

**UNITED NATION DEVELOPMENT PROGRAM  
UNDP**



**Community Based Agriculture and Rural Development - Access to Licit  
Livelihoods (CBARD-ALL) in Eastern region.**

Reference No. **UNDPAFGRPA/2024/01/29]**

**NANGARHAR PROVINCE KHOGYANI, DISTRICTS ANAR  
KHIL CANAL REHABILITATION**

**CONSTRUCTION DRAWINGS**

**DATE: SEPTEMBER-2024**

**act!onaid**  
**ACTION AID AFGHANISTAN (AAA)**

SL#	DESCRIPTION	DRAWING/SHEET NO.
01	TITLE SHEET	000
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LEGEND:-

FUNDED BY:  
United Nation Developement Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

**actionaid**

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION

SUB-PROJECT:  
REHABILITATION OF ANAR KHIL CANAL

DRAWING: List of Key Drawing

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE:

DRAWING PAGE NO:001

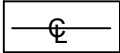
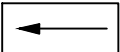




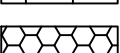
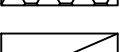
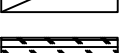
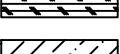
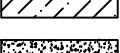

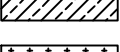
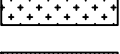




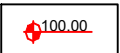


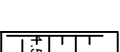
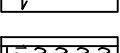
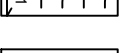
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Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA NGR Technical Team	AAA NGR T.J Team
Reviewed By:	AAA Technical Team	AAA Technical Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:September , 2024

LEGEND:-

	Center Line
	Direction of flow
	Dry Stone Pitching/Section
	Grouted Stone Masonry/Pitching Section
	Brick Masonry
	P.C.C Block
	Gabion
	Gabion Section
	Wash/River Bed Material
	Geotextile Mattress
	Plain Cement Concrete
	Reinforced Cement Concrete
	Bank Protection
	Compacted Soil
	Hill
	H.F.L / M.W.L
	Elevation of the point is 100 m
	Elevation of the point (100m) in Plan view
	Traverse Station
	Bench Mark
	Lined Slope
	Earthen Slope
	Ground Level
	Stone Pitching/Rip Rap


Av	AVERAGE
BM	BENCH MARK
B	WIDTH
C/C	CENTER TO CENTER
D	DEPTH OF WATER
DRG	DRAWING
DIA , Ø	DIAMETER
D.W.L	DESIGN WATER LEVEL
D/S	DOWNSTREAM
EL.	ELEVATION
F.B	FREE BOARD
HFL	HIGH FLOOD LEVEL
HT.	HEIGHT
H.G.L	HYDRAULIC GRADE LINE
KM , km	KILOMETERE
M ,m	METRE
Chkd	CHECKED
Apprvd	APPROVED
M . W .L	MAXIMUM WATER LEVEL
MIN	MINIMUM
No(s)	NUMBER(S)
N.G.L	NATURAL GROUND LEVEL
P.C.C	PLAIN CEMENT CONCRETE
R.C.C	REINFORCED CEMENT CONCRETE

ABBREVIATION:-


ST	STATION
THK	THICKNESS
TYP	TYPICAL
HFL	HIGH FLOOD LEVEL
U/S	UPSTREAM
YRS	YEARS
Q	DESIGN DISCHARGE
W.L	WATER LEVEL

LEGEND:-

FUNDED BY:  
United Nation Developement Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE : : **UNDP AFGRPA/2024/01/29J**

SUB-PROJECT:  
  
Nangarhar Province Kot District  
ANAR Khili Canal Rehablatation

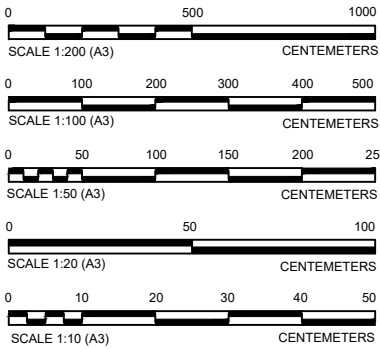
DRAWING:  
  
Legends

PROJECT SYMBOL:   CBARD ALL /AFG/EAST  
SUB-PROJECT CODE:   NGR-Kot-01,Str-1  
DRAWING PAGE NO:002  
REVISION NO:    1

Action Taken	Name	Designation
Surveyed By:	AAA Survey Team	AAA Survey Team
Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:September . 2024





GENERAL SPECIFICATIONS

- 1- All Mass Concrete Should be (40% crushed stone with 60% concrete the maximum size of stone shall be 20cm) with ration 1:2:4 of the concrete.
- 2- The stone for mass concrete , stone masonry and grouted stone pitching Should be good quality and approved by engineer.
- 3- All Grouted stone pitching in stilling basin and foundations Should be with ratio of 1:3.
- 4- All Masonry Wall Should be with mortar 1:3.
- 5- Bitumen Should be used in all construction joints.
- 6- All Plain Cement concrete Should be 1:2:4 or as specified
- 7- All tests which are needed for selection of the well graded soil Should be done before any backfilling.
- 8- In all backfilling the max. thickness of each layer Should be 15 cm.
- 9- The compaction tests Should be done during the backfilling.
- 10- The percentage of compaction Should be not less than 95%.
- 11- All the tests Should be done by an organization which is accepted by the client.
- 12- Provide construction joint for stone masonry wall at 10-16m.
- 13- Stone for gabion Should be good quality.
- 14- Stone size for gabion Shall be range 20 cm -30 cm.
- 15- Woven using galvanized gabion wire.
- 16- Principal wires along the gabion edges(selvedges) to be strong.
- 17- Tensile strength of wire Should be 38-50 kg/mm<sup>2</sup>.
- 18- Galvanized gabion wire used for mesh panel have a diameter of 4mm.
- 19- Galvanized gabion wire used for frame of gabion have a diameter of 4mm.
- 20- Mesh size for gabion basket 8x10cm and for mattress 8x10cm Should follow Macaffere Standard

- 21- All P.C.C under footings to have cement,sand and agg. ratio 1:2:4 or as specified
- 22- The Reinforcement yield stress  $f_y$  Shall not be less than 3000 kg/cm<sup>2</sup> or as specified
- 23- Concrete design based on a compressive strength of  $f_c = 250$  kg/cm<sup>2</sup> or as specified
- 24- Weight per unit volume of concrete  $W = 2400$  kgf/m<sup>3</sup>
- 25- Sand or fine aggregate Shall be free from salt,alkali,calcium sulphate or vegetable and it Shall not contain more than 0.5 percent by weight of clay.
- 26- Aggregate:- Coarse aggregate Shall consist of crush ed gravel with the max. size of 20mm.
- 27- The Max slump Should be between 5-7.5 cm.
- 28- To increase the workability of the concrete provide the chemical admixture (Supper plasticizer)
- 29- The water used for making and curing of concrete Shall be from a source approved by the Engineer and at the time of use Shall be free from polluting matter.
- 30- Concrete is poured and vibrate in such a way to form a solid compact concrete.
- 31- The concrete is to be cured for 14 days.
- 32- During the cold wether concreting Should be stop or the contractor has to consider the cold wether concreting procedure.
- 33- All Shuttering Should be from steel type.
- 34- Shuttering can be removed after :

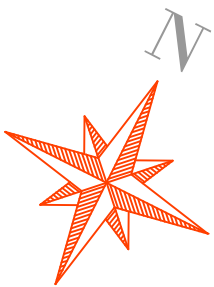
Side of beams,walls,columns	16-24 hours
Forms from beneath the slabs(spaning up to 6m)	14 days
Forms from beneath the slabs(spaning above 6m)	21days
- 35- Steel bar overlap Should not be less than 60 Ø bar  
Location of the Hydraulic structure, setting out and elevation to be confirmed by the engineer before of construction.

LEGEND:-

FUNDED BY: United Nation Development Program		
IMPLEMENTATION PARTNER: ACTION AID AFGHANISTAN (AAA)		
		
PROJECT: CBARD ALL PROJECTS EASTERN REGION PROJECT CODE : <b>UNDP AFGRPA/2024/01/291</b>		
SUB-PROJECT: Nangarhar Province Kot District		
DRAWING: ANAR Khill Canal Rehablatation		
PROJECT SYMBOL: CBARD ALL /AFG/EAST		
SUB-PROJECT CODE: NGR-Kot-01,Str-1		
DRAWING PAGE NO:003		
REVISION NO: <b>1</b>		
Action Taken	Name	Designation
Surveyed By:	AAA Survey Team	AAA Survey Team
Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		
Drawing Scale: As Shown		Date:September , 2024



KOT Distdriect Anar Khil / Canal GIS MAP For CBARD ALL Project



LEGEND:-

Proposed Canal

Existing Asphalt Road

Mountains Area

Command Area

River

Desert

Start point of Canal

Village Area

FUNDED BY:  
United Nation Development Proggmm

IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

act:onaaid

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE : UNDP AFG/PA/2024/01/29J

SUB-PROJECT:  
Nangarhar Province Kot District  
ANAR Khilil Canal Rehablatation

DRAWING:  
Anaar Khil GIS MAP

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: NGR-Kot-01,Str-1

DRAWING PAGE NO:004

REVISION NO: 1

Action Taken	Name	Designation
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Approved By:		

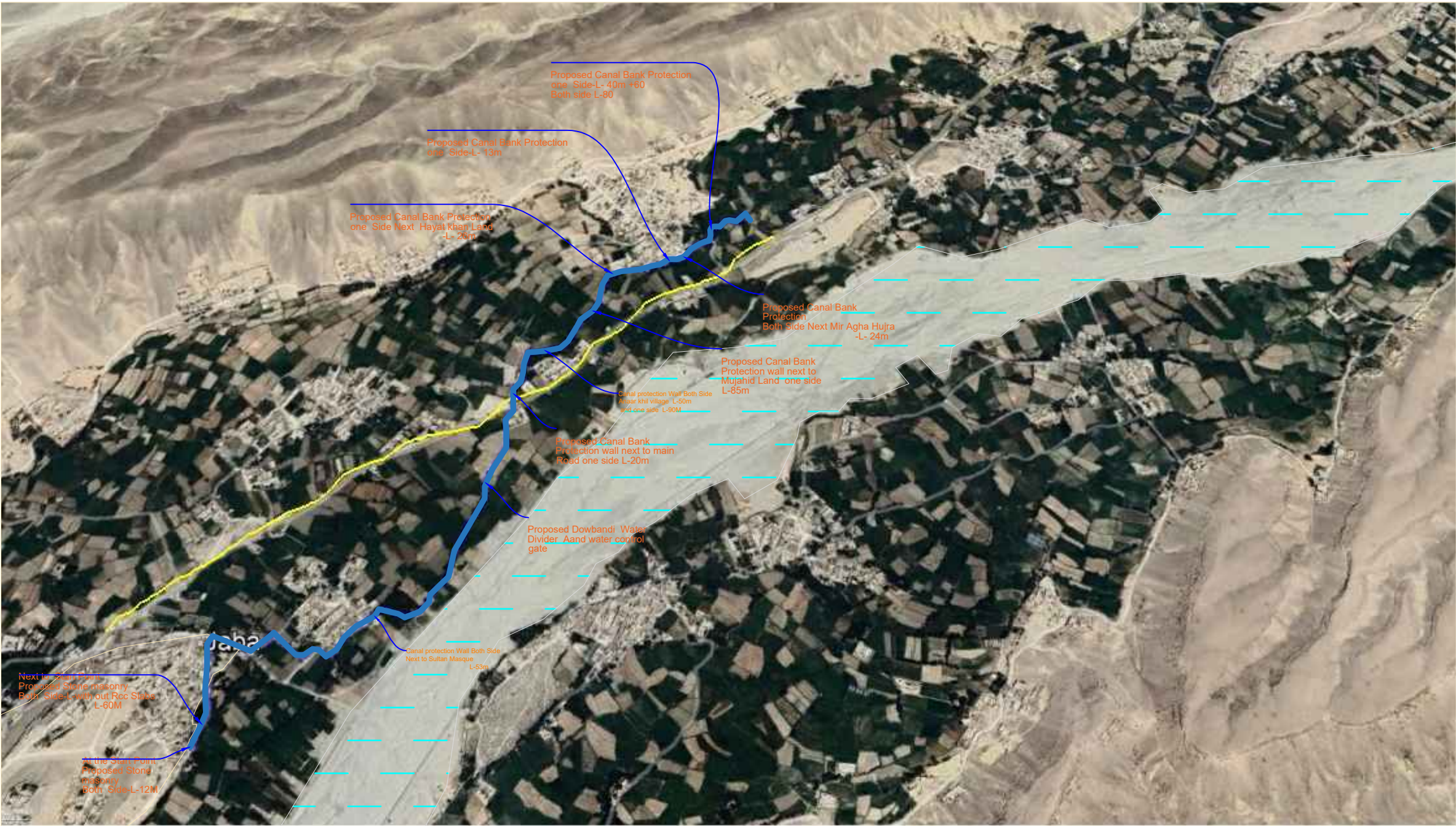
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Date:September , 2024

BENCH MARKS COORDINATES TABLE				
Point #	Elevation	Northing	Easting	Description
1	733.764m	N34° 11' 54.47"	E70° 39' 00.59"	bm1
2	733.752m	N34° 11' 54.79"	E70° 39' 00.60"	bm2
27	732.812m	N34° 11' 54.77"	E70° 39' 00.85"	bm3
28	707.372m	N34° 12' 03.92"	E70° 39' 09.69"	bm4



