

**UNITED NATION DEVELOPMENT PROGRAM  
UNDP**



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

Reference No. UNDP/AFGRPA/2024/01/29]

**LAGHMAN PROVINCE MEHTARLAM DISTRICTS  
NAHARI SHAHI CANAL REHABILITATION**

**CONSTRUCTION DRAWINGS**

**DATE: SEPTEMBER-2024**



**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)



PROJECT:  
CBARD ALL PROJECTS EASTERN REGION

SUB-PROJECT:  
Nahar Shahee Canal Rehabiltaiion

DRAWING: List of Key Drawing

PROJECT SYMBOL:      CBARD ALL /AFG/EAST

SUB-PROJECT CODE:

DRAWING PAGE NO:001

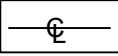
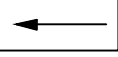


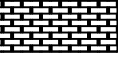
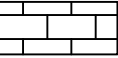

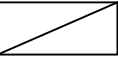
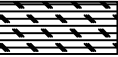
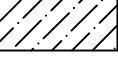


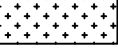


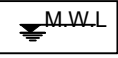
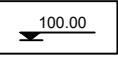
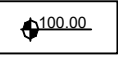


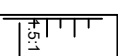


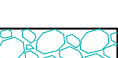
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Action Taken	Name	Designation
Surveyed By:	AAA Survey Team	AAA Survey Team
Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA NGR Technical Team	AAA NGR T..I Team
Reviewed By:	AAA Technical Team	AAA Technical Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

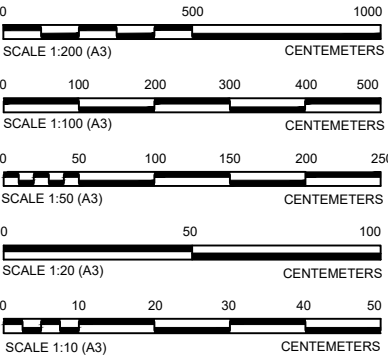
Date:Sep. 2024

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

ABBREVIATION:-

Av	AVERAGE	ST	STATION
BM	BENCH MARK	THK	THICKNESS
B	WIDTH	TYP	TYPICAL
C/C	CENTER TO CENTER	HFL	HIGH FLOOD LEVEL
D	DEPTH OF WATER	U/S	UPSTREAM
DRG	DRAWING	YRS	YEARS
DIA , Ø	DIAMETER	Q	DESIGN DISCHARGE
D.W.L	DESIGN WATER LEVEL	W.L	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		



LEGEND:-

FUNDED BY:  
United Nation Developement Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

**act:onaid**

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE : **UNDP AFGRPA/2024/09/2]**

SUB-PROJECT:  
Laghman Province Mahterlam District  
Nahar Shahee Canal Rehabilaion

DRAWING:  
Legends

PROJECT SYMBOL:    CBARD ALL /AFG/EAST  
SUB-PROJECT CODE:    LG M-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

LEGEND:-

- 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 be1:2:4 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/mm2.

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 fy Shall not be less than 3000 kg/cm2 or as specified

23- Concrete design based on a compressive strength of fc =250 kg/cm2 or as specified

24- Weight per unit volume of concrete W=2400 kgf/m3

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 wokeablty 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,columns16-24 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 confirme by the engineer before of construction.

FUNDED BY: United Nation Developement Progrmm		
IMPLEMENTATION PARTNER: ACTION AID AFGHANISTAN (AAA)		
		
PROJECT: CBARD ALL PROJECTS EASTERN REGION PROJECT CODE : <b>UNDP AFGRPA/2024/09/2</b>		
SUB-PROJECT: LAGHMAN PROVINCE MEHTARLAM DISTRICT NAHRI SHAI CANAL REHABILITATION		
DRAWING: Key Elements		
PROJECT SYMBOL: CBARD ALL /AFG/EAST		
SUB-PROJECT CODE: LGM- MEH-01,Str-1		
DRAWING PAGE NO:003		
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: SEPT. 2024



Mihterlam Distdrikt Nahre Shahee Canal Scheme Google Earth 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)

**act:onaid**

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE : **UNDP AFGRPA/2024/09/2**

SUB-PROJECT:  
Province: Laghman , District :Mahterlam  
Nahar Shahee canal

DRAWING:  
Nahar Shahee canal MAP

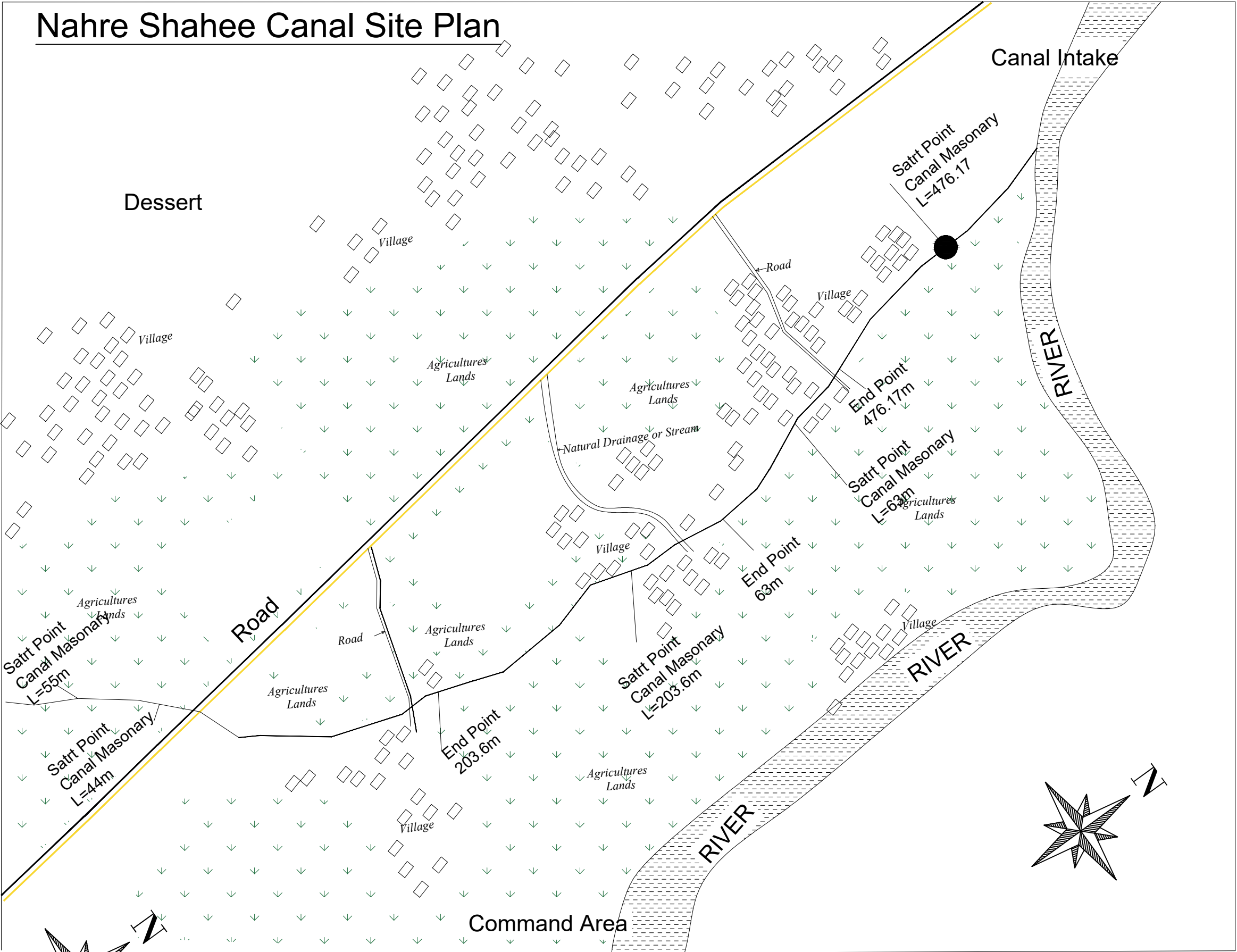
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SUB-PROJECT CODE: LG M-01,Str-1  
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REVISION NO: 1

Action Taken	Name	Designation
Surveyed By:	Said Ahamd Alingary	ConsultantEngineer
Design/Drawn By:	Said Ahamd Alingary	ConsultantEngineer
Reviewed By:	Shaistagul Maroofi	Senior Engineer
Reviewed By:	Shaistagul Maroofi	Senior Engineer
Checked By:		
Approved By:		

Drawing Scale: As Shown Date:Sep. 2024



Nahre Shahee Canal Site Plan



LEGEND:-

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

FUNDED BY:  
United Nation Development Proggmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

act:onaaid

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE : **UNDP AFGRPA/2024/09/2]**

