

The Best Solution





The Best Solution



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COMPANY





CLENCI – Clínica de Engenharia Civil, Lda. was founded in September 1999 with the purpose of consulting, advice and analysis, management and technical coordination, supervision and quality control, studies, projects and other works of engineering.

It has a dynamic and versatile staff, specialized in various fields of engineering. The company has gained prestige over the years due to the quality, accuracy and ethics that characterize its work.

The company has focused most of its activities in the area of Roads and Transports. Some of the works are presented in this document.



MISSION

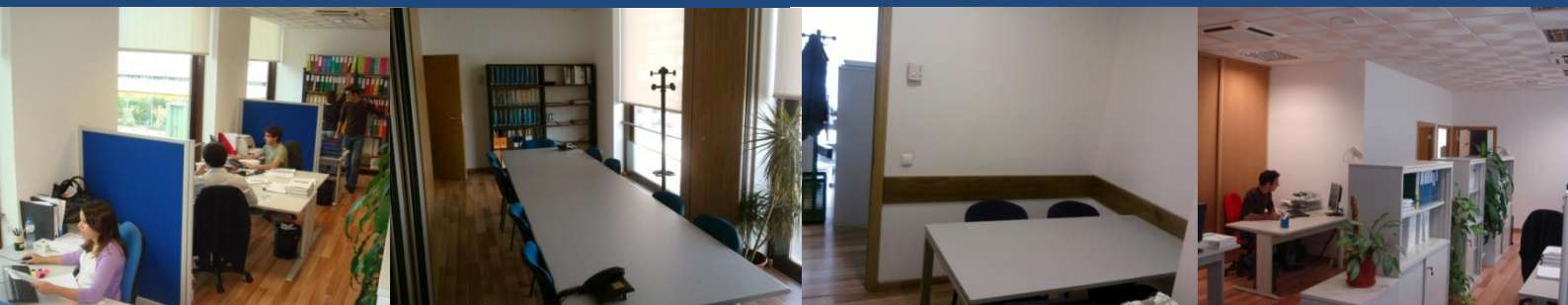
Provision services of high quality engineering

VISION

Be a reference in the consultancy area

VALUES

Confidence
Qua**L**ity
Cr**E**dibility
Integrity
Effi**C**iciency
Innovation



CLENCI have all the technical equipment needed to the execution of studies and projects in its areas of intervention.

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Lote 1.02.1.1, Edifício Z,
Piso 3 /32B Parque das Nações,
1990-203 Lisboa
Portugal



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Localization Map:







CLIENTS





Our primary concerns are the priorities of our Clients. All of our efforts and commitment are directed to the satisfaction of your goals.

CLIENTS

- **AELO** - Auto-Estradas do Litoral Oeste, S.A.
- **AEA** - Auto-Estradas do Atlântico, S.A.
- **AETM** - Auto-Estradas do Marão, S.A.
- **ANA** - Aeroportos de Portugal, S.A.
- **CMO** - Câmara Municipal de Oeiras
- **CMS** - Câmara Municipal de Setúbal
- **CMSMA** - Câmara Municipal de Sobral de Monte Agraço
- **CMTV** - Câmara Municipal de Torres Vedras
- **LENA** - Engenharia e Construções, S.A.
- **DENAP** - Desenvolvimento e Análise de Projectos, Lda.
- **EIFFAGE Construction**, S.A.
- **ESTUDOCIVIL** - Estudos, Projectos e Obras de Engenharia Civil, Lda.
- **EXPROPRIARTE** - Estudos e Projectos de Engenharia, Lda.
- **FERBRITAS** - Empreendimentos Industriais e Comerciais, S.A.
- **GLOBALVIA** - Consultores de Engenharia, S.A.
- **IKEA Portugal** - Móveis e Decoração, Lda.
- **LACE** - ACE - Litoral Atlântico Construtores, ACE
- **LOC** - Litoral Oeste Construtores, ACE
- **MAJIG** - International Transportation Consulting Engineers (Sudan)
- **MSF Engenharia**, S.A.
- **NOVOPCA** - Construtores Associados, S.A.
- **OESTEROTA** - Concessões Rodoviárias de Portugal, S.A.
- **PROFICO** - Projectos, Fiscalização e Consultadoria, Lda.
- **PROPLANO** - Gabinete de Estudos e Projectos, Lda.
- **REFUNDOS** - Sociedade Gestora de Fundos de Investimento Imobiliário, S.A.
- **SARCO** - Roads and Bridges (Sudan)
- **Sierra Management Portugal**, S.A.
- **SOMAGUE Engenharia**, S.A.
- **Trakia Motorway**, AD (Bulgaria)
- **VIALITORAL** - Concessões Rodoviárias da Madeira, S.A.
- **VIÉS** - Consultoria, Estudos e Projectos de Engenharia, Lda.





PROJECTS





PROJECTS

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1. STUDIES AND DESIGN

- Trakia Motorway
Concession Exploitation Studies

Country

Bulgary

Client

Trakia Motorway, AD

Period of execution

2007/2008

Dimension

440km

Description

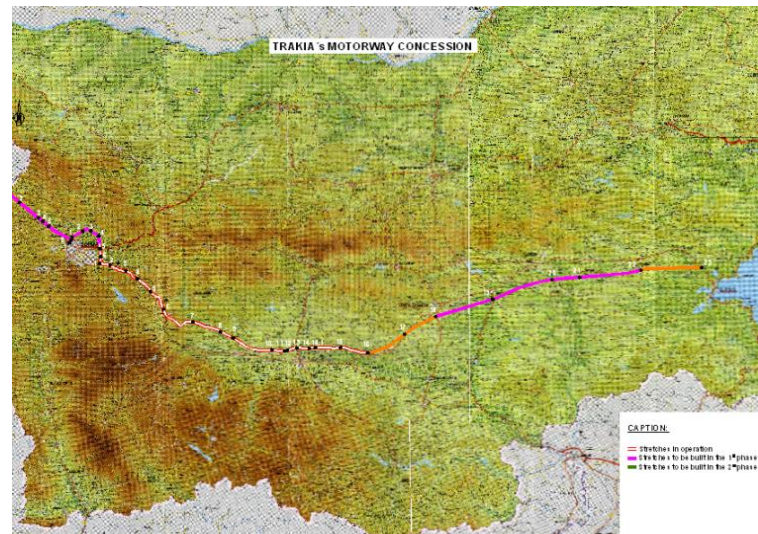
Trakia Motorway develops between Serbia-Montenegro and the Black Sea with approximately 440km length and studies involved the conception of a toll system Preliminary Design, including the alteration of 30 road junctions to be equipped with tolls.

Elements developed by themes:

Theme I - Concession Map, toll system characterization, exploitation scheme, Management and Maintenance Centers (MMC) and Winter Maintenance Centers (WCC) schemes;

Theme II - Tolls and road junctions, including the study of road junctions geometry, the connections to the existent network and the design of toll plazas;

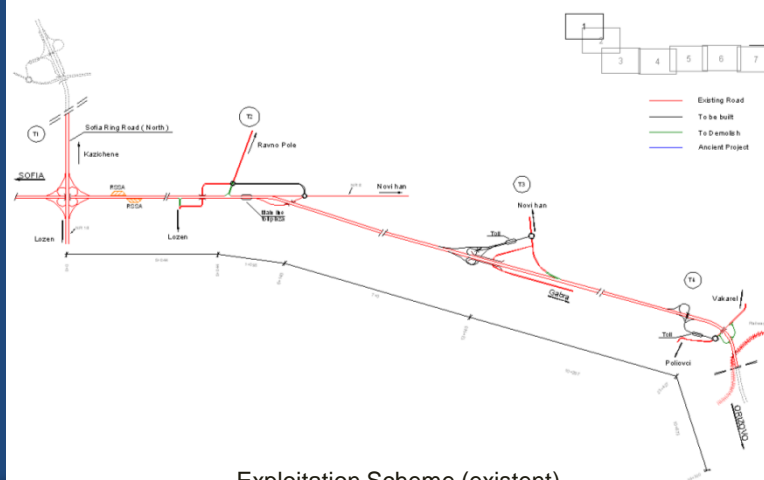
(Continue)



Concession Scheme



TRAKIA - R4 Road Junction



Exploitation Scheme (existent)

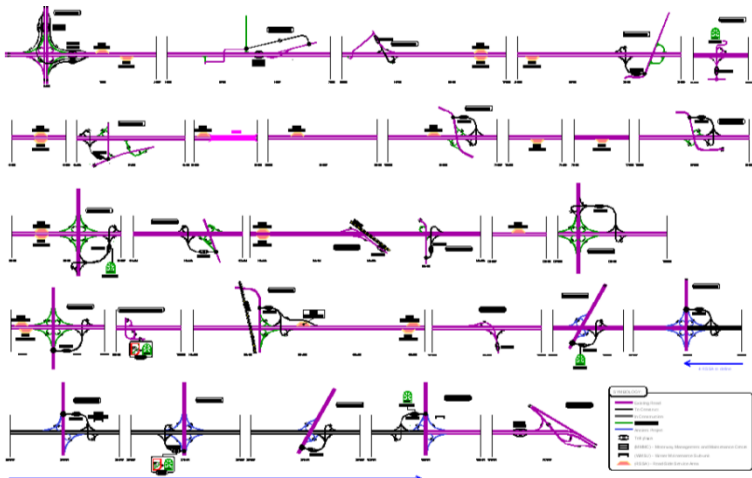
1. STUDIES AND DESIGN

- Trakia Motorway
Concession Exploitation Studies

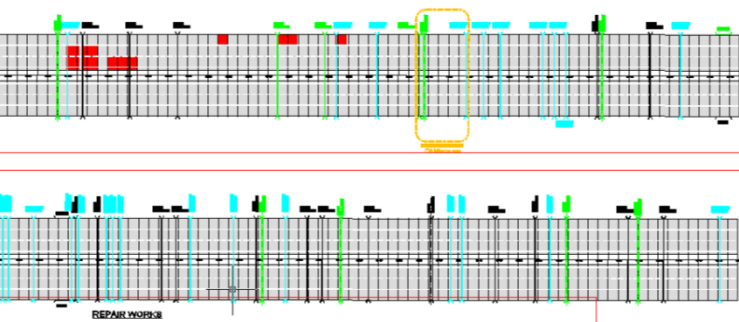
(Continuation)

Theme III – Intervention maps involving the realization of synthesis maps and schematic plans of all interventions provided in the sections opened to traffic;

Theme IV – Operation elements, including the preparation of background documentation for the control and traffic management systems, clients assistance system and the organization of conservation and maintenance systems.



Management and Maintenance Centers (MMC) and Winter Maintenance Centers (WCC) scheme



Plant Synthesis of intervention in the existing



MMC/WCC Typical General Plan

1. STUDIES AND DESIGN

➤ El Nile Street

Country

Sudan

Client

MAJIG – International Transportation Consulting Engineers / Road Department - Ministry of Physical Planning and Public Utilities - Khartoum State

Period of execution

2006/2007

Dimension

13 km

Description

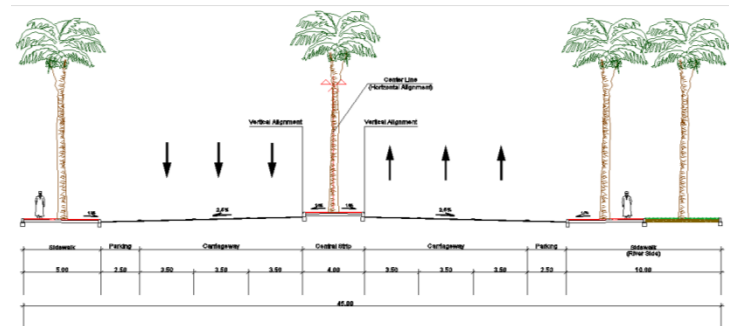
El Nile Road Design involved the benefiting and widening of approximately 13 km.

This Design was developed for a typical cross section with 40 meters wide, a carriageway with 3 lanes on each way, central strip and 6 main intersections.

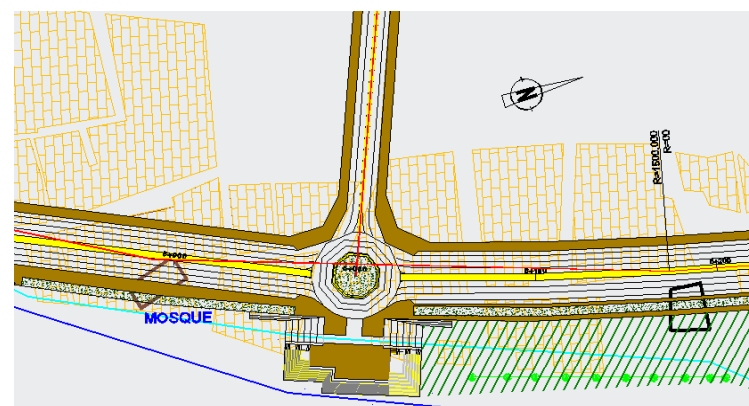
The Design was composed of several volumes, including Geometry, Drainage, Pavement, Signalling, Landscaping and Lighting.



El Nile Street – Typical Pier



El Nile Street - Typical Cross section



El Nile Street – Road Junction (km 6+000)

1. STUDIES AND DESIGN

➤ El Wadi Surrounding Area

Country

Sudan

Client

MAJIG – International Transportation Consulting Engineers / Road Department - Ministry of Physical Planning and Public Utilities - Khartoum State

Period of execution

2005/2006

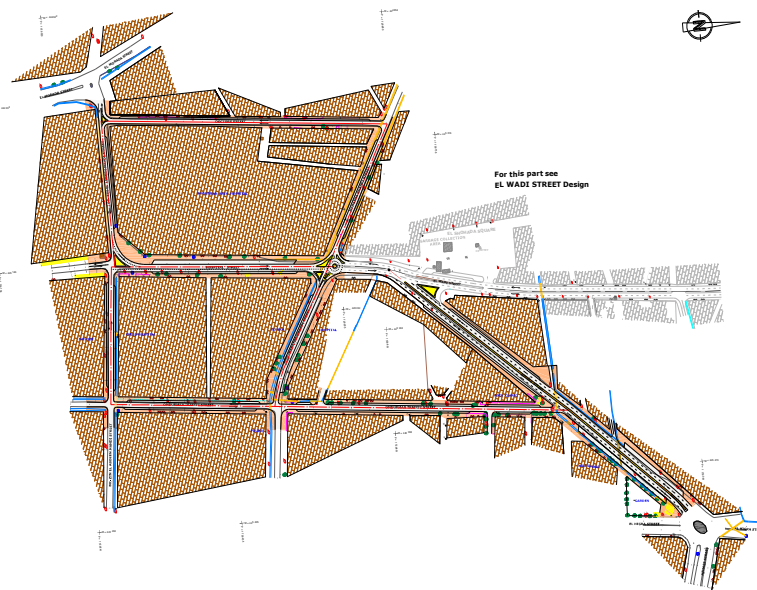
Dimension

2,0 km

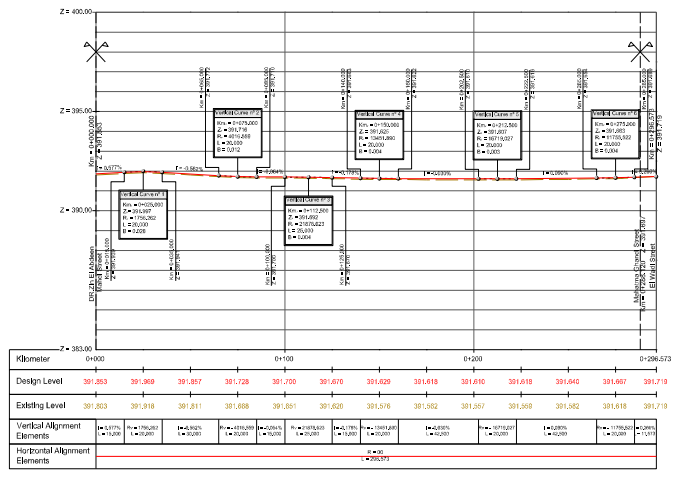
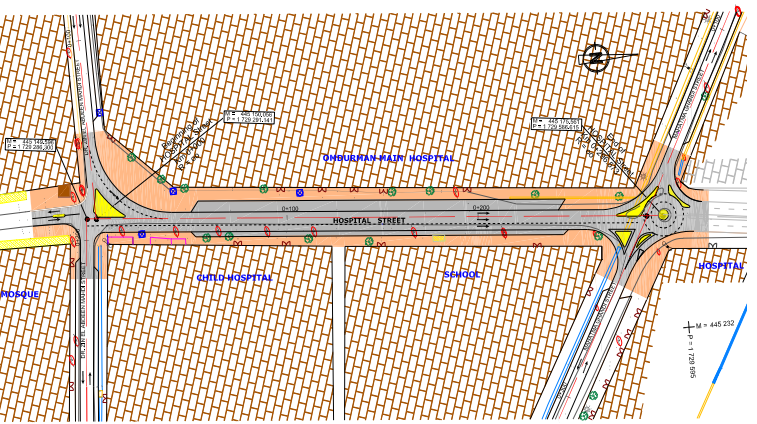
Description

El Wadi Surrounding Area Design was developed to reorganize, to benefit and to do the widening of six streets with an extension of approximately 2,0 km on the initial part of El Wadi Street, situated in the old zone of Omdurman (State of Khartoum).

