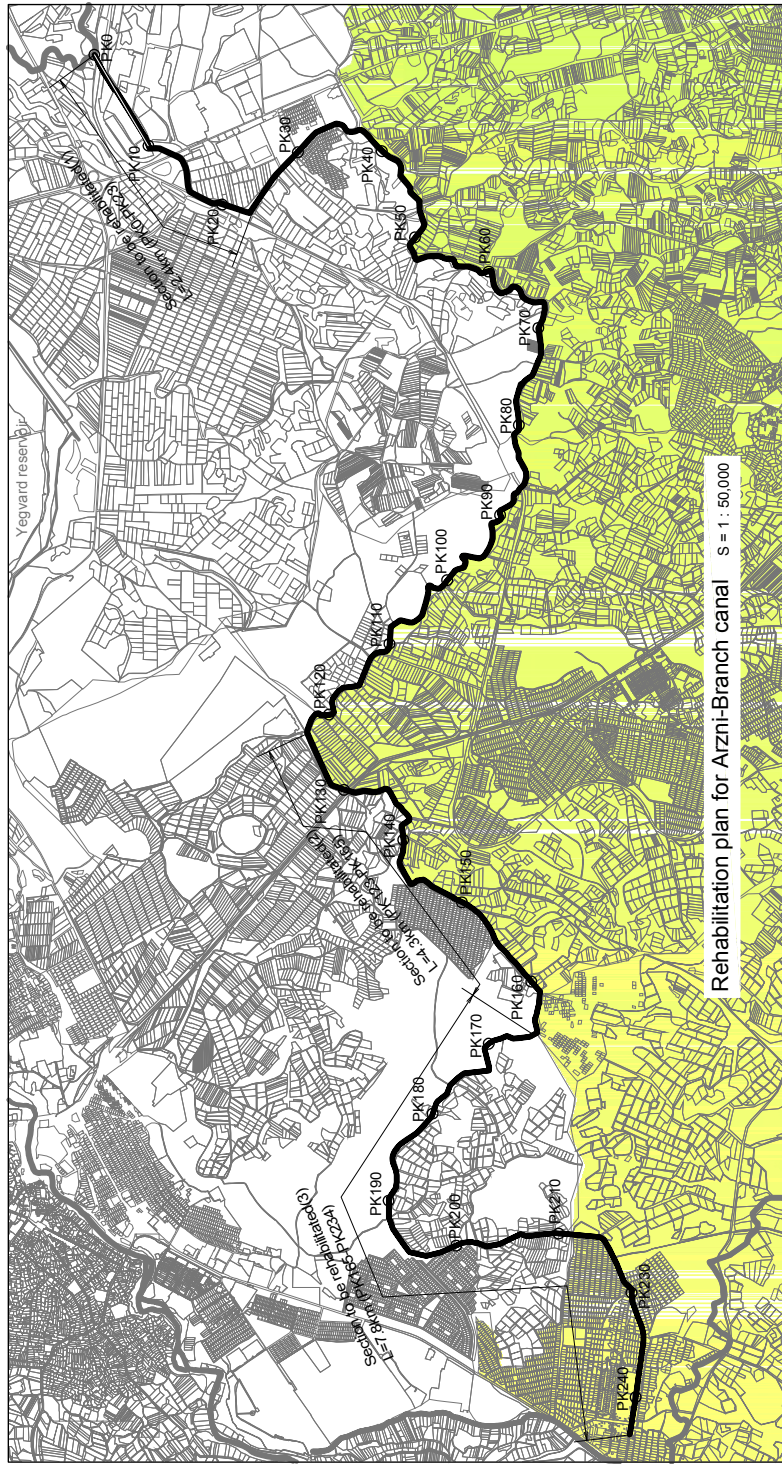


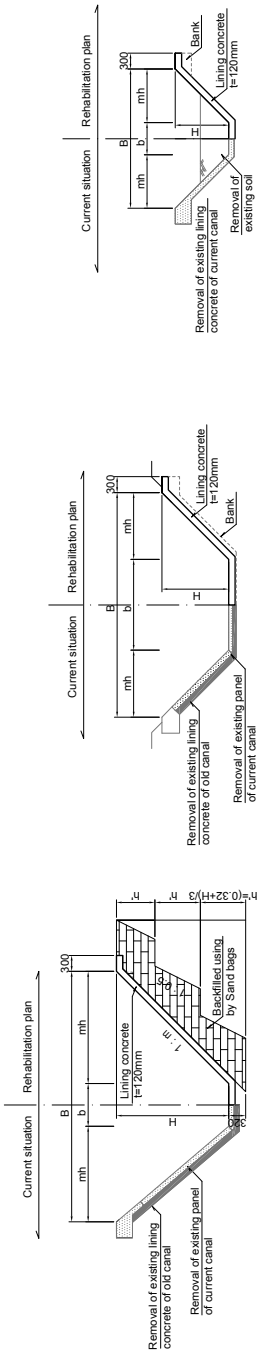


Rehabilitation plan for Azzni-Branch canal S = 1 : 50,000

DIMENSION OF THE CANALS

PK	L (m)	H (m)	B (m)	b (m)	m	Q1 (Current Discharge) (m³/s)	Q2 (Design Discharge) (m³/s)
TypeA: PK0 - PK23							
PK0+00	30.00	1.60	4.20	1.00	1.00	5.00	2.30
PK0+30	874.00	1.20	3.20	0.80	1.00	5.00	2.30
PK0+04	546.00	1.40	3.80	1.00	1.00	5.00	2.30
PK1+50	70.00	1.80	4.80	1.20	1.00	6.00	2.30
PK1+20	180.00	2.10	6.70	2.50	1.00	5.00	2.30
PK1+40	356.00	2.10	4.58	0.80	0.90	4.80	2.30
PK2+56	250.00	2.10	4.37	0.80	0.85	4.80	2.30
PK2+06	250.00	2.10	4.37	0.80	0.85	4.80	2.30
TypeB: PK123 - PK165							
PK123+00	400.00	0.85	2.45	0.75	1.00	2.60	0.56
PK127+00	30.00	1.05	3.00	0.90	1.00	2.80	0.56
PK127+30	30.00	-	-	-	-	-	-
PK127+60	30.00	1.25	4.20	1.70	1.00	2.80	0.56
PK131+00	340.00	1.45	3.60	0.70	1.00	2.80	0.56
PK137+60	680.00	1.50	4.20	1.20	1.00	2.80	0.56
PK139+05	25.00	1.25	3.40	0.90	1.00	2.80	0.56
