

Auroville

MOBILITY

Planning Policy and Design Criteria
For movement, traffic and roads

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Auroville's Future
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Approved by Roger Anger

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see annex – *Crown development Guidelines*

Preface

Helmut Schmidt in consultation with Mr Billinger, a German traffic specialist, had produced a basic concept document on Mobility for Auroville.

Building on their studies this document re-interprets the information in order to create a set of design guidelines, as indicated and endorsed by the chief architect, Mr Roger Anger.

Final implementation will be based on further detailed technical studies, such as Road levels, plinth levels, and other considerations.

1. Overall Planning Policy

Summary

A City set for the Future

Auroville, to be true to The Mother's vision, will provide alternative forms of mobility to suit the needs for peaceful conditions throughout the city area. Today's type of environmentally polluting, hazardous, and high-speed motorized transport will no longer have its predominant, overbearing position – the individual will regain his own spatial dignity.

Planning principles of circulation

The indications given by the Mother (four zones in the form of a rosary) for an experimental town favouring the evolving conditions for man has been translated into the concept of the Galaxy.

The 12 Radials, connecting the Crown Road to the Outer Ring Road, are the dynamic representation of the Mother's symbol.

The shape of the Galaxy has the following inherent advantages:

- Reducing transport time;
- Allowing a better interaction between the residents;
- The Crown brings together the prominent activities specific to each zone;
- The pedestrian is freed from the pressure of traffic the closer one comes to the Matrimandir;

The layout of Auroville is ideal to develop a pedestrian-friendly city.

Preference for eco-friendly movement

An environment free of noise and other traffic-hazards befits a calm and tranquil area. Children and the elderly can move freely with minimal danger. Cyclists will be allowed where they do not disturb. Delivery and removal will be municipal, eco-friendly vehicles, their access restricted to certain times of the day. All motor-vehicles will have to adjust their speed and give priority to the pedestrians.

As no privately owned vehicles will be encouraged, Aurovillian’s who do own a vehicle (which may be used only outside the city), shall park their vehicle at one of the Primary Nodes garaging facilities.

Nature of the Traffic

Providing an efficient and attractive public transport system - shuttle - will be a fundamental precondition to complement the needs of a mobility-friendly city. Since all modes of transportation will be provided and maintained by the municipality there will be no need for private vehicular ownership.

- The visitors’ entrance will be regulated;
- Only those spiritually interested can access the Matrimandir’s gardens and the main building, on request only;
- The tourist will be entertained in the Visitors’ Centre and will visit the international pavilions on request only.

Context

Situation	Vehicle Energy Consumption
Energy consumption of different vehicles (in KWh per person per km) :	Car / Motorbike 0.75
	Train / Tram 0.3
	Pedestrian 0.07
	Cycle 0.025

Proposal

Preface

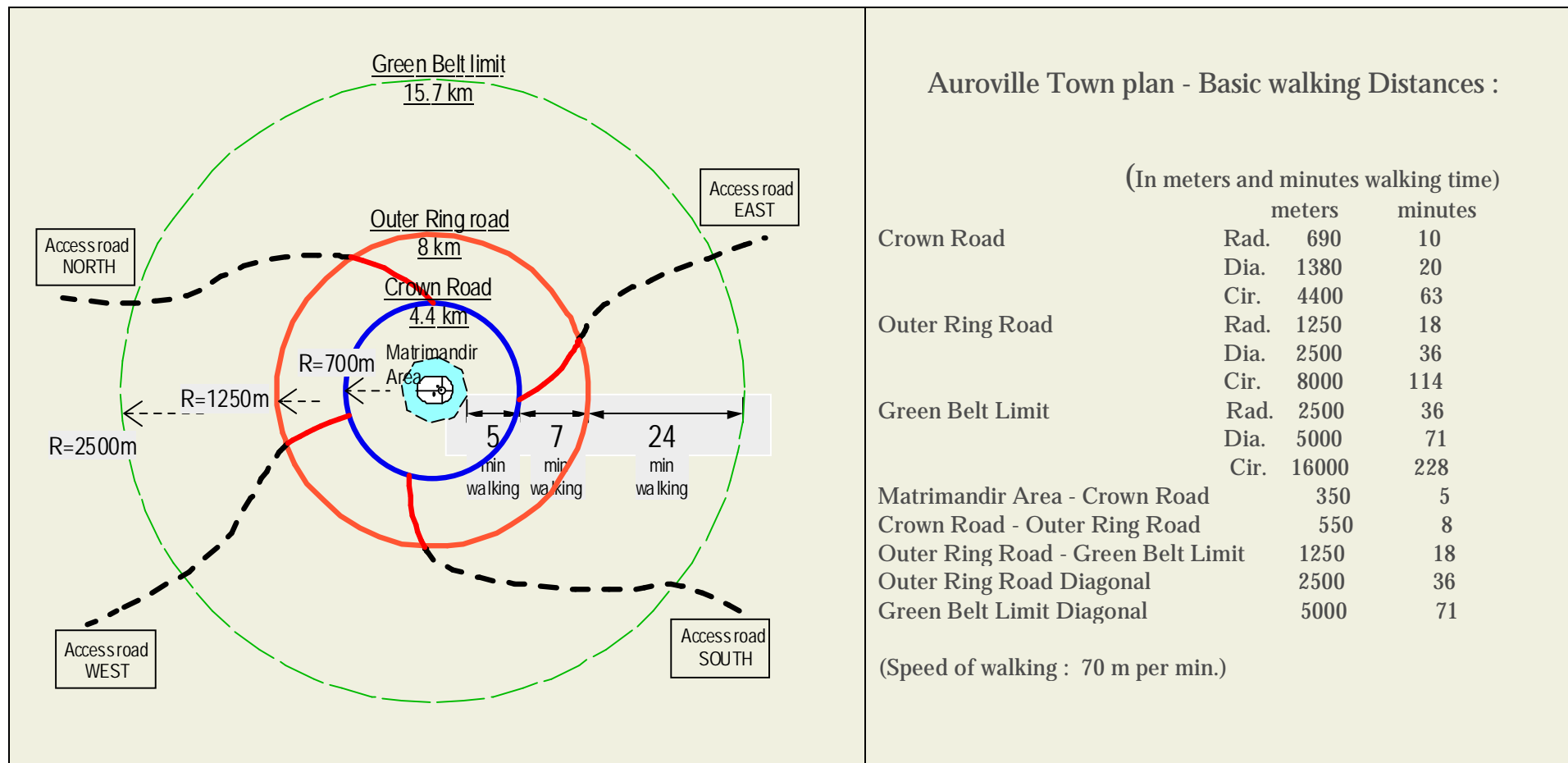
Based on this network of roads and pathways there will be provided a municipal shuttle services that will be accessible within reasonable walking distances from any point in the town. This collective transportation service will also connect to the service nodes on the outer edge of Auroville's Green Belt.

Traffic system

The Auroville Master Plan envisages the street as a common space for all. Wherever vehicular movement is permissible within Auroville itself it will be restricted to approximately 15 km/h, a speed indicated by the Mother.

- All fast moving vehicular traffic will remain outside the city limits.
- All of Auroville's traffic systems will be provided and managed by the municipality.
- Auroville will provide the most energy efficient, non-polluting, user-friendly modes of mass, and individual, public conveyance systems.
- There will be no other private or independent traffic systems inside the town.

Distances, Travel and Time



Auroville Town plan - Basic walking Distances :

(In meters and minutes walking time)

	Rad.	Di.	Cir.	meters	minutes
Crown Road	Rad.	690	1380	690	10
	Di.	1380	4400	1380	20
	Cir.	4400	8000	4400	63
Outer Ring Road	Rad.	1250	2500	1250	18
	Di.	2500	8000	2500	36
	Cir.	8000	16000	8000	114
Green Belt Limit	Rad.	2500	5000	2500	36
	Di.	5000	16000	5000	71
	Cir.	16000		16000	228
Matrimandir Area - Crown Road				350	5
Crown Road - Outer Ring Road				550	8
Outer Ring Road - Green Belt Limit				1250	18
Outer Ring Road Diagonal				2500	36
Green Belt Limit Diagonal				5000	71

(Speed of walking : 70 m per min.)

2) Design Criteria and Guidelines

Streets and Pathways

There will be a hierarchical network of streets and pathways from the centre of the city to the outskirts. As a design rule preference will be given to traffic safety of pedestrian mobility and the avoidance of pollution (noise and exhaust):

Crown Road: The inner city area, and the Matrimandir Area, will be a pedestrian zone defined by the Crown Road, in the form of a ring. It will include Auroville's ecological, collective shuttle transportation system. Cyclists will be provided a separate pathway. Apart from essential access for emergency transport, delivery and removals will also be allowed, but restricted to certain hours of access (speed limit of 15 km/h). The Crown, facing the Inner city and Matrimandir complex, will contain a continuous, 3 meter wide covered (minimum) pedestrian boulevard forming a major artery of continuity weaving along and through the Crown.

The municipal shuttle service will circulate in one direction only. Other vehicles (non-private), eco-friendly will circulate in both directions.