Kot District Anaar Khil /Canal GIS MAP and Proposed Structures Location For CBARD ALL Project



LEGEND:-

Proposed Canal

Existing Asphalt Road

Mountains Area

Command Area

River

Desert

Start point of Canal

FUNDED BY:  
United Nation Development Proggm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE : **UNDP AFGRPA/2024/01/29J**

SUB-PROJECT:  
Nangarhar Province Kot District  
Anaar Khill Canal Rehabilitation

DRAWING:  
Anaar khil / Dosarak GIS MAP First Page

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: NGR-Kot-01,Str-1  
DRAWING PAGE NO:005 UNDP AFGRPA/2024/01/29J  
REVISION NO: 1

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Reviewed By:	AAA Design Team	AAA Design Team
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Approved By:		

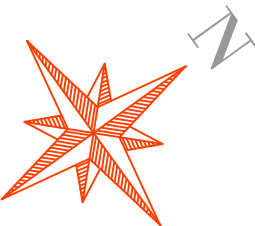
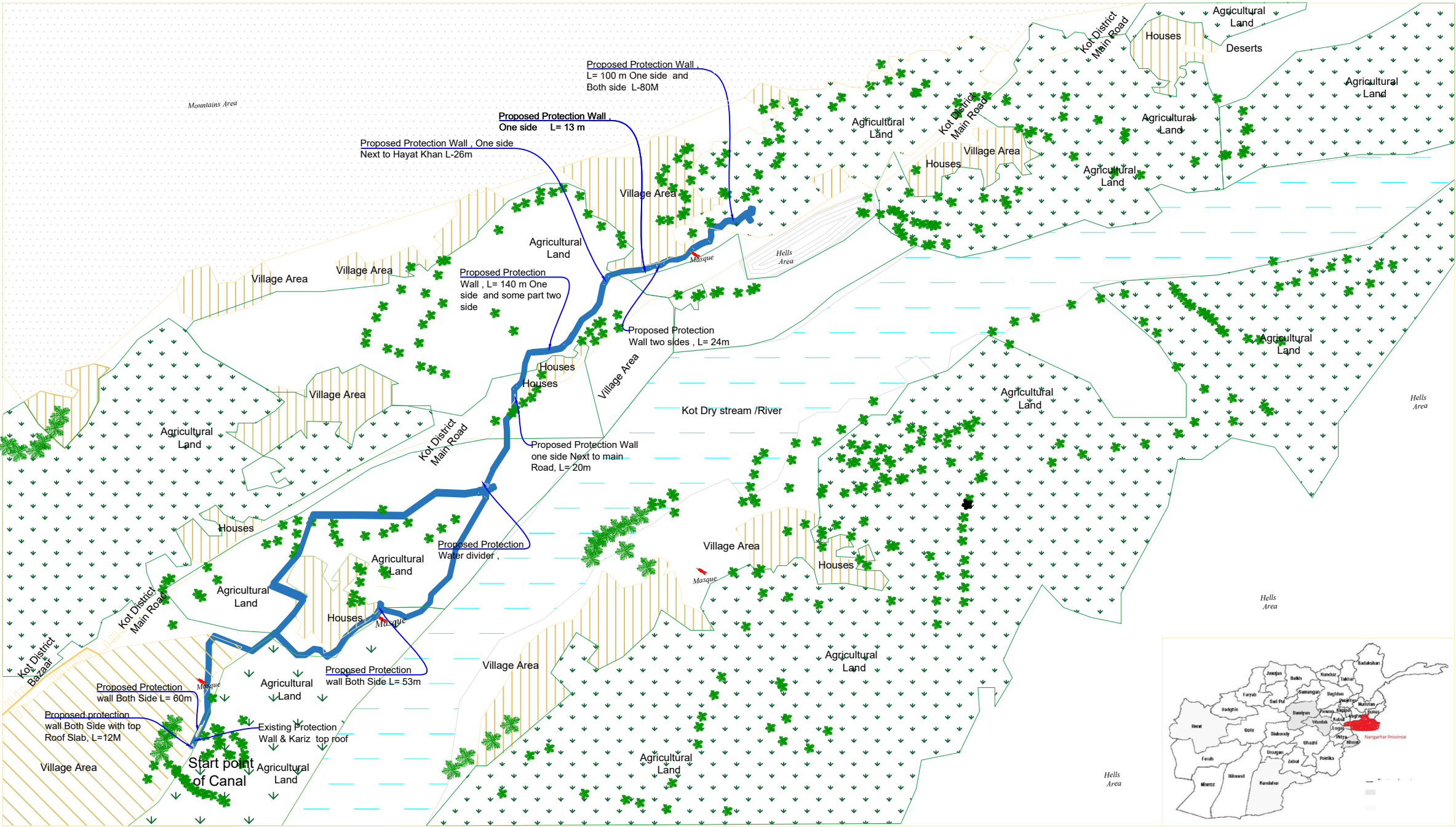
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BENCH MARKS COORDINATES TABLE

Point #	Elevation	Northing	Easting	Description
1	733.764m	N34° 11' 54.47"	E70° 39' 00.59"	bm1
2	733.752m	N34° 11' 54.79"	E70° 39' 00.60"	bm2
27	732.812m	N34° 11' 54.77"	E70° 39' 00.85"	bm3
28	707.372m	N34° 12' 03.92"	E70° 39' 09.69"	bm4



Kot District Anaar Khil village Canal GIS MAP For CBARD ALL Project



**LEGEND:-**

- Proposed Canal ————
- Existing Asphalt Road ————
- Mountains Area ————
- Command Area ————
- River ————
- Desert ————
- Start point of Canal ————

FUNDED BY:  
United Nation Development Proggm

IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE : **UNDP AFGRPA/2024/01/29**

SUB-PROJECT:  
Nangarhar Province Kot District  
Anaar Khil Canal Rehabilitation

DRAWING:  
Ahmad khil Dosrarak GIS MAP Second Page

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: NGR-Kot-01,Str-1  
DRAWING PAGE NO:006 UNDP AFGRPA/2024/01/29  
REVISION NO: 1

Action Taken	Name	Designation
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Design/Drawn By:	AAA Design Team	AAA Design Team
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Approved By:		

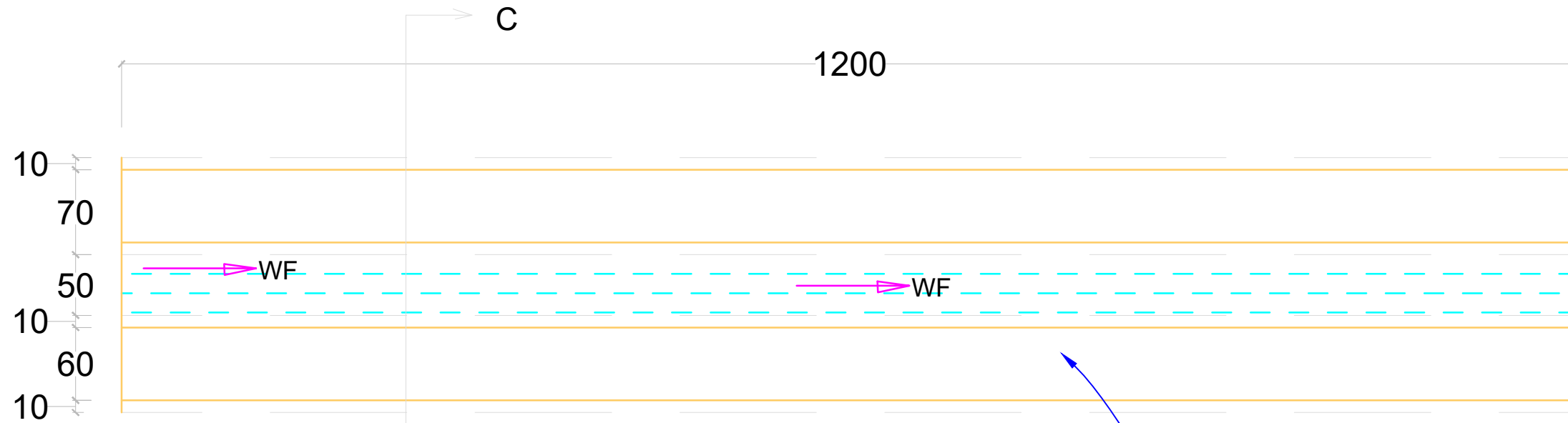
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Date:Sept. 2024

BENCH MARKS COORDINATES TABLE				
Point #	Elevation	Northing	Easting	Description
1	733.764m	N34° 11' 54.47"	E70° 39' 00.59"	bm1
2	733.752m	N34° 11' 54.79"	E70° 39' 00.60"	bm2
27	732.812m	N34° 11' 54.77"	E70° 39' 00.85"	bm3
28	707.372m	N34° 12' 03.92"	E70° 39' 09.69"	bm4

### Plan of Canal Protection wall or lining Out let of Kariz

Scale 1:100

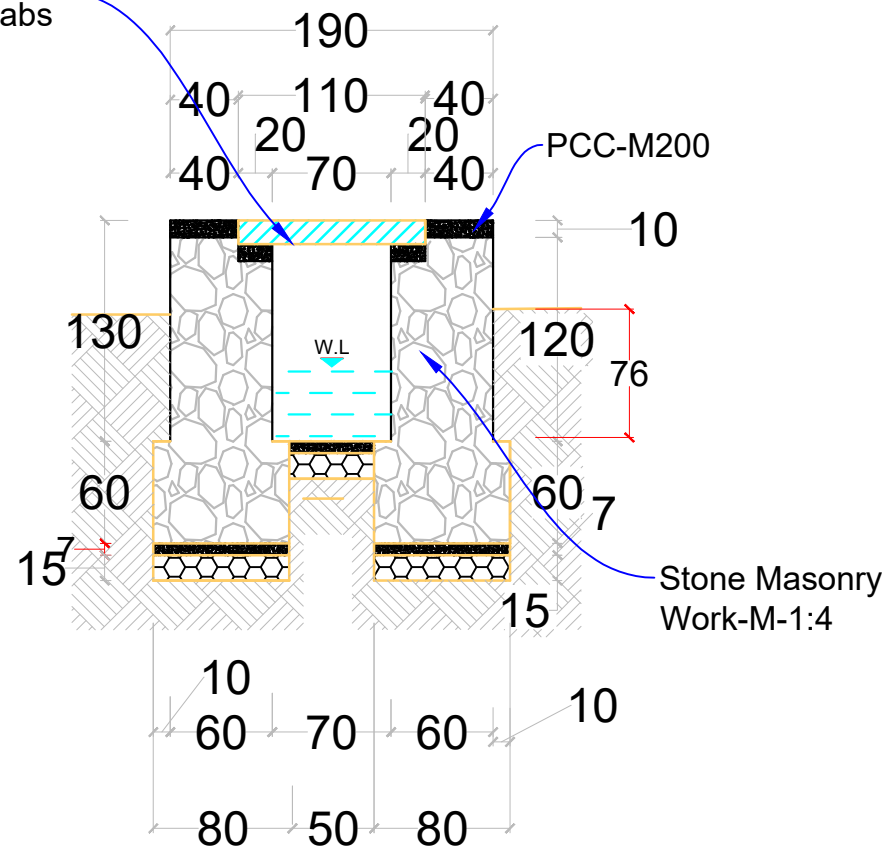


### Canal Section C-C ,L-12 M

















**Scale 1:50**

## RCC-M200 free Cast Slabs

Proposed Stone  
Masonry Work-M-1:4



LEGEND:-

Parent Canal	—	
Drainage Canale	—	
Branches	—	
Benchmark	—	
Temporary Benchmark	—	
Masjid	—	
Village	—	
House	—	
Village Road	—	
Cemetery	—	
Hand pump/Tube Well	—	
Cultivated are	—	
Garden	—	
E.R.W	—	
Proposed Culvert Type one	—	
Existing Culvert Type one	—	
Proposed Aqueduct-Spn-m	—	

FUNDED BY:  
United Nation Developement Progrmm

IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

**act:onaid**

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE: : **UNDP AFGRPA/2024/01/29]**

SUB-PROJECT:

Nangarhar Province Kot District

Anaar Khill Canal Rehabilitation

DRAWING:

Anaar khil Canal bank Protection wall Plan

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: NGR-Kot-01,Str-1

DRAWING PAGE NO:008

REVISION NO: 1

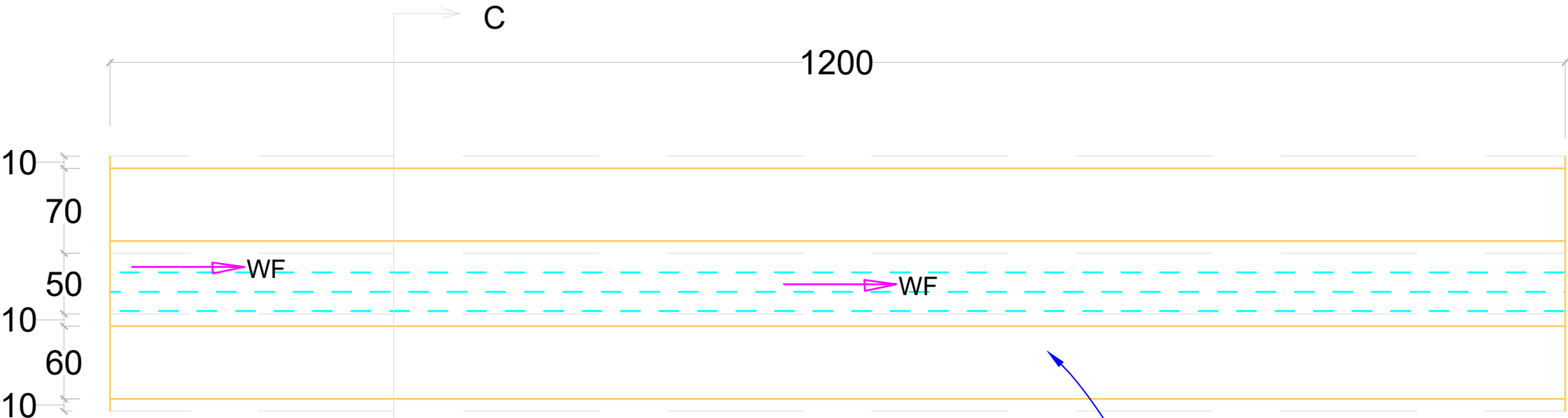
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Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date: August, 2024

Plan of Canal Protection wall or lining Out let of Kariz

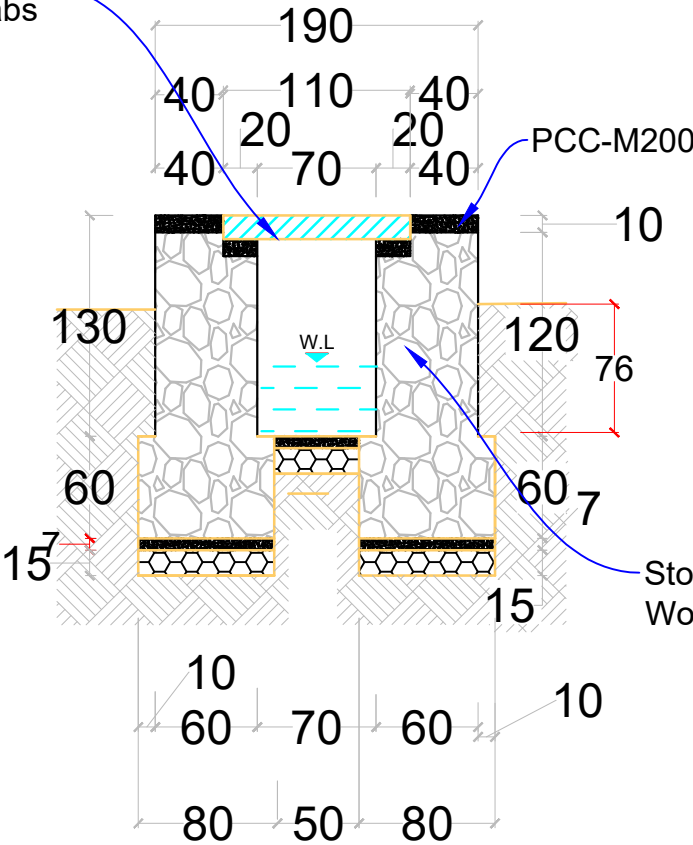
Scale 1:100



Canal Section C-C ,L-12 M

Scale 1:50

RCC-M200  
free Cast Slabs



Proposed Stone  
Masonry Work-M-1:4

Stone Masonry  
Work-M-1:4

LEGEND:-

Parent Canal	—	
Drainage Canale	—	
Branches	—	
Benchmark	—	
Temporary Benchmark	—	
Masjid	—	
Village	—	
House	—	
Village Road	—	
Cemetery	—	
Hand pump/Tube Well	—	
Cultivated are	—	
Garden	—	
E.R.W	—	
Proposed Culvert Type one	—	
Existing Culvert Type one	—	
Proposed Aqueduct-Spn-m	—	

FUNDED BY:  
United Nation Develpement Proggmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE: : UNDP AFGRPA/2024/01/29]

SUB-PROJECT:  
Nangarhar Province Kot District  
Anaar Khill Canal Rehabilitation

DRAWING:  
Anaar khil Canal bank Protection wall Plan

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: NGR-Kot-01,Str-1

DRAWING PAGE NO:008

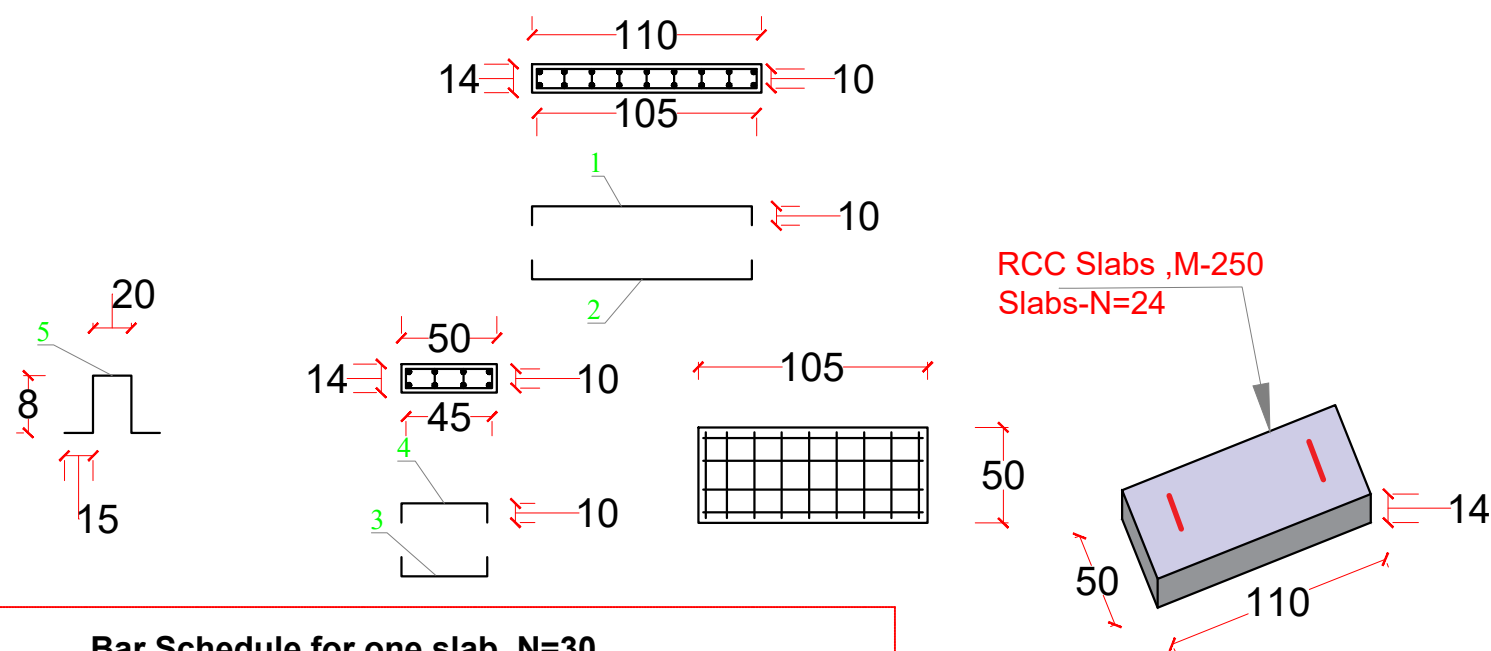
REVISION NO: 1

Action Taken	Name	Designation
Surveyed By:	AAA Survey Team	AAA Survey Team
Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:August, 2024

Steel Fixing Detials of free cost slab for out let of kariz



Bar Schedule for one slab ,N=30								
Bar no.	Bar dia (mm)	Num. of bar	Length (m)	Total length (m)	Weight (kg/m)	Total weight (kg)	Total weight + 5 % (kg)	Shape of bar
1	12	5	1.25	6.26	0.888	5.55	6.5	
2	12	5	1.25	6.26	0.888	5.55	6.5	
3	10	7	0.55	3.85	0.661	6.075	7	
4	10	7	0.55	3.85	0.661	6.075	7	
5	10	4	1.10	2.20	0.661	1.55	1.7	
Total weight:					30X24 = 720KG			

1	5Ø12 @ C/C 15 L=125
2	5Ø12 @ C/C 15 L=125
3	7Ø10 @ C/C 15 L=55
4	7Ø10 @ C/C 15 L=55
5	2Ø10 @ C/C .cm L=110

- Note:
1. All dimensions are in centimeters unless otherwise specified.
  2. If rounded stone from a river or other sources is used, it shall not comprise of more then 30 % of the total volume of stone and shall be evenly distributed throughout the wall.
  3. All masonry work should be pointed.
  4. Angle and length of wing walls should be adjusted by the Engineer as per site conditions.
  5. Refer to the bar schedule for the length and shape of reinforcement.
  6. Concrete mix shall be proportioned by volume with a water/cement ratio of not more than 0.45. and all RCC Mark should be 250 for upper structure and rings The 250M concrete should be mixed by mixer with keeping the water/cement ratio
  7. The culvert should be built with a fall of (2 -4) % in order to avoid siltation

LEGEND:-		
Parent Canal	—	
Drainage Canale	—	
Branches	—	
Benchmark	—	
Temporary Benchmark	—	
Masjid	—	
Village	—	
House	—	
Village Road	—	
Cemetery	—	
Hand pump/Tube Well	—	
Cultivated are	—	
Garden	—	
E.R.W	—	
Proposed Culvert Type one	—	
Existing Culvert Type one	—	
Proposed Aqueduct-Spn-m	—	

FUNDED BY:  
United Nation Development Proggmm

IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE : **UNDP AFGRPA/2024/01/29J**

SUB-PROJECT:  
Nangarhar Province Kot District  
Anaar Khill Canal Rehabilitation

DRAWING:  
Anaar khil Canal free Cast Slab Steel Fixing

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: : **UNDP AFGRPA/2024/01/29J**  
DRAWING PAGE NO:009  
REVISION NO: 1

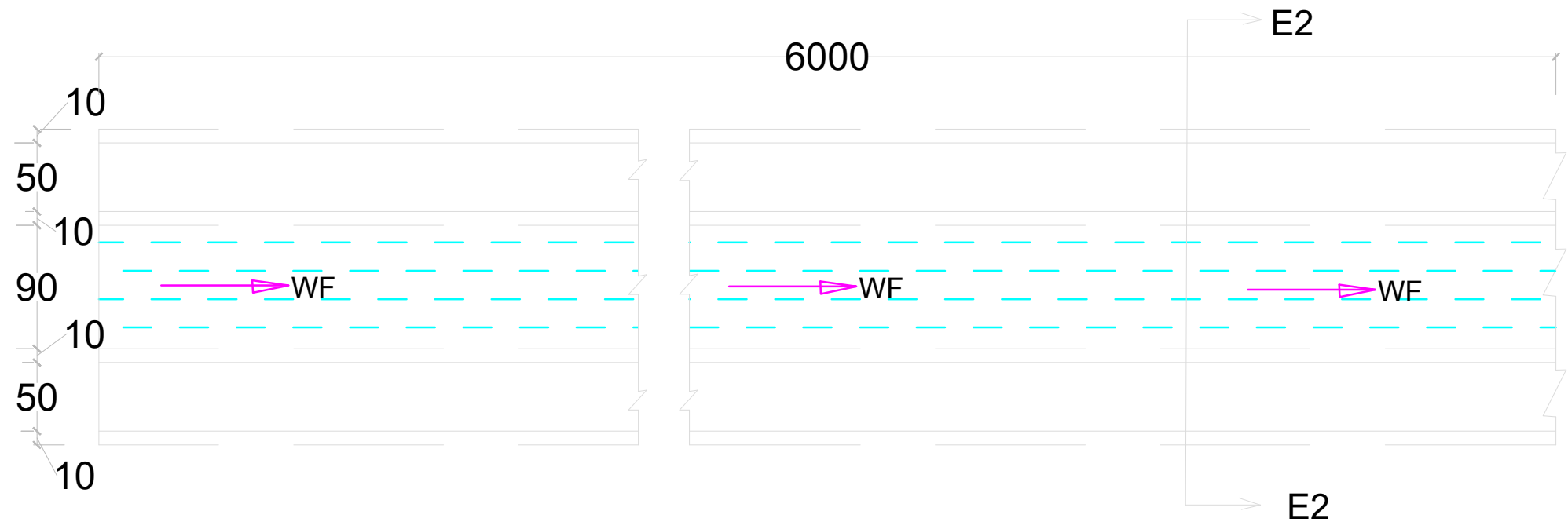
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Surveyed By:	AAA Survey Team	AAA Survey Team
Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:Sept. 2024

