

PLAN
DIVERSION STRUCTURE FOR BYPASS CHANNEL

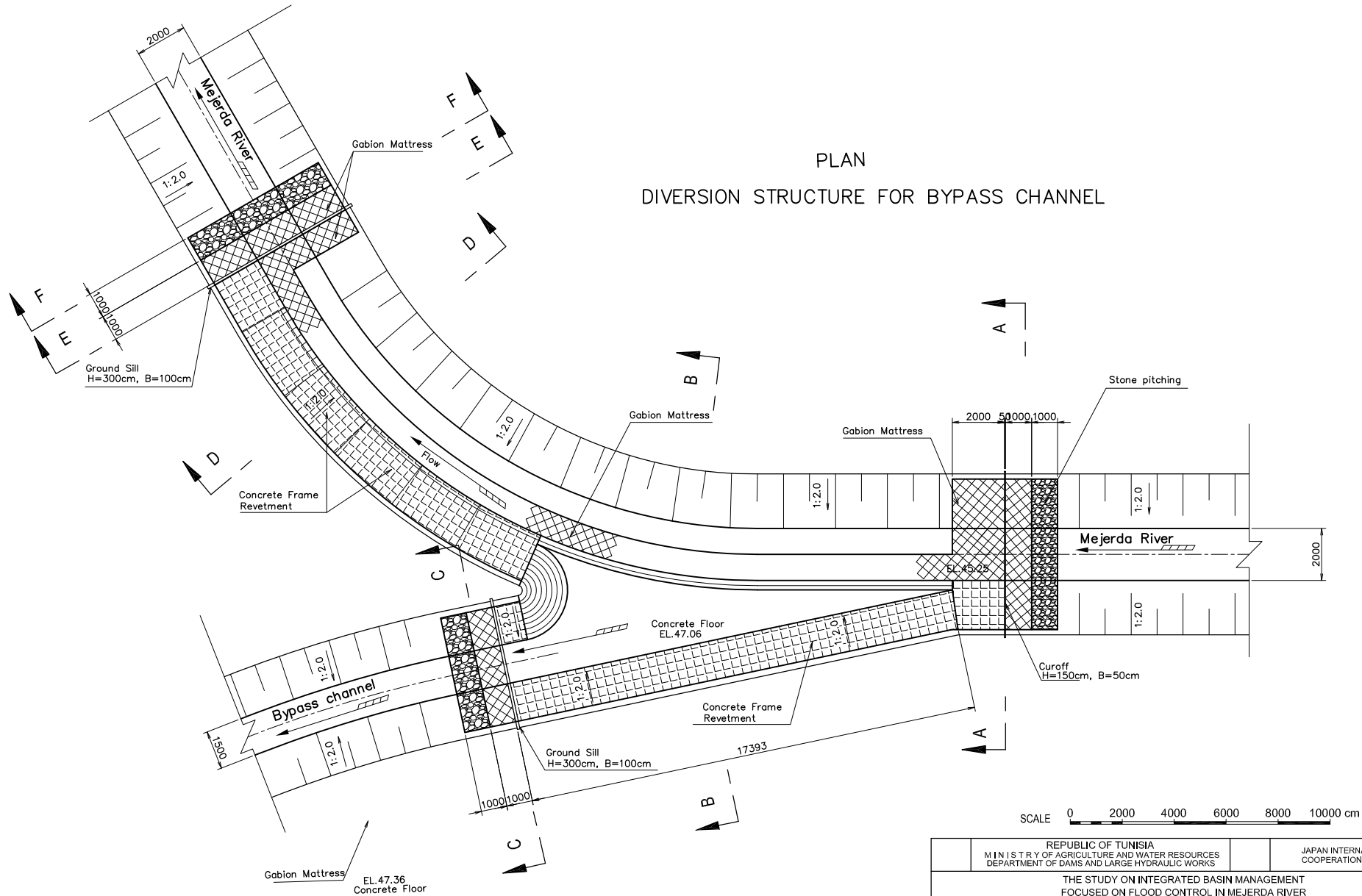


図9.1.5 メジェズエルバブバイパス水路 (Zone D1) の取水施設図

REPUBLIC OF TUNISIA MINISTRY OF AGRICULTURE AND WATER RESOURCES DEPARTMENT OF DAMS AND LARGE HYDRAULIC WORKS		JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL IN MEJERDA RIVER		
DRAWING TITLE	MEJEZ EL BAB BYPASS CHANNEL (ZONE D1) INLET STRUCTURE OF BYPASS CHANNEL	SHEET NO.
NIPPON KOEI Co., Ltd.		

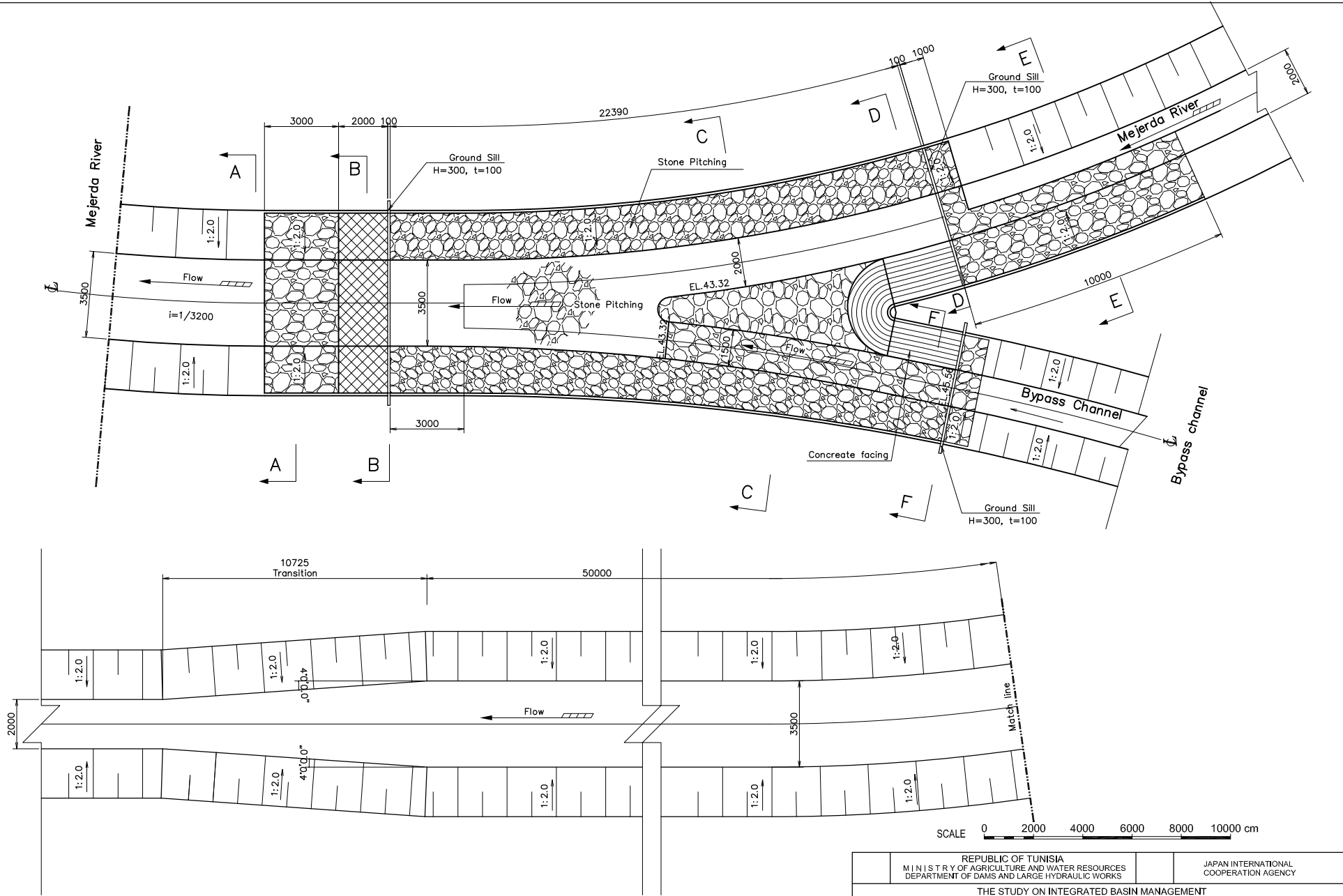


図9.1.6 メジェズエルバブバイパス水路 (Zone D1) の放流施設図

REPUBLIC OF TUNISIA MINISTRY OF AGRICULTURE AND WATER RESOURCES DEPARTMENT OF DAMS AND LARGE HYDRAULIC WORKS		JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL IN MEJERDA RIVER		
DRAWING TITLE	MEJEZ EL BAB BYPASS CHANNEL (ZONE D1) PLAN OF OUTLET STRUCTURE	SHEET NO.
NIPPON KOEI Co., Ltd.		

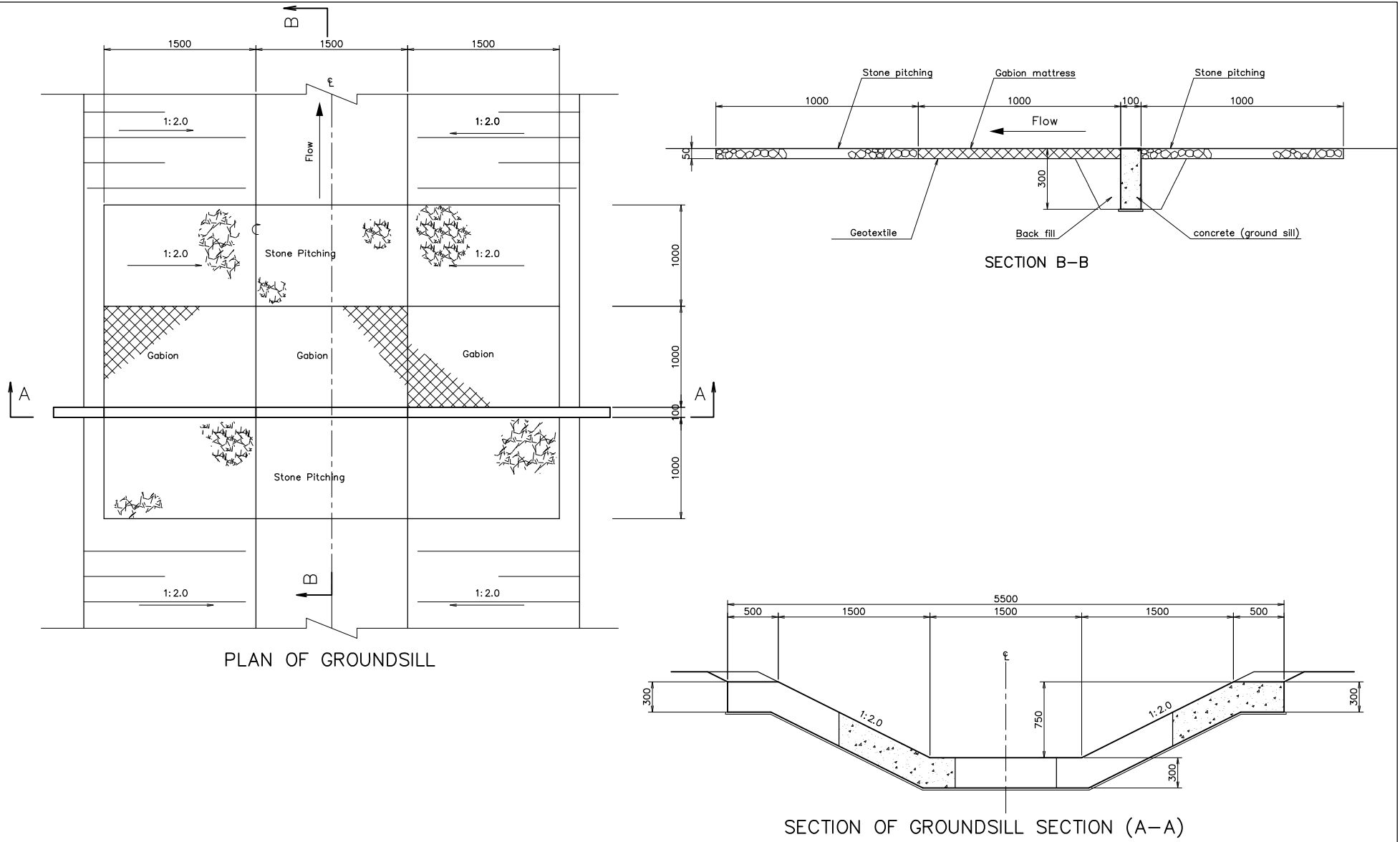
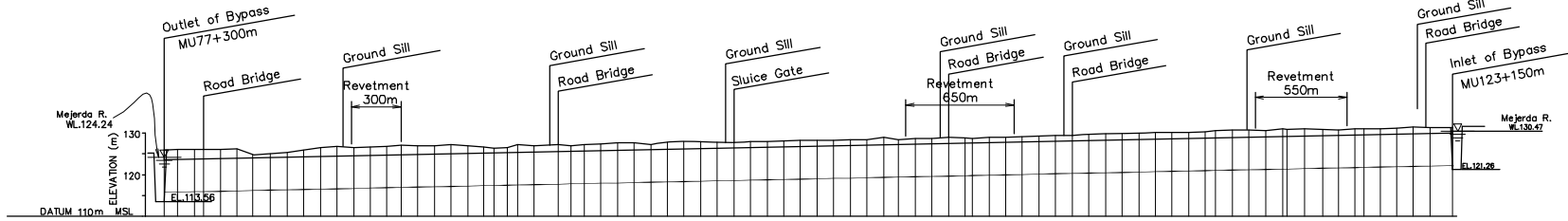
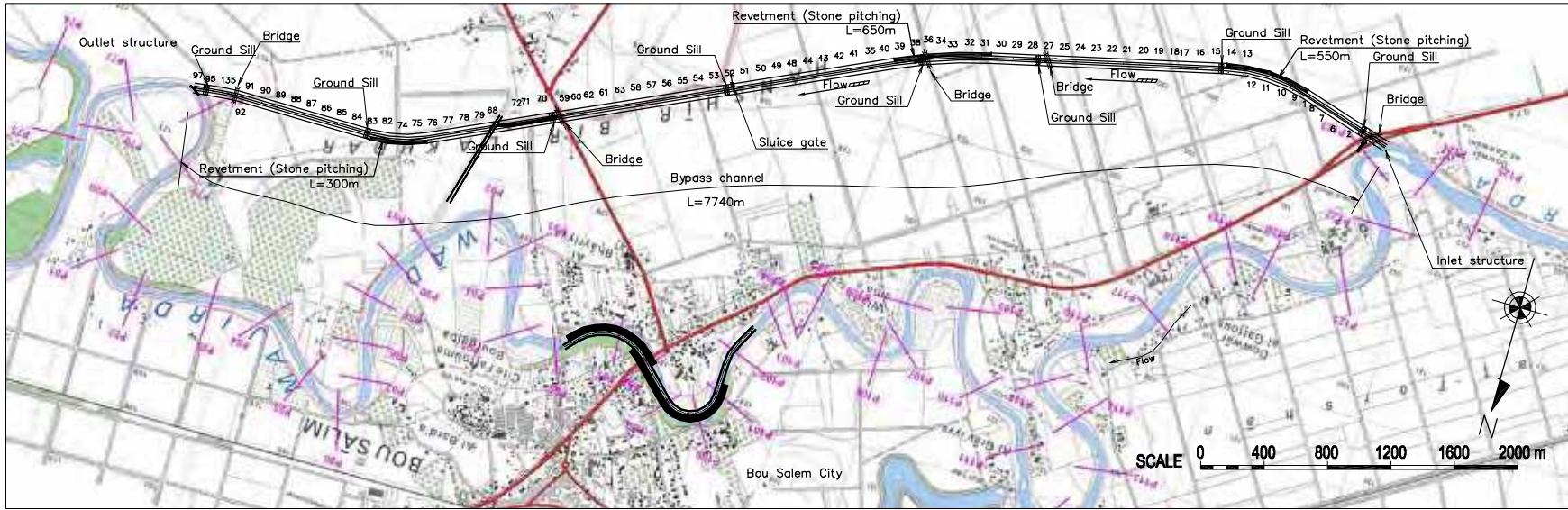