Radials: Twelve Radials, starting from the Crown Road, provide the links with the Outer Ring Road. These Radials will include a tree-lined (shaded) pedestrian boulevard and separate cycle paths alongside the Radial carriageway. Right-of-Way will depend on location, refer to table above:

Outer Ring Road: The Outer Ring Road sits on the boundary of the inner limit of the Green Belt. It provides access to all parts of the city at the outer edge, on a road parallel to the Crown Road and linked to the 12 Radials. It will consist of vehicular carriageway where cyclists will be accommodated on separate pathways alongside the road.

Service Roads: Restricted vehicular access to buildings for maintenance, emergency services, as well as delivery and waste disposal. Will provide the tertiary level of circulation for local movement within each zone, between the major road network – Outer Ring road, Radials, and Crown road – as well as access within the Inner City area, between the Crown and the Matrimandir complex.

Access Roads: Connecting to the ECR and Tindivanam roads, crossing the Green Belt, each Access Road will be attached to one of the four Zones and connect Auroville to the outside world through the Primary and Secondary Service Nodes. The Service Nodes points will be necessary for filtering traffic and goods entering into Auroville.

The four main access roads

to the International Zone, called WEST access

to the Residential Zone, called SOUTH access

to the Cultural Zone, called EAST access

to the Industrial Zone, called NORTH access

Green Corridors : Besides the Radials alternative connections between Outer Ring Road and Crown will be provided by shaded (natural foliage) pathways for pedestrians and cycles – Green Corridors. These corridors will also provide ‘circular’ connectivity, crossing over the Radials. The reserve widths of these will be initially 30 meter, eventually being merged into to the local landscaping and gardens of the areas it passes through, adjusting to varying conditions and architectural design factors. Cyclists will have their own independent track to avoid disturbance of the pedestrian movement.

Service Nodes: These nodal points will serve as transport mode exchange areas, offering parking facilities for visitor buses, cars and two-wheelers
There are two types of Service Nodes:

Primary Service Node: located at the outer edge of the Green Belt (Town Boundary), will help to regulate entry into the town – visitors and tourists, goods and vehicles. Guests and visitors arriving at Auroville by bus, car or two-wheelers will be received at one or more Primary Nodal points. Visitors will move to Auroville’s non-polluting municipal transport (shuttle) to visit various places. Construction and other bulky materials will be downloaded and / or transferred to Aurovillian transportation services (probably the only exception being ready-mix concrete Lorries that will be permitted to enter throughout the construction phase of Auroville).

Secondary Service Node: located on the inner edge of the Green Belt and the outer limit of the Town – Outer Ring Road. The Aurovillian coming from or going to the outside will park here any conventional vehicle (car or motorbike), using Auroville’s Municipal, internal transportation system. A Godown and / or vehicle transfer facility will provide external to internal delivery service for goods supply and refuse disposal. Various Aurovillian services, Government offices will offer public facilities such as information desks, shops, artisan workshops, exhibition areas, and the like.

Summary of Traffic Planning Guidelines											
		Dimensions								description	
		1. Width Carriageway (m)	2. Width Right-of-Way (m)	3. Radius to road centre (m)	4. Building Line Setback (m)		5. Width Pedestrian Path (m)	Width Cycle Path (m)			
					on one side of road	on both sides of road	on both sides of road	on both sides of road			
Category	Zone / No:										
CROWN Road			8.00	18.00	690.00		2.50	3.00	2.50		
RADIAL Road	Cultural	1	6.00	11.50		2.00		3.00	2.50	Schools + future access to Pondy Univ.	
		2	4.00	9.50			2.00	3.00	2.50	Sports facilities, stadia	
	Residential	3	4.00	9.50		2.00		3.00	2.50	Gaia	
		4	6.00	11.50			2.00	3.00	2.50	Vikas	
		5	6.00	11.50			2.00	3.00	2.50	Solar Kitchen	
		6	8.00	19.00			2.00	3.00	2.50	Aurodam	
		7	10.00	20.50			2.00	3.00	2.50	Centre Field (main entry)	
	International	8	4.00	9.50			2.00	3.00	2.50	Visitor's Centre	
		9	6.00	11.50		2.00		3.00	2.50	CIRHU	
	Industrial	10	8.00	19.00			2.00	3.00	2.50	Pondy Farm	
		11	8.00	19.00			2.00	3.00	2.50	Verite	
		12	8.00	19.00			2.00	3.00	2.50	Sve Dam	
GREEN Corridor				7 > 30				< 1.5	< 1.5	Vehicle-free paths (minimum)	
OUTER RING road			10.00	21.00	1250.00		2.00		2.50		
Service Road			3.50	6.00							
Access Road	Residential/SOUTH	1	10.00	30.00							
	International/WEST	2	10.00	30.00							
	Industrial /NORTH	3	10.00	30.00							
	Cultural /EAST	4	10.00	30.00							

Auroville’s collective, non-polluting, municipal Shuttle service

It is envisaged that to provide Auroville’s city area with a non-polluting, user-friendly mass transport, alongside the pedestrians and cyclists, a system of shuttle-transport will be required for all Aurovilians, guests and visitors. This service will operate both on the Crown and the Radials. It will start at a Service Node and pick up anybody arriving there in conventional motorised vehicles.

<p>If the shuttle bus starts here and maintains a maximum speed of 15 km/h (average speed 10 km/h including stops), it will be back within 30 minutes time after circling around the Crown.</p> <p>To attain a frequency of less than 10 minutes, 4 buses will be necessary.</p> <p>Insistence on non-polluting shuttle transport is the basic concept of Auroville as an ecological and sustainable project. But just by giving priority to buses instead of individual motorised transport, an enormous improvement in air quality is achieved; and even more so when the latest standards, e.g. particle filtration, are complied to. Technically, the best developed contribution to pollution-free motors are natural gas (CNG) motors. Even electrically driven buses are inferior to gas driven buses, for though they do not emit harmful exhausts locally, they do add to air contamination on a wider scale.</p>	<p>When fossil fuel is used, the problem of CO₂ is inevitable. In case of natural gas (CNG), all other emissions (CO, NOX, SO₂, Volatile Organic Compounds etc.) including smells that are substantially reduced. CNG driven buses reduce pollution in city areas significantly. They are more energy efficient. New Delhi is a good example.</p> <p>If a tram or an alternative is envisaged as public transport, it is important that it moves within a speed limit of 15 km/h. Such a train can easily operate in the middle of a pedestrian street, amongst other “permitted” vehicles.</p> <p>One could imagine a tram, cautiously moving with 10 km/h, allowing embarking and disembarking without requiring a stop, except on request by people with reduced abilities.</p> <p>It would be an excellent project if a team in Auroville starts developing such a system of public transport. This would be a project of great interest not only for Auroville alone.</p>
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Steps for realising the motor-free city

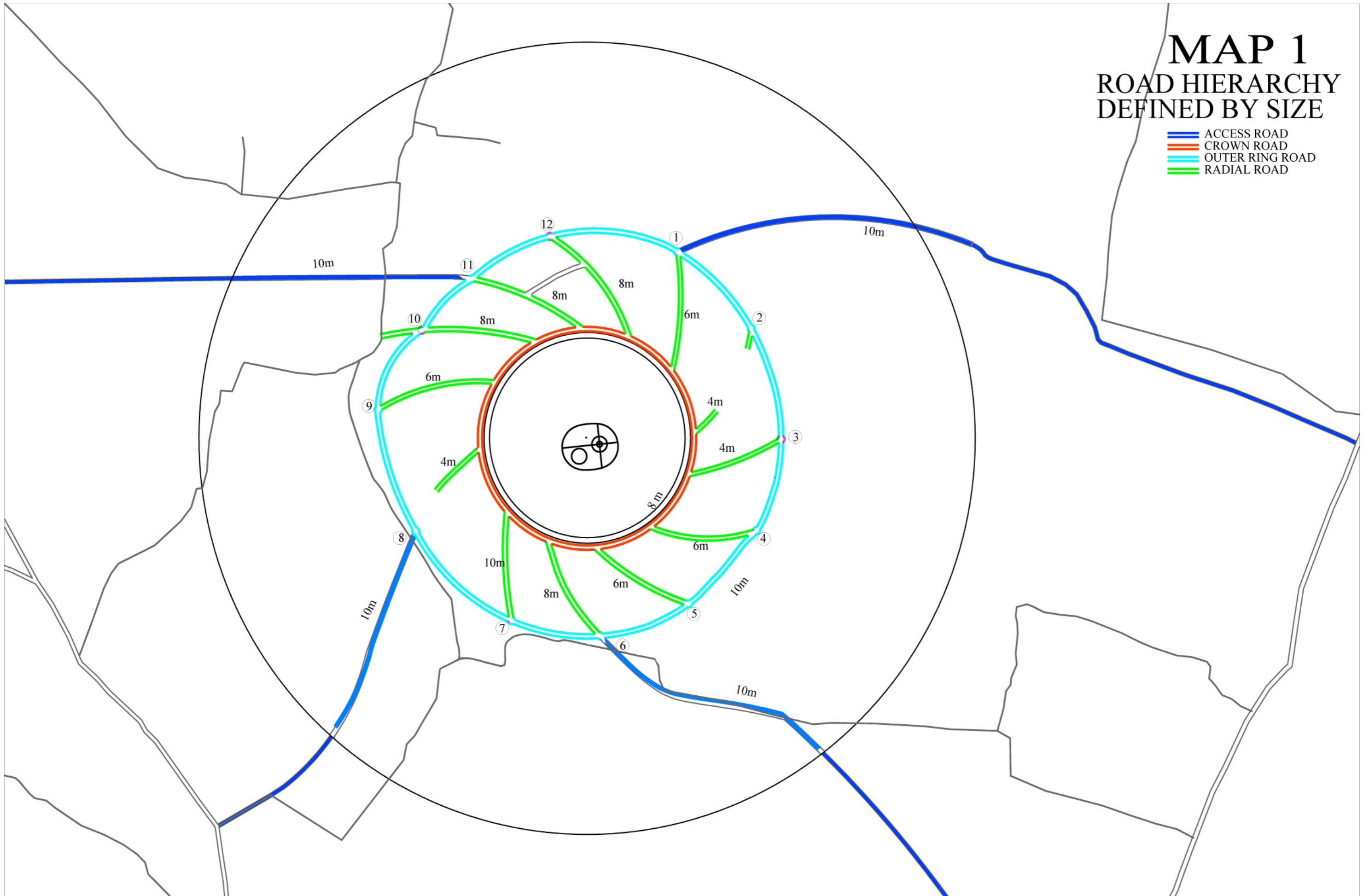
Implementing the plan for scaled-down freedom of movement from motor-vehicles (motorbikes and cars) in Auroville will require the understanding, acceptance and support of the community.