The Design is composed of several volumes, including Geometry, Drainage, Intersections, Pavement, Signalling, Landscaping and Lighting.



General Plan



Horizontal and Vertical Alignment of the Hospital Street

1. STUDIES AND DESIGN

➤ Africa Street / Africa Road

Country

Sudan

Client

MAJIG – International Transportation Consulting Engineers / Road Department - Ministry of Physical Planning and Public Utilities - Khartoum State

Period of execution

2005/2006

Dimension

Africa Street – 6,5 km

Africa Road – 26 km

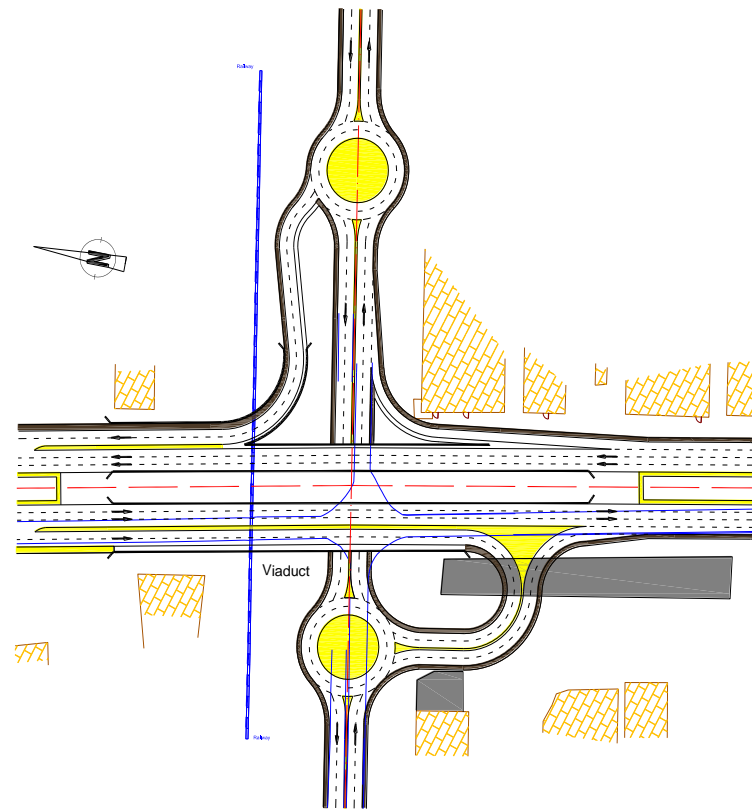
Description

The Project is composed of two different studies. The first study (Africa Street) develops in a urban area, with a cross section of 65 meters wide, a carriageway composed by 3+3 lanes on each way, central strip and includes 9 main intersections. This new avenue starts in the Khartoum Airport area and develops to the South of the city.

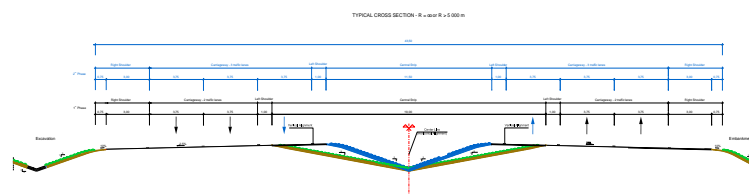
The second study (Africa Road) develops in a rural environment, with a cross section composed by a 2x2 carriageways with central ditch and includes 2 main intersections.

This project was developed in two separate design stages:

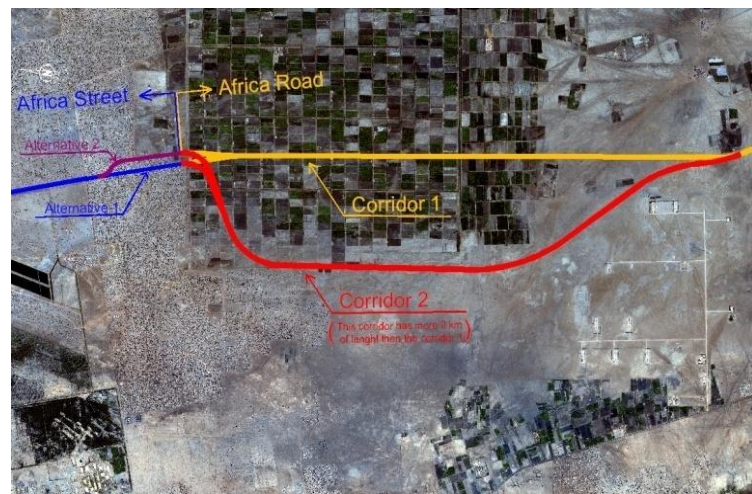
- Africa Street – Basic Design
- Africa Road – Preliminary Design



Africa Street – Railroad crossing and connection to the existing road network



Africa Road – Typical Cross section



Satellite image with geometric alternatives

1. STUDIES AND DESIGN

➤ El Wadi Street

Country

Sudan

Client

MAJIG – International Transportation Consulting Engineers / Road Department - Ministry of Physical Planning and Public Utilities - Khartoum State

Period of execution

2005

Dimension

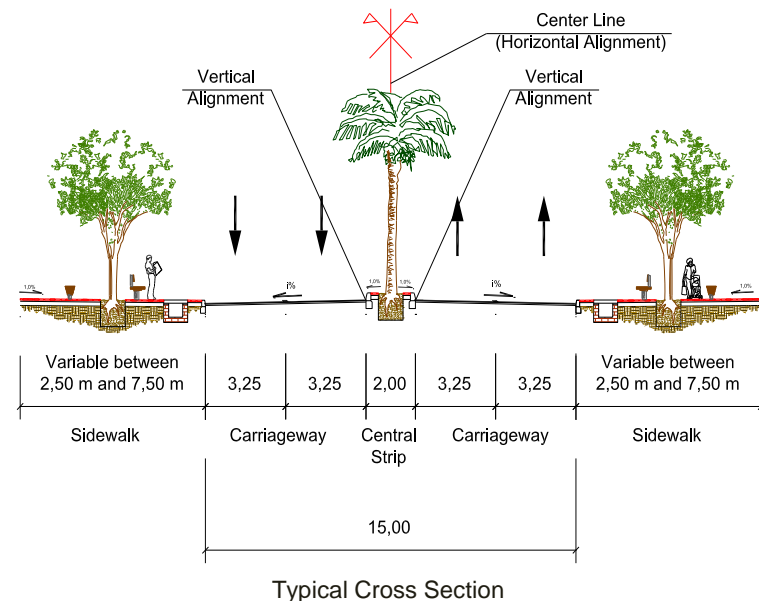
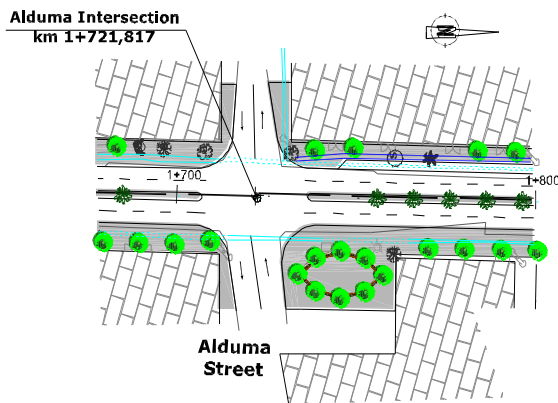
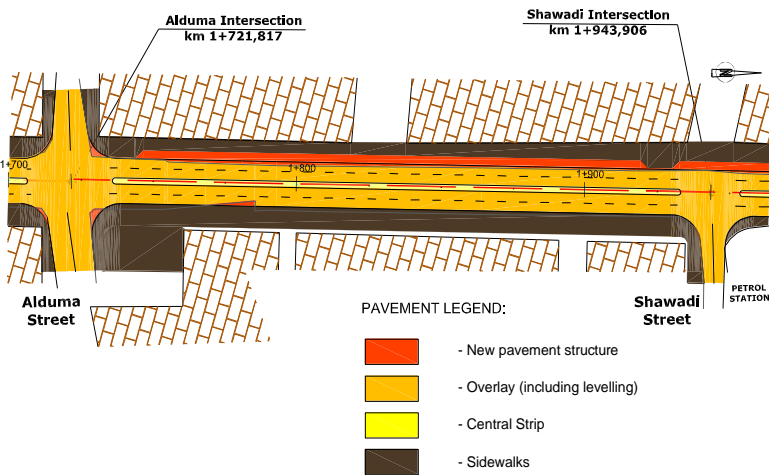
2,5 km

Description

El Wadi Street develops in the old city of Omdurman (Khartoum State) and the goal of the intervention was the rehabilitation and widening of the road.

This Design was developed for a typical cross section with 20 meters wide, a carriageway with 2 lanes on each way, central strip and includes 7 main intersections.

The Design is composed of several volumes, including Geometry, Drainage, Pavement, Signalling, Landscaping and Lighting.



1. STUDIES AND DESIGN

➤ 60th Street

Country

Sudan

Client

MAJIG – International Transportation Consulting Engineers / Road Department - Ministry of Physical Planning and Public Utilities - Khartoum State

Period of execution

2004/2005

Dimension

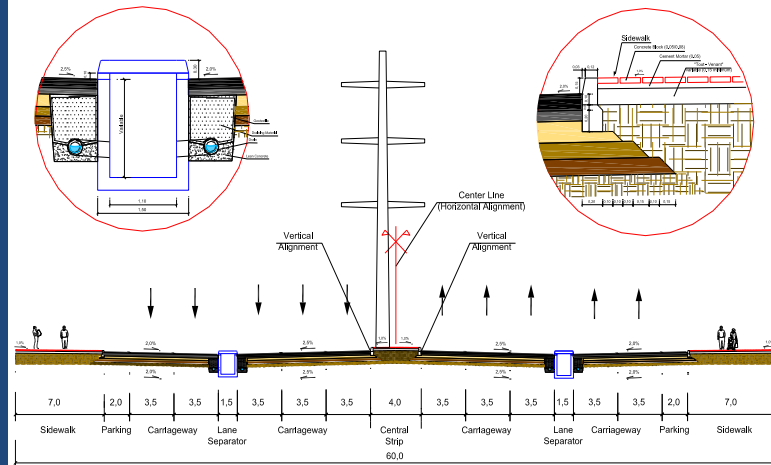
8 km

Description

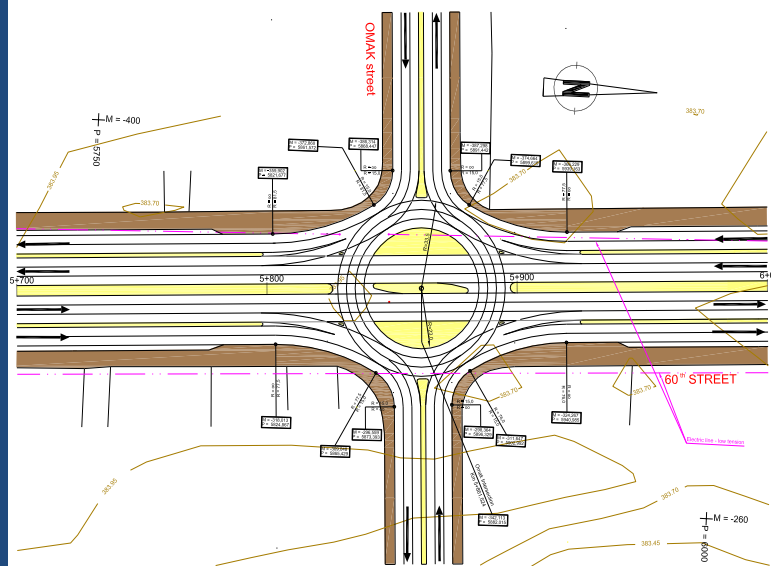
The 60th Street connects two of the most important roads of Khartoum and also makes the connection to the preferential access to the New Bridge over the Blue Nile River.

This Design was developed for a typical cross section with 60 meters wide, a carriageway with 3+2 lanes on each way, central strip and 16 main intersections.

The Design is composed of several volumes, including Geometry, Drainage, Intersections, Pavement, Signalling, Landscaping and Lighting.



Typical Cross Section



Omak Intersection



View of 60th Street

1. STUDIES AND DESIGN

➤ Gândara Road Junction improvement

Country

Portugal

Client

Auto-estradas do Litoral Oeste

Period of execution

2011

Dimension

1,1 km

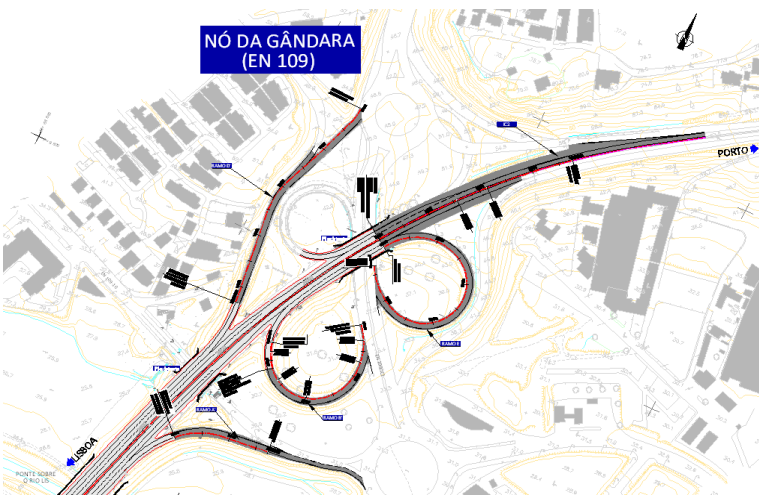
Description

Design involves the rehabilitation of the Gândara road junction and includes the geometric parameters rectification of IC2 main section (between the end of the widening intervention at the km 3+075 and the concession limits) and four intersection legs of the existent road junction.

The Design is composed of several volumes, including Geometry, Drainage, Pavement, Signalling and Road Restraint Systems.



Photomap



General Plan



Gândara road junction photo report

1. STUDIES AND DESIGN

➤ VR1 – Ribeira Brava/Porto do Caniçal

Country

Portugal

Client

Vialitoral – Concessões Rodoviárias da Madeira, S.A.