図9.1.7 メジェズエルバブバイパス水路 (Zone D1) の床固工標準図

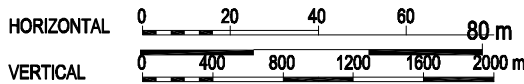
REPUBLIC OF TUNISIA MINISTRY OF AGRICULTURE AND WATER RESOURCES DEPARTMENT OF DAMS AND LARGE HYDRAULIC WORKS		JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL IN MEJERDA RIVER		
DRAWING TITLE	MEJEZ EL BAB BYPASS CHANNEL (ZONE D1) TYPICAL DESIGN OF GROUND SILL	SHEET NO.
NIPPON KOEI Co., Ltd.		



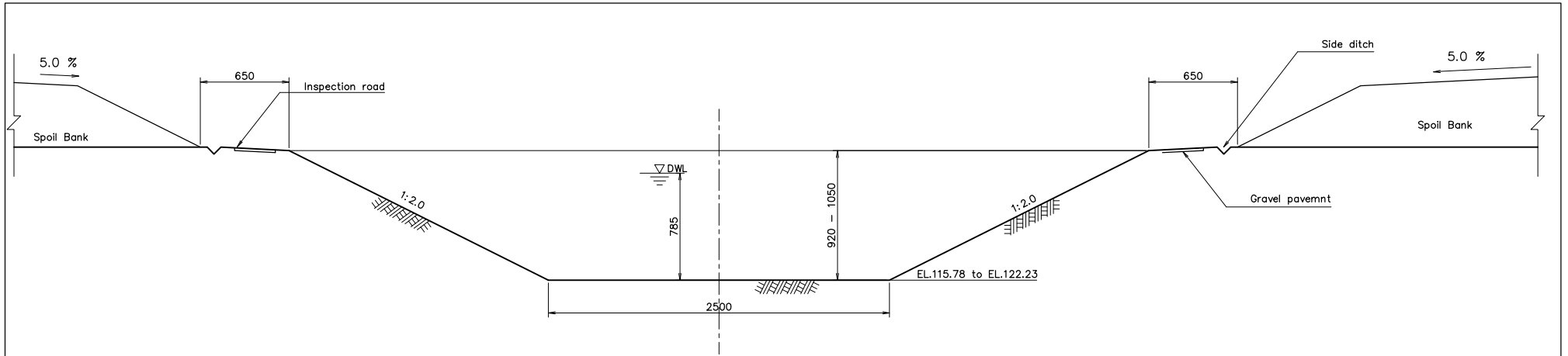
STATION No.	DISTANCE	ACCUMULATIVE DISTANCE	ORIGINAL GROUND ELEVATION	DESIGN WATER LEVEL	DESIGN RIVERBED ELEVATION	DESIGN RIVERBED SLOPE
97	0.00	0.00	126.97	123.62	115.78	1/27.79
98	0.54	80.94	126.07	123.69	115.85	
99	1.08	161.88	126.09	123.77	115.93	
100	1.62	242.82	126.14	123.82	115.98	
101	2.16	323.76	126.14	123.90	116.06	
102	2.70	404.70	126.27	123.98	116.14	
103	3.24	485.64	124.74	124.07	116.23	
104	3.78	566.58	125.06	124.15	116.31	
105	4.32	647.52	125.42	124.23	116.39	
106	4.86	728.46	125.90	124.32	116.48	
107	5.40	809.40	126.52	124.40	116.56	
108	5.94	890.34	126.86	124.48	116.64	
109	6.48	971.28	126.58	124.57	116.73	
110	7.02	1052.22	126.68	124.65	116.81	
111	7.56	1133.16	126.69	124.73	116.89	
112	8.10	1214.10	124.61	116.97		
113	8.64	1295.04	124.89	117.05		
114	9.18	1375.98	124.97	117.13		
115	9.72	1456.92	127.20	125.06	117.22	
116	10.26	1537.86	127.20	125.06	117.30	
117	10.80	1618.80	126.99	125.14	117.38	
118	11.34	1699.74	126.55	125.22	117.43	
119	11.88	1780.68	126.35	125.27	117.43	
120	12.42	1861.62	127.75	125.36	117.55	
121	12.96	1942.56	127.20	125.35	117.55	
122	13.50	2023.50	127.20	125.35	117.55	
123	14.04	2104.44	127.00	125.47	117.63	
124	14.58	2185.38	127.20	125.59	117.75	
125	15.12	2266.32	126.59	125.59	117.81	
126	15.66	2347.26	127.00	125.59	117.81	
127	16.20	2428.20	127.20	125.72	117.88	
128	16.74	2509.14	127.49	125.81	117.96	
129	17.28	2590.08	127.59	125.89	118.05	
130	17.82	2671.02	127.66	125.96	118.05	
131	18.36	2751.96	127.66	126.05	118.13	
132	18.90	2832.90	127.66	126.05	118.21	
133	19.44	2913.84	127.66	126.05	118.21	
134	19.98	2994.78	127.66	126.22	118.35	
135	20.52	3075.72	127.66	126.22	118.35	
136	21.06	3156.66	128.04	126.30	118.46	
137	21.60	3237.60	127.65	126.39	118.55	
138	22.14	3318.54	127.65	126.47	118.63	
139	22.68	3399.48	127.98	126.55	118.71	
140	23.22	3480.42	128.04	126.64	118.80	
141	23.76	3561.36	128.11	126.72	118.88	
142	24.30	3642.30	128.11	126.80	118.96	
143	24.84	3723.24	128.22	126.80	119.05	
144	25.38	3804.18	128.29	126.89	119.06	
145	25.92	3885.12	128.21	126.97	119.13	
146	26.46	3966.06	128.45	127.05	119.21	
147	27.00	4047.00	128.49	127.14	119.30	
148	27.54	4127.94	128.66	127.22	119.38	
149	28.08	4208.88	128.66	127.29	119.45	
150	28.62	4289.82	128.38	127.39	119.54	
151	29.16	4370.76	128.71	127.38	119.54	
152	29.70	4451.70	127.46	127.46	119.62	
153	30.24	4532.64	128.95	127.54	119.70	
154	30.78	4613.58	128.59	127.62	119.78	
155	31.32	4694.52	128.59	127.63	119.82	
156	31.86	4775.46	128.59	127.63	119.82	
157	32.40	4856.40	128.99	127.75	119.91	
158	32.94	4937.34	128.99	127.75	119.91	
159	33.48	5018.28	129.05	127.83	119.99	
160	34.02	5099.22	129.17	127.91	120.07	
161	34.56	5180.16	129.27	127.91	120.16	
162	35.10	5261.10	129.08	128.08	120.24	
163	35.64	5342.04	129.48	128.16	120.32	
164	36.18	5422.98	129.75	128.25	120.41	
165	36.72	5503.92	129.75	128.33	120.49	
166	37.26	5584.86	129.84	128.41	120.57	
167	37.80	5665.80	130.06	128.50	120.66	
168	38.34	5746.74	130.11	128.58	120.74	
169	38.88	5827.68	130.19	128.66	120.82	
170	39.42	5908.62	130.18	128.75	120.91	
171	39.96	5989.56	130.26	128.83	120.99	
172	40.50	6070.50	130.57	128.88	121.04	
173	41.04	6151.44	130.57	128.88	121.04	
174	41.58	6232.38	130.70	128.96	121.12	
175	42.12	6313.32	130.76	129.05	121.21	
176	42.66	6394.26	130.67	129.13	121.29	
177	43.20	6475.20	130.67	129.24	121.38	
178	43.74	6556.14	130.68	129.24	121.38	
179	44.28	6637.08	131.04	129.33	121.49	
180	44.82	6718.02	130.89	129.41	121.57	
181	45.36	6798.96	130.89	129.41	121.57	
182	45.90	6879.90	131.02	129.50	121.65	
183	46.44	6960.84	131.02	129.58	121.74	
184	46.98	7041.78	131.17	129.79	121.87	
185	47.52	7122.72	131.17	129.79	121.95	
186	48.06	7203.66	131.50	129.87	122.03	
187	48.60	7284.60	131.38	129.96	122.12	
188	49.14	7365.54	131.38	130.07	122.23	
189	49.68	7446.48	131.38	130.07	122.23	

図 9.1.8

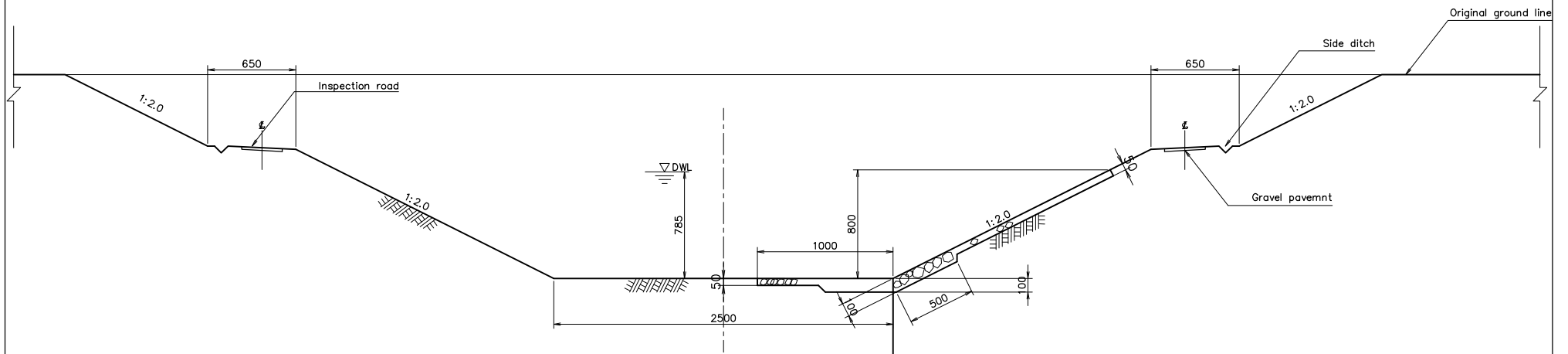
ブサレムバイパス水路 (Zone U2) の平面図及び縦断図



REPUBLIC OF TUNISIA MINISTRY OF AGRICULTURE AND WATER RESOURCES DEPARTMENT OF DAMS AND LARGE HYDRAULIC WORKS		JAPAN INTERNATIONAL COOPERATION AGENCY	
THE STUDY ON INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL IN MEJERDA RIVER			
DRAWING TITLE		BOUSALEM BYPASS CHANNEL (ZONE U2) PLAN AND PROFILE	
		SHEET NO.	
NIPPON KOEI Co., Ltd.			



