
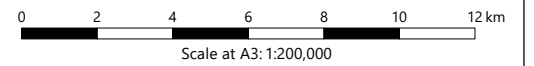


\\172.26.36.27\6000_Task\2019_Task\X.19.00287.GLA - Zarafshon Wind Farm ESIA Uzbekistan\Modelling\GIS\2021 ArcMap and InDesign documents\43423-WOOD-XX-02-DR-SA-0001_S3_R7.mxd Originator: wisc03



Key

 Proposed WTG locations



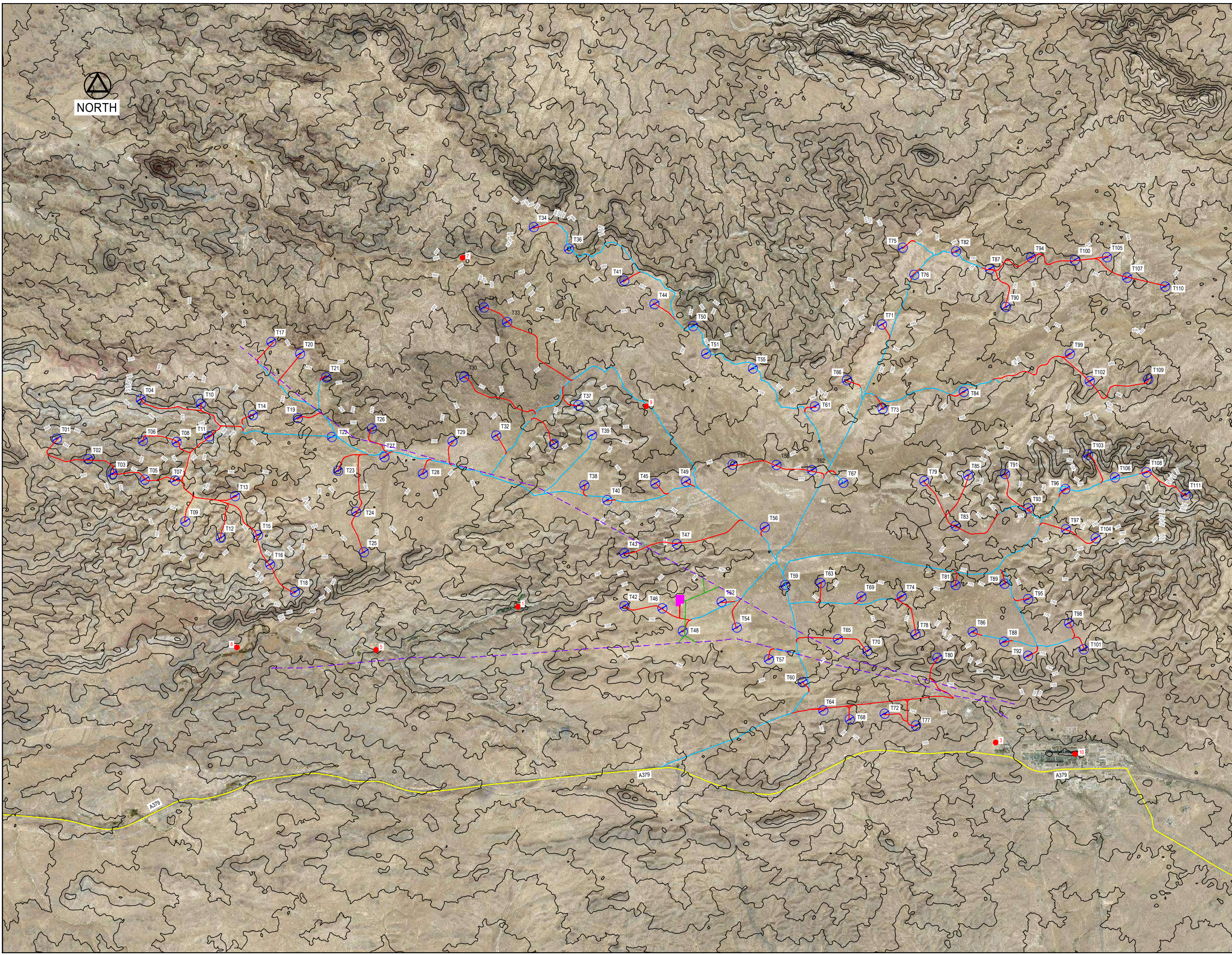
Zarafshan Wind Farm ESIA

Figure 1-1
Site Location

May 2021



wood.

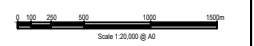


DO NOT SCALE

KEY

- EXISTING ROADS
- EXISTING ROADS TO BE UPGRADED
- NEW ROADS
- WTG LOCATIONS
- INDICATIVE SUBSTATION
- OH CONNECTION LINES
- - - EXISTING OH TRANSMISSION LINES
- SENSITIVE RECEPTORS

RECEPTOR No	SENSITIVE RECEPTOR
1	TOURIST AREA
3	BESAPAN
5	NEW FARM 1 RESIDENTIAL
7	FARM - RESIDENTIAL
8	STRUCTURE 1 - RESIDENTIAL
9	2 BUILDINGS IN A COMPOUND
10	RESIDENTIAL & AGRICULTURAL
	GOLD MINE SETTLEMENT



Rev	Description	By	Chk'd	App'd	Date
B2	NOISE RECEPTOR LOCATIONS ADDED. SITE ACCESS ROAD ADDED.	PLM/G	VM/L	DM	08.07.21
B1	ISSUED FOR ESIA.	PLM/G	VM/L	DM	18.05.21

Job Title:

ZARAFSHAN WIND FARM ESIA

SITE LAYOUT PLAN

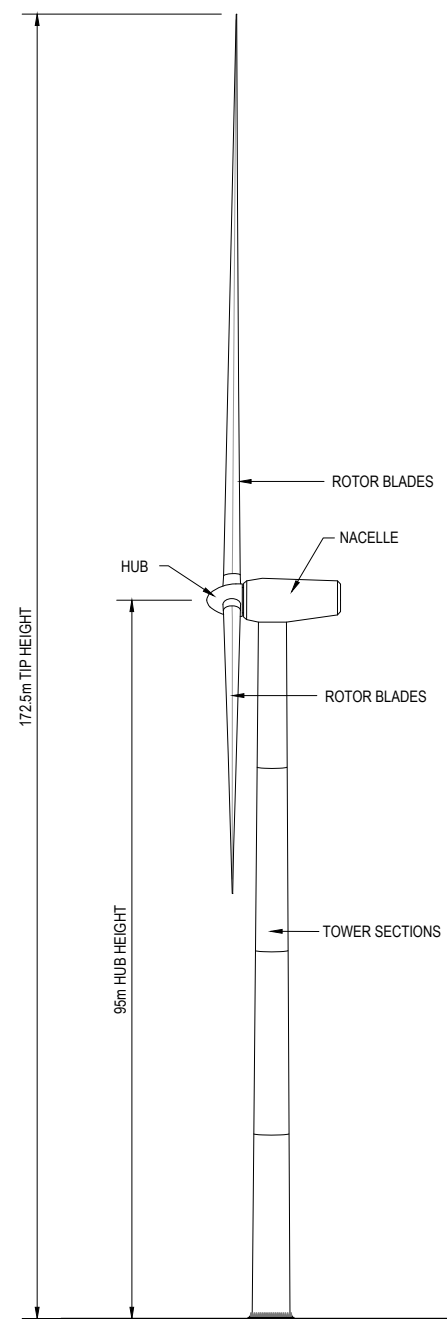


1:20,000
 PLM/G
 VM/L
 DM
 MAY 2021
 A0

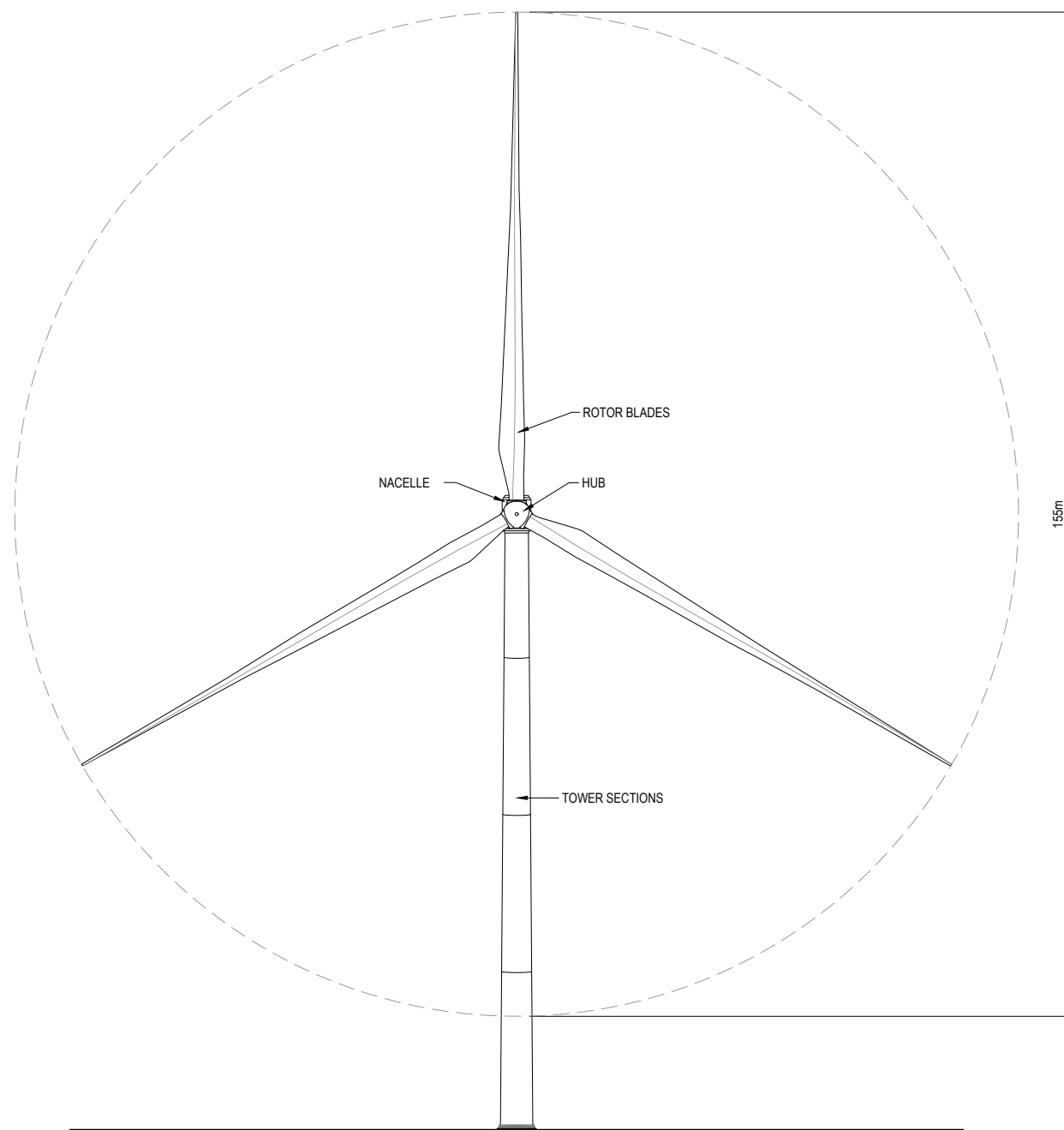
ESIA

FIGURE 1-2 B2

DO NOT SCALE



SIDE ELEVATION



FRONT ELEVATION

B1	ISSUED FOR ESIA	PMcG	VMcL	VMcL	19.05.21
Rev	Description	By	Chk'd	App'd	Date

Job Title

**ZARAFSHAN
WIND FARM ESIA**

Org Title

**WIND TURBINE GENERATOR
ELEVATIONS**



St Vincent Plaza, 319 St Vincent Street, Glasgow, G2 5LP
tel: +44 (0) 141 227 1700 www.woodplc.com

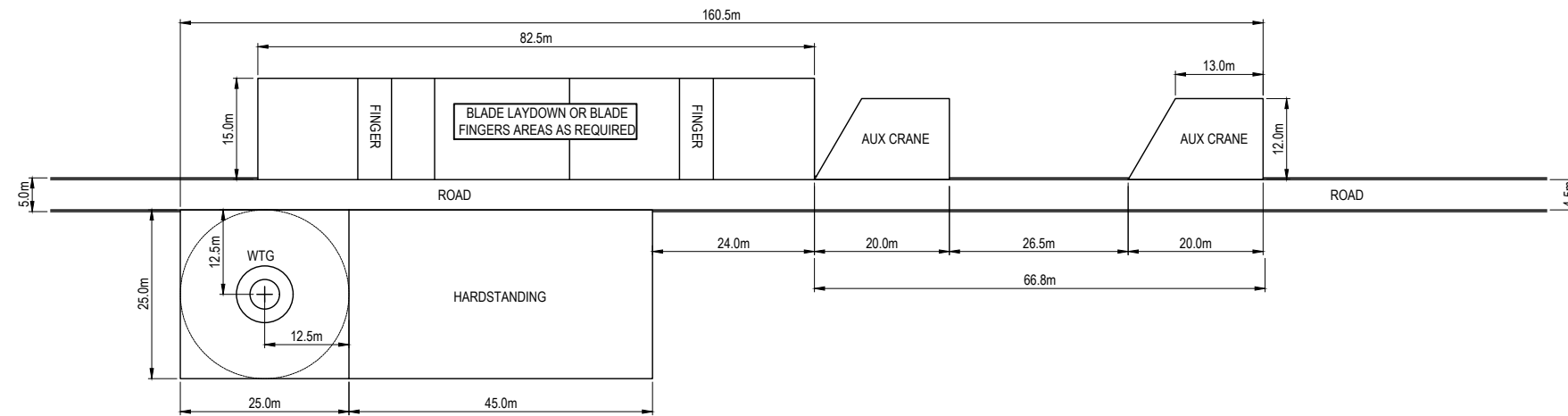
Scale	1:1000	Date	MAY 2021	Size	A3
Drawn	PMcG	Checked	VMcL	Approved	VMcL

Status

ESIA

Drawing No.	FIGURE 2.1	Revision	B1
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DO NOT SCALE



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B1	ISSUED FOR ESIA	PMcG	VMcL	VMcL	19.05.21
Rev	Description	By	Chk'd	App'd	Date

Job Title
**ZARAFSHAN
WIND FARM ESIA**

Org Title
TYPICAL HARDSTANDING AREA



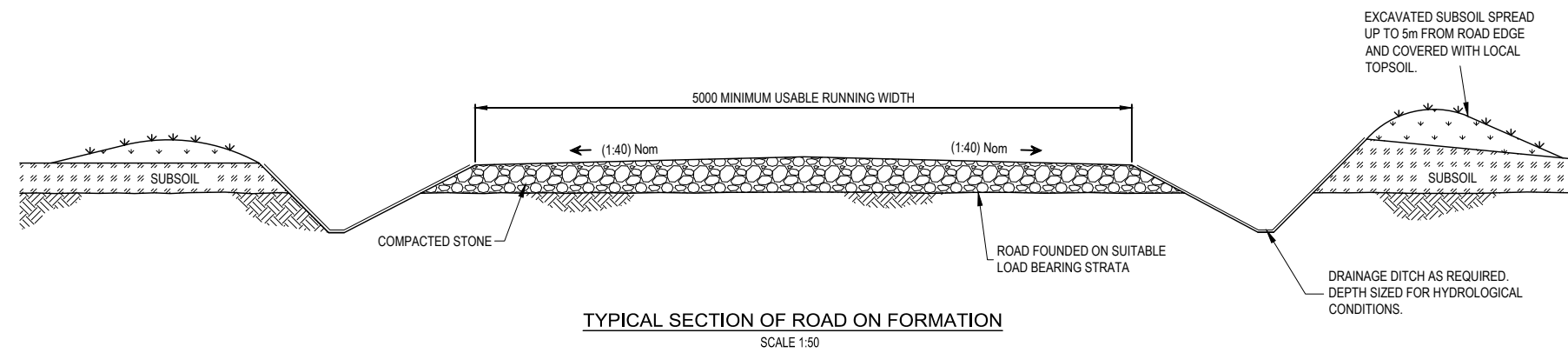
St Vincent Plaza, 319 St Vincent Street, Glasgow, G2 5LP
tel: +44 (0) 141 227 1700 www.woodplc.com

Scale	1:1000	Date	MAY 2021	Size	A3
Drawn	PMcG	Checked	VMcL	Approved	VMcL

Status
ESIA

Drawing No.	FIGURE 2.2	Revision	B1
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DO NOT SCALE



B1	ISSUED FOR ESIA	PMcG	VMcL	VMcL	19.05.21
Rev	Description	By	Chk'd	App'd	Date

Job Title

**ZARAFSHAN
WIND FARM ESIA**

Org Title

TYPICAL ROAD SECTION

wood.

St Vincent Plaza, 319 St Vincent Street, Glasgow, G2 5LP
tel: +44 (0) 141 227 1700 www.woodplc.com

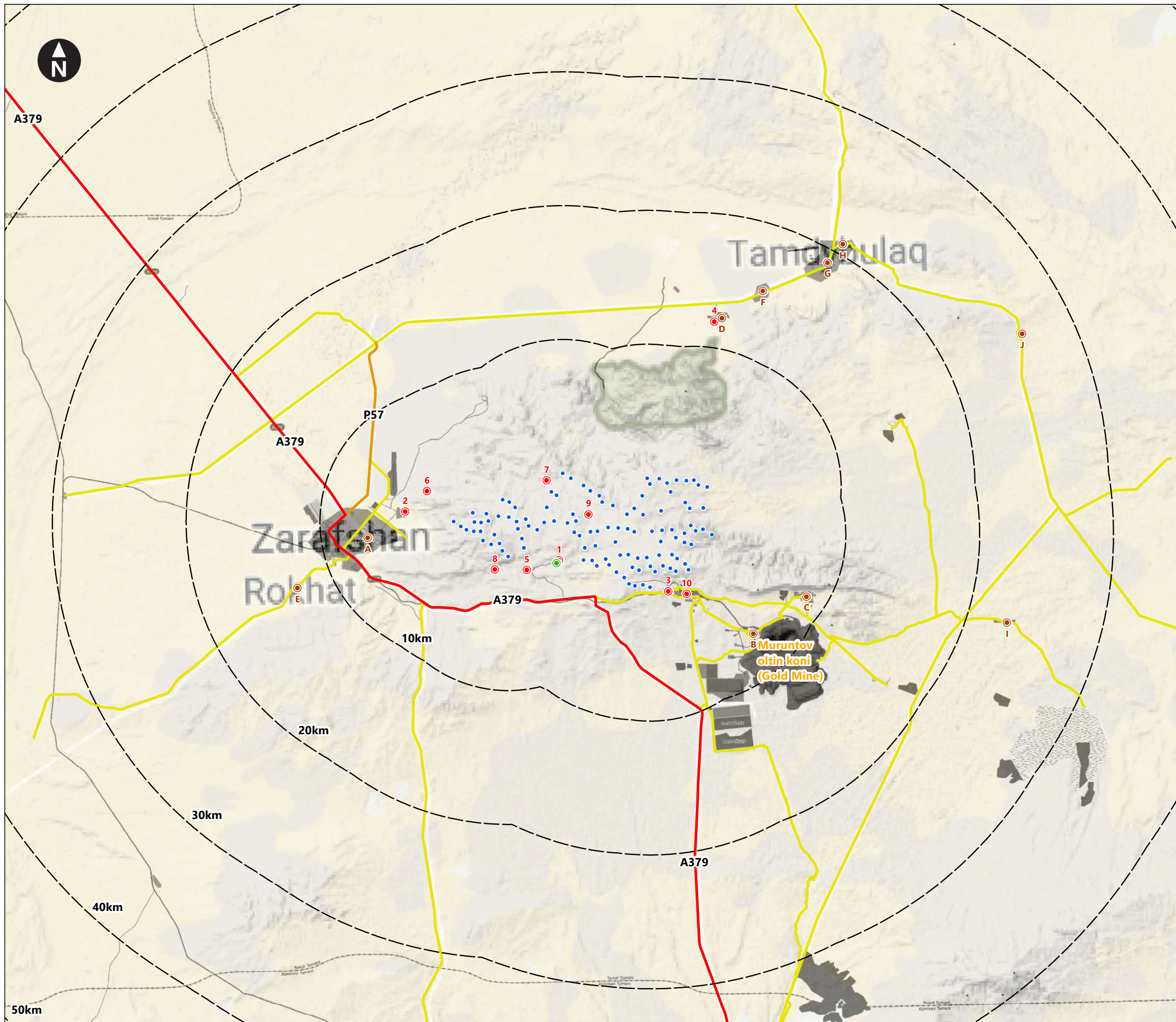
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Drawn	PMcG	Checked	VMcL	Approved	VMcL