Period of execution

2011

Dimension

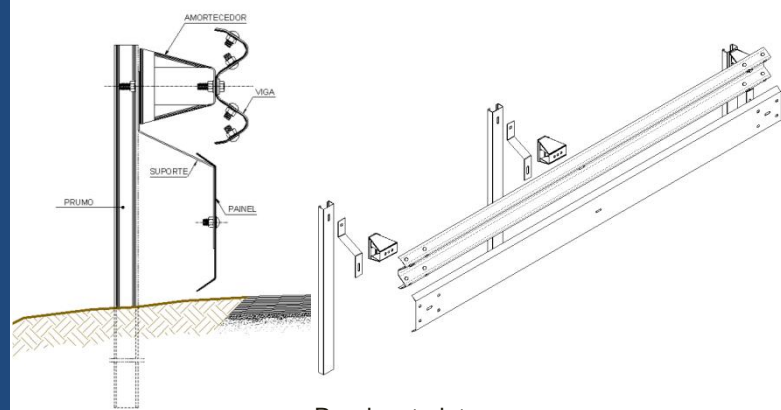
44 km

Description

Review Design of Motorcycle Road Restraint System implementation on the existent safety barriers.



Localization Map of VR1



Road restraints



VR1 general view



Photo report

1. STUDIES AND DESIGN

- Metro do Mondego
Miranda do Corvo / Serpins

Country

Portugal

Client

Metro do Mondego / Febritas, Empreendimentos Industriais e Comerciais S.A. / Profico, Projectos, Fiscalização e Consultadoria, Lda.

Period of execution

2010

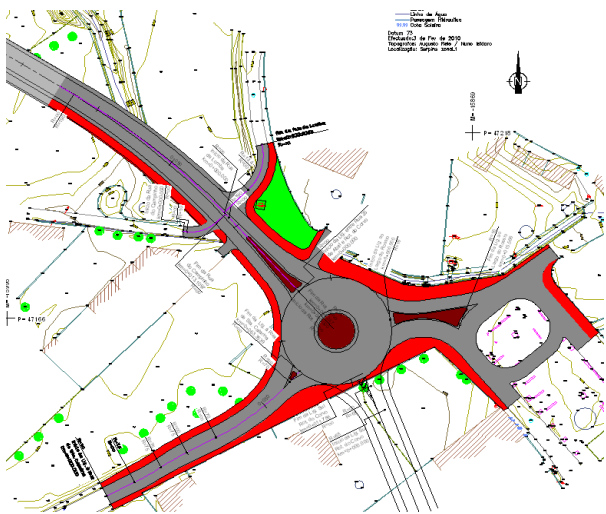
Dimension

1,1 km

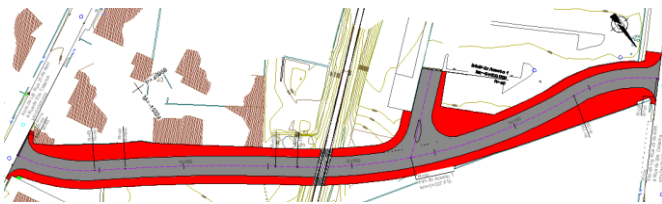
Description

Preliminary Studies and Design included two new roads, connecting 25 de Abril street and Santa Catarina street (in Miranda do Corvo), and the reformulation of Casal de Santo António street cross section (in Serpins).

The Design was prepared in accordance to EP – Estradas de Portugal, E.P.E. standards and the client instructions, including several specific designs (Geometry, Drainage, Pavement and Signalling) and the production of the Technical Specifications.



Corvo roundabout and connection to Sta Catarina street



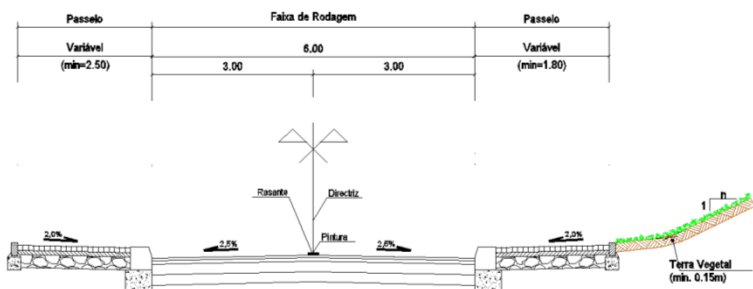
Connection between Sta Catarina street and 25 de Abril street



Serpins roundabout and Casal de Sto António road

Ligação entre a Rua 25 de Abril e a Rua de Santa Catarina

Esc. 1:50



Typical Cross Section

1. STUDIES AND DESIGN

➤ Troino Quarter Reformulation

Country

Portugal

Client

Câmara Municipal de Setúbal

Period of execution

2010

Dimension

10 554 m²

Description

Design of Troino Quarter (located at Setúbal city) include the Requalification and the Revitalization of existent neighborhood, involving the creation of new parking places, streets with conditioned traffic and the improvement of the public space.

The Design was prepared in accordance to EP – Estradas de Portugal, E.P.E. standards and the client instructions, including several specific designs (Geometry, Drainage, Pavement, Signalling, Landscaping and Lighting) and the production of the Technical Specifications.



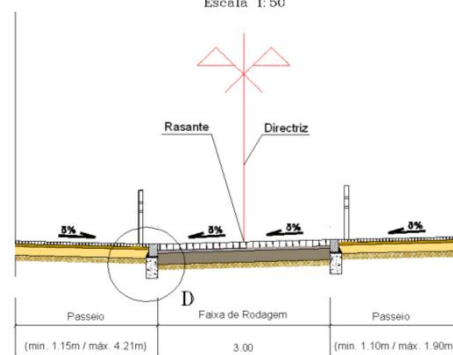
Photomap



General Plan

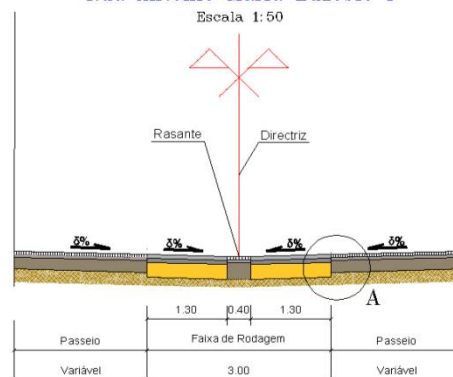
Rua Frei Agostinho da Cruz I

Escala 1:50

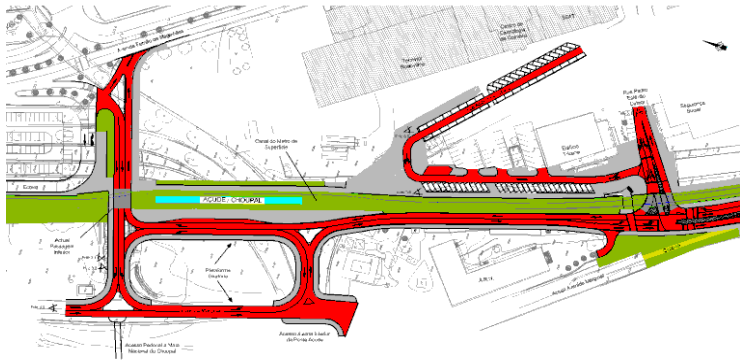


Rua João Eloy do Amaral I Rua Fran Paxeco I Rua António Maria Euzébio I

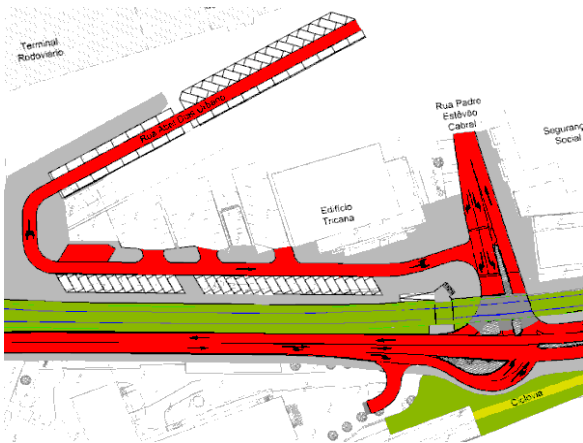
Escala 1:50



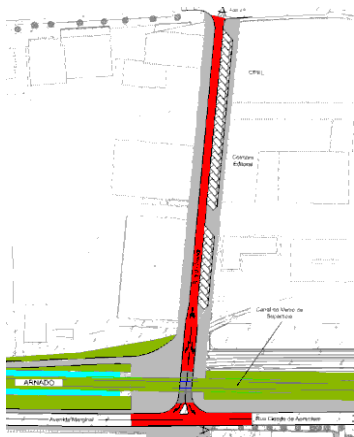
Typical Cross Section



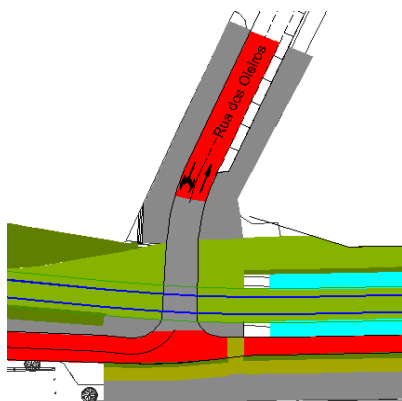
Main road interventions zone



Padre Estêvão Cabral street intersection



Arnado street intersection



Oleiros street intersection

1. STUDIES AND DESIGN

➤Coimbra - B / Portagem
Lousã Railway Stretch

Country

Portugal

Client

Metro do Mondego / Ferbitas, Empreendimentos Industriais e Comerciais S.A / Profico, Projectos, Fiscalização e Consultadoria, Lda.

Period of execution

2009/2010

Dimension

1,5 km

Description

Preliminary Studies and Design for the Integrated Roads in Coimbra-B/Portagem Stretch.

The Design involves the improvement and reformulation of Av. Marginal/Cidade Aeminium streets and the connection to the existing road network.

The Design was prepared in accordance to EP – Estradas de Portugal, E.P.E. standards and the client instructions, including several specific designs: Geometry, Drainage, Pavement and Signalling.

1. STUDIES AND DESIGN

➤ Alentejo, Vendas Novas and Évora railways

Country

Portugal

Client

REFER, E.P.E. / Ferbritas, Empreendimentos Industriais e Comerciais S.A / Profico, Projectos, Fiscalização e Consultadoria, Lda.

Period of execution

2009/2010

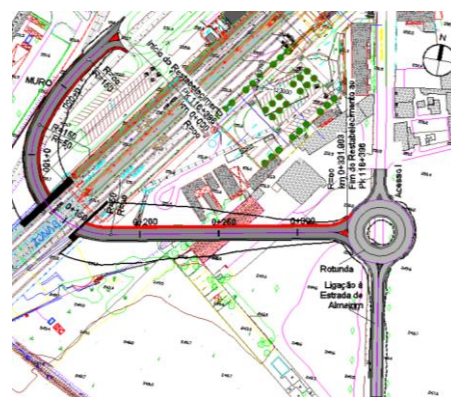
Dimension

1,4 km

Description

Feasibility Study, Preliminary Studies and Design for the elimination of 3 existing railroad crossings located at kilometers 116+396, 117+277 and 117+654.

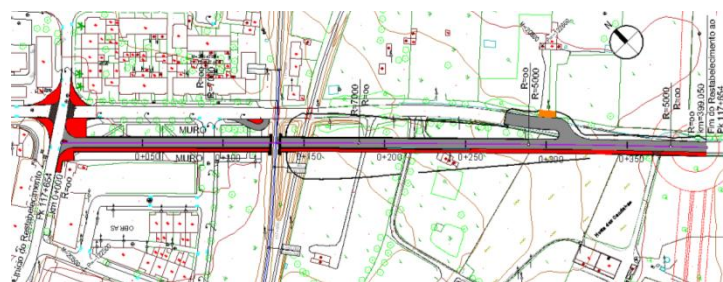
The Design was prepared in accordance to EP – Estradas de Portugal, E.P.E. standards and the client instructions, including several specific designs (Geometry, Drainage, Pavement and Signalling) and the production of the Technical Specifications.



General Plan (Alignment at Km 116+396)



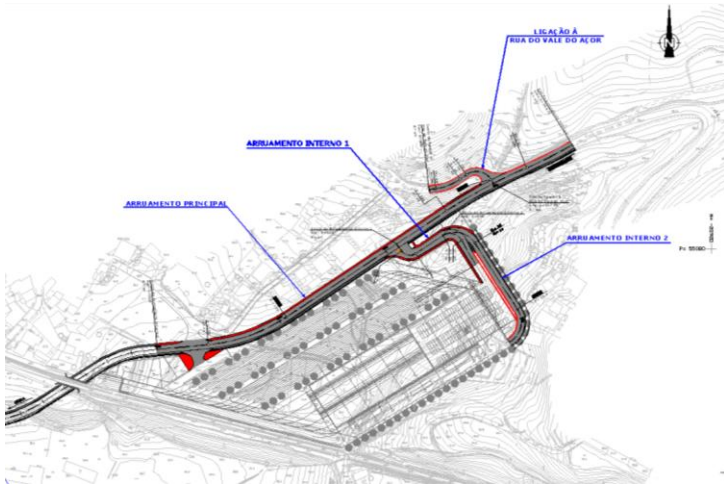
General Plan (Alignment at Km 117+277)



General Plan (Alignment at Km 117+654)

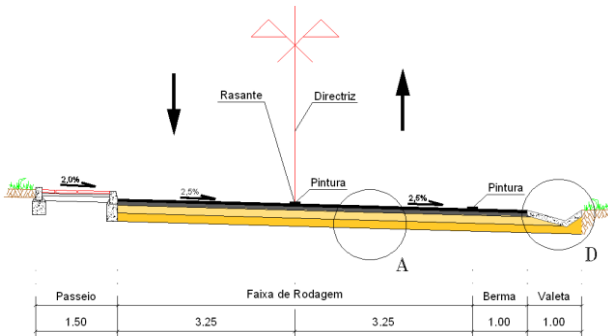


Photo report

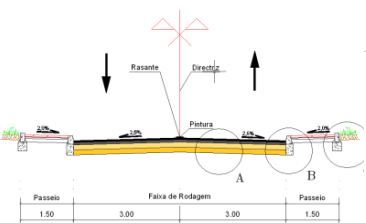


General Plan

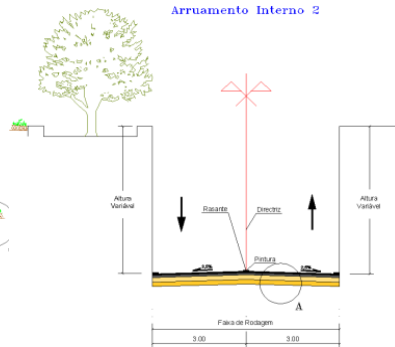
Arruamento Principal



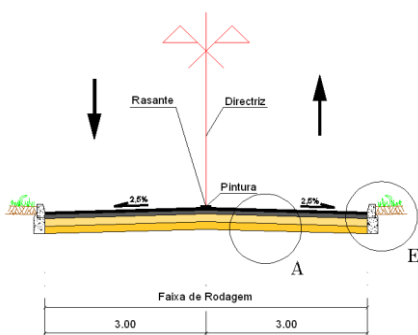
Arruamento Interno 1



Arruamento Interno 2



Ligação à Rua do Vale do Azor



Typical Cross Section

1. STUDIES AND DESIGN

- Lousã Railway Stretch
Mondego Mobility System
Ceira Maintenance Center

Country

Portugal

Client

Metro do Mondego / Ferbritas, Empreendimentos Industriais e Comerciais S.A / Profico, Projectos, Fiscalização e Consultadoria, Lda

Period of execution

2008/2010

Dimension

1 km

Description

Preliminary Studies and Design of Road Infrastructures associated to Ceira Maintenance Center, (integrated on Mondego Mobility System), involving the definition of one main road, two connections for the Maintenance Center and one small intersection.

The main road is composed by a carriageway with one lane with 3,25 meters wide on each way and sidewalks on both sides.

The Design was prepared in accordance to EP – Estradas de Portugal, E.P.E. standards and client instructions, including several specific designs (Geometry, Drainage, Pavement and Signaling) and the production of Technical Specifications.

1. STUDIES AND DESIGN

➤ Road access to Quinta Fonte de Beber Condominium (at Palmela Village)

Country

Portugal

Client

Refundos, Sociedade Gestora de Fundos de Investimento Imobiliários, S.A.