TYPICAL SECTION OF BYPASS CHANNEL
($Q=700\text{m}^3/\text{s}$)

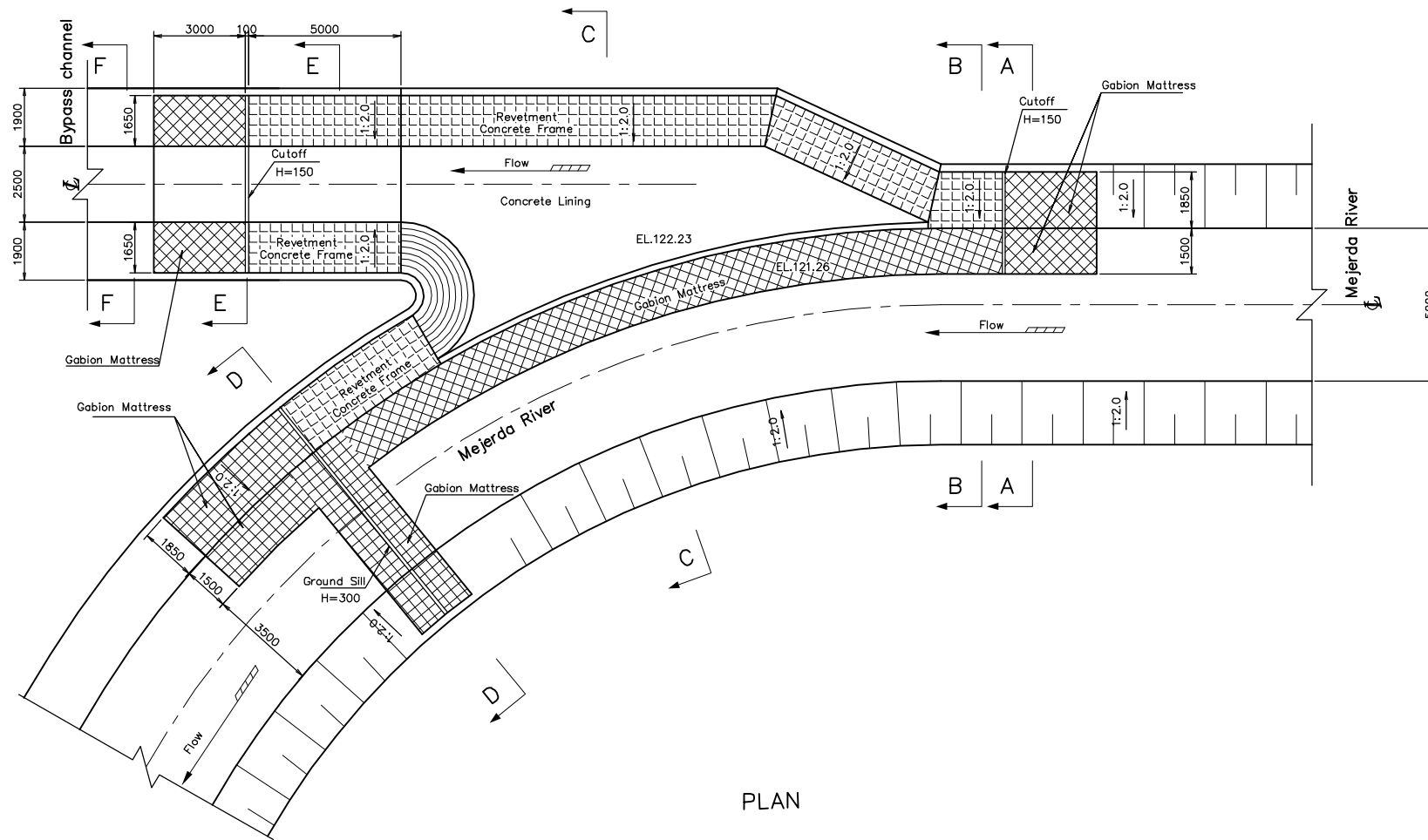


TYPICAL SECTION OF REVETMENT
(STONE PITCHING)

SCALE 0 400 800 1200 1600 2000 cm

図9.1.9 ブサレムバイパス水路 (Zone U2) の標準断面図

REPUBLIC OF TUNISIA MINISTRY OF AGRICULTURE AND WATER RESOURCES DEPARTMENT OF DAMS AND LARGE HYDRAULIC WORKS		JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL IN MEJERDA RIVER		
DRAWING TITLE	BOUSALEM BYPASS CHANNEL (ZONE U2) TYPICAL SECTION OF BYPASS CHANNEL	SHEET NO.
NIPPON KOEI Co., Ltd.		

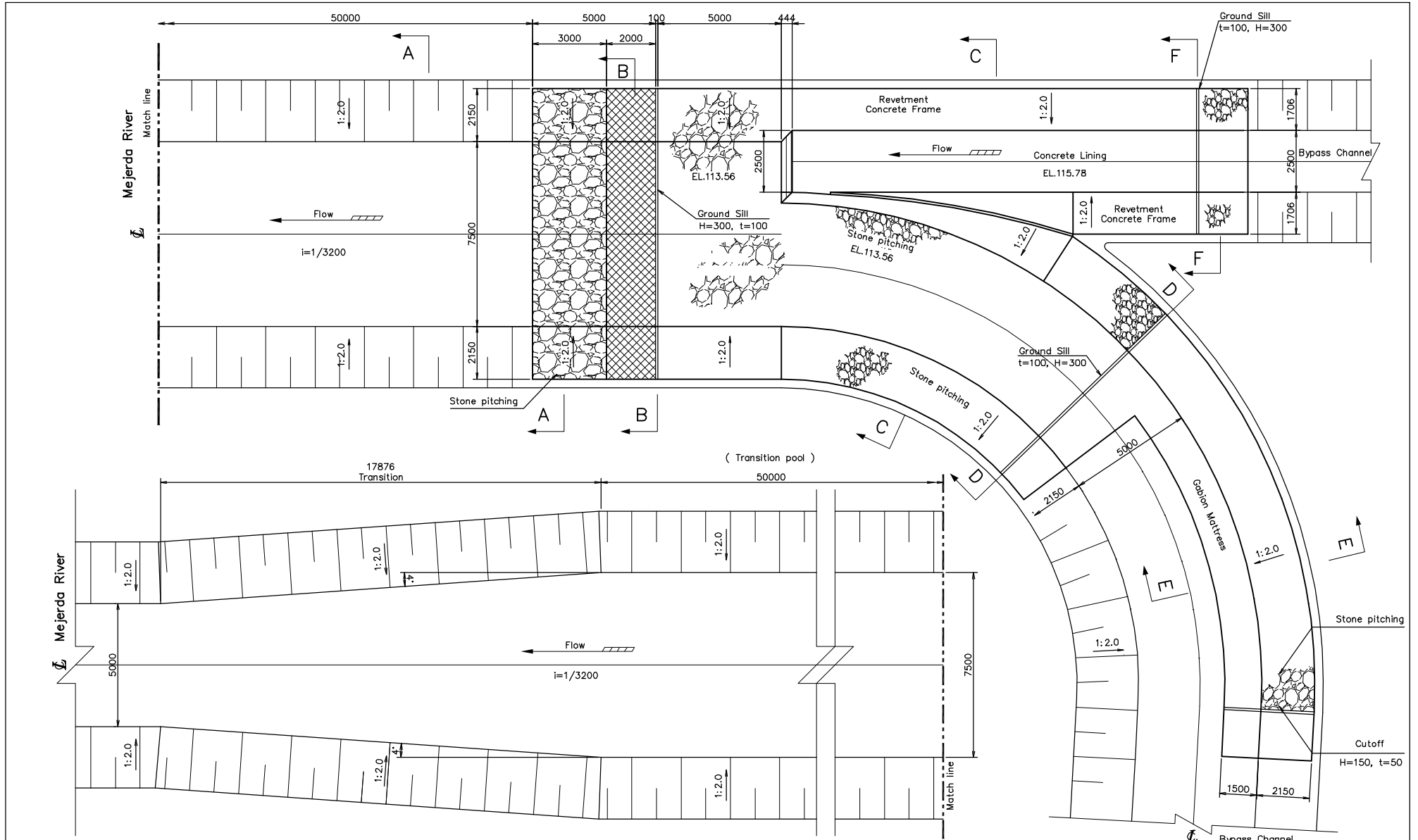


PLAN

SCALE 0 2000 4000 6000 8000 10000 cm

図9.1.10 ブサレムバイパス水路 (Zone U2) の取水施設平面図

REPUBLIC OF TUNISIA MINISTRY OF AGRICULTURE AND WATER RESOURCES DEPARTMENT OF DAMS AND LARGE HYDRAULIC WORKS		JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL IN MEJERDA RIVER		
DRAWING TITLE	BOUSALEM BYPASS CHANNEL (ZONE U2) INLET STRUCTURE PLAN	SHEET NO.
NIPPON KOEI Co., Ltd.		



PLAN

図9.1.11 ブサレムバイパス水路 (Zone U2) の放流施設平面図

SCALE 0 2000 4000 6000 8000 10000 cm

REPUBLIC OF TUNISIA MINISTRY OF AGRICULTURE AND WATER RESOURCES DEPARTMENT OF DAMS AND LARGE HYDRAULIC WORKS		JAPAN INTERNATIONAL COOPERATION AGENCY	
THE STUDY ON INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL IN MEJERDA RIVER			
DRAWING TITLE		BOUSALEM BYPASS CHANNEL (ZONE U2)	
		OUTLET STRUCTURE	
		PLAN	
		SHEET NO.	
NIPPON KOEI Co., Ltd.			

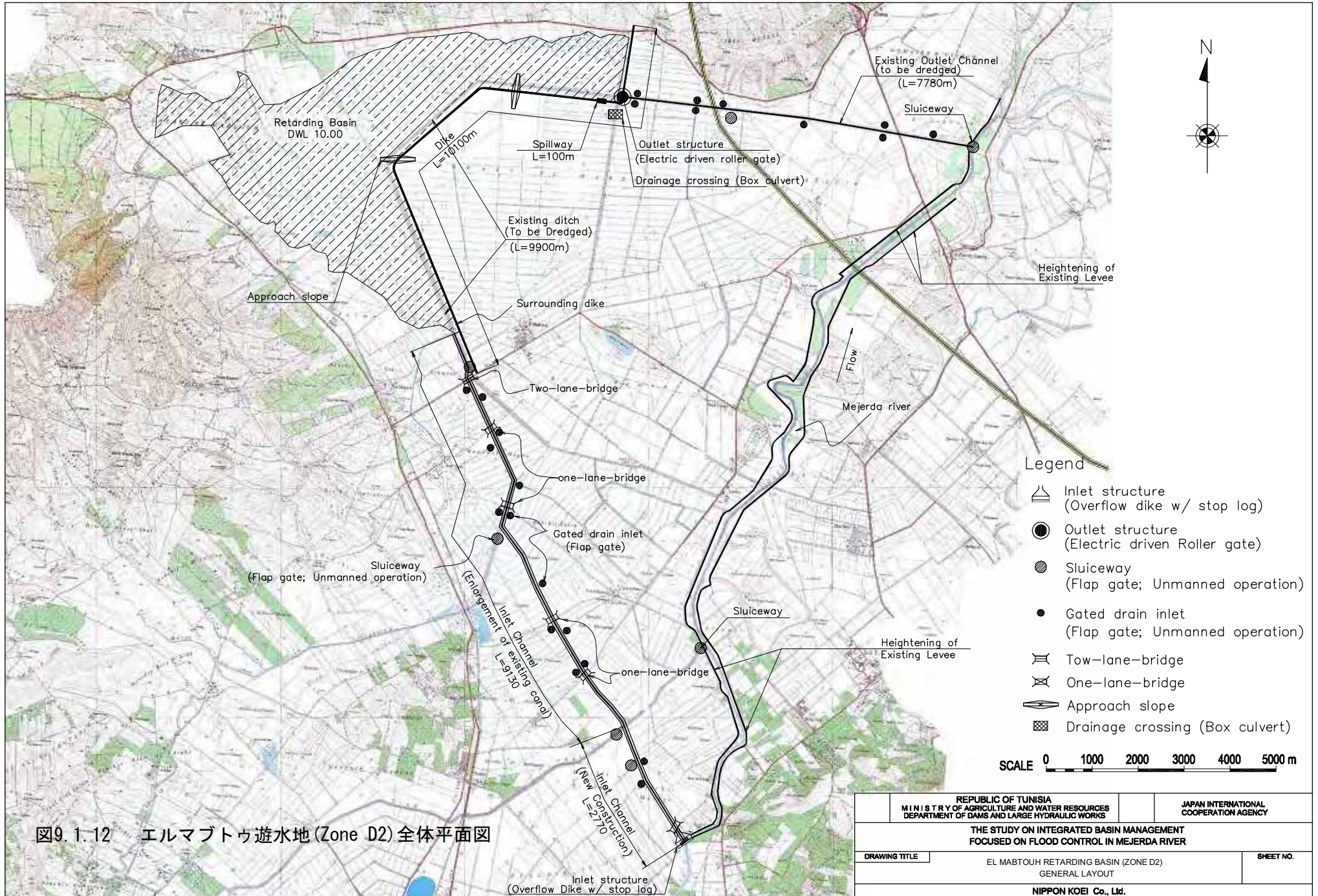


図9.1.12 エルマブトゥ遊水地 (Zone D2) 全体平面図

REPUBLIC OF TUNISIA MINISTRY OF AGRICULTURE AND WATER RESOURCES DEPARTMENT OF DAMS AND LARGE HYDRAULIC WORKS		JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL IN MEJERDA RIVER		
DRAWING TITLE	EL MABTOUH RETARDING BASIN (ZONE D2) GENERAL LAYOUT	SHEET NO.
NIPPON KOEI Co., Ltd.		