SUB-PROJECT:  
Province: Laghman , District :Mahterlam  
Nahar Shahee canal

DRAWING:  
Nahar Shahee canal MAP First Page

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: LGM-01,Str-1

DRAWING PAGE NO:005

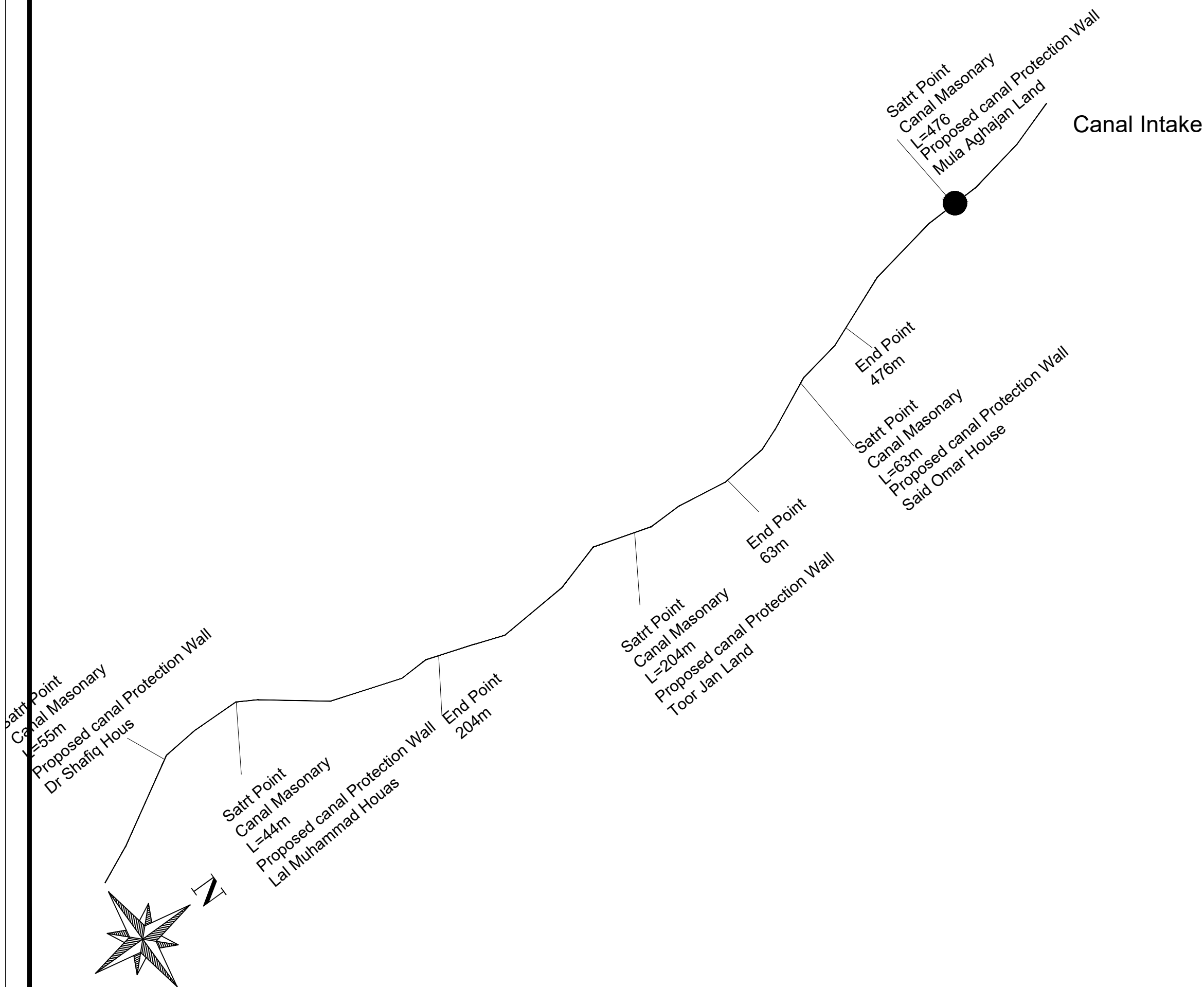
REVISION NO: 1

Action Taken	Name	Designation
Surveyed By:	Said Ahamd Alingary	ConsultantEngineer
Design/Drawn By:	Said Ahamd Alingary	ConsultantEngineer
Reviewed By:	Shaistagul Maroofi	Senior Engineer
Reviewed By:	Shaistagul Maroofi	Senior Engineer
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:Sep. 2024

Mihterlam District Nahre Shahee Canal Google Earth Project Plan For CBARD ALL Project



LEGEND:-

Proposed Canal —————

Existing Asphalt Road —————

Mountains Area —————

Command Area —————

River —————

Desert —————

Start point of Canal —————

FUNDED BY:

United Nation Developement Progrmm

IMPLEMENTATION PARTNER:

ACTION AID AFGHANISTAN (AAA)

PROJECT:

CBARD ALL PROJECTS EASTERN REGION

PROJECT CODE: : UNDP AFGRPA/2024/09/2]

SUB-PROJECT:

Province: Laghman , District :Mahterlam

Nahar Shahee Canal Rehabilaion

DRAWING:

Nahar Shahee MAP Second Page

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: LGM-KHGN-01,Str-1

DRAWING PAGE NO:006

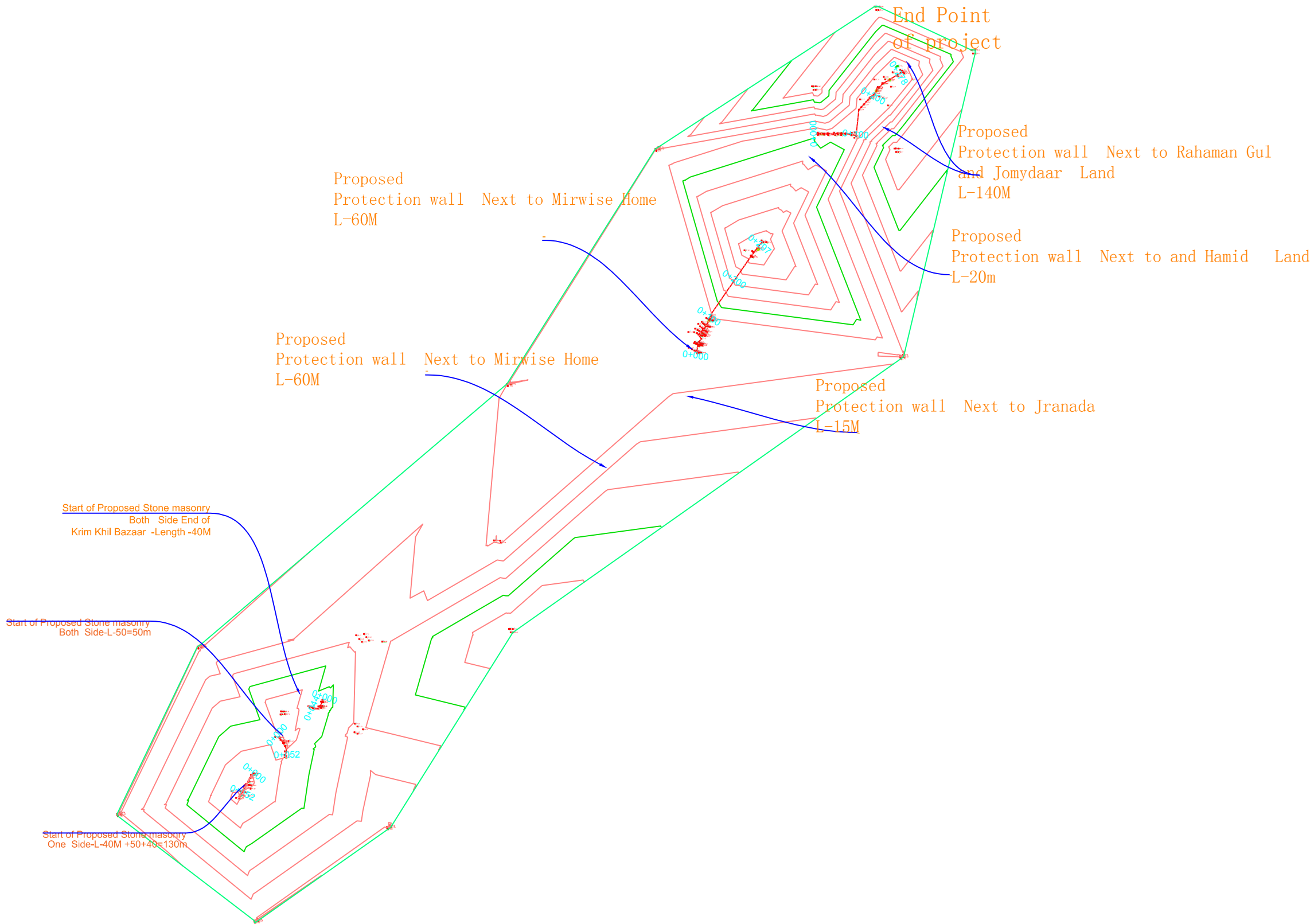
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Action Taken	Name	Designation
Surveyed By:	Said Ahamd Alingary	ConsultantEngineer
Design/Drawn By:	Said Ahamd Alingary	ConsultantEngineer
Reviewed By:	Shaistagul Maroofi	Senior Engineer
Reviewed By:	Shaistagul Maroofi	Senior Engineer
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:August. 2024

# Shahi Canal Contour Map



- 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 Program

IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

act:onaid

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE: : UNDP AFGRPA/2024/02/2

SUB-PROJECT:  
Laghman ProvinceMahterlam District  
Nahar Shahee Canal Rehabiltaiton

