

**ENVIRONMENTAL AND SOCIAL  
IMPACT ASSESSMENT**

**Baku – Tbilisi – Ceyhan  
Oil Pipeline Azerbaijan**

**VOLUME 2:  
Environmental and  
Social Route Maps**

**Prepared for BP**

**By AETC Ltd / ERM**

**December 2002**

## GENERAL NOTES

**Project No:** P8107

**Title:** Environmental and Social Impact Assessment  
Baku – Tbilisi – Ceyhan Oil Pipeline Azerbaijan

### VOLUME 2: Environmental and Social Route Maps

**Client:** BP

**Issue Date:** May 2002

**Issuing Office:** Helsby

**Authorised by:** \_\_\_\_\_ **Project Manager**      **Date:** \_\_\_\_\_

**Authorised by:** \_\_\_\_\_ **Project QA Rep**      **Date:** \_\_\_\_\_

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Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the Quality Management System of AETC.

Some of the reports in this appendix have been prepared by independent consultants on behalf of AETC for use during the ESIA process. Information available at the time of survey and report production may have changed subsequently. Any recommendations contained in the baseline reports do not necessarily constitute requirements or mitigations under the ESIA; only those reflected in the main volume are to be implemented as part of the project.

## Acknowledgements

This Environmental and Socio-economic Impact Assessment (ESIA) for the Baku-Tblisi –Ceyhan Oil Pipeline, Azerbaijan was carried out by RSK and ERM on behalf of the BTC Owners (operated by BP).

RSK and ERM acknowledge the collective and individual contributions from a range of companies, academic and scientific experts in the preparation of this ESIA report. RSK and ERM are grateful for the willing assistance of these companies and individuals and their contribution to a rigorous and comprehensive ESIA report.

### **RSK and ERM acknowledge with thanks the following:**

#### **Companies**

AES  
Air Photo Services  
Alan Saunders Associates  
BEC  
Holymoor Consultancy  
Hydro Scientific Limited  
M & M Impact  
Synergetics  
UTT  
WSP

#### **Academic and scientific experts and their organisations**

Baku State University (Zoology)  
Institute of Archaeology and Ethnography  
Institute of Botany  
Institute of Erosion and Irrigation  
Institute of Geography  
Institute of Zoology  
Ministry of Environment and Natural Resources  
Ministry of Culture  
BP Research and Monitoring Group

# EXPLANATION TO ROUTE MAPS

## ECOLOGY

The conservation status of species has been assessed by reference to the Red Data Book for Azerbaijan (1989), information from local scientists on proposed additions to the Red Book, European Bird Populations: Estimates and Trends (Birdlife International/European Bird Census Council, 2000) and the 2000 IUCN Red List of Threatened Species. The status categories used in this volume are described in the Table 1, below.

Table 1 Threatened species status categories

| STATUS CATEGORY | DESCRIPTION  |
|-----------------|--|
| Ie              | Species of International Conservation Concern – endangered     |
| Iv              | Species of International Conservation Concern – vulnerable     |
| IIr             | Species of International Conservation Concern – low risk       |
| Ee              | Bird of European Conservation Concern - endangered             |
| Ev              | Bird of European Conservation Concern - vulnerable             |
| Er              | Bird of European Conservation Concern – rare                   |
| Ed              | Bird of European Conservation Concern - declining              |
| RDB             | Listed in Red Data Book of Azerbaijan Republic                 |
| PRDB            | Proposed for inclusion in Red Data Book of Azerbaijan Republic |
|                 |  |

Where vegetation data has been collected during field surveys, community types for each broad habitat type have been identified. Their structure and species composition are described below in Table 2.

Table 2 Vegetation communities with broad habitat categories

| DESERT      |  |
|-------------|--|
| D1          | <i>Artemisia fragrans</i>                      |
| D2          | <i>Artemisia fragrans + Salsola nodulosa</i>   |
| D3          | <i>Artemisia fragrans + Salsola dendroides</i> |
| D4          | <i>Artemisia fragrans + Suaeda dendroides</i>  |
| D5          | <i>Salsola nodulosa</i>                        |
| D6          | <i>Salsola dendroides</i>                      |
| D7          | <i>Suaeda dendroides</i>                       |
| D8          | <i>Kalidium caspicum</i>                       |
| D9          | <i>Halocnemum strobilaceum</i>                 |
| D10         | <i>Capparis spinosa</i>                        |
| D11         | Ephemeral desert                               |
| D12         | Interzone                                      |
| D13         | <i>Salsola nodulosa + Artemisia fragrans</i>   |
| D14         | <i>Salsola ericoides</i>                       |
| SEMI-DESERT |  |
| SD1         | <i>Artemisia fragrans</i>                      |
| SD2         | <i>Artemisia fragrans + Salsola nodulosa</i>   |
| SD3         | <i>Artemisia fragrans + Salsola dendroides</i> |

**Table 2 Vegetation communities with broad habitat categories**

|                           |                              |
|---------------------------|------------------------------|
| SD4                       | <i>Salsola dendroides</i>    |
| SD5                       | Interzone                    |
| <b>AGRICULTURAL</b>       |                              |
| A1                        | Fields                       |
| A2                        | Old Fields                   |
| <b>WOODLAND AND SCRUB</b> |                              |
| WS1                       | Plantations                  |
| WS2                       | Scrub                        |
| <b>WETLAND</b>            |                              |
| W1                        | River                        |
| W2                        | Lake                         |
| W3                        | Canals (Major)               |
| W4                        | Marsh                        |
| W5                        | Seasonal marsh / Chal meadow |
| <b>OTHER</b>              |                              |
| Individually Named        |                              |

## ARCHAEOLOGY

The following archaeological sites will be subject to trial trenching investigation prior to construction:

Gobustan (KP9-11) Sites 4, 5, 6  
 Kazi-Magomed (KP54) Sites 21, 22  
 Yevlakh (KP221) Sites 52, 53, 54  
 Neymatabad (KP236) Site 56  
 Mingechaur (KP248) Site 57  
 Nadirkand (KP276) Site 59  
 Dalimamedli (KP280) Site 60  
 Zayamchai (KP355) Sites 111, 112, 113  
 Girag Salakhli (KP 05) Site 138

#### Water (Communal Piped Water Supply)

-  Always Receive Water
-  Interrupted
-  No Communal Supply

#### Water (Other Sources)

-  Household Well or Neighbourhoods/Community Well
-  Stored Water Supply
-  Springs
-  Canals

#### Electricity (Frequency of Supply)

-  Permanent
-  Interrupted
-  Seasonal
-  No Supply

#### Gas (Piped Supply)

-  Permanent
-  Interrupted
-  No Gas line/No Supply

#### Gas (Canisters)

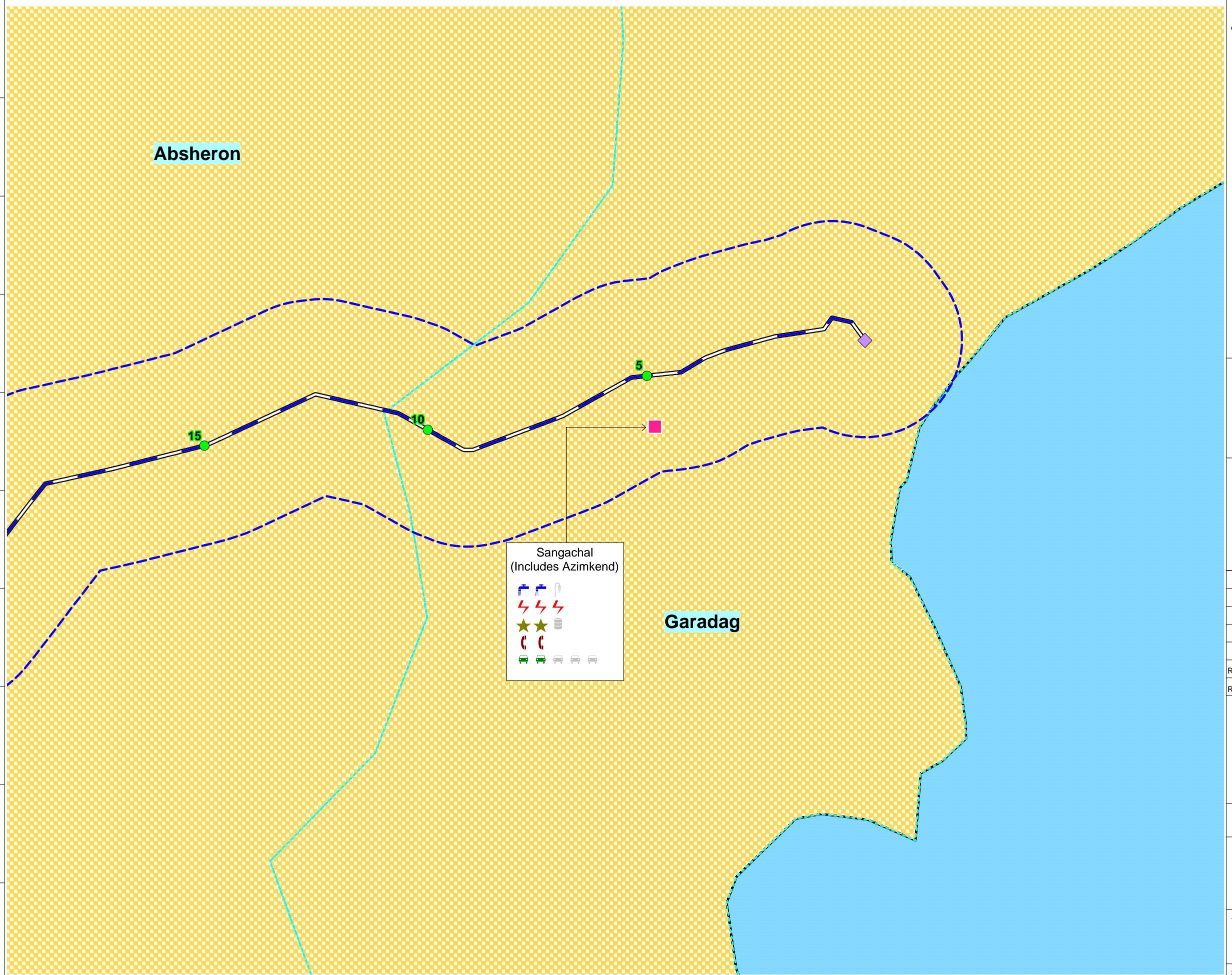
-  Available
-  Not Locally Available
-  Too Expensive
-  Do Not Use Gas

#### Telephones (Landline)

-  Most Households
-  One at Communal Points
-  None

#### Roads (Quality)

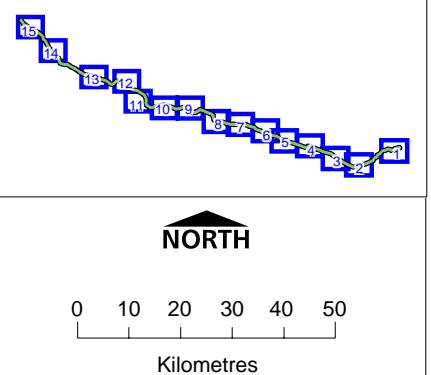
-  Excellent
-  Very Good
-  Good
-  Fair
-  Poor
-  Non-Existent



- Proposed Pipeline Route
- Settlements
- Proposed Pipeline 2km Corridor
- Administrative Boundaries
- Potential Pipe Yards
- Potential Construction Camps
- Pump Station
- Pigging Station
- Five Kilometre Marker

**Socio-Economic Survey Legend  
Included as Separate Figure**

\* Socio-Economic Data Not Available



|     |          |             |     |     |     |
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| REV | DATE     | DESCRIPTION | DRN | CHK | APP |