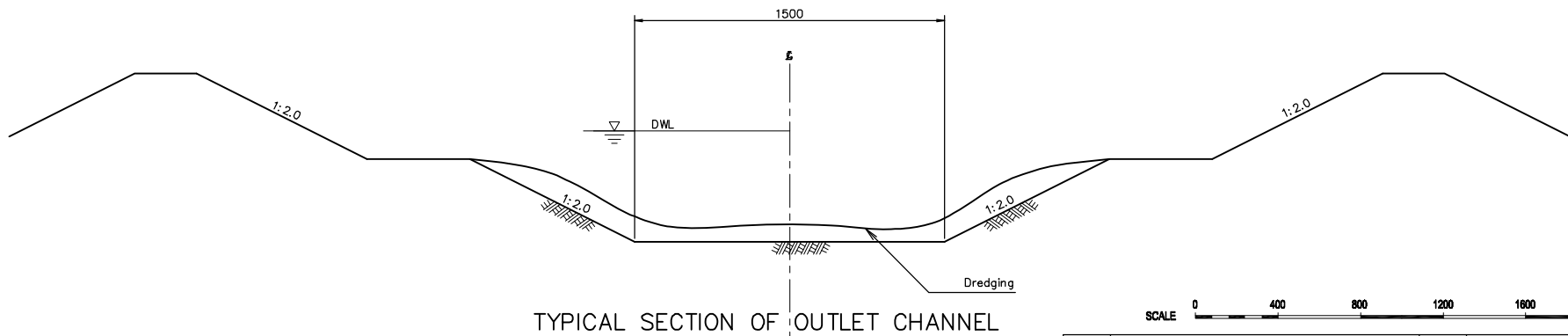
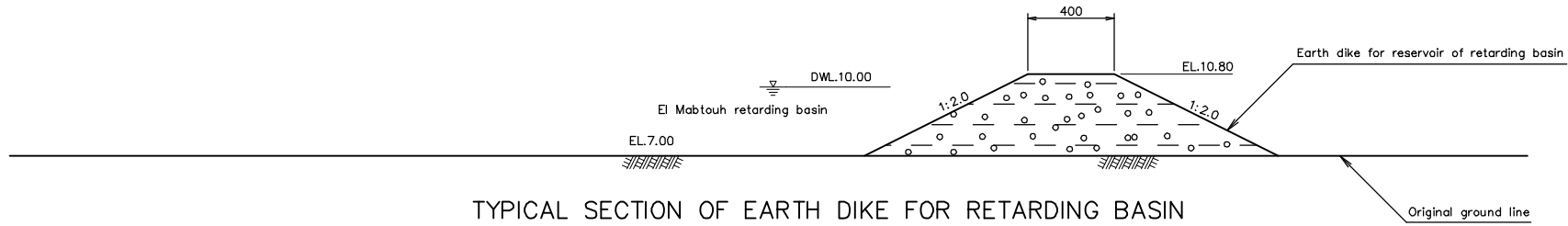
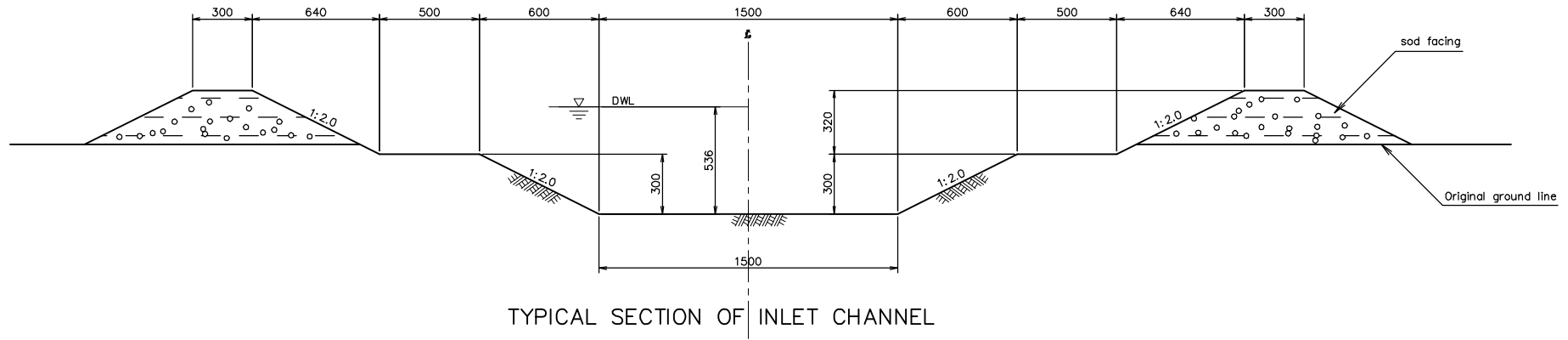
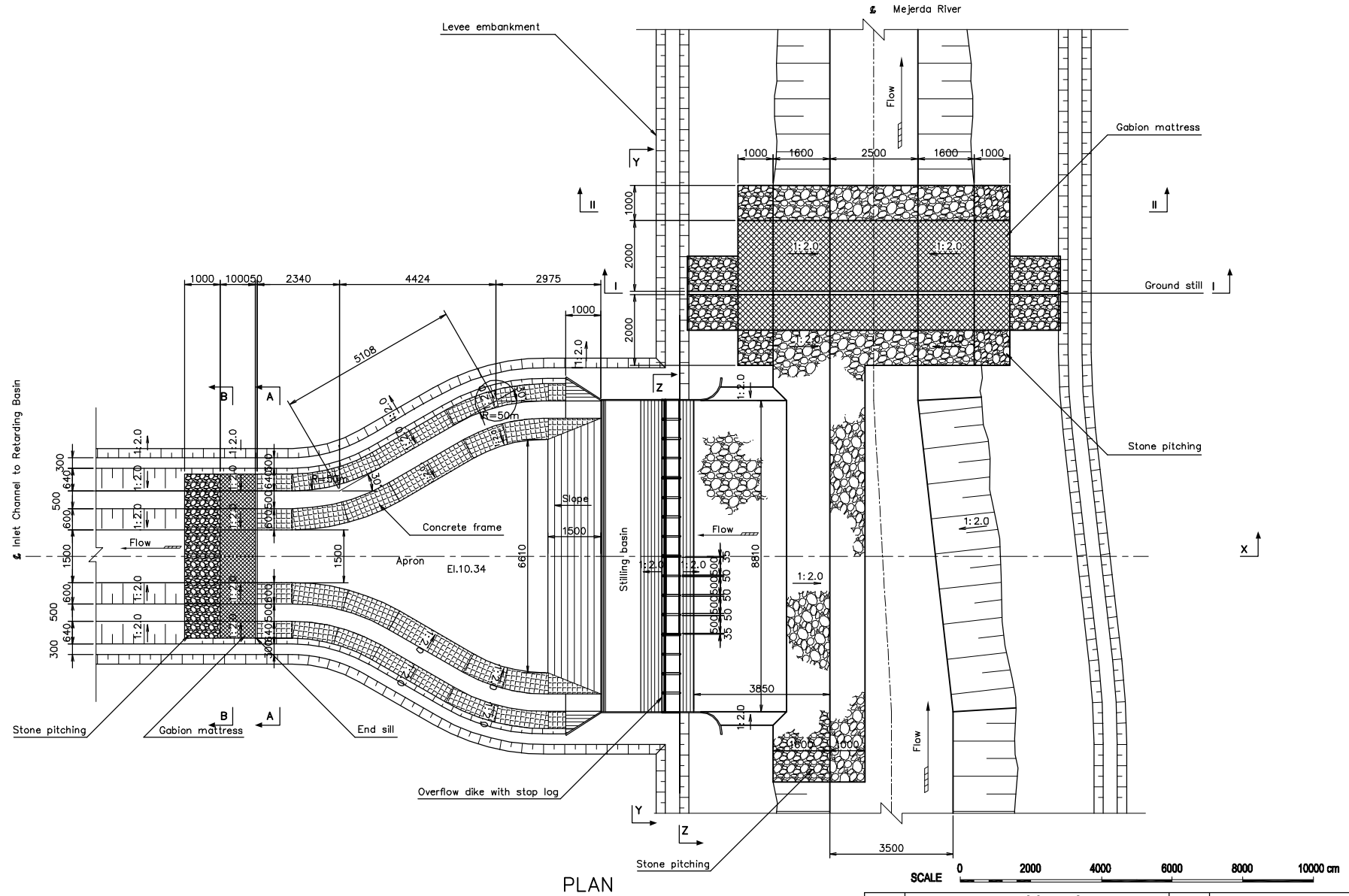


図9.1.13 エルマブトゥ遊水地 (Zone D2) の取水施設
 角落し付越流堤標準断面図

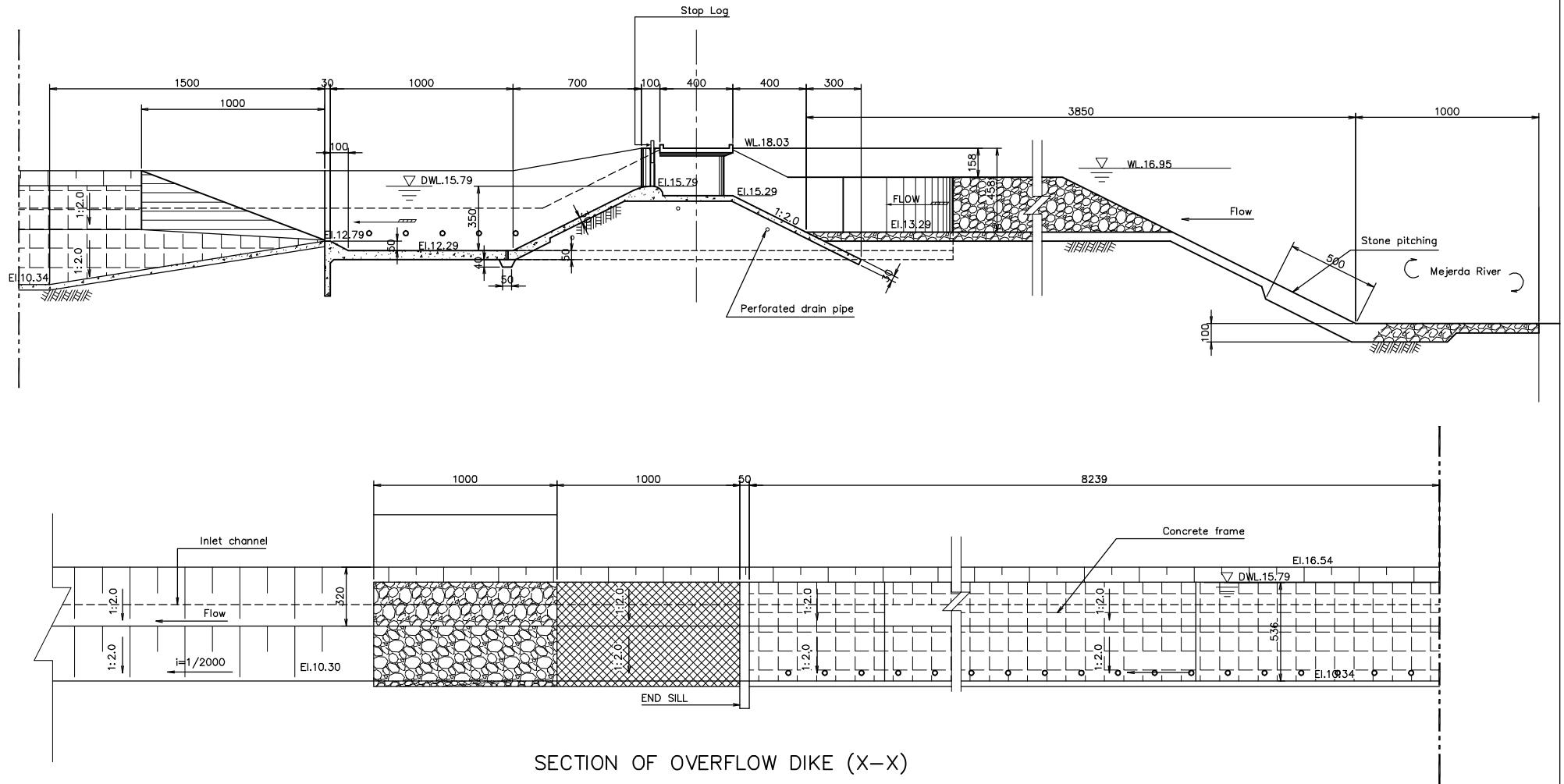
REPUBLIC OF TUNISIA MINISTRY OF AGRICULTURE AND WATER RESOURCES DEPARTMENT OF DAMS AND LARGE HYDRAULIC WORKS		JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL IN MEJERDA RIVER		
DRAWING TITLE	EL MABTOUH RETARDING BASIN (ZONE D2) INTEL STRUCTURE OF RETARDING BASIN-OVERFLOW DIKE WITH STOP LOG TYPICAL SECTIONS FOR EARTH WORKS	SHEET NO.
NIPPON KOEI Co., Ltd.		