PK140+53	248.00	1.00	1.80	0.40	0.70	2.80	0.56
PK144+29	47.00	-	-	-	-	-	-
PK144+76	24.00	1.25	3.40	3.40	0.00	2.90	0.56
PK145+00	186.00	1.15	2.80	0.50	1.00	2.00	0.56
PK146+86	394.00	0.90	2.45	0.65	1.00	2.00	0.56
PK150+80	40.00	1.00	1.20	1.20	0.00	2.10	0.56
PK151+20	40.00	0.90	2.50	0.70	1.00	2.10	0.56
PK151+60	970.00	-	-	-	-	-	-
PK161+30	135.00	0.90	2.60	0.80	1.00	2.00	0.56
PK162+65	49.00	0.85	1.35	1.35	0.00	-	-
PK163+14	76.00	1.00	2.60	0.60	1.00	2.00	0.56
PK163+90	12.00	0.70	2.00	0.60	1.00	2.00	0.56
PK164+02	93.00	1.00	2.60	0.60	1.00	2.00	0.56
PK164+35	2695.00	1.00	2.60	0.60	1.00	2.00	0.56
PK164+95	1975.00	1.30	3.00	0.40	1.00	-	0.56
PK21+65	2,193.00	0.80	2.10	0.50	1.00	-	0.56
PK23+48	-	-	-	-	-	-	0.56

NOTE : Source of dimension (section1) and current Q are by Ashatarak WUA
Source of dimension (section2,3) is by study team
Source of current Q (section2,3) is designed by Millennium project

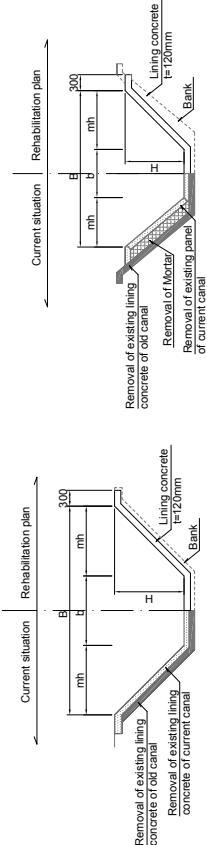
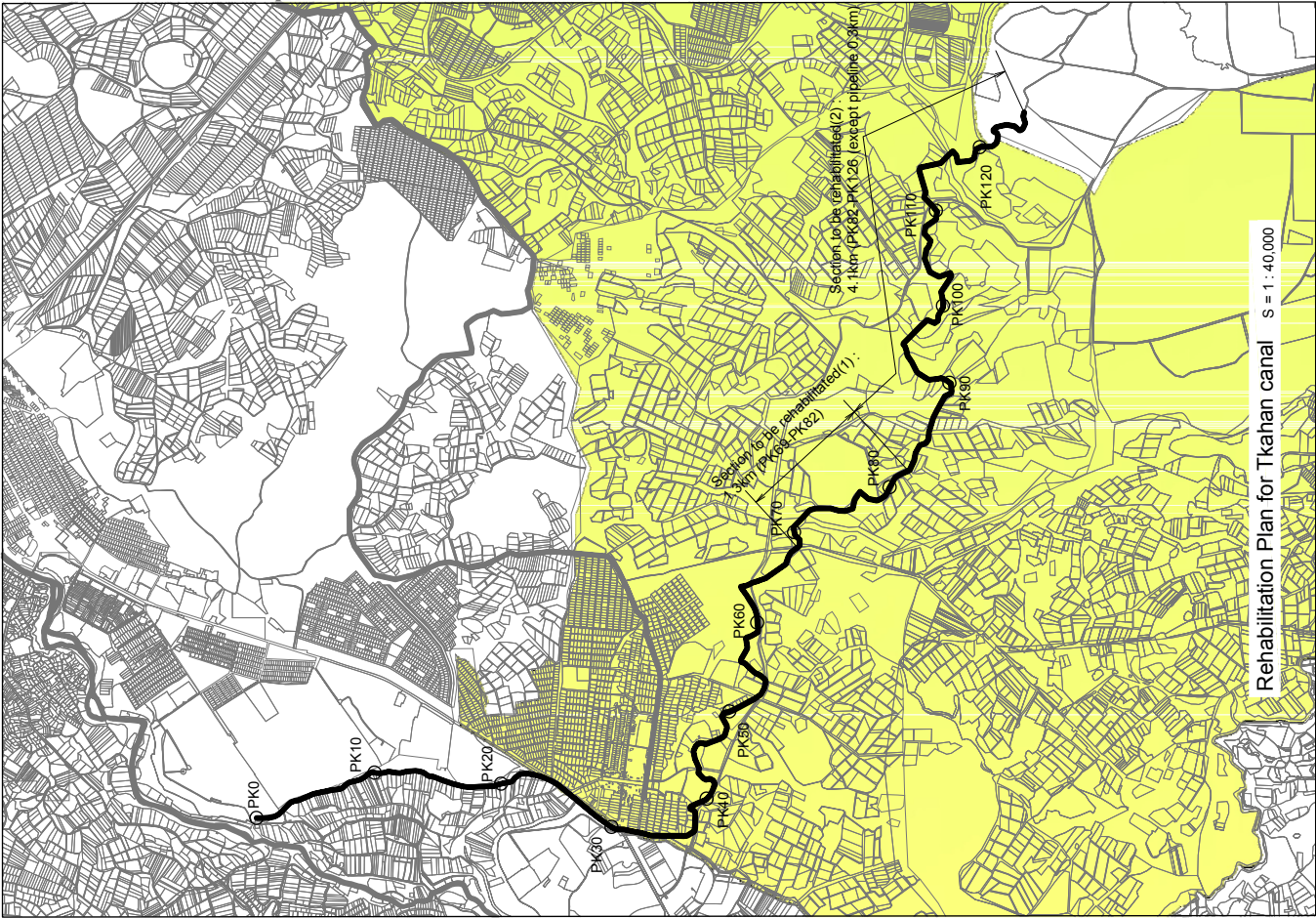


