kara River (3)

Appendix 9-2 Superstructure and Substructure Designs of Bridge Across the Koumongou River

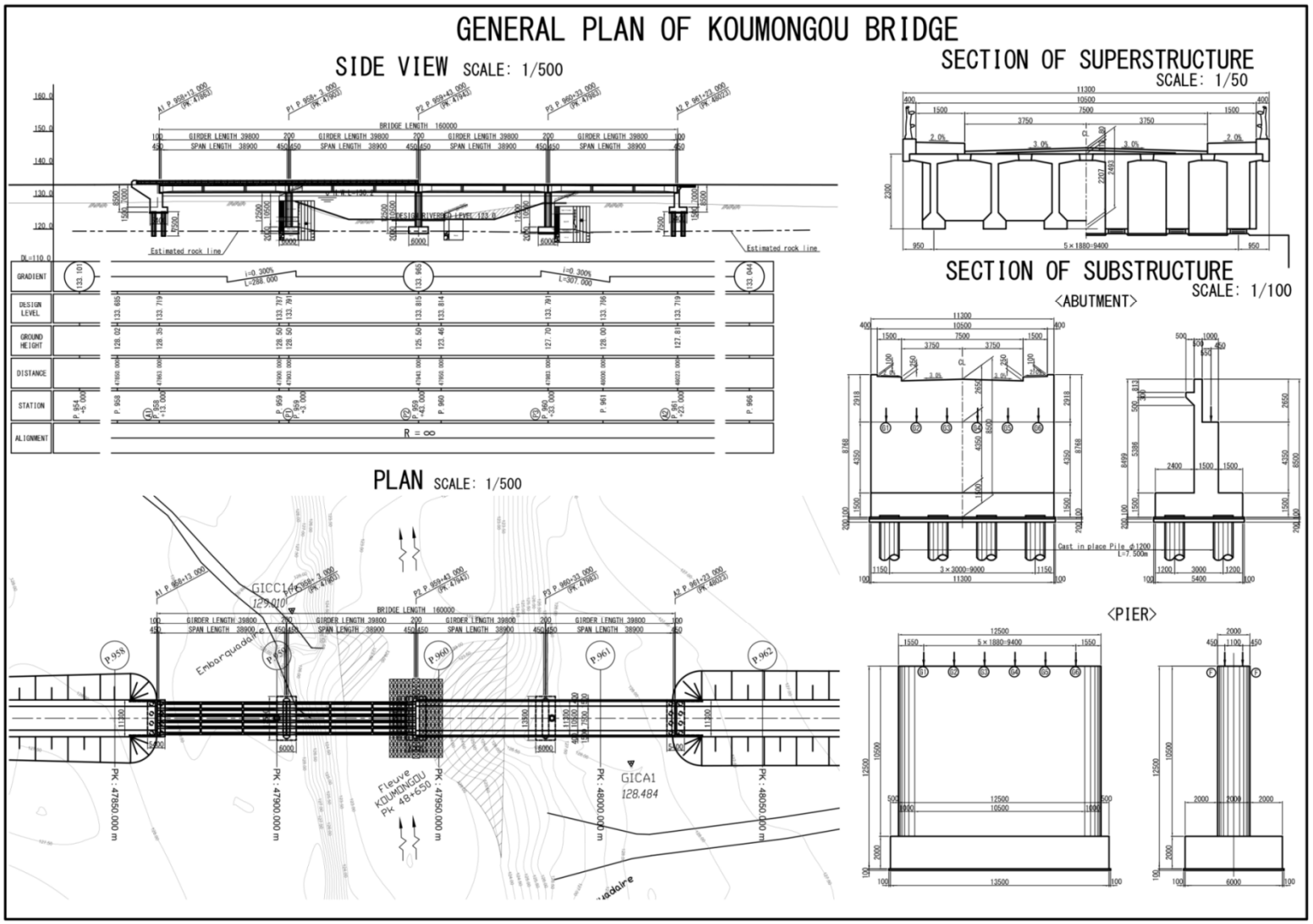