PLAN

図9.1.14 エルマブトゥ遊水地 (Zone D2) の取水施設
角落し付越流堤平面図

REPUBLIC OF TUNISIA MINISTRY OF AGRICULTURE AND WATER RESOURCES DEPARTMENT OF DAMS AND LARGE HYDRAULIC WORKS		JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL IN MEJERDA RIVER		
DRAWING TITLE	EL MABTOUH RETARDING BASIN (ZONE D2) INLET STRUCTURE OF RETARDING BASIN - OVERFLOW DIKE WITH STOP LOG PLAN	SHEET NO.
NIPPON KOEI Co., Ltd.		



SECTION OF OVERFLOW DIKE (X-X)



図9.1.15 エルマブトゥ遊水地 (Zone D2) の取水施設
角落し付越流堤縦断面図

REPUBLIC OF TUNISIA MINISTRY OF AGRICULTURE AND WATER RESOURCES DEPARTMENT OF DAMS AND LARGE HYDRAULIC WORKS		JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL IN MEJERDA RIVER		
DRAWING TITLE	EL MABTOUH RETARDING BASIN (ZONE D2) INLET STRUCTURE OF RETARDING BASIN - OVERFLOW DIKE WITH STOP LOG PROFILE	SHEET NO.
NIPPON KOEI Co., Ltd.		

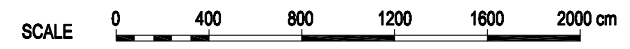
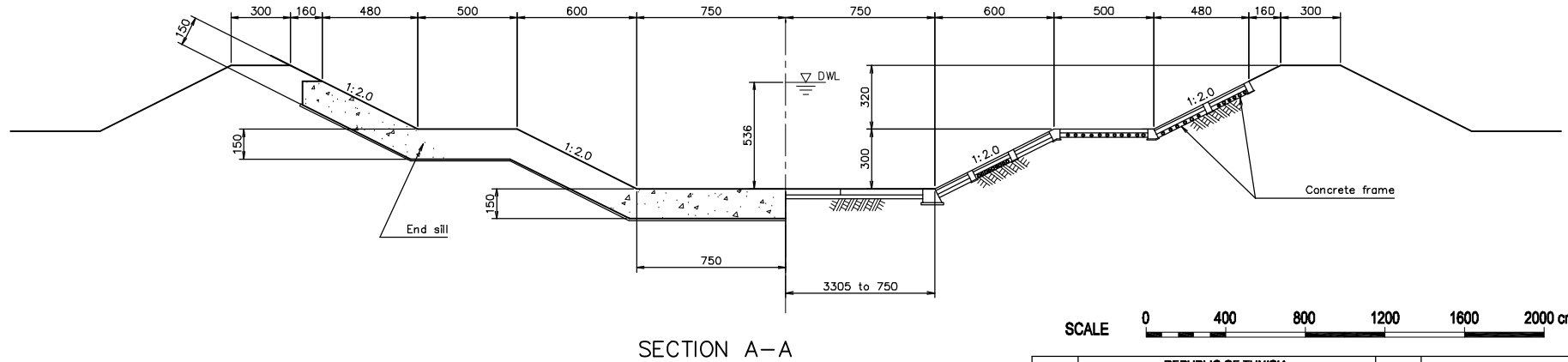
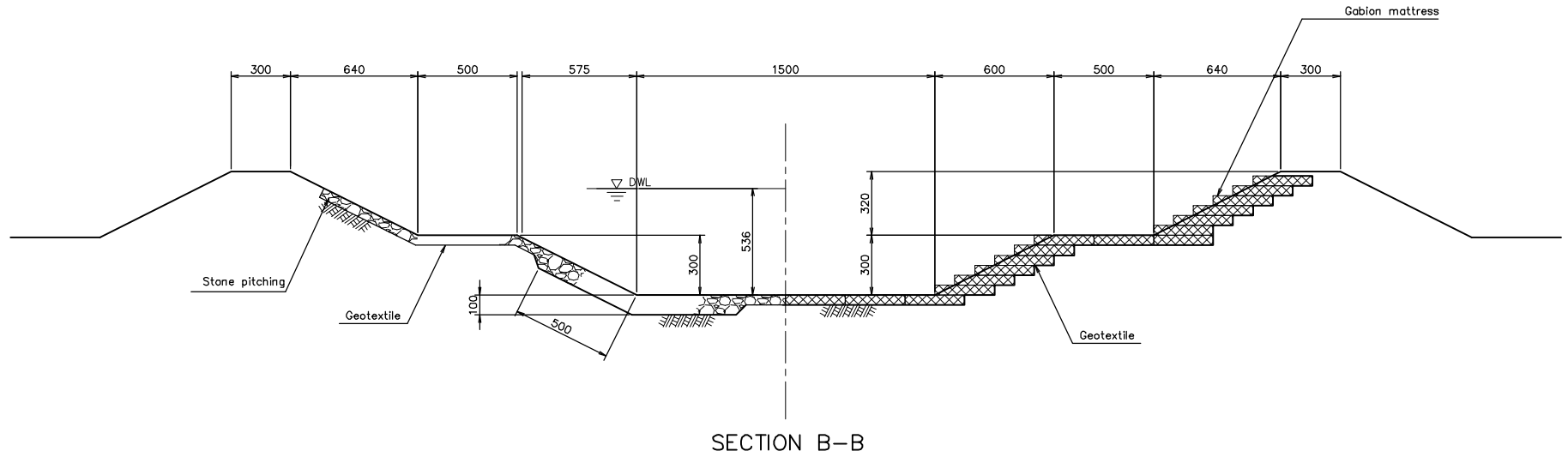
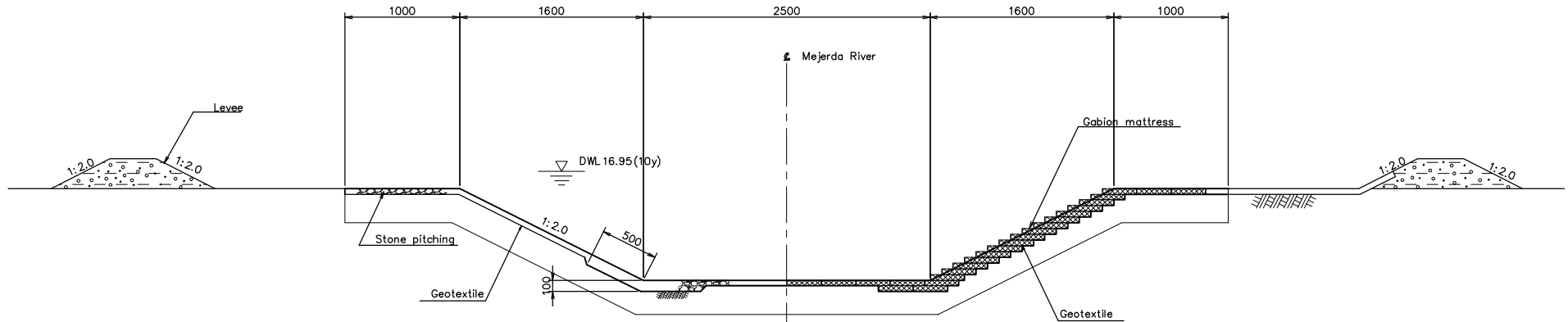
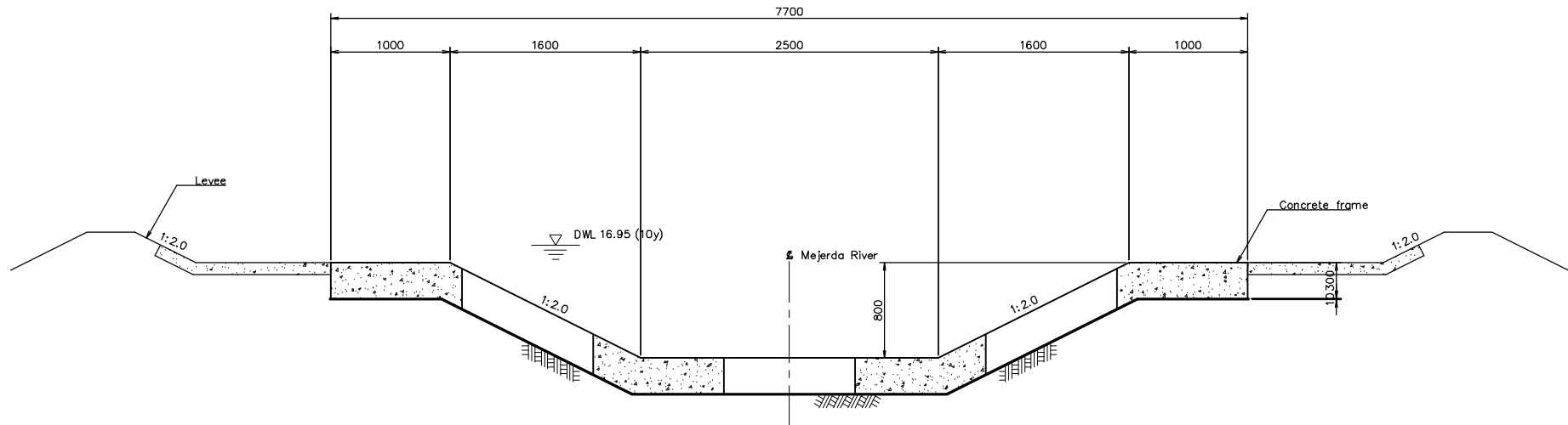


図9.1.16 エルマブトゥ遊水地 (Zone D2) の取水施設
 角落し付越流堤横断図 (1/2)

REPUBLIC OF TUNISIA MINISTRY OF AGRICULTURE AND WATER RESOURCES DEPARTMENT OF DAMS AND LARGE HYDRAULIC WORKS		JAPAN INTERNATIONAL COOPERATION AGENCY	
THE STUDY ON INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL IN MEJERDA RIVER			
DRAWING TITLE EL MABTOUH RETARDING BASIN (ZONE D2) INLET STRUCTURE OF RETARDING BASIN - OVERFLOW DIKE WITH STOP LOG CROSS SECTIONS (1/2)		SHEET NO.	
NIPPON KOEI Co., Ltd.			



SECTION II-II

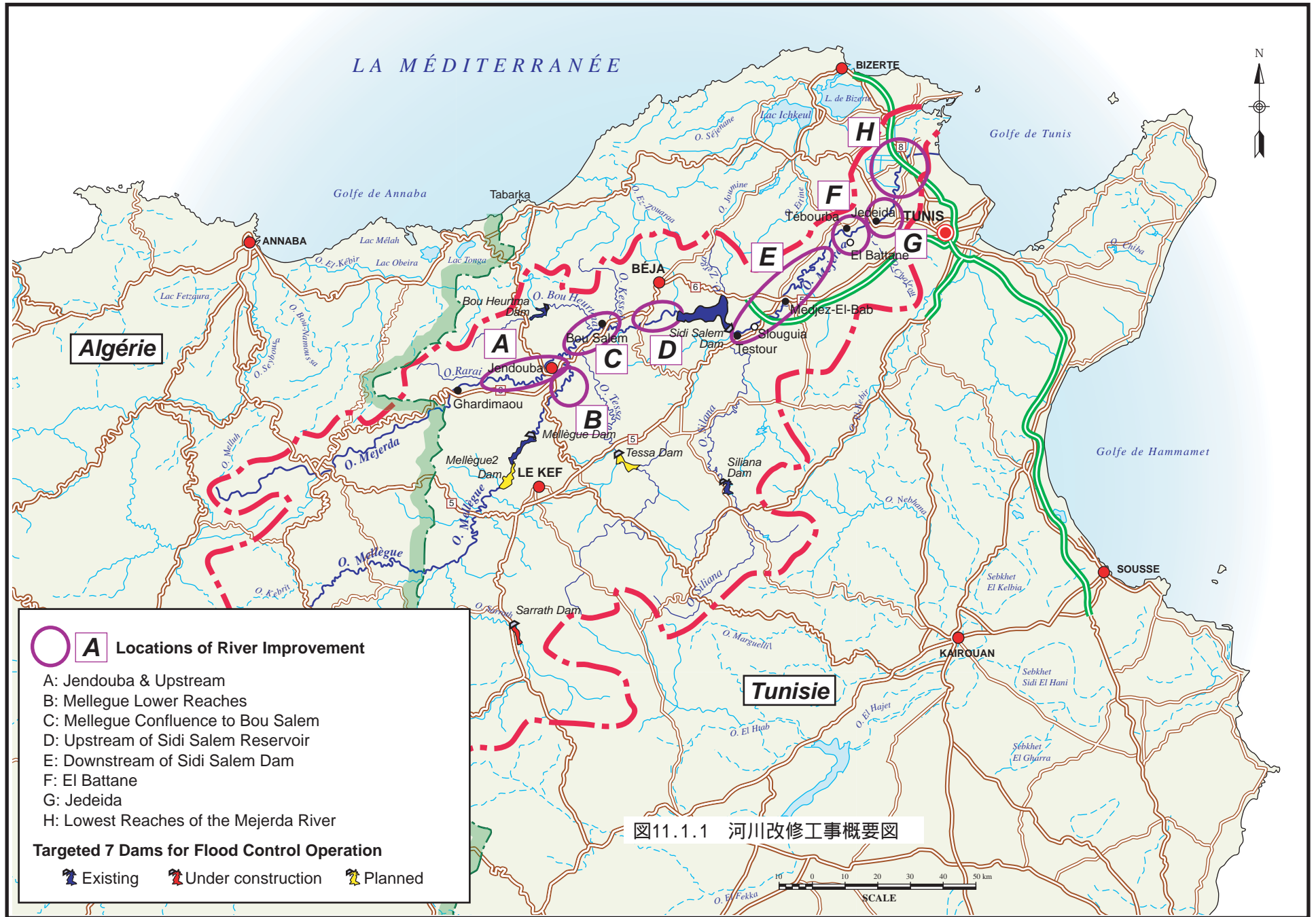


SECTION I-I



図9.1.17 エルマブトゥ遊水地 (Zone D2) の取水施設
 角落し付越流堤横断面図 (2/2)