Status

ESIA

Drawing No.	FIGURE 2.3	Revision	B1
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\\172.26.36.27\6000_Task\2019_Task\X\19.00287.GLA - Zarafshon Wind Farm ESIA Uzbekistan\Modelling\GIS\2021 ArcMap and InDesign documents\43423-WOOD-XX-02-DR-SA-0016_S3_R10.mxd Originator: wilsc03



Key

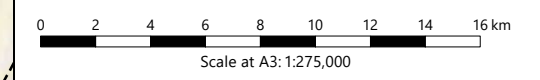
- Proposed WTG locations
- Lines indicating the distance from the proposed turbine locations
- Noise Sensitive / Shadow Flicker Receptors

- 1) Tourist area
- 2) Zarafshon (east)
- 3) Besapan
- 4) Adzherekty
- 5) New Farm 1 Residential
- 6) New Farm 2 Residential
- 7) Farm - Residential
- 8) Structure 1 - Residential, 2 buildings in a compound
- 9) Residential and agricultural
- 10) Gold Mine Settlement

- Religious Site
- Settlements

- A) Zarafshan
- B) Besapan
- C) Muruntov
- D) Yangi Tomdi
- E) Rokhat
- F) Ajiriqti
- G) Kazbek bi
- H) Tamdibuloq
- I) Jingildi
- J) Kynyr

- A739 road
- P57 road
- Unclassified roads



Zarafshan Wind Farm ESIA

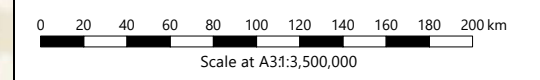
Figure 7-1
Community Territories

\\172.26.36.27\6000_Task\2019_Task\X.19.00287\GLA - Zarafshan Wind Farm ESIA Uzbekistan\Modelling\GIS\2021 ArcMap and InDesign documents\43423-WOOD-XX-02-DR-SA-0013_S3_R6.mxd Originator: wils03



Key

- Proposed WTG locations
- Indicative transport route from Aktau to Zarafshan

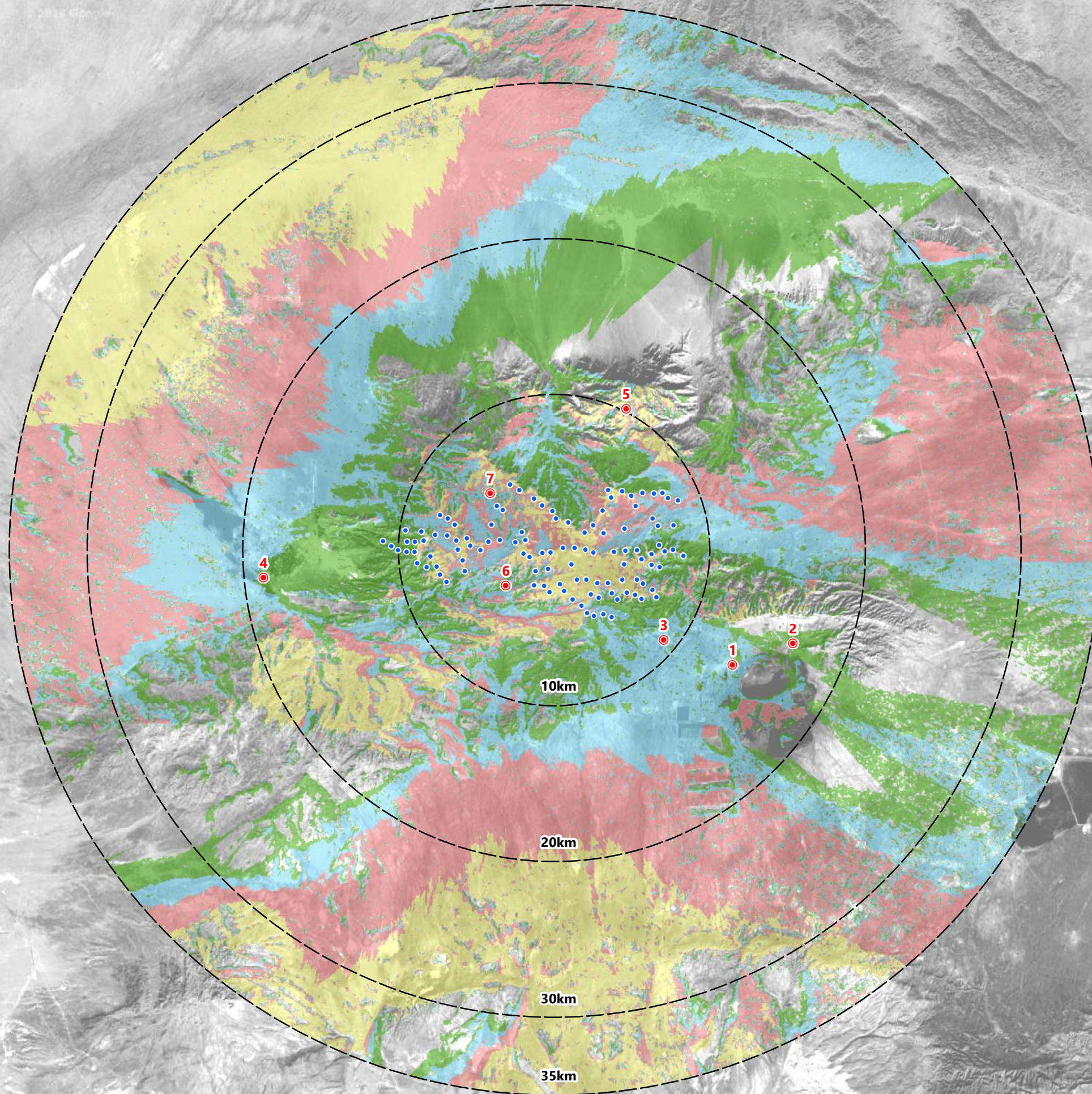


Zarafshan Wind Farm ESIA


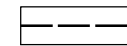

Figure 8-1
Indicative Transport Route

June 2021



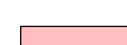
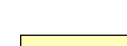




Key

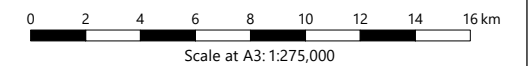
-  Proposed WTG locations
-  Lines indicating the distance from the mean site centre
-  Viewpoint Locations

- 1) Road at Besapan
- 2) South of Muruntov
- 3) South of Industrial Area/Rail Depot
- 4) Edge of Zarafshan
- 5) High Ground to North
- 6) Tourist Area
- 7) Farm Shelter

-  1-27 turbines may be theoretically visible
-  28-55 turbines may be theoretically visible
-  56-83 turbines may be theoretically visible
-  84-111 turbines may be theoretically visible

Notes: This drawing is based on a computer generated Zone of Theoretical Visibility (ZTV). The areas shown indicate the maximum theoretical visibility of the proposed turbines and do not take account of any screening from vegetation or built-form. The ZTV also includes an adjustment that allows for the Curvature and Light Refraction of the Earth.

This figure has been based on the following parameters:
 Turbine layout file: LZARAFSHON004.WFL
 Hub height: 95m
 Rotor diameter: 155m
 Height to blade tip: 172.5m