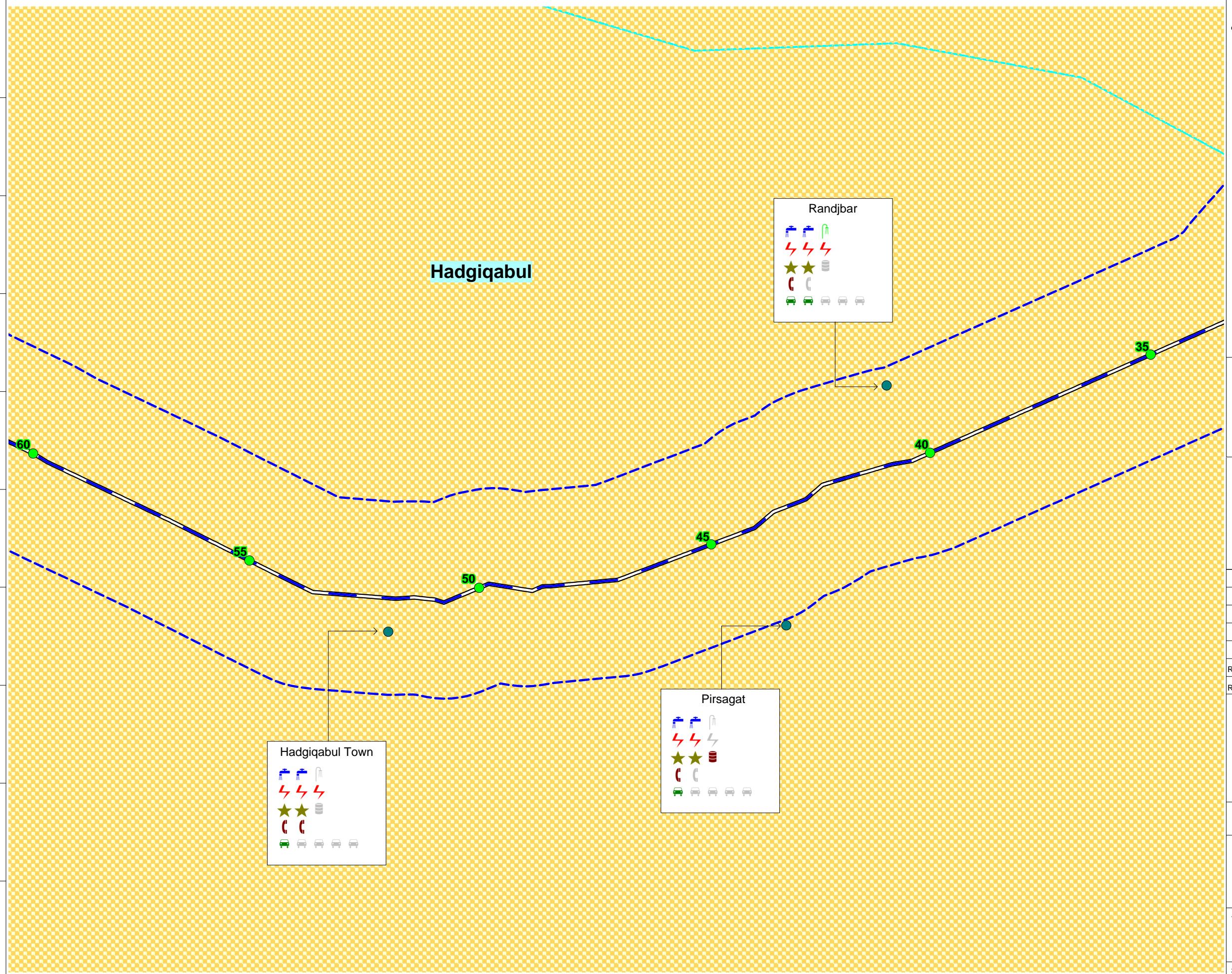


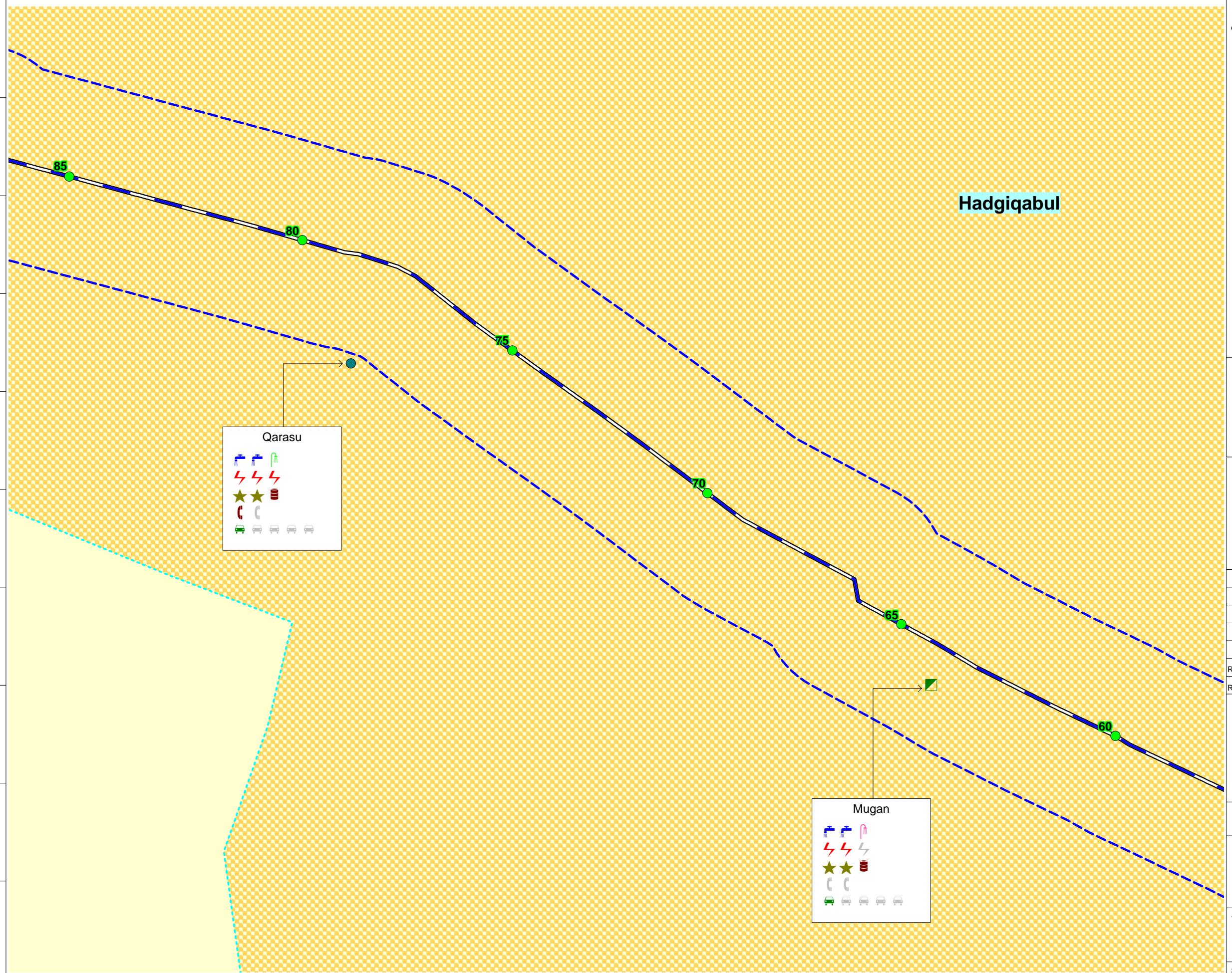
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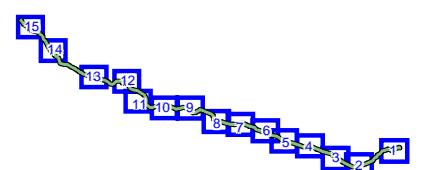
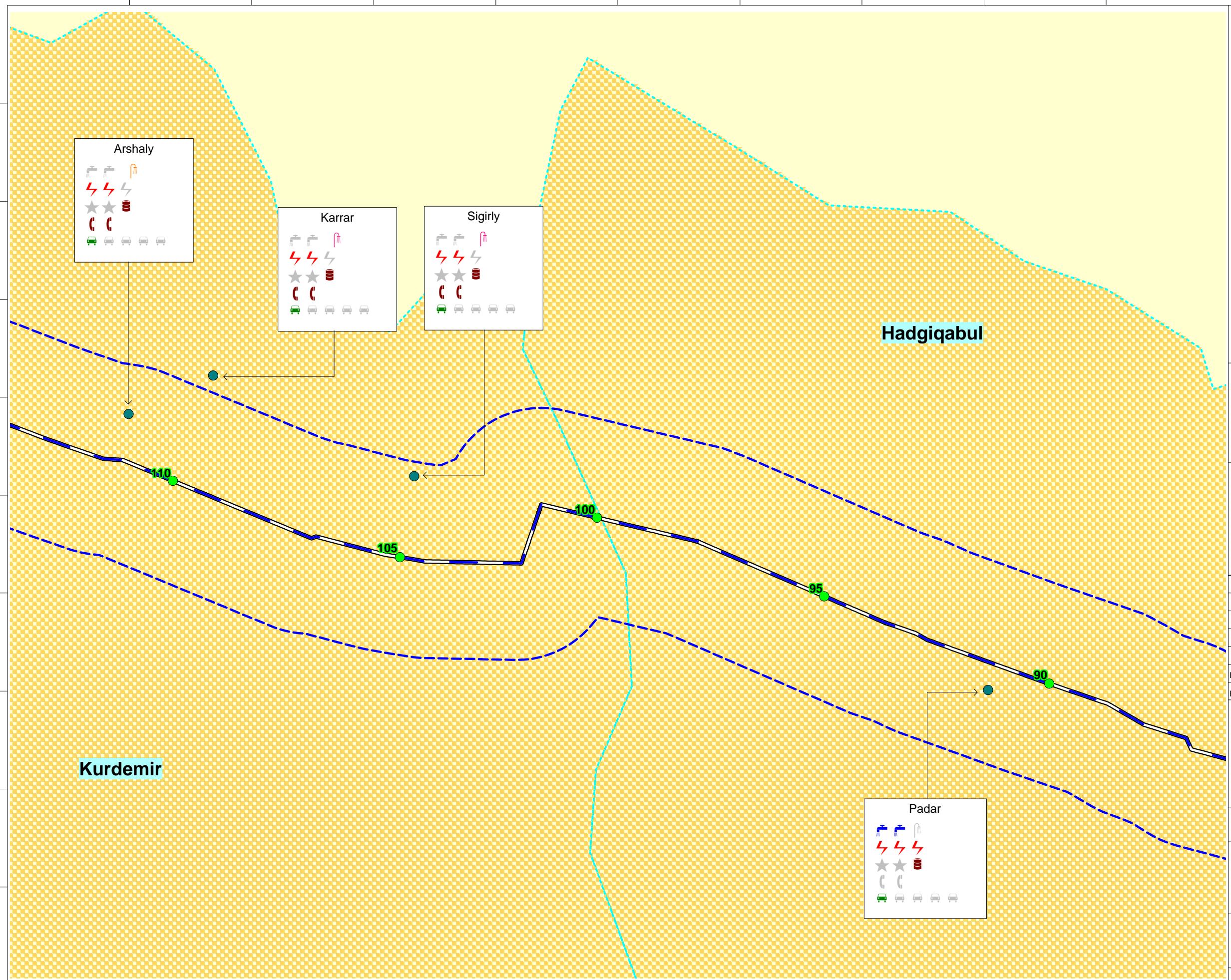
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SCALE: 1:75,000 REV 00





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| <b>BTC PIPELINES PROJECT</b>  |          |             |     |     |     |
| <b>ERM</b>  |          |             |     |     |     |
| TITLE: Azerbaijan Map 03: Settlements Along Pipeline Route Corridor (BTC Pipelines Project) |          |             |     |     |     |
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NORTH