REPUBLIC OF TUNISIA MINISTRY OF AGRICULTURE AND WATER RESOURCES DEPARTMENT OF DAMS AND LARGE HYDRAULIC WORKS		JAPAN INTERNATIONAL COOPERATION AGENCY
THE STUDY ON INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL IN MEJERDA RIVER		
DRAWING TITLE	EL MABTOUH RETARDING BASIN (ZONE D2) INLET STRUCTURE OF RETARDING BASIN - OVERFLOW DIKE WITH STOP LOG CROSS SECTIONS (2/2)	SHEET NO.
NIPPON KOEI Co., Ltd.		



LA MÉDITERRANÉE



Algérie

Tunisie

A Locations of River Improvement

- A: Jendouba & Upstream
- B: Mellegue Lower Reaches
- C: Mellegue Confluence to Bou Salem
- D: Upstream of Sidi Salem Reservoir
- E: Downstream of Sidi Salem Dam
- F: El Battane
- G: Jedeida
- H: Lowest Reaches of the Mejerda River

Targeted 7 Dams for Flood Control Operation

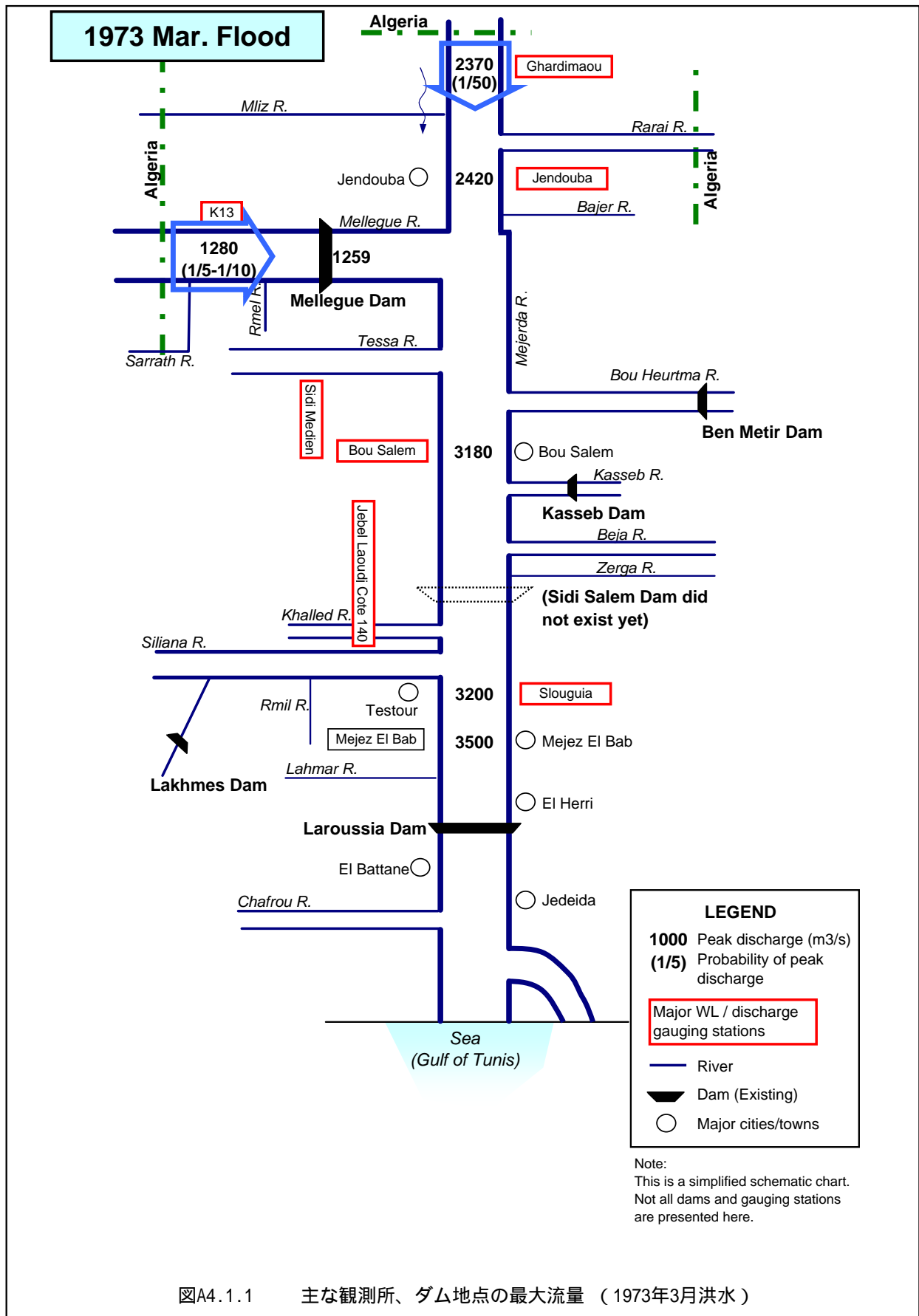
- Existing
- Under construction
- Planned