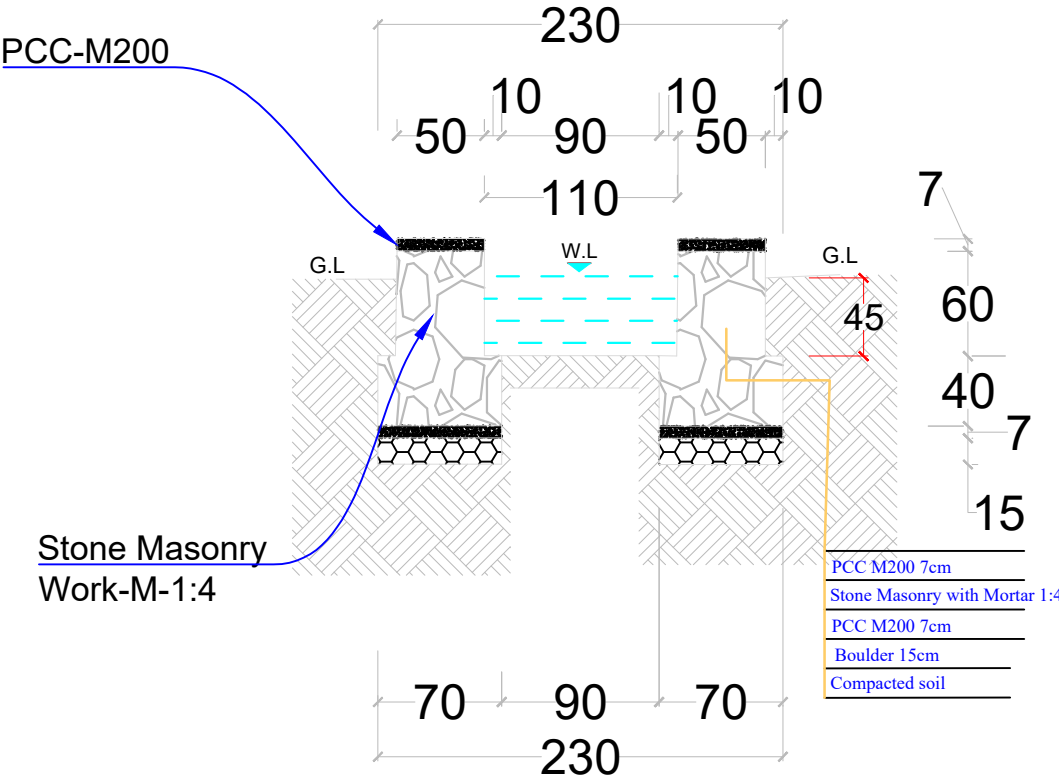
Plan of Canal Protection wall or lining Next to Kariz of Anar Khail

Scale 1:100



Canal Section E2-E2 ,L-60

Scale 1:50



LEGEND:-

- Center Line
- Direction of flow
- Grouted Stone Masonry/Pitching Section
- Plain Cement Concrete
- Reinforced Cement Concrete
- Bank Protection
- Compacted Soil
- H.F.L / M.W.L
- Elevation of the point is 100 m in Elevation
- Elevation of the point (100m) in Plan view
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

Abbrevation

- c/c - center to center
- U/S - Up Stream
- D/S - Down Stream
- W.L - Water Level
- RCC - Reinforce Cement Concrete
- PCC - Plain Cement Concrete
- WF - Water Flow Line

FUNDED BY:  
United Nation Developement Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE: : **UNDP AFGRPA/2024/01/29]**

SUB-PROJECT:  
Nangarhar Province Kot District  
Anaar Khill Canal Rehabilitation

DRAWING:  
Anaar Khil Canal lining Plan section

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: : **UNDP AFGRPA/2024/01/29]**  
DRAWING PAGE NO:010  
REVISION NO: 1

Action Taken	Name	Designation
Surveyed By:	AAA Survey Team	AAA Survey Team
Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
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Checked By:		
Approved By:		

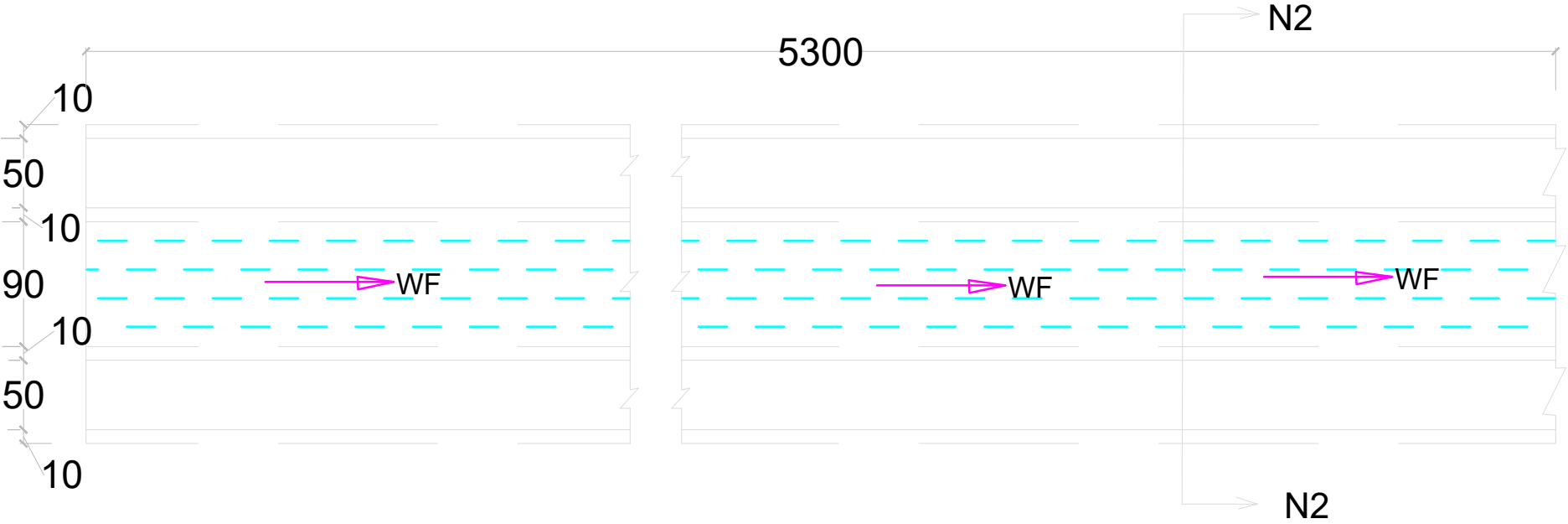
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Date:Sept. 2024



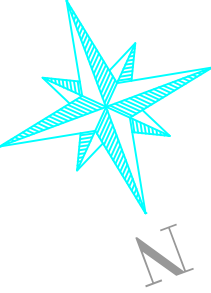
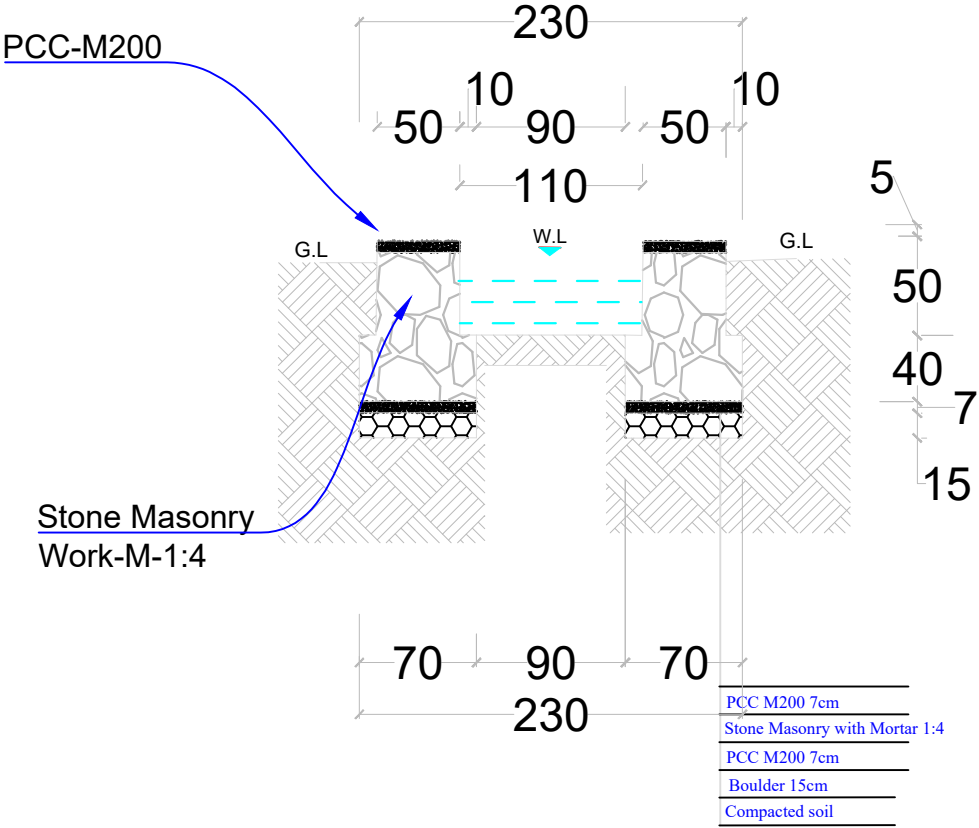
Plan of Canal Protection wall or lining Next to Masjed Sultan Miran Village

Scale 1:100



Canal Section N2-N2 ,L-53M

Scale 1:50



LEGEND:-

- Center Line
- Direction of flow
- Grouted Stone Masonry/Pitching Section
- Plain Cement Concrete
- Reinforced Cement Concrete
- Bank Protection
- Compacted Soil
- H.F.L / M.W.L
- Elevation of the point is 100 m in Elevation
- Elevation of the point (100m) in Plan view
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

Abbravation

- c/c - center to center
- U/S - Up Stream
- D/S - Down Stream
- W.L - Water Level
- RCC - Reinforce Cement Concrete
- PCC - Plain Cement Concrete
- WF - Water Flow Line

FUNDED BY:  
United Nation Developement Proggm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE : **UNDP AFGRPA/2024/01/29]**

SUB-PROJECT:  
Nangarhar Province Kot District  
Anaar Khil Canal Rehabilitation

DRAWING:  
Anaar Khil Canal lining Plan section

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE : **UNDP AFGRPA/2024/01/29]**  
DRAWING PAGE NO:010  
REVISION NO: 1

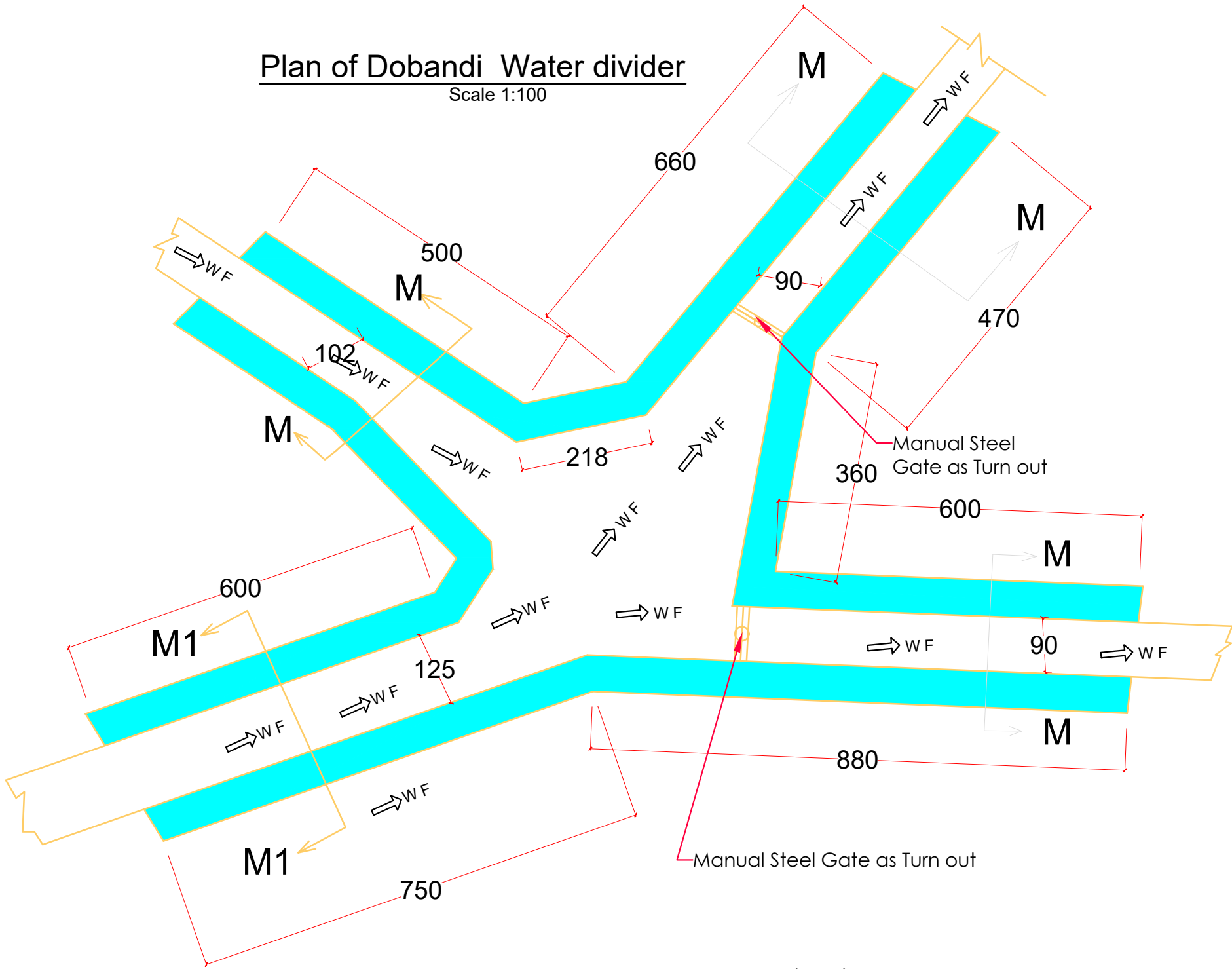
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Surveyed By:	AAA Survey Team	AAA Survey Team
Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:Sept. 2024