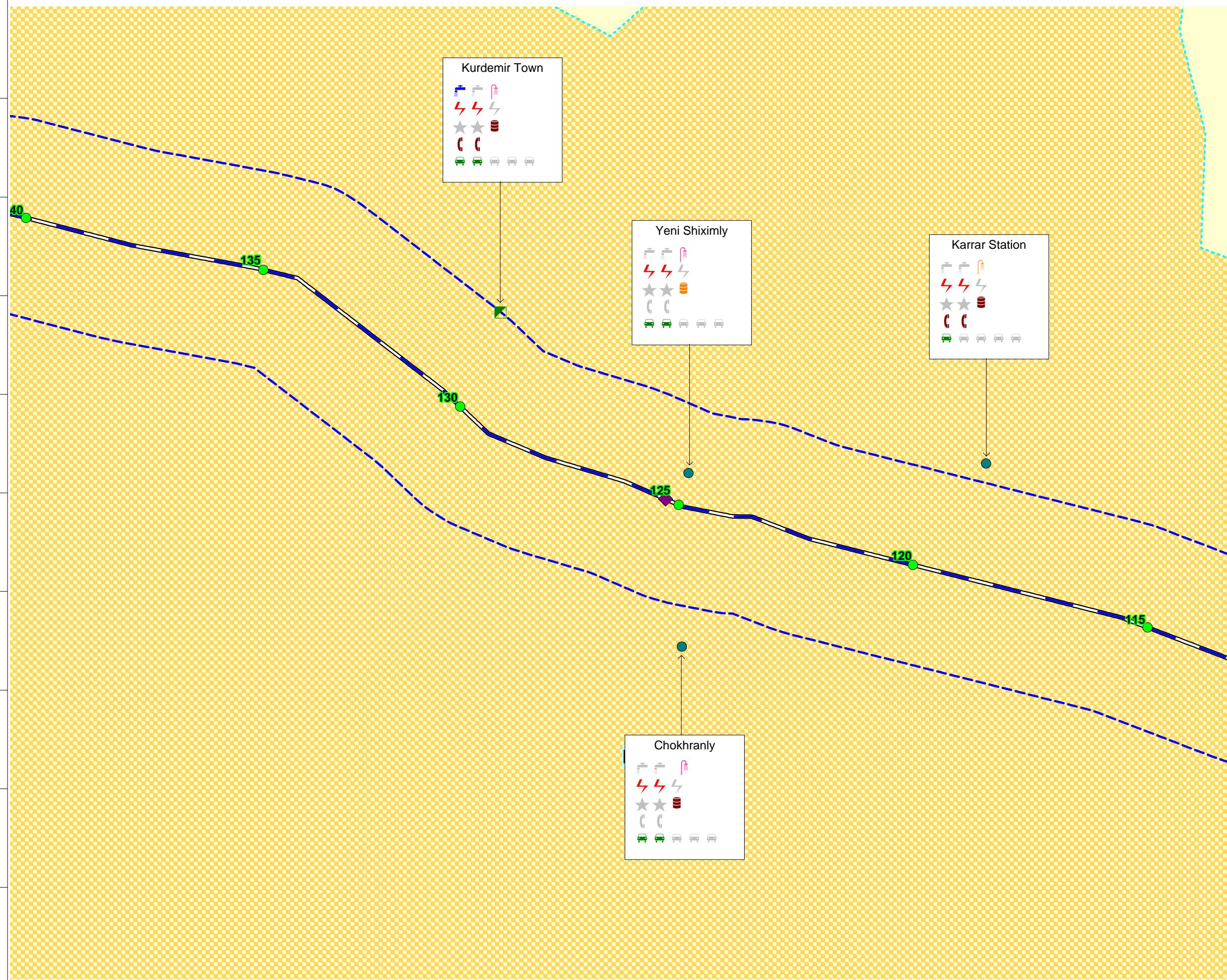
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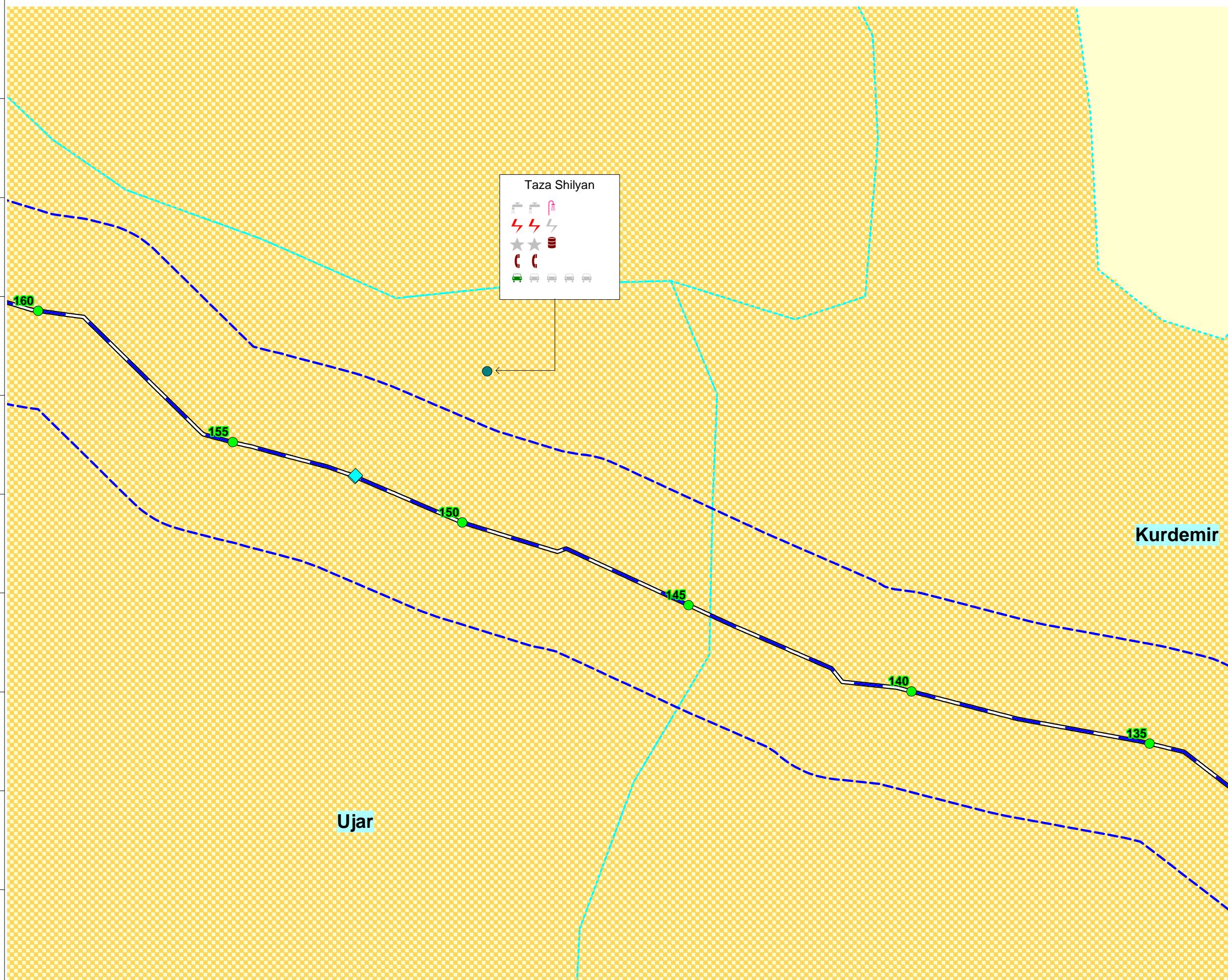
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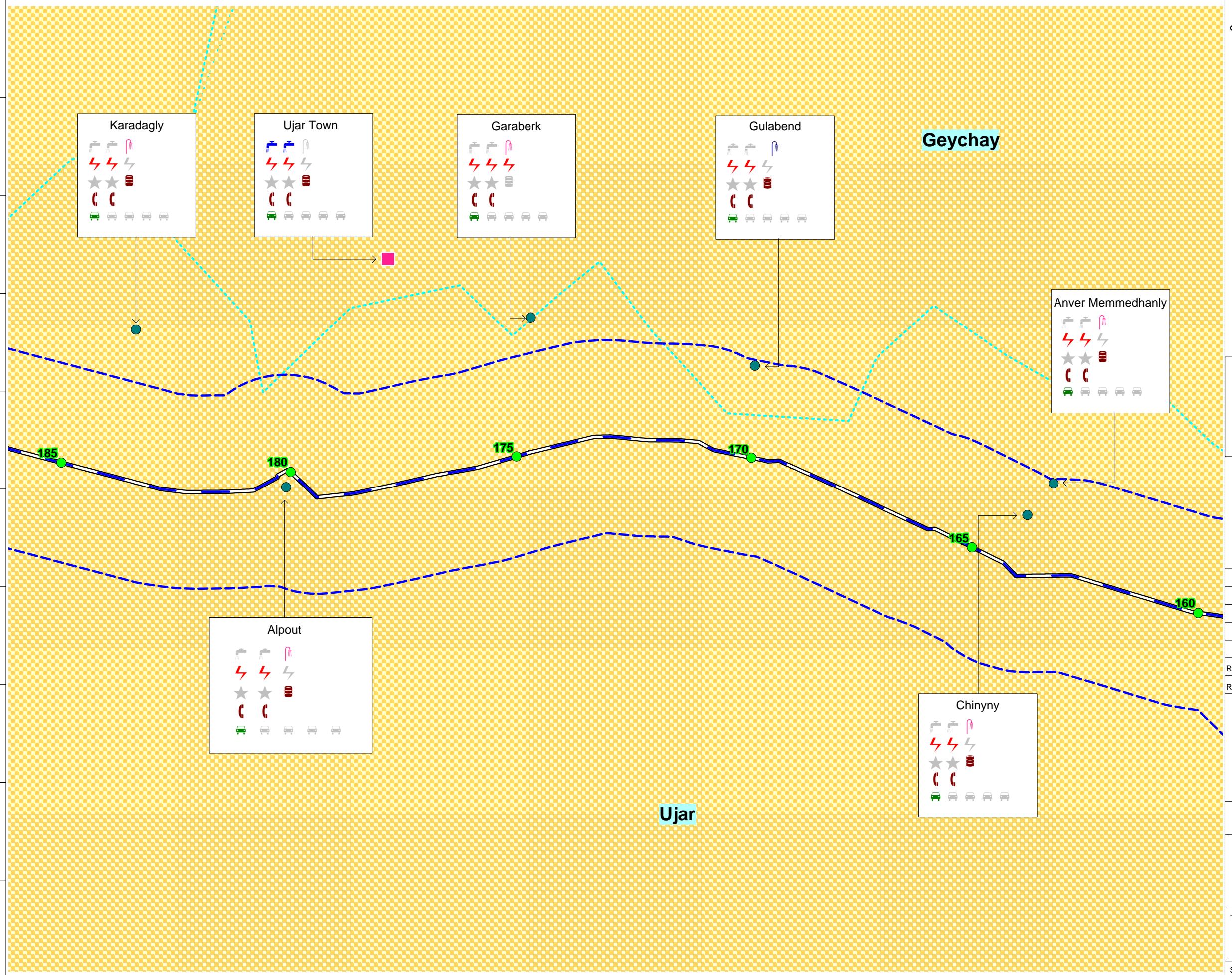
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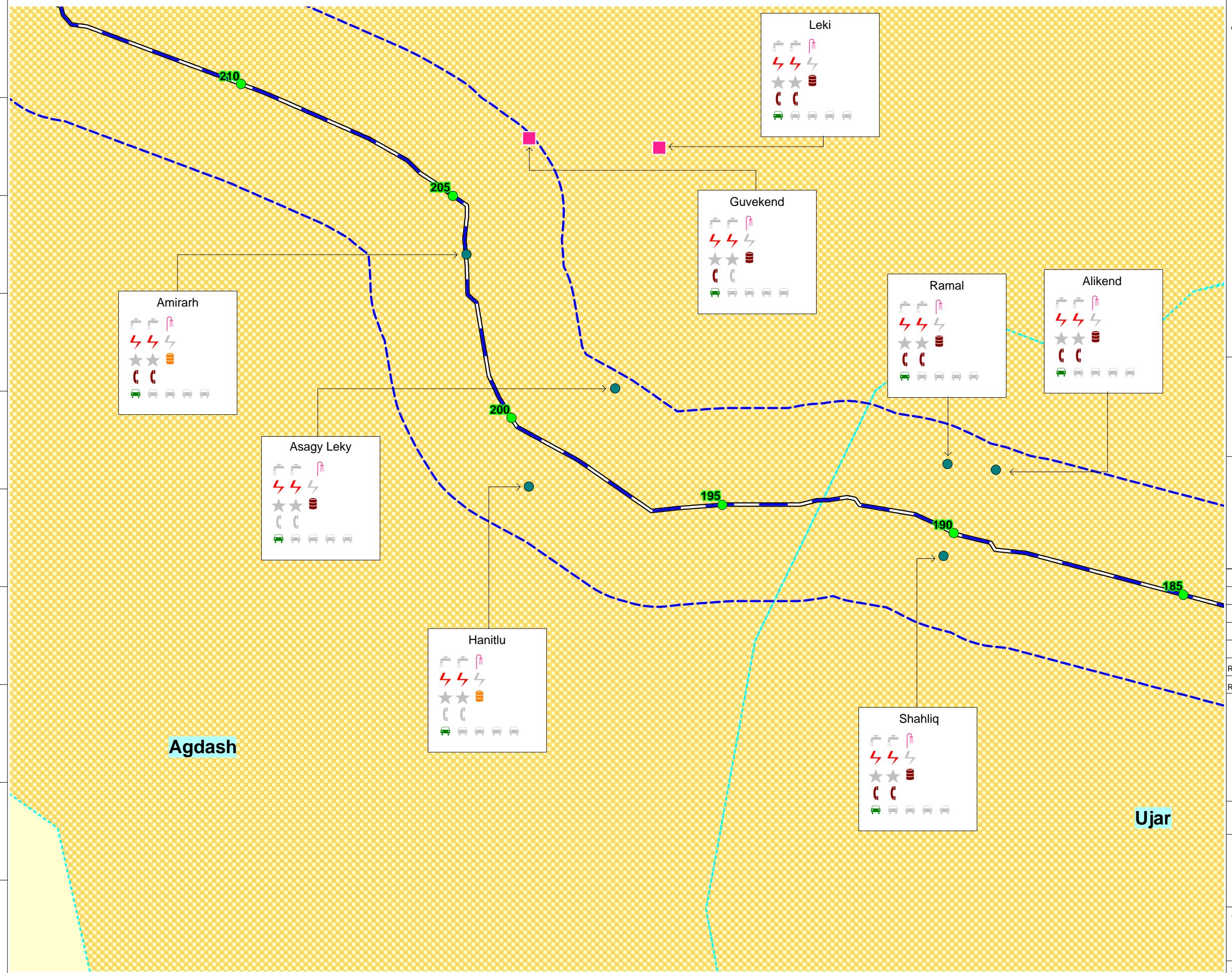
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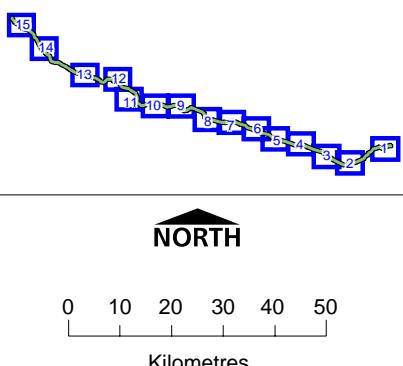




- Proposed Pipeline Route
- Settlements
- Proposed Pipeline 2km Corridor
- Administrative Boundaries
- Potential Pipe Yards
- Potential Construction Camps
- Pump Station
- Pigging Station
- Five Kilometre Marker