TypeA : Section(1) PK0 - PK23

TypeB : Section(2) PK123 -165

TypeC : Section(3) PK165 -234

Project:	Preparatory Survey for Yeghvard Irrigation System Improvement Project	Drawing No:	Drawn by:
Drawing Title:	Rehabilitation Plan for Azzni-Branch canal	Scale:	Checked by:
Revision	Initials	All dimension in:	Approved by:
		Meter	



TypeA : Section(1) PK69 - PK82

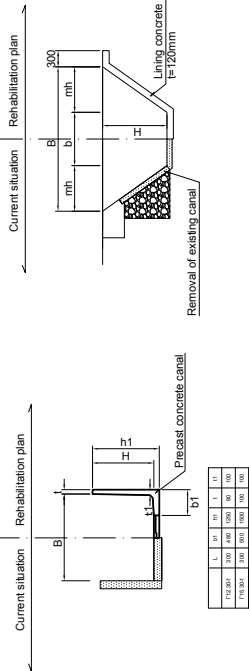
TypeB : Section(2) PK82 -126

DIMENSION OF THE CANALS

PK	L	H	B	b	m	Q1 (Current Discharge) (m ³ /s)	Q2 (Design Discharge) (m ³ /s)
TypeA: PK69 - PK82							
PK68+60	330.00	1.30	3.90	1.30	1.00	-	1.30
PK71+40	300.00	1.25	3.50	1.00	1.00	-	1.30
PK74+40	635.00	1.30	3.80	1.20	1.00	-	1.30
PK81+25	75.00	1.30	3.60	1.00	1.00	-	1.30
PK82+00	1.30	3.60	1.00	1.00	1.00	-	1.30
TypeB: PK82 - PK126							
PK82+00	165.00	1.30	3.60	1.00	1.00	-	1.30
PK83+65	280.00	1.10	3.10	0.90	1.00	-	1.30
PK86+45	34.00	1.40	1.60	1.60	0.00	-	1.30
PK86+79	141.00	1.30	3.75	1.15	1.00	-	1.30
PK88+20	425.00	1.20	3.30	0.90	1.00	-	1.30
PK92+45	535.00	1.05	2.80	0.70	1.00	-	1.30
PK97+80	295.00	1.20	3.30	0.90	1.00	-	1.30
PK100+70	660.00	0.90	2.60	0.80	1.00	-	1.30
PK103+65	360.00	1.00	2.90	0.90	1.00	-	1.30
PK110+25	615.00	1.30	3.35	0.75	1.00	-	1.30
PK120+40	625.00	1.45	3.80	0.90	1.00	-	1.30
PK126+40	625.00	1.45	3.80	0.90	1.00	-	1.30

NOTE : Source of dimension is by study team

Project:	Preparatory Survey for Yeghvard Irrigation System Improvement Project	Drawing No:	Drawn by:
Drawing Title:	Rehabilitation Plan for Tkanan canal	Scale:	Sanyu Consultants Inc.
Revision	Initials	All dimension in:	Checked by:
		Meter	Approved by:



Section of rehabilitation(1) PK0 - PK31, PK62 - PK63

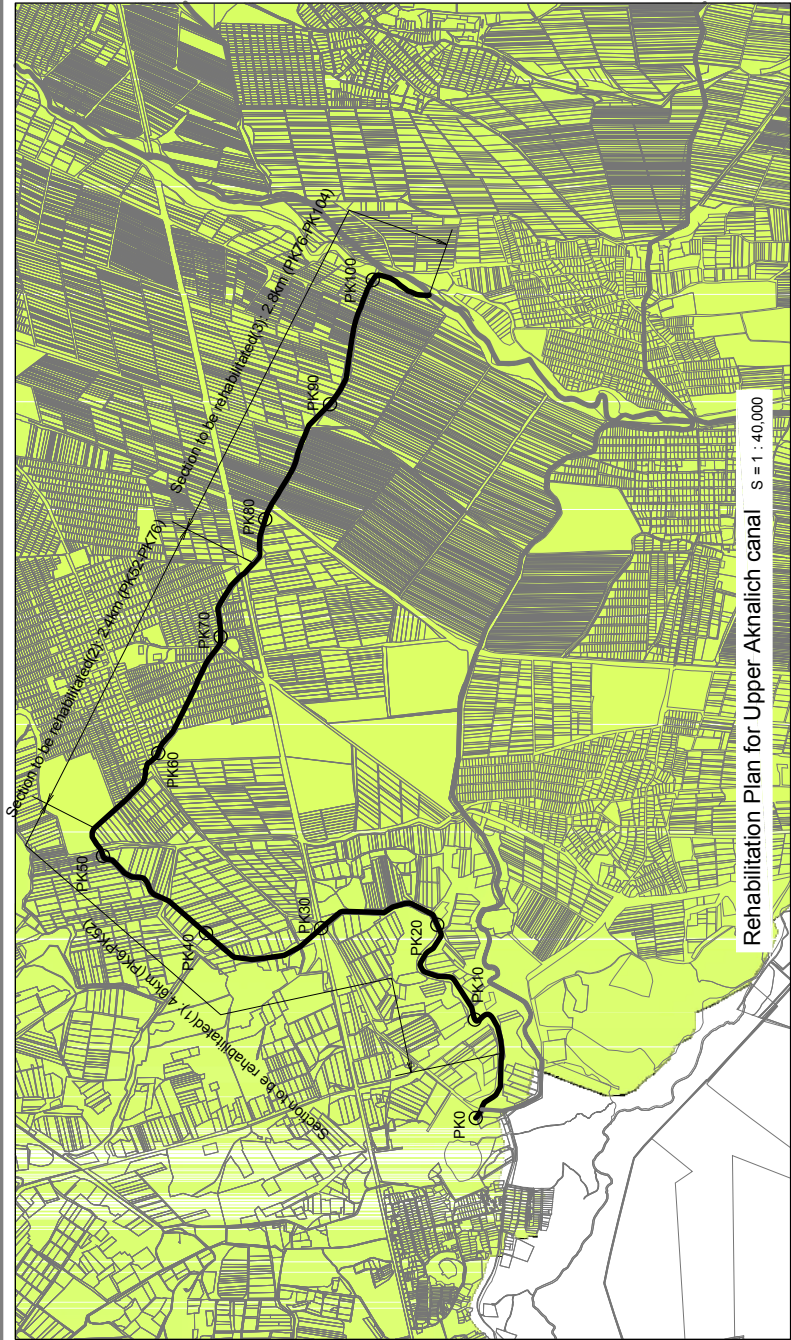
Section of rehabilitation(2) PK63 - PK70, PK82 - PK112

DIMENSION OF THE CANALS

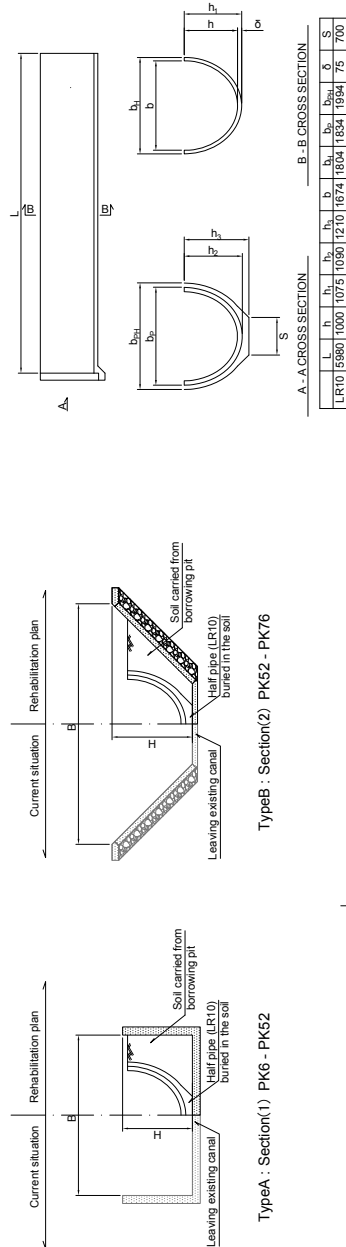
PK	L (m)	H (m)	B (m)	b (m)	m (m)	Q1 (Current Discharge) (m³/s)	Q2 (Design Discharge) (m³/s)
TypeA: PK0 - PK31, PK62 - PK63							
PK0+00	30.00	1.50	1.50	1.50	0.00	1.80	1.00
PK0+30	450.00	1.10	1.10	1.10	0.00	1.80	1.00
PK5+65	600.00	1.10	1.65	1.65	0.00	1.80	1.00
PK11+00	1.10	1.65	1.65	1.65	0.00	1.80	1.00
PK11+50	55.00	1.15	3.10	3.10	0.00	1.80	1.00
PK12+05	290.00	1.10	2.95	2.95	0.00	1.80	1.00
PK14+65	110.00	1.05	3.00	3.00	0.00	1.80	1.00
PK15+75	690.00	1.15	3.00	3.00	0.00	1.80	1.00
PK22+65	180.00	1.00	3.05	3.05	0.00	1.80	1.00
PK24+45	250.00	1.15	1.60	1.60	0.00	1.80	1.00
PK26+45	40.00	1.00	1.60	1.60	0.00	1.80	1.00
PK27+35	170.00	1.10	1.80	1.80	0.00	1.80	1.00
PK29+05	120.00	1.20	1.50	1.50	0.00	1.80	1.00
PK29+27	162.00	1.10	1.80	1.80	0.00	1.80	1.00
PK30+89	120.00	1.20	1.50	1.50	0.00	1.80	1.00
PK61+90	155.00	1.20	2.20	2.20	0.00	1.20	0.57
PK63+45	120.00	1.20	2.20	2.20	0.00	1.20	0.57
TypeB: PK62 - PK82 - PK112							
PK63+45	125.00	1.20	2.20	2.20	0.00	1.20	0.57
PK64+70	1185.00	1.20	2.70	2.70	0.00	1.00	0.39
PK69+65	3000.00	1.20	2.70	2.70	0.00	1.00	0.39
PK82+00	120.00	1.20	2.70	2.70	0.00	1.00	0.39
PK112+10	100.00	1.20	2.70	2.70	0.00	1.00	0.39