Period of execution

2009

Dimension

Not applicable

Description

Feasibility study of road access to Quinta Fonte de Beber Condominium located next to the historic center of Palmela Village.

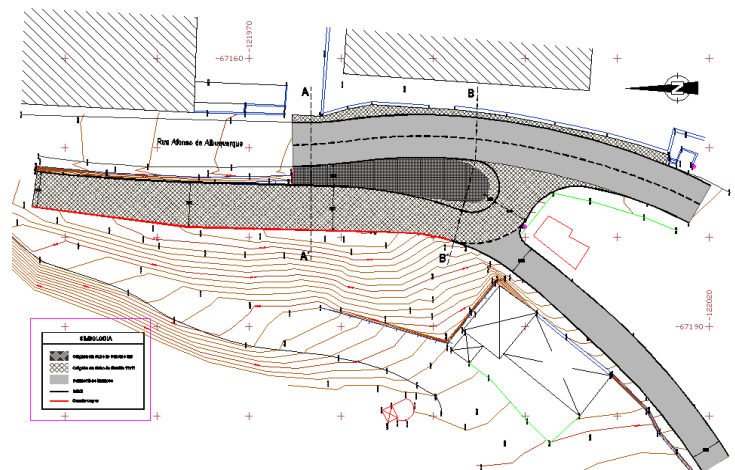
The main objective of this study is to guarantee the viability of an access road to the condominium, to improve traffic conditions at the intersection and to valorize the quality of public space.

The feasibility study is composed by:

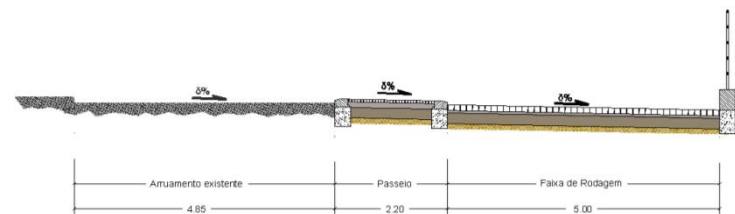
- General Plan;
- Typical cross section;
- Vehicle maneuvers simulation.



Photomap



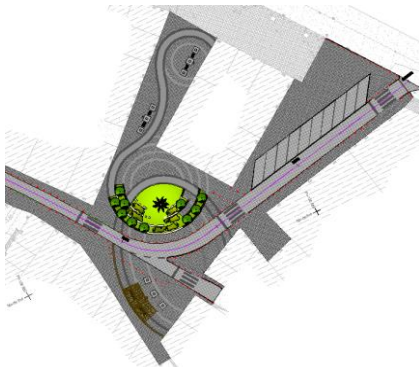
General Plan



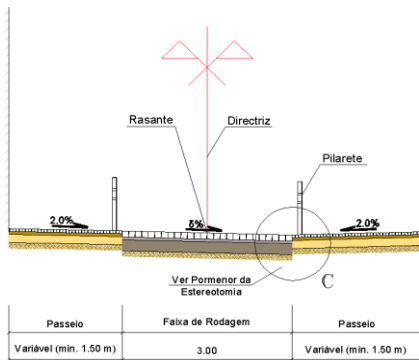
Typical Cross Section



Photomap



General Plan



Typical Cross Section



Photo Reportage

1. STUDIES AND DESIGN

- Requalification of Palmeira's square, Vasco da Gama street and Fonte Nova's square

Country

Portugal

Client

Câmara Municipal de Setúbal

Period of execution

2009

Dimension

9 700 m²

Description

Design of Palmeira's square, Vasco da Gama street and Fonte Nova's square requalification (located at Setúbal city), including the revitalization of Troino quarter, involving the creation of new parking places, reorganization of traffic and the improvement of the public space.

The Design was prepared in accordance to EP – Estradas de Portugal, E.P.E. standards and the client instructions, including several specific designs (Geometry, Drainage, Pavement, Signalling, Landscaping and Lighting) and the production of the Technical Specifications.

1. STUDIES AND DESIGN

- IKEA Store
Reformulation of the road network

Country

Portugal

Client

IKEA Portugal/

Profico, Projectos, Fiscalização e Consultadoria, Lda

Period of execution

2008/2009

Dimension

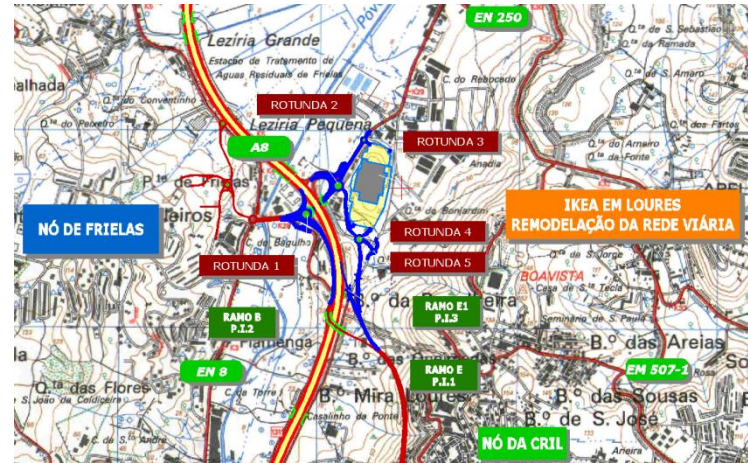
4.5 km

Description

Preliminary Studies and Design of access roads network to IKEA Store, (located at Quinta do Bonjardim - Loures) including Frielas road junction (A8) reformulation, new roads and existing roads benefit.

This design also includes the Internal Road Network, which is composed by parking's and outdoor loading and unloading areas.

The design consists on several specific designs: Geometry, Drainage, Pavement, Signaling, Lighting and Road Restraint Systems.



Localization Map



General Plan

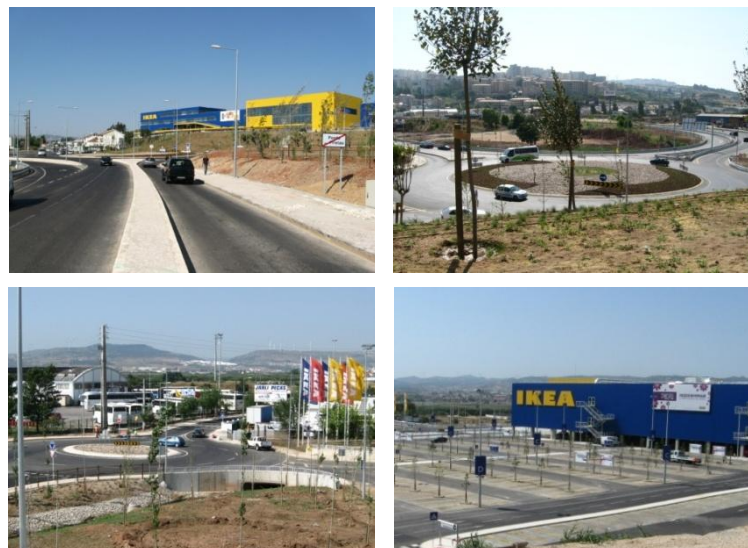
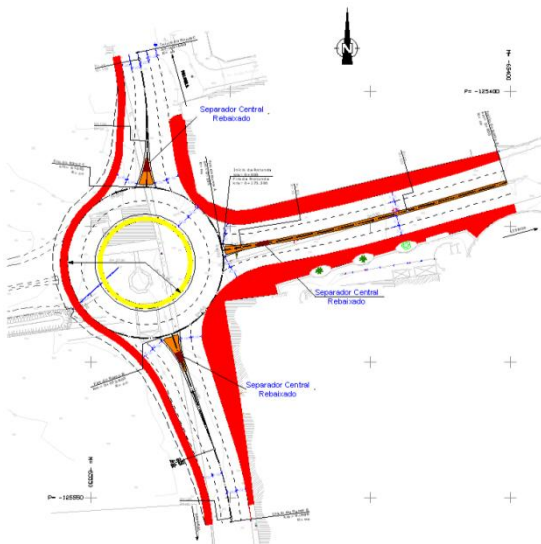


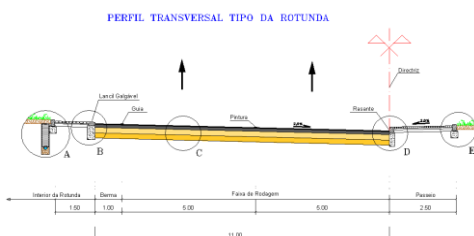
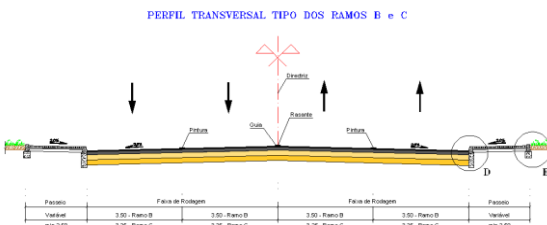
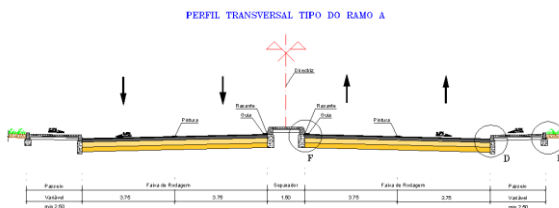
Photo Report



Localization Map



General Plan



Typical Cross Section

1. STUDIES AND DESIGN

➤ EN 252/Av. Antero de Quental
Roundabout

Country

Portugal

Client

Câmara Municipal de Setúbal

Period of execution

2008

Dimension

8 600 m²

Description

Design of one roundabout to replace the existent intersection between EN252 road and Antero de Quental avenue.

The Design was prepared in accordance to EP – Estradas de Portugal, E.P.E. standards and client instructions, including several specific designs (Geometry, Drainage, Pavement, Signaling and Lighting) and the production of Technical Specifications.

1. STUDIES AND DESIGN

➤ Auto-estradas do Centro Concession
 IC2 – Mealhada / Trofa
 (Geometric Design at tender phase)

Country

Portugal

Client

Novopca, Construtores Associados, S.A./ Eiffage
 Construções

Period of execution

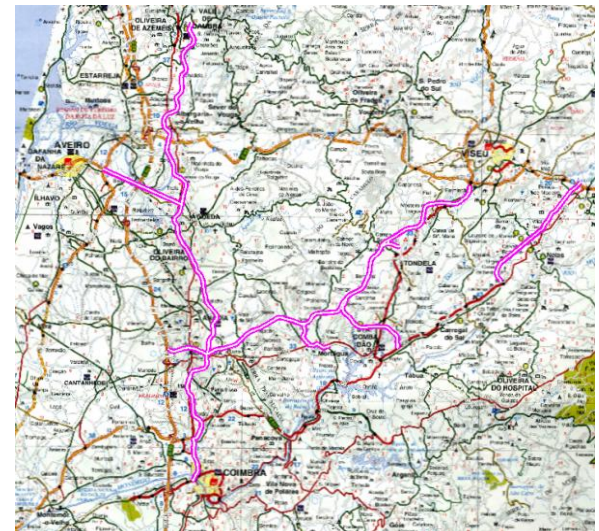
2008

Dimension

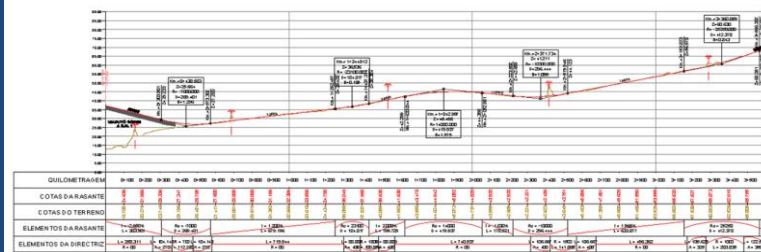
27 km

Description

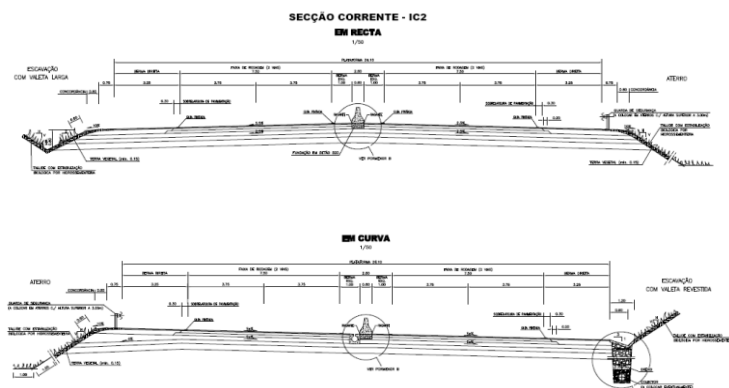
The Design involved the development of the main section of IC2 (typical cross section with 2x2 lanes, reduced central strip, a carriageway composed by 2 lanes with 3,75 meters wide, a left emergency lane with 1,00 meters wide and a right emergency lane with 3,75 meters), 4 road junctions and 11 secondary roads associated to structures (Overpass and Underpass). The cartography was produced by CLENCI at 1/2000 scale.



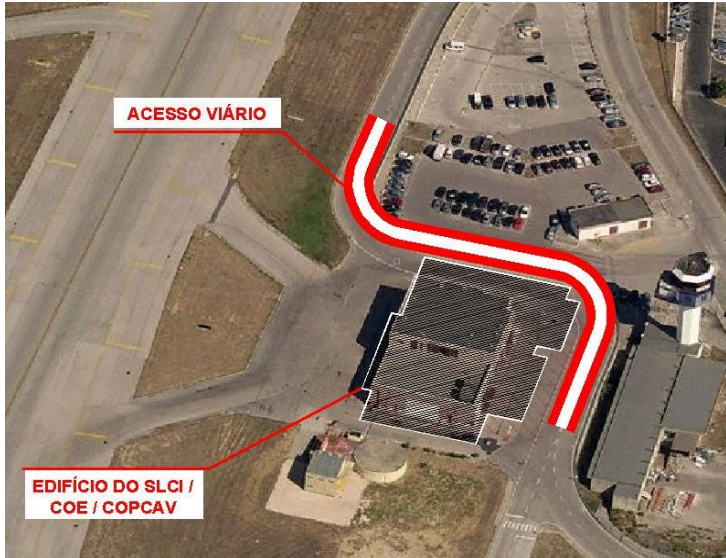
Localization Map



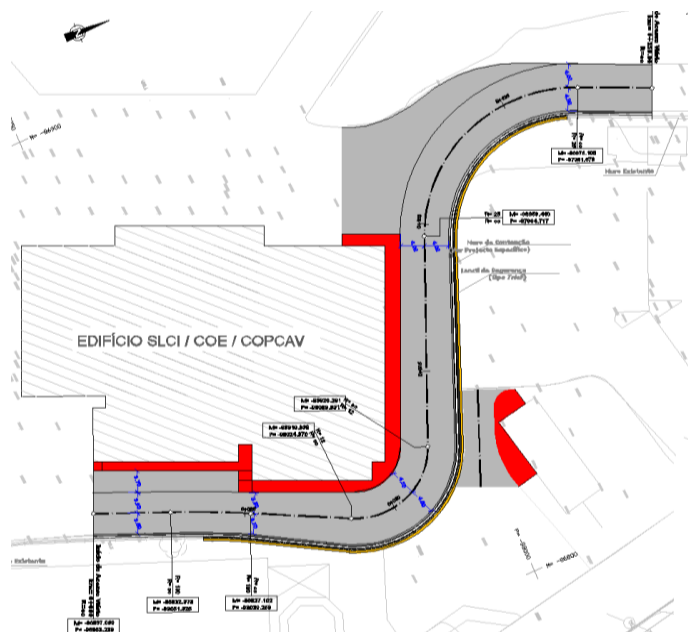
Horizontal and Vertical Alignment
 km 0+000 a km 3+500



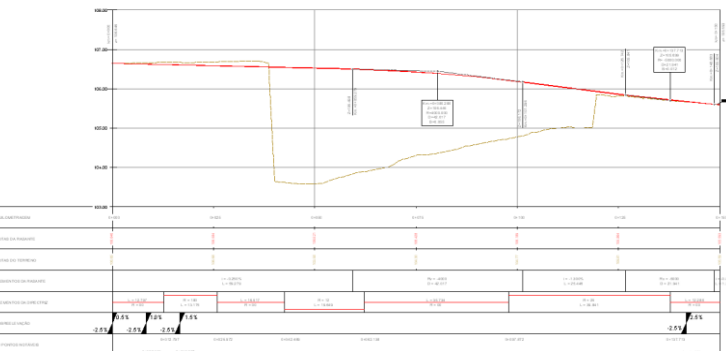
Typical Cross Section



Photomap



General Plan



Vertical Alignment

1. STUDIES AND DESIGN

- Access road to the Emergency Center building (located at Lisbon Airport).