**Socio-Economic Survey Legend  
Included as Separate Figure**

\* Socio-Economic Data Not Available



|     |          |             |     |     |     |
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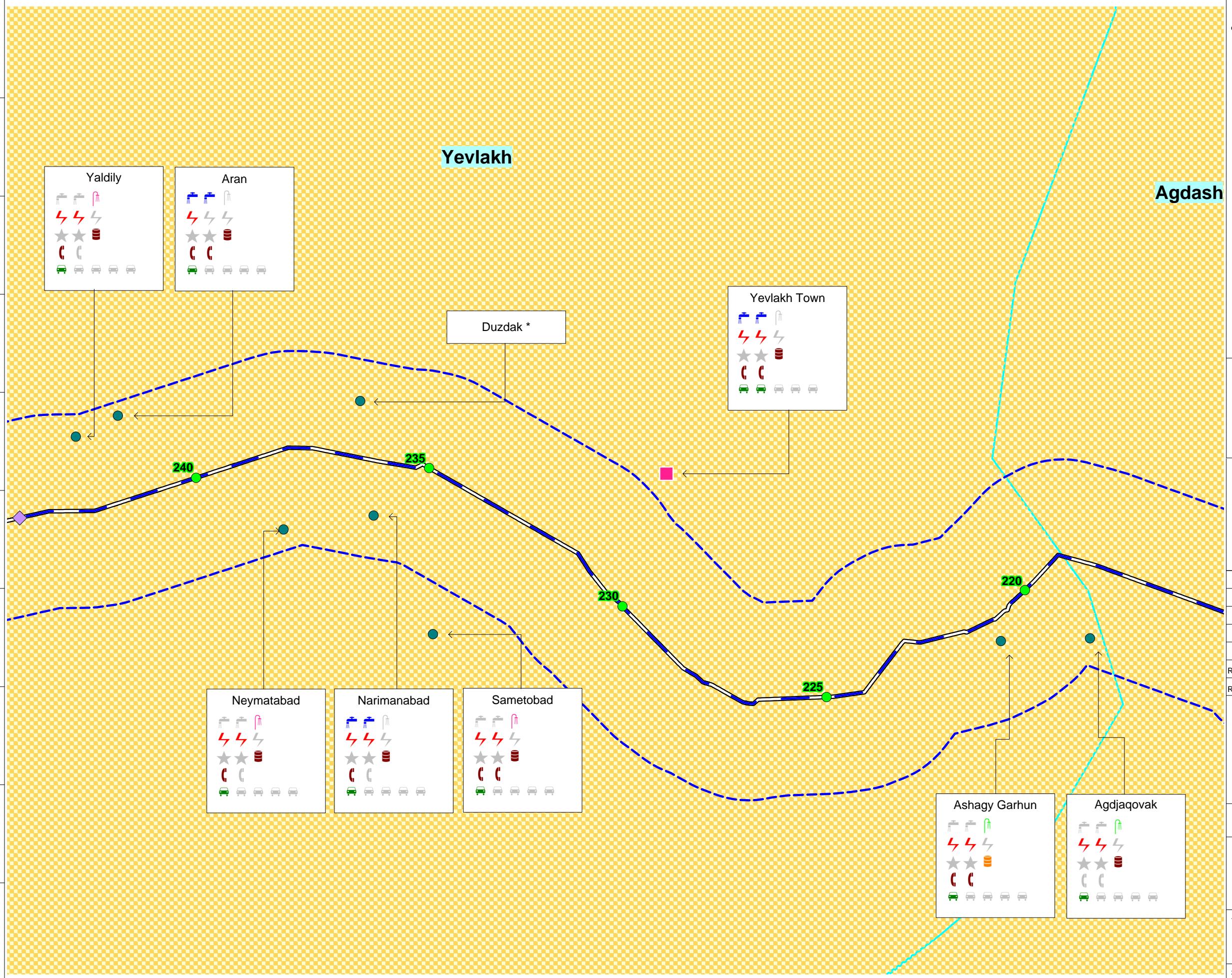


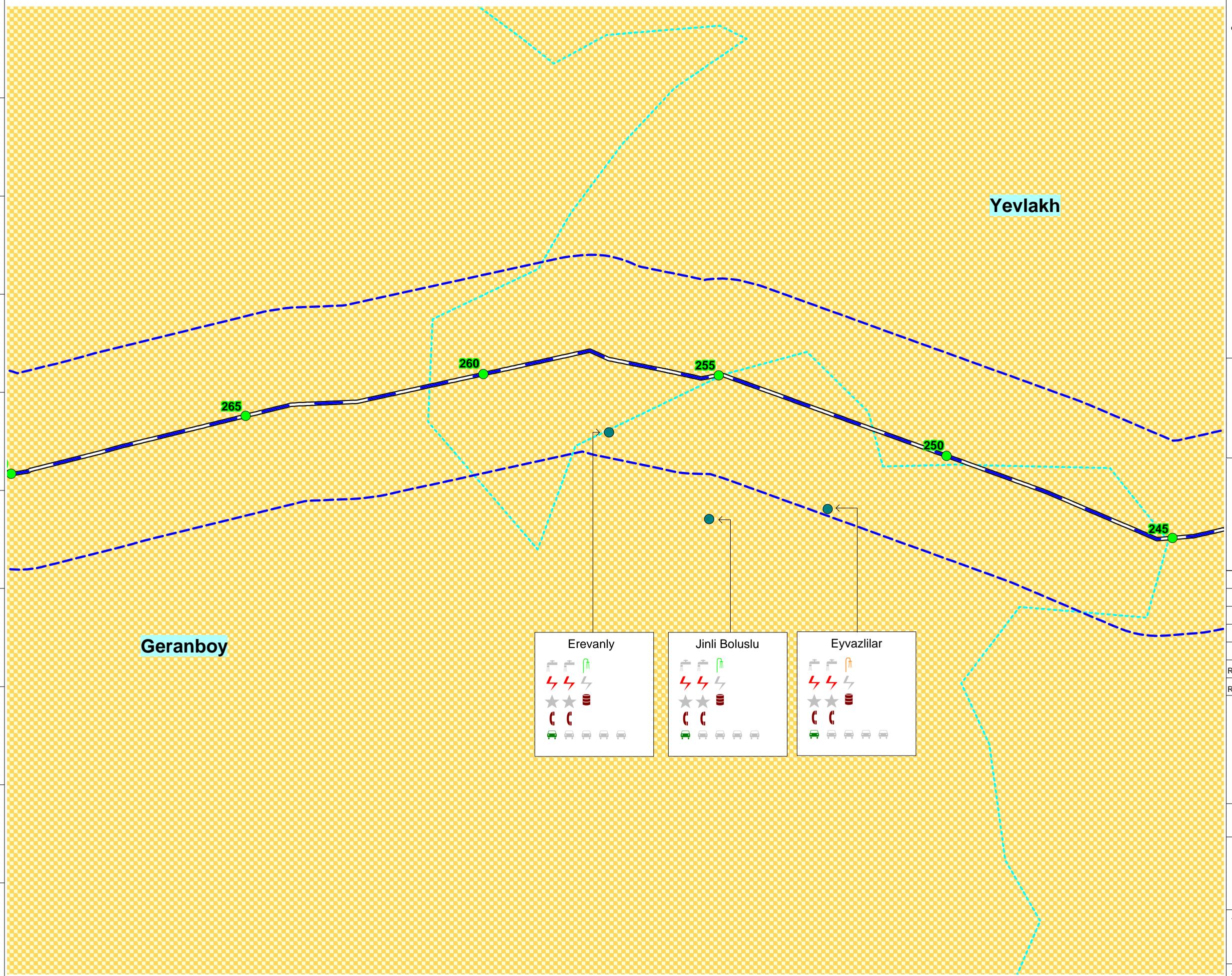
**BTC PIPELINES PROJECT**



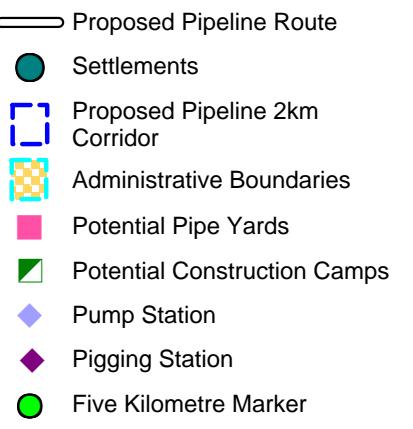
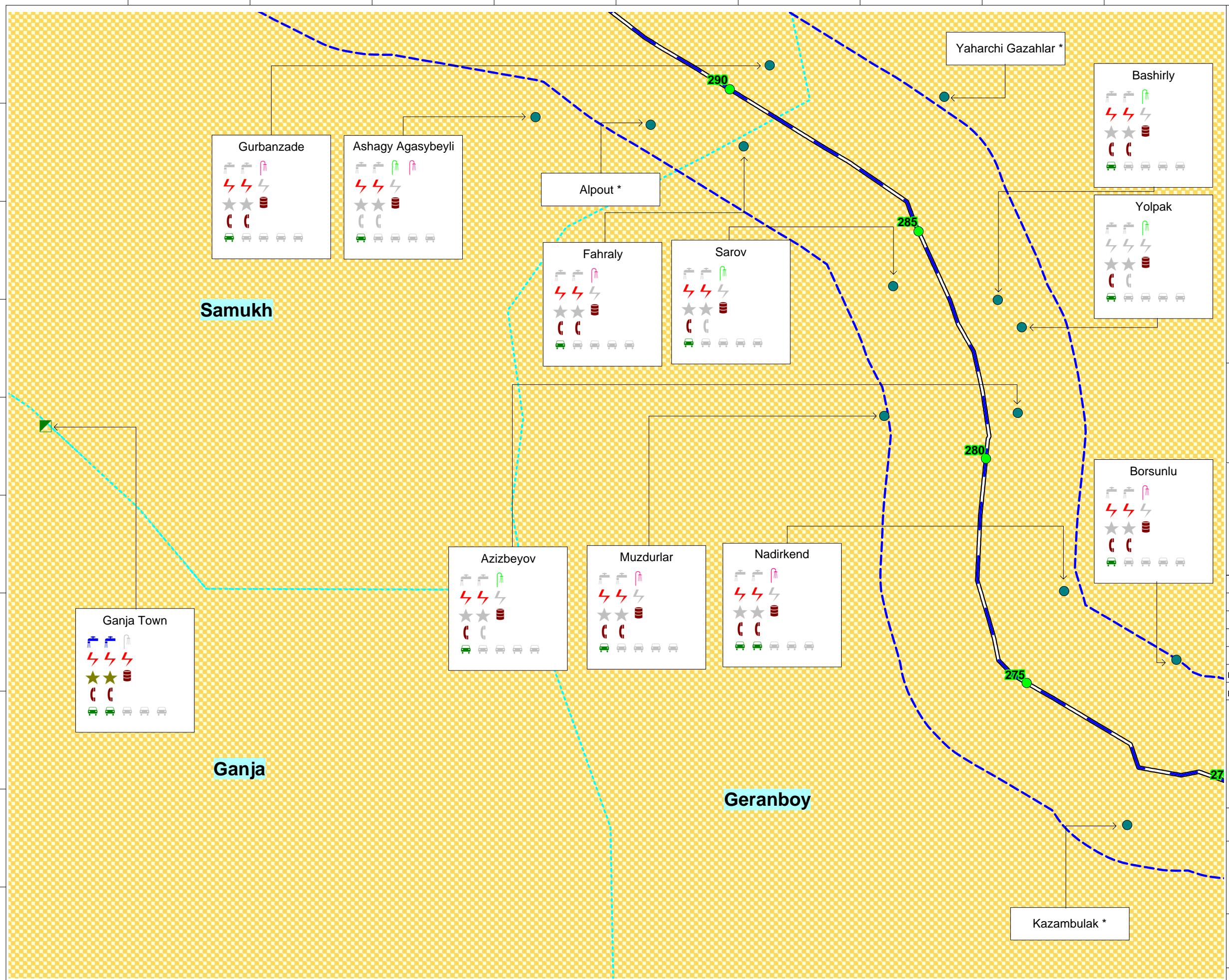
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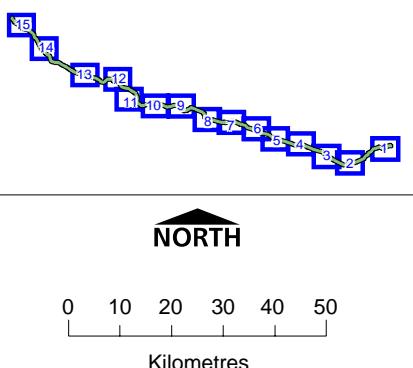


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| <b>BTC PIPELINES PROJECT</b>  |          |             |     |     |     |
| <b>ERM</b>  |          |             |     |     |     |
| TITLE: Azerbaijan Map 10: Settlements Along Pipeline Route Corridor (BTC Pipelines Project) |          |             |     |     |     |
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| FILE NAME:8338\BTC Azerbaijan Map 10.WOR  |          |             |     |     |     |