DRAWING:  
Weir Apron Structure Steel fixing

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

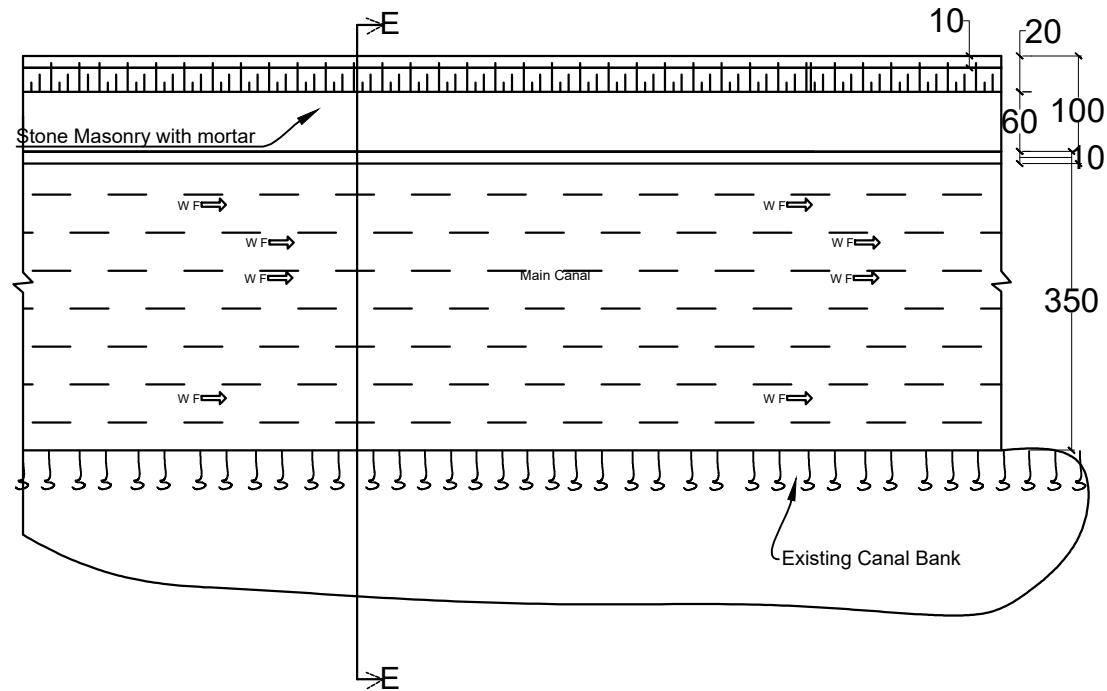
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Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown  
Date:August. 2024



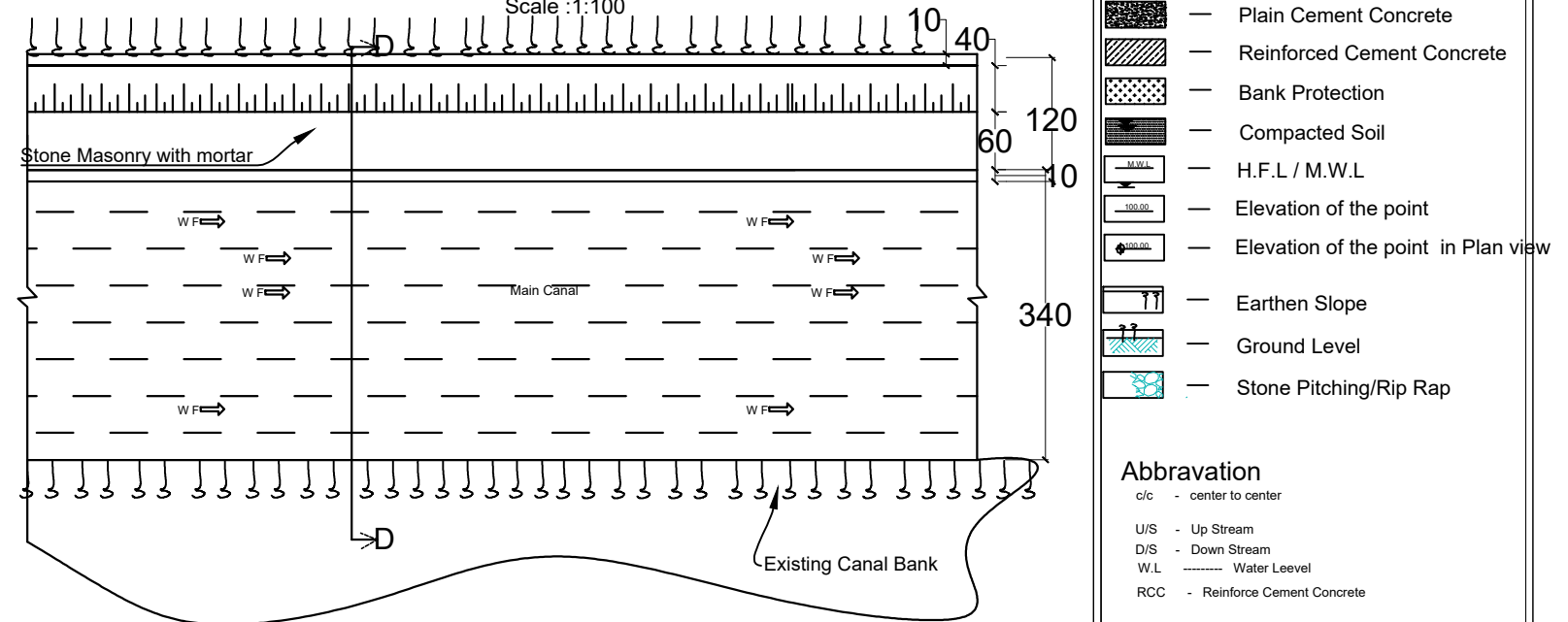
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Scale :1:100



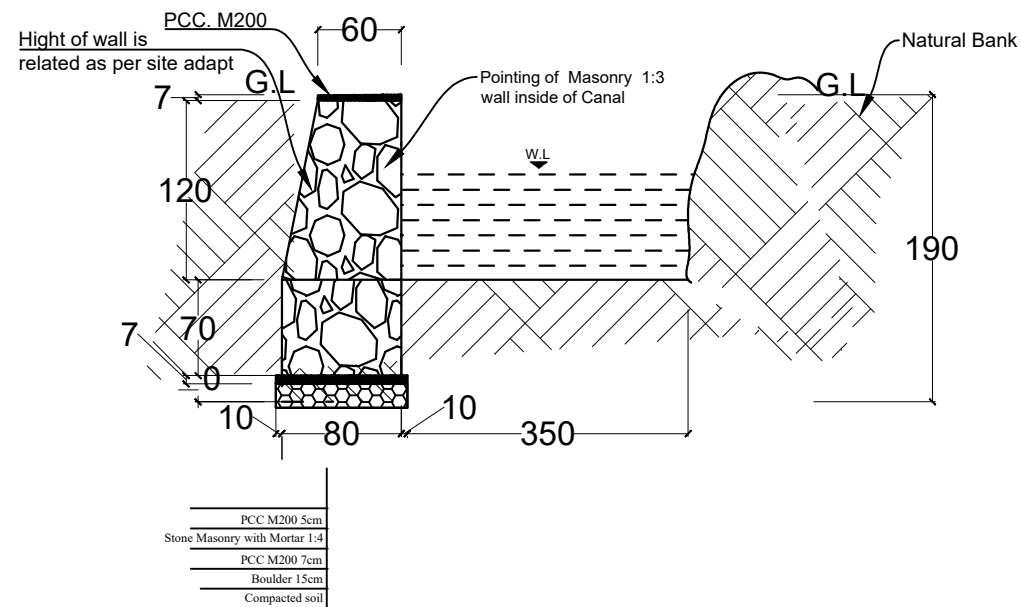
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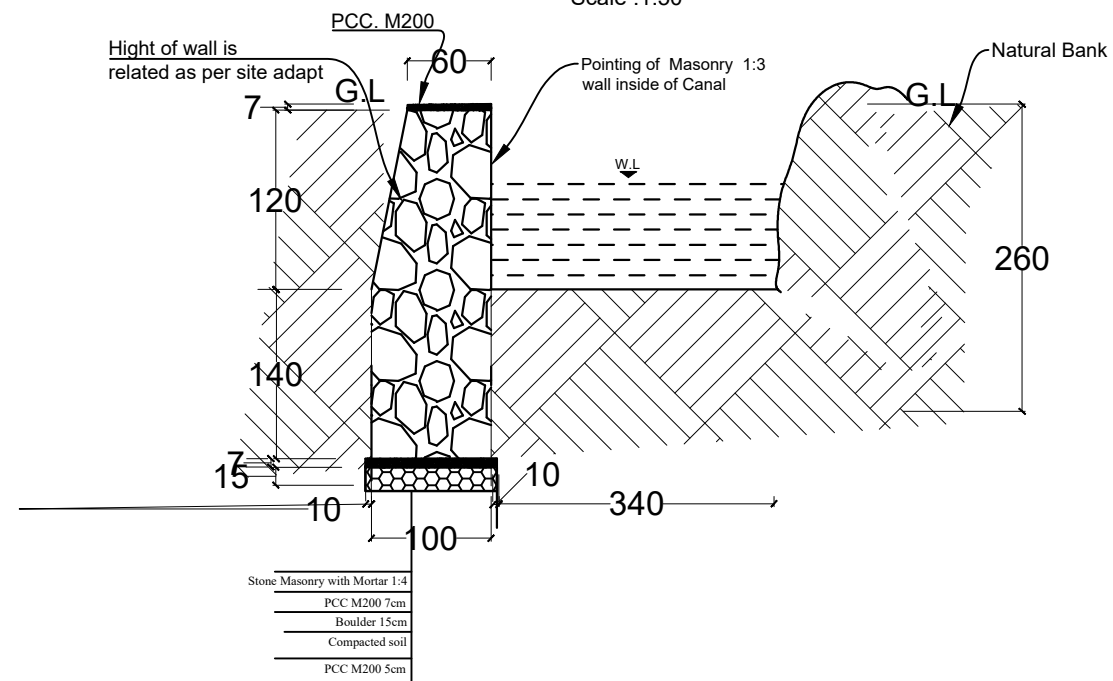
## Section E-E, L=55M