And a first step would be to free the City Centre from polluting vehicles.

MAP 1

ROAD HIERARCHY DEFINED BY SIZE

- ACCESS ROAD
- CROWN ROAD
- OUTER RING ROAD
- RADIAL ROAD



MAP 2

ACCESS ROADS

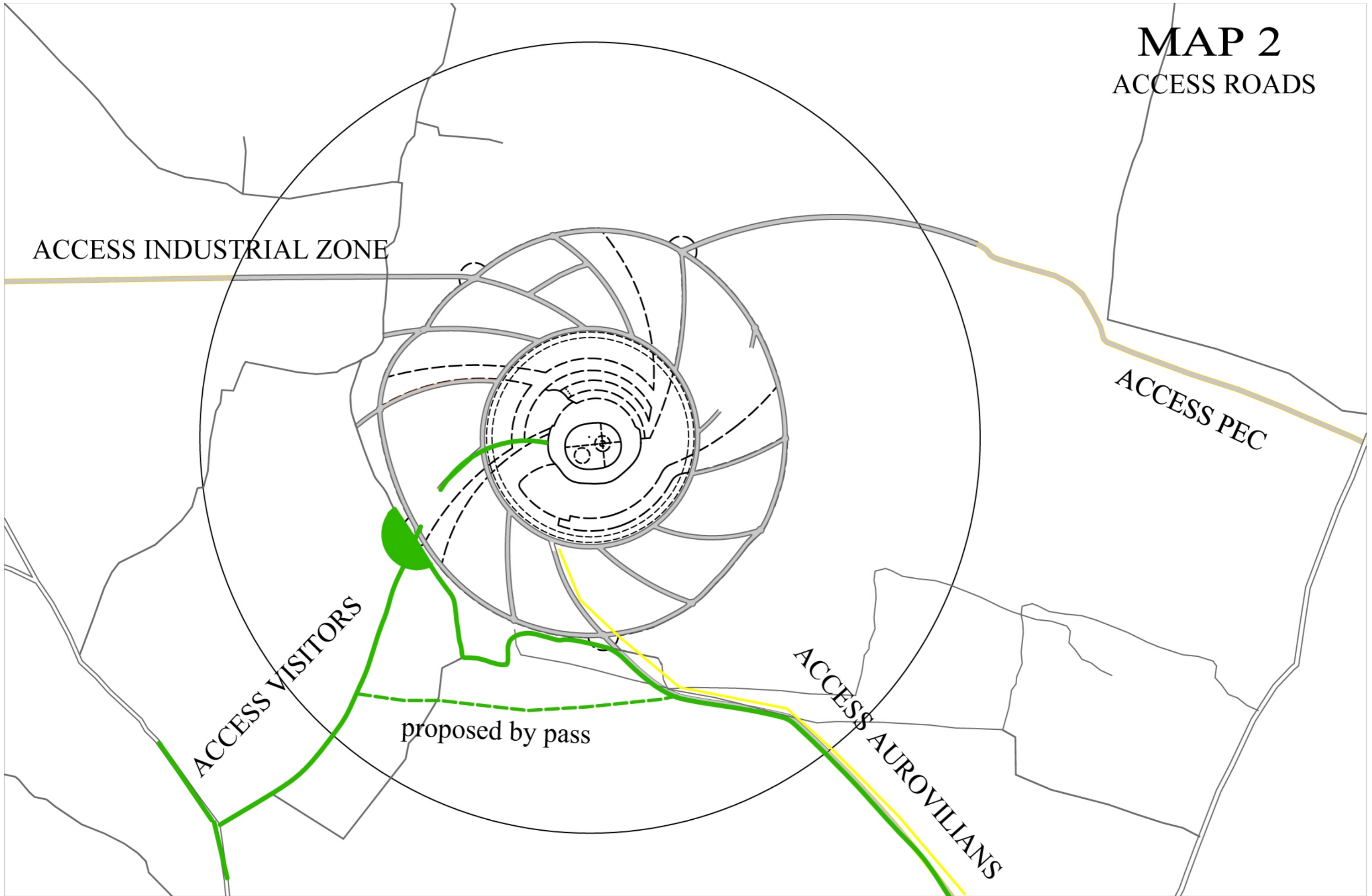