NOTE : Source of dimension is by study team
current Q are by Vagashapat WUA

Project:	Preparatory Survey for Yeghvard Irrigation System Improvement Project	Drawn by:	Sanyu Consultants Inc.
Drawing Title:	Rehabilitation Plan for Shakti-Aru canal	Checked by:	
Revision:	Initials	Scale:	Free
		All dimension in:	Meter
		Approved by:	



Rehabilitation Plan for Upper Aknaich canal S = 1 : 40,000



Half pipe (LR10)

Project: Preparatory Survey for Yeghvard Irrigation System Improvement Project

Drawing Title: Rehabilitation Plan for Upper Aknaich canal

Revision: Initials

Scale: Free

Approved by: Meter

Drawing No: Sanyu Consultants Inc.

Checked by:

Approved by:

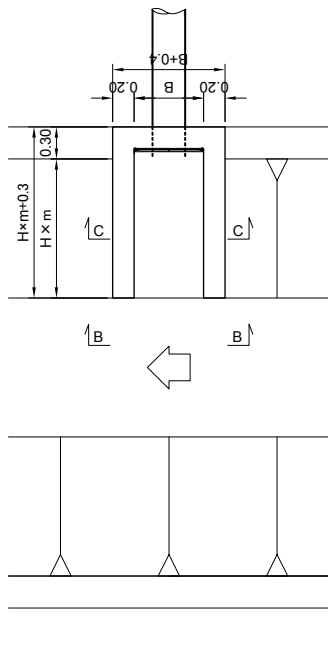
NOTE : Source of dimension (PK6-PK76) is by study team, the other is by Vagashapat WUA Current Q are by Vagashapat WUA

DIMENSION OF THE CANALS

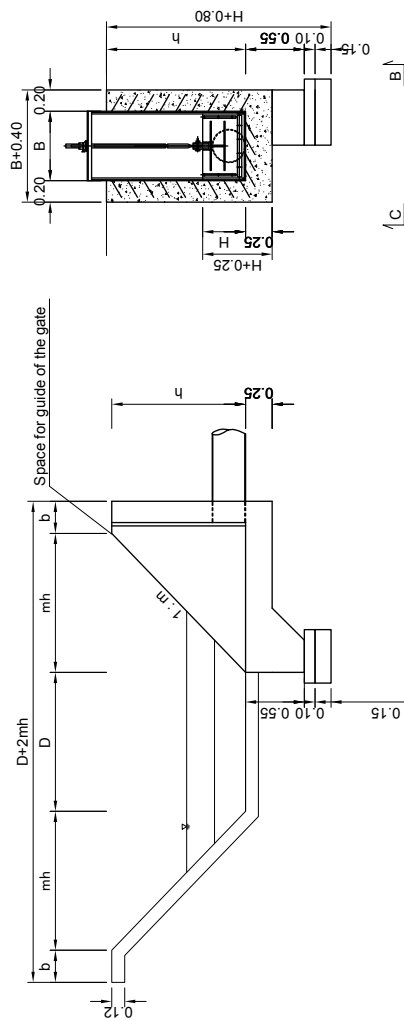
PK	L (m)	H (m)	B (m)	b (m)	m	O1 (Current Discharge) (m³/s)	O2 (Design Discharge) (m³/s)
TypeA: PK6 - PK32							
PK6+65	170.00	1.30	3.00	3.00	0.00	2.20	1.08
PK7+35	235.00	1.35	2.80	2.80	0.00	2.20	1.08
PK9+70	255.00	1.70	2.75	2.75	0.00	2.20	1.08
PK12+25	125.00	1.80	2.80	2.80	0.00	2.20	1.08
PK13+50	180.00	1.70	2.60	2.60	0.00	2.20	1.08
PK15+40	620.00	1.90	2.80	2.80	0.00	2.20	1.08
PK21+60	160.00	1.90	2.75	2.75	0.00	2.20	1.08
PK23+20	160.00	1.85	2.70	2.70	0.00	2.20	1.08
PK24+80	380.00	1.75	2.85	2.85	0.00	2.20	1.08
PK28+40	90.00	1.70	2.75	2.75	0.00	2.20	1.08
PK29+30	155.00	1.75	2.70	2.70	0.00	2.20	1.08
PK30+85	125.00	1.70	2.85	2.85	0.00	2.20	1.08
PK32+10	180.00	1.80	2.80	2.80	0.00	2.20	1.08
PK34+00	410.00	1.80	2.75	2.75	0.00	2.20	1.08
PK38+10	180.00	1.35	2.10	2.10	0.00	2.20	1.08
PK40+00	50.00	1.50	2.00	2.00	0.00	2.20	1.08
PK40+50	485.00	1.35	2.20	2.20	0.00	2.20	1.08
PK45+45	23.00	1.30	2.25	2.25	0.00	2.20	1.08
PK45+68	6.00	1.30	2.25	2.25	0.00	2.20	1.08
PK45+74	646.00	1.50	4.50	1.50	1.00	2.20	1.08
PK52+20	17.00	1.50	2.00	2.00	0.00	2.20	1.08
PK52+37	17.00	1.10	3.20	1.00	1.00	2.20	1.08
TypeB: PK52 - PK76							
PK52+37	13.00	1.10	3.20	1.00	1.00	2.20	1.08
PK52+50	355.00	1.30	4.35	1.75	1.00	2.20	1.08
PK56+05	215.00	1.10	4.40	2.20	1.00	2.20	1.08
PK58+20	245.00	1.30	4.10	1.50	1.00	2.20	1.08
PK60+65	300.00	0.70	3.20	1.80	1.00	2.20	1.08
PK63+65	745.00	0.70	3.00	1.60	1.00	1.20	0.30
PK71+10	535.00	0.80	2.10	0.80	1.00	1.20	0.30
PK76+45	535.00	1.50	4.50	1.50	1.00	1.20	0.30
TypeC: PK76 - PK104							
PK76+45	2755.00	1.50	4.50	1.50	1.00	1.20	0.30
PK104+00	2755.00	1.50	4.50	1.50	1.00	1.20	0.30