Scale :1:50



## Section D-D, L=44M

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 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/2024/09/2**

SUB-PROJECT:  
Laghman Province Mahterlam District  
Nahar Shahee Canal Rehabilaion

DRAWING:  
Weir Apron Structure Steel fixing

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: L G M-01,Str-1

DRAWING PAGE NO:007

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

# 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 Development Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

**act:onaid**

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

SUB-PROJECT:  
Laghman Province Mahterlam District  
Canal Construction

DRAWING:  
Weir Apron Structure Steel fixing

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: L G M-01,Str-1

DRAWING PAGE NO:008

REVISION NO: 1

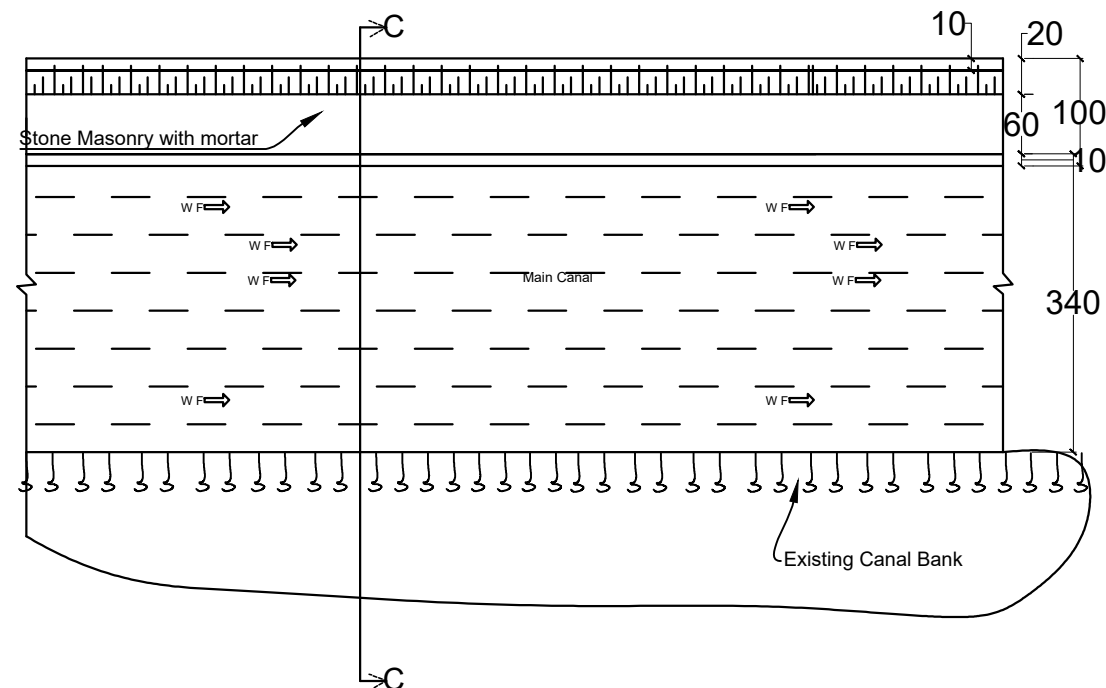
Action Taken	Name	Designation
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Design/Drawn By:	AAA Design Team	AAA Design Team
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Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:August. 2024

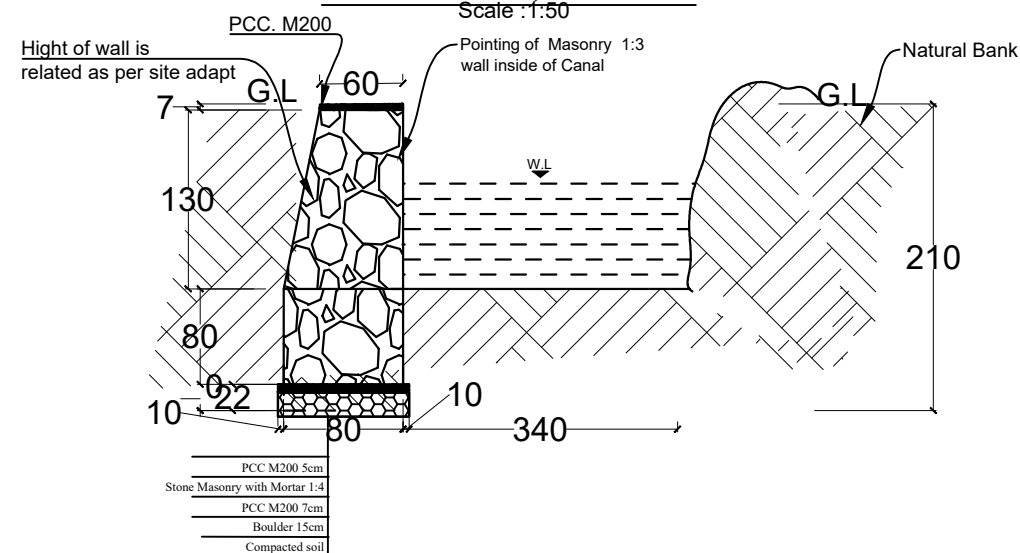
## Canal Bank Protection Wall Plan,L=204m

Scale :1:100



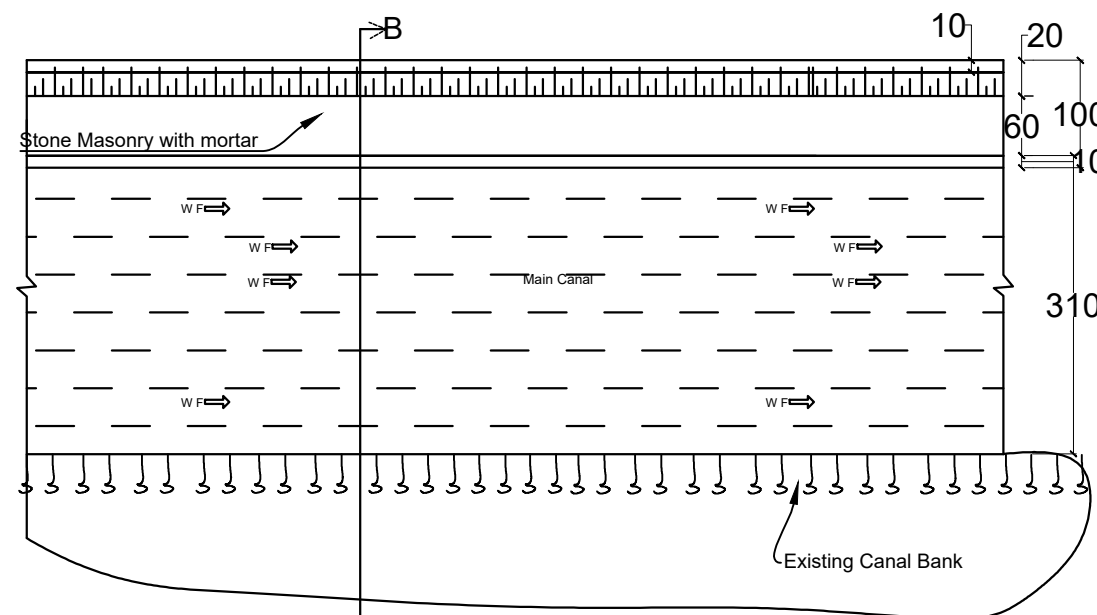
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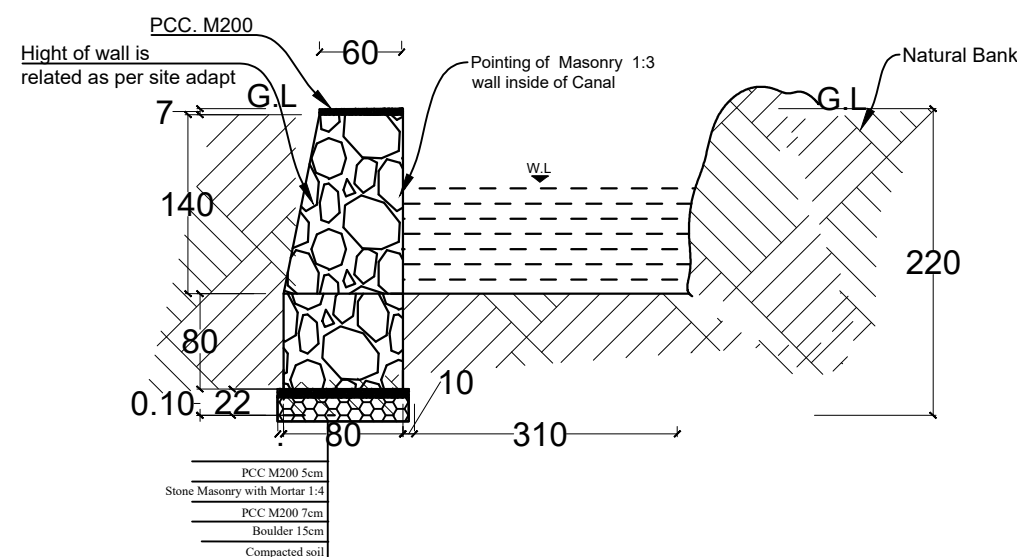
## Canal Bank Protection Wall Plan,L=63m