Socio-Economic Survey Legend  
Included as Separate Figure

\* Socio-Economic Data Not Available



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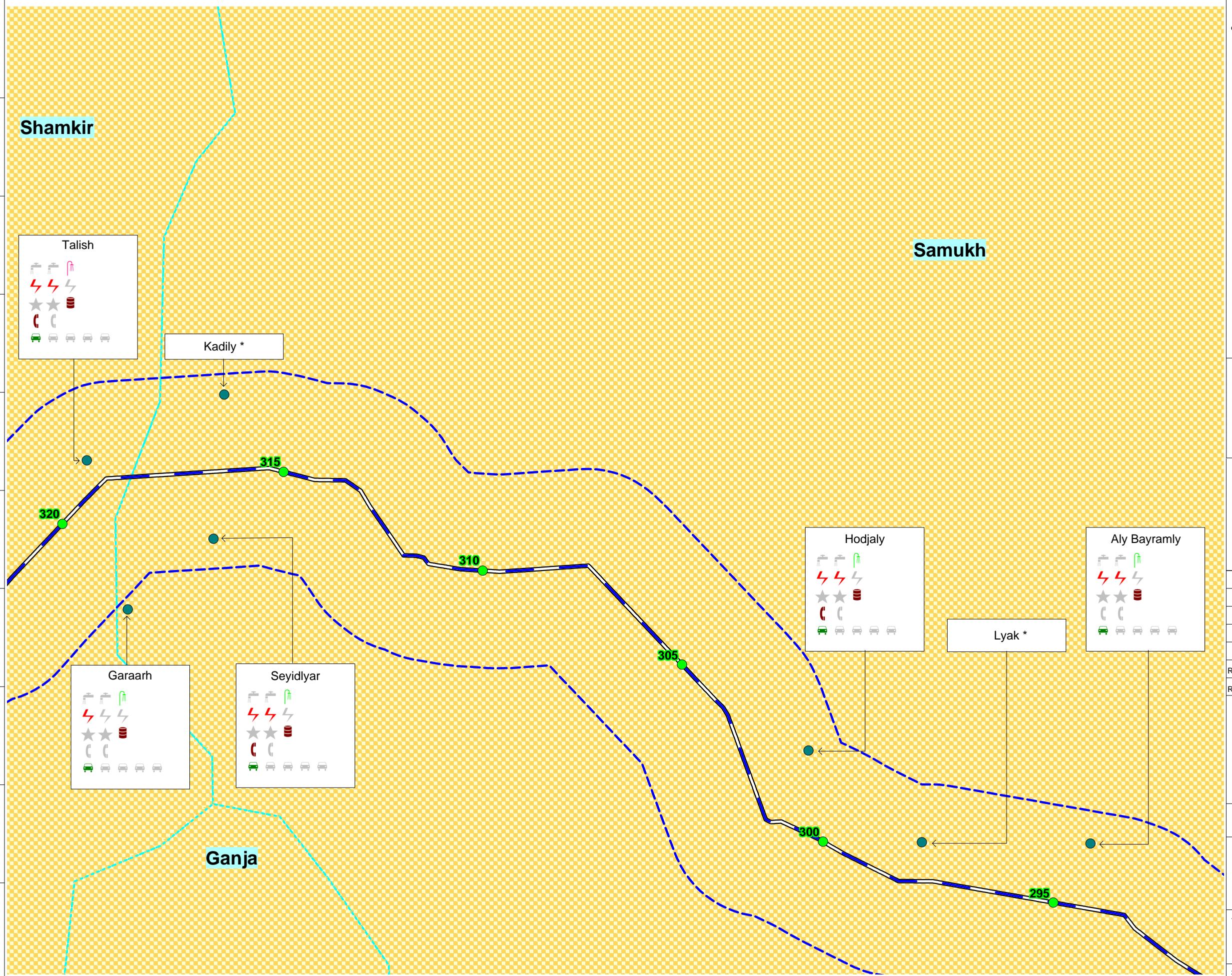


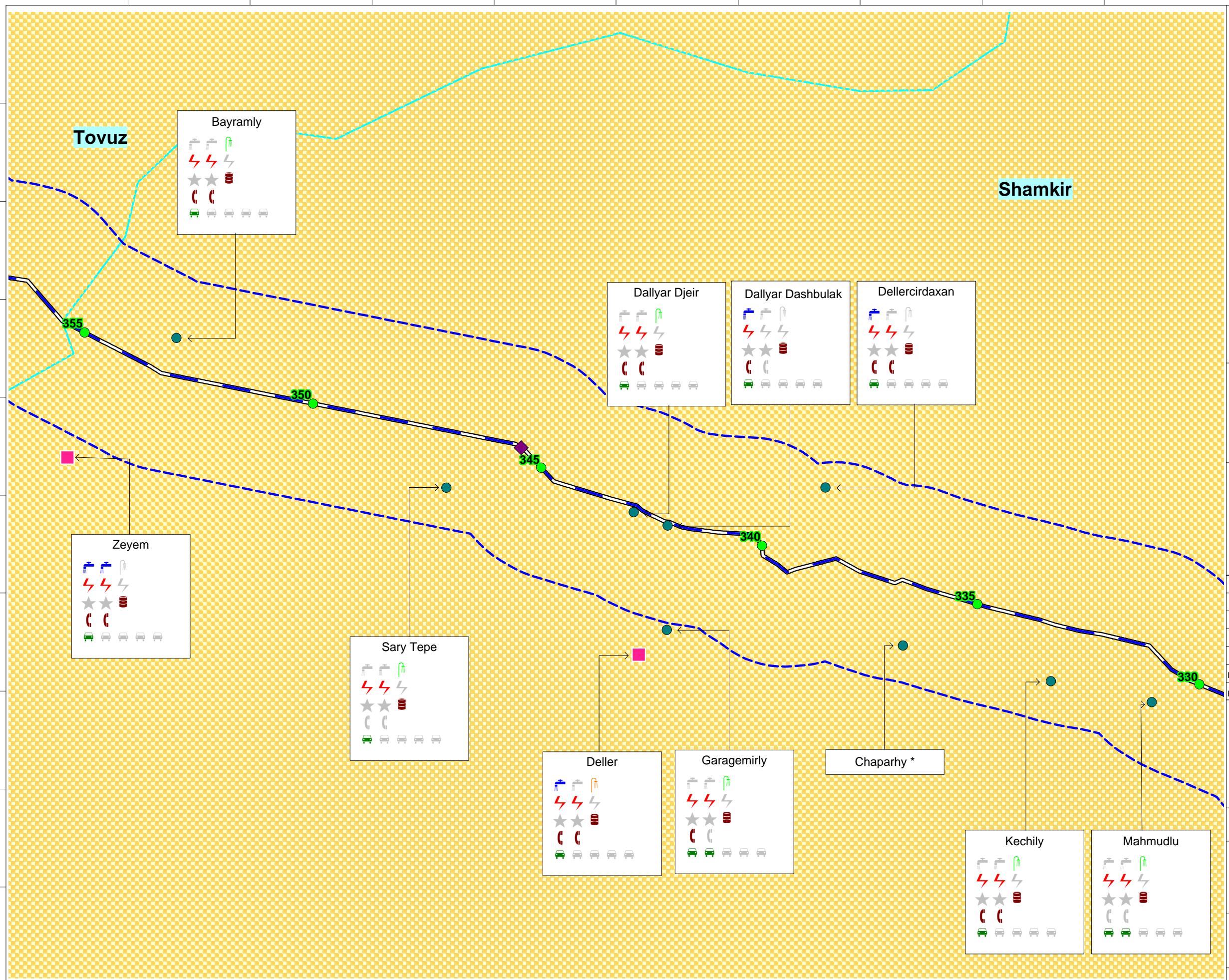
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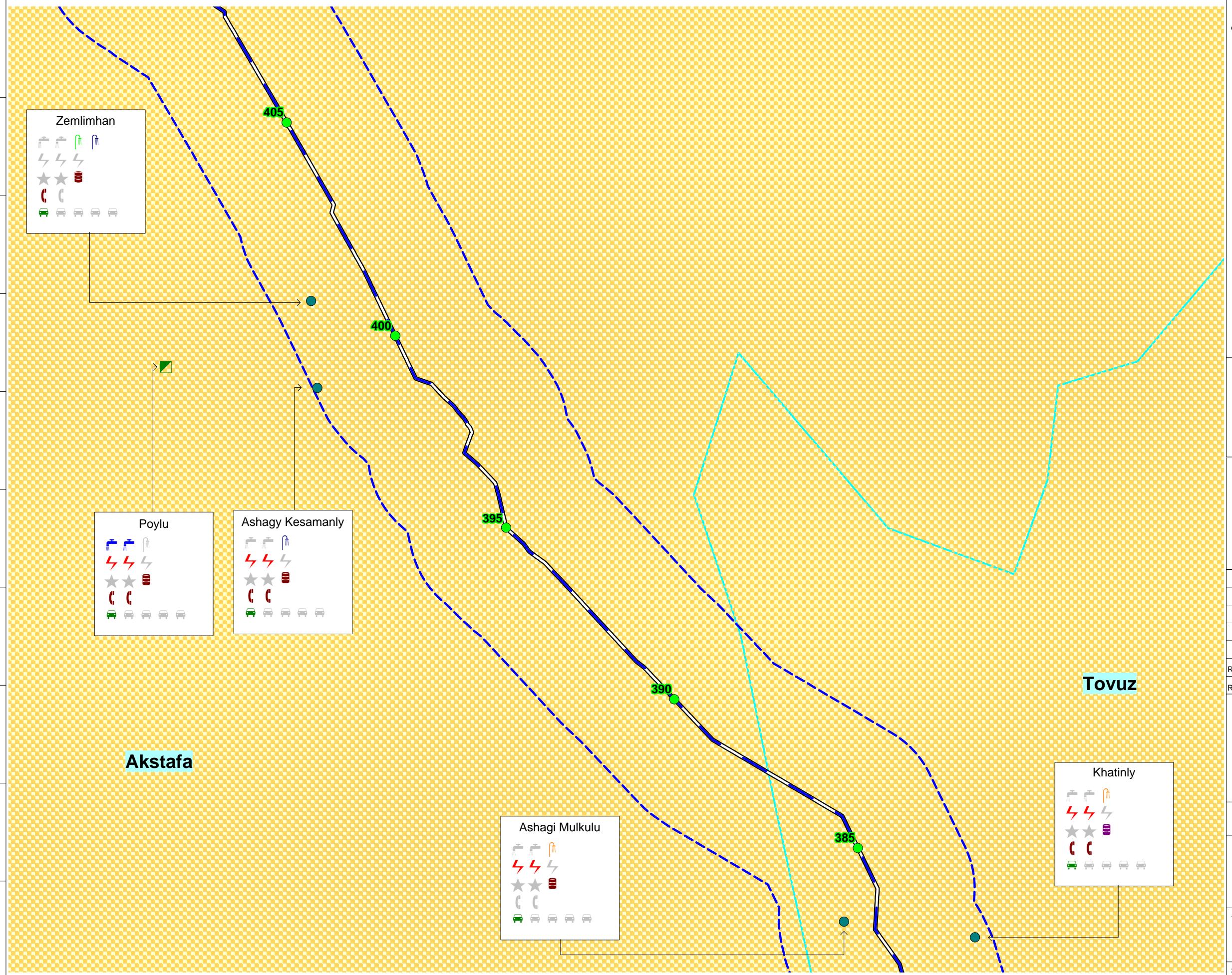


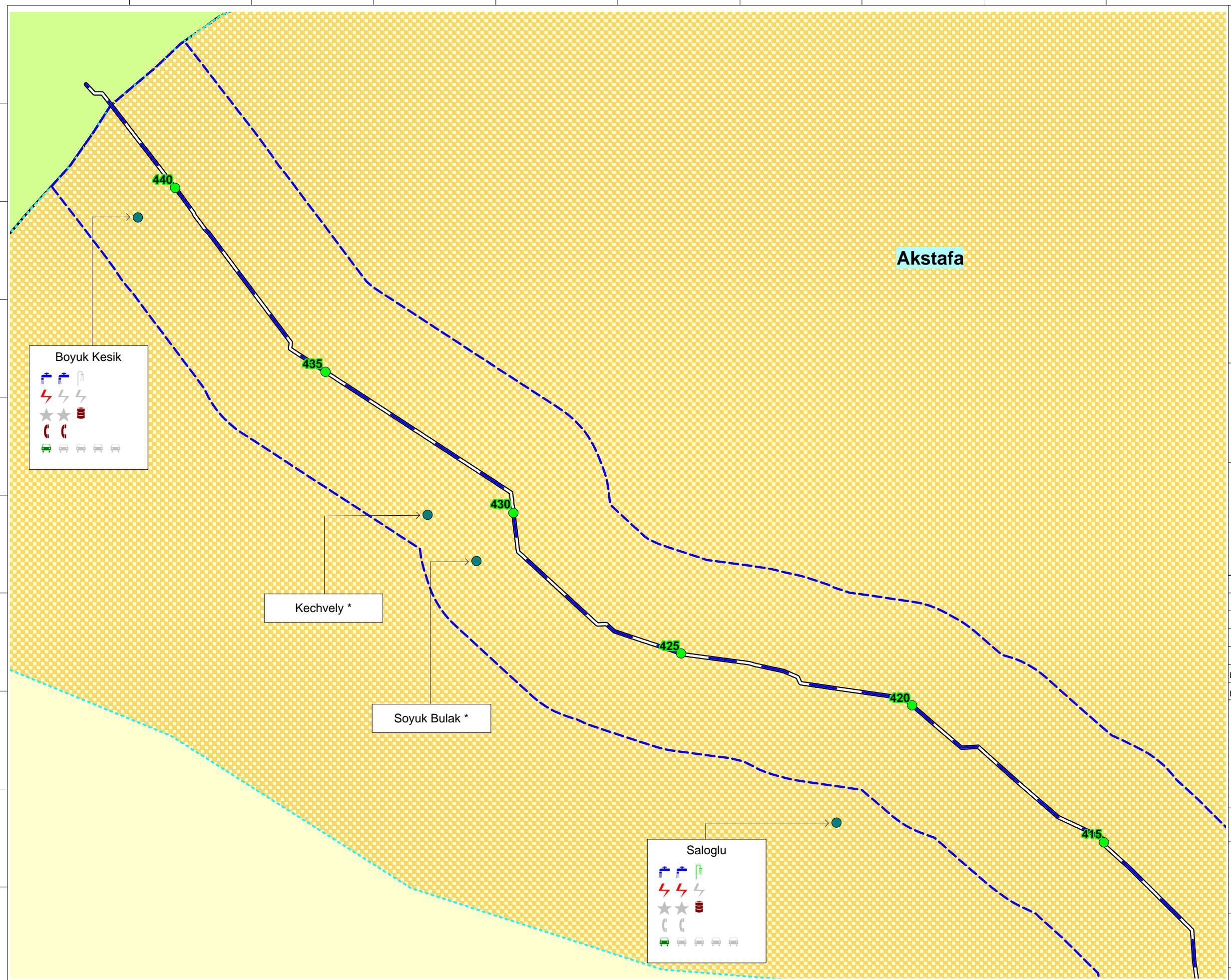
TITLE: Azerbaijan Map 11: Settlements Along Pipeline Route Corridor