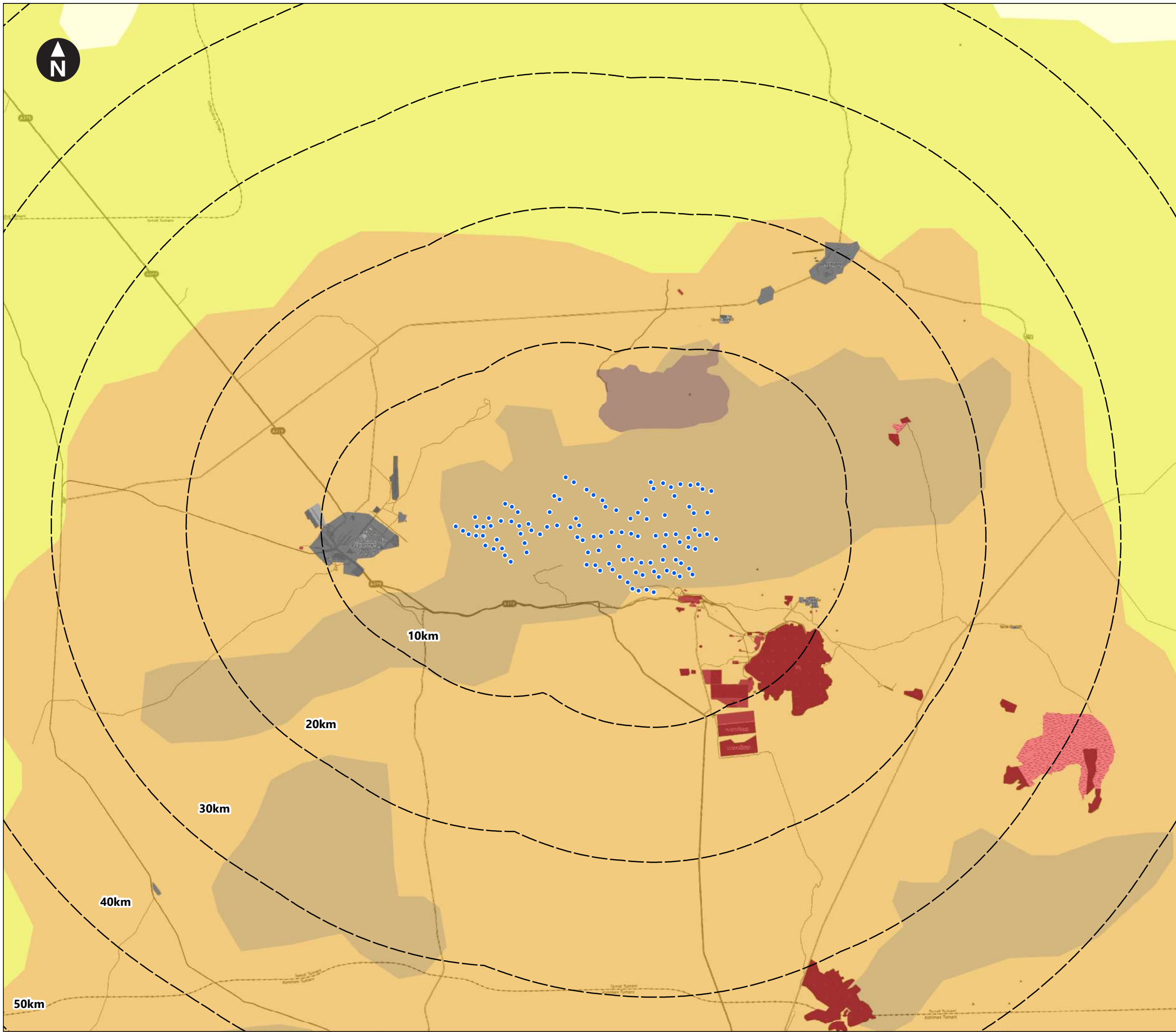
Zarafshon Wind Farm ESIA

Figure 9-1
Zone of Theoretical Visibility
with Viewpoints

June 2021



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Key

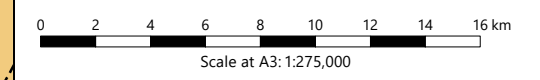
- Proposed WTG locations
- Lines indicating the distance from the proposed turbine locations

Landscape Character Types

- Gypsum Deserts
- Rocky Deserts
- Saline Deserts
- Sand Deserts

Source: The Sixth National Report of the Republic of Uzbekistan on the Conservation of Biological Diversity (p.196)

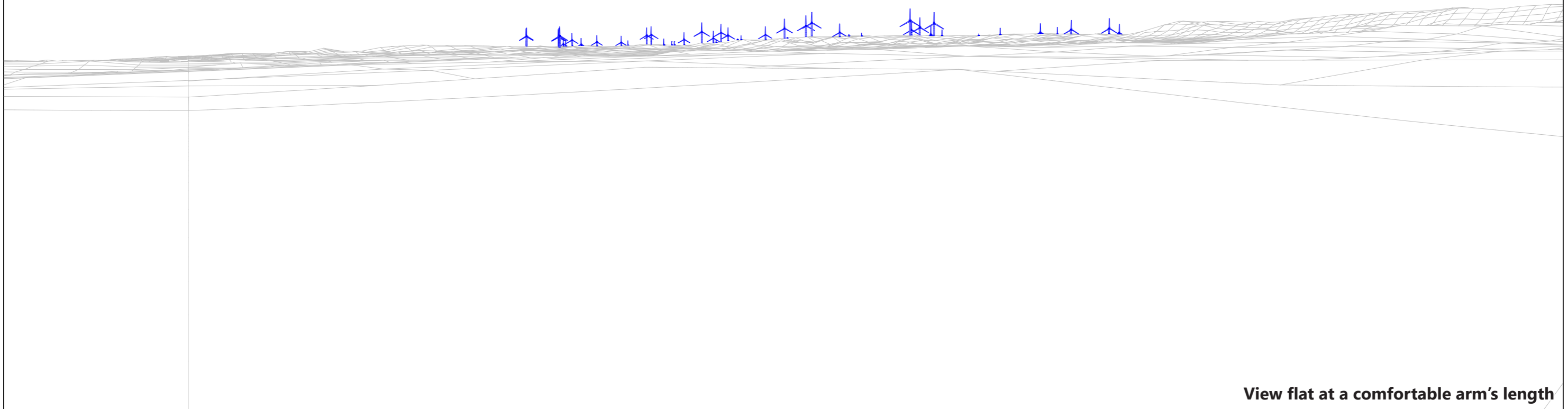
- Urban
- Mining & Industry
- Tamdytau Mountains



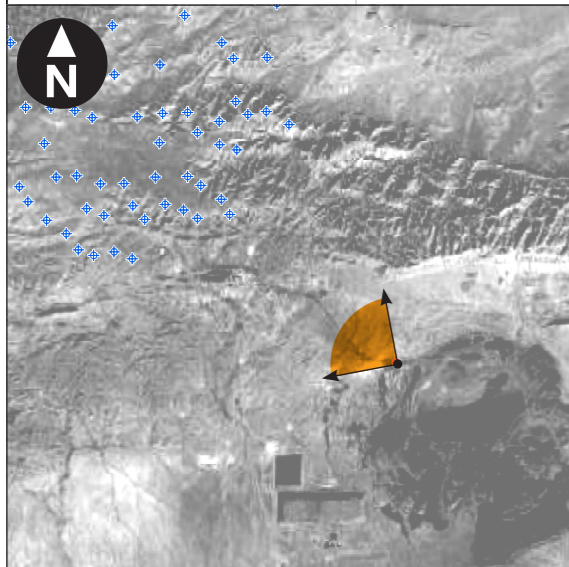
Zarafshon Wind Farm ESIA

Figure 9-2
Landscape Character Types

June 2021



View flat at a comfortable arm's length



This figure has been based on the following parameters:
 Turbine layout file: LZARAFSHON004.WFL
 • Hub height: 95m
 • Rotor diameter: 155m
 • Height to blade tip: 172.5m

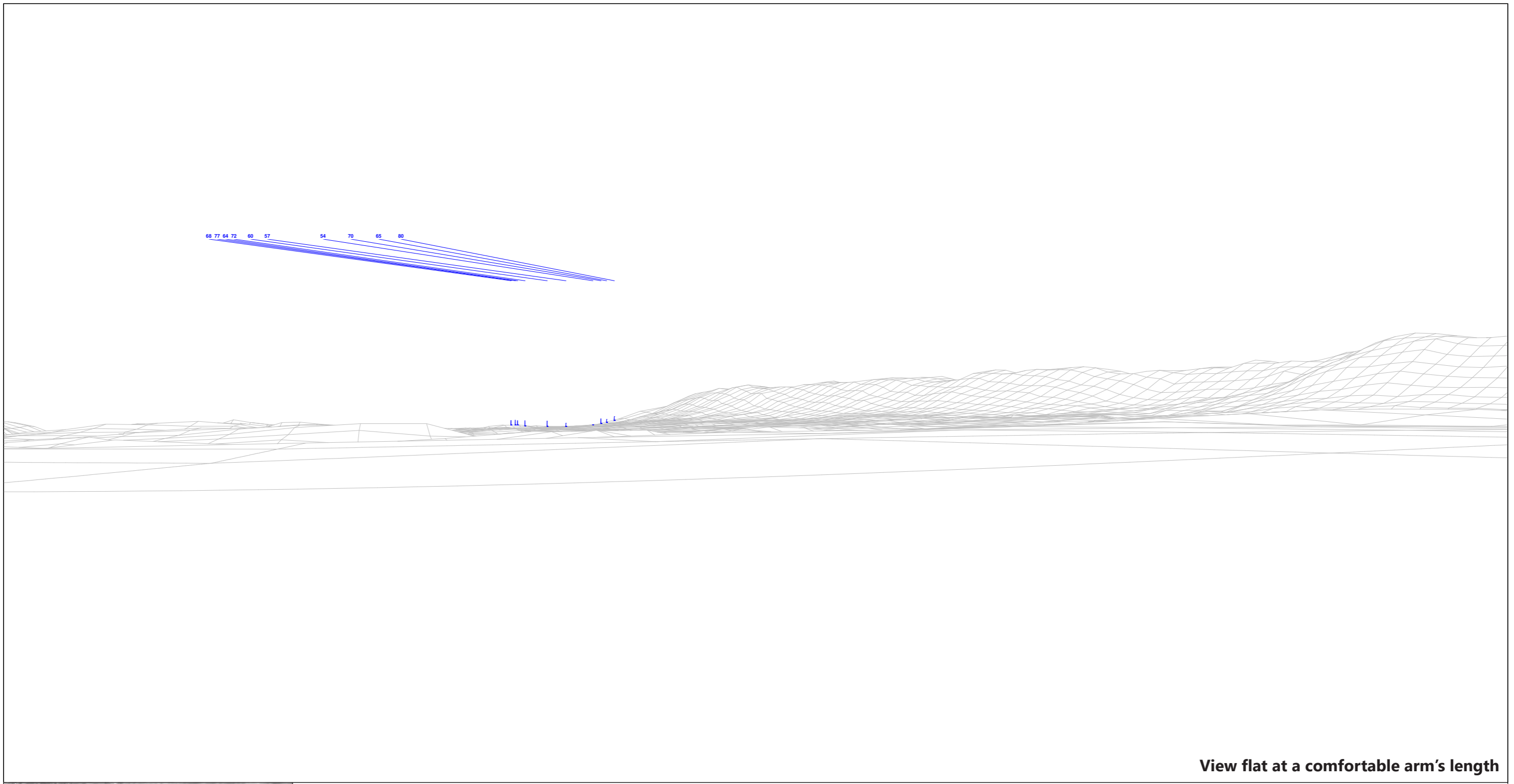
OS reference:	E629 651, N4596 350	Horizontal field of view:	90° (cylindrical projection)
Eye level:	585.5m AOD	Principal distance:	522mm
Direction of view:	304°	Paper size:	420mm x 297mm (A3)
Nearest consented turbine:	6,553m	Correct printed image size:	390 x 202mm