Figure A9-4 General Plan of Bridge across the Koumongou River

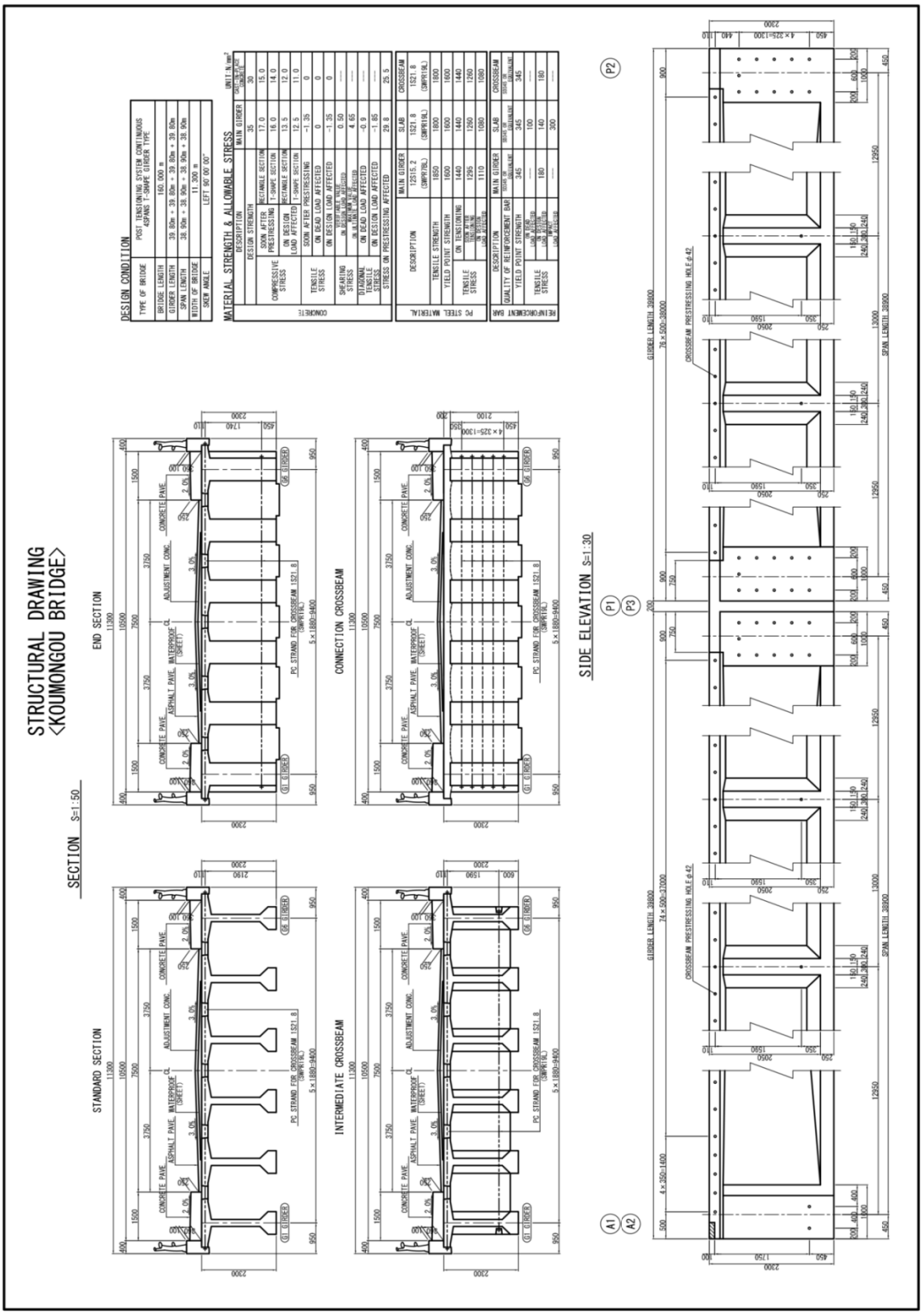

Figure A9-5 Structural Drawing of Superstructure of Bridge across the Koumongou River