Country

Portugal

Client

ANA – Aeroportos de Portugal, S.A. / Profico, Projectos, Fiscalização e Consultadoria, Lda

Period of execution

2008

Dimension

1km

Description

The solution for the new access involves the construction of a carriageway with one lane on each way and a sidewalk surrounding the building on the left side of the access.

The Design was prepared in accordance to EP – Estradas de Portugal, E.P.E. standards and the client instructions, including several specific designs (Geometry, Pavement and Signalling) and the production of the Technical Specifications.

1. STUDIES AND DESIGN

➤ Alcains Station Square reformulation
Beira Baixa Railway

Country

Portugal

Client

REFER, E.P.E. / Ferbritas, Empreendimentos Industriais e Comerciais S.A / Profico, Projectos, Fiscalização e Consultadoria, Lda.

Period of execution

2008

Dimension

2 200 m²

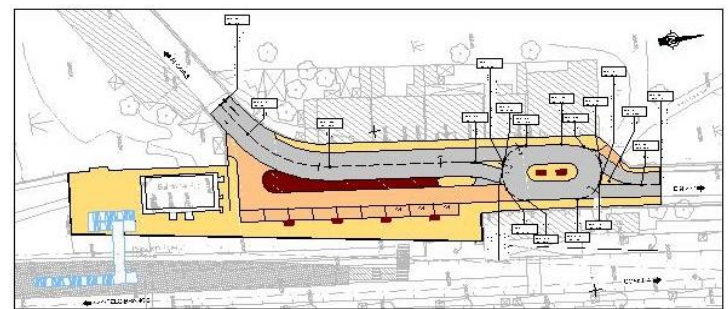
Description

Design of Alcains Station Square reformulation (located at Castelo Branco/Vale de Prazeres railway stretch), including the square expansion and the increase of existent parking capacity and the quality of public space.

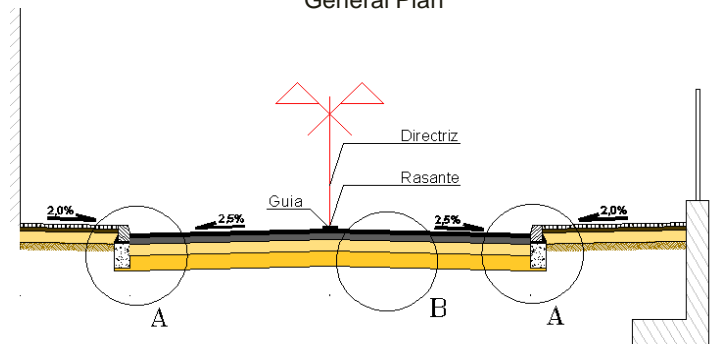
The Design was prepared in accordance to EP – Estradas de Portugal, E.P.E. standards and the client instructions, including several specific designs (Geometry, Drainage, Pavement and Signaling) and the production of the Technical Specifications.



Photomap



General Plan



Passeio	Faixa de rodagem		Passeio
1.20/1.40	2.60/3.00	2.60/3.00	1.60/1.70
Variável	Variável	Variável	Variável

Typical Cross Section



Photo Report

1. STUDIES AND DESIGN

- Reformulation of Vale do Jamor sports center access / Av. Marginal, in Cruz Quebrada

Country

Portugal

Client

Câmara Municipal de Oeiras

Period of execution

2006/2007/2008

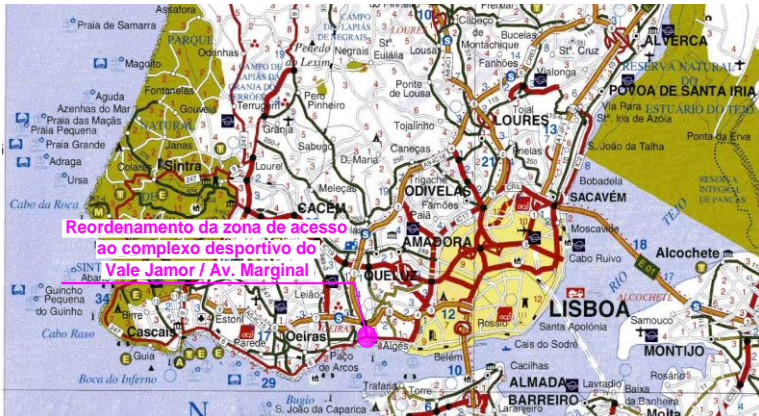
Dimension

1 km

Description

Preliminary Studies and Design, including one roundabout with two lanes and the improvement of existing Pierre Coubertin street. The intervention in Pierre Coubertin street also involves the materialization of a central strip along the road.

The Design was prepared in accordance to EP – Estradas de Portugal, E.P.E. standards and the client instructions, including several specific designs (Geometry, Drainage, Pavement, Signalling, Landscaping and Lighting) and the production of Health and Safety Plan and the Technical Specifications.



Localization Map



General Plan



Photo report

1. STUDIES AND DESIGN

➤ Cross Section Reformulation of Vítor Duarte Pedroso Street, Algés

Country

Portugal

Client

Câmara Municipal de Oeiras

Period of execution

2006/2007

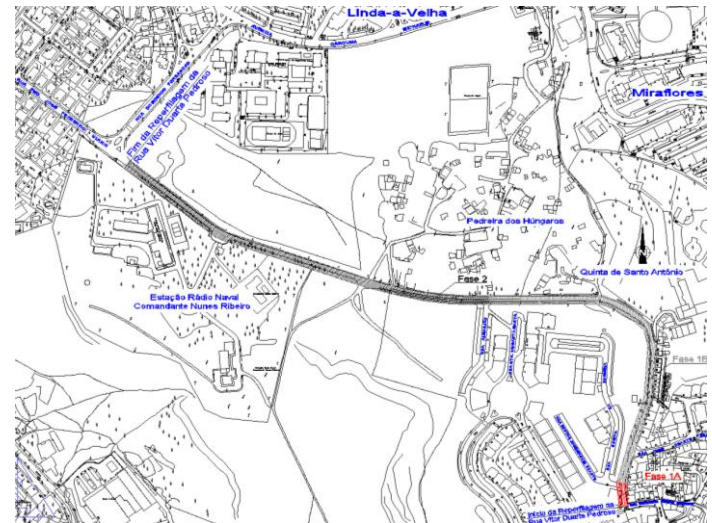
Dimension

1 km

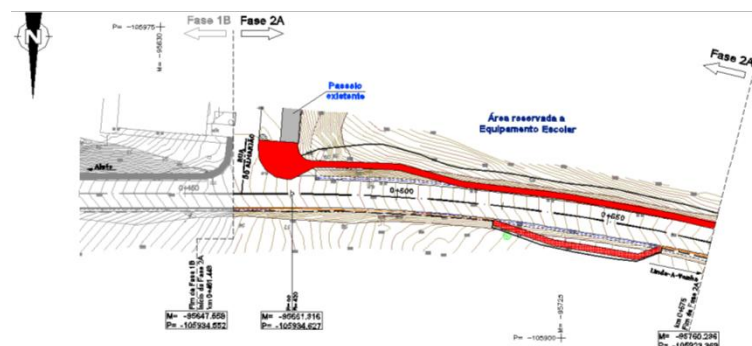
Description

Preliminary Studies and Design of Vítor Duarte Pedroso street cross section reformulation, involving the implementation of one lane in each way with 3.50 meters wide and some modifications in order to improve circulation and increase road safety in the intervention area.

The Design was prepared in accordance to EP – Estradas de Portugal, E.P.E. standards and client instructions, including several specific designs (Geometry, Drainage, Pavement, Signalling, Landscaping and Lighting) and the production of Health and Safety Plan and the Technical Specifications.



General Plan



General Plan - Phase 2A



Photo report

1. STUDIES AND DESIGN

➤ Connection between EN 347 and EN 115

Country

Portugal

Client

Câmara Municipal de Sobral de Monte Agraço

Period of execution

2005

Dimension

5 km

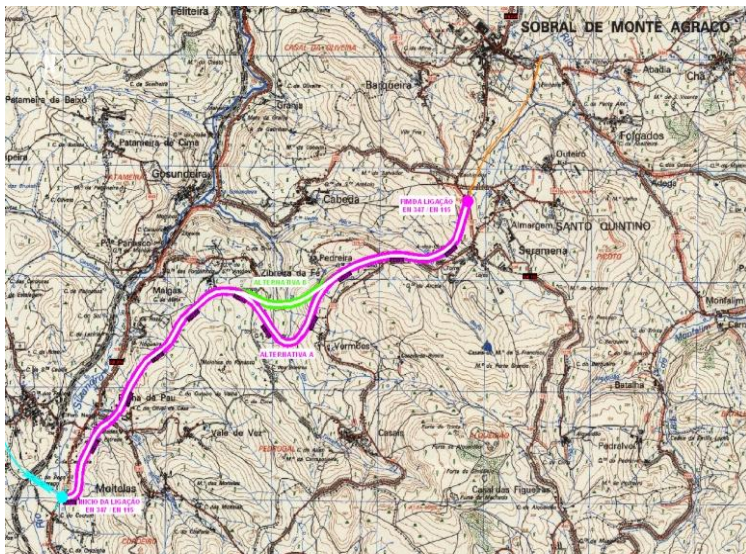
Description

Feasibility Study of 2 new connections between:

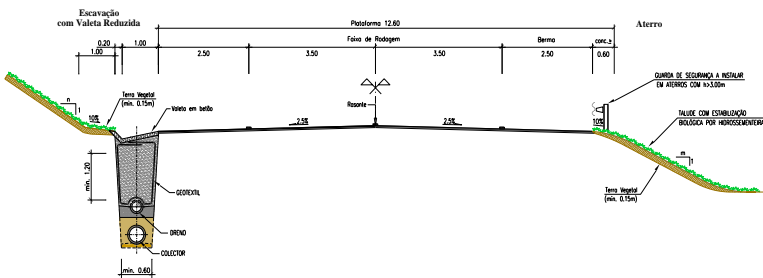
- EN347 and EN115;

- EN 9-2 bypass (in Pêro Negro) and the EN 115/EN 248 bypass (in Sobral de Monte Agraço).

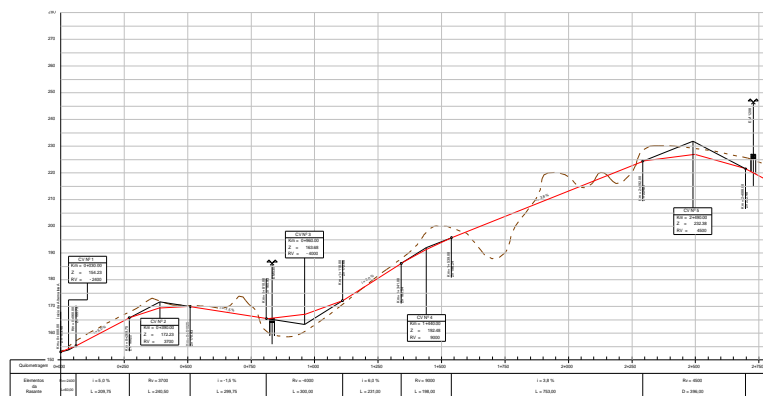
This feasibility study was developed for a typical cross section with 12 meters wide, a carriageway with 1 lane on each way and emergency lanes on both sides of the road.



Localization Map



Typical Cross Section



Vertical Alignment (Solution A)

1. STUDIES AND DESIGN

➤ Reformulation of the road network in Póvoa de Penafirme (EN 247 / EM 561-1)

Country

Portugal

Client

Expropriarte – Estudos e Projectos de Engenharia, Lda. /
Câmara Municipal de Torres Vedras

Period of execution

2004/2005

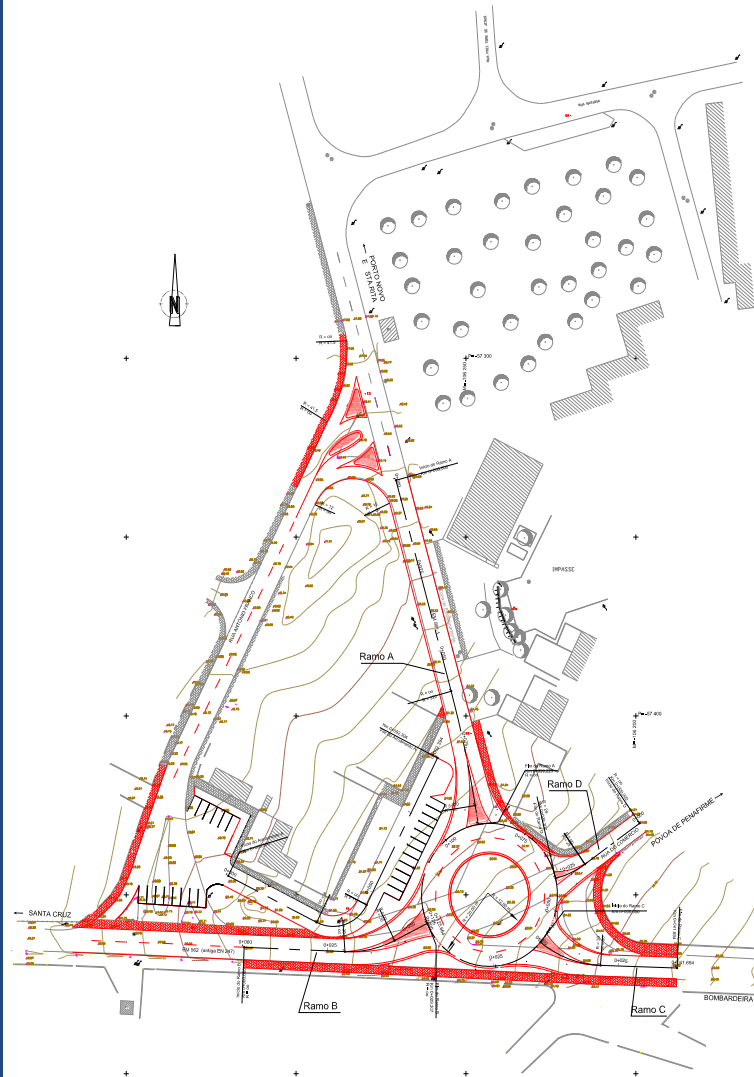
Dimension

Not applicable

Description

Preliminary Studies and Design of a new roundabout and the reformulation of an existing intersection.