SCALE: 1:75,000 REV 00





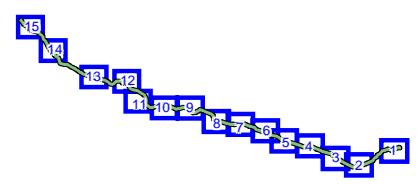




- Proposed Pipeline Route
- Settlements
- Proposed Pipeline 2km Corridor
- Administrative Boundaries
- Potential Pipe Yards
- Potential Construction Camps
- △ Pump Station
- ◆ Pigging Station
- Five Kilometre Marker

**Socio-Economic Survey Legend  
Included as Separate Figure**

\* Socio-Economic Data Not Available



NORTH

0 10 20 30 40 50  
Kilometres

|     |          |             |     |     |     |
|-----|----------|-------------|-----|-----|-----|
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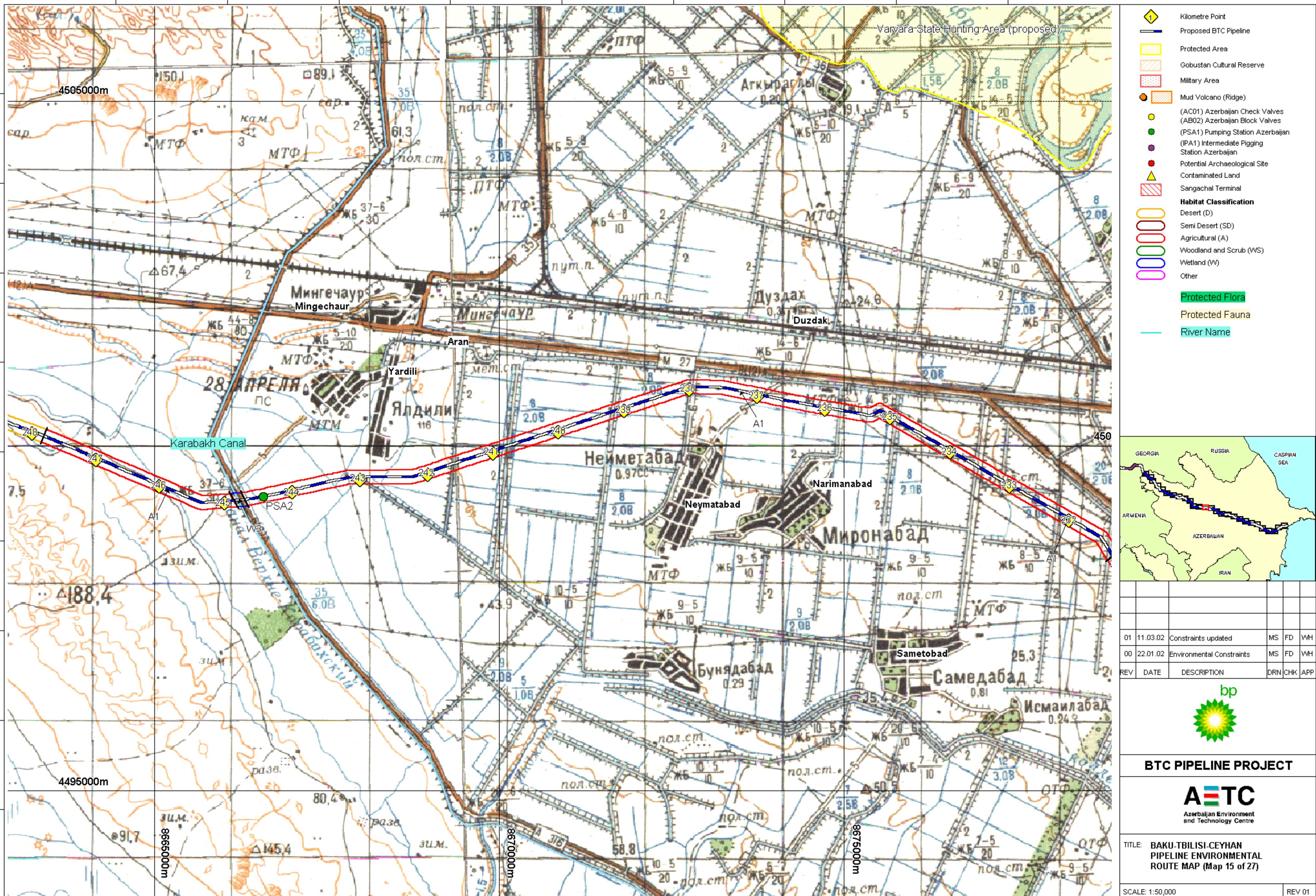


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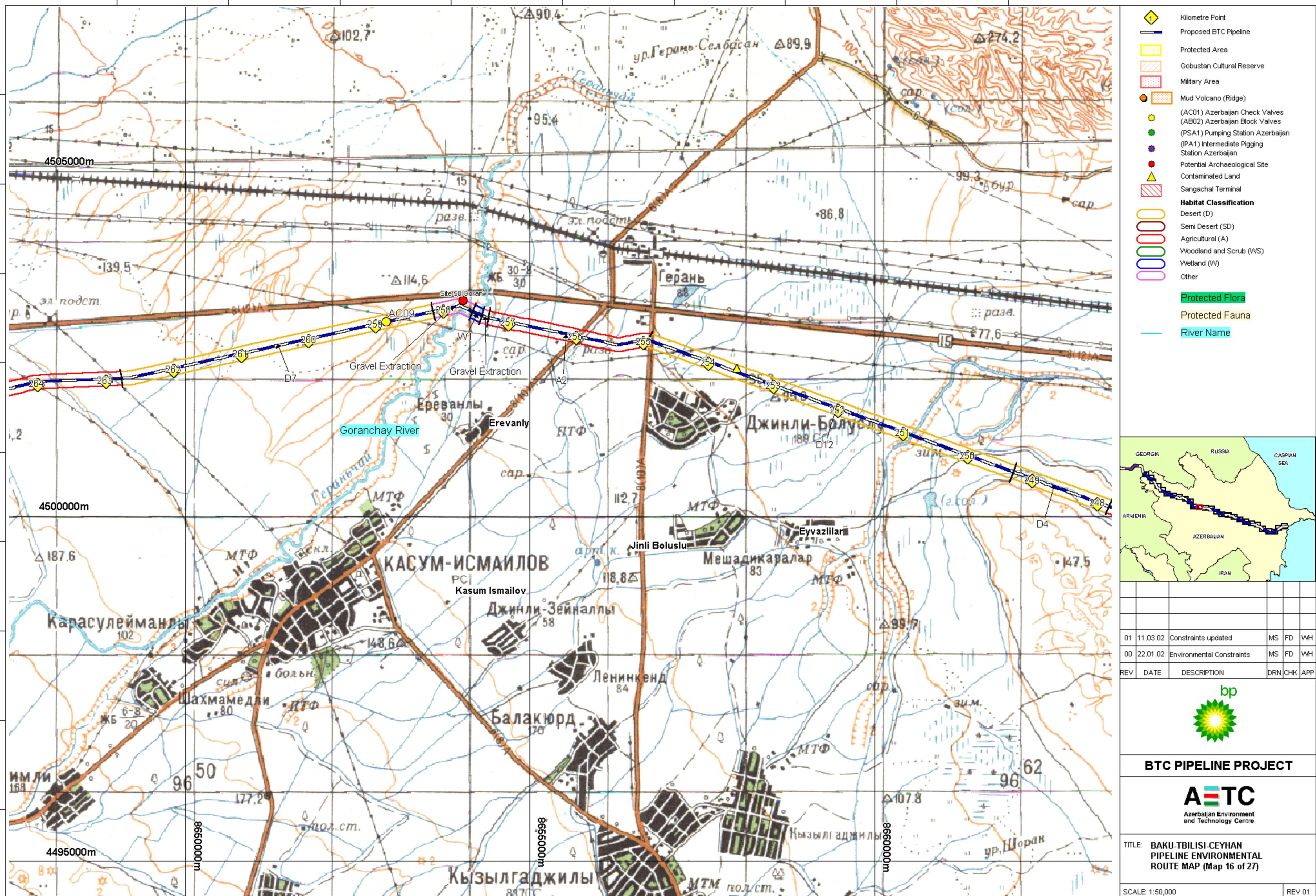


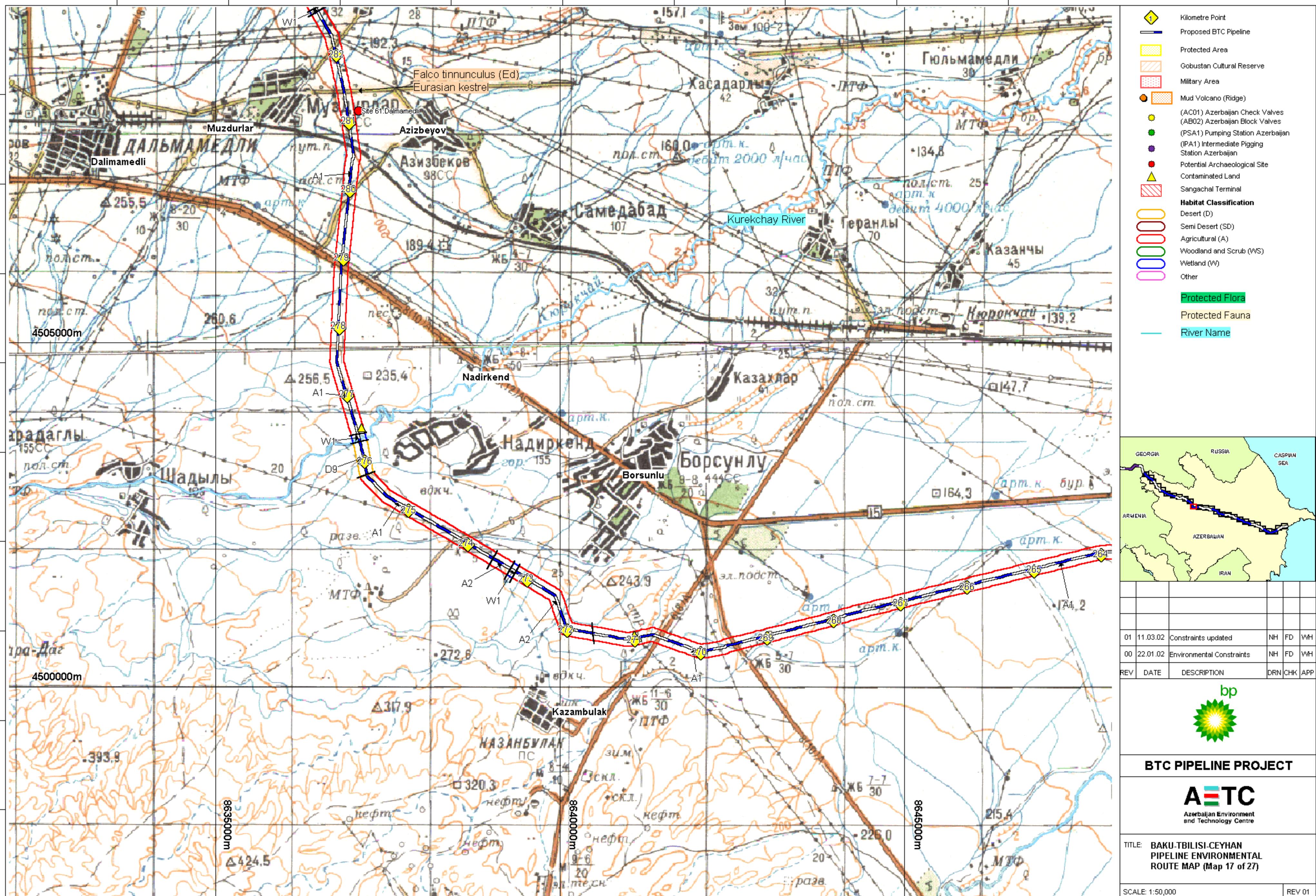
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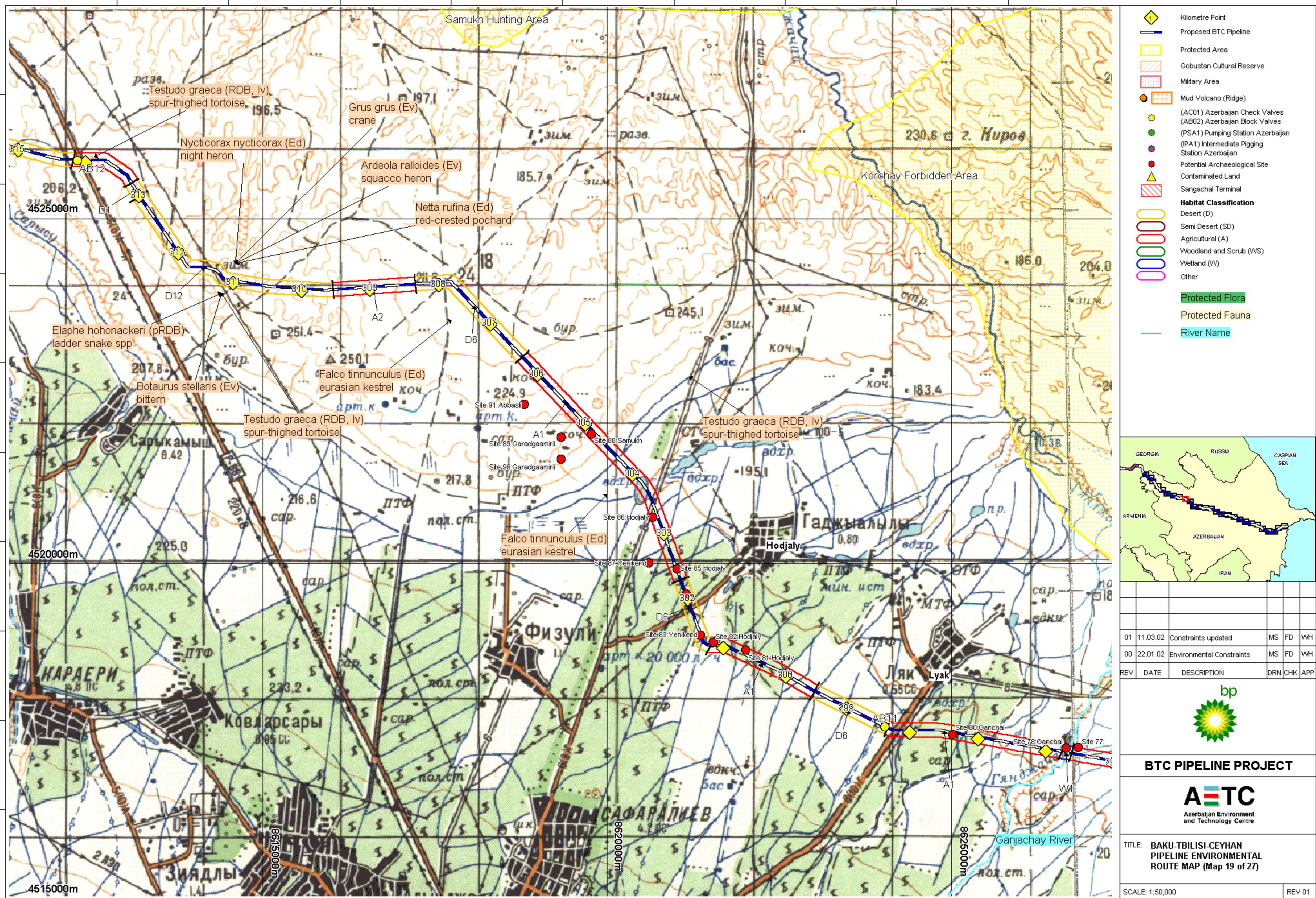