图11.1.1 河川改修工事概要图

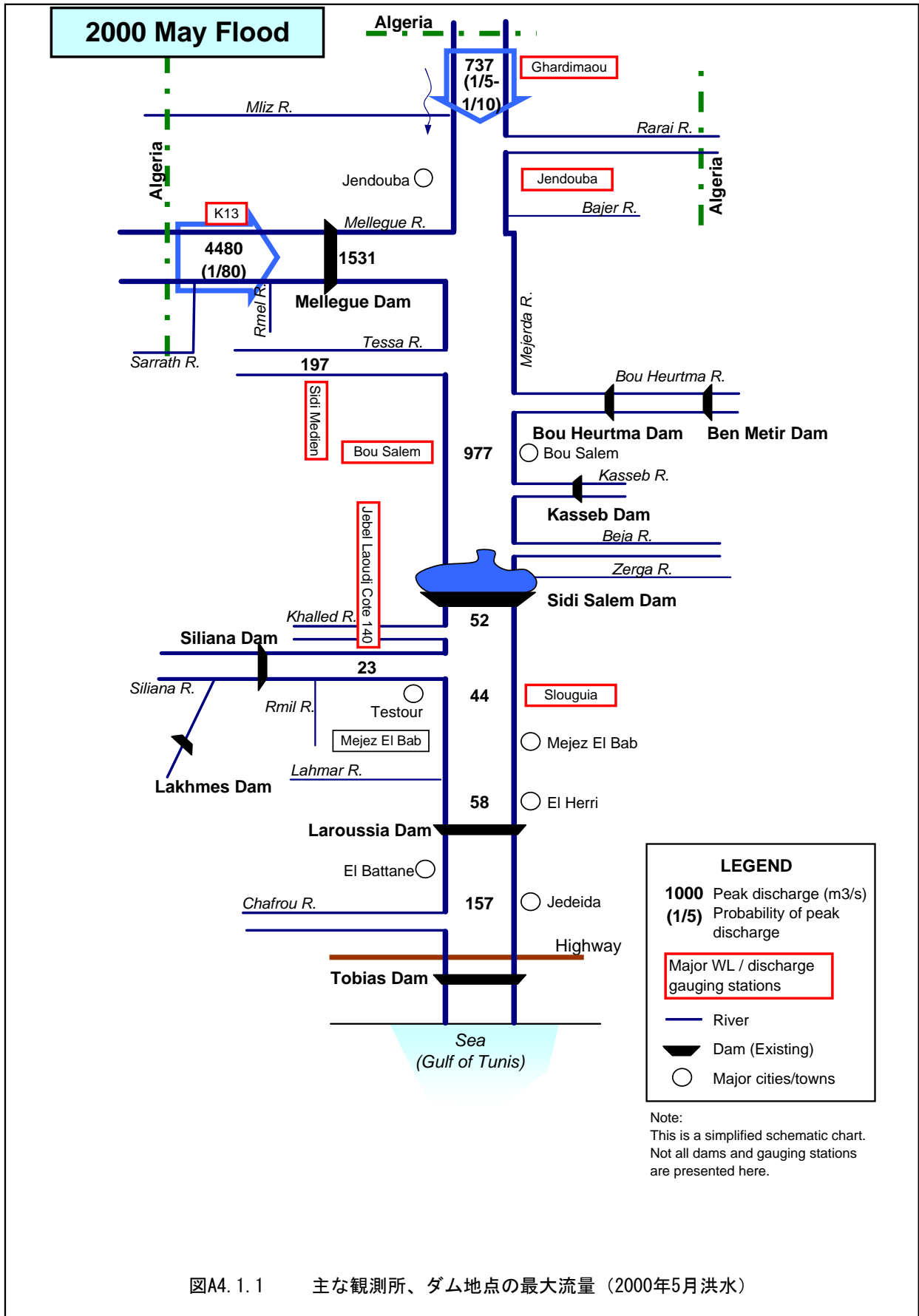


付 録

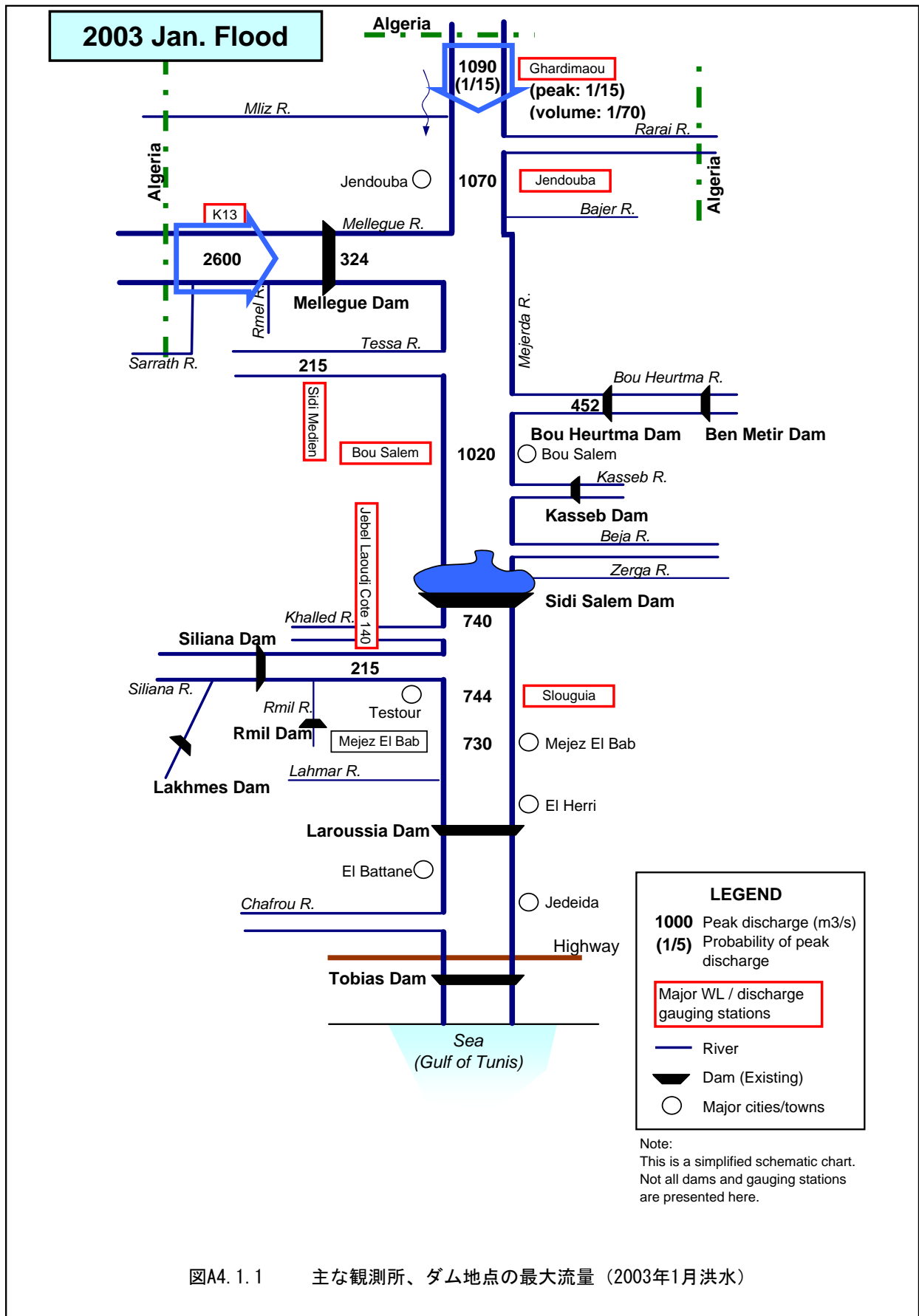
付録4.1 既往洪水時に主な観測所、ダム地点で観測された最大流量



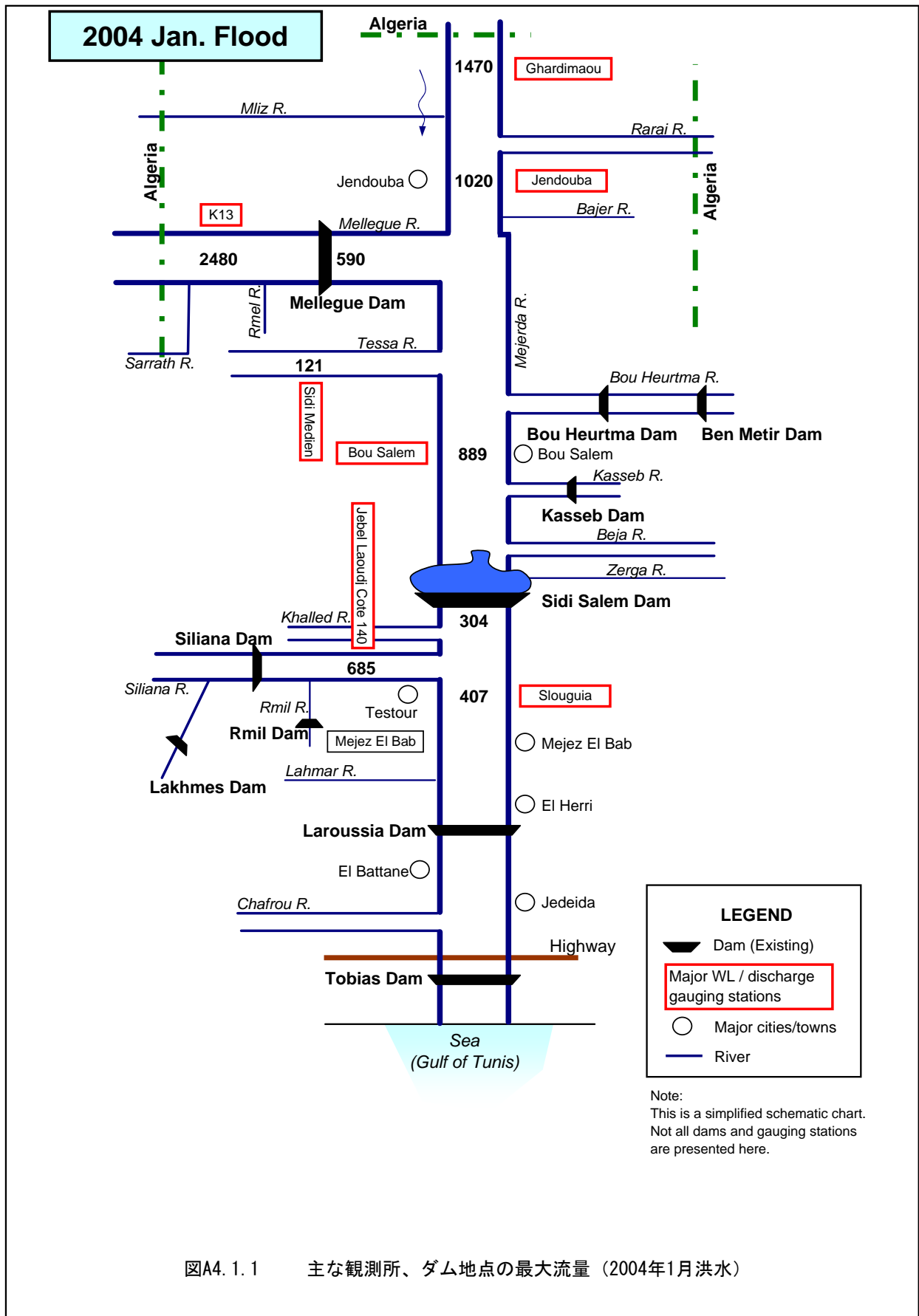
図A4.1.1 主な観測所、ダム地点の最大流量（1973年3月洪水）



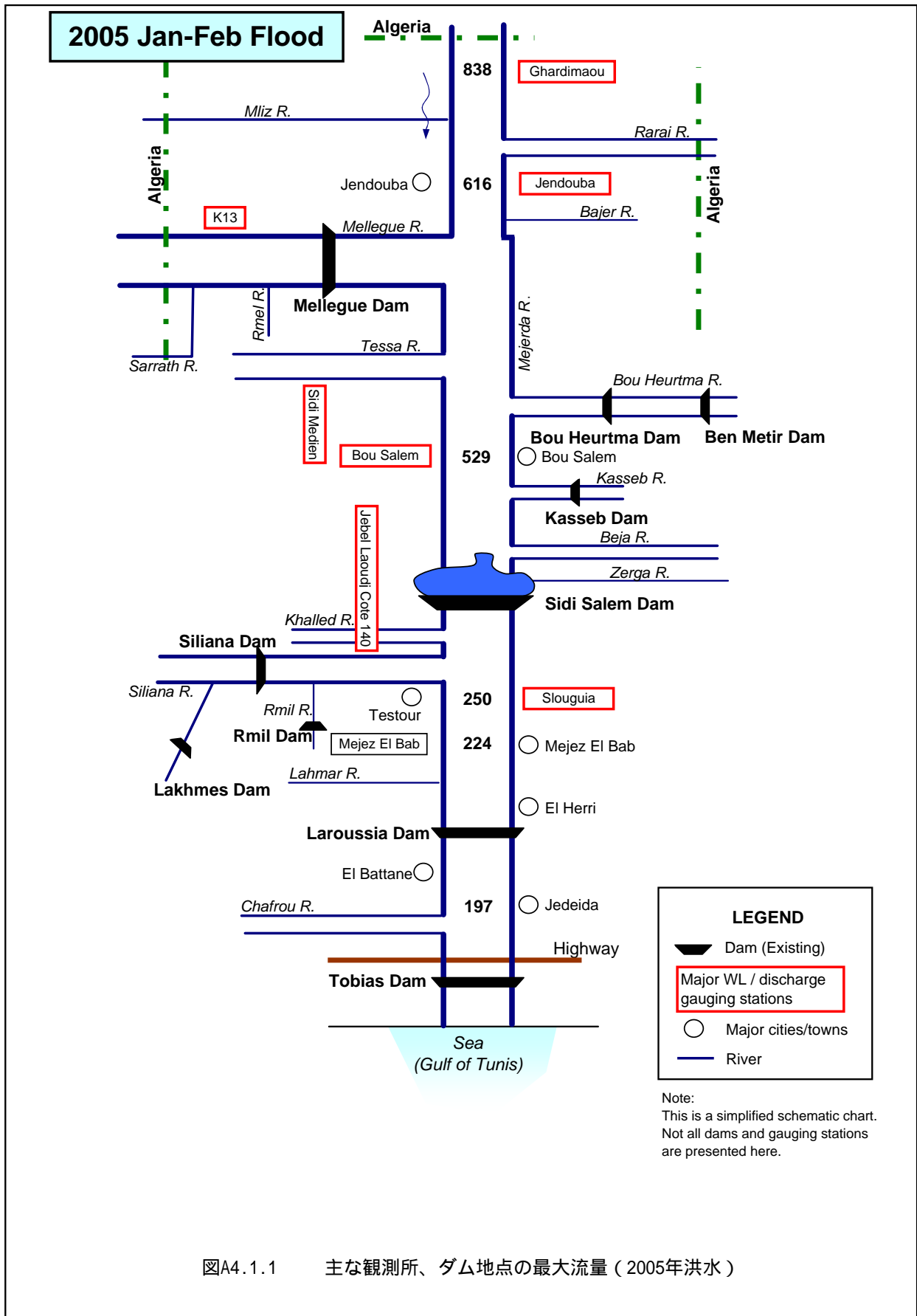
図A4. 1.1 主な観測所、ダム地点の最大流量（2000年5月洪水）



図A4. 1.1 主な観測所、ダム地点の最大流量（2003年1月洪水）



図A4. 1. 1 主な観測所、ダム地点の最大流量（2004年1月洪水）



図A4.1.1 主な観測所、ダム地点の最大流量（2005年洪水）

付 録 A

Scope of Work

**SCOPE OF WORK
FOR
THE STUDY
ON
INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL
IN MEJERDA RIVER
IN
THE REPUBLIC OF TUNISIA**

**AGREED UPON BETWEEN
MINISTRY OF AGRICULTURE AND HYDRAULIC RESOURCES OF
THE REPUBLIC OF TUNISIA
AND
JAPAN INTERNATIONAL COOPERATION AGENCY**

Tunis, June 28th, 2006

Mr. Naceur Zehri
Director General
Department of Dam and Large Hydraulic Works
Ministry of Agriculture and Hydraulic Resources



N. Zehri

Mr. Kenji Nagata
Leader of the Preparatory Study Team
Japan International Cooperation Agency



1. INTRODUCTION

In response to the official request from the Government of the Republic of Tunisia (hereinafter referred to as " the Government of Tunisia ") for technical cooperation on "the Study on Integrated Basin Management focused on Flood Control in Mejerda River" (hereinafter referred to as "the Study"), the Government of Japan (hereinafter referred to as "GOJ") decided to conduct the Study in accordance with relevant laws and regulations in force in Japan.

Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the preparatory study team to Tunisia from June 12th to July 8th 2006 and signed on the minutes of meetings on the Scope of Work for the Study on June 28th 2006.

Accordingly, JICA, the official agency responsible for the implementation of the technical cooperation programs of GOJ, will undertake the Study in close cooperation with the authorities concerned of the Government of Tunisia.

On the parts of the Government of Tunisia, the Ministry of Agriculture and Water Resources (hereinafter referred to as " MAHR "), shall act as the counterpart agency to the Japanese study team (hereinafter referred to as "the Team") and also as the coordinating body in relation to other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

The present document sets forth the scope of work with regard to the Study and will be valid after notification of approval by JICA to the Government of Tunisia.

2. OBJECTIVES OF THE STUDY

The objectives of the Study are:

1. To formulate a master plan for Integrated Basin Management focused on Flood Control in Mejerda River,
2. To transfer technology and knowledge on integrated basin management focused on flood control to the Tunisian counterparts through their direct participation in the Study and training programs.

3. STUDY AREA

The Study area covers basically the whole area of the Mejerda River Basin shown in Annex-1. However, the other related areas are also included, if required for the Study.

4. SCOPE OF THE STUDY

In the Study, an integrated basin management master plan focused on flood control will be formulated in consideration for the long-term balance of water resources development/use, sediment discharge and basin environment.

The scope of the Study is listed below:

Phase I: Understanding of Present Conditions and Formulation of Framework for the Master Plan

(1) Collection and review of existing data and information

- Existing maps and aerial photos
- Social and economic conditions (administration, organization, government policy, laws, agreement, regulation, guidelines, standards, financial and budgetary conditions, water demand projection, etc.)
- Natural conditions (meteorological/hydrological conditions, soil/geological conditions, topographical conditions, rivers and river basins, sediment production and discharge, etc.)
- Environmental conditions (surface/groundwater water quality, ecology, fauna & flora, vegetation, social-custom of local people, etc.)
- Flood and drought damages
- Existing structures/facilities for water resources management and flood control (flood control system, water supply system/project, irrigation system/project, drainage and sewage)
- Water resources management system (operation & maintenance)
- Watershed management (erosion control) system
- Past studies/projects and ongoing/proposed projects/programs relevant to the Study
- Other relevant data and information

(2) Field Reconnaissance

- Natural conditions (topography, geology, groundwater, water bodies: rivers, lakes, ponds, marshes and springs)
- Social and economic conditions (tourism, culture, land use, etc.)
- Existing facilities/systems (flood control, water supply, irrigation, drainage and sewage)
- Conditions of flood/inundation, landslide/debris-flow: sedimentation, drought
- Situation of waste disposal, effluents and sanitation

(3) Specific Survey

- River profile and cross section survey (if necessary)
- Inventory survey of river facilities
- Flood/inundation damage survey
- Social survey (peoples awareness, living conditions, etc.)
- Environmental survey

(4) Analysis

- Flood analysis (flood runoff analysis, flood/inundation analysis and flood damage projection)
- Sediment analysis (sediment production, sediment discharge, dam/river sedimentation)
- Simulation analysis for operation of water management facilities (especially dams)

(5) Identification and study of problems/issues for flood damage mitigation and water resources management

- (6) Formulation of the framework for the integrated basin management focused on flood control
- (7) Scoping of environmental and social impacts and preparing TOR of the Environmental Impact Assessment (EIA), through meetings with stakeholders.
- (8) Technology transfer

Phase II: Formulation of the Master Plan on Integrated Basin Management focused on Flood Control

- (1) Preparation and study of alternative plans for integrated basin management focused on flood control
- (2) Formulation of the master plan
 - Planning scale of flood control measures and water use risks
 - Flood discharge allocation plan
 - Basin management plan for flood control (sediment and basin environment)
 - River plan for flood control (flood regulation, excavation, dykes, revetment, etc.)
 - Flood control plan by existing dams
 - Non structural measures
 - Operation and maintenance plan
 - Design of proposed major structures/facilities
 - Cost estimates
 - Implementation program
- (3) Technical assistance in the environmental and social consideration survey for the EIA

The Government of Tunisia shall be responsible for EIA and carry out EIA, explanation and socialization to stakeholders. The Study team will assist in the above activities.
- (4) Support in public consultation meeting with stakeholders

Public consultation meetings with stakeholders shall be done under the responsibility of the Government of Tunisia. The Study team will assist in preparation of materials and presentation in the meetings.
- (5) Overall evaluation of the Master Plan from technical, economic, financial, social and environmental aspects
- (6) Selection of high priority projects/areas and recommendation of implementation plan
- (7) Technology transfer

5. SCHEDULE OF THE STUDY

The Study will be carried out in accordance with the tentative schedule shown in Annex-2.