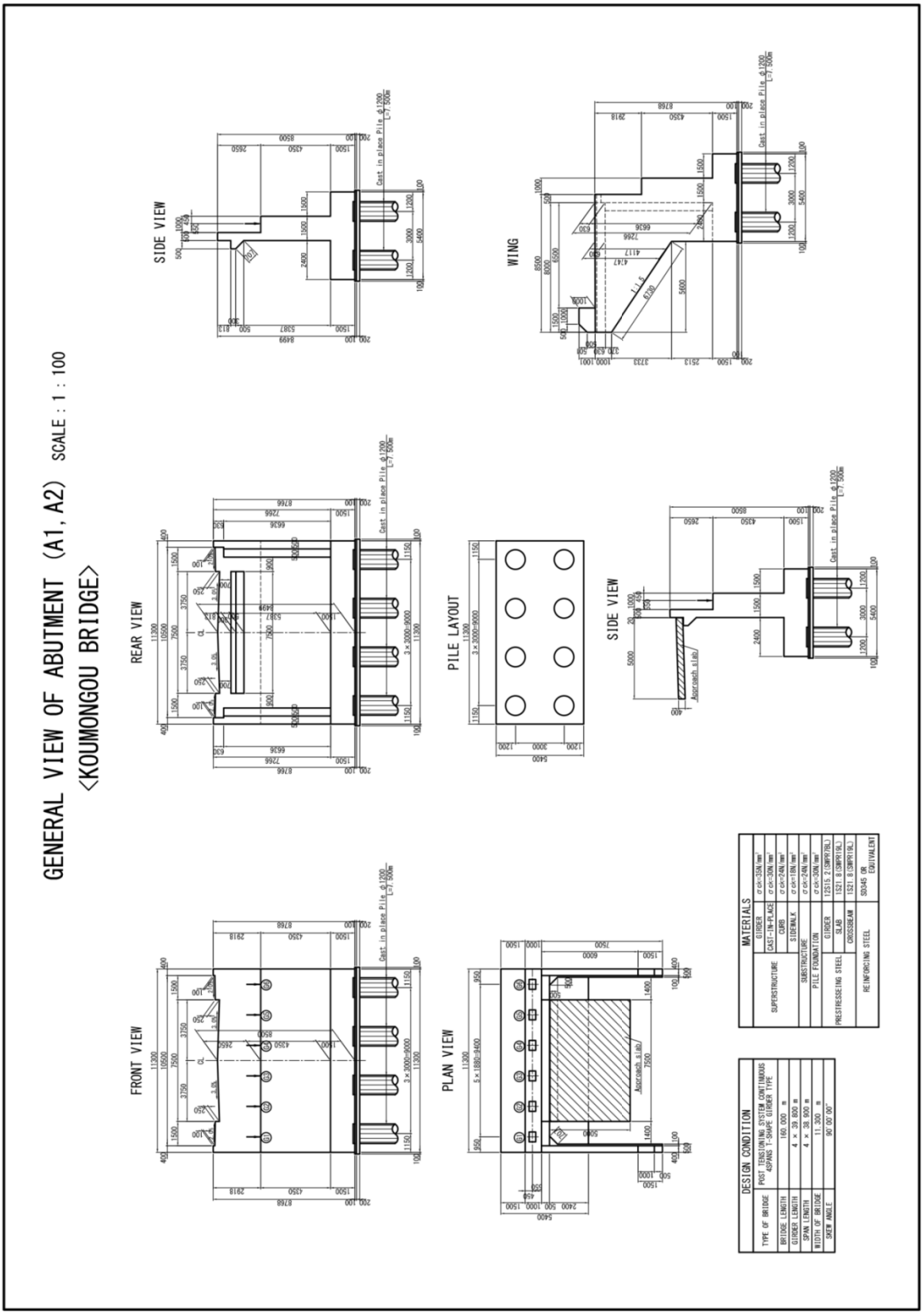

Figure A9-6 Structural Drawing of Substructure of Bridge across the Koumongou River (1)