ACCESS INDUSTRIAL ZONE

ACCESS PEC

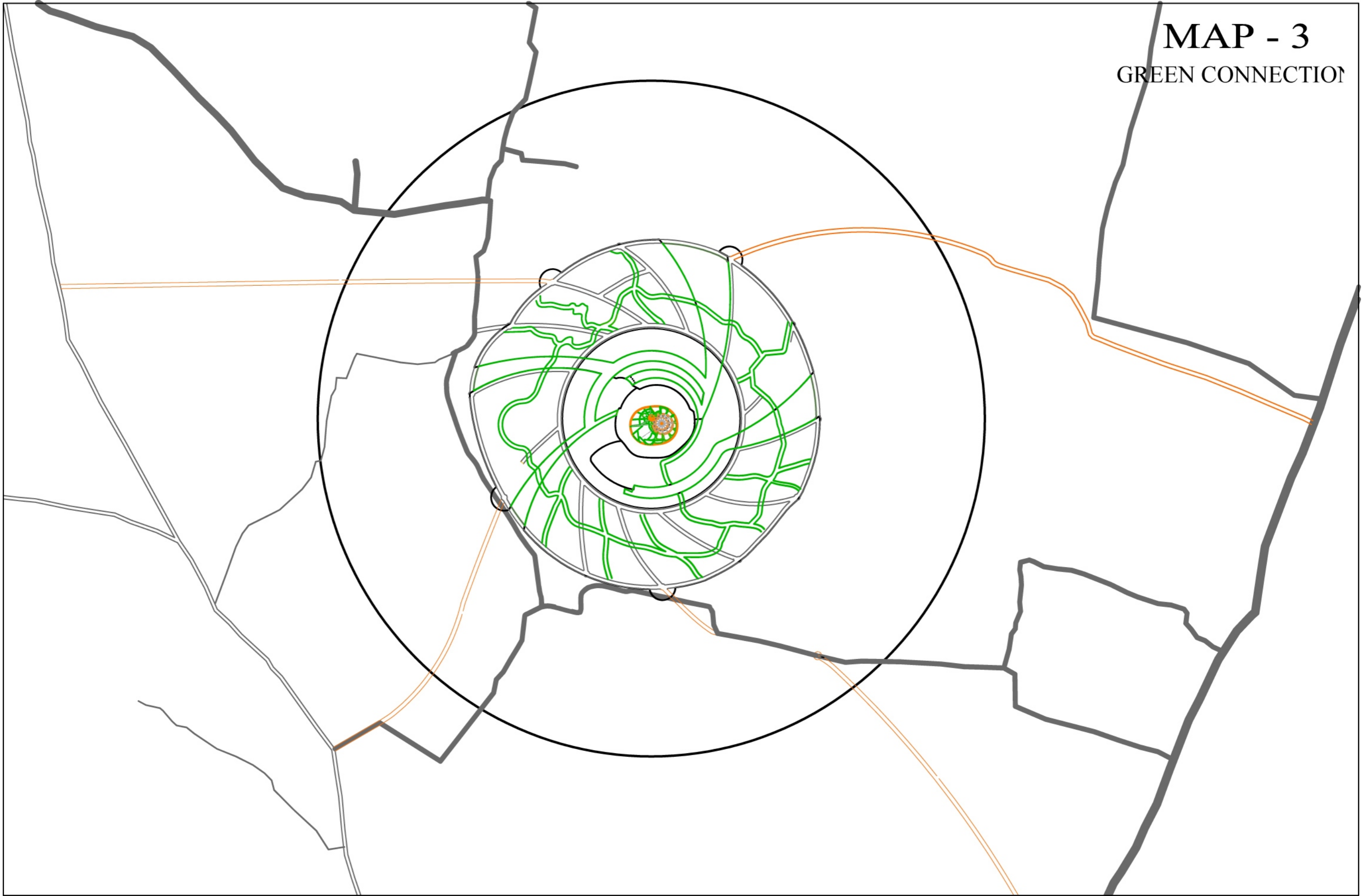
ACCESS VISITORS

proposed by pass

ACCESS AUROVILIANS

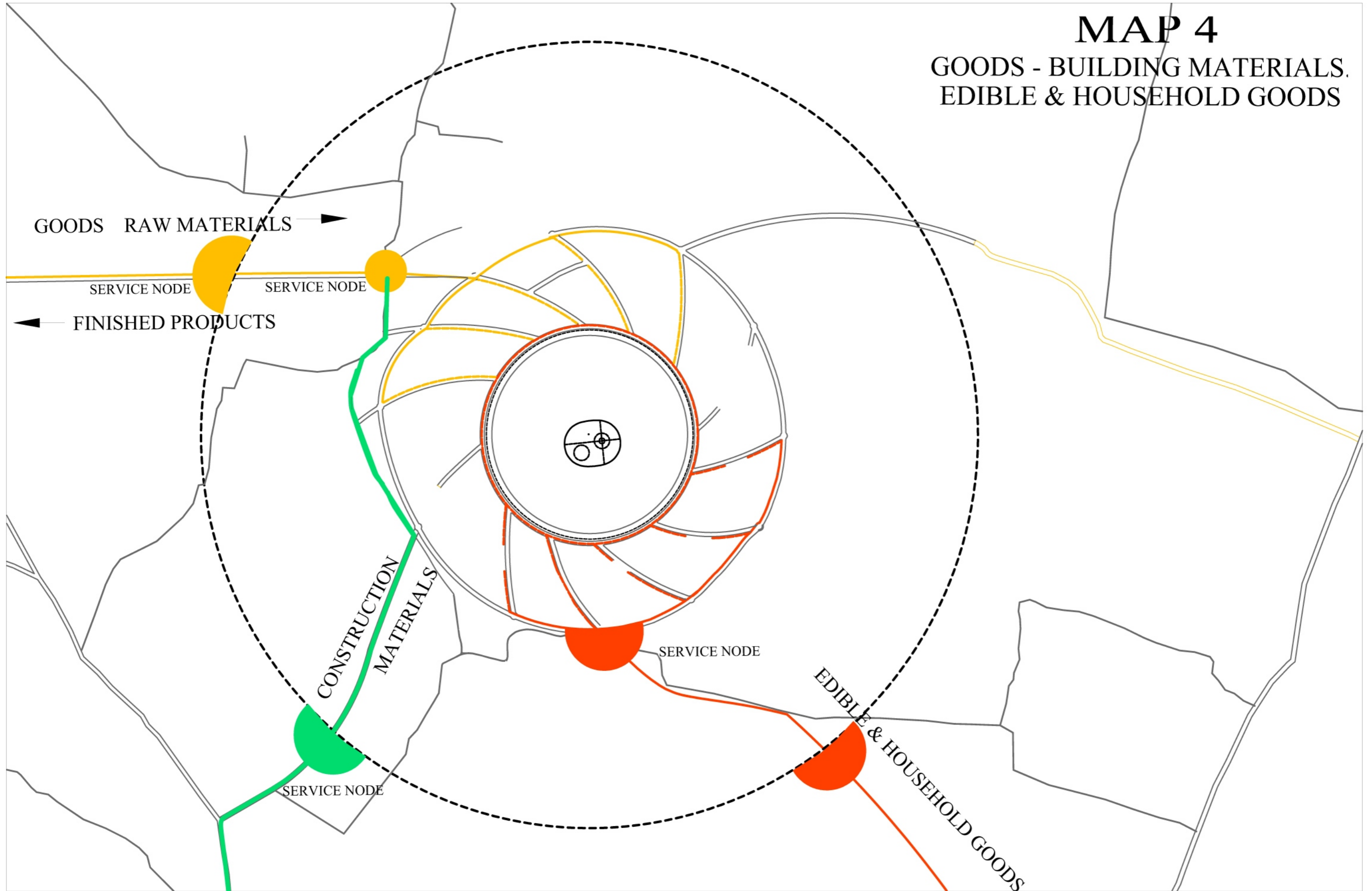


MAP - 3
GREEN CONNECTION



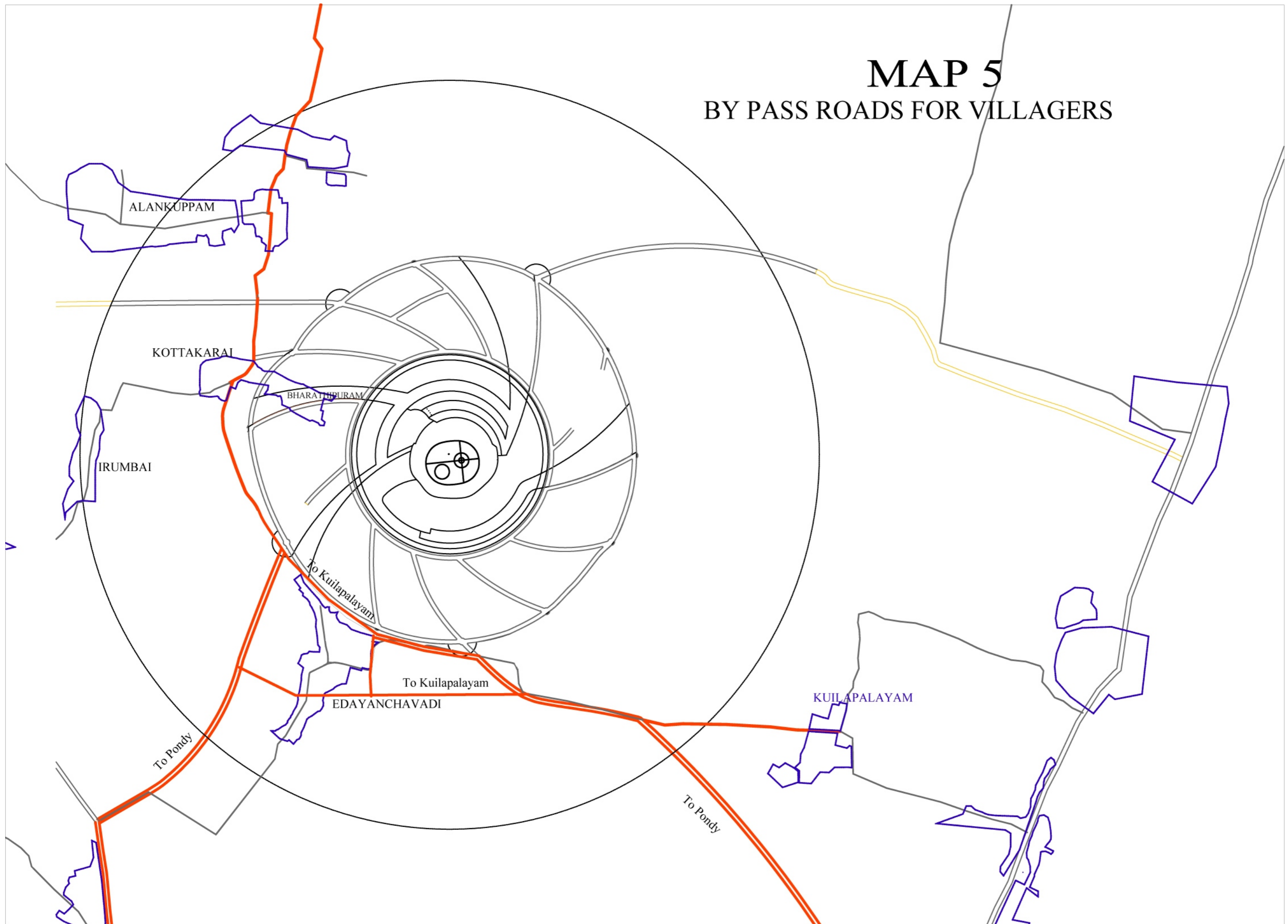
MAP 4