6. REPORTS

JICA shall prepare and submit the following reports in English to the Government of Tunisia.

1. Inception Report:
Twenty (20) copies at the commencement of the Study
2. Progress Report (1):
Twenty (20) copies at the middle of Phase I
3. Interim Report:
Twenty (20) copies at the end of Phase I
4. Progress Report (2):
Twenty (20) copies at the middle of Phase II
5. Draft Final Report:
Twenty (20) copies at the end of Phase II (MAHR shall submit the comments within two (2) months after receipt of the Draft Final Report.)
6. Final Report (Main, Supporting, Summary, etc.):
Fifty (50) copies within one (1) month after JICA's receipt of the comments on the Draft Final Report

7. UNDERTAKINGS OF THE GOVERNMENT OF TUNISIA

1. To facilitate the smooth conduct of the Study, the Government of Tunisia shall take necessary measures according to Tunisian legislation in force:
 - (1) To secure the safety of the Team,
 - (2) To permit the members of the Team to enter, leave and sojourn in the Tunisia for the duration of their assignment therein, and exempt them from foreign registration requirements and consular fees,
 - (3) To exempt the members of the Team from taxes, duties, fees and any other charges on equipments, machinery and other materials brought into and out the Tunisia for the implementation of the Study,
 - (4) To exempt the members of the Team from income taxes and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Team for their services in connection with the implementation of the Study,
 - (5) To provide necessary facilities to the Team for the remittances as well as the utilization of the funds introduced into the Tunisia from Japan in connection with the implementation of the Study,
 - (6) To secure permission for the Team to enter into private properties or restricted areas for the implementation of the Study,
 - (7) To secure permission for the Team to take one copy of all the data and documents(including photographs and maps) related to the Study out of the Tunisia to Japan, and
 - (8) To facilitate access to medical services as needed.
2. The government of Tunisia shall bear claims, if any arise, against the members of the Team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross

negligence or willful misconduct on the part of the members of the Team.

3. MAHR shall, at its own expense, provide the Team with the following, in cooperation with other organizations concerned:

- (1) Security-related information on as well as measures to ensure the safety of the Team,
- (2) Information on as well as support in obtaining medical service,
- (3) Available data and information related to the Study,
- (4) Credentials or identification cards,
- (5) Counterpart personnel, and
- (6) Suitable and adequate main office with necessary office equipment in Tunis.

8. CONSULTATION

JICA and MAHR shall consult with each other in respect of any matter that may arise from or in connection with the Study.



SCHEDULE OF THE STUDY

TENTATIVE SCHEDULE

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Phase 1																			
Phase 2																			
Report	▲ IC/R			▲ P/R1				▲ IT/R				▲ P/R2				▲ DF/R			▲ F/R

REMARKS: IC/R : Inception Report
P/R : Progress Report
IT/R : Interim Report
DF/R : Draft Final Report
F/R : Final Report

付 録 B

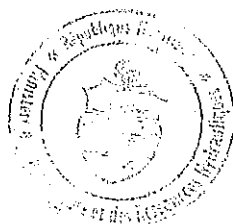
***Minutes of Meeting
on
Scope of Work***

**MINUTES OF MEETINGS
ON
SCOPE OF WORK
FOR
THE STUDY
ON
INTEGRATED BASIN MANAGEMENT FOCUSED ON FLOOD CONTROL
IN MEJERDA RIVER
IN
THE REPUBLIC OF TUNISIA**

**AGREED UPON BETWEEN
MINISTRY OF AGRICULTURE AND HYDRAULIC RESOURCES OF
THE REPUBLIC OF TUNISIA
AND
JAPAN INTERNATIONAL COOPERATION AGENCY**

Tunis, June 28th, 2006

Mr. Naceur Zehri
Director General
Department of Dam and Large Hydraulic Works
Ministry of Agriculture and Hydraulic Resources



N. Zehri

Mr. Kenji Nagata
Leader of the Preparatory Study Team
Japan International Cooperation Agency



NZ

In response to the official request of the Government of the Republic of Tunisia (hereinafter referred to as "the Government of Tunisia"), the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Preparatory Study Team (hereinafter referred to as "the Team") headed by Mr. Kenji NAGATA, to Tunisia from June 12th to July 8th, 2006 to discuss and agree on the Scope of Work (hereinafter referred to as "S/W") for "the Study on Integrated Basin Management focused on Flood Control in Mejerda River in the Republic of Tunisia" (hereinafter referred to as "the Study").

During its stay in Tunisia, the Team made field visits of the study area, and held a series of discussions with the Tunisian Side represented Ministry of Agriculture and Hydraulic Resources (hereinafter referred to as "MAHR"), and other authorities concerned. The list of participants is attached in the Appendix-1.

The Minutes of Meetings have been prepared for the better understanding of the S/W agreed upon between the MAHR and the Team.

The main items that were discussed and agreed upon by the Team and the Tunisian Side (hereinafter referred to as "both sides") are summarized as follows:

1 The title of the study

Both sides agreed that the title of the study would be "Integrated Basin Management focused on Flood Control in Mejerda River in the Republic of Tunisia".

2 Study area

The study area basically covers the whole area of the Mejerda River basin. The extreme north and Ichkeul basins should be taken into account for the consideration of water management.

3 Scope of the study

- (1) The scope of the Study includes analysis of interconnected dams operation focused on flood control and water use, taking into account inter-annual regulation of dams operation.
- (2) The Tunisian Side will inform the JICA Tunisia office in August about the location and basic specification of cross sectional survey related to the downstream of Sidi Salem dam. The cross sectional survey will be conducted and finished by the Tunisian Side before the end of September, and the results of the survey will be submitted to the JICA Tunisia Office by the end of October.

The Tunisian Side requested that the JICA study team should carry out a cross-sectional survey with required accuracy of Mejerda River in the upstream of Sidi Salem Dam with reference to the said survey results.

4 Technology transfer

The Team explained that the technology transfer includes on-the-job-training to counterpart personnel, workshops and seminars. The Tunisian Side requested that counterpart personnel should take advantage of training in Japan related to the Study to promote effective technology transfer. Moreover the Tunisian Side appealed that they needed to become able to use by

164

themselves analyzing tools and software that may be used/developed by the JICA study team, and requested those training for them. The Team agreed to convey this request to JICA headquarters.

5 Counterpart team

The Team requested MAHR to assign a counterpart team to the JICA study team. MAHR agreed to make up a counterpart team collected from the following departments, and appoint personnel for the counterpart team before the commencement of the Study and assign them in timely manner.

(1) MAHR

- Department of Dam and Large Hydraulic Works
- Department of Water Resources
- Department of Land Management and Preservation
- Department of Agricultural Studies and Development
- Department of Forests

(2) Other Ministries

- Ministry of Environment and Sustainable Development
- Ministry of Transportation (National Meteorology Institution: INM)
- Ministry of Equipment, Housing and Country Planning

(3) Regional Offices of MAHR

- Bizerte
- Beja
- Jendouba
- Ariana
- Manouba
- Kasserine
- Le Kef
- Siliana

(4) Universities

- High Institution for Rural Equipment Engineers (ESIER)
- National Agronomic Institute of Tunisia (INAT)

6 Steering committee

Both sides agreed that MAHR will set up a steering committee for the smooth implementation of the Study. It consists of the representatives of the following relevant

organizations under the chairmanship of MAHR.

- MAHR
 - Department of Dam and Large Hydraulic Works
 - Department of International Cooperation
 - Department of Water Resources
 - Department of Agricultural Studies and Development
- Ministry of Environment and Sustainable Development
- Ministry of Equipment, Housing and Country Planning
- Ministry of Foreign Affairs

7 Environmental and social considerations

The Team explained JICA's environmental and social consideration guidelines, and that it will be applied to the Study. MAHR accepted the policy of the JICA's guidelines, and agreed in principle to the following responsibilities and requirements.

- MAHR shall be responsible for conducting environmental impact assessment (EIA) in collaboration with the JICA study team.
- The JICA study team shall provide MAHR with technical support in order to conduct EIA.
- Final evaluation and approval of EIA is done by the Tunisian Side.
- In the course of conducting EIA, public consultation with stakeholders shall be included.
- The disclosure of information such as study reports is necessary to ensure the participation and dialogues with various stakeholders, in order to achieve appropriate environmental and social considerations.

8 Reports

- (1) The Tunisian Side requested that a copy of each report written in French should be submitted for the better understanding by the Tunisian Side. The Team agreed to convey this request to JICA Headquarters.
- (2) Each report shall be submitted with agreed number of copies and PDF file format in CD.
- (3) Both sides agreed that the study report would be open to the public, in principle, in order to achieve maximum use of the study results.

9 Work Schedule

MAHR requested that the Study period should be 11 months for phase 1 and 12 months for phase 2, totally 23 months. The Team understands the necessity of the said period and promised to convey the request to JICA Headquarters.

10 Undertaking of the Government of Tunisia

- (1) MAHR agreed to provide the JICA study team all the available data in MAHR and assist for the JICA study team to collect information outside of MAHR.

(2) MAHR agreed that office space with office furniture, air-conditioning, telephone lines and electricity would be provided in Tunis for the use by the JICA study team.

11 Equipment

The Tunisian Side requested computers with software and a vehicle for the Study. The Team agreed to convey this request to JICA headquarters.

12 Language

S/W and M/M are established in English and French versions. Both versions of the two documents are eligible. In case of misinterpretation, the English version shall prevail.

As

[Handwritten mark]

Appendix-1 List of Participants

Tunisian Side

Ministry of Agriculture and Hydraulic Resources

- Mr. Naceur ZEHRI, Director General, Department of Dam and Large Hydraulic Works
- Mr. Mohammed Hedi LOUATI, Director of Water Mobilizing Studies, Department of Dam and Large Hydraulic Works
- Mr. Hedi BELHADJ, Director of the Exploitation of Dams, Department of Dam and Large Hydraulic Works
- Ms. Madiha ABID, Modelling Deputy Director, Department of Dam and Large Hydraulic Works
- Mr. Mohammed SAËDAOUI, Hydrological Studies Deputy Director, Department of Water Resources
- Ms. Afef BEN REJEB, Department of International Cooperation
- Mr. Nouredine FERCHICHI, Water Resources Section Manager, the Regional Commissary of Agricultural Development of Beja
- Mr. Mohammed HAMROUNI, Water Resources section staff, the Regional Commissary of Agricultural Development of Beja
- Mr. Bahaeddine JRADI, Water Resources Section Manager, the Regional Commissary of Agricultural Development of Ariana
- Mr. Mohammed GASMI, Deputy Manager, Direction of Urban Hydraulic

Ministry of Environment and Sustainable Development

- Ms. Awatef MESSAI, Engineer, Department of Environment and Life Quality
- Mr. Mustapha LAROUI, Engineer, Department of Environment and Life Quality
- Ms. Marie José ELLOUMI, Director, the National Environment Protection Agency

Ministry of Transportation

- Mr. Laatiri Lotfi, Engineer, the National Institute of Meteorology

Japanese Side

The Preparatory Study Team, JICA

- Mr. Kenji NAGATA, Leader
- Mr. Masayuki KITAMAKI, Integrated Watershed Management
- Ms. Hiromi SAWADA, Cooperation planning
- Mr. Hiroshi OKADA, Flood Control Planning / Watershed Management
- Mr. Satoshi NAKAMURA, Social and Environmental Consideration

JICA Tunisia Office

- Mr. Satoshi MACHIDA, Resident Representative
- Mr. Koichi SHOJI, Assistant Resident Representative
- Mr. Abdelmajid BELHAJ YAHIA, Assistant Resident Representative
- Mr. SLAKA Karim, Assistant Coordinator