Scale :1:100



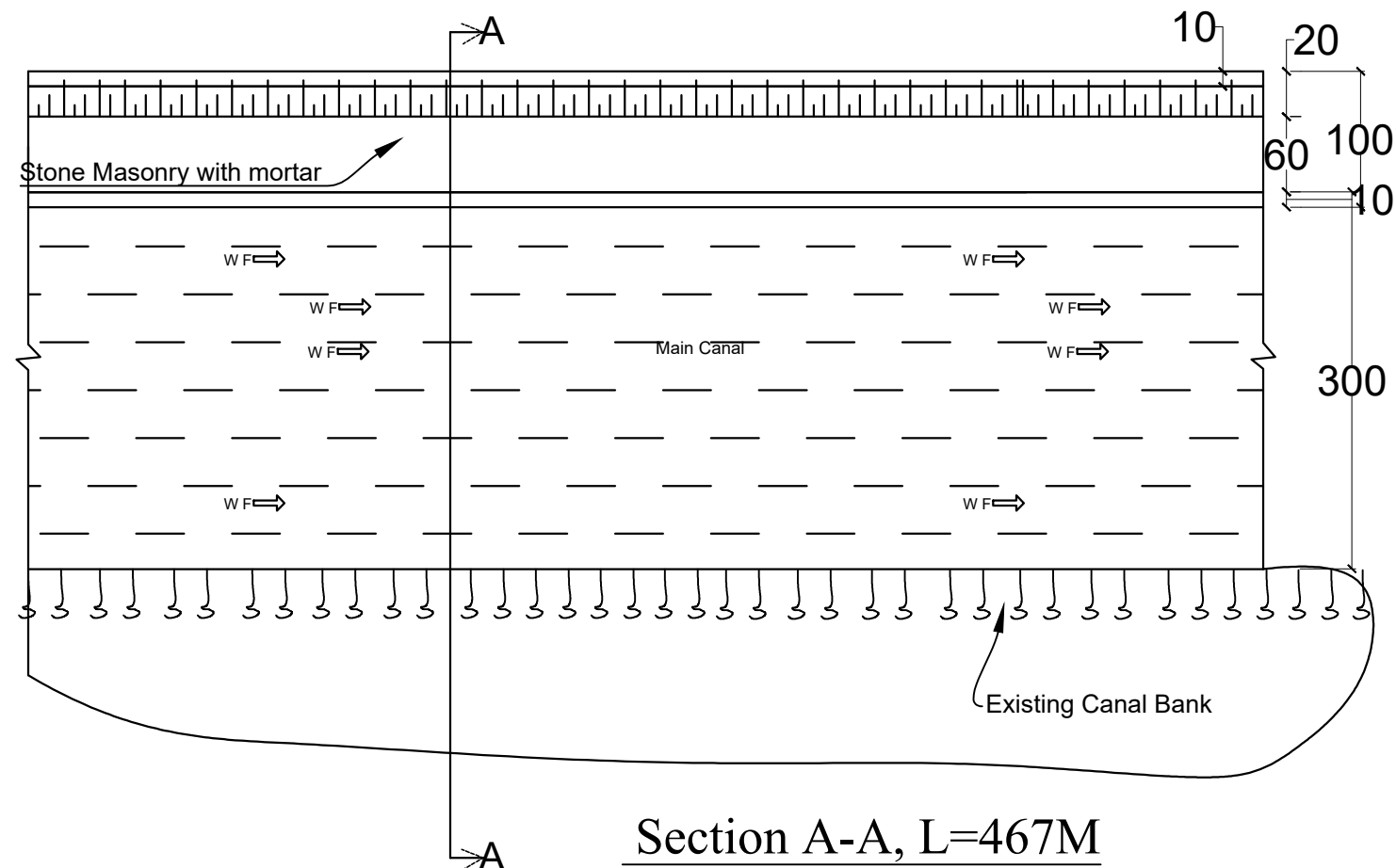
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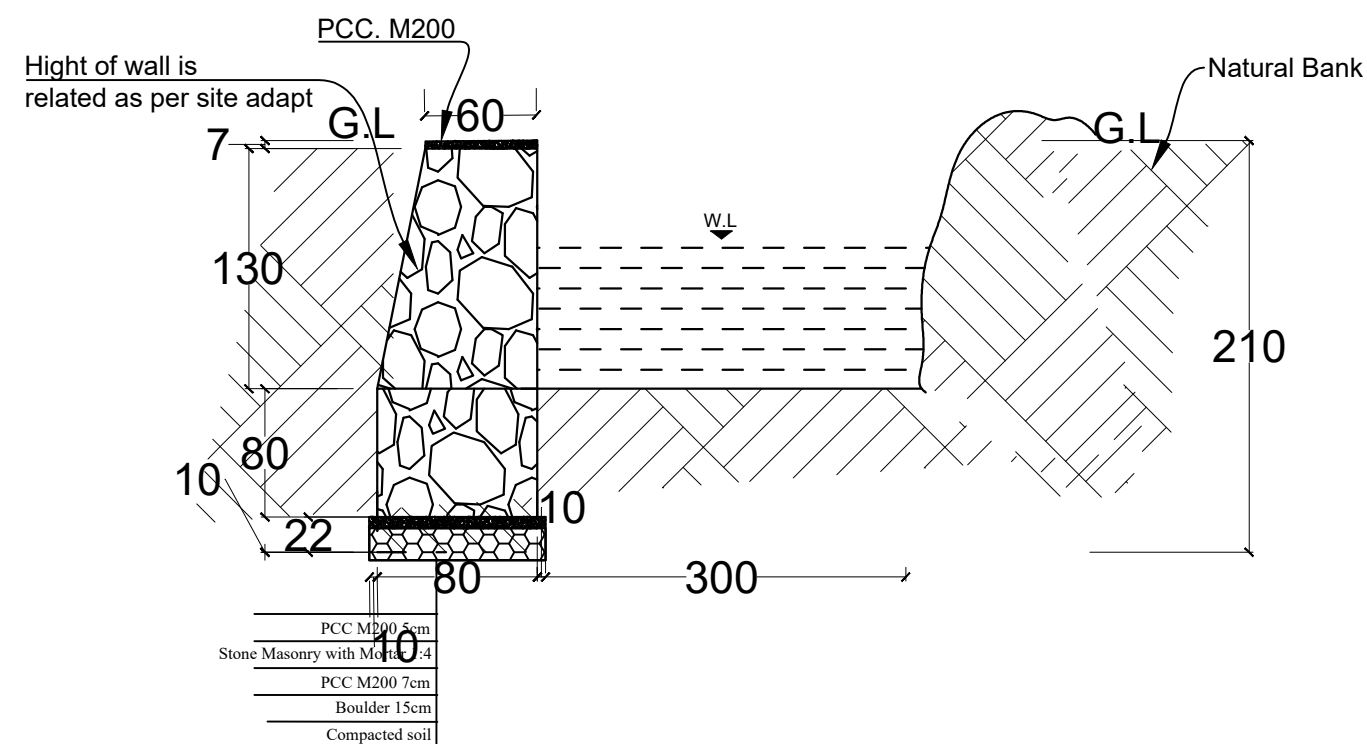
## Canal Bank Protection Wall Plan,L=467m

Scale :1:100

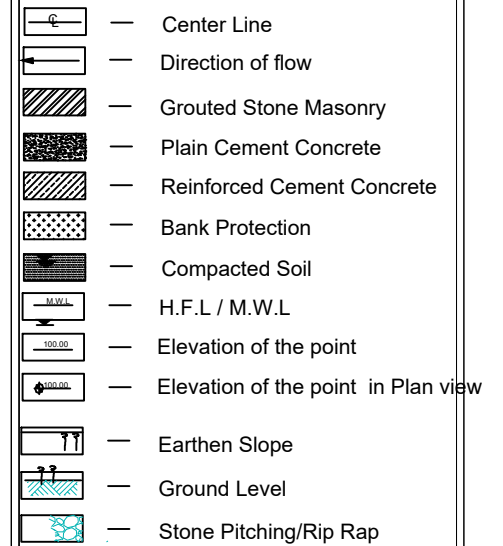


## Section A-A, L=467M

Scale :1:50



LEGEND:-



## 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 Development Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE: : **UNDP AFGRPA/2024/09/2]**

SUB-PROJECT:

Laghman Province Mahterlam District

Canal Construction

DRAWING:

Weir Apron Structure Steel fixing

PROJECT SYMBOL:	CBARD ALL /AFG/EAST
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SUB-PROJECT CODE:	L G M-01,Str-1
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DRAWING PAGE NO:009