Zarafshan Wind Farm ESIA

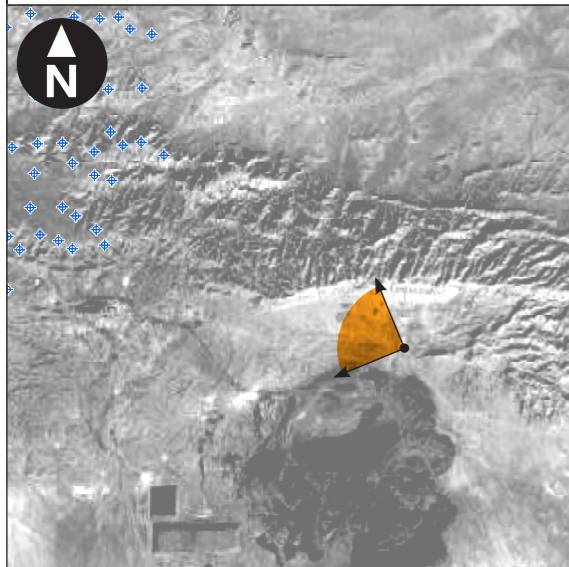
Figure 9-3
Viewpoint 1
Road at Besapan

June 2021





View flat at a comfortable arm's length



This figure has been based on the following parameters:
 Turbine layout file: LZARAFSHON004.WFL
 • Hub height: 95m
 • Rotor diameter: 155m
 • Height to blade tip: 172.5m

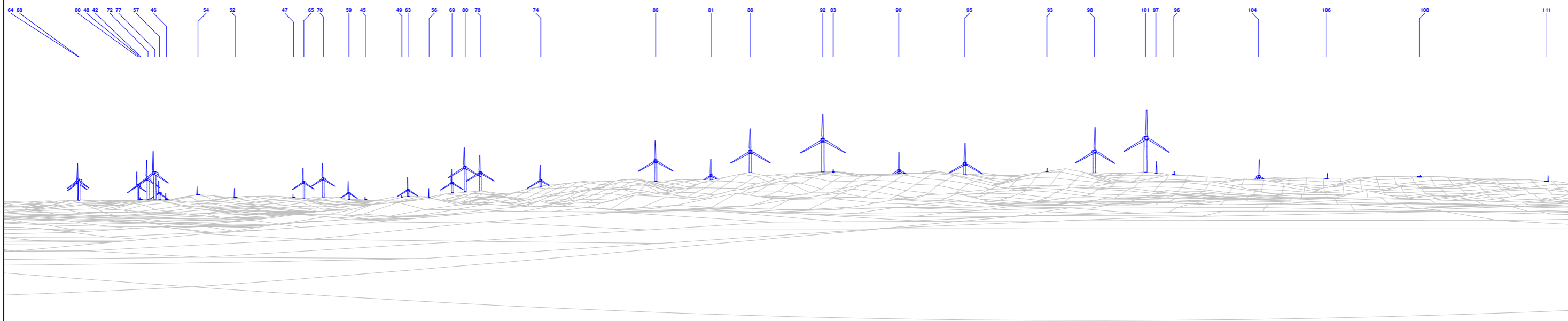
OS reference:	E633 524, N4597 713	Horizontal field of view:	90° (cylindrical projection)
Eye level:	562.5m AOD	Principal distance:	522mm
Direction of view:	293°	Paper size:	420mm x 297mm (A3)
Nearest consented turbine:	9,006m	Correct printed image size:	390 x 202mm

Zarafshan Wind Farm ESIA

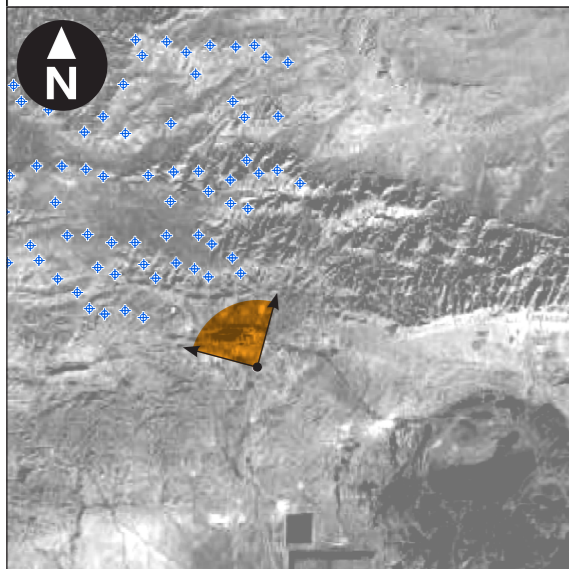
Figure 9-4
Viewpoint 2
South of Muruntov

June 2021





View flat at a comfortable arm's length



This figure has been based on the following parameters:
 Turbine layout file: LZARAFSHON004.WFL
 • Hub height: 95m
 • Rotor diameter: 155m
 • Height to blade tip: 172.5m

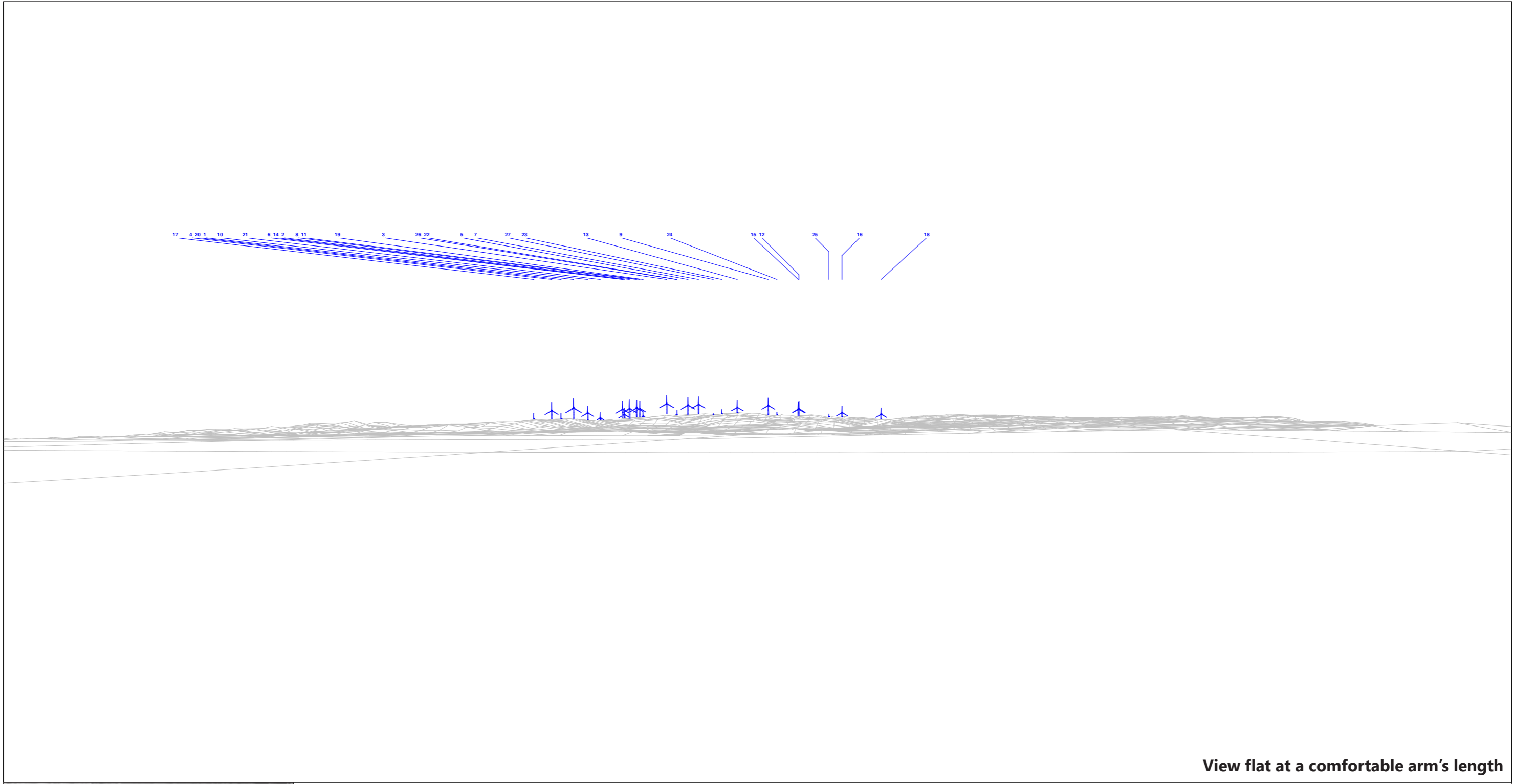
OS reference:	E625 229, N4597 936	Horizontal field of view:	90° (cylindrical projection)
Eye level:	613.5m AOD	Principal distance:	522mm
Direction of view:	330°	Paper size:	420mm x 297mm (A3)
Nearest consented turbine:	2,808m	Correct printed image size:	390 x 202mm