GOODS - BUILDING MATERIALS,
EDIBLE & HOUSEHOLD GOODS



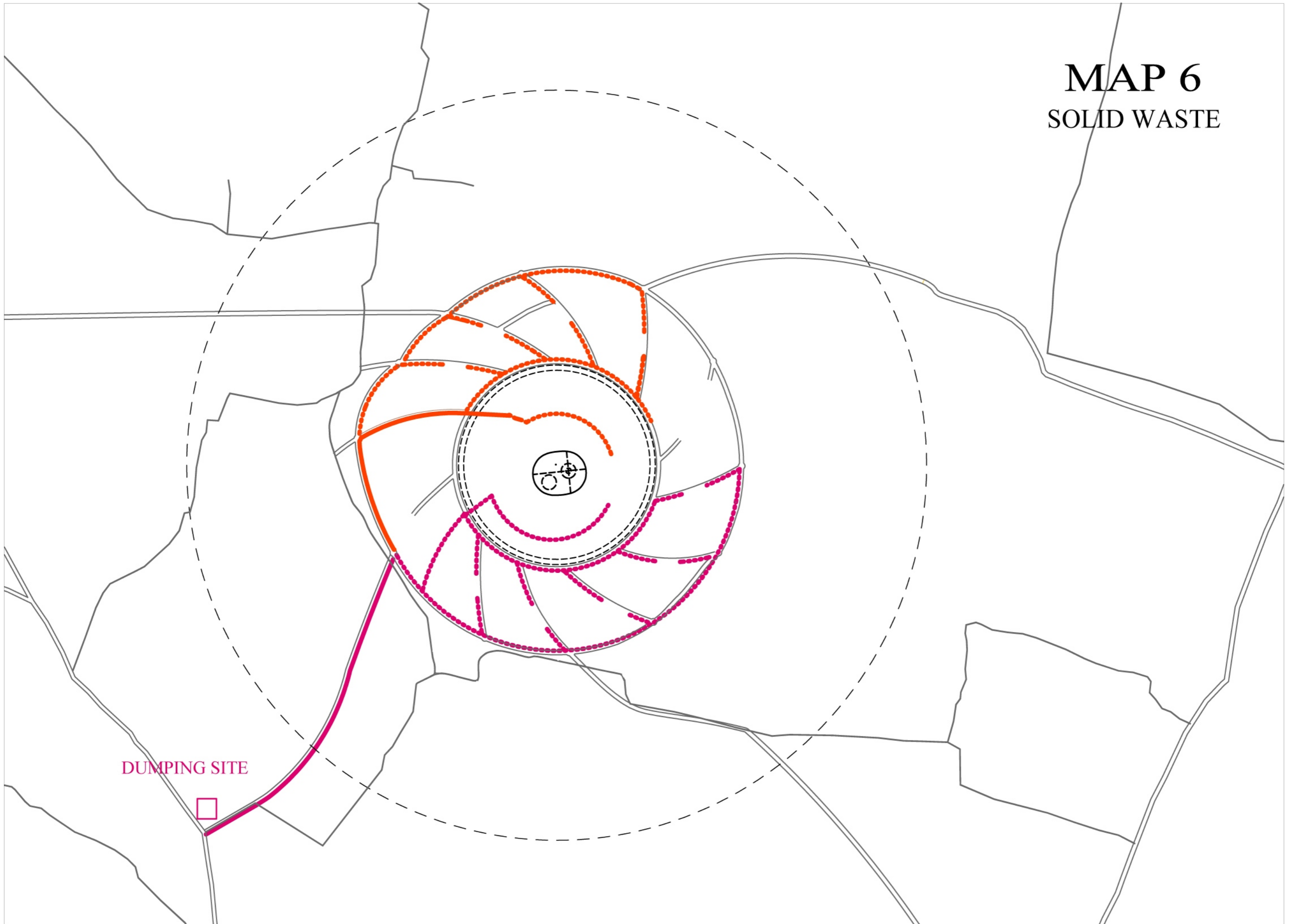
MAP 5

BY PASS ROADS FOR VILLAGERS

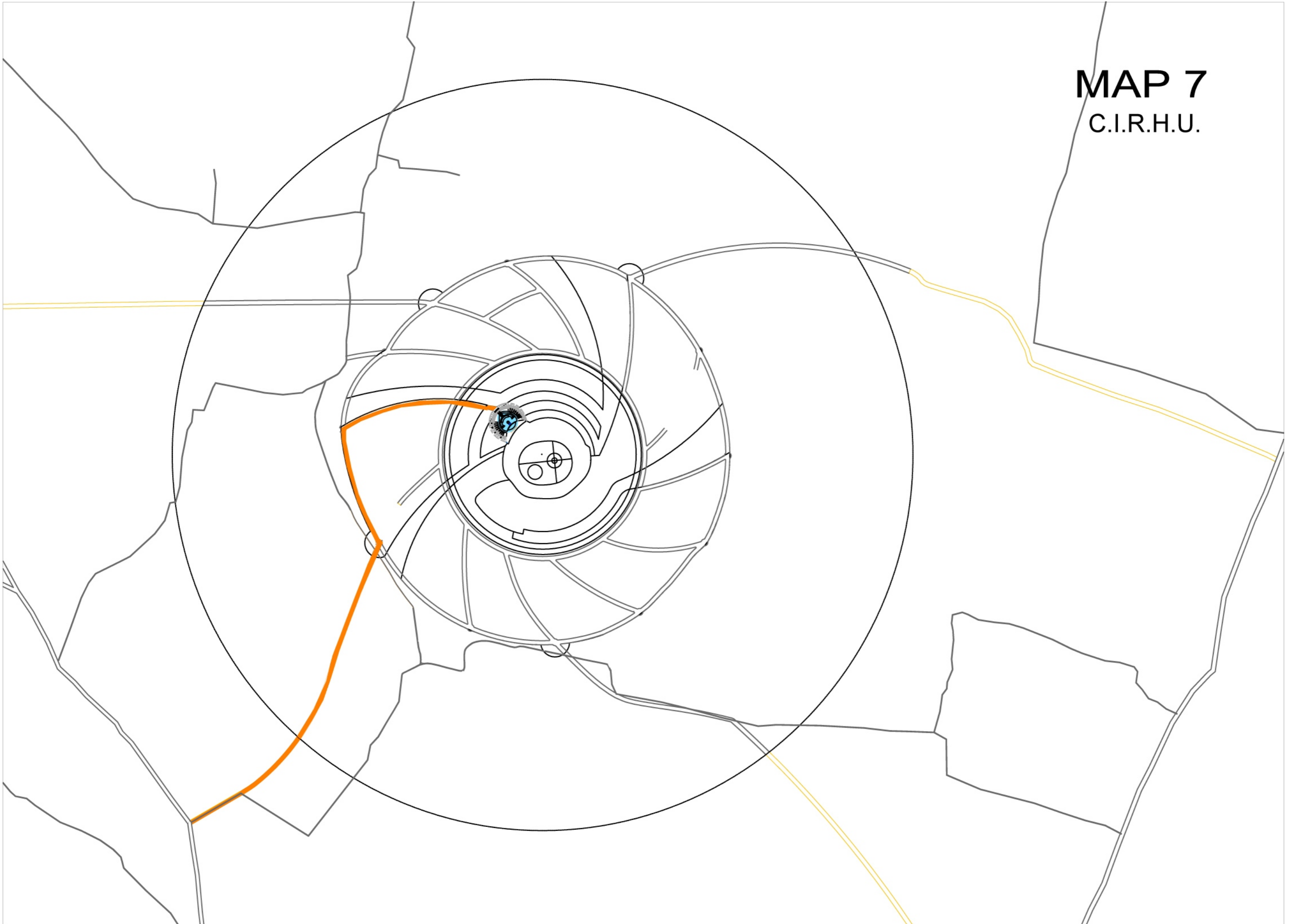


MAP 6

SOLID WASTE

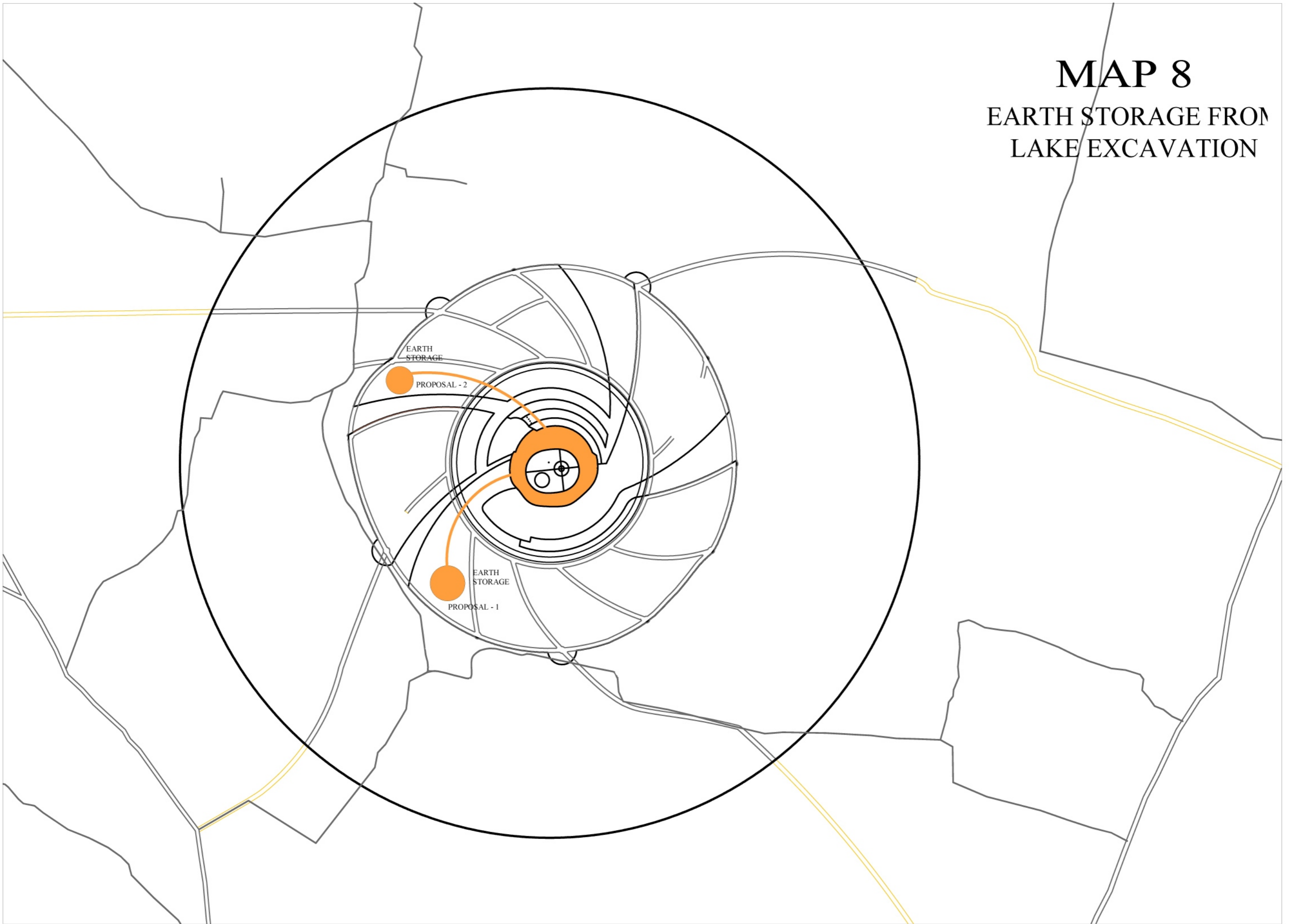


MAP 7
C.I.R.H.U.