LOCATION OF THE SLUICE GATE WITH THE SIZE

Size	Canal			
	Azmi-Branch	Tkahan	Shakhi-Aru	Upper canal
B = 0.30m				(1) PK63+65 (2) PK64+90 (3) PK96+77 (1) PK95+3 (2) PK97+35
B = 0.35m	(1) PK224+65 (2) PK224+65 (3) PK224+65	(1) PK124+10 (1) PK124+10		(1) PK96+77 (1) PK99+18
B = 0.40m	(1) PK161+30 (1) PK162+65	(1) PK107+41		(1) PK13+50
B = 0.45m		(1) PK91+85 (2) PK91+85 (3) PK92+55 (4) PK103+65		(1) PK5+65 (2) PK7+35 (3) PK9+70
B = 0.50m	(1) PK163+40 (2) PK188+50 (3) PK214+50 (4) PK220+15	(1) PK108+80 (2) PK113+85		
B = 0.60m	(1) PK162+65 (1) PK173+15 (2) PK173+15	(1) PK27+51		(1) PK93+69 (1) PK95+53 (1) PK45+45
B = 0.65m	(1) PK162+65 (1) PK173+15	(1) PK33+35		
B = 0.70m	(1) PK161+30 (1) PK211+65	(1) PK106+25 (2) PK106+5 (3) PK110+25 (1) PK7+15	(1) PK16+44	
B = 0.75m	(1) PK162+65 (1) PK173+15	(1) PK22+76 (2) PK107+41 (1) PK22+47 (2) PK69+56	(1) PK38+10	
B = 0.80m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	
B = 0.85m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	
B = 0.90m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	
B = 0.95m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	
B = 1.00m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	
B = 1.05m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	
B = 1.10m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	
B = 1.15m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	
B = 1.20m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	
B = 1.25m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	
B = 1.30m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	
B = 1.35m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	
B = 1.40m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	
B = 1.45m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	
B = 1.50m	(1) PK162+65 (1) PK173+15	(1) PK106+5 (1) PK110+25 (1) PK7+15	(1) PK40+50	



PLAN VIEW

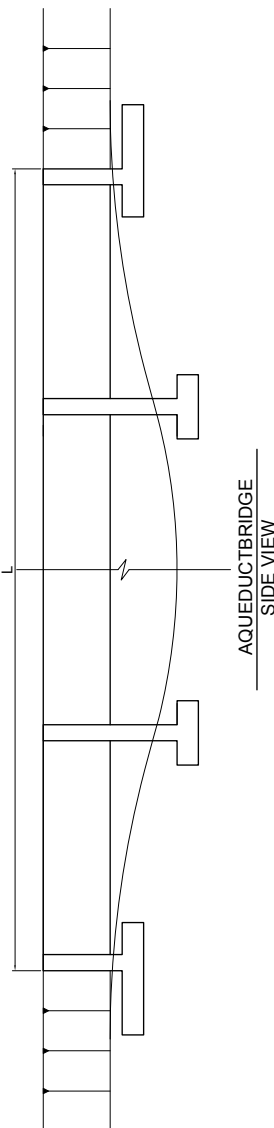
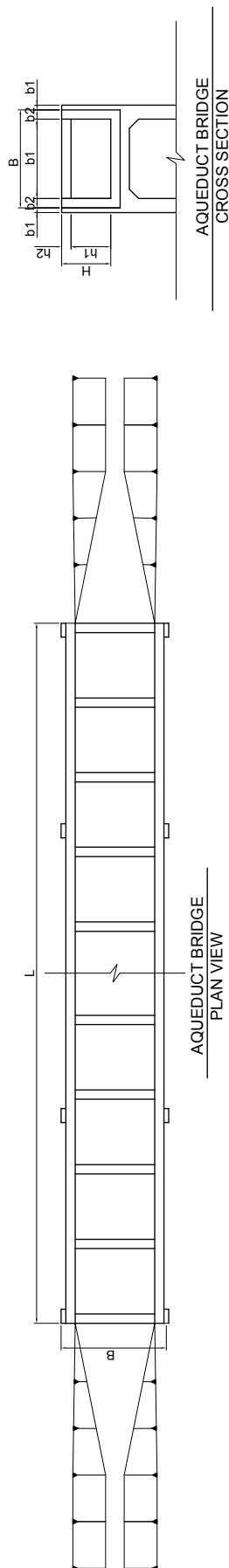


