P.L.8904

LINK ROAD MINN SMART CITY SA TAL-BARRANI

***19678. L-ONOR. OWEN BONNICI** staqsa lill-Prim Ministru: Jista' l-Prim Ministru jpoġġi fuq il-Medja tal-Kamra l-Master Plan: Link Road From Smart City Malta to tal-Barrani,Tarxien. (January 2010)? Ladarba l-EIS reports (partikolarment dak ta l-espert li dettalji tiegħu qed jingħataw separatament) jitkellmu dwar impatt inaċċettabbli għal Smart City f'każ li ma jkunx hemm *link road* bejn il-Kalkara u tal-Barrani, x'inhi l-pożizzjoni tal-Gvern dwar din il-ħaġa? Fl-istess ħin saru EIS dwar jekk din il-*link road* bejn il-Kalkara u tal-Barrani ikollhiex impatt fuq l-ambjent u l-agrikoltura tal-madwar? X beħsiebu jagħmel il-gvern dwar dawn l-isfidi li għandna quddiemna?

27/09/2010

ONOR. LAWRENCE GONZI: Kopja tal-*Master Plan "Link Road from Smart City Malta to Tal-Barrani, Tarxien*" qed titpoġġa fuq il-Mejda tal-Kamra kif mitlub.

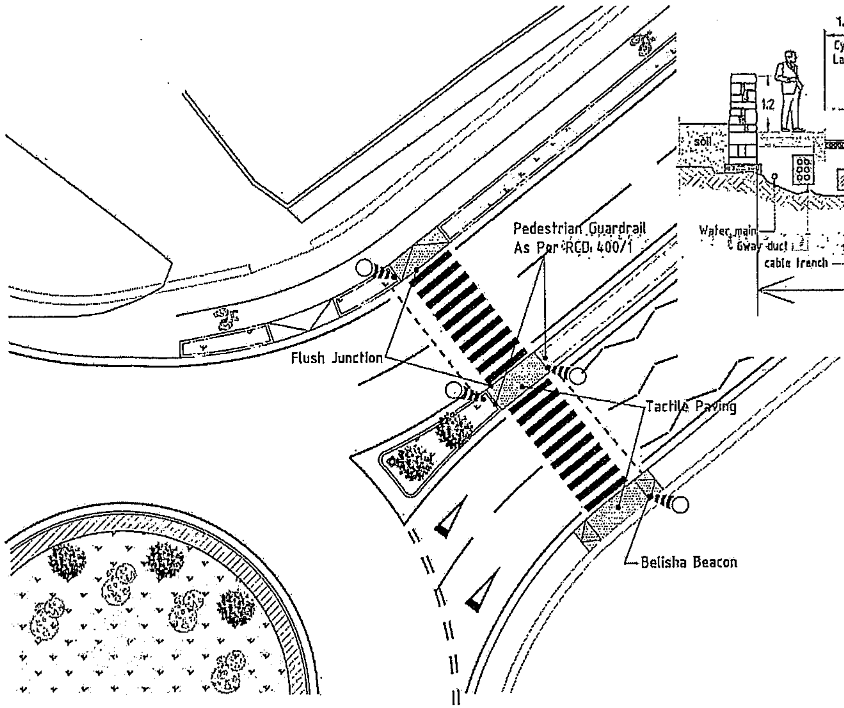
B'referenza għall-impatt fuq Smart City Malta hekk kif imsemmi fis-"*Socio-Economic Impacts Report*", hija l-intenzjoni tal-Gvern li l-*link road* bejn il-Kalkara u tal-Barrani tinbena skont dan il-*Master Plan* u għalhekk l-impatt inaċċettabli li qed jissemma għal Smart City Malta m'għadux jeżisti.

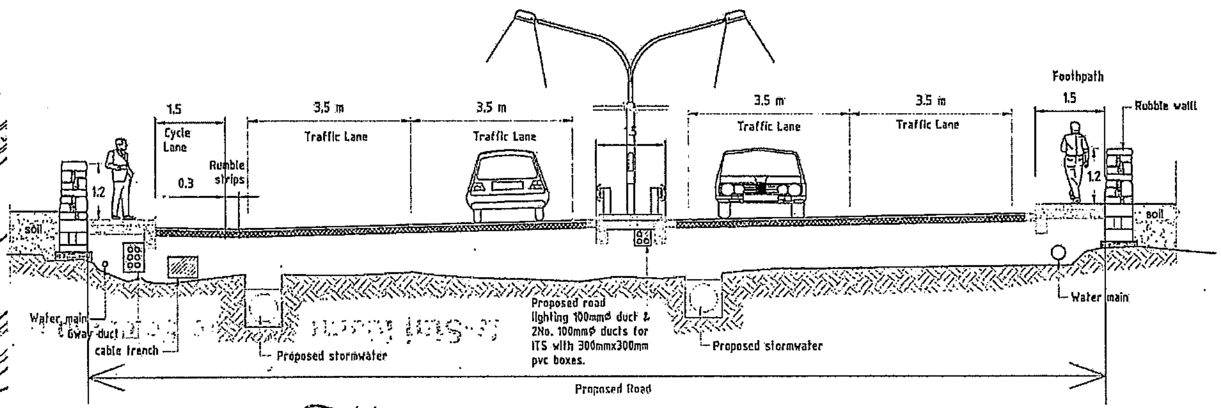
Fir-rigward tal-EIS fuq din il-*link road*, sal-lum, Transport Malta għandha applikazzjonijiet quddiem il-MEPA li jkopru ż-żona ta' bejn il-Kalkara u Ħaż-Żabbar; għalhekk l-istudji fuq l-ambjent u l-agrikoltura li saru s'issa huma għal din iż-żona biss. Transport Malta qegħda fil-proċess li tissottometti lill-MEPA l-applikazzjoni tagħha għall-*Phase 2* tal-*link road* (iż-żona ta' bejn Ħaż-Żabbar u Ħal Tarxien), għalhekk ladarba din l-applikazzjoni tiġi sottomessa tkun il-MEPA li tiggwida lil Transport Malta dwar l-istudji neċessarji f'din iż-żona.

Seduta Numru 434
12/12/2011

MASTER PLAN:

LINK ROAD FROM SMART CITY MALTA TO TAL – BARRANI, TARXIEN





Typical Road Section

IMQIEGHED FUQ IL-MEJDA TAL-KAMRA
TAD-DEPUTATI FIS- S.434 – 12.12.11
MILL- Segr. Parl. l-Onor Mario de Marco,
f'isem il-Prim Ministru

SKRIVAN TAL-KAMRA

Transport Malta

PQ19678

MASTER PLAN: SMART CITY LINK ROAD – KALKARA TO TAL-BARRANI, TARXIEN

Chapter 1: SCOPE

1.1 Background

In view of the construction of the ICT City at Kalkara (ka Smart City), Malta Transport (mt) has submitted a number of applications to MEPA for the construction of the link road that will connect Smart City to the rest of the transportation network. Malta Transport (mt) has been asked by MEPA to undertake the formulation of this Master Plan in order to provide a holistic overview that includes the road network expansion, road realignment and junction redesign. This project is being proposed to start for implementation during the year 2010 and it is envisaged that it will be terminated in its totality by the year 2019/2010. These time frames and other strategic decisions outlined in this Master Plan are mainly based on the information that is available within the Traffic Impact Statement (TIS) submitted by Colin Buchanan on behalf of Sama Dubai in August 2007 and which gives comprehensive traffic projections up to the year 2020, when it is being envisaged that Smart City Malta will be fully operational. Hence, this Master Plan was also prepared following close consultation with Smart City representatives here in Malta.

1.2 Project Outline

This project involves a major plan which comprises the upgrading of part of the existing network and which also includes new roads that will eventually link the Tal-Barrani Area, Tarxien to Smart City at Kalkara (ref. Drg. No. 001). This link has an approximate total length of 4.30 Km, and permit requests have been submitted for part of this link as follows:

PHASE 1:

Phase A (PA 0502/09) -	From Bieb Hompesch, Fgura to Bieb is-Sultan, Zabbar, ref. Drg. No. 002.
Phase B (PA 0237/07) -	From Bieb is-Sultan, Zabbar to Triq Santu Rokku, Kalkara, ref. Drg. No. 003.
Phase C (PA 0501/09) -	From Triq Santu Rokku (Capuchin Convent) to Smart City Malta ref. Drg. No. 004.

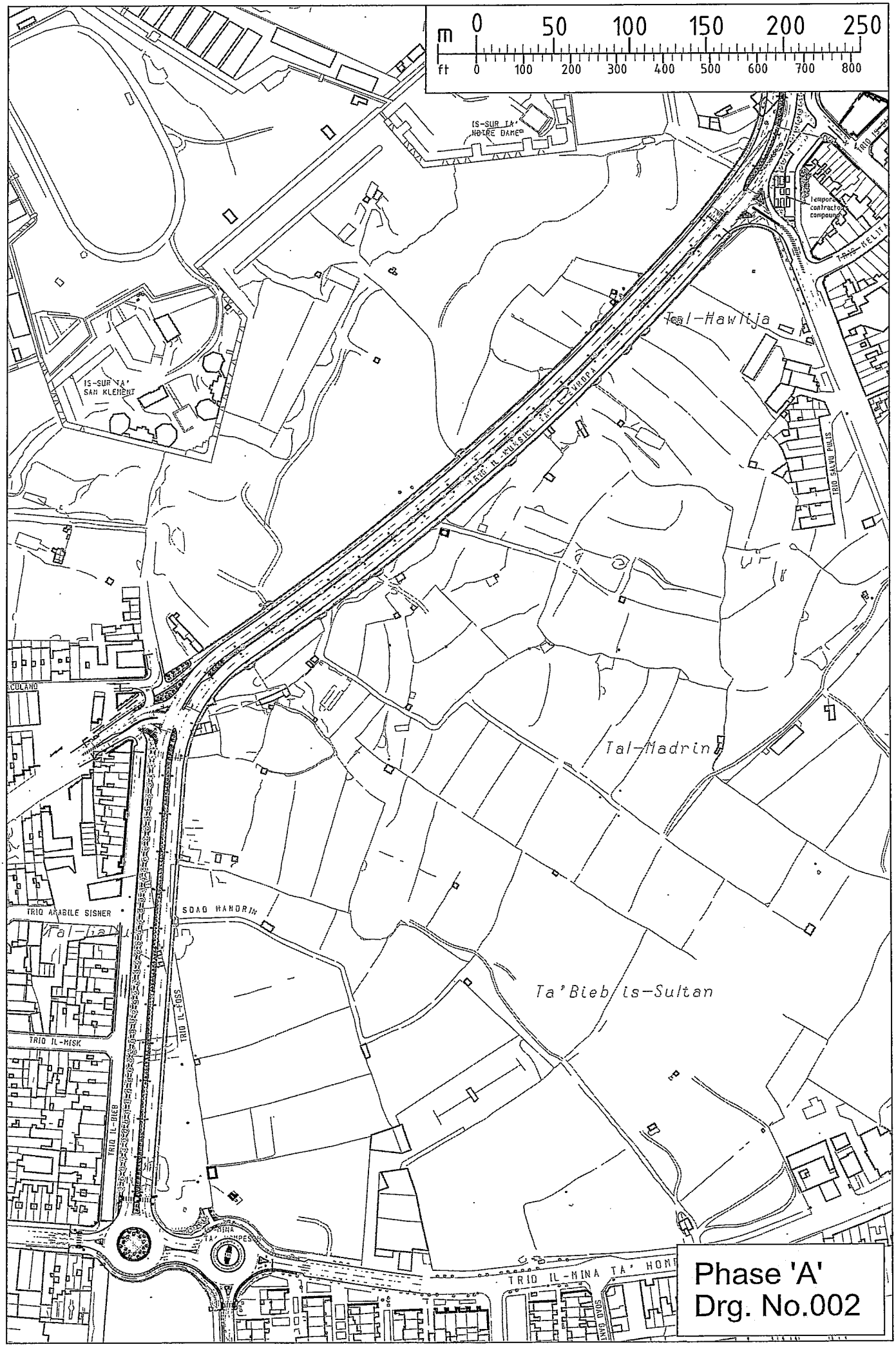
In addition to this, through a 2nd Phase, Malta Transport (mt) intends to submit applications from Hompesch Gate in Fgura up to and including the present junction in Triq San Leonardo, Tal-Barrani (Tarxien).

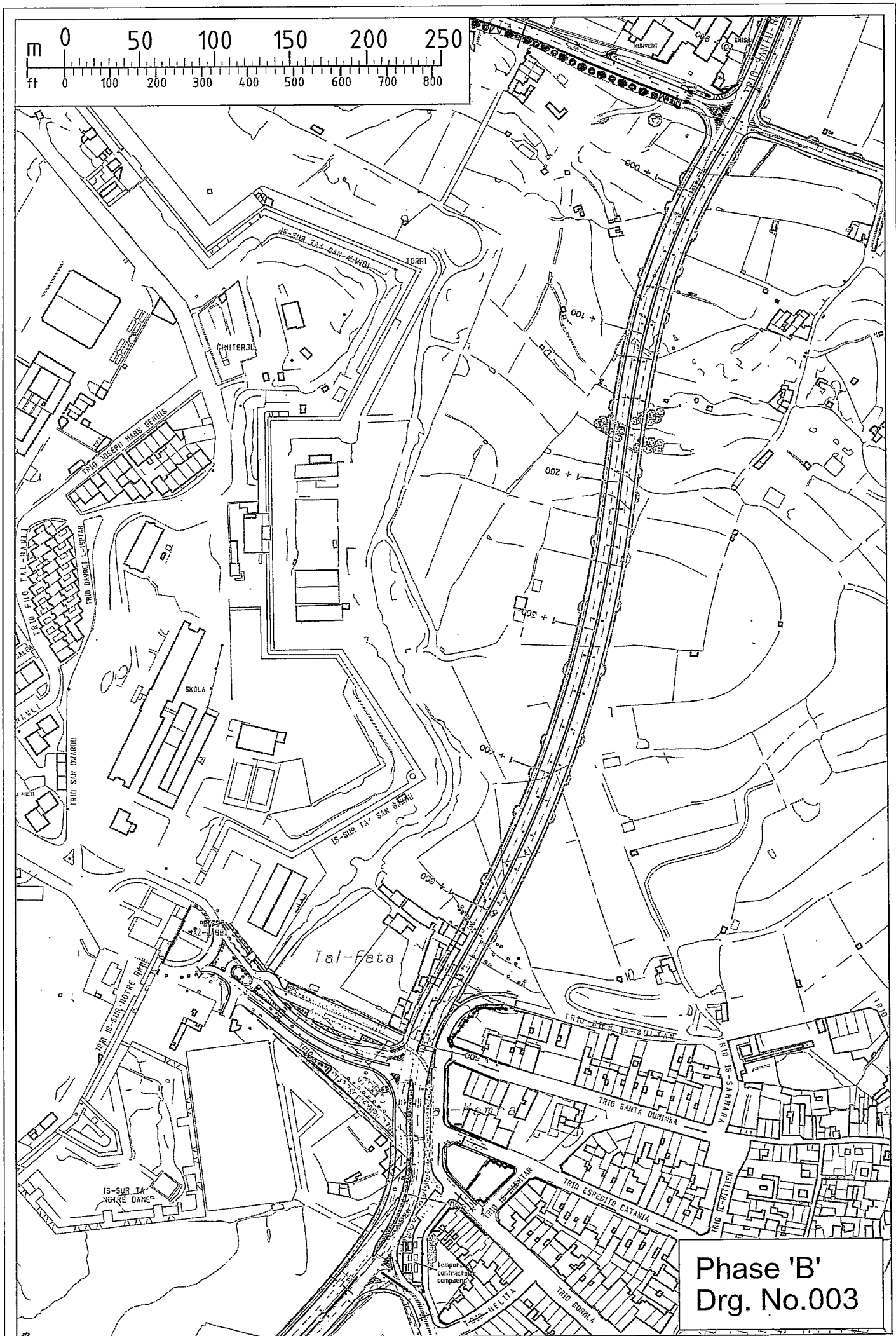
The improvements to this part of the National Network are intended to result in environmental enhancements, such as improved traffic flows, greater public accessibility, and the socio-economic benefits that National Policies advocate.