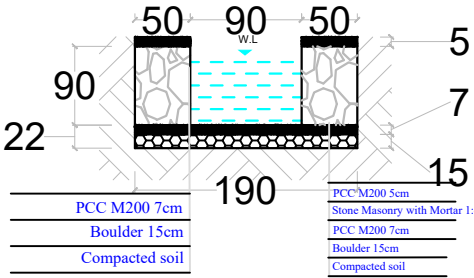
Plan of Dobandi Water divider

Scale 1:100



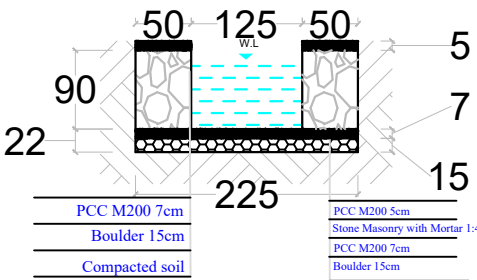
Mouta Canal Section M-M ,

Scale 1:50



Mouta Canal Section M1-M1 ,L= 13.5

Scale 1:50



LEGEND:-

- Center Line
- Direction of flow
- Grouted Stone Masonry/Pitching Section
- Plain Cement Concrete
- Reinforced Cement Concrete
- Bank Protection
- Compacted Soil
- H.F.L / M.W.L
- Elevation of the point is 100 m i Elevati
- Elevation of the point (100m) in Plan view
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

Abbravation

- c/c - center to center
- U/S - Up Stream
- D/S - Down Stream
- W.L - Water Llevel
- RCC - Reinforce Cement Concrete
- PCC - Plain Cement Concrete
- WF - Water Flow Line

FUNDED BY:  
United Nation Develpement Proggmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

act:onaaid

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE : **UNDP AFGRPA/2024/01/29J**

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Anaar Khill Canal Rehabilitation

DRAWING:  
Anaar Khil Canal water divider Plan section

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: NGR-KHGN-01,Str-1  
DRAWING PAGE NO:002  
REVISION NO: 1

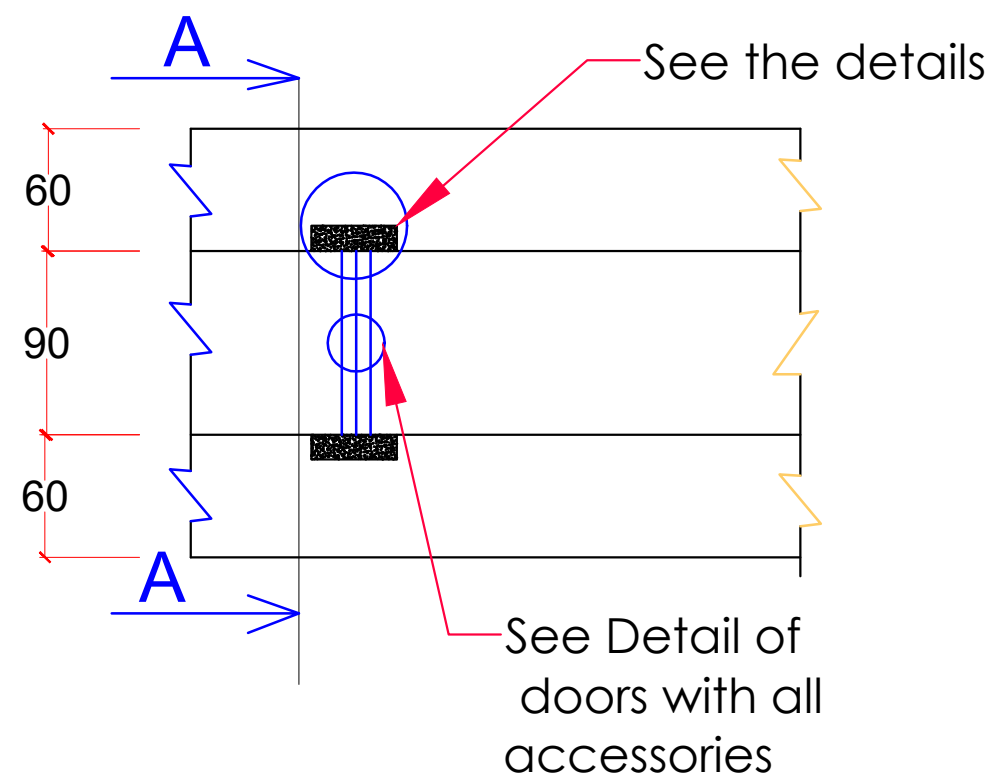
Action Taken	Name	Designation
Surveyed By:	AAA Survey Team	AAA Survey Team
Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:August. 2024

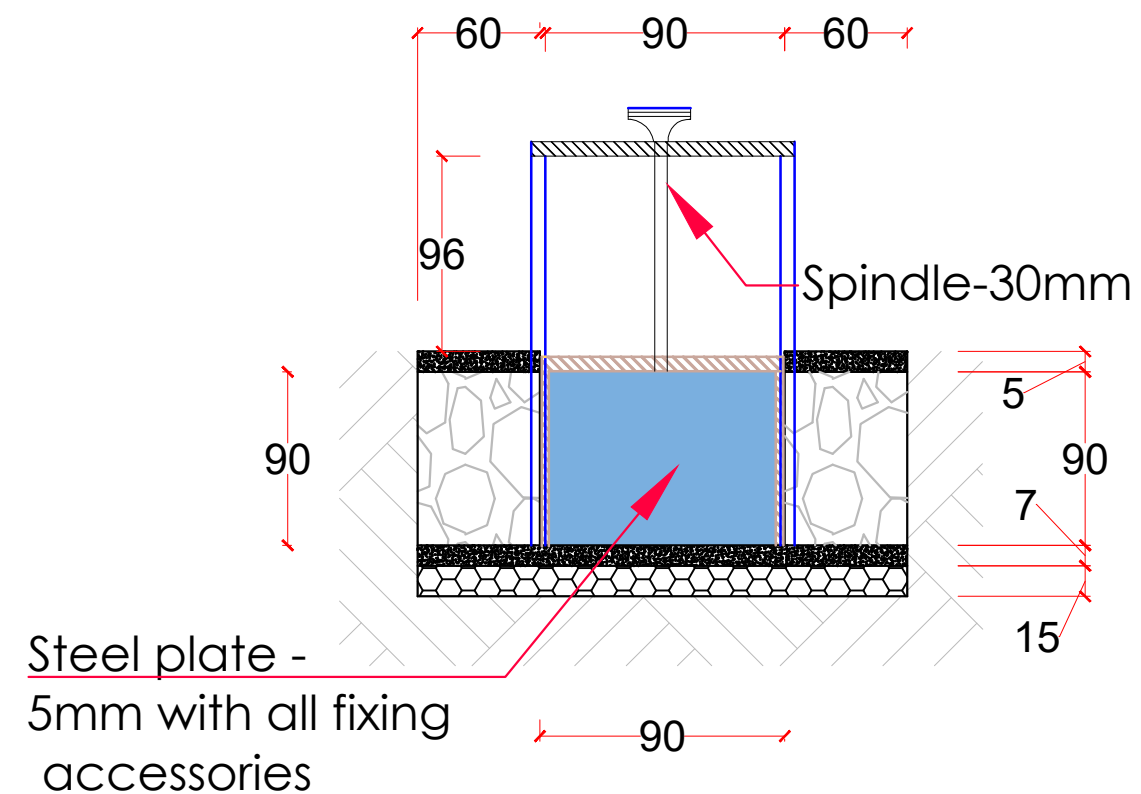
# Plan of Water Control Gate

Scale 1:100



# Section A-A

**Scale 1:50**



LEGEND:-

	—	Center Line
	—	Direction of flow
	—	Grouted Stone Masonry
	—	Plain Cement Concrete
	—	Reinforced Cement Concrete
	—	Bank Protection
	—	Compacted Soil
	—	H.F.L / M.W.L
	—	Elevation of the point
	—	Elevation of the point in Plan view
	—	Earthen Slope
	—	Ground Level
	—	Stone Pitching/Rip Rap

## Abbreviation

c/c - center to center

U/S - Up Stream

D/S - Down Stream

RCC - Reinforce Cement Concrete

PCC - Plain Cement Concrete

WF - Water Flow Line

FUNDED BY:  
United Nation Development Progrmm

IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

**act:onaid**

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE: : **UNDP AFGRPA/2024/01/29]**

SUB-PROJECT:

Nangarhar Province Kot District

Anar Khill Canal Rehabilitation

DRAWING:

Anaar Khil Canal Water control gate Plan section

PROJECT SYMBOL:	CBARD ALL /AFG/EAST
SUB-PROJECT CODE:	: UNDP AFGRPA/2024/01/29]

DRAWING PAGE NO:011

REVISION NO: 1

Action Taken	Name	Designation
Surveyed By:	AAA Survey Team	AAA Survey Team
Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

**Drawing Scale: As Shown**

Date: August, 2024

## Details of Water control Gate



Item	Description
1	Thrust bearing/nut assembly
2	[100 x 50 Channel (Upper beam)
3	[80 x 50 Channel
4	Spindle # 40 or 45
5	6x75 bar
6	Guide rail L50x50x6
7	[80x50 lower beam
8	L 50 X 50 X 6 lifting brackets
9	M20 Bolt & Nut
10	Hand Wheel (Steering Wheel)
11	Skin plate 5mm
12	Stiffener channel 150x50
13	L 50x50x6



**TABLE 02**  
**THRUST BEARING ASSEMBLY COMP**

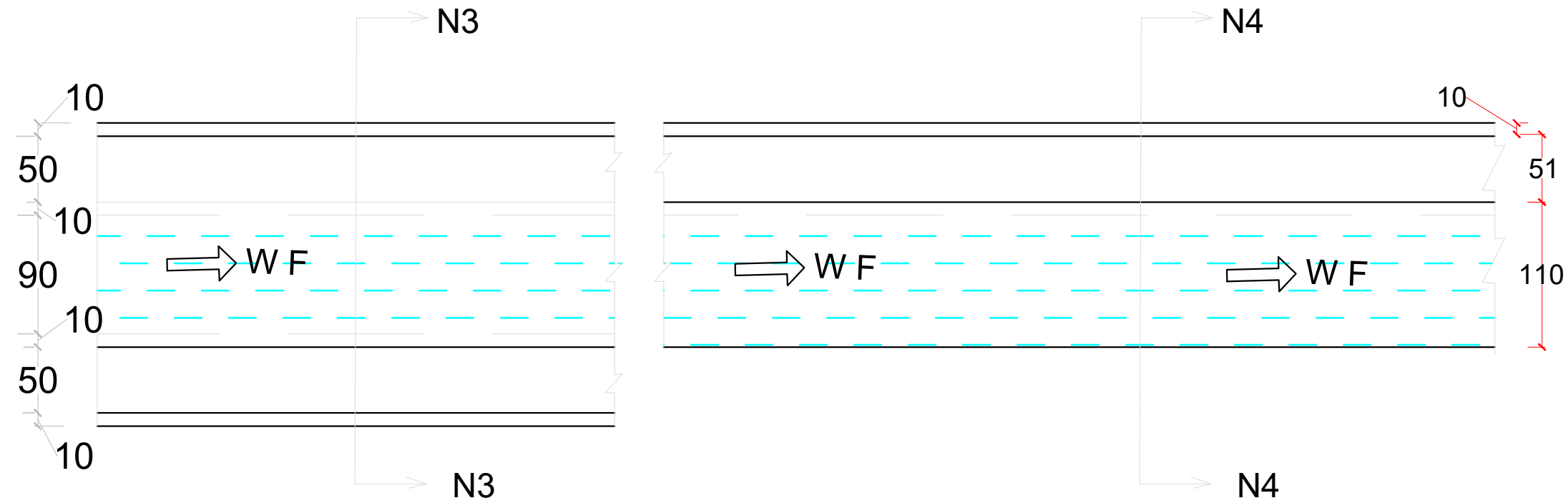
STEEL GATE PANEL DIMENSIONS TABLE			
S.N	Height (h)	Width (s)	Quantity
1	0.45	1.00	10.0



- |                         |                  |
|-------------------------|------------------|
| Drawing Scale: As Shown | Date: sept. 2024 |
|-------------------------|------------------|