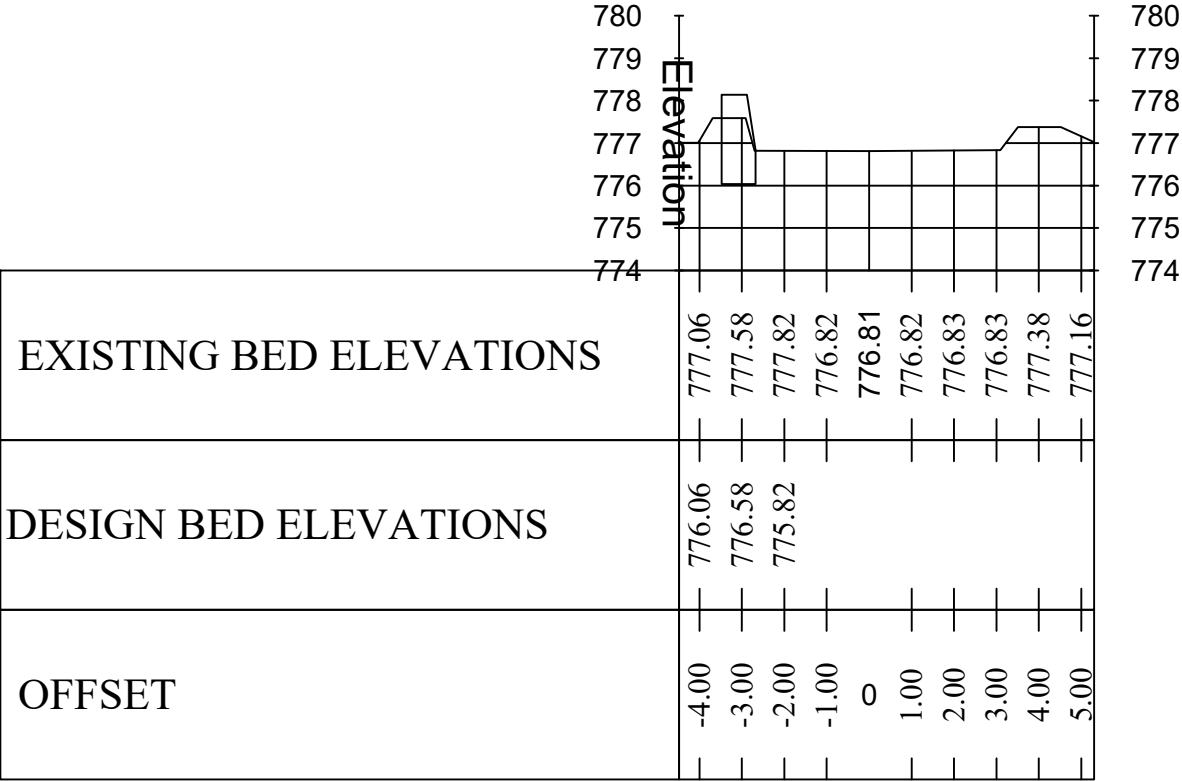
REVISION NO: 1

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
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Approved By:		

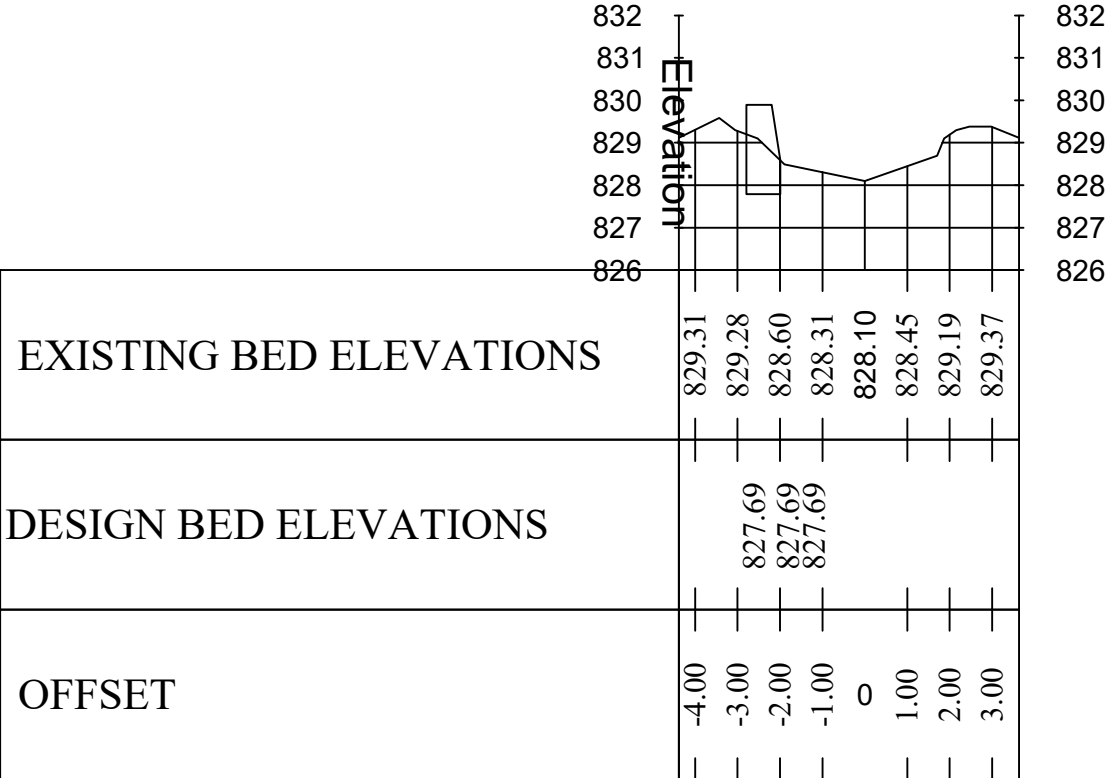
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Date: Sep. 2024

Cross Section  
0+077.67



Cross Section  
0+019.24



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 Progrmm

IMPLEMENTATION PARTNER:

ACTION AID AFGHANISTAN (AAA)

PROJECT:

CBARD ALL PROJECTS EASTERN REGION

PROJECT CODE: : UNDP AFGRPA/2024/01/29]

SUB-PROJECT:

Laghman Province Mahterlam District

Canal Construction

DRAWING:

Weir Apron Structure Steel fixing

PROJECT SYMBOL:

CBARD ALL /AFG/EAST

SUB-PROJECT CODE:

L G M-01,Str-1

DRAWING PAGE NO:

010

REVISION NO:

1

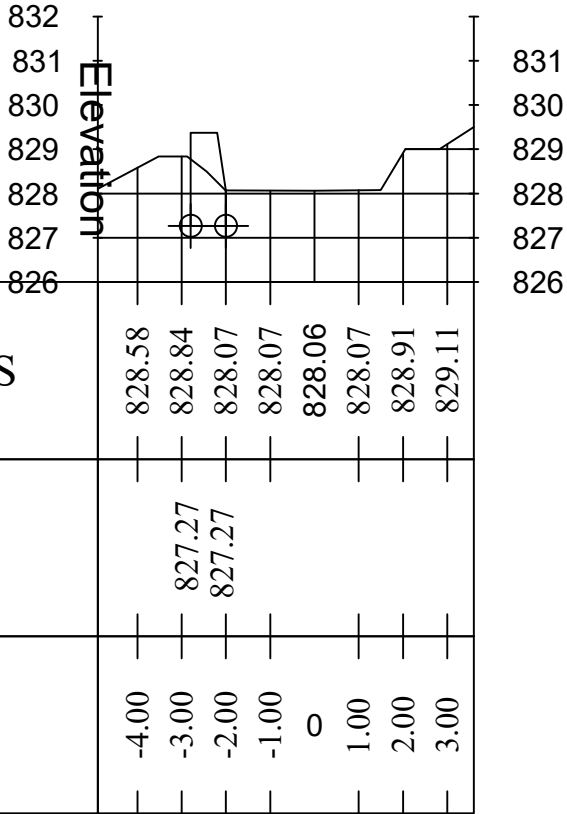
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Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
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Checked By:		
Approved By:		

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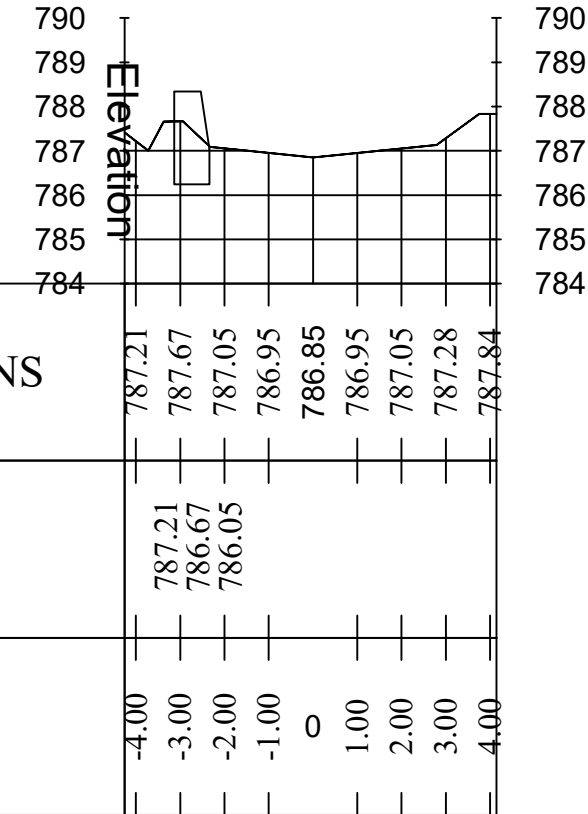
Date:August. 2024



# Cross Section 0+290.09



# Cross Section 0+029.36



## 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 Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



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

SUB-PROJECT:  
Laghman Province Mahterlam District  
Canal Construction

DRAWING:  
Weir Apron Structure Steel fixing

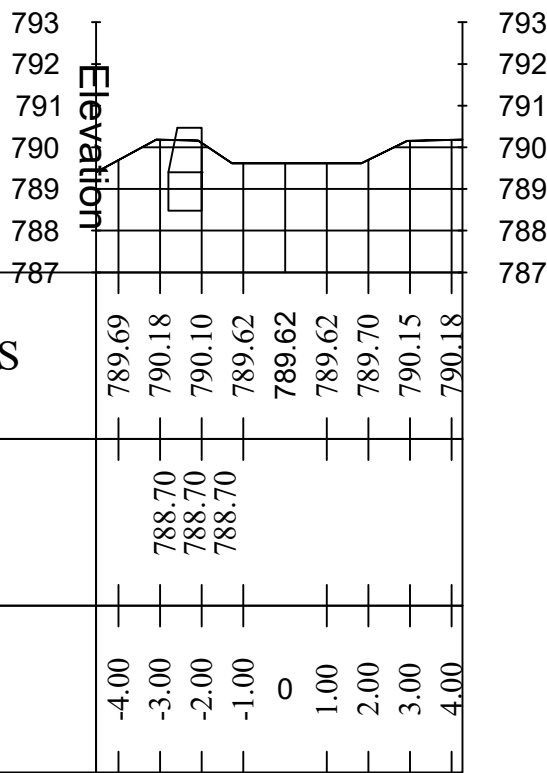
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SUB-PROJECT CODE: L G M-01,Str-1  
DRAWING PAGE NO:011  
REVISION NO: 1