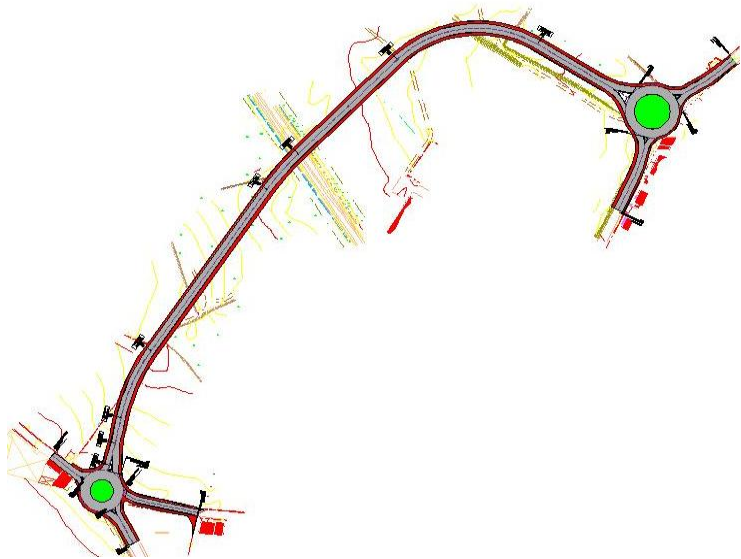
The design was prepared in accordance to EP – Estradas de Portugal, E.P.E. standards, including several specific designs (Geometry, Drainage, Pavement, Signalling, Landscaping and Lighting) and the production of Health and Safety Plan and the Technical Specifications.



General Plan

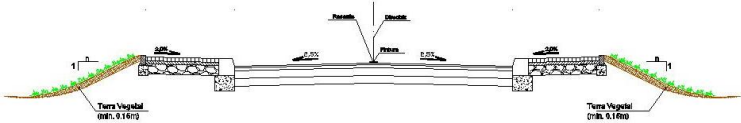


Photo report



General Plan

RUA DA PRAIA (E)
Esc. 1:60



Typical Cross Section

1. STUDIES AND DESIGN

➤ Oporto Surface Subway

Country

Portugal

Client

Metro do Porto / Profico, Projectos, Fiscalização e Consultadoria, Lda.

Period of execution

Temporarily suspended

Dimension

3,5 km

Description

Preliminary Studies and Design of five new road connections:

- Connection between Espaço Natureza and Praia street;
- Connection between Aldeia Nova (EN13) and Fonte streets;
- Connection between Estação and Mota streets;
- Connection between Pinheiro street and Travessa do Outeiro;
- Connection between Via Circular and Fonte street.

The Design was prepared in accordance to EP – Estradas de Portugal, E.P.E. standards and the client instructions, including several specific designs (Geometry, Drainage, Pavement, and Signalling) and the production of the Technical Specifications.

2. MANAGEMENT AND TECHNICAL COORDINATION

➤ VR1 – Ribeira Brava/Porto do Caniçal

Country

Portugal

Client

Vialitoral – Concessões Rodoviárias da Madeira, S.A.

Period of execution

2011

Dimension

44 km

Description

Strategic Noise Maps analysis (produced by the Certiprojecto Ltd company) and the respective review of Strategic Action Plans for noise reduction.

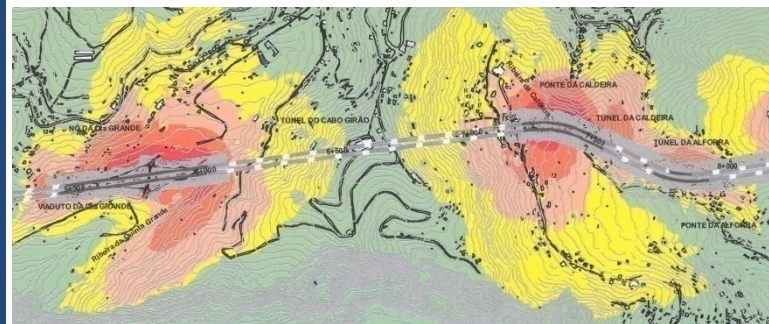
It also provided technical assistance in road safety, proposing actions to minimize/eliminate identified problems.



Localization Map of VR1



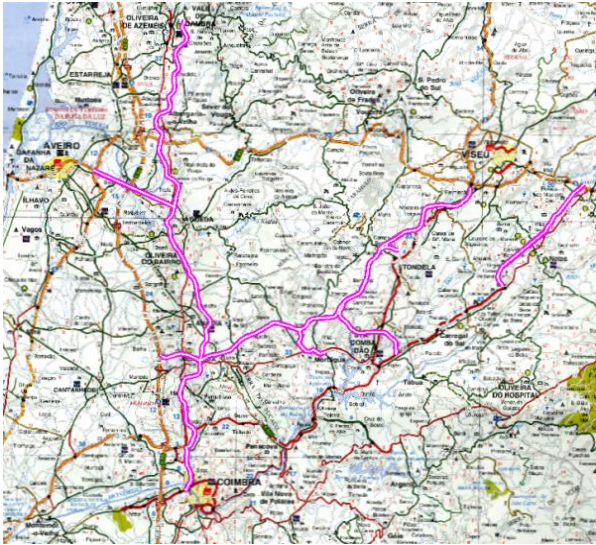
Overview of VR1



Strategic Noise Map of VR1



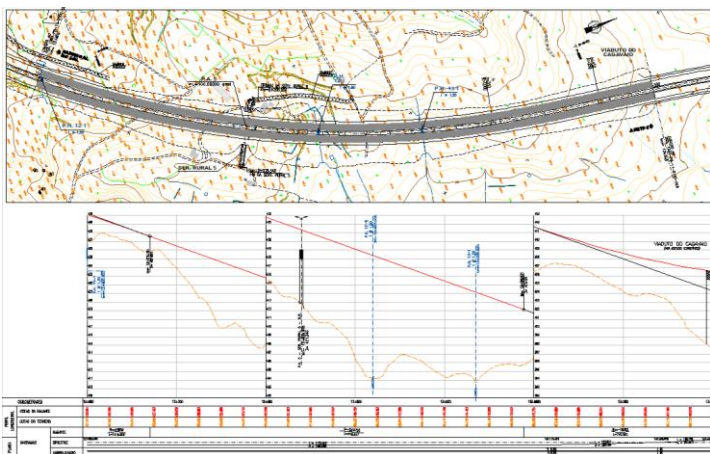
Photo report



Localization Map



**Photomap provided to the designers
IC2 - Coimbra / Mealhada**



**Horizontal and Vertical Alignment
IC12 – Canas de Senhorim / Mangualde**

2. MANAGEMENT AND TECHNICAL COORDINATION

➤ Technical Coordination during the Tender Phase of Auto-estradas do Centro Concession

Country

Portugal

Period of execution

2008

Client

Novopca, Construtores Associados, S.A./ Eiffage Construções

Dimension

191 km

Description

The technical coordination involved the analysis of the geometry of the concession stretches and proposed alternatives in specific locations, as well as the management of various designers.

The concession includes the stretches referred below:

- IP3 - Trouxemil/Fail (70 km)
- IC2 – Coimbra/Oliveira de Azeméis (65 km)
- IC12 – Mealhada (A1)/Mealhada (IP3/IC2) (6 km)
- IC12 – IP3/Santa Comba Dão (14 km)
- IC12 – Canas de Senhorim/Mangualde (22 km)
- IC2 to Aveiro connection(14 km)

2. MANAGEMENT AND TECHNICAL COORDINATION

➤ Technical Coordination during the Tender Phase of Baixo Tejo Concession

Country

Portugal

Client

Denap/ Estudocivil / Proplano / Viés

Period of execution

2008

Dimension

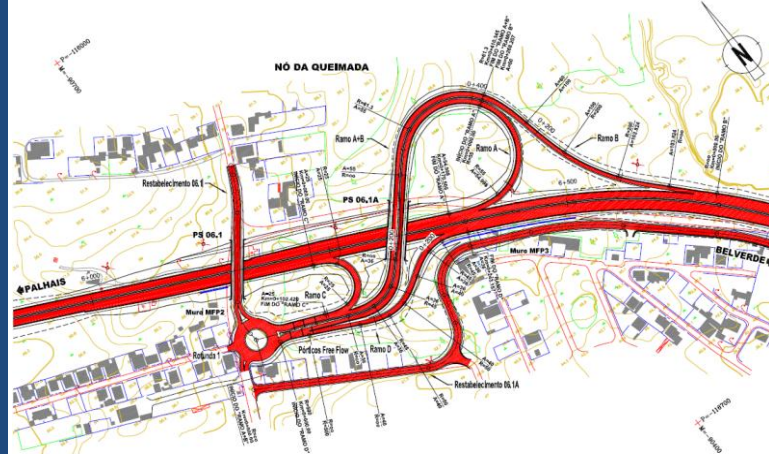
37 km

Description

The technical coordination involved the analysis of road geometry and proposed alternative solutions in specific locations, as well as monitoring the designers to know the current status of each study development and to agree on methodologies for future action.

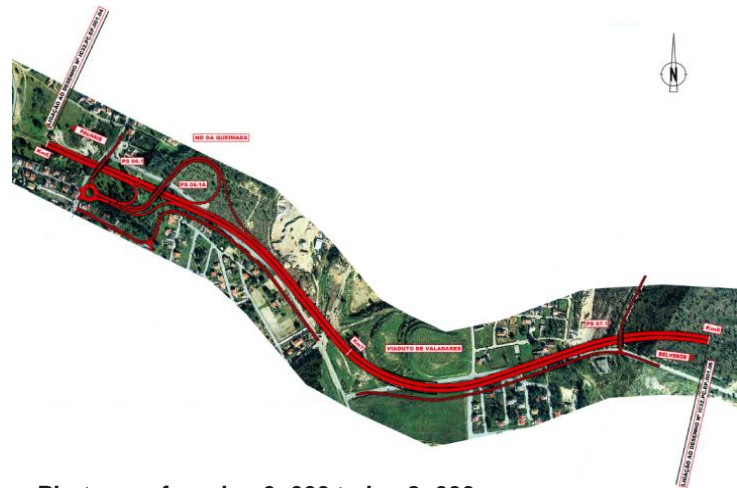
The concession includes the stretches referred below:

- IC32 – Funchalinho/Palhais/Coima, including the Trafaria connection
(Extension: 22 km)
- ER377-2 – Costa da Caparica/Fonte da Telha/IC32 (Belverde), including Avenida do Mar between Fonte da Telha and the IC32
(Extension: 15 km)



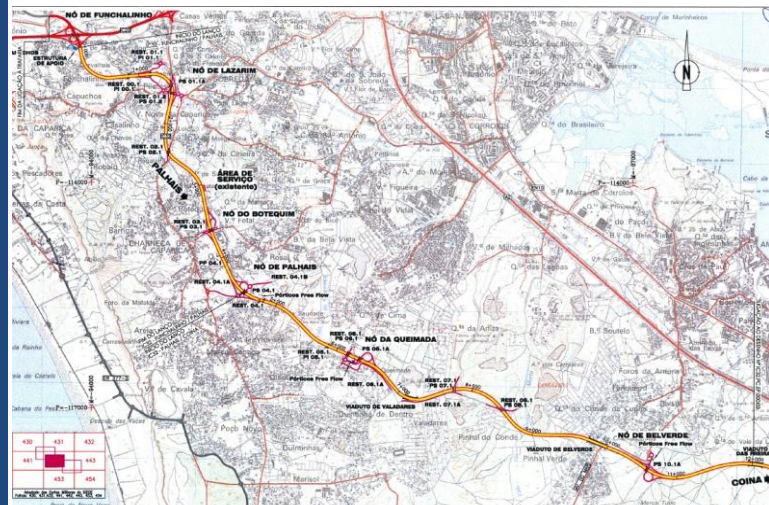
Queimada road junction General Plan
IC32 – Palhais/Coima stretch

DENAP, ESTUDOCIVIL, PROPLANO e VIÉS



Photomap from km 6+000 to km 8+000
IC32 – Palhais/Coima

DENAP, ESTUDOCIVIL, PROPLANO e VIÉS



Localization Map

IC32 – Funchalinho/Palhais/Coima (including the Trafaria connection)

DENAP, ESTUDOCIVIL, PROPLANO e VIÉS

2. MANAGEMENT AND TECHNICAL COORDINATION

➤ Technical Assistance during the Tender Phase of Douro Interior Concession

Country

Portugal

Client

Via Nordeste – Eiffage Construções / Novopca, Construtores Associados, S.A.

Period of execution

2008

Dimension

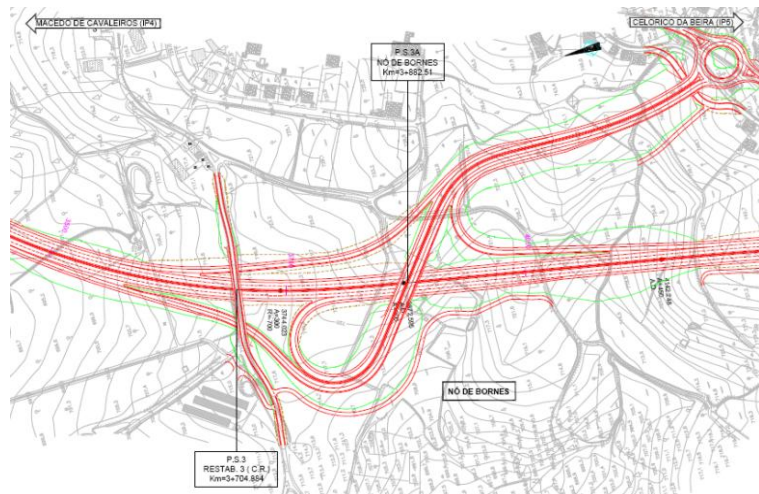
255 km

Description

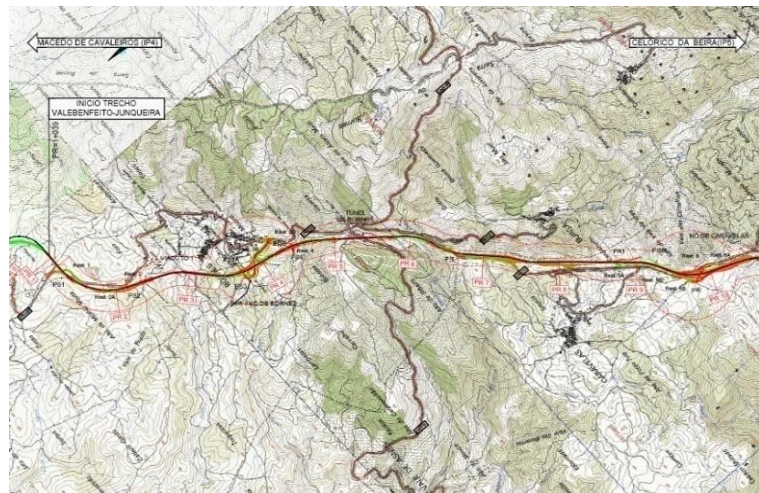
Technical Assistance for the road studies developed, including the design analysis, namely the alternatives provided by the designers, selecting the best solution available.

The Concession includes the stretches referred below:

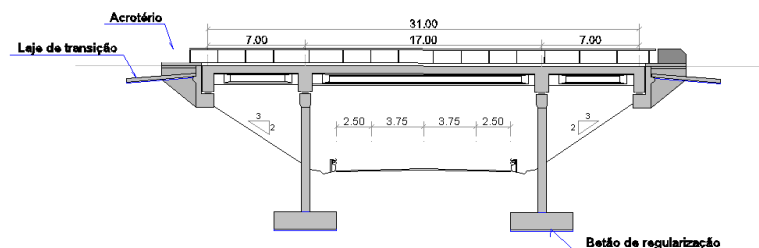
- IP2 - Macedo de Cavaleiros/Celorico da Beira (IP5)
(Extension: 126 km)
- IC5 – Murça/Miranda do Douro
(Extension: 129 km)



General Plan
Valebenfeito/Junqueira (km 3+500 to km 4+200)



Localization Map – IP2 - Valebenfeito/Junqueira



PERFIL LONGITUDINAL TIPO NA PASSAGEM SUPERIOR
SECÇÃO CORRENTE COM 1 x 2 VIAS
Escala: 1:200

Structures – Over Passage

2. MANAGEMENT AND TECHNICAL COORDINATION

➤ Technical Management during the Tender Phase of Auto-estrada Transmontana Concession

Country

Portugal

Client

Denap/ Estudocivil/ Proplano / Viés

Period of execution

2007/2008

Dimension

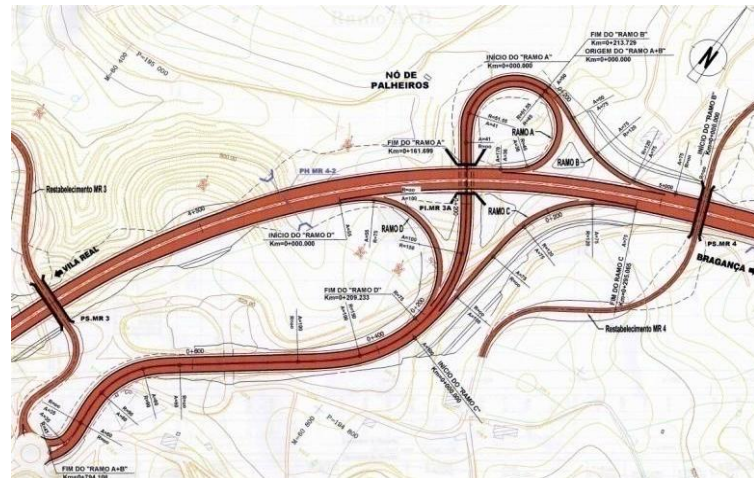
138 km

Description

Technical coordination of the studies, involving geometric analysis and alternative proposals at specific locations, as well as monitoring the designers to know the current status of each study and to agree on methodologies for future action.