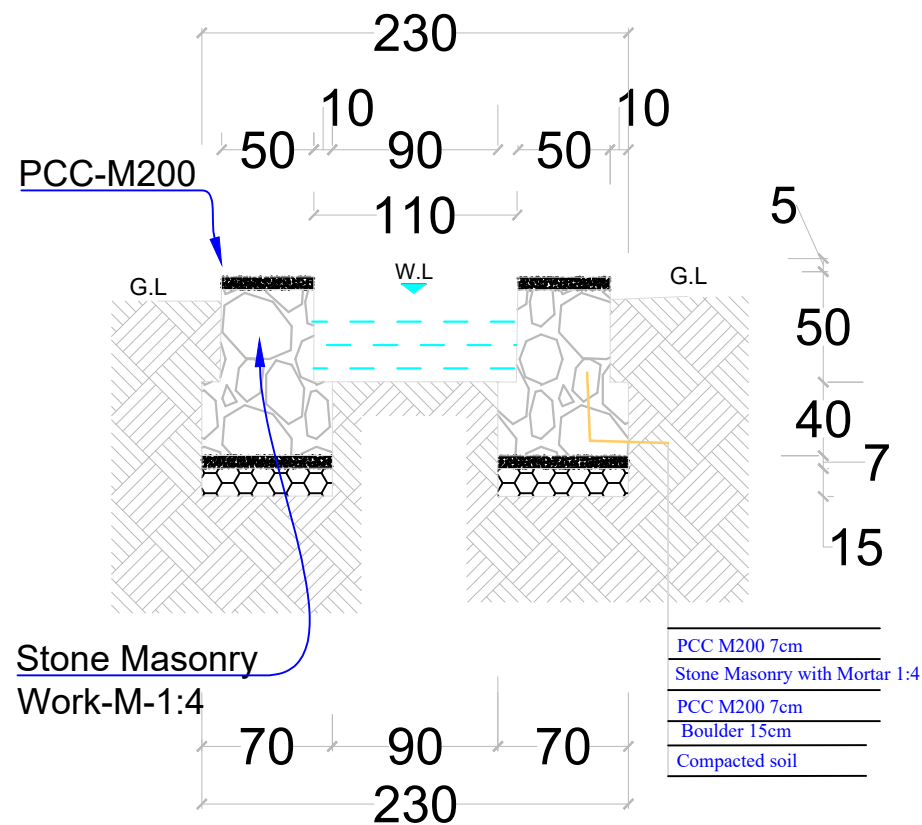
# Plan of Canal Protection wall or lining Next to Anar khil Village

Scale 1:100



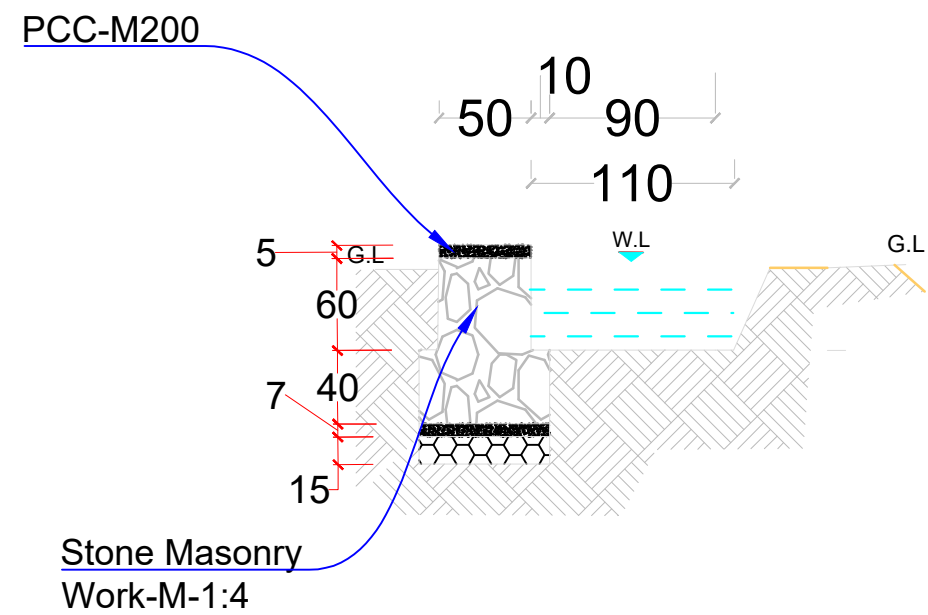
Canal Section N3-N3 ,L-50M +24+80=154

Scale 1:50



Canal Section N4-N4 ,L-90M+26+12+40+60=228

Scale 1:50



## LEGEND:-

- Center Line
- Direction of flow
- Grouted Stone Masonry
- Plain Cement Concrete
- Reinforced Cement Concrete
- Bank Protection
- Compacted Soil
- H.F.L / M.W.L
- Elevation of the point
- Elevation of the point in Plan view
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

## Abbreviation

- c/c - center to center
- U/S - Up Stream
- D/S - Down Stream
- W.L - Water Level
- RCC - Reinforce Cement Concrete
- PCC - Plain Cement Concrete
- WF - Water Flow Line

FUNDED BY:  
United Nation Development Program



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

**act:onaid**

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE : **UNDP AFGRPA/2024/01/29**

SUB-PROJECT:  
Nangarhar Province Kot District  
Anaar Khil Canal Rehabilitations

DRAWING:  
Plan of Bank protection wall and details of structure

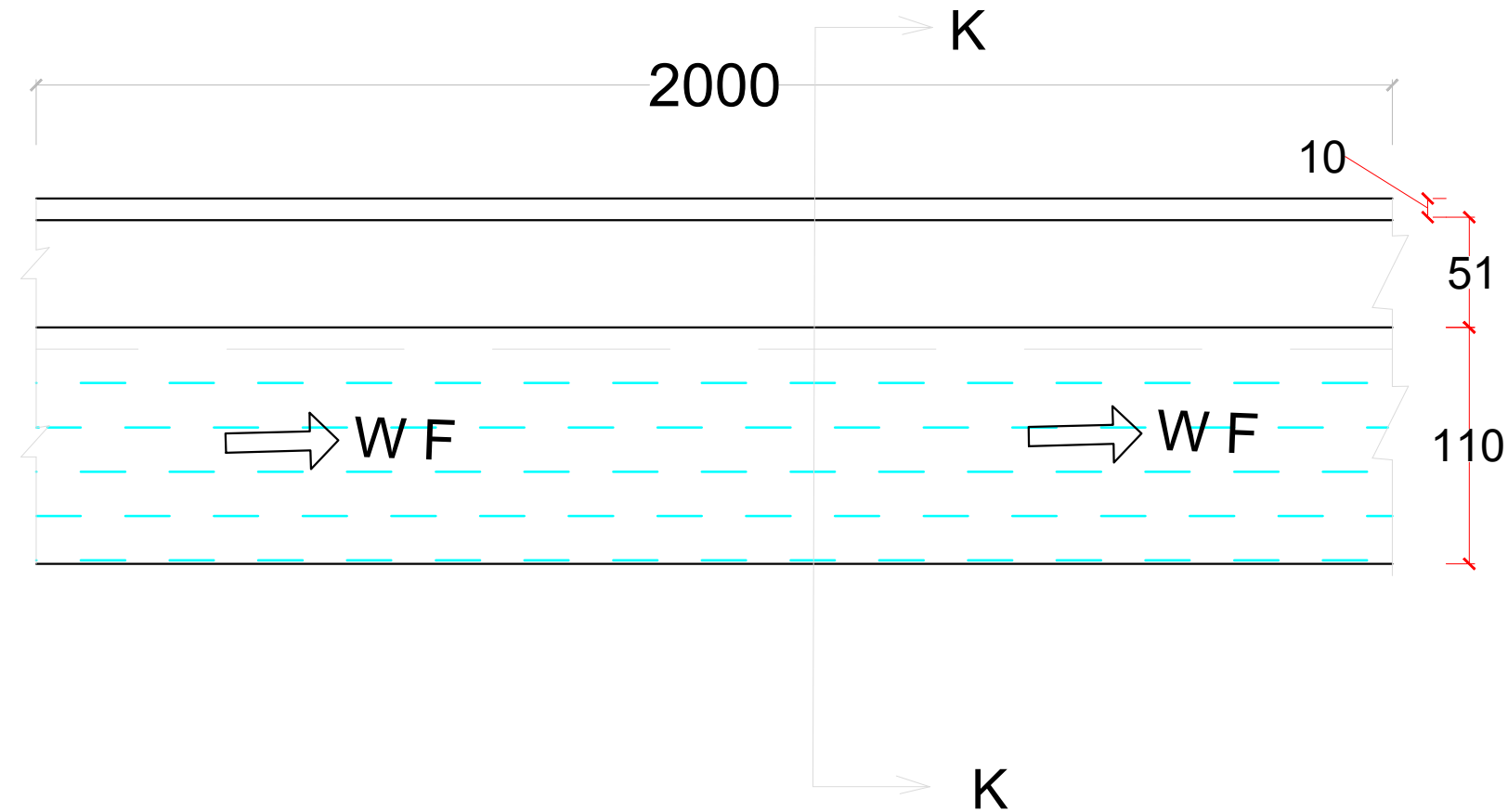
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SUB-PROJECT CODE: **UNDP AFGRPA/2024/01/29**  
DRAWING PAGE NO:014  
REVISION NO: 1

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Design/Drawn By:	AAA Design Team	AAA Design Team
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Reviewed By:	AAA Design Team	AAA Design Team
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Approved By:		

Drawing Scale: As Shown Date: August, 2024

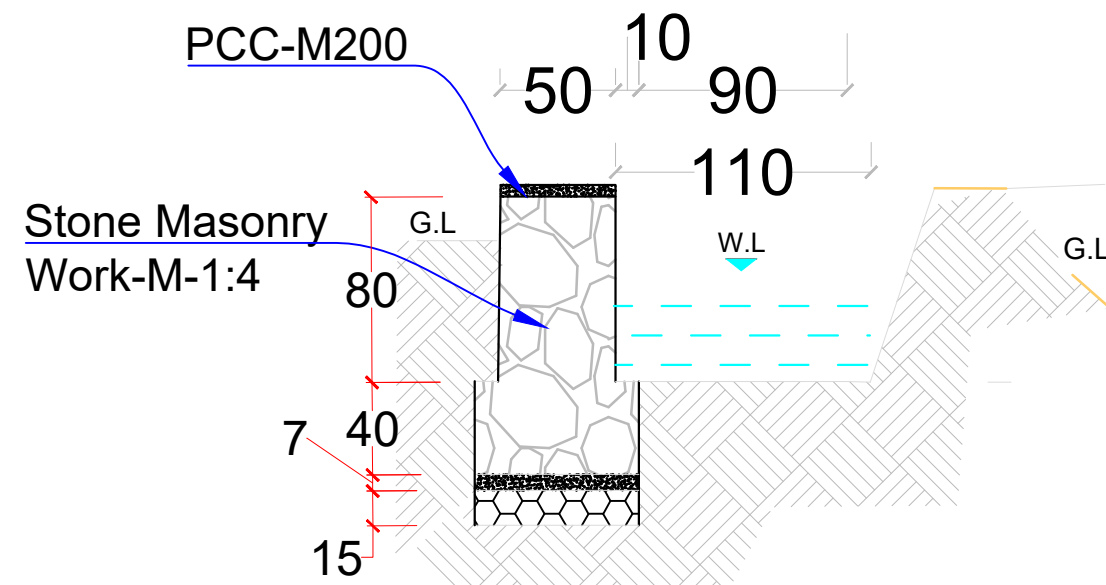
# Plan of Canal Protection wall or Next to Main Road of Kot

Scale 1:100



## Canal Section K-K ,L-20M

Scale 1:50



### LEGEND:-

- Center Line
- Direction of flow
- Grouted Stone Masonry
- Plain Cement Concrete
- Reinforced Cement Concrete
- Bank Protection
- Compacted Soil
- H.F.L / M.W.L
- Elevation of the point
- Elevation of the point in Plan view
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

### Abbrevation

- c/c - center to center
- U/S - Up Stream
- D/S - Down Stream
- W.L - Water Leel
- RCC - Reinforce Cement Concrete
- PCC - Plain Cement Concrete
- WF - Water Flow Line

FUNDED BY:  
United Nation Deveplemment Proggm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

**act:onaid**

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE: : **UNDP AFGRPA/2024/01/29]**

SUB-PROJECT:  
Nangarhar Province Kot District  
Anaar Khill Canal Rehabilitations

DRAWING:  
Plan of Bank protection wall and details of structure

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: : **UNDP AFGRPA/2024/01/29]**  
DRAWING PAGE NO:015  
REVISION NO: 1