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
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Checked By:		
Approved By:		

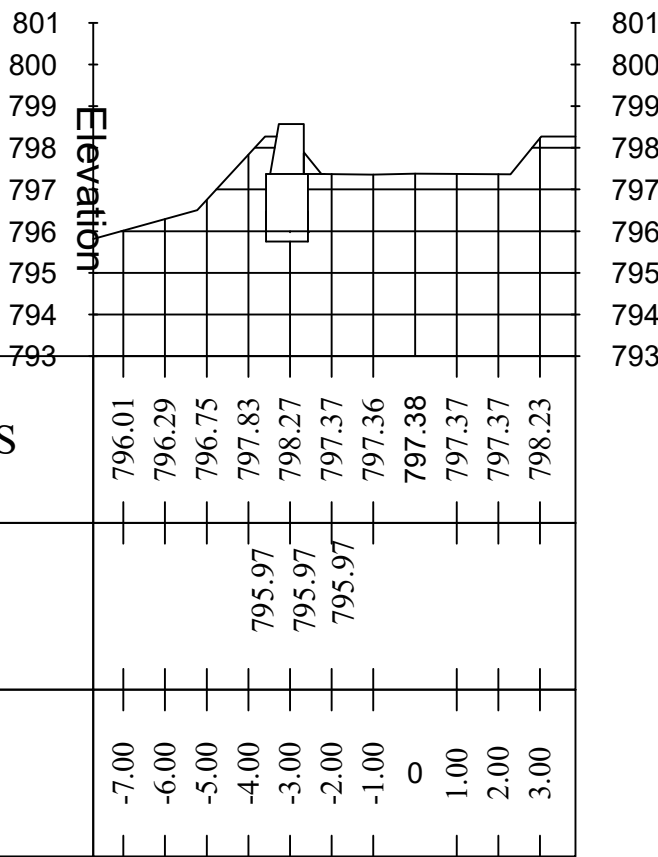
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Date:Sep2024

# Cross Section 0+021.64



# Cross Section 0+028.59



## 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 Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE: : UNDP AFGPA/2024/09/2]

SUB-PROJECT:  
Laghman Province Mahterlam District  
Canal Construction

DRAWING:  
Weir Apron Structure Steel fixing

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: L G M-01,Str-1  
DRAWING PAGE NO:012  
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:		

Drawing Scale: As Shown

Date:SEP2024



# Details of Water Trans out Gate

## 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 Development Program



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

**act:onaid**

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE: : UNDP AFRPA/2024/09/2]

SUB-PROJECT:  
Laghman Province Mahterlam District  
Nahar Shahee Canal Canstruction

DRAWING:  
structure and details

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: LGM-MHL-01,Str-1

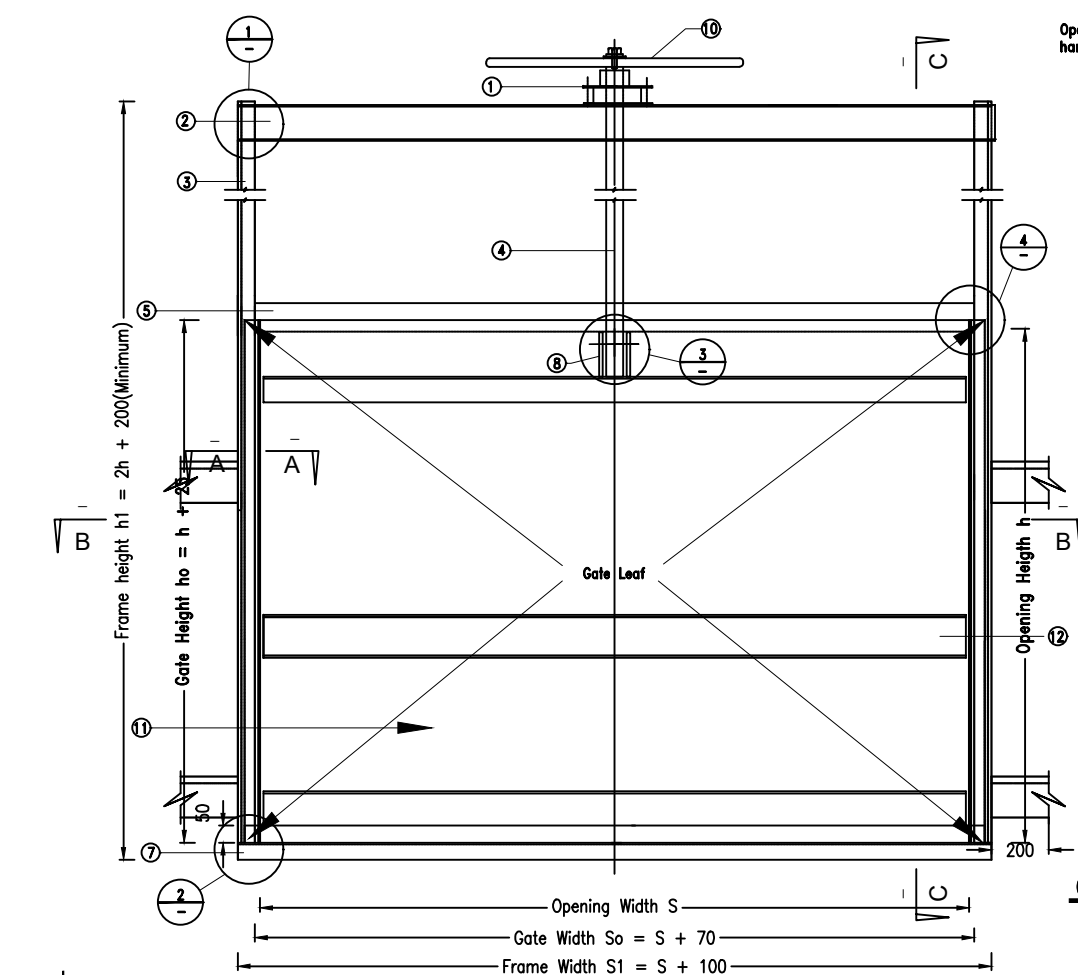
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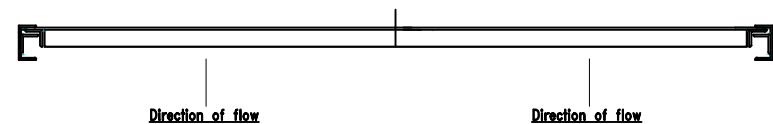
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Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
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Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:August, 2024



01 TYPICAL GATE PLAN  
REF. K075

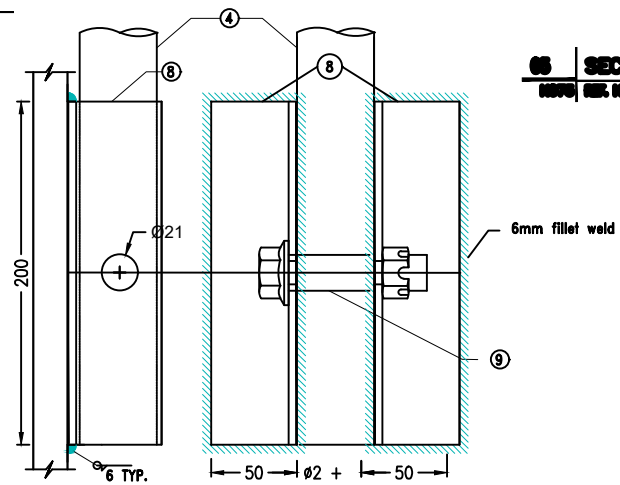


02 SECTION D-D  
REF. K075

Item	Description
1	Thrust bearing/nut assembly
2	[100 x 50 Channel (Upper beam)
3	[80 x 50 Channel
4	Spindle $\phi$ 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

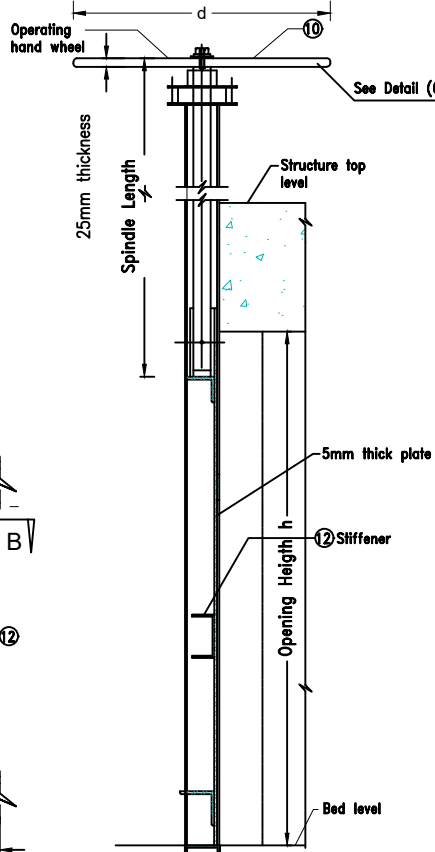
12 DETAIL 03  
GATE COMPONENT  
K075 REF. K075