The concession includes the stretches referred below:

- Vila Real (Parada De Cunhos) / A24/ IP3 Road Junction (Extension: 7 km)
- A24/IP3 Road Junction / Vila Real Nascente Road Junction (Extension: 4 km)
- Vila Real Nascente Road Junction / Bragança Poente Road Junction (Extension: 106 km)
- Bragança Poente Road Junction / Bragança Nascente Road Junction (Extension: 7 km)
- Bragança Nascente Road Junction / Quintanilha (Extension: 14 km)



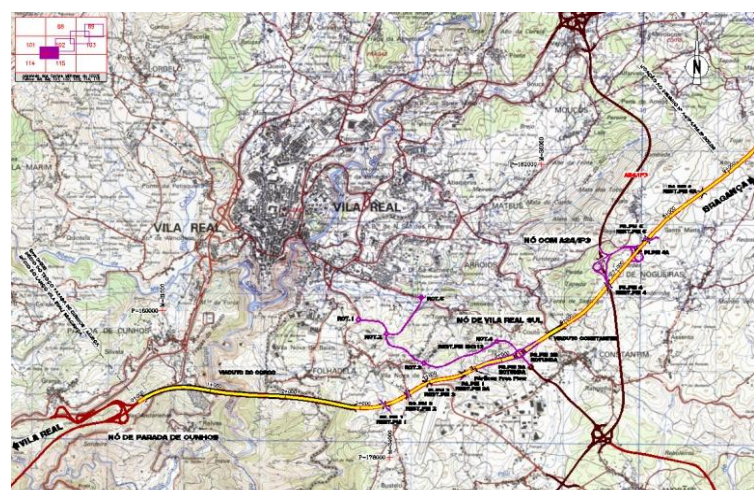
Palheiros Road Junction Plan

DENAP, ESTUDOCIVIL, PROPLANO and VIÉS



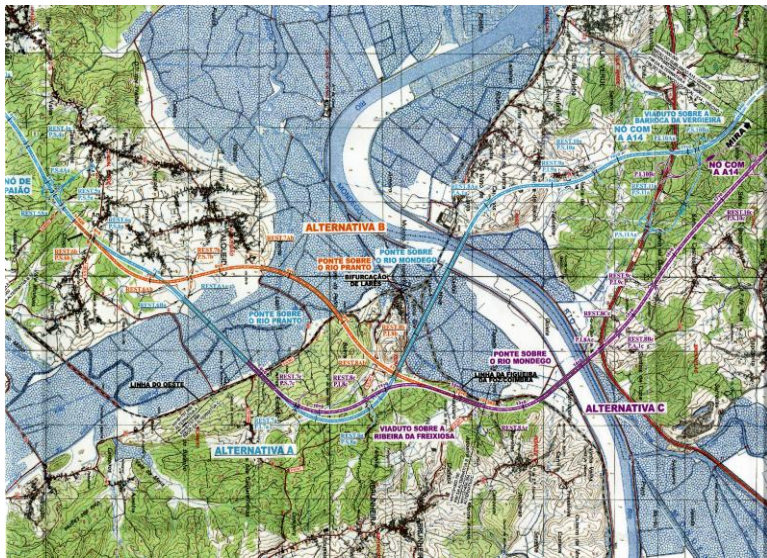
Photomap from km 0+000 to km 3+500

DENAP, ESTUDOCIVIL, PROPLANO and VIÉS



Localization Map from km 0+000 to km 9+000

DENAP, ESTUDOCIVIL, PROPLANO and VIÉS



Localization Map (Mondego River crossing area)

Globalvia – Consultores de Engenharia, S.A.



Road Junction (Leiria Norte)



Road Junction (Monte Real)

2. MANAGEMENT AND TECHNICAL COORDINATION

➤ Technical Assistance A17 – Auto-estrada Marinha Grande / Mira

Country

Portugal

Client

Litoral Atlântico Construtores, ACE – Group of enterprises:
Somague / MSF / Novopca / Lena Construções

Period of execution

2003/2008

Dimension

92,9 km

Description

Environmental impact analysis and study of geometric alternatives.

The concession includes the stretches referred below:

- Marinha Grande/Monte Redondo (21,0 km)
- Monte Redondo/Louriçal (12,1 km)
- Louriçal/A14 – trecho 1 (5,2 km)
- Louriçal/A14 – trecho 2 (18,4 km)
- Lanço A14/Quiaios (8,2 km)
- Quiaios/Tocha (14,7 km)
- Tocha/Mira (13,3 km)

(Continue)

2. MANAGEMENT AND TECHNICAL COORDINATION

➤ Technical Assistance A17 – Auto-estrada Marinha Grande / Mira

(Continuation)

The concession also include the construction of 10 road junctions and 1 high speed road junction, 8 viaducts with a approximately length of 2 390 meters, 3 bridges with a length of 3 450 meters and 122 structures, with toll system for users.

The analysis and studies were also performed in the context of IC8 - Lourçal / Pombal, with an extension of 12 km, including 1 road junction, 2 viaducts with a length of 1 100 meters and 17 structures.



Toll Plaza in the Lourçal Road Junction



Operation Centre – Marinha das Ondas/Paião



Toll Plaza in Current Section

2. MANAGEMENT AND TECHNICAL COORDINATION

➤ Technical Coordination during the Tender Phase of Douro Litoral Concession

Country

Portugal

Client

Oesterota – Concessões Rodoviárias de Portugal, S.A.

Period of execution

2004

Dimension

80 km

Description

The work done during the tender phase of the Douro Litoral Concession includes the management of multiple consultants, particularly regarding the production of aerial photography and cartography, geometric design, structures, environment and expropriations.

➤ A32/IC2–S. João da Madeira(ER327)/Carvalhos(IP1)

Geometry Preliminary Study, with alternatives, at 1:5000 scale, and the Preliminary Study of environmental impacts
(Extension: 30 km)

➤ A41/IC24 – Picoto(IC2)/Ermida(IC25)

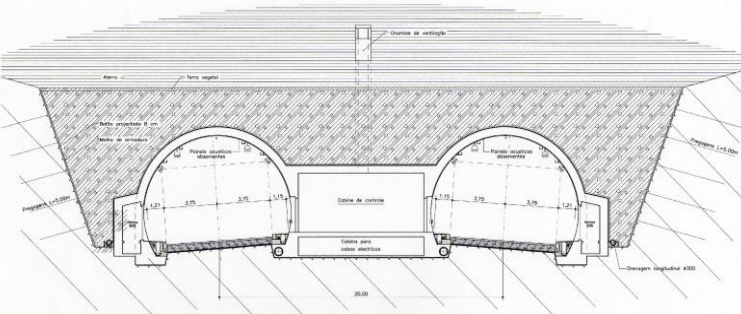
Study of alternative solutions, at 1:5000 scale
(Extension: 32 km)

➤ A43/IC29 – Gondomar/Aguiar de Sousa(IC24)

Study of alternative solutions, at 1:5 000 scale
(Extension: 8 km)

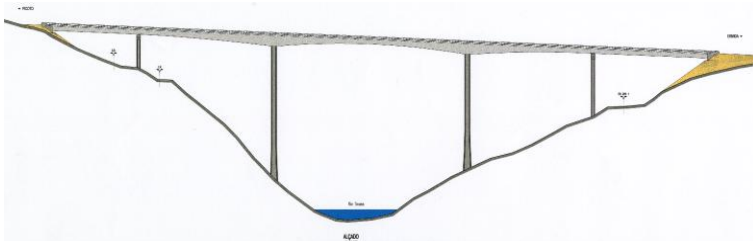
➤ ER327 – Ovar(IC1)/S. João da Madeira(IC2)

Geometry Preliminary Study, with alternatives, at 1:5000 scale, and the Preliminary Study of environmental impacts
(Extension: 10 km)



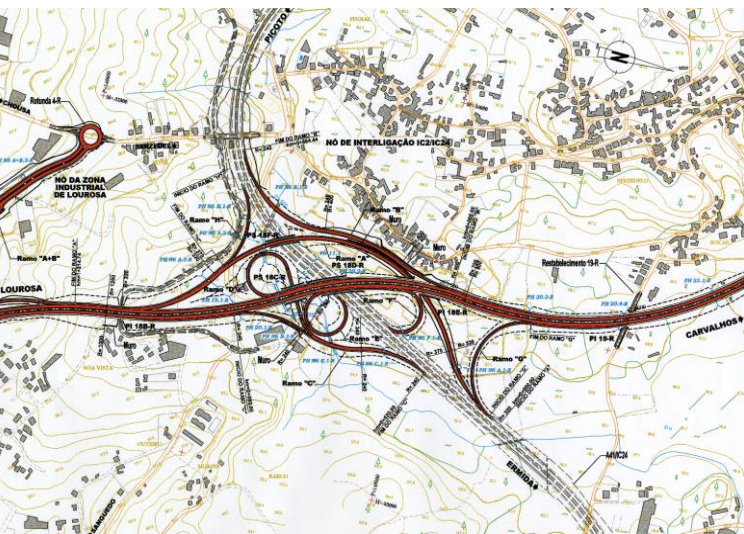
Escarigo Tunnel's Cross Section in ER 327

J. L. Câncio Martins – Projectos de Estruturas, Lda.



Side and Upper View of the Sousa River Bridge on the IC24

BETAR Consultores, Lda.



General Plan of the road junction between IC2 and IC24

Globalvia – Consultores de Engenharia, S.A.

2. MANAGEMENT AND TECHNICAL COORDINATION

Other important works:

➤ Technical Assistance during the Tender Phase of the following concessions:

A17/IC1 – Marinha Grande/Marinha das Ondas/ Figueira da Foz / Mira (Litoral Oeste)

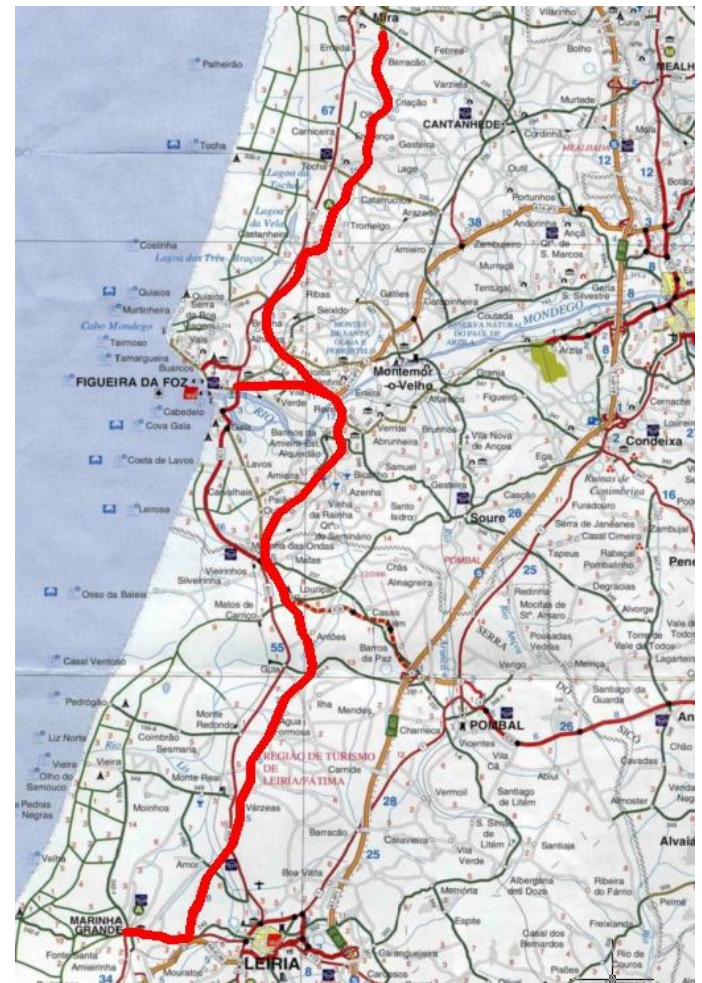
IC11 – Torres Vedras/Carregado (Lisboa Norte)

IC36 – A8/EN113 and IC2 widening in Leiria area

A16 – CREL (A9) / IC30 Lourel / Alcabideche (A5)



IC11 –Torres Vedras/Carregado



IC1 – Marinha Grande/Marinha das Ondas/ Figueira da Foz/ Mira

3. DESIGN AUDIT AND ADVISING

➤ LITORAL OESTE CONCESSION

Country

Portugal

Client

AELO – AUTO-ESTRADAS LITORAL OESTE, S.A.

Period of execution

In progress

Dimension

85 km

Description

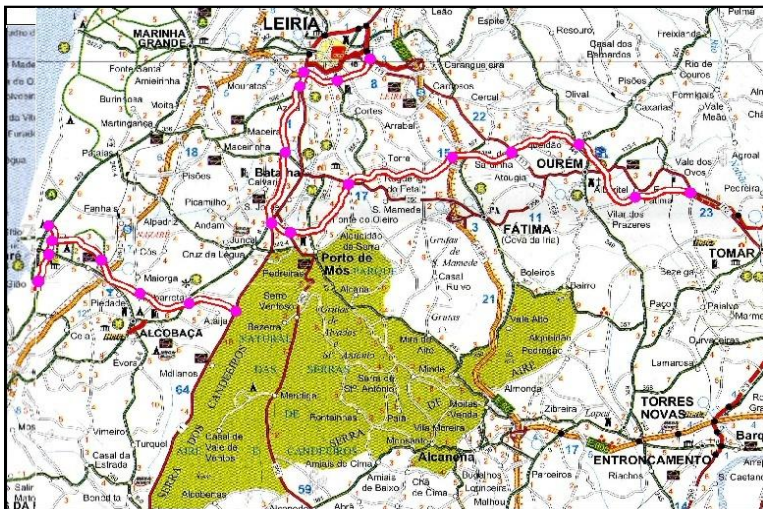
The Audit involved studies of various specialties, including general works, structures, environmental studies, control systems and traffic management.

The Highway stretches are:

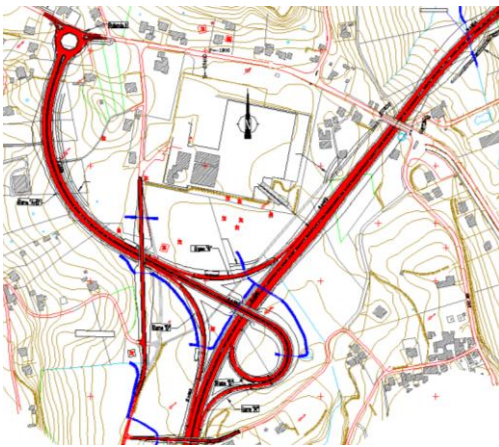
- IC2 – Variante da Batalha (13,9 km)
- IC2 – Nó do IC36/Nó da EN109 (3,1 km)
- IC36 – Leiria Sul (IC2)/Leiria Nascente (6,5 km)
- EN242 – Variante de Nazaré (5,6 km)
- IC9 – Nazaré/Alcobaça/EN1 (16,8 km)
- IC9 – EN1 (IC2)/Fátima(A1) (19,0 km)
- IC9 – Fátima (A1)/Ourém (Alburitel) (20,0 km)

The stretches that make up the concession includes the construction of 20 road junctions, 22 viaducts with a length of 7 325 m, 1 Tunnel and 103 Structures.