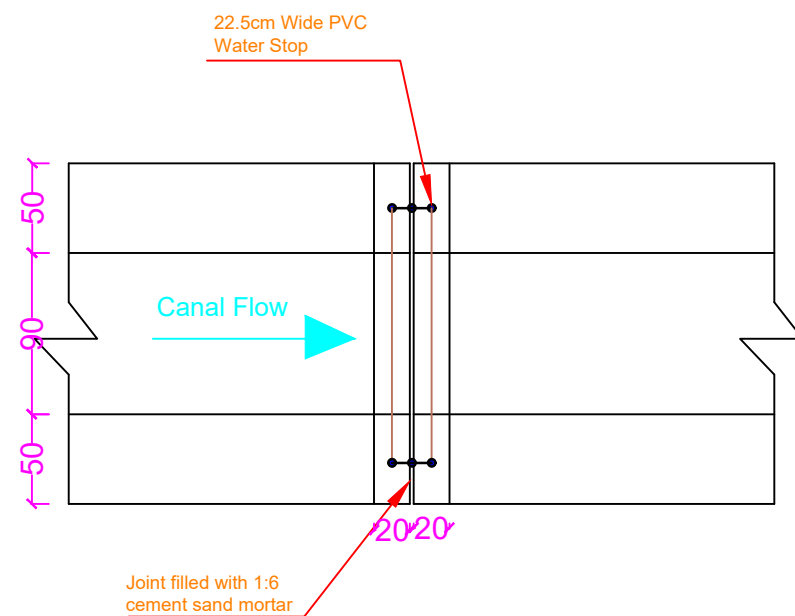
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Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

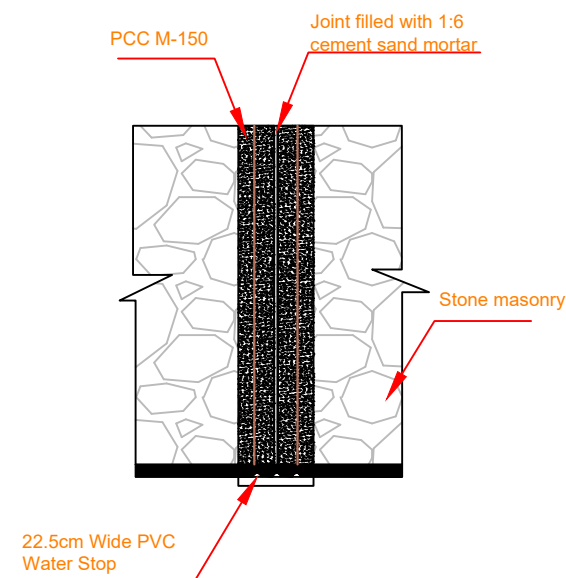
Date:Sept. 2024



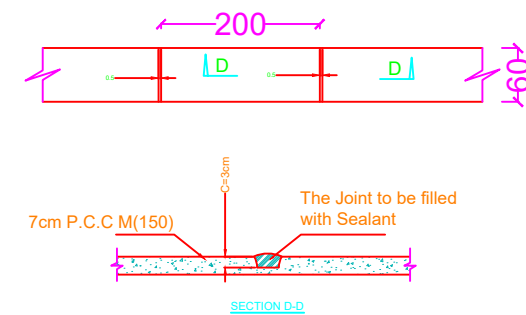
PLAN OF CONSTRUCTION  
JOINT FOR COVERED  
SECTION  
Stone masonry  
Scale: 1:50



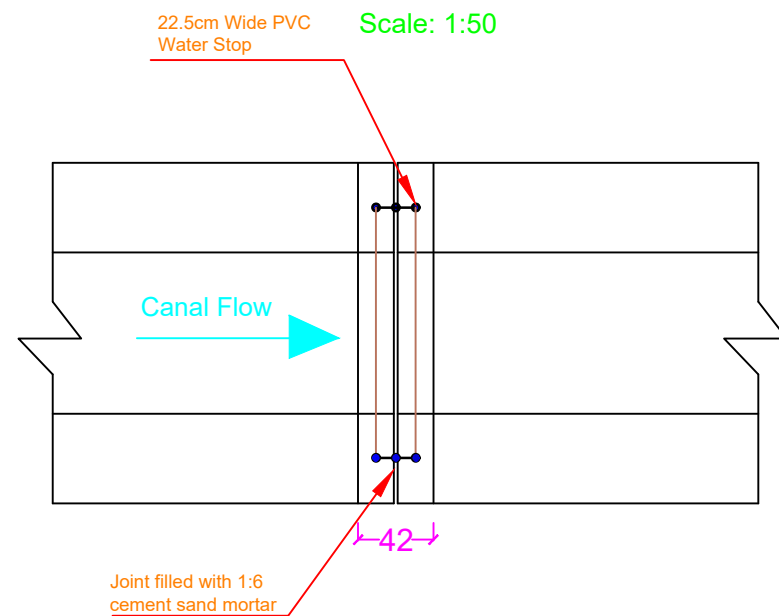
SECTION A-A  
Scale: 1:50



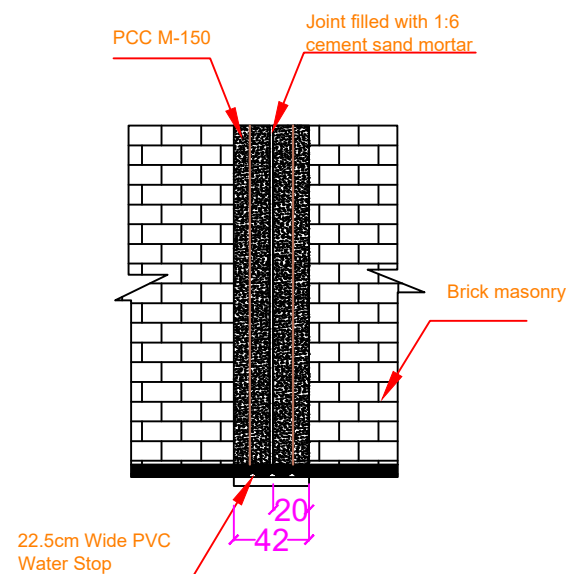
PLAN OF WALL COPING



PLAN OF CONSTRUCTION  
JOINT FOR COVERED  
SECTION  
Brick masonry  
Scale: 1:50



SECTION B-B  
Scale: 1:50



Sample of 22.5cm Wide PVC Water Stop



LEGEND:-

	Center Line
	Direction of flow
	Grouted Stone Masonry
	Plain Cement Concrete
	Reinforced Cement Concrete
	Bank Protection
	Compacted Soil
	H.F.L / M.W.L
	Elevation of the point
	Elevation of the point in Plan view
	Earthen Slope
	Ground Level
	Stone Pitching/Rip Rap

Abbrevation

c/c	- center to center
U/S	- Up Stream
D/S	- Down Stream
W.L	- Water Level
RCC	- Reinforce Cement Concrete
PCC	- Plain Cement Concrete
WF	- Water Flow Line

FUNDED BY:  
United Nation Developement Proggmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

**act:onaaid**

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE : **UNDP AFGRPA/2024/01/29J**

SUB-PROJECT:  
Nangarhar Province Kot District  
Anaak Khill Canal Rehabilitation

DRAWING:  
Water stopper sections and details

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: NGR-KHGN-01,Str-1  
DRAWING PAGE NO:017  
REVISION NO: 1

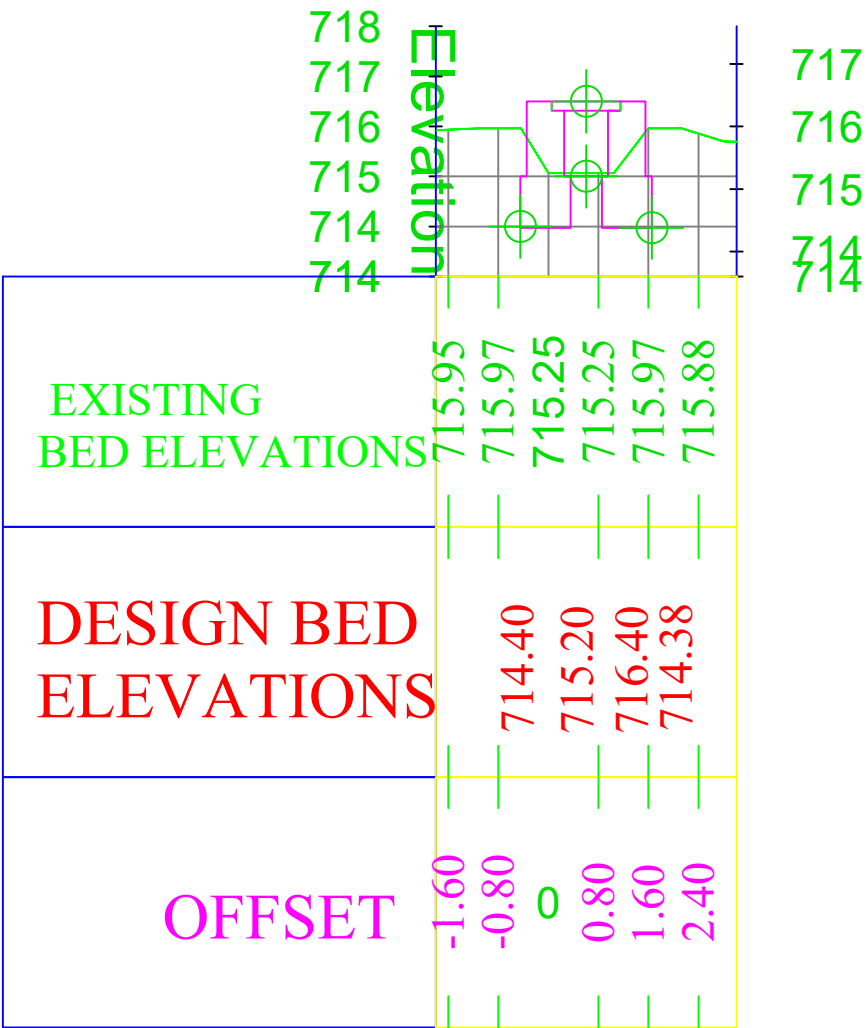
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Design/Drawn By:	AAA Design Team	AAA Design Team
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Checked By:		
Approved By:		

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Date:Sep. 2024

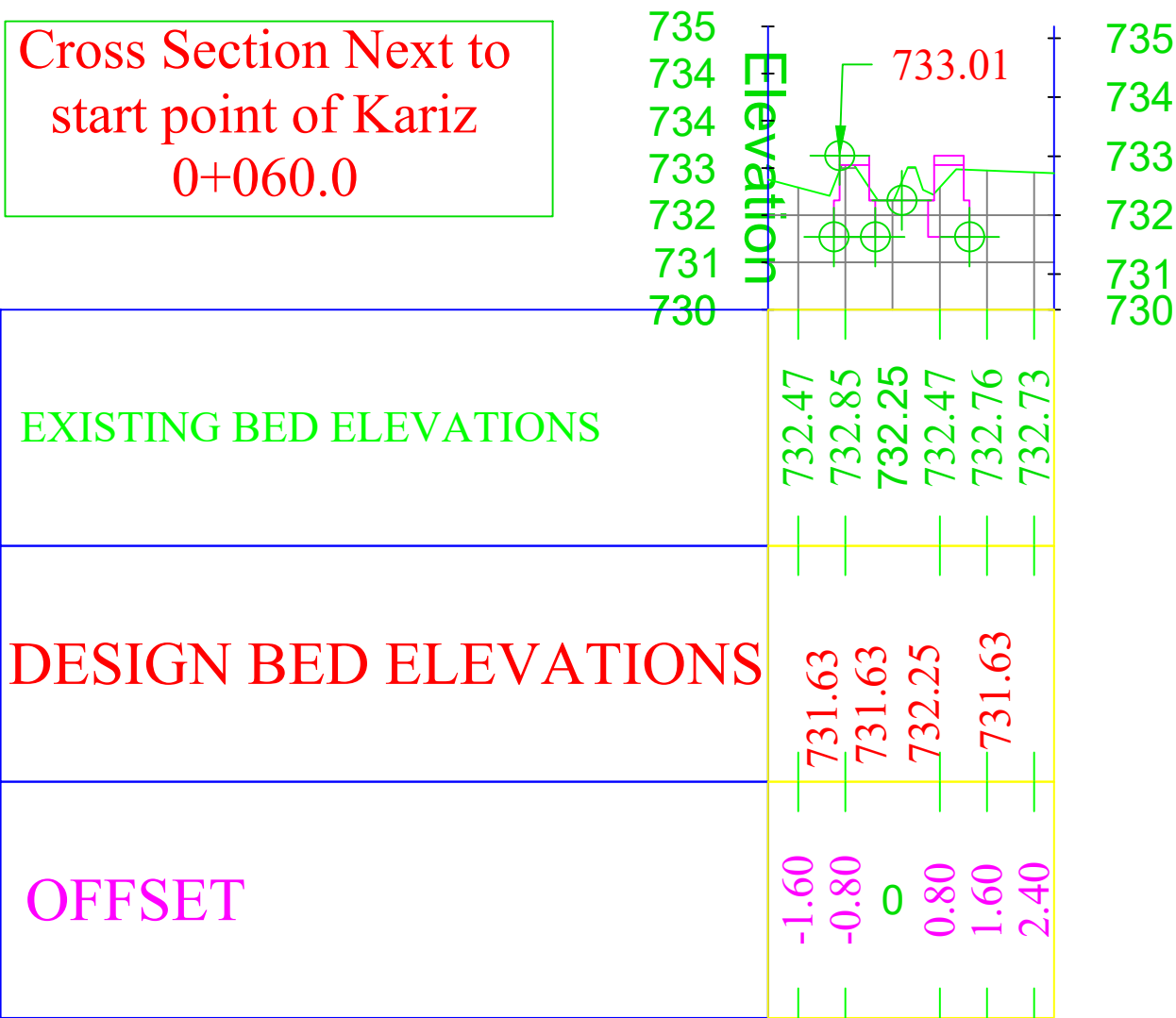




Cross Section  
0+012.52



Cross Section Next to  
start point of Kariz  
0+060.0



LEGEND:-

- Center Line
- Direction of flow
- Grouted Stone Masonry
- Plain Cement Concrete
- Reinforced Cement Concrete
- Bank Protection
- Compacted Soil
- H.F.L / M.W.L
- Elevation of the point
- Elevation of the point in Plan view
- Earthen Slope
- Ground Level
- Stone masonry work