Zarafshan Wind Farm ESIA

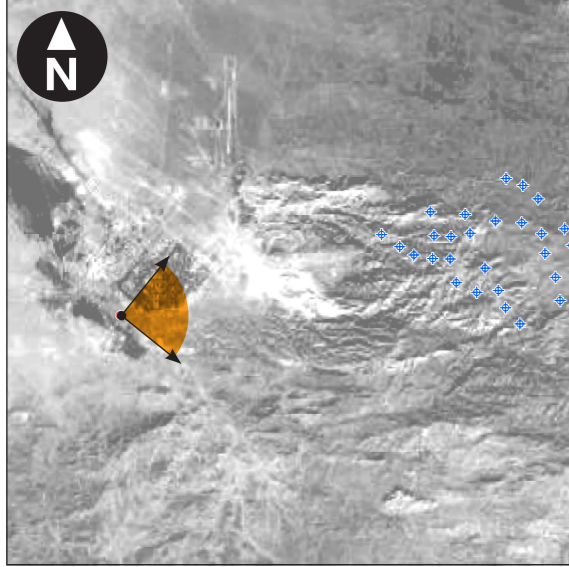
Figure 9-5
Viewpoint 3
South of Industrial Area / Rail Depot

June 2021





View flat at a comfortable arm's length



This figure has been based on the following parameters:
 Turbine layout file: LZARAFSHON004.WFL
 • Hub height: 95m
 • Rotor diameter: 155m
 • Height to blade tip: 172.5m

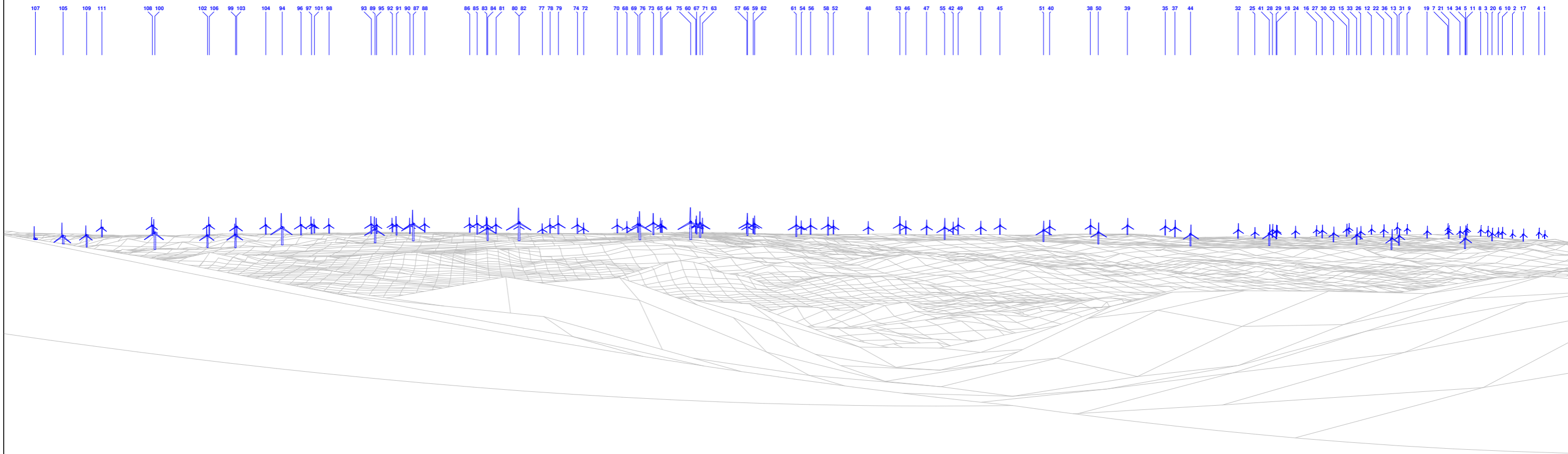
OS reference:	E599 506, N4601 932	Horizontal field of view:	90° (cylindrical projection)
Eye level:	408.5m AOD	Principal distance:	522mm
Direction of view:	84°	Paper size:	420mm x 297mm (A3)
Nearest consented turbine:	8,051m	Correct printed image size:	390 x 202mm

Zarafshan Wind Farm ESIA

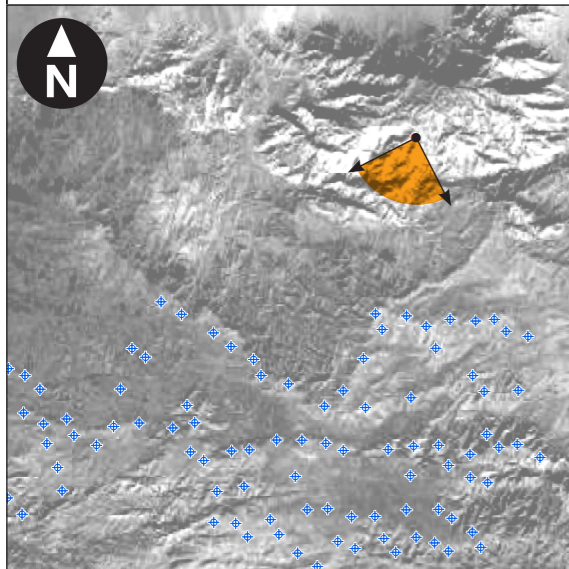
Figure 9-6
Viewpoint 4
Edge of Zarafshan

June 2021





View flat at a comfortable arm's length



This figure has been based on the following parameters:
 Turbine layout file: LZARAFSHON004.WFL
 • Hub height: 95m
 • Rotor diameter: 155m
 • Height to blade tip: 172.5m

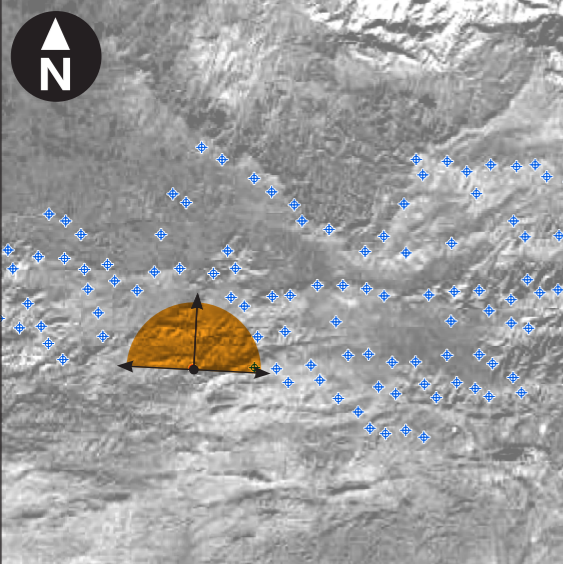
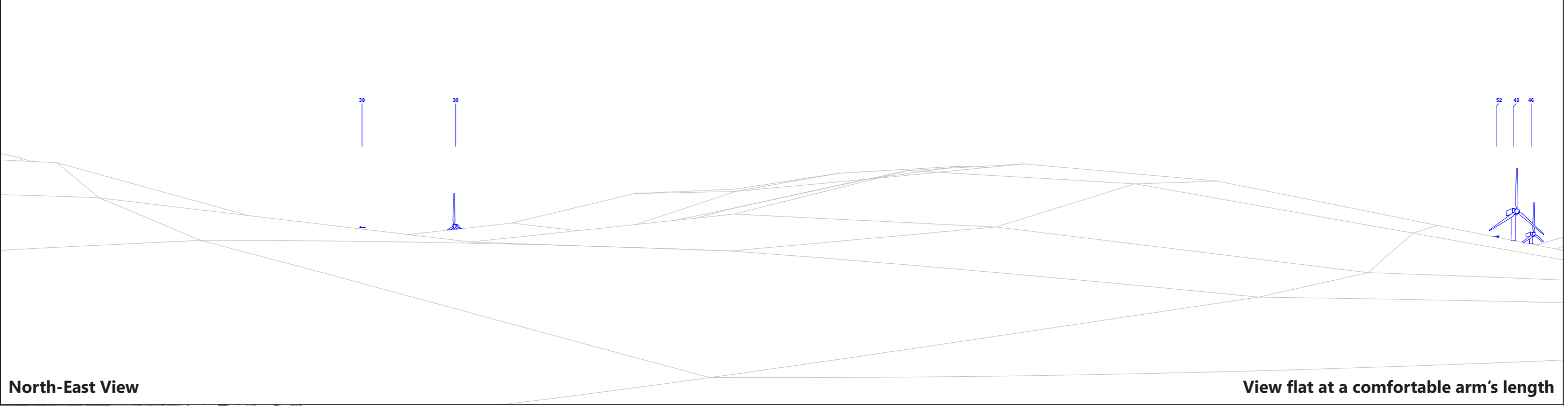
OS reference:	E622 812, N4612 770	Horizontal field of view:	90° (cylindrical projection)
Eye level:	830.5m AOD	Principal distance:	522mm
Direction of view:	198°	Paper size:	420mm x 297mm (A3)
Nearest consented turbine:	5,273m	Correct printed image size:	390 x 202mm

Zarafshan Wind Farm ESIA

Figure 9-7
Viewpoint 5
High Ground to North

June 2021





This figure has been based on the following parameters:
 Turbine layout file: LZARAFSHON004.WFL
 • Hub height: 95m
 • Rotor diameter: 155m
 • Height to blade tip: 172.5m