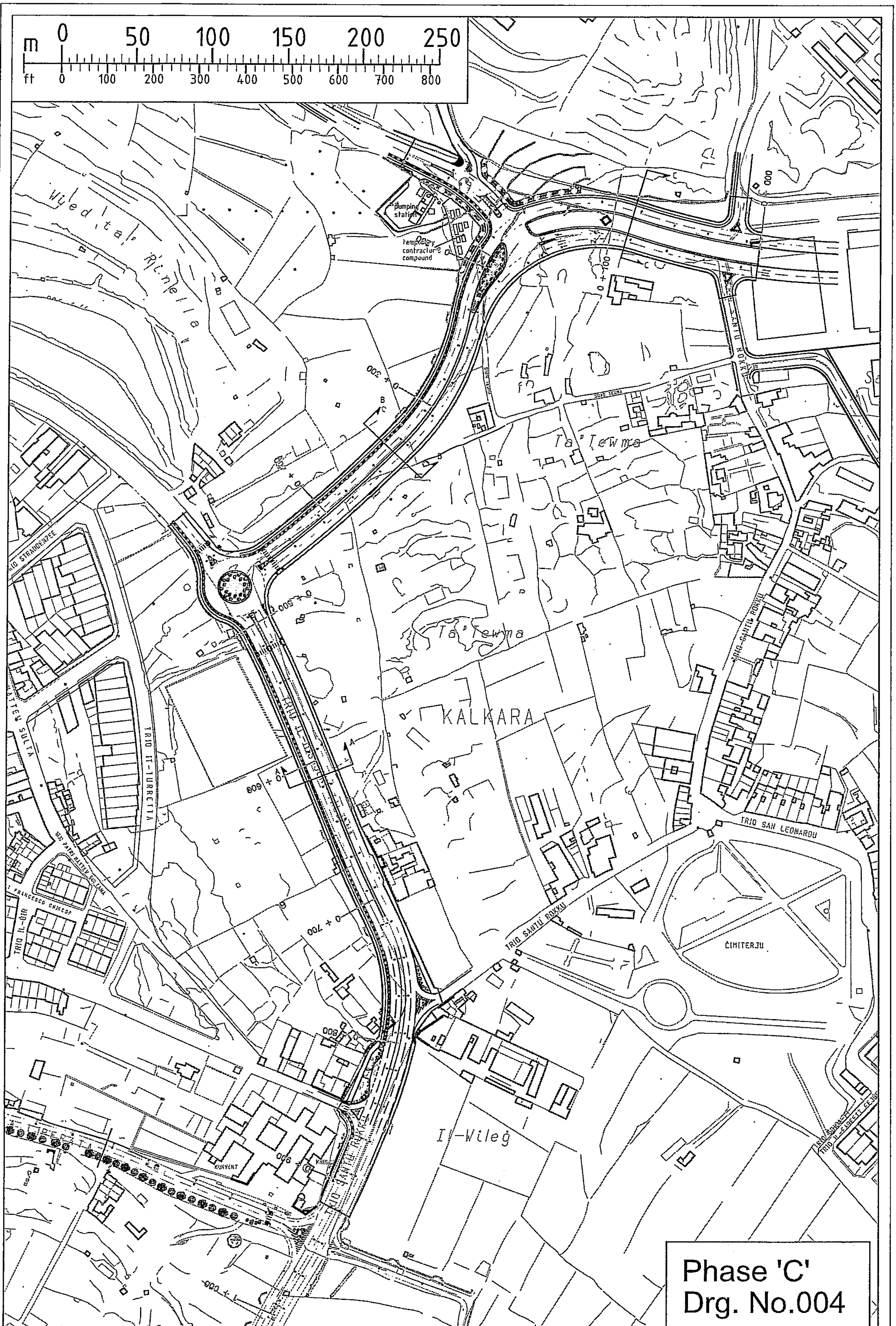
The link road is shown in its totality in Drg. No. 005 attached.


MELLIEHA
SAN PAWL IL-BAHAR
PEMBROKE
SAN GILJAN
SWIEQI
SLIEMA
GZIRA
MGARR
NAXXAR
GHARGHUR
SAN GWANN
IKLIN
MOSTA
LIJA
BIRKIRKARA
BALZAN
MSIDA
TAL-XBIEX
VALLETTA
FLORIANA
PIETA
HAMRUN
ST. VENERA
ATTARD
MTARFA
MDINA
QORMI
BIRGU
KALKARA
ISLA
BORMLA
XGHAJRA
ZABBAR
MARSA
PAOLA
FGURA
TARXIEN
LUQA
ST. LUCIA
ZEJTUN
MARSASKALA
GUDJA
GHAXAQ
MARSAXLOKK
ZEBBUG
RABAT
DINGLI
SIGGIEWI
MQABBA
KIRKOP
SAFI
QRENDI
ZURRIEQ
BIRZEBBUGIA

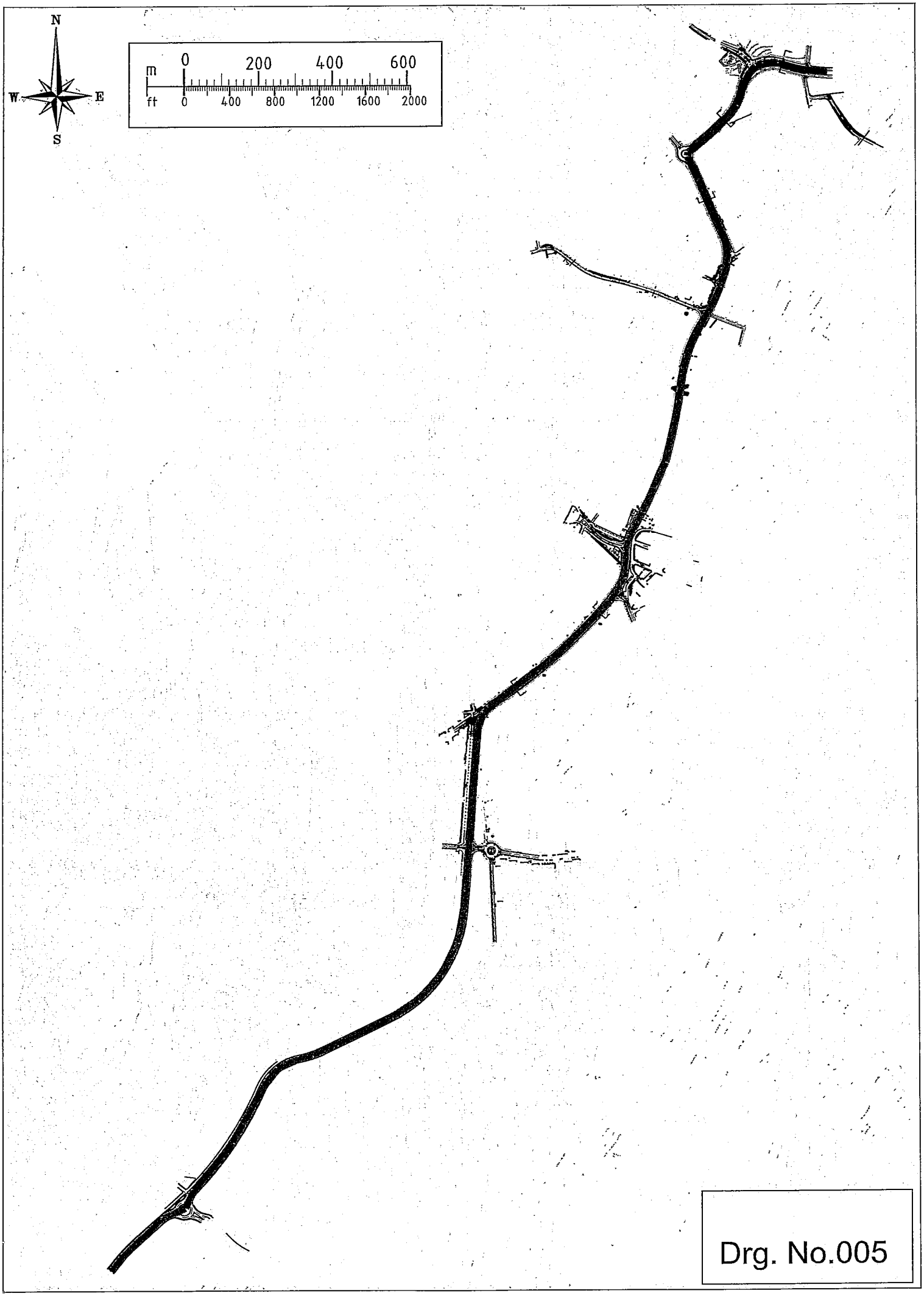
Drg. No.001


m 0 50 100 150 200 250
ft 0 100 200 300 400 500 600 700 800
IS-SUR TA' NOTRE DAME
IS-SUR TA' SAN KLEMENT
Tal-Hawtija
TRIQ IL-FUSSIEL
TRIQ SALVU PULIS
TRIQ KELITA
Tal-Madrin
Ta' Bieb is-Sultan
TRIQ IL-MISK
TRIQ IL-BIEB
TRIQ IL-FOSS
TRIQ IL-MINA TA' HOMPES
Phase 'A'
Drg. No.002


m 0 50 100 150 200 250
ft 0 100 200 300 400 500 600 700 800
TRIQ SAN ANTNIN
TRIQ IS-SANNAJA
TRIQ SANTA DUMINKA
TRIQ ESPEDITO CATANIA
TRIQ BORMLA
TRIQ HELITA
TRIQ JOSEPH MARY DEMUTS
TRIQ SAN DWARDU
TRIQ IS-SUR TA' SAN ANDRU
TRIQ IS-SUR TA' NOTRE DAME
SKOLA
CIMITERJU
Tal-Fata
Phase 'B'
Drg. No.003



Phase 'C'
Drg. No.004



Drg. No.005

Chapter 2: SITE ANALYSIS

2.1 The Location

This proposed link, through the various phases as being proposed by the Network Infrastructure Directorate within the Malta Transport Authority will provide the necessary infrastructure for better mobility within the Grand Harbour area and towards Malta South in accordance with the transport policies being implemented by the Government of Malta.

Hence, the site proposed for this development links the area of Santu Rokku in Kalkara directly to tal-Barrani at Tarxien. This link is constructed partly through the upgrading of the existing infrastructure and also through the formation and construction of new roads, particularly at Tal-Fata in Kalkara / Zabbar and also in the Bulebel Area at Zabbar. Land uses within the proximity of the site limits are various and the major are outlined further on in this report.

2.2 The Structure Plan / Local Plan

For this area the structure plan mainly identifies the need to manage traffic, in particular the need to address road safety through speed limits and traffic calming and to lessen the impact of car traffic through the provision of non-car modes such as public transport. In conjunction with this, two local plans have to be consulted for this area, these being the Grand Harbour Local Plan and the Malta South Local Plan.

The Grand Harbour Local Plan has the following aims:

- ✓ to maintain Valletta's accessibility and improve that of Cottonera and the Harbour area;
- ✓ to reduce the need for journeys;
- ✓ to encourage the use of public transport and reduce the dependence of the Valletta terminus;
- ✓ to improve north-south links;
- ✓ to promote safety aspects in transportation;
- ✓ to seek the protection of the environment whilst safeguarding the transportation requirements of new schemes;
- ✓ to reduce extraneous traffic particularly from residential areas; and
- ✓ to improve conditions for pedestrians and cyclists.

These aims are supported by policies GT01-GT14. Policy GT02 emphasises the need to have junctions on the road network that are able to cope with the volume of traffic using them. It states that the planning authority will encourage the upgrading of existing junctions where appropriate. Policy GT03 states that a new arterial road will be constructed from Paola Hill to Kalkara, which will be given high priority. Policy GT12 promotes ferry crossings between the harbour areas and states that potential landing points will be protected from development. The South Malta Local Plan sets out a framework to guide development up to 2012. It states that the South Malta Local Plan area has slightly higher car ownership than the national average and that the quality of public transport varies throughout the area. It also mentions that there are high levels of through traffic at the Hompesch Arch.

The transport strategy set out in the Plan aims to ensure that traffic flows within the Plan area do not produce serious environmental, economic and social problems. It aims to encourage and facilitate the use of public transport, introduce bus priority measures, manage car parking requirements and improve traffic flows at key junctions. Four transport policies are identified. Policy SMTR 01 seeks to implement comprehensive measures to increase the "convenience and attractiveness" of bus services along two major corridors. These are the Fgura/Zabbar corridor and the Paola/Tarxien corridor. It also states that developers of major sites close to these corridors will be required to contribute to the introduction of ameliorative measures.

2.3 Land Use

Particular areas of land in this locality are utilized in diverse ways. These include residential, business, industrial, agricultural, historic and other relatively natural land uses for example farms. Each of these broader categories can be further subdivided, based on the nature and intensity of the activities that are undertaken.

Residential land uses, for example, involve single-family dwellings on large or small plots, or aggregations of multiple-unit dwellings of various sorts. The most intensive residential land-uses are associated with clusters of apartment buildings, which can support large densities of populations.

Institutional land uses are mostly associated with land that is occupied by public buildings such as schools, government office buildings, convents and museums. These facilities are most commonly located in the urban or suburban areas of the area under study. Business land uses are rather similar in many respects, and are mostly associated with land that is appropriated to retail facilities of various types.

Industrial land uses are extremely varied, depending on the nature of the industry being considered. Urban-industrial land usage generally refers to the siting of factories, and of utilities such as electricity generating sub-stations. Also, present in the area are an amount of scrap yards, which are to date in use.

Land uses for agriculture and farming are also types of industrial land uses, in this case involved with the production of food or animal husbandry. The nature of agricultural land uses depends on the types of crops.