A-A CROSS SECTION

B-B, C-C FRONT OF THE GATE

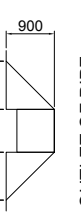
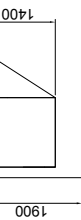
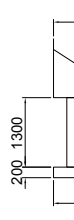
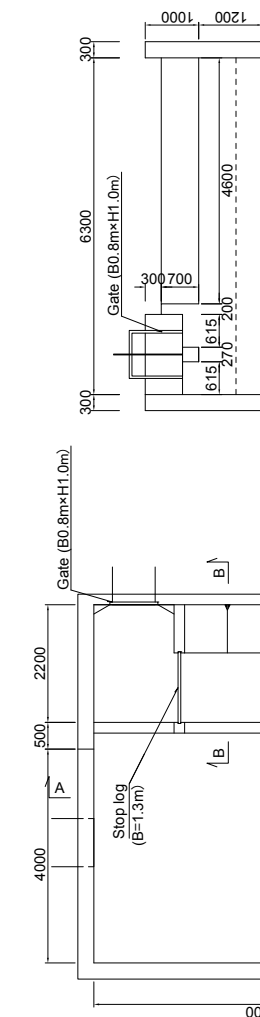
B : Shall include the frame of the gate
m : Shall be confirmed at site
h : Shall include design water level and freeboard

Project:	Preparatory Survey for Yeghvard Irrigation System Improvement Project	Drawing No:	Sanyu Consultants Inc.
Drawing Title:	Standard drawing of the diversion works	Scale:	Free
Revision	Initials	Approved by:	Meter



LOCATION OF THE AQUEDUCT BRIDGES WITH THE SIZE

Canal	PK	b1	b2	b3	B	h1	h2	H	L
Arzi-Branch	PK144+29	1.70	0.20	0.10	2.00	0.85	0.20	1.05	47.00
	PK162+05	1.35	0.15	0.08	1.58	0.95	0.15	1.10	48.00
	PK66+05	1.60	0.20	0.10	3.38	1.25	0.15	1.40	34.00
Tkhayan	PK120+00	1.60	0.50	0.25	2.35	1.25	0.15	1.40	17.00
	PK45+68	2.10	0.35	0.18	2.63	1.05	0.15	1.20	6.00
Upper canal	PK32+50	1.70	0.35	0.18	4.98	1.10	0.15	1.25	17.00
	PK32+20	1.70	0.35	0.18	4.98	1.10	0.15	1.25	17.00



SANRI Flume No.	b		0-10		b1	hsp	hc	i5	Head range		Free-flow discharge range Q			
	m	mm	m	mm					m	mm	min	max	min	max
1	2	3	4	5	6	7	8	9	10	11				
1	0.30	0.60	0.510	0.40	0.70	1.80	1.14	0.55	0.3	0.25				
2	0.40	0.80	0.610	0.50	0.80	2.00	1.28	0.65	0.4	0.35				
3	0.50	1.00	0.810	0.60	0.90	2.20	1.45	0.70	0.50	0.40				
4	0.60	1.20	1.000	0.80	1.00	2.50	1.60	0.85	0.10	1.00				
5	0.75	1.50	1.200	1.00	1.20	3.00	0.22	1.00	0.16	1.60				
6	1.00	2.00	1.700	1.20	1.30	3.00	0.24	1.10	0.25	2.50				

Drawn by:

Sanyu Consultants Inc.

Checked by:

Scale:

Measurement facilities

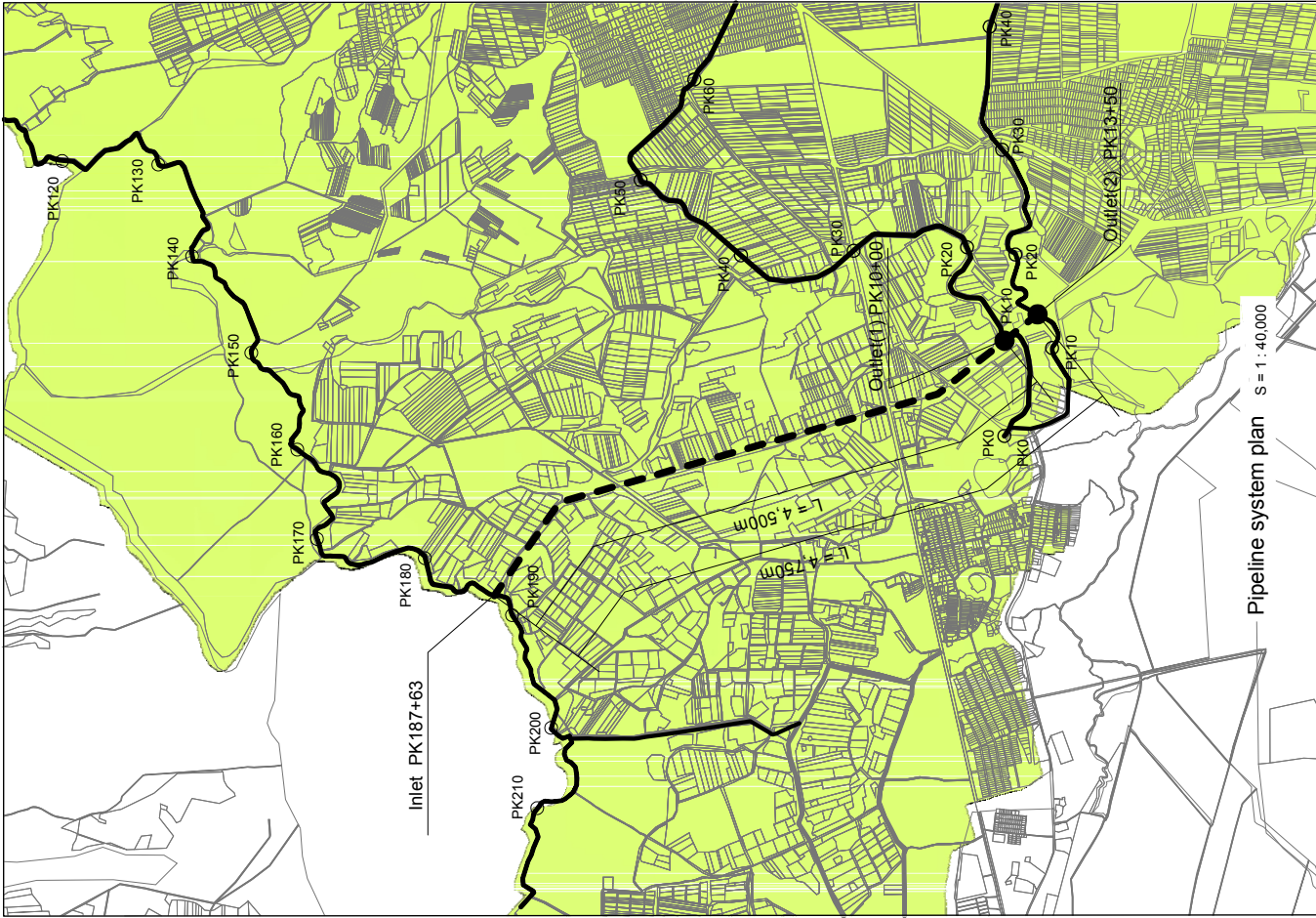
Drawing No:

Preparatory Survey for Yeghvard Irrigation System Improvement Project

Drawing Title:
Standard drawing of the aqueduct bridges, the water measurement facilities

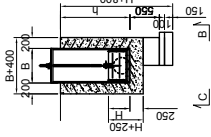
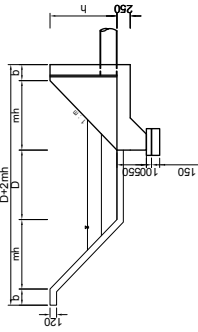
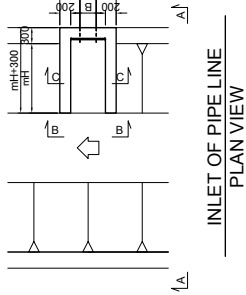
Initials

[illegible]



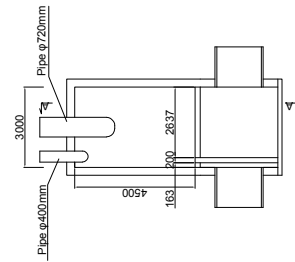
PK	L (m)	H (m)	B (m)	b (m)	m	Q1 (Current Discharge) (m³/s)	Q2 (Design Discharge) (m³/s)	Freeboard (m)	h (Height of raising bank) (m)
PK185+70		1.72	4.80	1.40	0.93	3.00	6.64	0.28	0.13

Size		Canal	
		Lower Hazdan to Upper	Lower Hazdan to Inner
B = 0.50m	B 0.50 x 0.50	(1) PK10+10	
B = 1.20m	B 1.20 x 1.20		(1) PK13+50



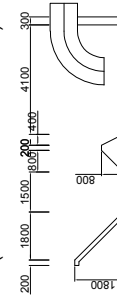
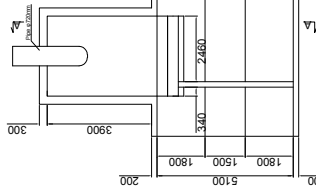
INLET OF PIPE LINE
A-A CROSS SECTION

INLET OF PIPE LINE
B-B-C-C CROSS SECTION



OUTLET OF PIPE LINE
PLAN VIEW
(UPPER AKNALICH CANAL)

OUTLET OF PIPE LINE
A-A CROSS SECTION
(UPPER AKNALICH CANAL)



OUTLET OF PIPE LINE
PLAN VIEW
(INNER AKNALICH CANAL)

OUTLET OF PIPE LINE
A-A CROSS SECTION
(INNER AKNALICH CANAL)

Project:	Preparatory Survey for Yeghvard Irrigation System Improvement Project	Drawing No:	Drawn by:
Drawing Title:	Water transmitting pipeline for Upper and Inner Aknalich canal system	Scale:	Sanyu Consultants Inc.
Revision	Initials	Free	Checked by:
		All dimension in:	Approved by:
		Meter	