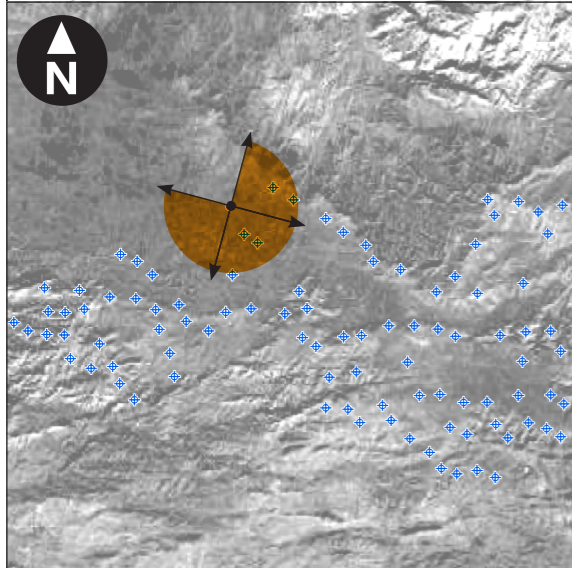
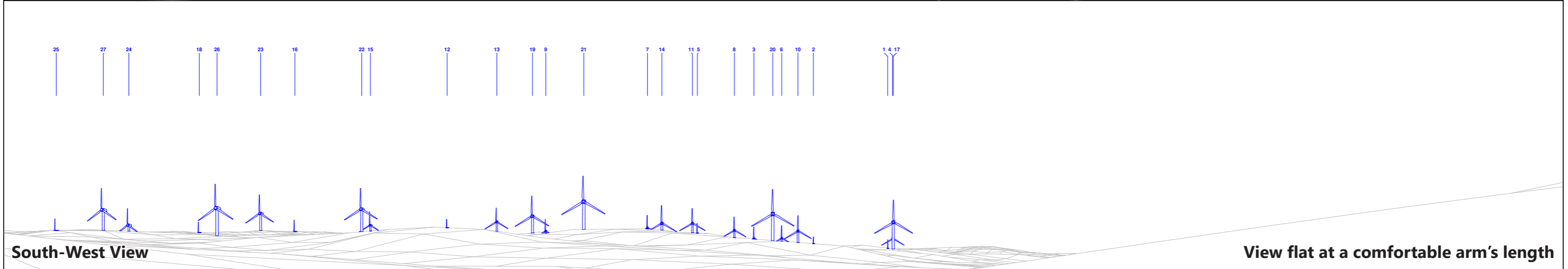
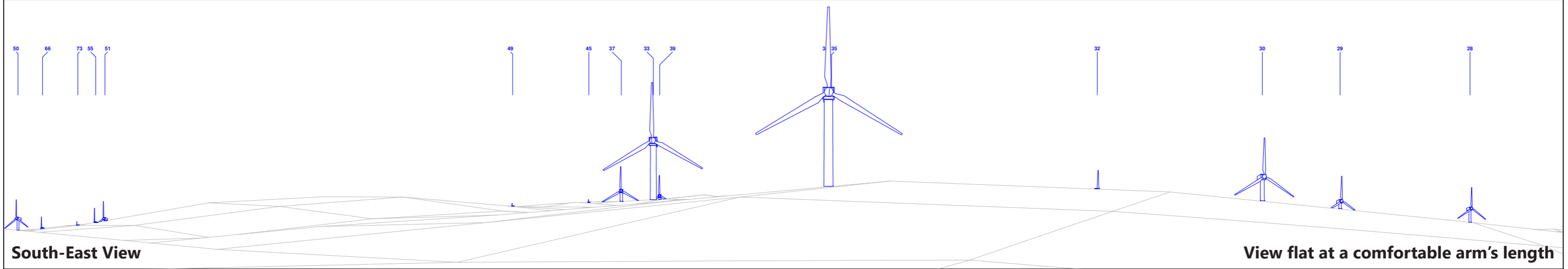
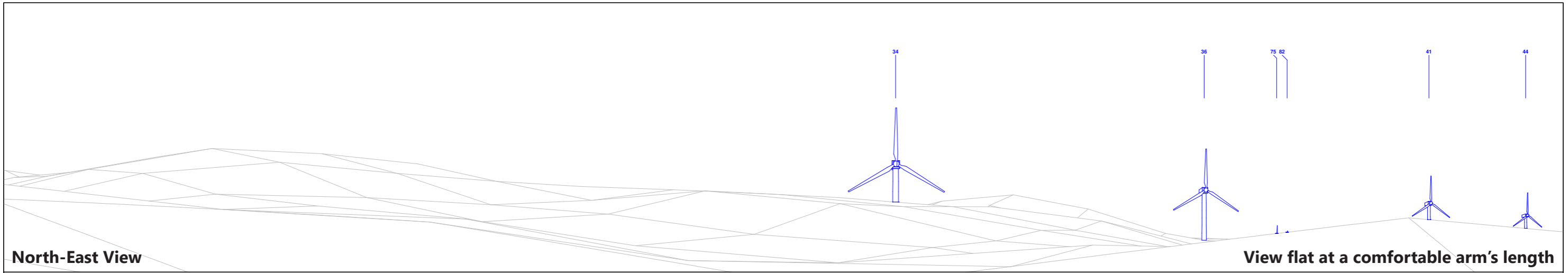
OS reference:	E615 083, N4601 432	Horizontal field of view:	90° (cylindrical projection)
Eye level:	644.5m AOD	Principal distance:	522mm
Direction of view:	318° / 48°	Paper size:	420mm x 297mm (A3)
Nearest consented turbine:	1,820m	Correct printed image size:	390 x 101mm

Zarafshon Wind Farm ESIA

Figure 9-8
Viewpoint 6
Tourist Area

June 2021

Originator: wilsc03
 \\172.26.36.27\6000_Task\2019_Task\X.19.00287.GLA - Zarafshon Wind Farm ESIA Uzbekistan\Modelling\GIS\2021 ArcMap and InDesign documents\43423- WOOD-XX-02-DR-SA-0018_S3_R2.indd



This figure has been based on the following parameters:
 Turbine layout file: LZARAFSHON004.WFL
 • Hub height: 95m
 • Rotor diameter: 155m
 • Height to blade tip: 172.5m

OS reference:	E614 078, N4607 363	Horizontal field of view:	90° (cylindrical projection)
Eye level:	593.5m AOD	Principal distance:	522mm
Direction of view:	60° / 150° / 240°	Paper size:	420mm x 297mm (A3)
Nearest consented turbine:	921m	Correct printed image size:	390 x 101mm

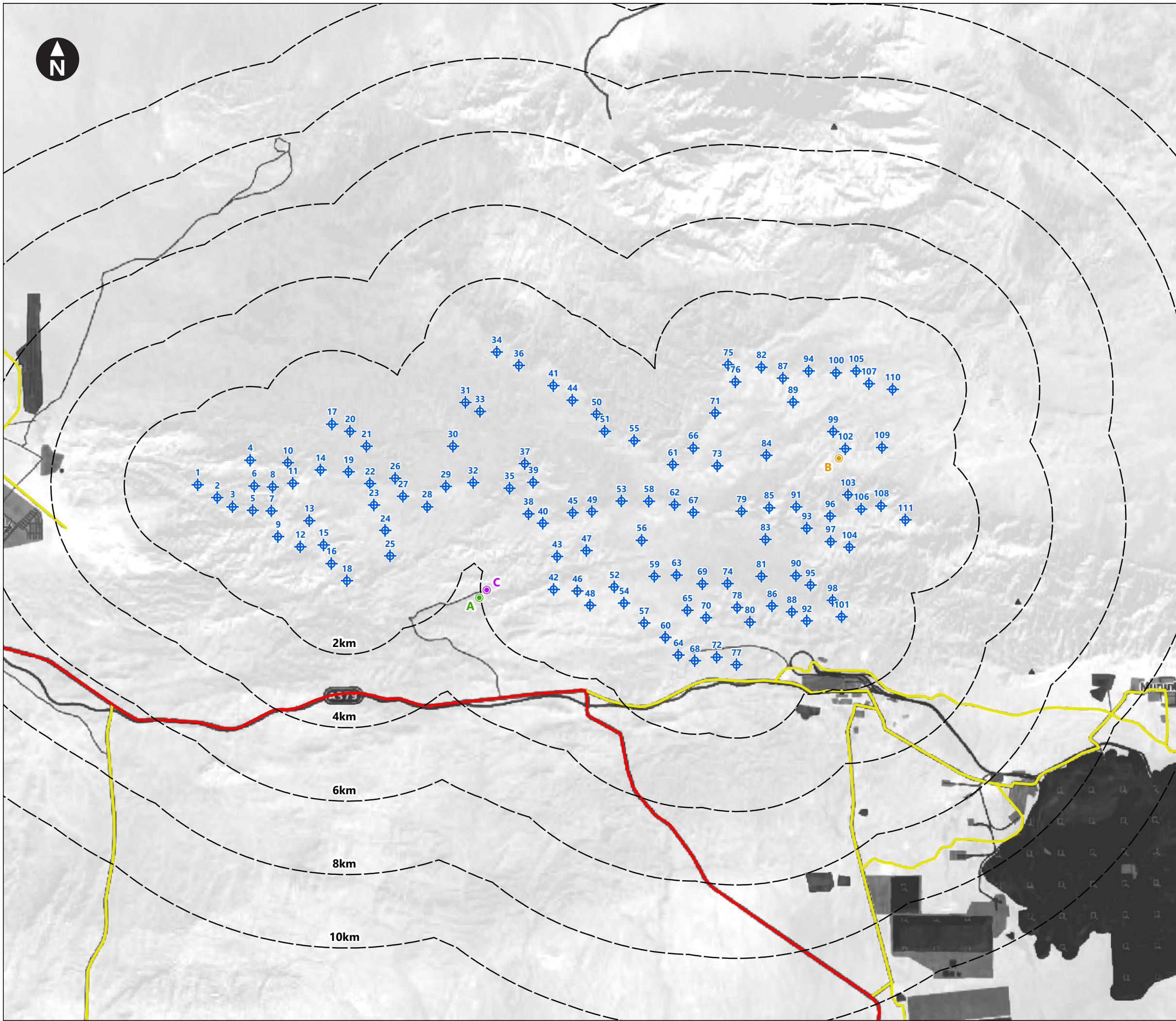
Zarafshan Wind Farm ESIA

Figure 9-9
Viewpoint 7
Farm Shelter

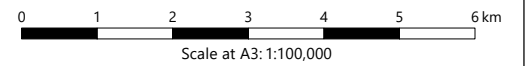
June 2021



\\172.26.36.27\6000_Tasks\2019_Tasks\19.00287.GLA - Zarafshon Wind Farm ESIA Uzbekistan\Modelling\GIS\2021 ArcMap and InDesign documents\43423-WOOD-XX-02-DR-SA-0010_S3_R3.mxd Originator: wilsco3



- Key
- Proposed WTG locations
 - Lines indicating the distance from the proposed turbine locations
 - A) Religious site (Gujumli Arliyo)
 - B) Indicative location of remnants of paleo volcano
 - C) Tourist Area