2.3.1 Major Land Uses along the route

A. Smart City Malta – Former Ricasoli Industrial Estate

As already stated this link road will cover the area from Smart City Malta, the ICT City and Media Park that is to be constructed at the former Ricasoli Industrial Estate. 1.Smart City Malta will provide a self contained environment for the knowledge community including residential, retail, entertainment, education and associated essential services. Specifically, Smart City Malta will be comprised of the following land-uses:

- ✓ Office
- ✓ Residential apartments and villas
- ✓ Hotels and related short stay accommodation facilities
- ✓ Resort based leisure facilities
- ✓ Retail and associated commercial floorspace
- ✓ Services, utilities, roads, access ways and parking related to the above.

The total size of the site area is 36 ha as per area indicated on Drg. No. 006. Furthermore, the trip generations towards Smart City have been predicted up to the year 2020, when the ICT City will be fully functional, as shown below.

Summary of peak hour trip generation (2010)

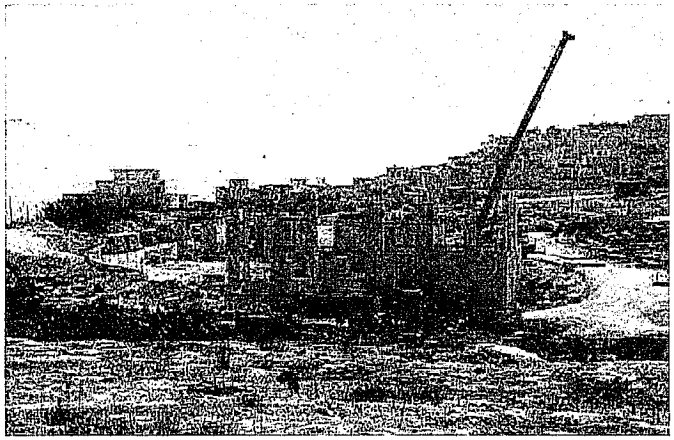
	IN	OUT	TOTAL
AM	334	174	508
IP	276	273	559
PM	193	369	562
24 hr	3252	3257	6509
12 hr	2693	2725	5418

Summary of peak hour trip generation (2020)

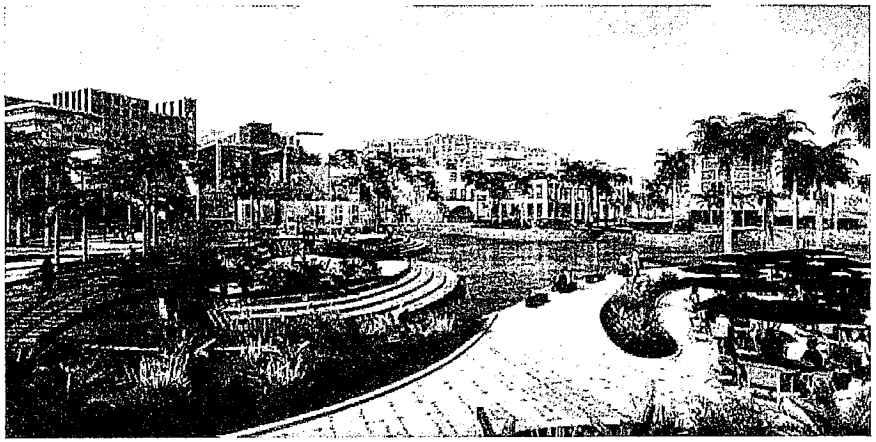
	IN	OUT	TOTAL
AM	2039	776	2815
IP	1607	1619	3226
PM	991	2265	3256
24 hr	18861	18823	37684
12 hr	14959	14883	29842

Notes: AM = 0700-0800 hrs
PM = 1700-1800 hrs
IP = 1300-1400 hrs
12hr = 0700-1900 hrs

[1] Summary of Trip Generations 2010 / 2020



Existing Smart City Site



Proposed Smart City Malta

B. Agricultural Land

The agricultural use of the site varies alongside the length of the route. The majority of agricultural land that will be affected by the project is located within Phase B of the project under application PA00237/07. For the purpose of this application an EIA study which includes, a survey of the agricultural land areas, their productivity and value and a tree map for the agriculture sites under study was carried out and the first draft has been forwarded to MEPA. The agricultural land which is mainly terraced consists of predominantly farmed dry-land as referred to on plan [redacted] It is also to note that presently part of this land is classified as "awaiting classification of agricultural value". In addition, according to local plans other extents of agricultural land include:

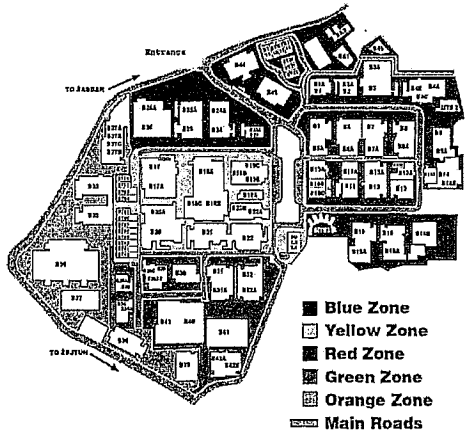
- ✓ Area outside the scheme
- ✓ Area scheduled for rationalisation in 2006
- ✓ Strategic open gap

Agricultural Land - Kalkara

C. Bulebel Industrial Estate

The Industrial Industrial Estate is located along Triq San Anard, Tarxien; it has an area of circa 500,000 sq m and accommodates 25 units, which are in certain cases subdivided into smaller units. Both the Local Plan (South Malta Local Plan, South Harbour Highway – MAP 10, attached) and the TIS presented by Sama Dubai indicate a ring road around the industrial estate however the Authority for Transport in Malta is of the opinion that an upgrade to Triq San Anard would better serve the purpose, as described further on in this report. It is also to note that even though presently there are a number of accesses onto Triq San Abard, Tarxien, further to consultation with MIP it results that all buildings can be accommodated through accesses from internal roads.

Bulebel Industrial Estate – Arial View



Bulebel Industrial Estate – Schematic Plan

D. Residential Areas

The link road proposed route traverses two major residential hubs:

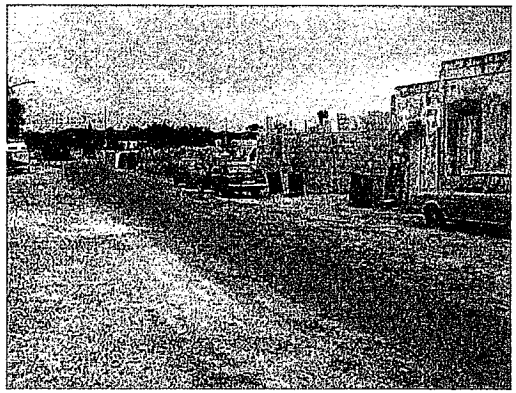
1. Tarxien, Triq San Anard, Triq il-Gudja and Triq id-Dejma

Triq San Anard is presently a 4 lane road (part of which includes a service Road) which reaches to tal-Barrani. Residences are mainly located within the service road and mostly include terraced, 2 floor properties. This road then reduces to two lanes in the parts concerning Triq il-Gudja and Triq id-Dejma. A number of residences are also present on this stretch however, these are scattered along the route with no definite pattern.

Residences in Triq San Anard, Tarxien

2. Zabbar, Triq il-Foss and p/o Triq il-Kunsill tal-Ewropa

As previously indicated, both roads will be part of the development being proposed. In the case of Triq il-Foss, major realignment is being planned. Due to this a minor number of residences / farms on Triq il-Foss will require expropriation. On the other hand, Triq il-Kunsill tal-Ewropa will be widened at certain instances. A very small number of old residences are also present on this road, parts of which will also require expropriation to accommodate road construction according to the proposal (ref. Drg. No. 7).

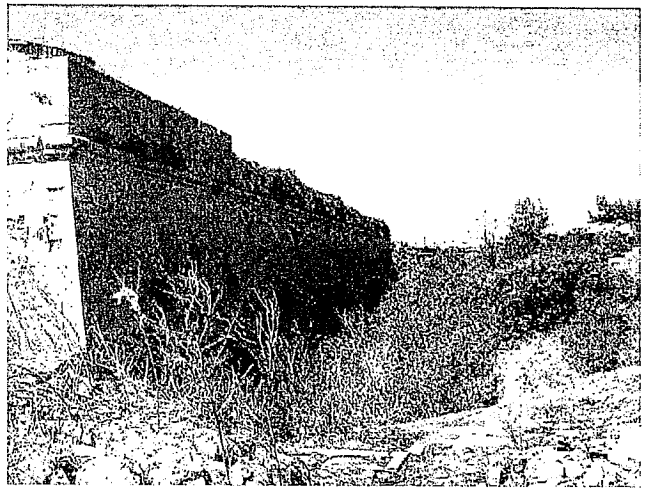


Residences in Triq il-Foss, Zabbar

E. Area of high landscape value

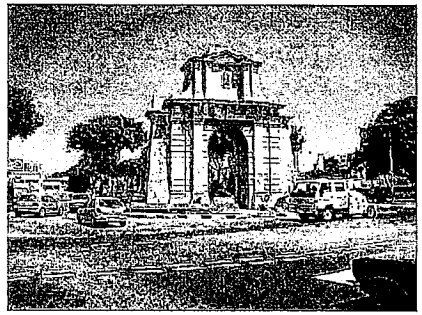
A considerable amount of land in the area considered is of high landscape value. This is under the protection of conservation designations. Statutory designations broadly fall into three categories: nature conservation, landscape conservation and natural heritage conservation, which protects wildlife, landscape and cultural aspects of the countryside. In the majority of the area considered of high landscape value the area of study consists predominantly of a large tract of land that is wholly agricultural in nature where the landscape is dominated by the presence of rubble walls, which are in a relatively good state of the dry stonewalls serve as ecological corridors for wildlife, linking different parts of the habitat to one another, providing routes for dispersal and for resource acquisition (ref. Drg. No. 7).

Another highly classified aspect of the surrounding landscape is the complex system of fortifications of the 17th Century. These consist of eight bastions with curtains adjoining each bastion. They are named as follows:- St Paul in Cospicua, St John, St Nicholas, St Clement, Notre Dame, St James, St Louis and San Salvatore. The Cottonera Lines are today practically intact, except for the few alterations and perforations made in them to accommodate present day traffic.



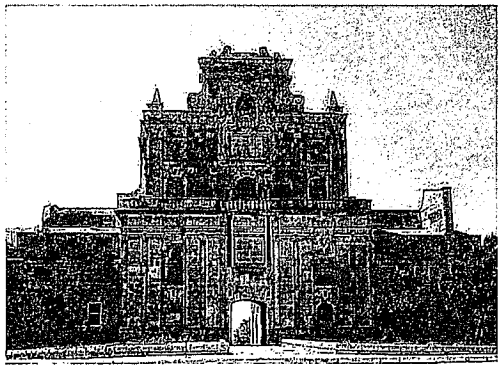
Bastions – Part of the Cottonera Fortifications

Also part of the route (phase A and phase B) count other forms of historical architecture, these mainly including Hompesch Gate and Bieb is-Sultan, both at Zabbar. The town of Zabbar, which is situated just outside the line of fortifications, is considered part of the Cottonera area. The monumental Zabbar Gate is only a short distance from the town. In 1797, Ferdinand Von Hompesch, last Grand Master of the Order in Malta, named Zabbar Citta Hompesch (Hompesch City). The triumphal arch was at the time erected to commemorate that event. It still stands proudly at one end of the town.



Hompesch Gate, Zabbar

On the other hand Bieb is-Sultan, aka Note Dame Gate is one of the original seven gateways into the Cottonera Lines built by Grand Master Fra Nicola Cotoner in 1675. It is also one of the main landmarks of the region. The present form of this gate may have been completed between 1707 and 1715. Its rich baroque design is attributed to the celebrated Italian architect and engineer Romano Carapecchia.

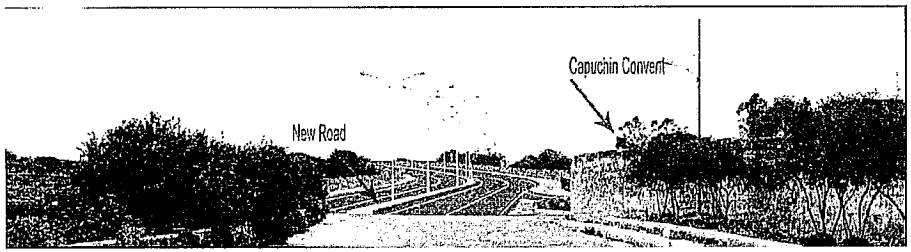


Notre Dame Gate, Zabbar

F. Religious Landscaping

The main building to be considered here is the capuchin convent which is considered as a "building of outstanding architectural or historical interest that shall be preserved in its entirety..." and has been scheduled by MEPA as requiring a Grade 1 level of Protection. It is located within phase C of the project and one is to note that the construction of the proposed link road would not form a noticeable deterioration or improvement in the view.

The Capuchin Convent is located on the promontory of the Kalkara valley side at coordinates 7907E/71583N and is found to the north within the area where the link road is to be located. The area of the Capuchins in Kalkara incorporates a cloistered convent, a church and extensive gardens with a large reservoir all built upon land granted to the Capuchin Friars back in 1736.



Proposal including the Capuchin Convent, Kalkara

G. Scrap Yards

As indicated on Drg No.008, there are three scrap yards in the vicinity of the link road, located as follows:

- ✓ Location 1: Casborella Scrap Yard, Kalkara

  This scrap yard is located at the limits of the site close to the Mediterranean Film Facilities (recreational area), in Triq ir-Rinella. A boundary wall presently surrounds the site and the scarp yard is presently in use.

- ✓ Location 2: Hompesch Steel, Zabbar

  This scrap yard is found at the limits of the industrial estate within Triq id-Dejma, Tarxien. Also, scrap metal is being deposited within this location.

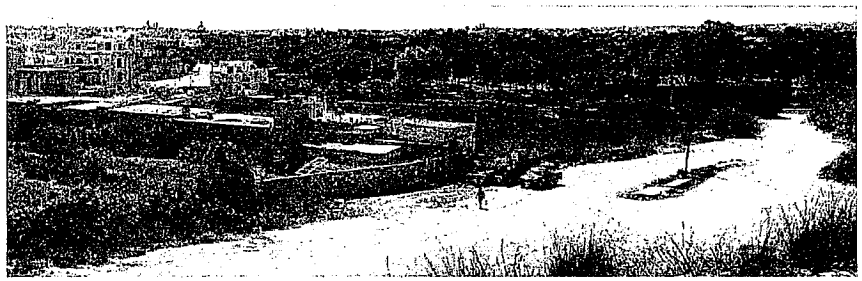
- ✓ Location 3: Hompesch Steel, Zabbar

  This is located in Triq id-Dejma, Tarxien in the area known as Tax-Xemx u l-Qamar Area. Currently scrap metal is being deposited at this location and it is to be noted that in this case the area was included within the rationalisation scheme in 2006.

One has also to point out that two derelict sites along Triq Bieb is-Sultan appear to be currently utilised as scrapyards. A breach has been detected by the Malta Environment and Planning Authority where the illegal dumping of derelict vehicles was found to be taking place on one of the derelict sites. An enforcement notice (EC/00436/09) has been issued and the case has been referred for direct action by MEPA.