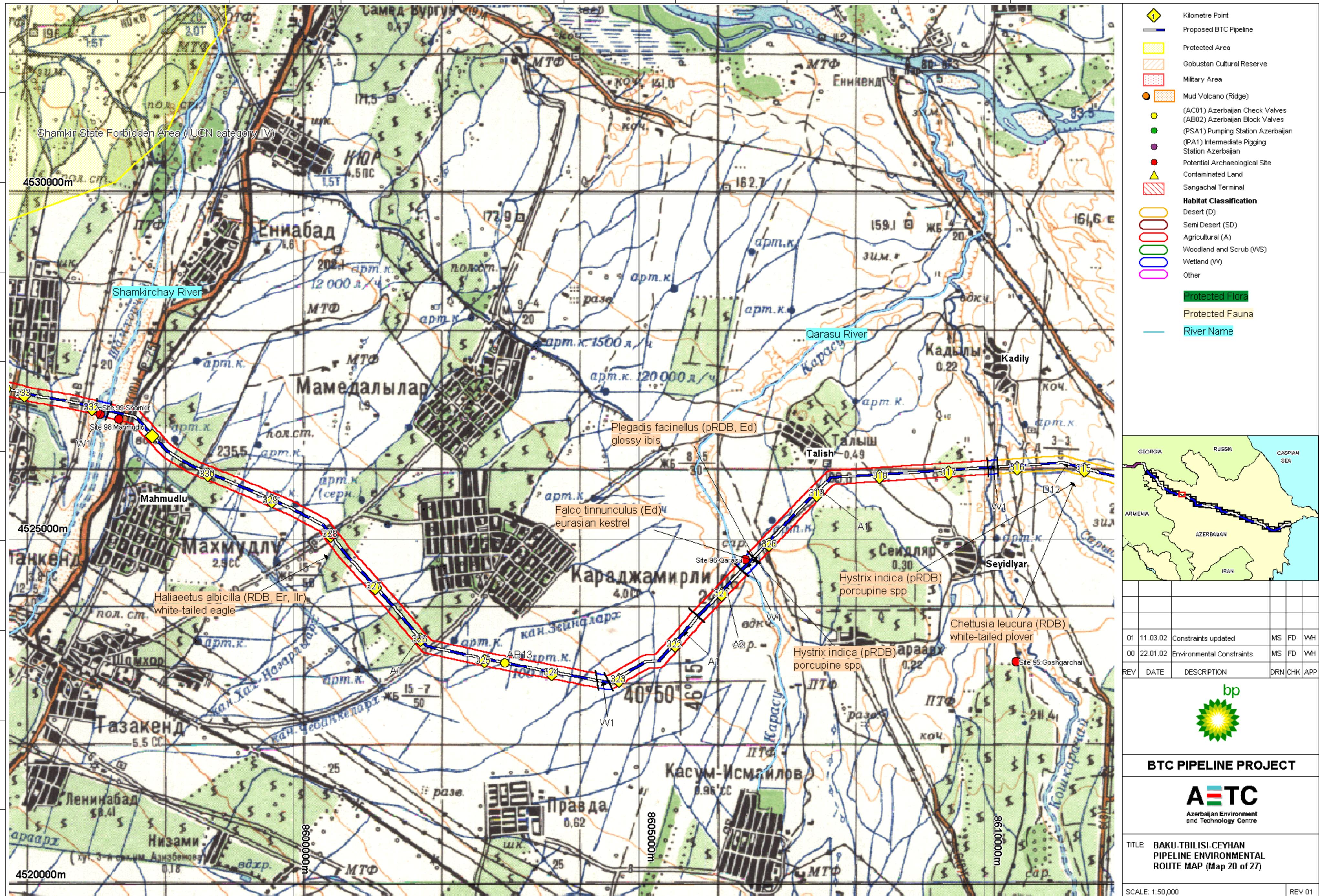


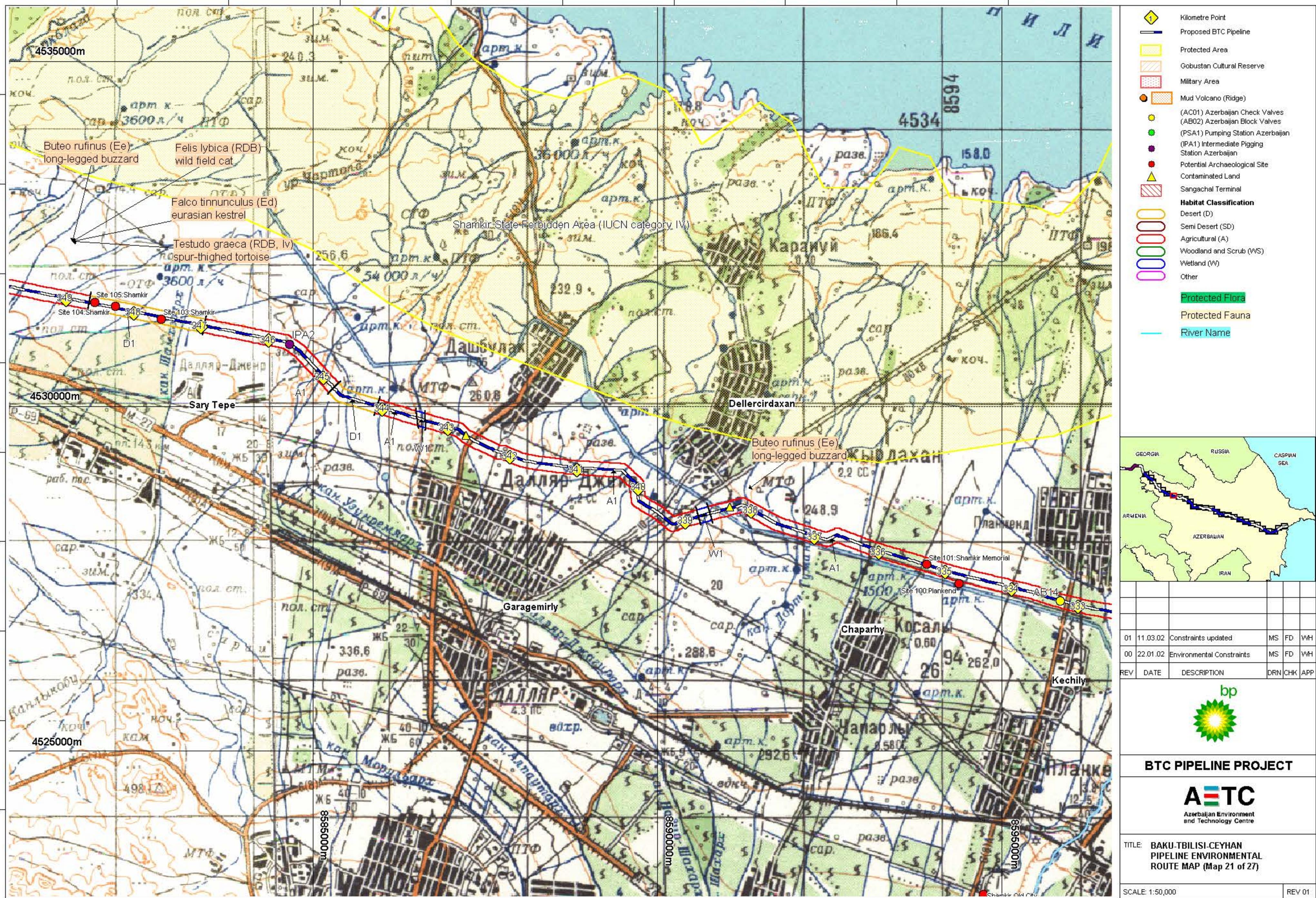
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FILE NAME: F-010781C\_CONSERVATION







FILE NAME: P8107BTC\_CONSTRAINTS21.WOR

- 1 Kilometre Point
- Proposed BTC Pipeline
- Protected Area
- Gobustan Cultural Reserve
- Military Area
- Mud Volcano (Ridge)
- (AC01) Azerbaijan Check Valves
- (AB02) Azerbaijan Block Valves
- (PSA1) Pumping Station Azerbaijan
- (IPA1) Intermediate Pigging Station Azerbaijan
- Potential Archaeological Site
- Contaminated Land
- Sangachal Terminal
- Habitat Classification
- Desert (D)
- Semi Desert (SD)
- Agricultural (A)
- Woodland and Scrub (WS)
- Wetland (W)
- Other
- Protected Flora
- Protected Fauna
- River Name



|    |          |                           |    |    |    |
|----|----------|---------------------------|----|----|----|
| 01 | 11.03.02 | Constraints updated       | MS | FD | WH |
| 00 | 22.01.02 | Environmental Constraints | MS | FD | WH |