MAP 8

EARTH STORAGE FROM LAKE EXCAVATION



MAP 9

ROAD DEVELOPMENT PRIORITY

LEGEND

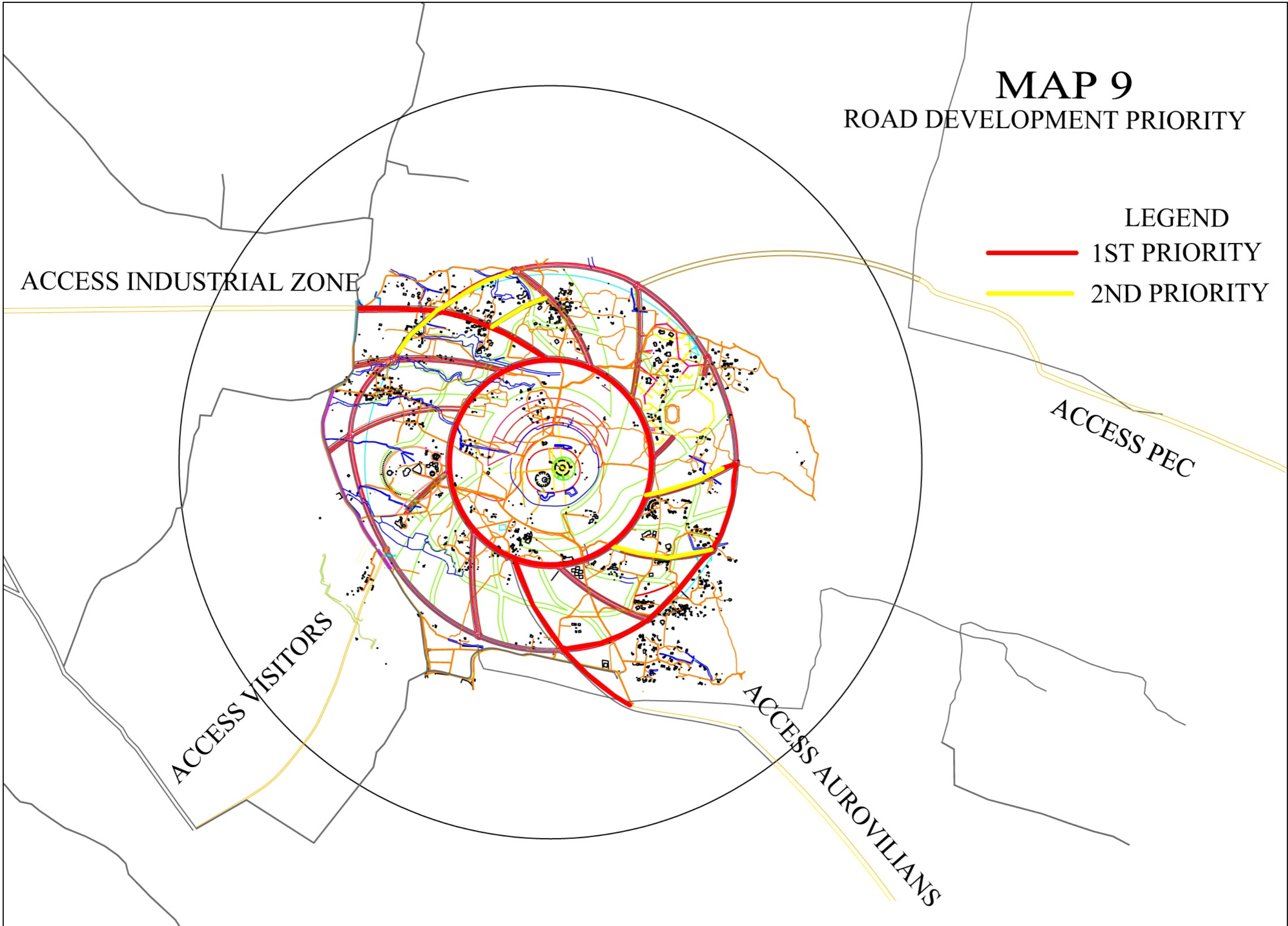
- 1ST PRIORITY
- 2ND PRIORITY

ACCESS INDUSTRIAL ZONE

ACCESS PEC

ACCESS VISITORS

ACCESS AUROVILLIANS



MAP 10

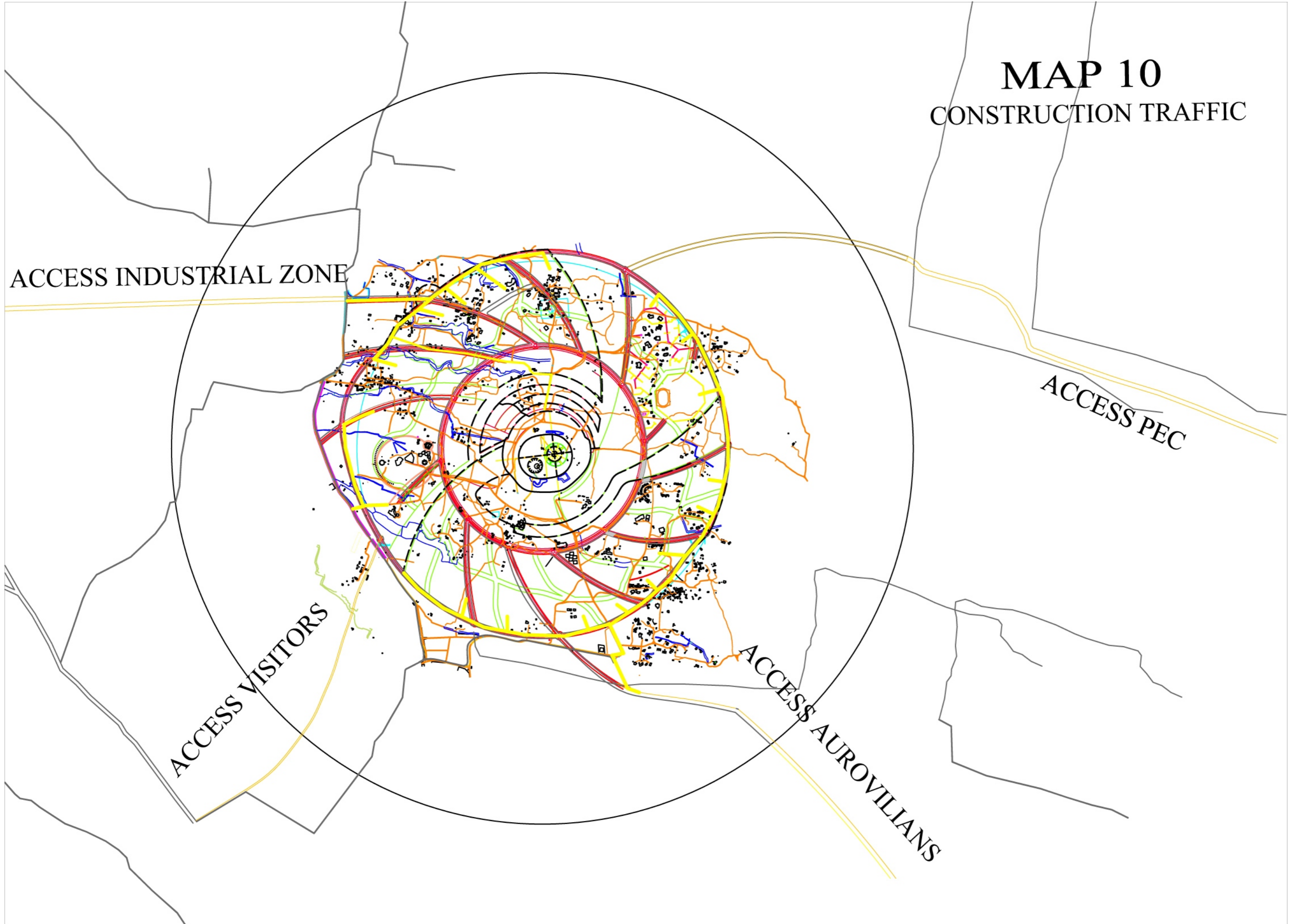
CONSTRUCTION TRAFFIC