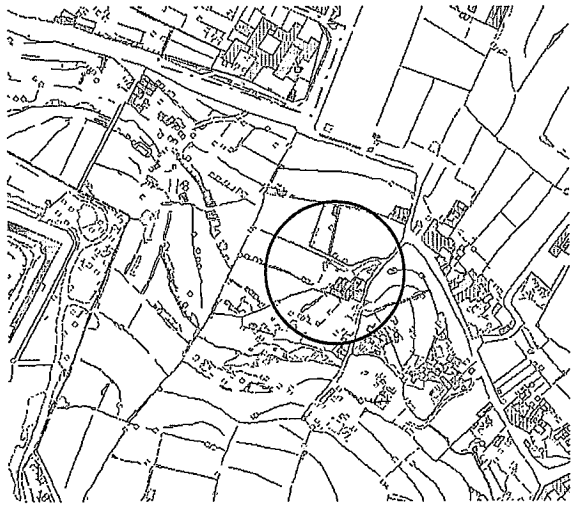
H. Farms

A large part of Phase B is dedicated to farming activities. An animal husbandry farm is situated at Tal-Fata , which farm is surrounded by a stretch of utilised agricultural area measuring 4,645.50 sq.m and a residential unit. This agricultural area is dedicated to the cultivation of vines.

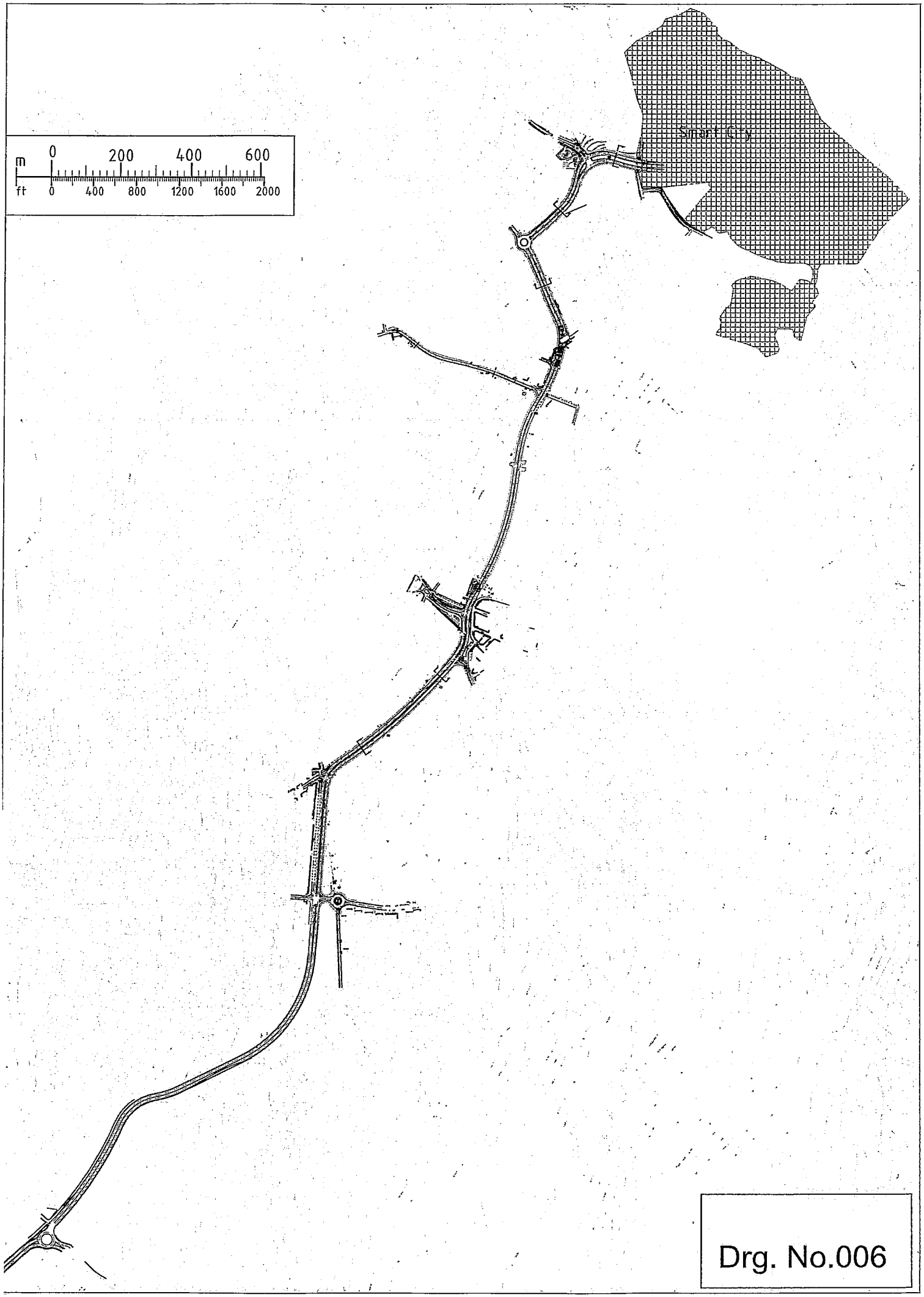


Existing Animal Farm

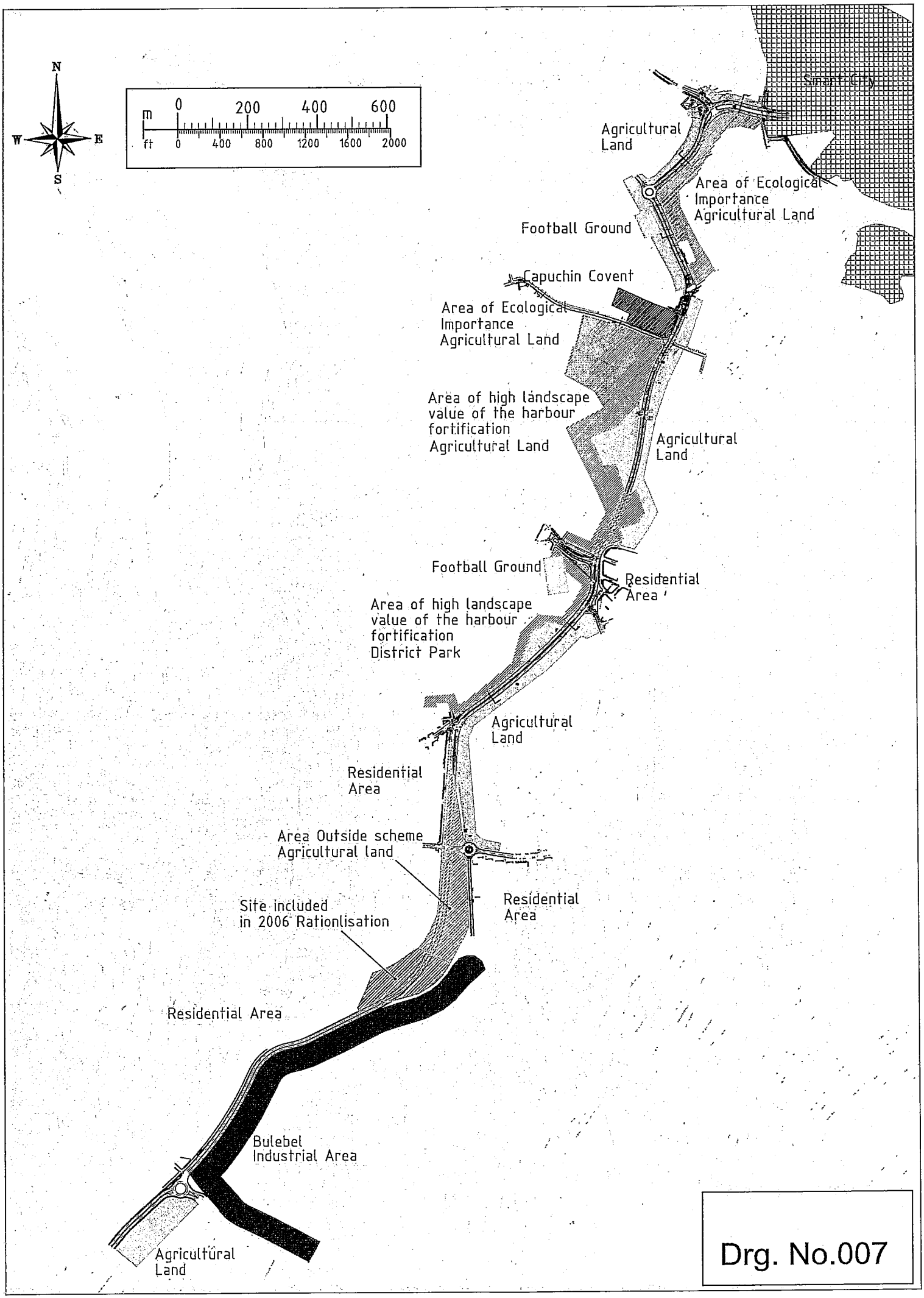
A second residential unit adjoins the animal husbandry farm and the surrounding agricultural land.



Animal Farm Location



Drg. No.006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Area of high landscape value of the harbour fortification Agricultural Land
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Football Ground
Residential Area
Area of high landscape value of the harbour fortification District Park
Agricultural Land
Residential Area
Area Outside scheme Agricultural land
Residential Area
Site included in 2006 Rationlisation
Residential Area
Bulebel Industrial Area
Agricultural Land
Drg. No.007

SOUTH MALTA LOCAL PLAN

MEPA

L-Awtorita' ta' Malta Dwar l-Ambjent u l-Ippjanar

Malta Environment & Planning Authority

Key

- Limits to Industrial Development - SMZN 02
- Limits to Development
- Scheme Alignment
- Proposed Zabbar-Bulebel Link Road

South Harbour Highway

Scale :	Date :	Map :
1:7000	July 2006	10

INDICATIVE ONLY
Not to be used for measurement or direct interpretation.
Maps to be used in conjunction with Policy Document.

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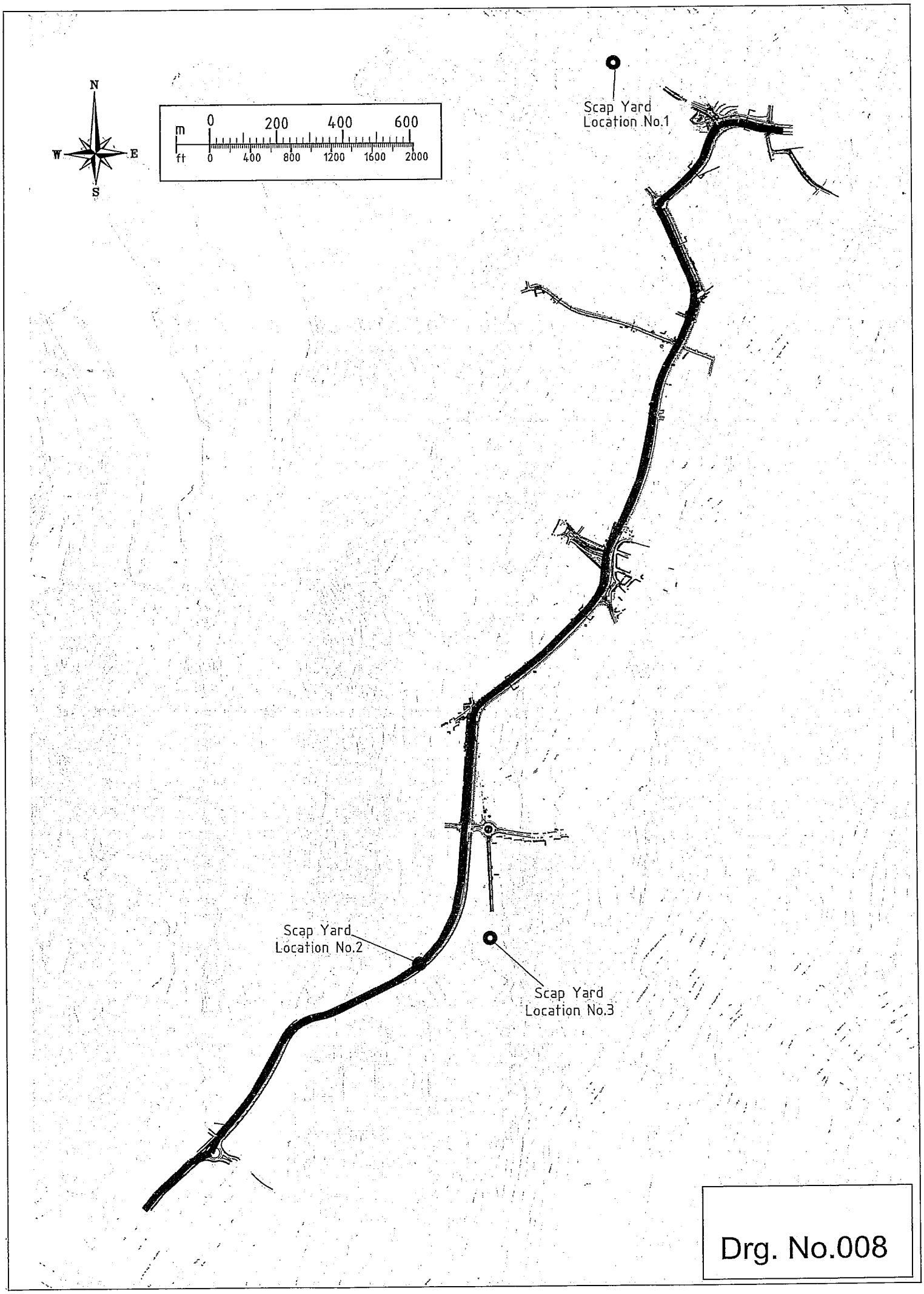
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Drg. No.008

Chapter 3: GENERAL METHODOLOGY

3.1 Traffic Impact Statement (for Smart City Malta)

As previously explained in Chapter 1, part of the decisions taken by the Authority for Transport in Malta are based on the information retrieved from the TIS prepared by Colin Buchanan for Smart City Malta. However, as explained further on in this plan certain deviations from the TIS presented by Buchanan have been adopted since the Malta Transport is of the opinion that more beneficial solutions for the area are hereby being presented.

3.2 Existing Junctions

Drg. No. 009 gives an overview of the existing site. During the formulation of the TIS carried out by Smart City Malta traffic counts were taken at the various junctions as follows:

- ✓ Junction A – site access
- ✓ Junction B – Triq Santu Rokku junction with Triq Missjoni Taljana
- ✓ Junction C – Triq Santu Rokku junction with Triq Santa Liberata
- ✓ Junction D – Triq Kunsill ta' l-Ewropa junction with Triq Bormla (Zabbar) and Triq San Duminku
- ✓ Junction E – Hompesch Arch
- ✓ Junction F – Triq Bormla (Zetjun) junction with Triq Dejma
- ✓ Junction G – Triq Dejma junction with Triq San Anard
- ✓ Junction H – Triq San Anard junction with Triq tal-Barrani

Additional junctions:

- ✓ Junction X – Roundabout at Triq Kottonera junction with Triq San Nikola
- ✓ Junction Y – Junction at northern entrance to Bormla namely Triq it-8 Dicembru junction with Triq il-Gublew tal Fidda
- ✓ Junction Z – Triq il-Foss junction with Triq Kunsill ta' l-Ewropa

From the TIS it results that,

"...existing traffic flows are greatest at junctions D, E, F, G and H. However, due to the nature of the Smart City Malta development the entire road network between the site and the arterial road network at Triq Tal-Barrani Route 9 is to be redesigned and rebuilt so that it can cater for the number of vehicles generated by the development."