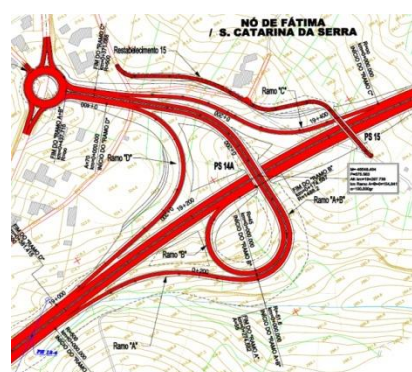
Continues



Localization Map



EN356 Road Junction



Fátima/S. Catarina da Serra Road Junction

3. DESIGN AUDIT AND ADVISING

➤ LITORAL OESTE CONCESSION

(Continuation)

Was also performed the design audit of the control system, traffic management and toll system.

The audit includes infrastructures and power supply systems for the equipments, telematics and toll systems.

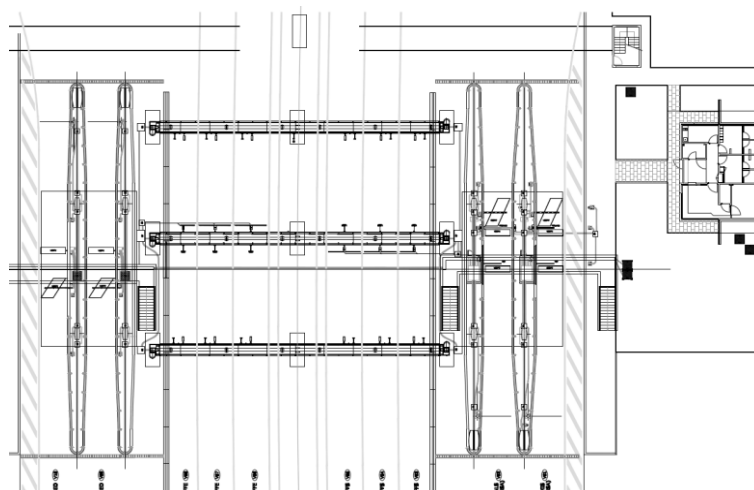
Design revision of the A8 - Leiria Sul toll plaza, with the geometric definition of the platform, lighting, telecommunications systems and telematics.

In addition to the stretches mentioned before, these works were also performed in the following stretches:

- IC9 – Alburitel/Carregueiro (4,4 km)
- IC9 – Carregueiros/Tomar (8,4 km)
- Via de Penetração de Leiria - VPL (1,7 km)
- Circular Oriental de Leiria – COL (3,2 km)
- EN1 – Nó do IC9/Nó de S. Jorge (6,6 km)



IC36 - Free Flow Structure



Toll Plaza of A8 – Leiria Sul

3. DESIGN AUDIT AND ADVISING

➤ A4/IP4 – AMARANTE/VILA REAL MARÃO TUNNEL

Country

Portugal

Client

AUTO-ESTRADA do MARÃO – Concessões Rodoviárias de Portugal, S.A.

Period of execution

2008/2011

Dimension

30 km

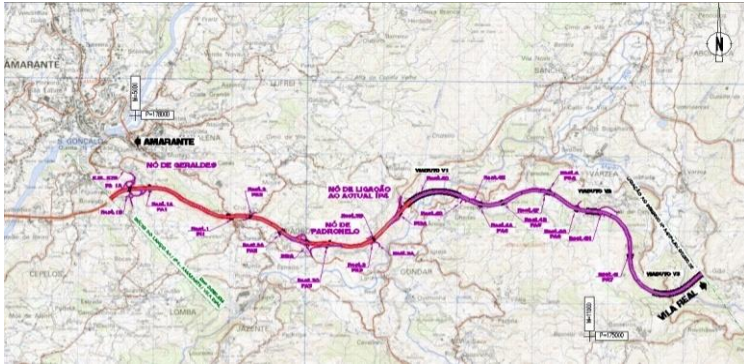
Description

The motorway A4/IP4 - Amarante/Vila Real has two different stretches, the first is based in improving and expanding the existing IP4, the second is associated with a completely new construction, divided as follows:

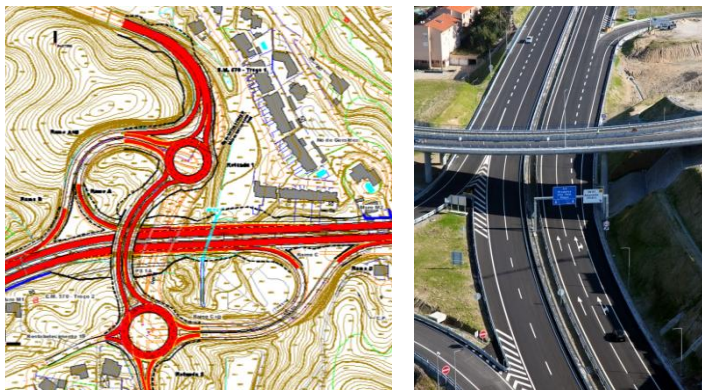
- Geraldés/Padronelo/Nó de Ligação ao IP4 (4 km)
- Nó de Ligação ao IP4/Nó de Campeã/Nó de Parada de Cunhos (26 km)

The concession includes the construction of 5 road junctions, 14 viaducts with an extension of 4 015 m, 1 tunnel with approximately 5.6 km and 28 overpassages and underpassages.

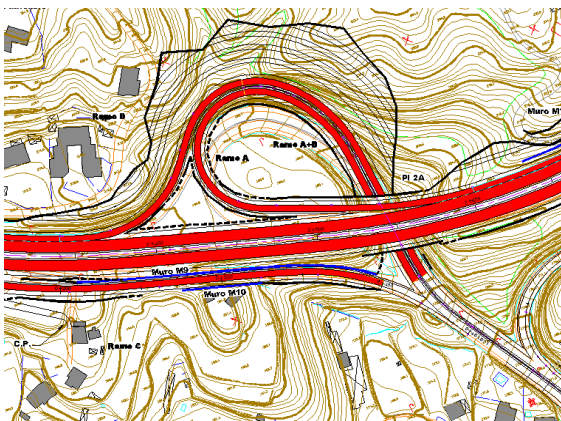
CLENCI has done the design audit of all studies, including general works, structures and environmental studies.



Localization Map



Geraldés Road Junction Plan



Padronelo Road Junction Plan

3. DESIGN AUDIT AND ADVISING

➤ A8 – LOURES / MALVEIRA PLATFORM WIDENING TO 2x3 LANES

Country

Portugal

Client

AUTO-ESTRADAS DO ATLÂNTICO – Concessões
Rodoviárias de Portugal, S.A.

Period of execution

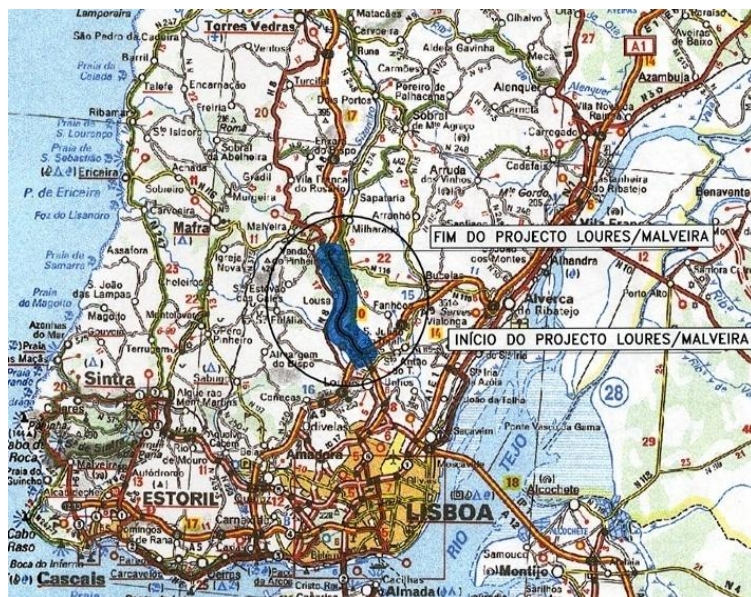
2006/2008

Dimension

11 km

Description

The audit involved all the studies related to the widening of the motorway from 2x2 to 2x3 lanes, involving also the adaptation of 3 road junctions (Road Junction with the A9-CREL, Road Junction of Lousa and Road Junction of Malveira), the widening of 2 viaducts with an approximate extension of 420 meters and 4 agricultural underpasses (the stretch includes 14 structures, however, only 4 were widened).



Localization Map



Photographic Report

4. ROAD SAFETY AUDIT

➤ LITORAL OESTE CONCESSION

Country

Portugal

Client

AELO – AUTO-ESTRADAS LITORAL OESTE, S.A.

Period of execution

In progress

Dimension

85 km

Description

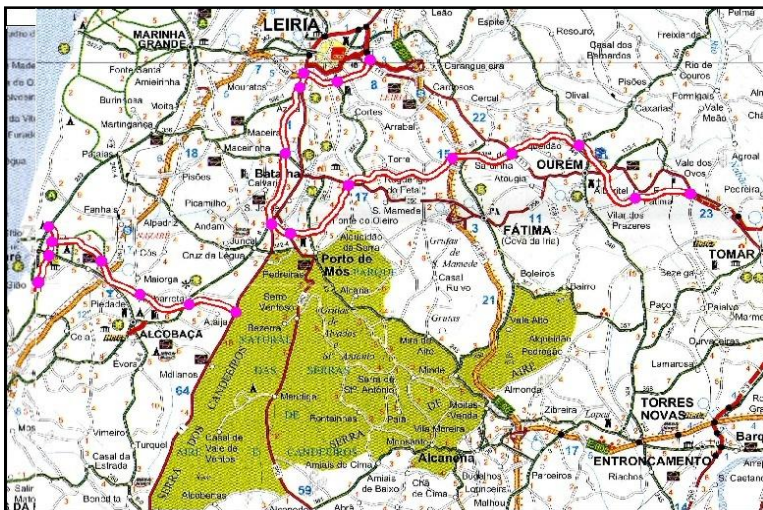
The stretches of the Motorway are:

- IC2 – Variante da Batalha (13,9 km)
- IC2 – Nó do IC36/Nó da EN109 (3,1 km)
- IC36 – Leiria Sul (IC2)/Leiria Nascente (6,5 km)
- EN242 – Variante de Nazaré (5,6 km)
- IC9 – Nazaré/Alcobaça/EN1 (16,8 km)
- IC9 – EN1 (IC2)/Fátima(A1) (19,0 km)
- IC9 – Fátima (A1)/Ourém (Alburitel) (20,0 km)

The works involved on the Concession includes the construction of 20 road junctions , 22 viaducts with a length of 7 325 m, 1 Tunnel and 103 Structures.

The road safety audit was performed in the design phase, for all stretches included in the Concession.

(Continues)



Localization Map



Batalha Road Junction



Maiorga Road Junction

4. ROAD SAFETY AUDIT

➤ LITORAL OESTE CONCESSION

(Continuation)

Beginning of the operation phase

Road safety report associated with the beginning of the operation phase for all stretches of the Concession.

Were made several visits to the road before and after the beginning of the operation, in order to evaluate the infrastructure at the stage of opening to traffic. The objective was to identify the aspects of road safety, indicating potential safety problems and suggesting recommendations for resolution/mitigation of these problems.



Overview of IC2 – Variante da Batalha



Overview of IC9 – EN1 (IC2)/Fátima (A1)



Overview of IC9/EN356 Road Junction

4. ROAD SAFETY AUDIT

➤ A4/IP4 – AMARANTE/VILA REAL MARÃO TUNNEL

Country

Portugal

Client

AUTO-ESTRADA do MARÃO – Concessões Rodoviárias de Portugal, S.A.

Period of execution

In progress

Dimension

30 km

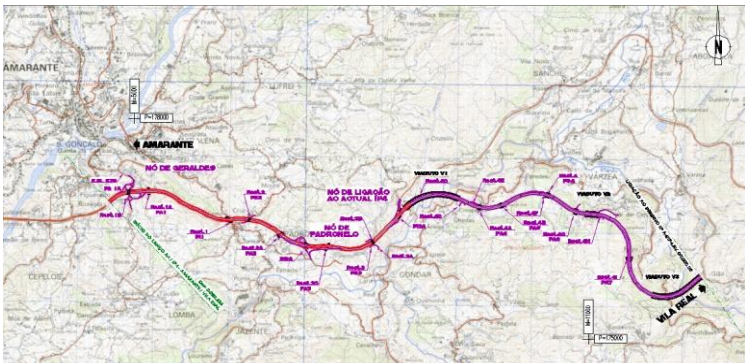
Description

The motorway A4/IP4 - Amarante/Vila Real has two different stretches, the first is based in improving and expanding the existing IP4, the second is associated with a completely new construction, divided as follows:

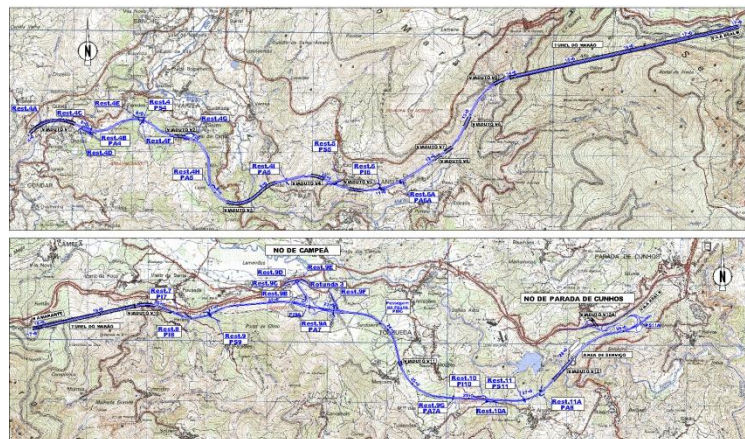
- Gerales/Padronelo/Nó de Ligação ao IP4 (4 km)
- Nó de Ligação ao IP4/Nó de Campeã/Nó de Parada de Cunhos (26 km)

The Concession includes the construction of 5 road junctions, 14 viaducts with an extension of 4 015 m, 1 tunnel of about 5.6 km and 28 structures.

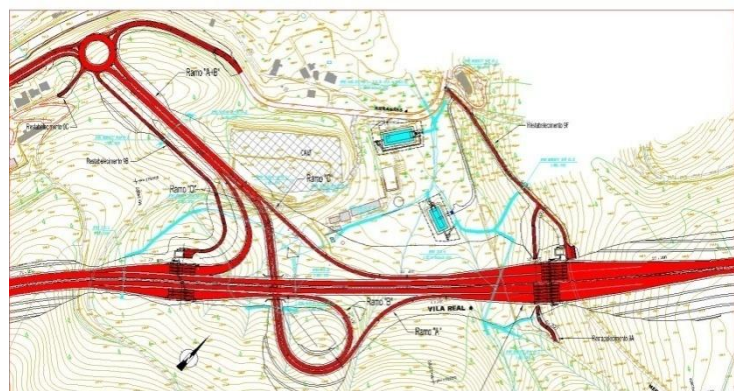
The road safety audit was performed in the design phase, for all stretches included in the Concession.



Localization Map – Gerales/Padronelo/IP4 Road Junction



Localization Map – IP4 Road Junction /Campeã Road Junction/Parada de Cunhos Road Junction



Campeã Road Junction



CD with presentation of the company



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