ACCESS INDUSTRIAL ZONE

ACCESS PEC

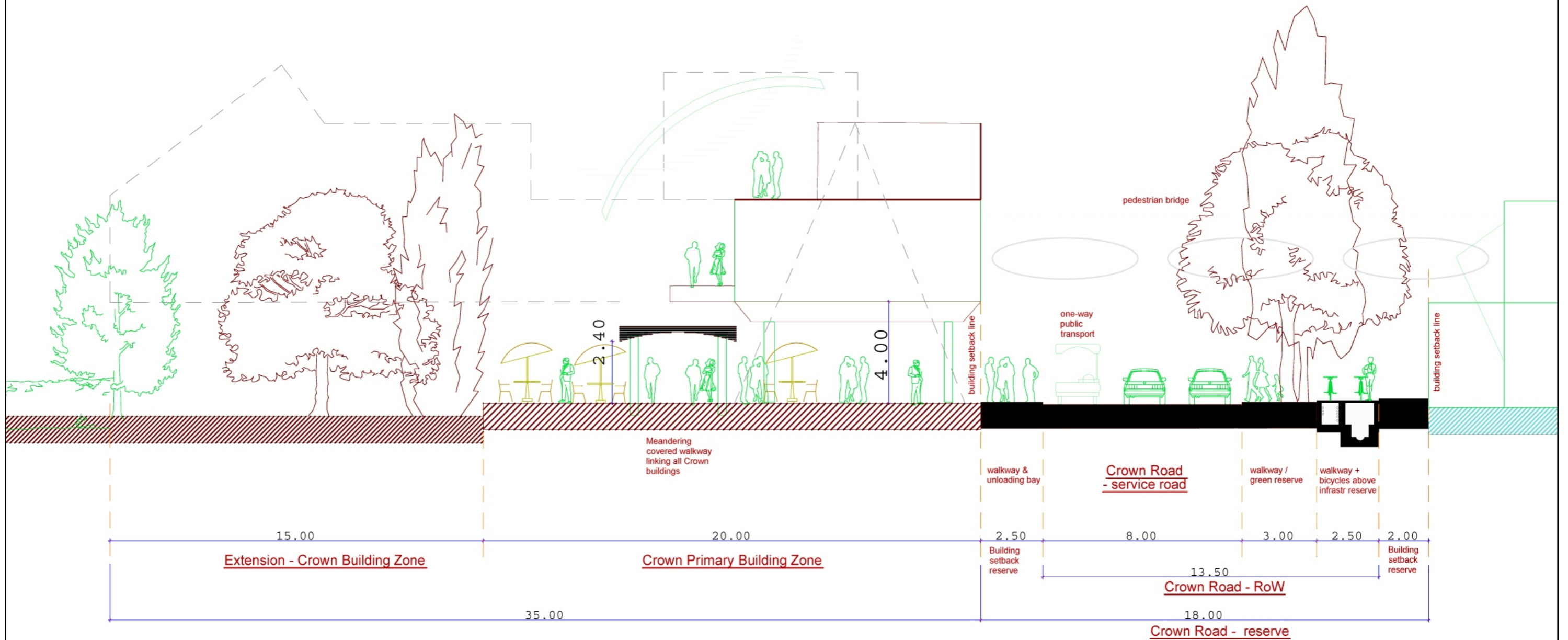
ACCESS VISITORS

ACCESS AUROVILIANS

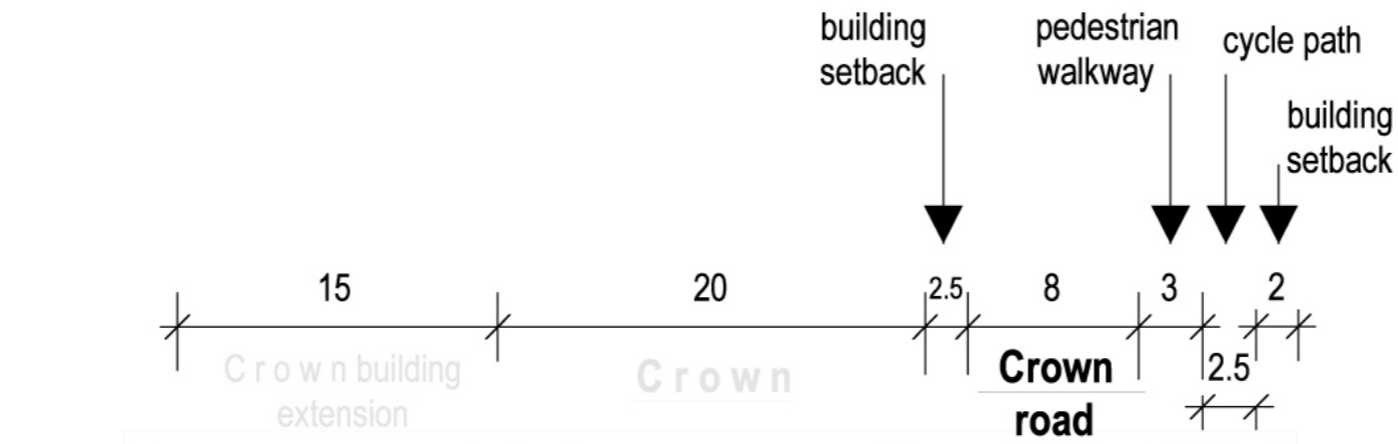


MAP 11

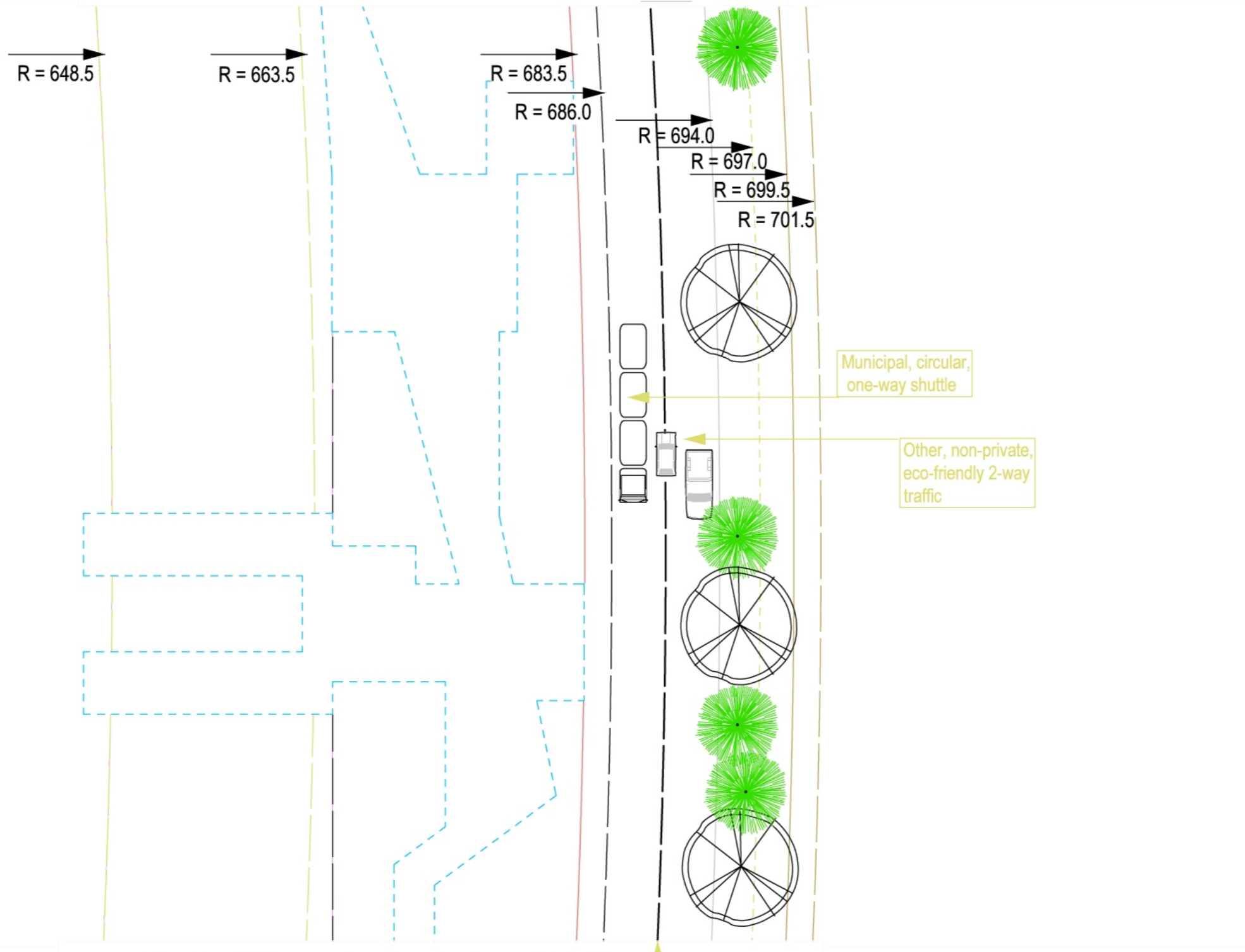
CROWN ROAD SECTION



MAP 11A CROWN ROAD PLAN



INNER
CITY
AREA



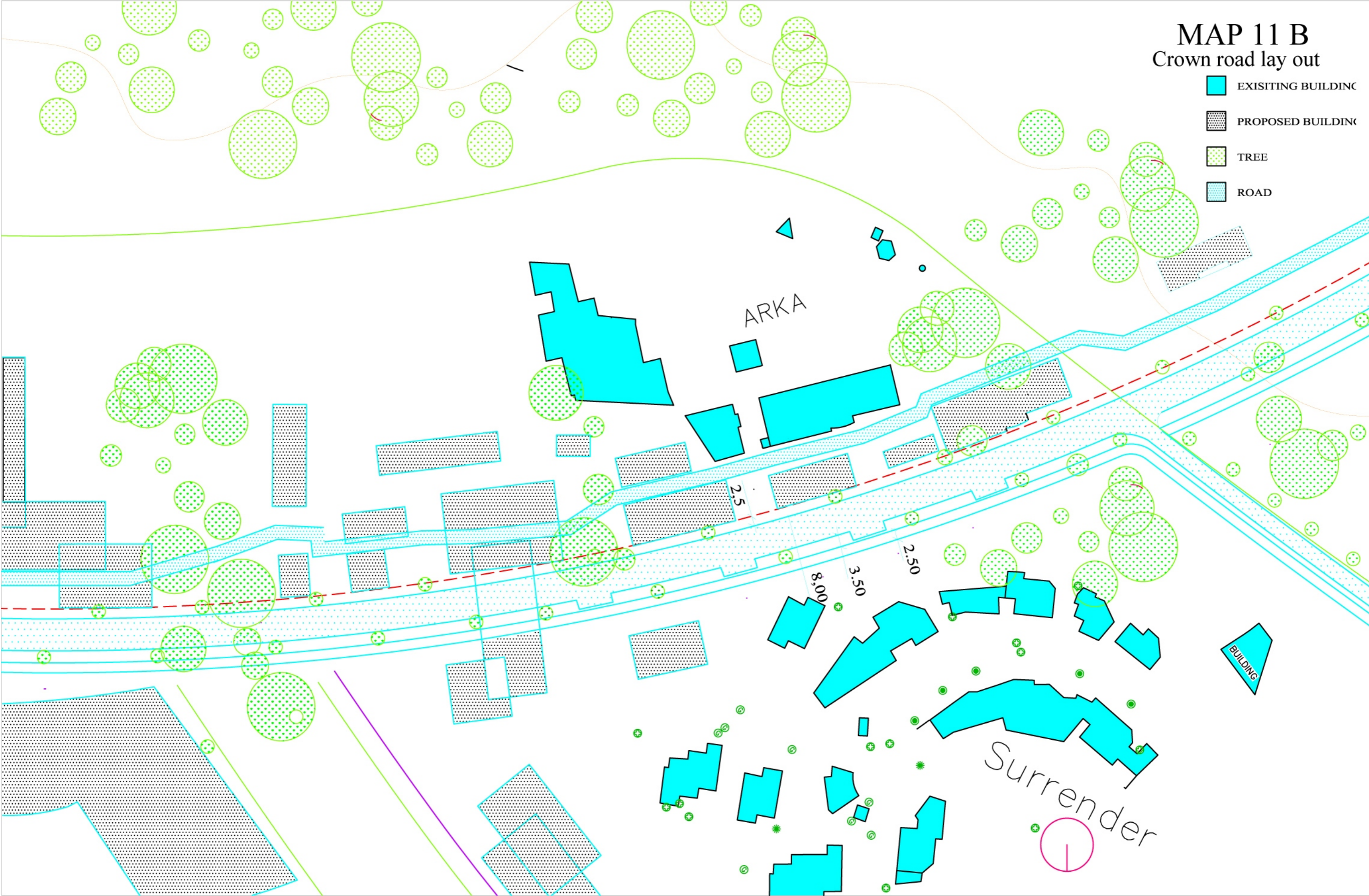