Also, according to the same TIS:

The majority of trips will originate in the urban areas around the Grand Harbour and Marsamxett Harbour particularly as follows:

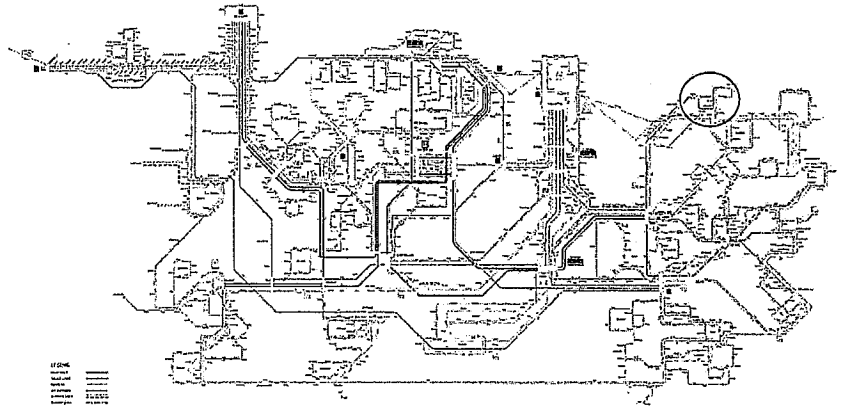
- ✓ Cospicua
- ✓ Zabbar
- ✓ Paola / Tarxien
- ✓ Marsa
- ✓ Hamrun
- ✓ Santa Venera
- ✓ Birkirkara
- ✓ San Gwann

Trips attracted from the other central business districts such as Valletta and Sliema are proportionally less. This reflects the fact that they have lower levels of population. Outside of the harbour area, the other key settlements from which trips are being attracted, although to a lesser extent, include the following:

- ✓ Marsascala
- ✓ Birzebbuga
- ✓ Zejtun
- ✓ Ghaxaq
- ✓ Zurrieq
- ✓ Luqa
- ✓ Siggiewi
- ✓ Rabat
- ✓ Balzan
- ✓ Mellieha
- ✓ Bugibba

3.2 Public Transport

Presently, there are a number of bus routes that considerably cover the area. However, further to the public transport reform it is being envisaged that a number of interchanges including those at Paola, and Bir id-Deheb will be operating and hence the current system will be significantly enhanced.



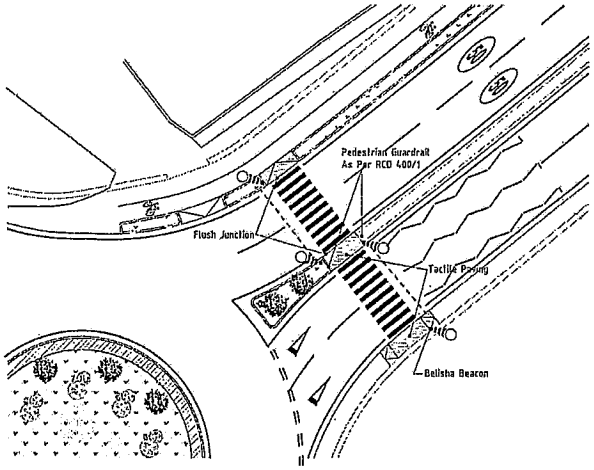
Malta – Public Transport Reform Network

3.3 Non Motorised Users

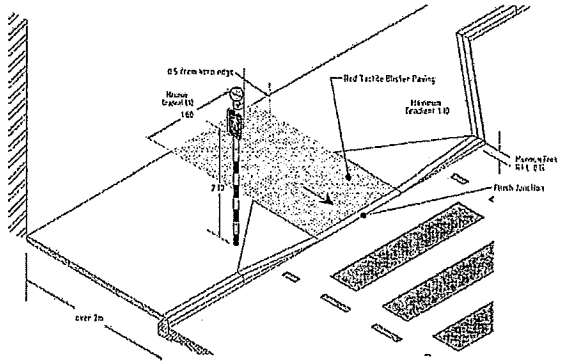
From the TIS observations on site it was found that pedestrian flows are generally low. From observation work carried out for the TIS, it was noted that Junctions D and E had the most pedestrian movement due to their proximity to local amenities in Zabbar and Fgura. This considered, throughout its present proposals the Authority for Transport in Malta has included provisions for pedestrians throughout the route. This way forward is also intended for subsequent proposals that will follow for Triq San Anard and Tarxien Area. These provisions mainly address pedestrians, disabled persons and cyclists. In view of this potential hazard locations have been identified at the design stage. This process will continue through construction and also once that the road is open for public use. For this scope, non motorized users have been categorized within two sections being pedestrians and cyclists:

Specific facilities for pedestrians will include:

- ✓ At least 1.00m unobstructed footways on both sides of the road with dropper kerbs as necessary
- ✓ Physical separation between cyclists and pedestrians (wherever possible)
- ✓ Lit walkways and roads
- ✓ Traffic calming is encouraged at sensitive locations – this is done through the introduction of physical street features that control vehicle speeds
- ✓ Pelican Crossings with facilities for the disabled
- ✓ Belisha crossings



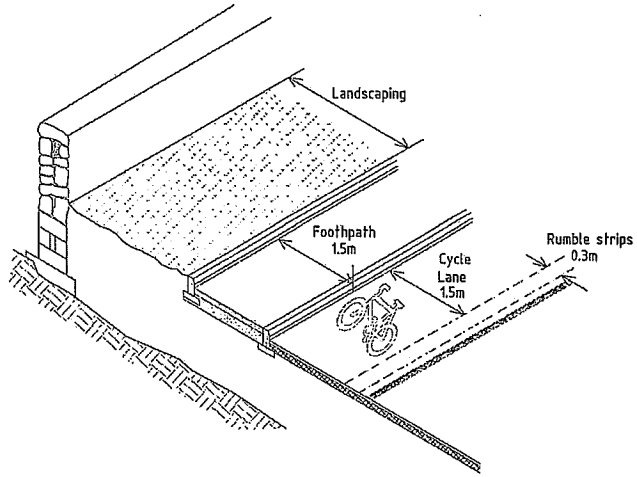
Plan of a typical pedestrian facility



Typical pedestrian facility view

Facilities for cyclists will include:

- ✓ Designated spots for the parking of bicycles
- ✓ Physical segregation from pedestrians and cars (wherever possible)
- ✓ Signage that indicates cyclists
- ✓ In cases where the cycle lane is located on the carriageway, it will be indicated with reflective thermoplastic road markings for safety purposes

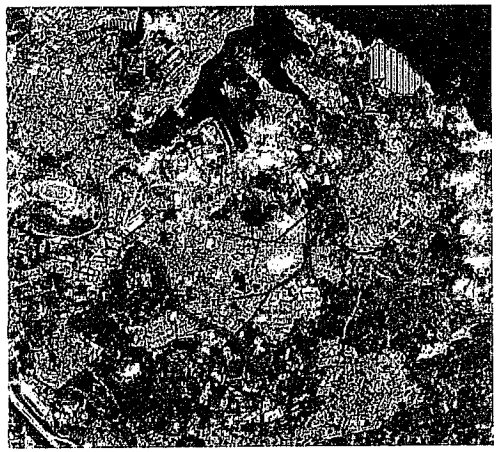


Typical Cycle Lane Details

3.4 Proposals within the TIS

The TIS takes into consideration the ideal routes to and from the site have been identified. The aim of the intended routes is to direct traffic to the roads most suitable for additional car traffic. These are either Arterial Roads, or Distributor Roads. For longer distance trips the traffic will approach the site from Triq Tal-Barrani either from the west or the east and then be directed along the new link road to the site. At the initial stages of development, traffic will be directed to from Triq Tal- Barrani Route 9 to the existing route along Triq San Anard. Once the full link road is complete, traffic will leave Triq Tal-Barrani at a new junction to the east of the existing junction with Triq San Anard, some 500 metres away.

For shorter journeys it is inevitable that trips will require the use of local roads the nearer to the driver's home location. However, the aim will be to direct vehicles to as quickly as possible to the new link road for onward journeys to Smart City Malta.



Identified routes towards Smart City Malta

According to the TIS studies, at present a number of the junctions presented in Drg. No.010 are not operating within capacity as follows:

Junction	Capacity	
	AM	PM
A	Yes	Yes
B	Yes	Yes
C	Yes	Yes
X	Yes	Yes
Y	Yes	Yes
D	No	No
Z	N/A	N/A
E	Yes	Yes
F	Yes	Yes
G	No	Yes
H	No	No

Table 1: Junction Capacities to date

This implies that presently Junction D, Junction G and Junction H are not operating at optimal capacity; hence they are heavily loaded with the formation of lengthy queues to access and exit the junctions. Similar results are obtained in the case where an upgrade to the existing junctions was included. In summary, the TIS also mentions that the preliminary design of the junctions as originally undertaken consisted of priority Roundabouts and one priority T – Junction. This type of priority junctions were proposed in order to keep the principal volume of traffic (north to south and vice versa) flowing freely. Priority Roundabouts were tested using the capacity software ARCADY (version 6). Priority T-Junction was tested using PICADY (version 4.1) software.

Within the TIS, predictions for the year 2020 have been carried out. The junctions involved are as presented in Drg No. 010. It results that the junctions as presented will have to be upgraded by the year 2020.

Further more the TIS also highlights the fact that, the junction capacity modelling results demonstrate that for the initial phasing of the development the new dual carriageway running from the Smart City Malta site to the Hompesch Arch would accommodate the future general and development traffic with the proposed new junctions operating with priority control. With the complete development in 2020 and the full dual carriageway, the junctions would all need to be signal controlled (with the exception of Junction Z and Bulebel Junction Industrial East) in order to operate within capacity.

In addition, within the TIS, it was recommended that the section of road made up of Triq San Anard and Triq Id-Dejma between the junction of Triq San Anard with Triq Tal-Barrani and Triq Id-Dejma with Triq il-Foss is downgraded when the new link road is completed to help ensure that the traffic is routed via the new link. It is also to be high lightened that to downgrade these roads the TIS proposes that a new road (shown on Drg. No. 0016) on the East side of the Industrial Estate, which will include Junction Industrial East, Junction Industrial South and the Junction with Triq San Anard. According to this plan, these junctions will require construction as indicated on the same plan.

3.5 Departure from the TIS

Following the TIS outcomes, The Authority for Transport in Malta has taken up the design and implementation of the proposed link road. This is done in respect of the approved TIS prepared by Buchanan however certain aspects have been revised since the Authority is of the opinion that through the amendments hereunder.

It is to be further noted that the Authority, also further to consultations with Smart City Malta, is proposing that the link road is constructed in phases. Also, as previously explained in Chapter 1 of this plan a number of applications have already been submitted to cover of the first 3 Km circa as follows:

PHASE 1 (ref. Drg. 012):

Phase A (PA 0502/09) - From Bieb Hompesch, Fgura to Bieb is-Sultan, Zabbar,

Phase B (PA 0237/07) - From Bieb is-Sultan, Zabbar to Triq Santu Rokku, Kalkara,

Phase C (PA 0501/09) - From Triq Santu Rokku (Capuchin Convent) to Smart City Malta

In conjunction with this phase a number of studies have already been carried out by mt. Basic decisions with regards to the road cross-section and alignment are based on the sieve analysis study that was carried out prior to the submission of these applications. Apart from this an EIA study has also been carried out for Phase B of this road. Both this studies together with the TIS have been used as a base document for this plan.

PHASE 2 (ref. Drg. 012):

Through a 2nd Phase, Malta Transport (mt) intends to submit applications from Hompesch Gate in Fgura up to and including the present junction in Triq San Leonardo, Tal-Barrani (Tarxien). This will also include the upgrading of the junction at Tal-Barrani.

The major changes to the TIS as presented by Smart City are in fact within this phase stating at the junction at close proximity to Hompesch Arch, i.e Junction Z. Here it is to be noted that Triq il-Foss, Fgura will be realigned with Triq il-Bieb, which will in turn be used as a service road to the four lane. Since this proposal is in fact divided in two phases a temporary solution had to be identified for the connection between the two. A temporary roundabout is hence being proposed as shown in Drg. No. 013. The Authority for Transport in Malta also aware that following this temporary solution some congestion will be created at Hompesch Arch, however it is to be noted that the present traffic at the existing roundabout will be shifted to the new junction at least during the first stages of Smart City Construction. Then, during further development within the Smart City site the second phase of the link road (from Homesh Arch to tal-Barrani) will be constructed.

Both the local plan and the TIS propose that the link road is routed on the East side of the industrial Estate. The Authority for Transport in Malta is however, of the opinion that this is not the optimal solution for the area, since:

- ✓ The existing Triq San Anard is already existent and it would in the case of the new road construction require downgrading
- ✓ The proposed route (within the TIS) is longer than the existing
- ✓ A number of junctions, with large radius are being proposed
- ✓ A number of studies (possibly another EIA) will be required
- ✓ Major disruption to the environment will be created, especially when considering that agricultural land part of our heritage will be effected
- ✓ Expropriation of agricultural land envisaged is considerable
- ✓ In close proximity to this site archaeological remain have been located.