Abbrevation

- c/c - center to center
- U/S - Up Stream
- D/S - Down Stream
- W.L - Water Level
- RCC - Reinforce Cement Concrete
- PCC - Plain Cement Concrete
- WF - Water Flow Line

FUNDED BY:  
United Nation Developement Progrmm

IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

act:onaid

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE: : UNDP AFGRPA/2024/01/29]

SUB-PROJECT:  
Nangarhar Province Kot District  
Cross Sections of Anaar Khill Canal

DRAWING:  
Cross Sections of Anaar Khill Canal

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: NGR-Kot-01,Str-1

DRAWING PAGE NO:019

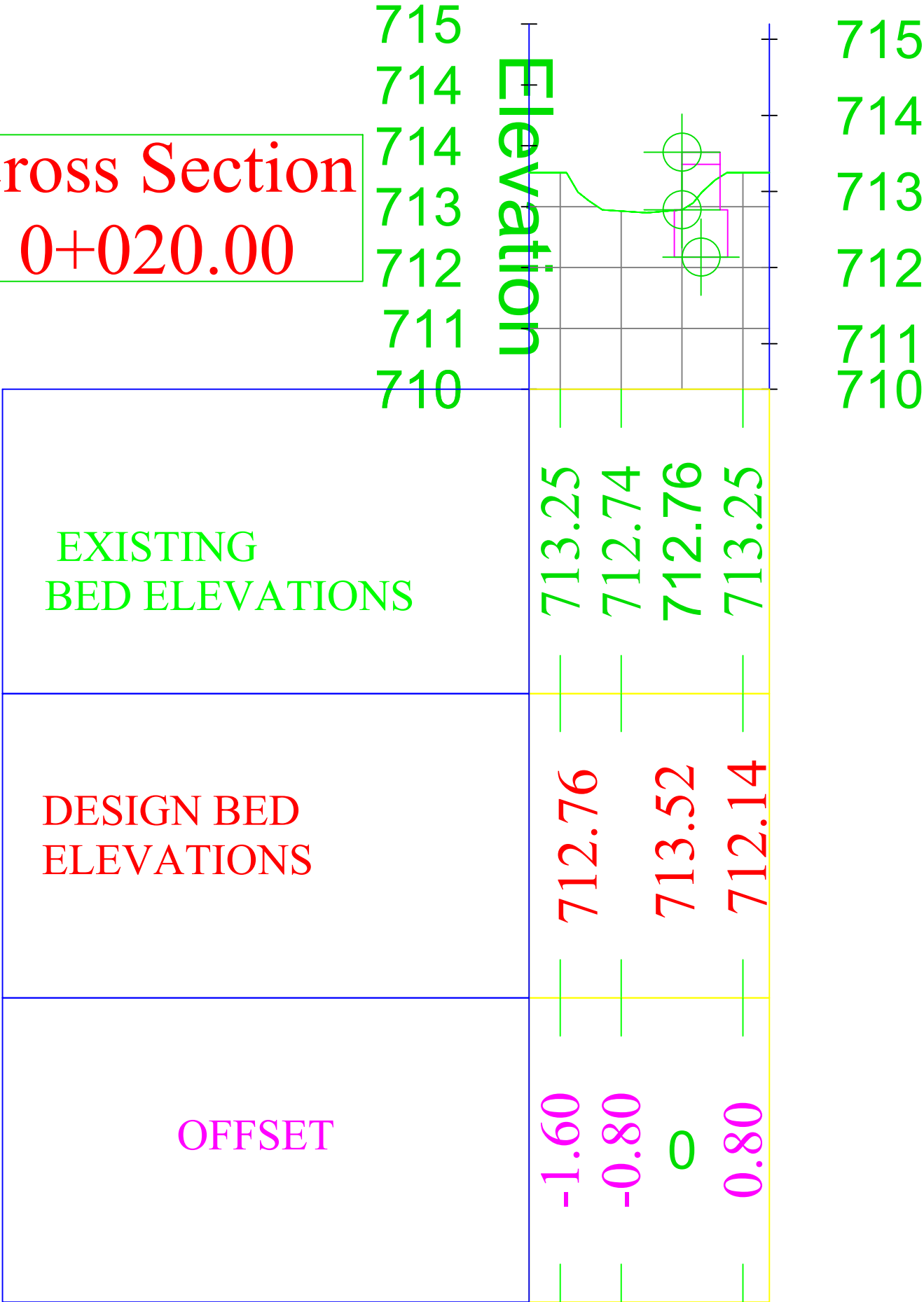
REVISION NO: 1

Action Taken	Name	Designation
Surveyed By:	AAA Survey Team	AAA Survey Team
Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:Sep. 2024

Cross Section  
0+020.00



LEGEND:-

- Center Line
- Direction of flow
- Grouted Stone Masonry
- Plain Cement Concrete
- Reinforced Cement Concrete
- Bank Protection
- Compacted Soil
- H.F.L / M.W.L
- Elevation of the point
- Elevation of the point in Plan view
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

Abbravation

- c/c - center to center
- U/S - Up Stream
- D/S - Down Stream
- W.L - Water Leevel
- RCC - Reinforce Cement Concrete
- PCC - Plain Cement Concrete
- WF - Water Flow Line

FUNDED BY:  
United Nation Developement Progrmm

IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

act!onaid

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE: : UNDP AFGRPA/2024/01/29]

SUB-PROJECT:  
Nangarhar Province Kot District  
Cross Sections of Anaar Khill Canal

DRAWING:  
Cross Sections of Anaar Khill Canal

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: NGR-Kot-01,Str-1

DRAWING PAGE NO.020

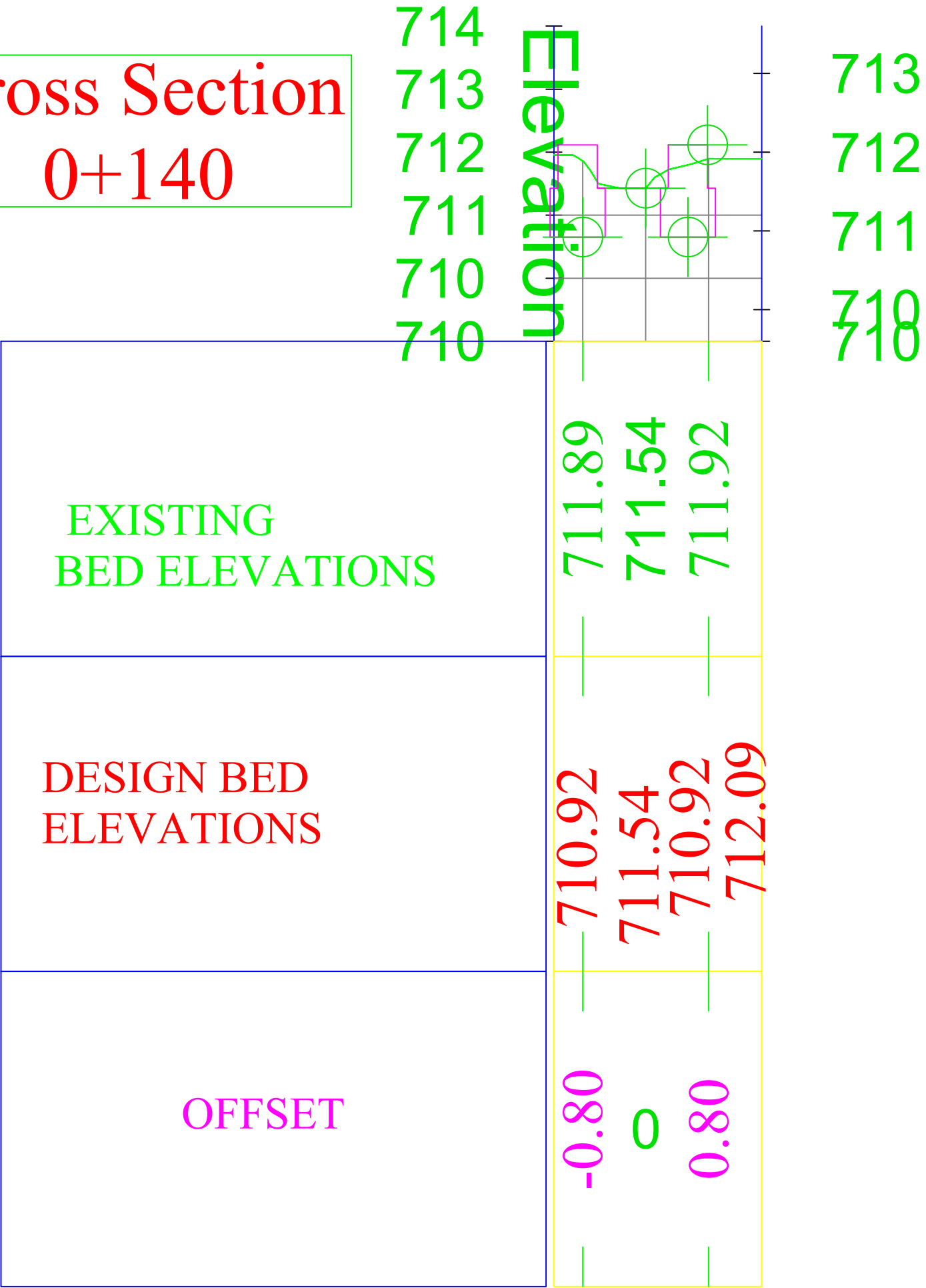
REVISION NO: 1

Action Taken	Name	Designation
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Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:Sep. 2024

Cross Section  
0+140



LEGEND:-

- Center Line
- Direction of flow
- Grouted Stone Masonry
- Plain Cement Concrete
- Reinforced Cement Concrete
- Bank Protection
- Compacted Soil
- H.F.L / M.W.L
- Elevation of the point
- Elevation of the point in Plan view
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

Abbrevation

- c/c - center to center
- U/S - Up Stream
- D/S - Down Stream
- W.L - Water Llevel
- RCC - Reinforce Cement Concrete
- PCC - Plain Cement Concrete
- WF - Water Flow Line

FUNDED BY:  
United Nation Developement Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE : UNDP AFGRPA/2024/01/29]

SUB-PROJECT:  
Nangarhar Province Kot District  
Cross Sections of Anaar Khill Canal

DRAWING:  
Cross Sections of Anaar Khill Canal

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: NGR-Kot-01,Str-1

DRAWING PAGE NO:021

REVISION NO: 1

Action Taken	Name	Designation
Surveyed By:	AAA Survey Team	AAA Survey Team
Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

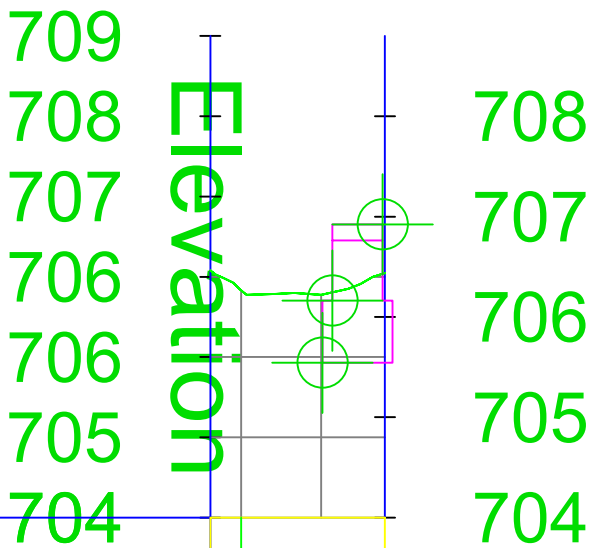
Date:Sep. 2024

Cross Section Near to  
end point of project  
0+287.00

EXISTING BED ELEVATIONS

DESIGN BED ELEVATIONS

OFFSET



LEGEND:-

- Center Line
- Direction of flow
- Grouted Stone Masonry
- Plain Cement Concrete
- Reinforced Cement Concrete
- Bank Protection
- Compacted Soil
- H.F.L / M.W.L
- Elevation of the point
- Elevation of the point in Plan view
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

Abbravation

- c/c - center to center
- U/S - Up Stream
- D/S - Down Stream
- W.L - Water Leavel
- RCC - Reinforce Cement Concrete
- PCC - Plain Cement Concrete
- WF - Water Flow Line

FUNDED BY:  
United Nation Developement Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE: : UNDP AFGRPA/2024/01/29]

SUB-PROJECT:  
Nangarhar Province Kot District  
Cross Sections of Anaar Khill Canal

DRAWING:  
Cross Sections of Anaar Khill Canal

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: NGR-Kot-01,Str-1

DRAWING PAGE NO:022

REVISION NO: 1

Action Taken	Name	Designation
Surveyed By:	AAA Survey Team	AAA Survey Team
Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date-Sep. 2024