Radius of Crown Road centre-line = 690.00 m



MAP 11 B

Crown road lay out

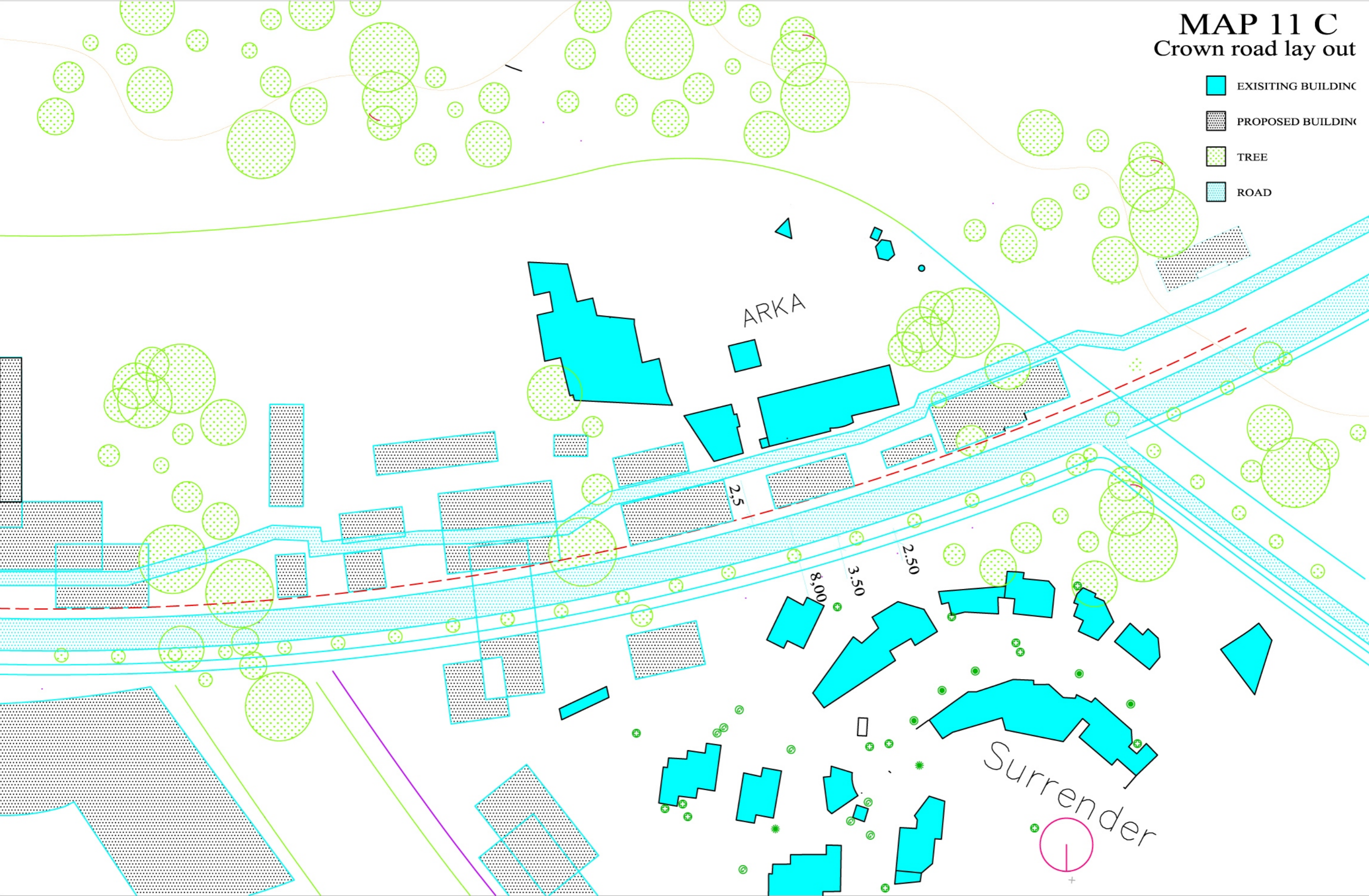
- EXISTING BUILDING
- PROPOSED BUILDING
- TREE
- ROAD



MAP 11 C

Crown road lay out

- EXISTING BUILDING
- PROPOSED BUILDING
- TREE
- ROAD



MAP 12

RADIAL ROAD SECTION