Hence, the Authority is hereby proposing an upgrade of the existing Triq San Anard since this area is already identified as a major road and which apart from certain instances can accommodate the four lane road plus service road on the residential area. It is also being envisaged that a minimum amount of expropriation will be required especially when compared to the stretch identified within the TIS. Expropriation within the industrial estate is minimal and further to consultation with the MIP it results that the only factory that is to be affected is already scheduled for demolition. Through this solution it is also being envisaged that less pollution will be created especially when considering that the number of junctions will be reduced to two:

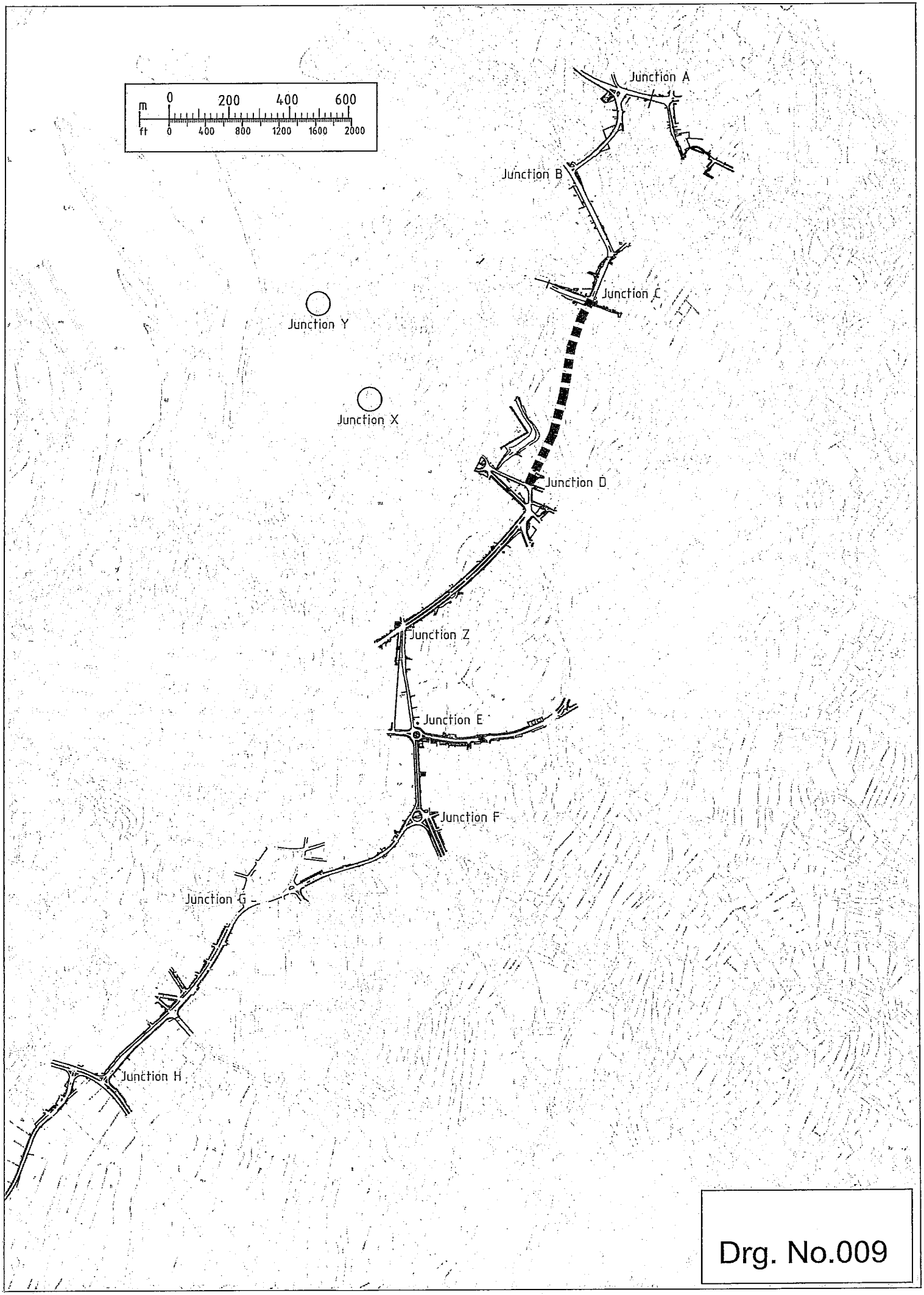
- ✓ The junction at tal-Barrani, possibly a graded junction will be required to accommodate the traffic – further analysis will be required to be able to identify the junction geometry
- ✓ The junction at the cross roads with Hompesch Arch.

The above does not imply that the Malta Transport will not be carrying out the necessary studies requested by MEPA. The Authority is aware that should the upgrading of the present route be accepted, mitigation measures will be required (as directed by any subsequent studies) especially with respect to sound pollution and air quality, especially with the residential area.

Another major change from the TIS is that within the original proposal all junctions are roundabouts. This implies that due to the large volumes of traffic diameters with a very large diameter are envisaged. Arcady Engineering tool was used for the modelling of the proposed roundabouts within the TIS study. Furthermore, as described in section 3.4 of this plan the majority of these junctions will require upgrading to signalised junctions by the year 2020 when Smart City Malta is envisaged to be fully operational. For this purpose the authority is of the opinion that all junctions apart from Junction B are constructed as signalised junction as from the first stages. For this purpose the plans for the

phases already presented to MEPA in detail include signalised junctions. These junctions will eventually be connected to the ITS which will allow synchronisation of Traffic for the Area.

These variations are illustrated in Drg. Nos. 11A / 11B / 11C attached.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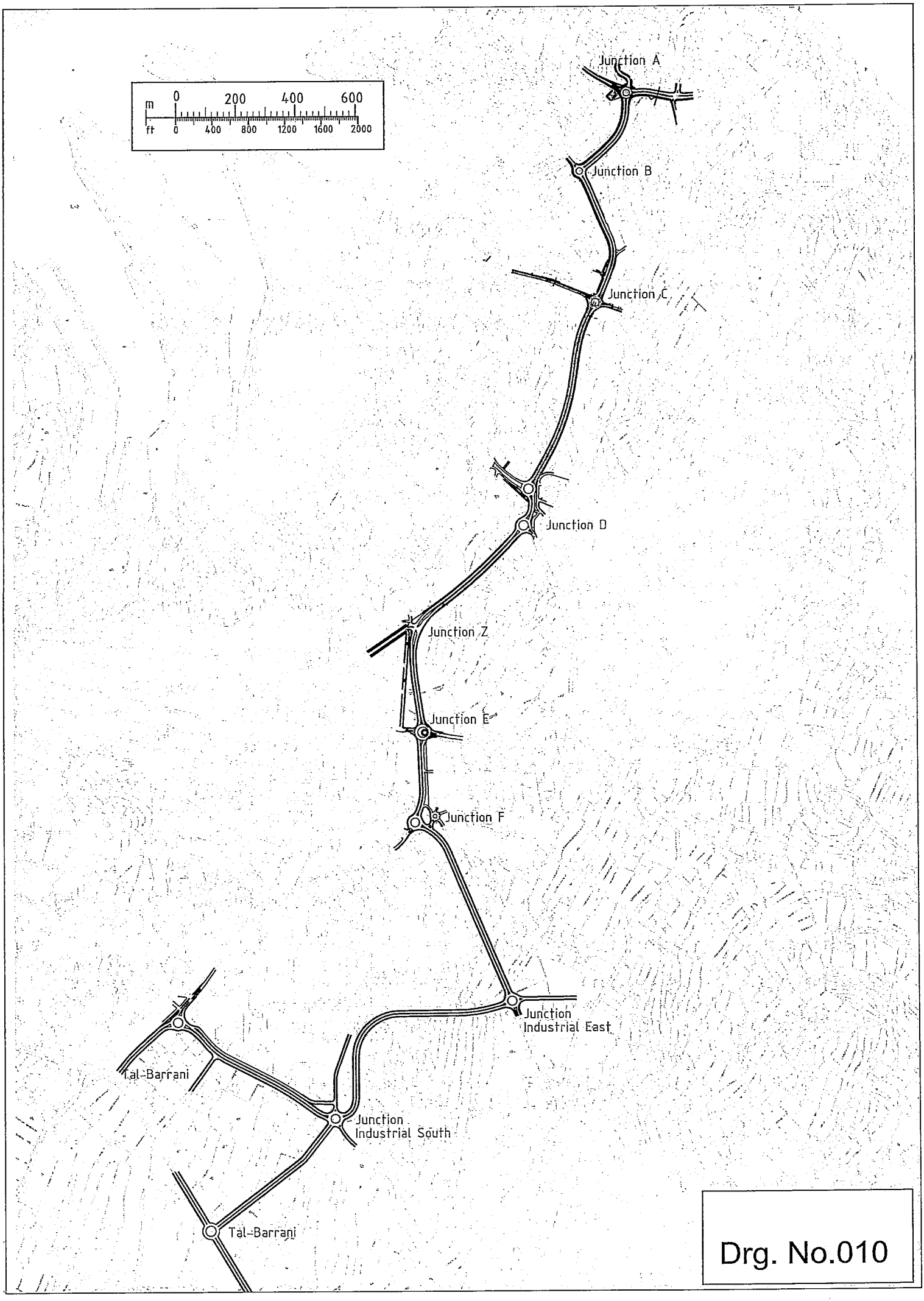
Junction G
Junction H

Drg. No.009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Junction A
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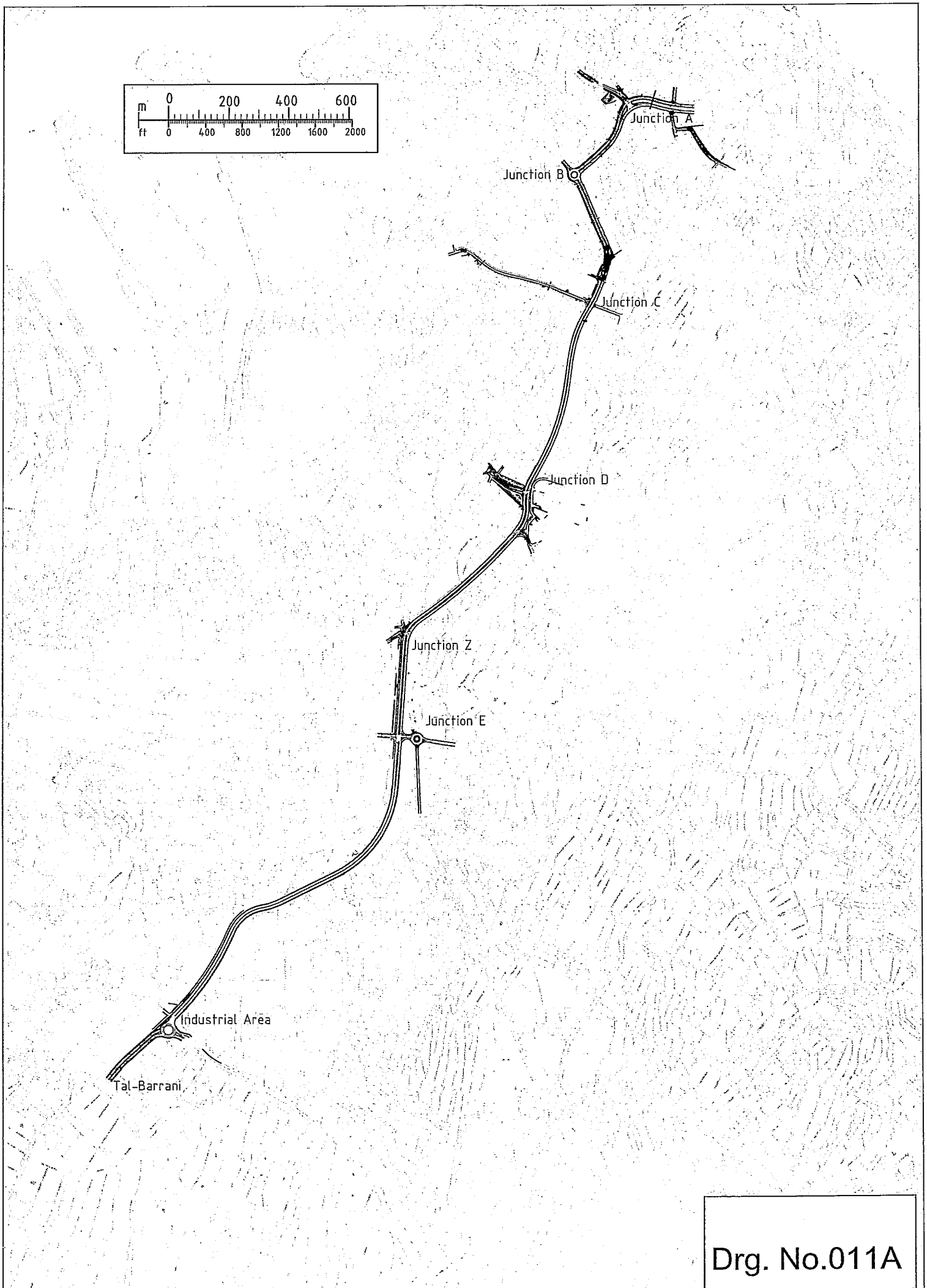
Tal-Barrani
Junction Industrial South
Tal-Barrani
Drg. No.010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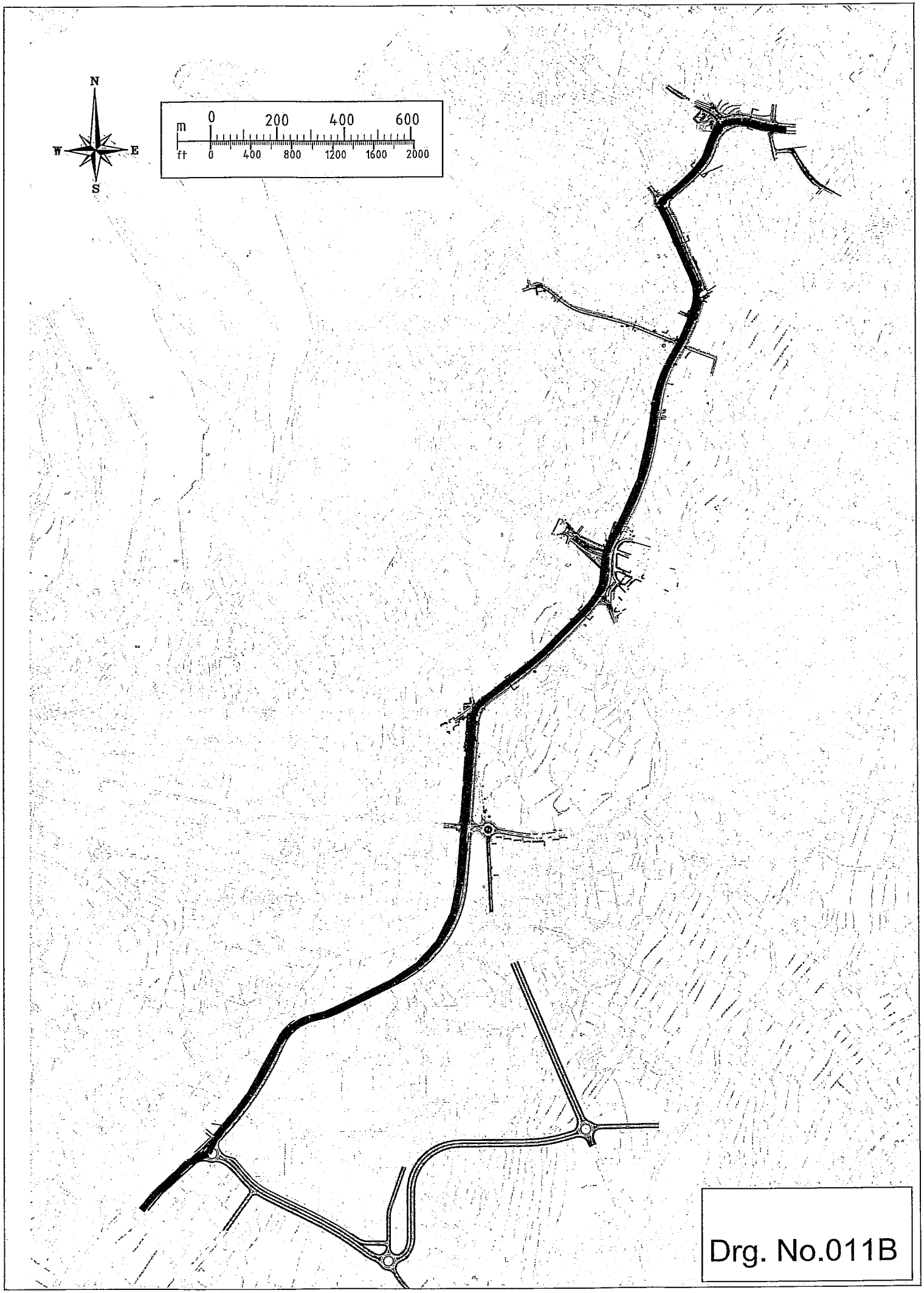
Industrial Area
Tal-Barrani