REV DATE DESCRIPTION DRN CHK APP

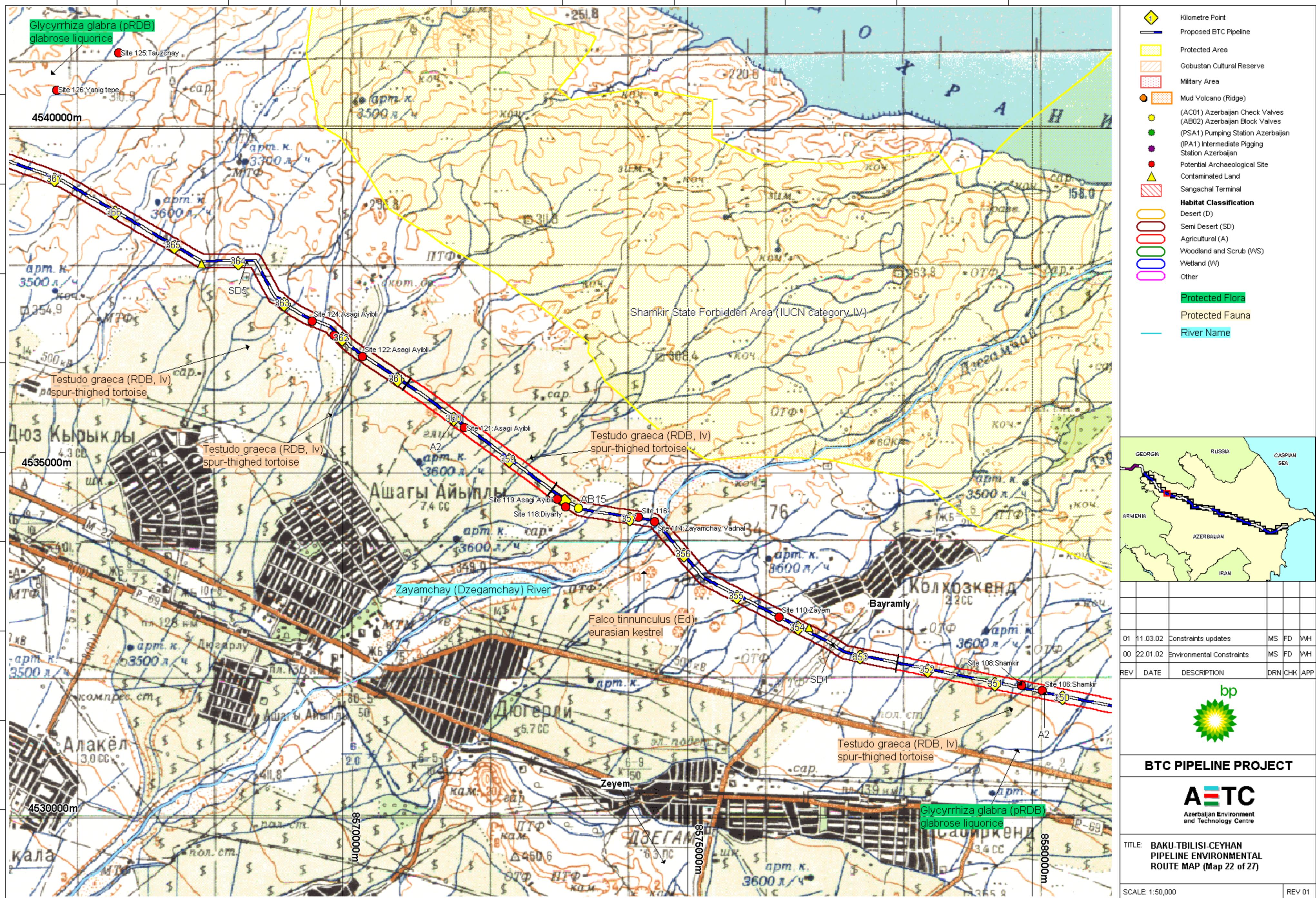


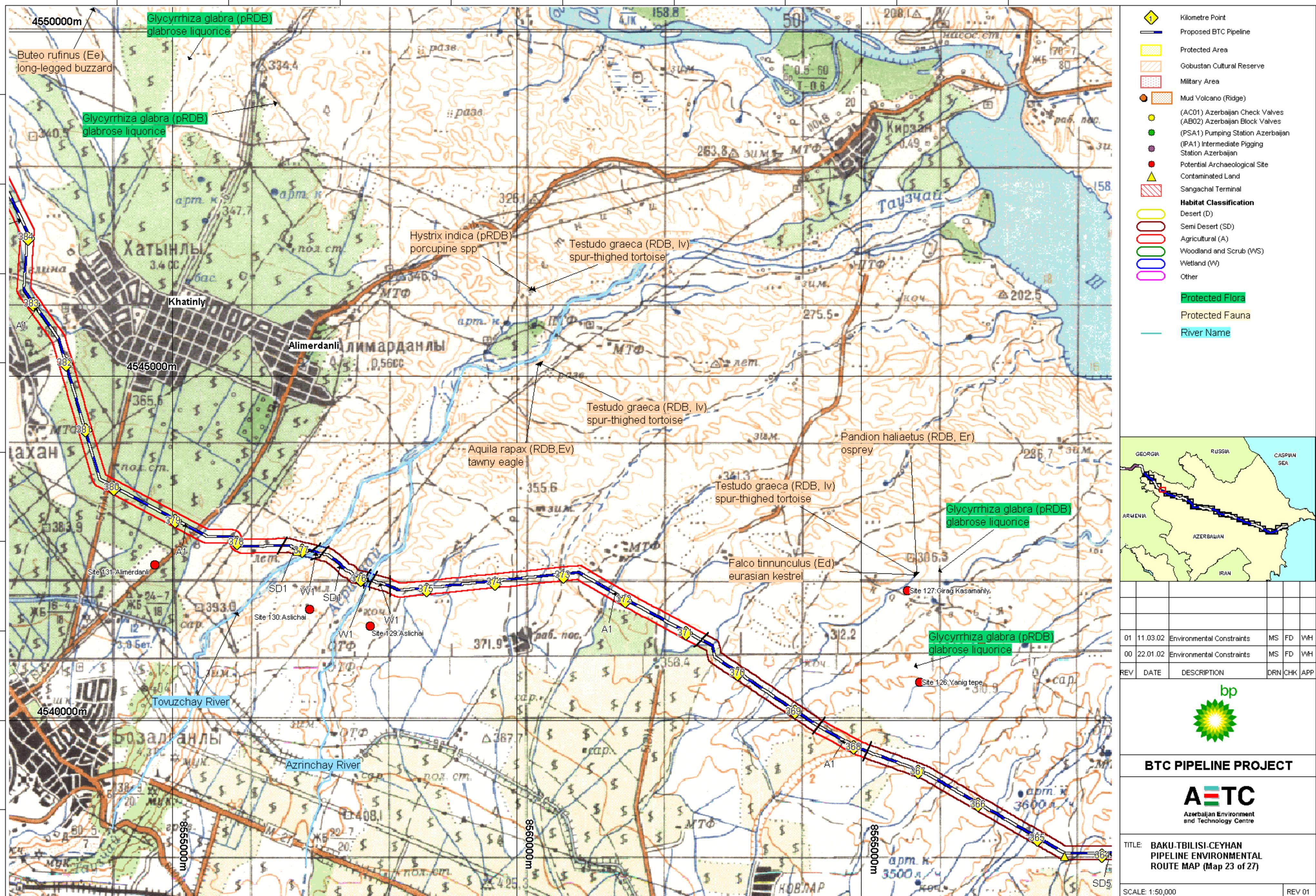
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**AETC**  
Azerbaijan Environment  
and Technology Centre

TITLE: BAKU-TBILISI-CHEYHAN  
PIPELINE ENVIRONMENTAL  
ROUTE MAP (Map 21 of 27)

SCALE: 1:50,000 REV 01





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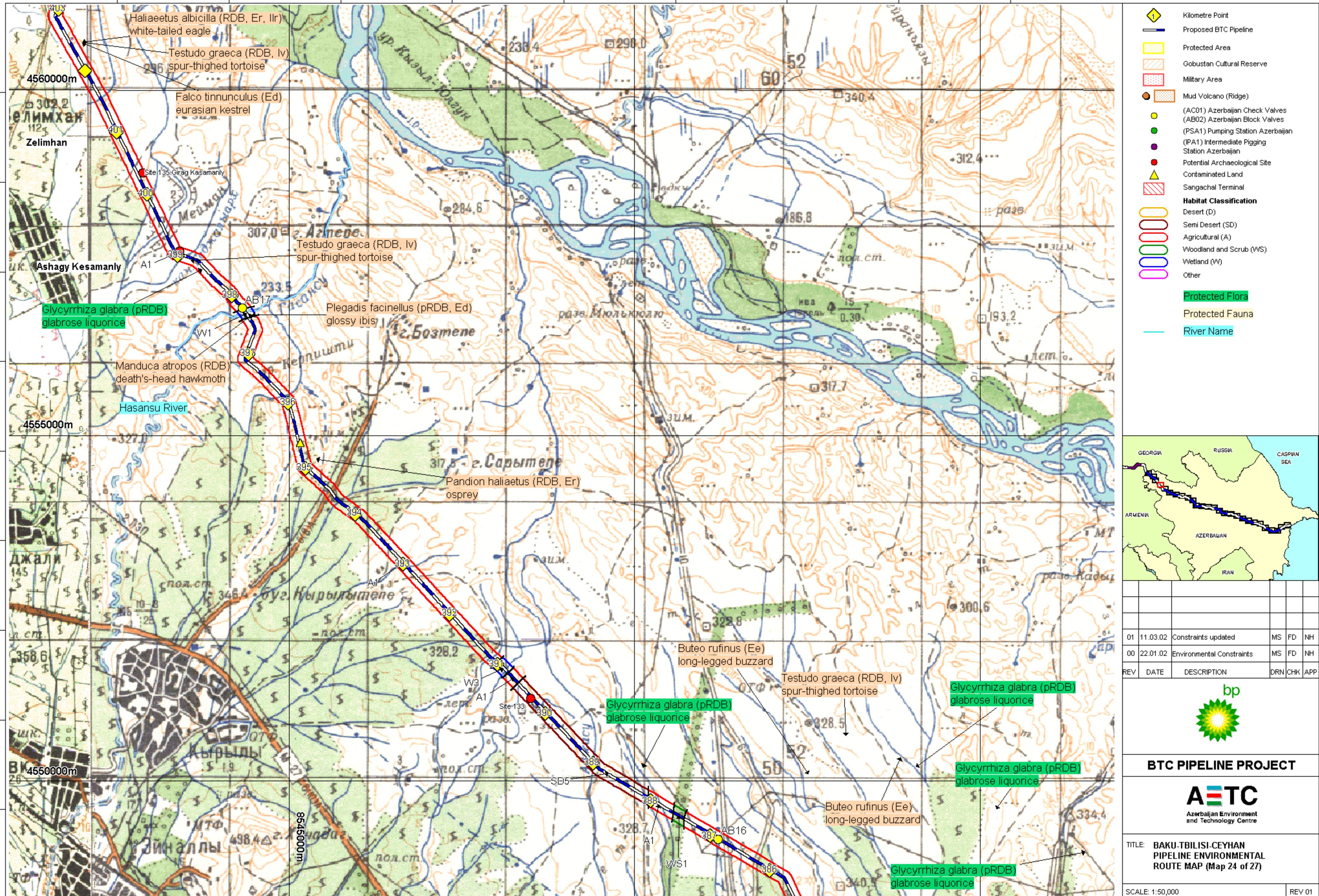


## BTC PIPELINE PROJECT

**AETC**  
Azerbaijan Environment  
and Technology Centre

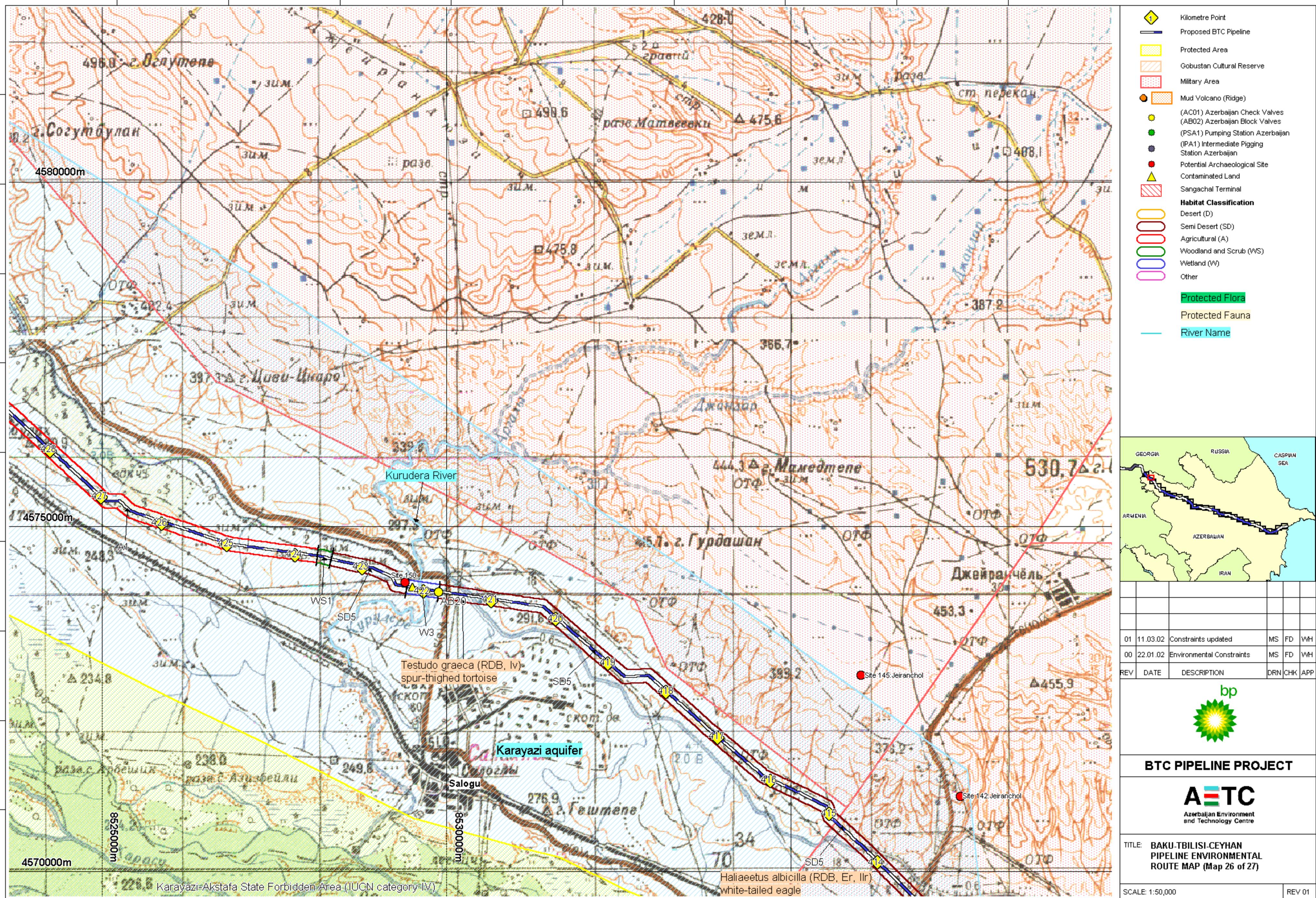
TITLE: BAKU-TBILISI-CHEYHAN  
PIPELINE ENVIRONMENTAL  
ROUTE MAP (Map 23 of 27)

SCALE: 1:50,000 REV 01





FILE NAME: F:\0777\B1C\\_CONSTRAIN\323.WOR





- ◆ Kilometre Point
- Proposed BTC Pipeline
- Protected Area
- Gobustan Cultural Reserve
- Military Area
- Mud Volcano (Ridge)
- (AC01) Azerbaijan Check Valves
- (AB02) Azerbaijan Block Valves
- (PSA1) Pumping Station Azerbaijan
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|    |          |                           |    |    |    |
|----|----------|---------------------------|----|----|----|
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| 00 | 22.01.02 | Environmental Constraints | MS | FD | WH |

| REV | DATE | DESCRIPTION | DRN | CHK | APP |
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### BTC PIPELINE PROJECT

**AETC**  
Azerbaijan Environment  
and Technology Centre

TITLE: BAKU-TBILISI-CHEYHAN  
PIPELINE ENVIRONMENTAL  
ROUTE MAP (Map 27 of 27)

SCALE: 1:50,000 REV 01