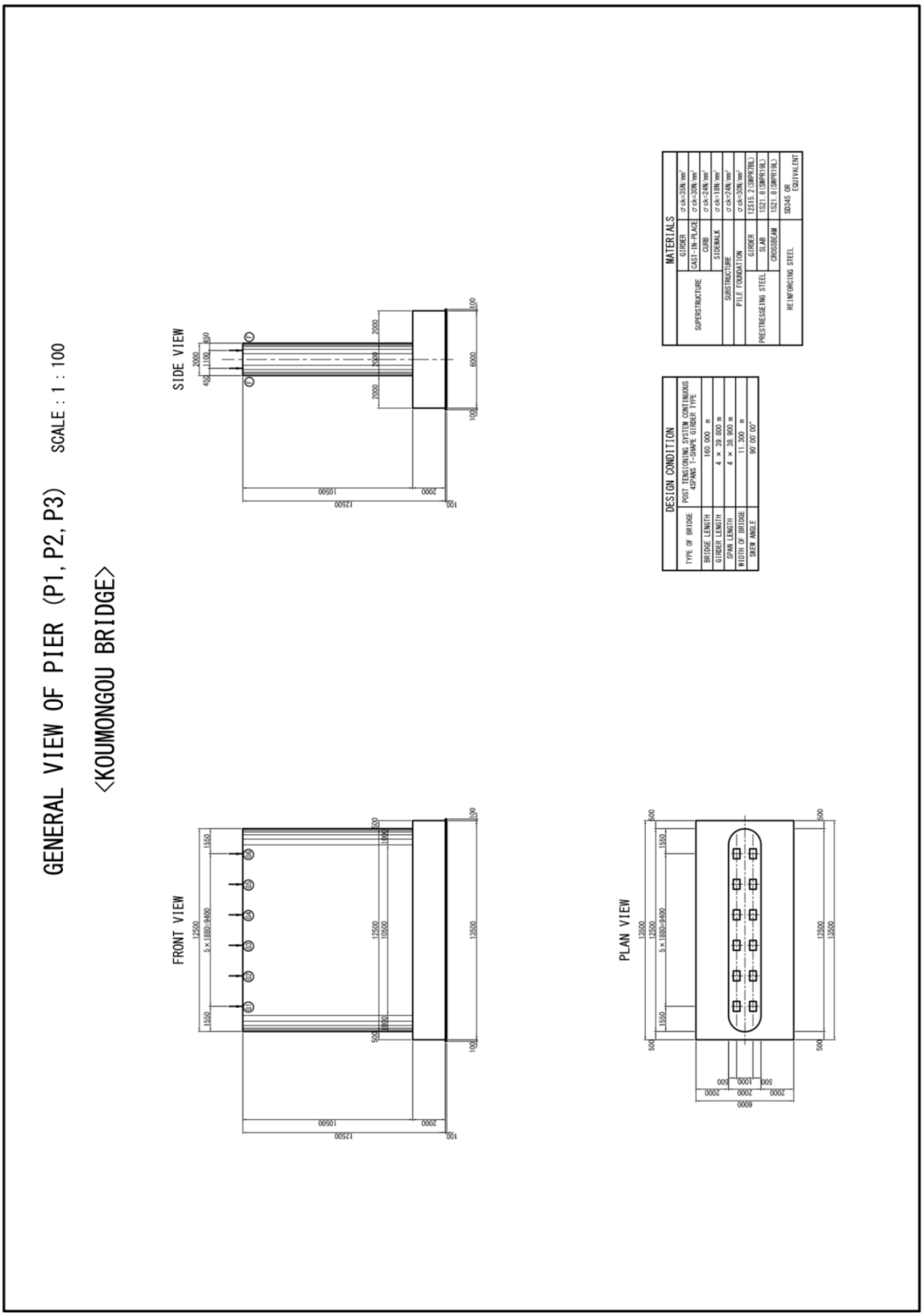

Figure A9-6 Structural Drawing of Substructure of Bridge across the Koumongou River (2)