Drg. No.011A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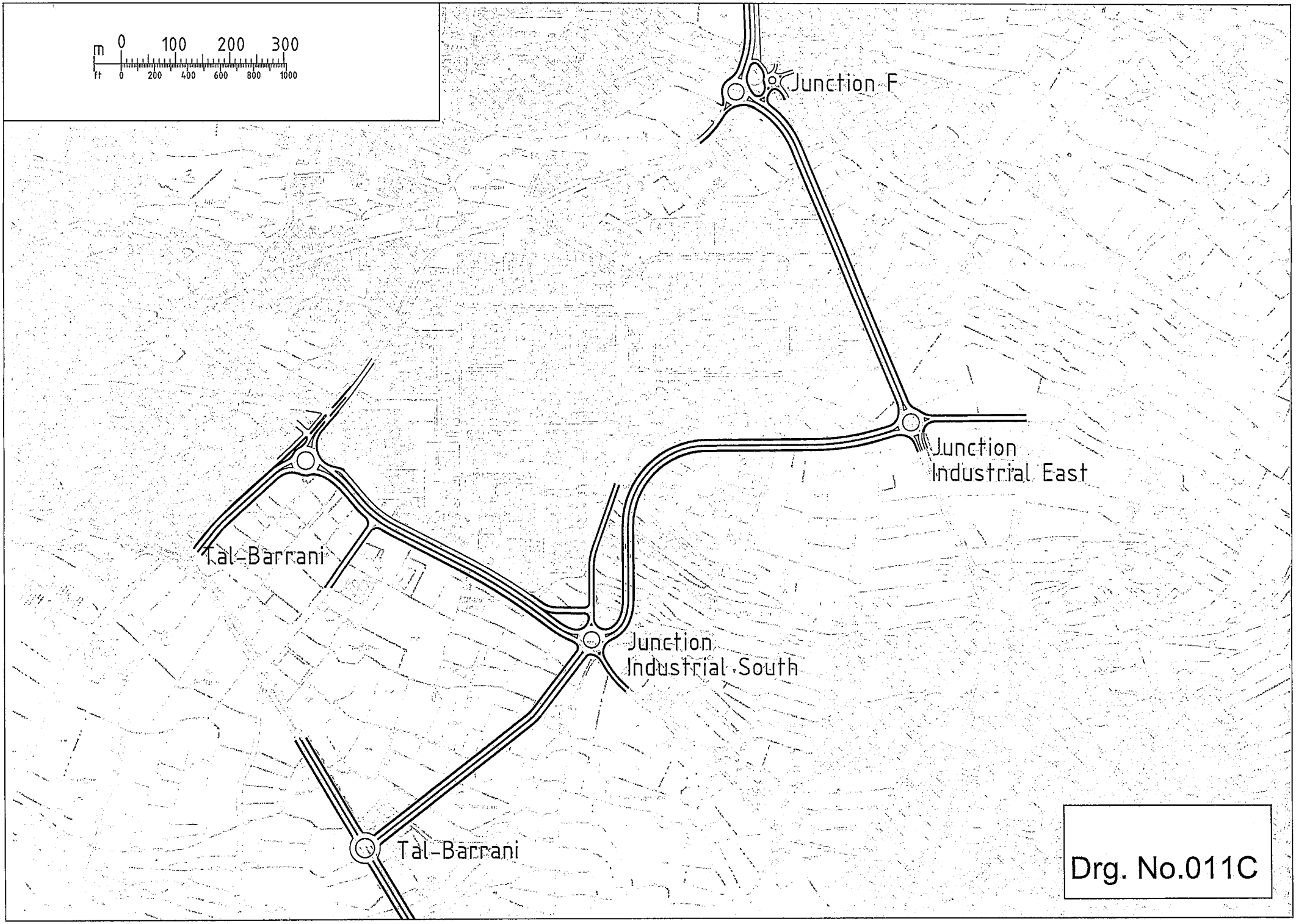
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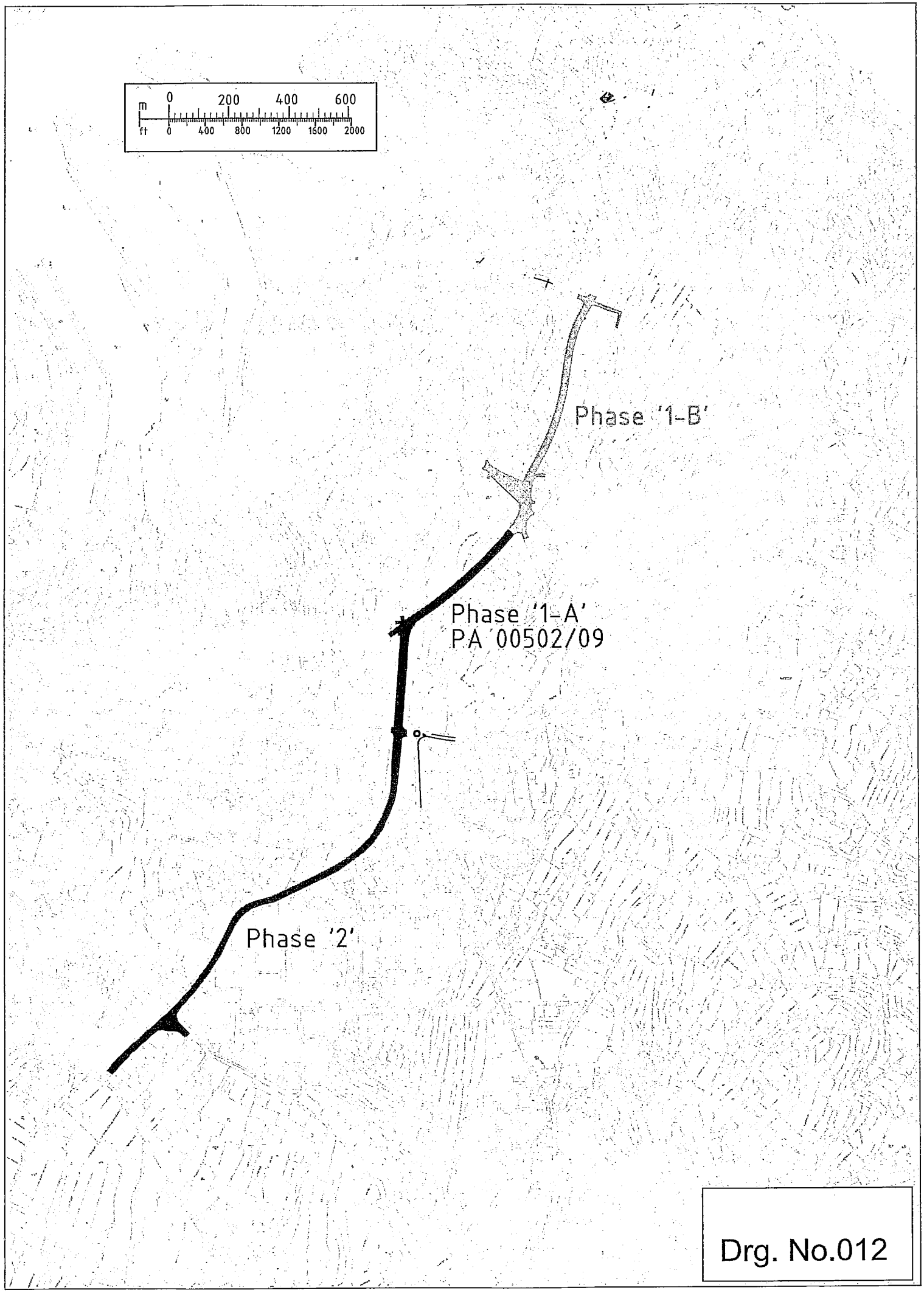
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PA 00502/09
Phase '2'
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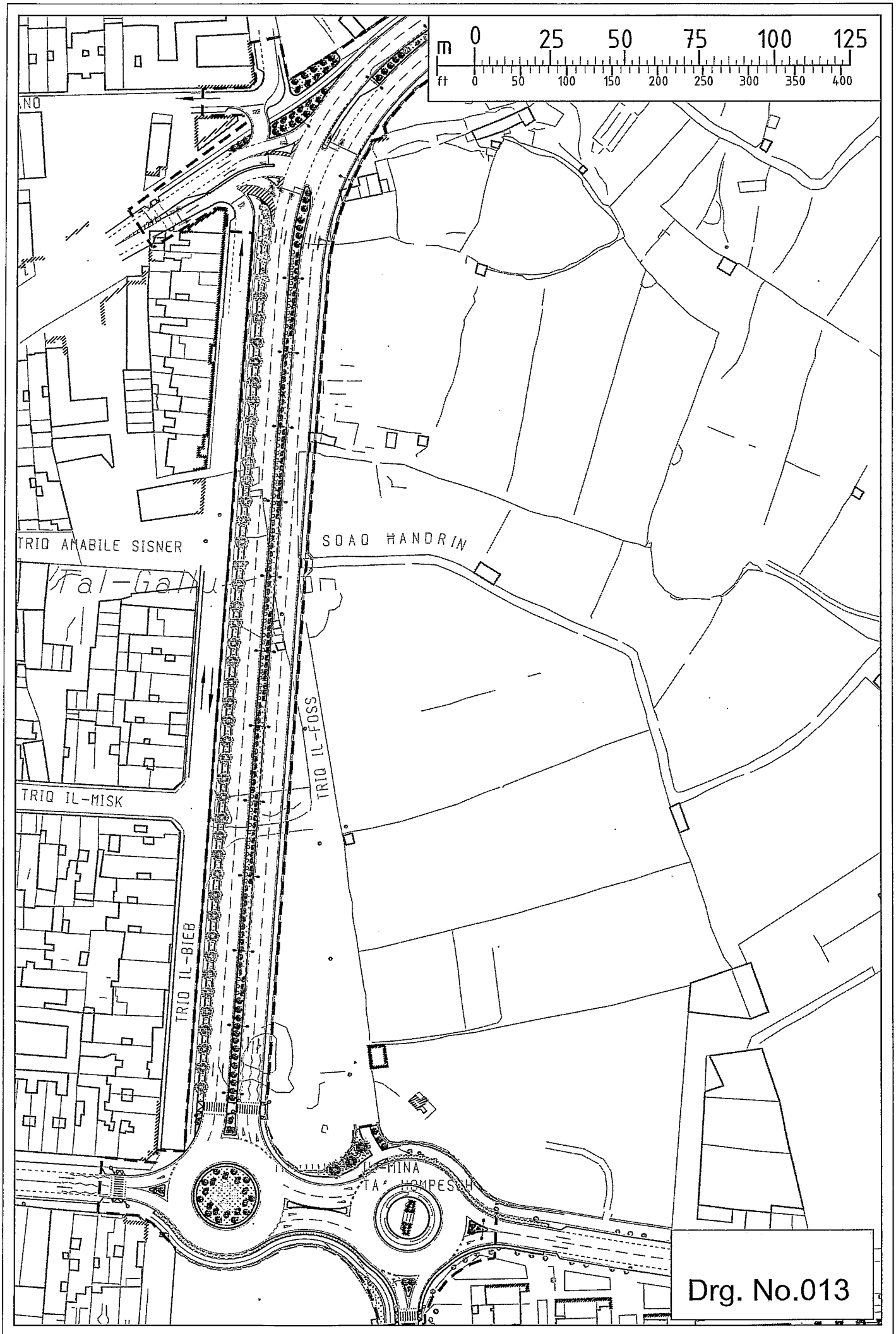
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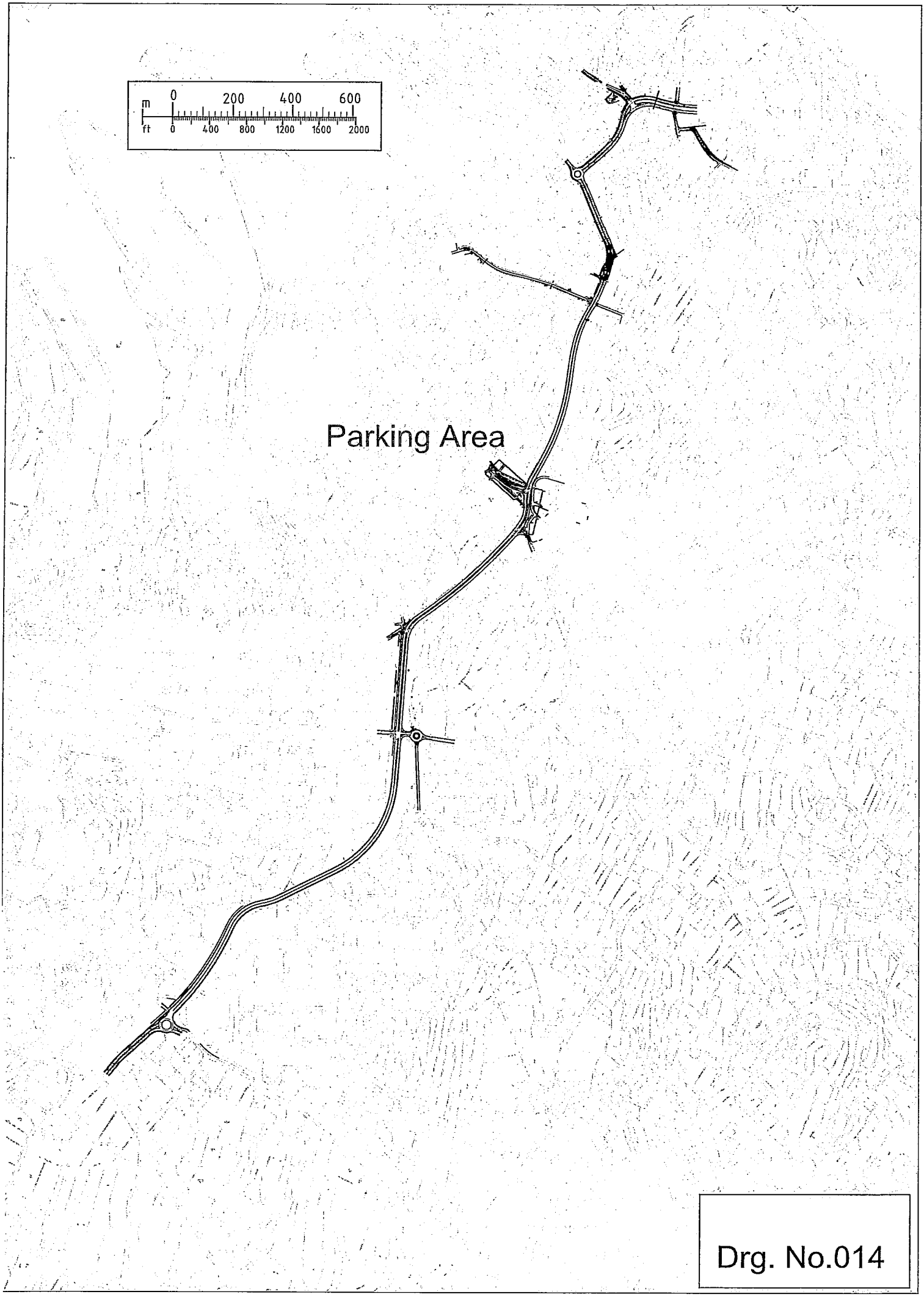


Drg. No.014

Chapter 4: PROJECT PROPOSAL

4.1 Project Description

This project is proposing a connection between Smart City Malta (the ICT City in Kalkara) and Tal-Barrani Tarxien. This link road is 4.30Km circa in length and as recommended within the TIS (as referenced earlier on in this plan) will consist of a dual carriageway four lane road. The proposal also includes pedestrian footpaths, cycle lanes, landscaping, parking areas and service roads where required. Within this project adequate surface water drainage and designed street lighting are also an asset.