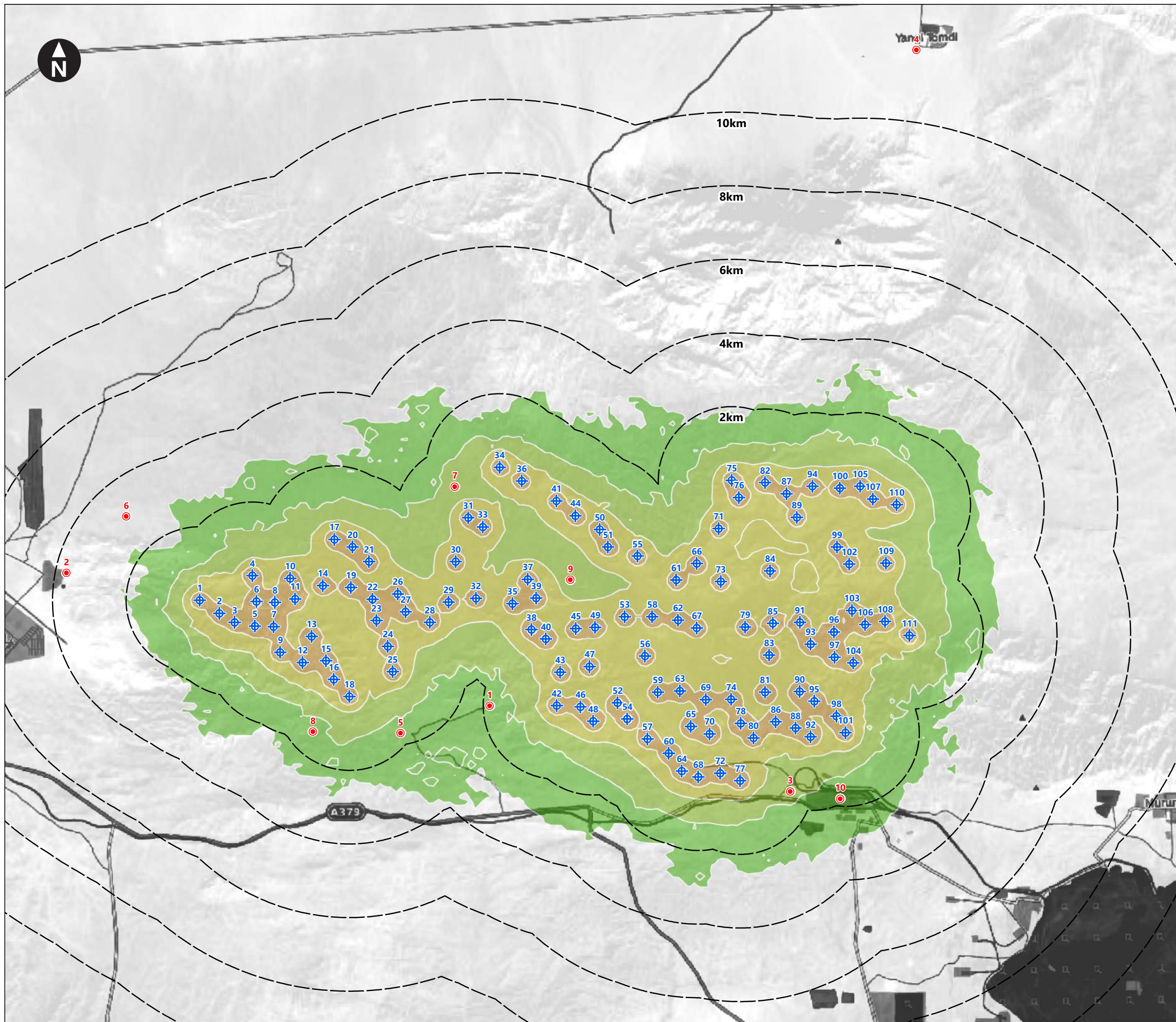
Zarafshon Wind Farm ESIA

Figure 10-1
Archaeology Sites

May 2021



H:\data\Projects\41917 Garbet Hill Wind Farm (Subfolder)\D Design_Technical\ArcGIS\43423-WOOD-XX-02-DR-SA-0011_S3_R8.mxd Originator: wllsc03



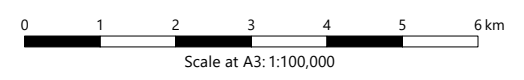
Key

- Proposed WTG locations
- Lines indicating the distance from the proposed turbine locations
- Noise Sensitive Receptors

1) Tourist area
 2) Zarafshon (east)
 3) Besapan
 4) Adzherekty
 5) New Farm 1 Residential
 6) New Farm 2 Residential
 7) Farm - Residential
 8) Structure 1 - Residential, 2 buildings in a compound
 9) Residential and agricultural
 10) Gold Mine Settlement

Noise Contours

- 35 dB (A)
- 40 dB (A)
- 45 dB (A)
- 50 dB (A)
- 55 dB (A)



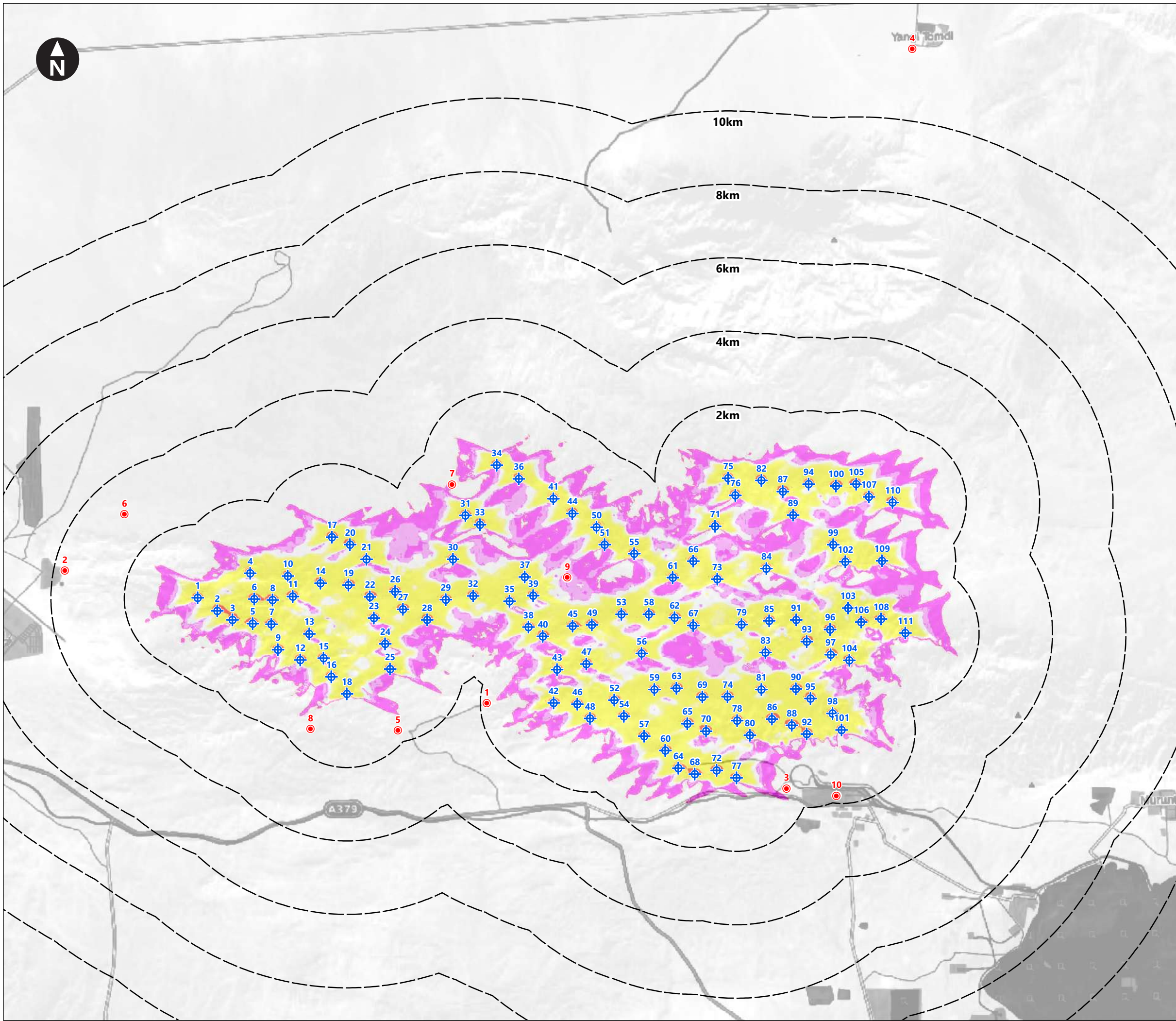
Zarafshan Wind Farm ESIA

Figure 11-1
Noise Sensitive Receptors




May 2021



\\172.26.36.27\6000_Tasks\2019_Tasks\X.19.00287.GLA - Zarafshon Wind Farm ESIA Uzbekistan\Modelling\GIS\2021 ArcMap and InDesign documents\43423- WOOD-XX-02-DR-SA-0012_S3_R3.mxd Originator: wilsc03

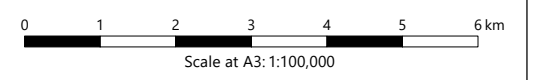


Key

-  Proposed WTG locations
-  Lines indicating the distance from the proposed turbine locations
-  Shadow Flicker Receptors

- 1) Tourist area
- 2) Zarafshon (east)
- 3) Besapan
- 4) Adzherekty
- 5) New Farm 1 Residential
- 6) New Farm 2 Residential
- 7) Farm - Residential
- 8) Structure 1 - Residential, 2 buildings in a compound
- 9) Residential and agricultural
- 10) Gold Mine Settlement

Note: Shading represents areas predicted to experience over 30 hours of theoretical shadow flicker events per year.



Zarafshan Wind Farm ESIA

Figure 12-1
Shadow Flicker

May 2021