This proposed link road will offer better traffic mobility for the area. It is being envisaged that when complete in its totality, it will relieve traffic from the village cores (Birgu, Kalkara, Bormla, Zabbar, Fgura and Paola) and especially from Zabbar Road Fgura since vehicles will be directed towards tal-Barrani from both directions of flow. This will also help in reducing emissions within these zones. From preliminary analysis, it is being calculated (from TIS) that this road will be taking circa 37, 000 trips per day towards Smart City Malta.

4.2 Project Timeline

The Authority for Transport in Malta is proposing that due to its extents this project is phased also in parallel with the progress within the construction stages of Smart City Malta since this will be the main destination of this route.

PHASE 1:

Phase C (PA 0501/09) - From Triq Santu Rokku (Capuchin Convent) to Smart City Malta
This phase is the first stage proposed for construction since during the year 2010 minimal traffic (when compared to the year 2020, when SCM is fully operational) will be accessing the site. Hence, through an upgrading plan of the existing roads within the area, Smart City Malta will be accessed through this phase and other existing roads. In the case of phase C, it is being envisaged that subject to the issue of MEPA permit these works will start within the third quarter of the year 2010.

Phase A (PA 0502/09) - From Bieb Hompesch, Fgura to Bieb is-Sultan, Zabbar
Phase B (PA 0237/07) - From Bieb is-Sultan, Zabbar to Triq Santu Rokku, Kalkara
Also, subject to the issue of MEPA permit it is being envisaged that these two phases will be completed by the end of year 2011. As previously explained in Chapter 3 of this plan, it is being proposed that phase A ends temporarily with a roundabout junction until phase 2 is initiated.

PHASE 2:

Phase 2 comprises the length from Hompesch Arch (end of Phase A) to Tal-Barrani. It this case completion is again in line with the full operation of Smart City Malta hence by the end of the second decade of the year 2000.

4.3 Project Layout

As previously indicated, this project consists of a dual carriageway – four lane road with a 1.50m median, landscaped verges, pedestrian footways, cycle lanes and side roads as appropriate. The geometrical layouts are designed by the Roads and Infrastructure Directorate within the Authority for Transport in Malta. The geometric layout as proposed is based on the

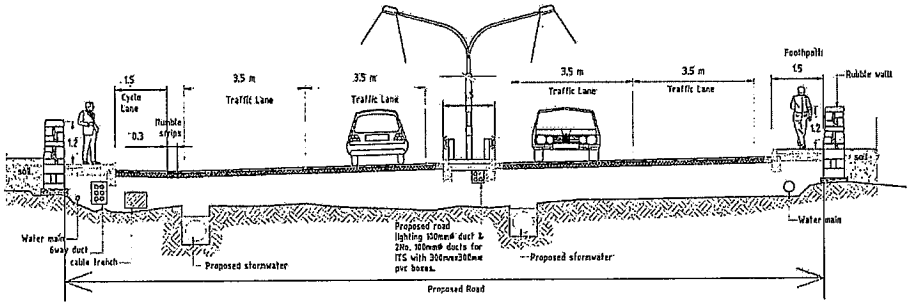
- ✓ ROAD WORKS: (Design and Construction) Standards, Regulations (LN 364/2003) – Volume 5 (Design Manual for Roads and Bridges)

whilst signage and road markings are based on

- ✓ The UK Traffic Signs Regulations and General Directions (TSRGD) and
- ✓ The UK Traffic Signs Manual (TSM)
- ✓ The Highway Code (Malta: DOI 2001)

Furthermore all turning circles and junctions are technically checked using AutoTurn (AT - UP 4.2) from TranSoft Solutions Inc., so that it is ensured that vehicles have adequate swept paths throughout their route.

Also below is a typical section that will be employed throughout the route.



Typical Road Section

4.3.1 Project Detailing

A. Street Lighting

As it can be noted from the above diagram, attention will be give to the road illumination to ensure that night visibility is appropriate throughout, even for cyclists and pedestrians. Furthermore, it is being envisaged that all signage and road markings will be of the retro – reflective type.

Also, in the case of the street light poles, all wiring will be routed through duct work and no overhead cables will be visible. Also, environmental efficiency measures within the lighting system of this project will include:

- ✓ 150W high pressure sodium lamps instead of 250W will be used
- ✓ High efficacy lamps will be used
- ✓ Light fittings with multi faceted reflectors will be used
- ✓ Dimming equipment will be available for use
- ✓ Flat – glass fittings (with cut offs) will be used to eliminate wastage – light pollution

B. Surface Water Runoff

Surface water drainage has also been given its due importance since a number of reservoirs are envisaged for construction throughout the route. Further to this a number of discharge points have been identified and for environmental considerations hydrodynamic separators will be employed at these strategic points.

C. Designated Parking Areas

Along the length of the route from Smart City Malta certain areas as indicated on Drg. No. 014 have been designated for parking. The main parking concerns are within Birgu especially during market days. For this reason, three on street marking areas have been allocated to this locality close to Notre Dame Gate. Also, on street parking will be allowed on Triq il-Gubilew tal-Fidda and within the proposed service roads.

D. Intelligent Traffic Systems (ITS)

It is to be noted that the Authority for Transport in Malta, has also considered the junction capacity of these new signal controlled junctions and the following results (also applicable to the year 2020):

- ✓ Signal Control Junction capacities – data derived from Smart City TIS – are suitable for traffic flows anticipated.
- ✓ TRANSYT 13 engineering software will be used to optimize the synchronization of the proposed traffic lights.

- ✓ These junctions will be at a later date incorporated within the ITMS for the Island of Malta and hence, this clearly indicates that the traffic lights cycle sequences derived from TRANSTY 13 will be adjusted automatically through the ITMS according to the real time traffic demand.

E. Expropriation

A considerable amount of expropriation is envisaged throughout the length of this project. The expropriated areas include:

- ✓ Agricultural Land
- ✓ Residences
- ✓ Farm
- ✓ Government Property
- ✓ Factory (Bulebel Industrial Estate)

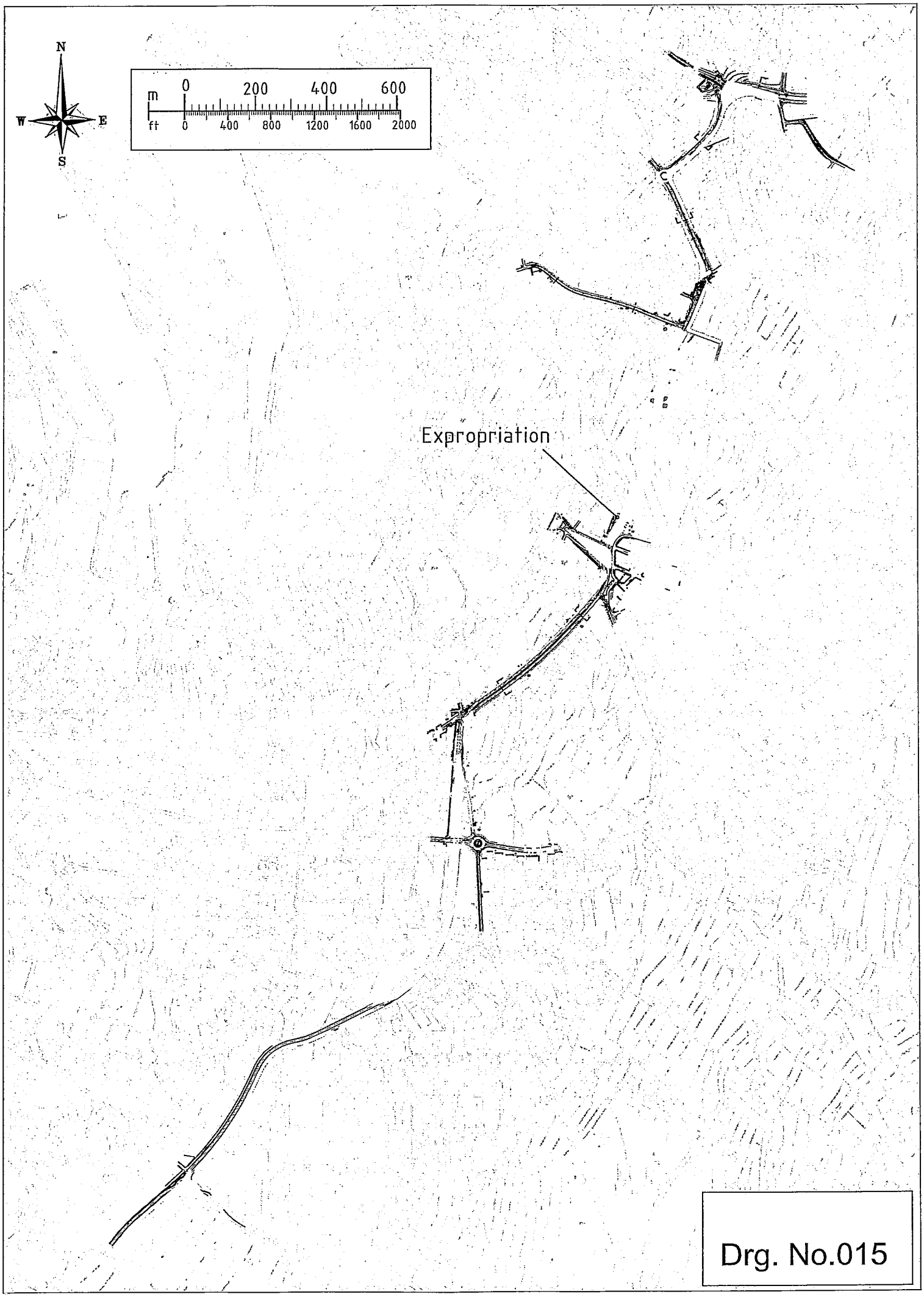
These areas are indicated within Drg. Nos. 15 / 16, attatched.

The Malta Transport has started this expropriation process through the lands department.

4.4 Conclusions

This plan comprehensively considers the various aspects of traffic needs associated with the proposed Smart City Malta development link road from Smart City itself to Tal-Barrani. It has taken into consideration the various reports and studies concerned with the project and it has also identified the better options for the improvements of the highway network of the area, hence also giving a holistic overview of the various phases here presented as a whole.

In view of this the Authority for Transport in Malta is of the opinion that the general concept illustrated within this plan should be acceptable to the approving bodies.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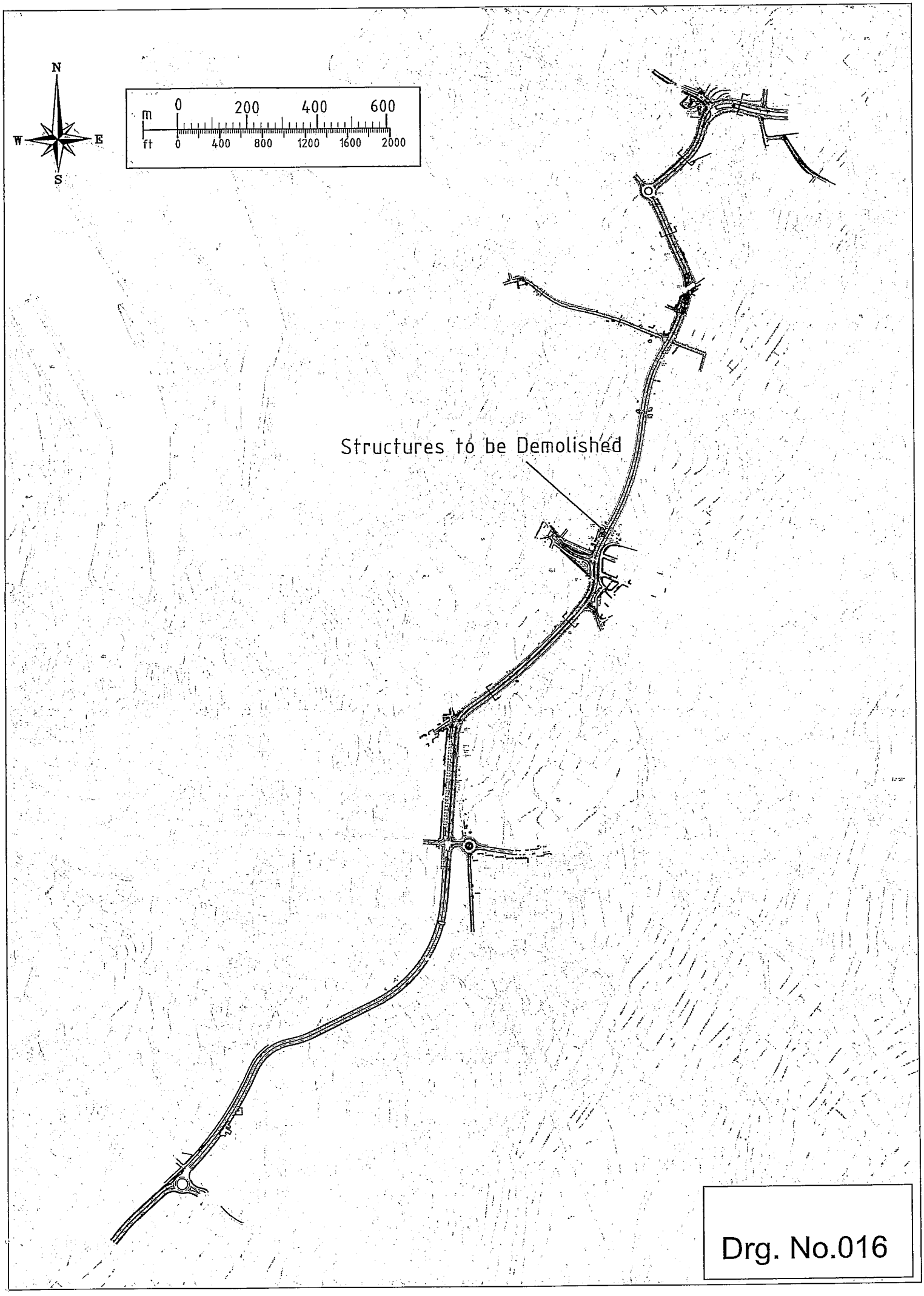
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