SCALE: NTS

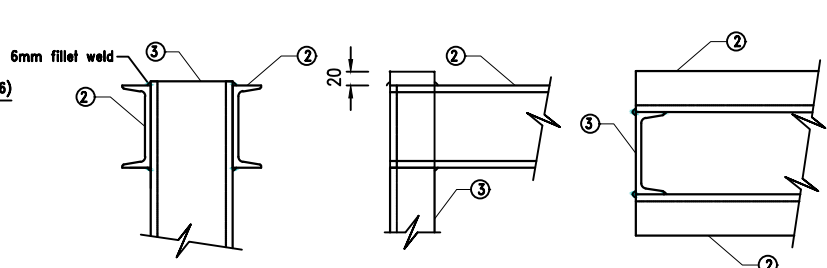


03 SECTION A-A  
REF. K075

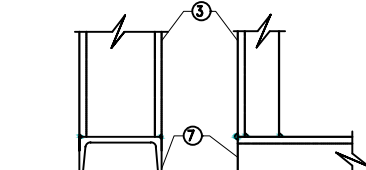
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LIFTING BRACKETS  
REF. K075



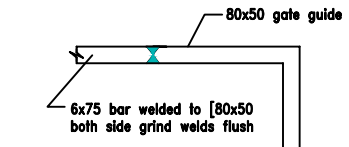
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REF. K075



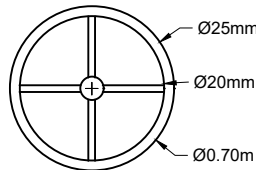
05 DETAIL 01  
FRAME CROSS BEAM (TOP)  
REF. K075



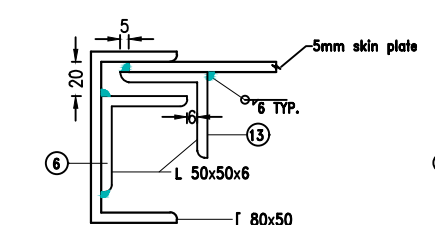
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REF. K075



07 DETAIL 04  
HORIZONTAL PLAIN BAR  
REF. K075



08 DETAIL 03  
REF. K075

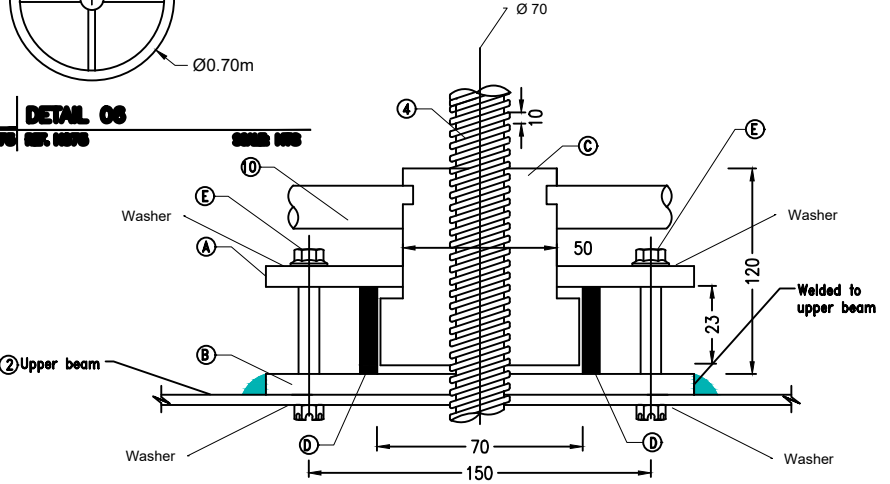


09 SECTION A-A  
REF. K075

Item	Description
A	Upper plate 12mm thick
B	Lower plate 12mm thick
C	Bearing nut
D	Spacer
E	Four M12 bolts with nuts + washer

10 TABLE 02  
THRUST BEARING ASSEMBLY COMP.  
REF. K075

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



11 PLAN  
THRUST BEARING ASSEMBLY  
REF. K075



# Details of Water Trans out Gate

## 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 Development Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

**act:onaid**

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE: : UNDP AFRPA/2024/09/2]

SUB-PROJECT:  
Laghman Province Mahterlam District  
Nahar Shahee Canal Canstruction

DRAWING:  
structure and details

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: LGM-MHL-01,Str-1

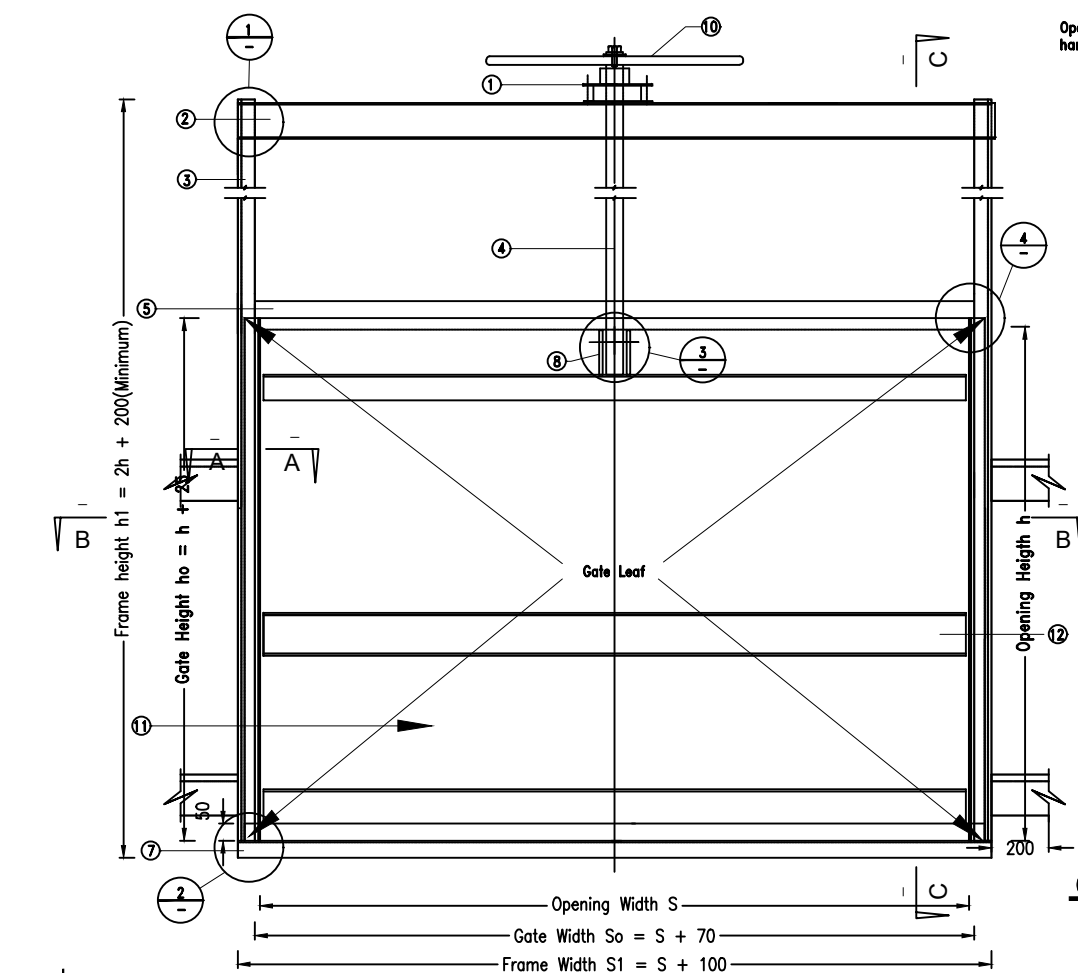
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REVISION NO: 1

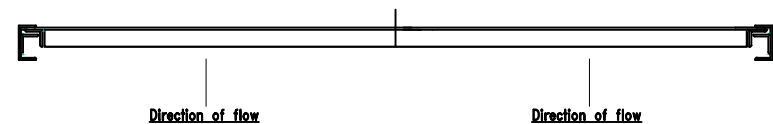
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Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:August, 2024



01 TYPICAL GATE PLAN  
REF. K075

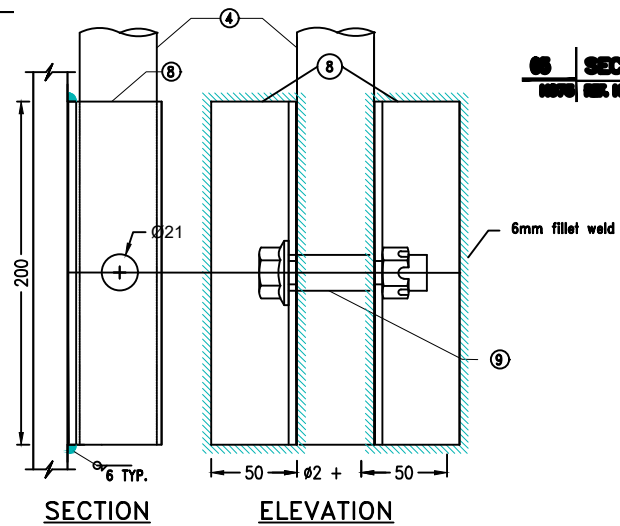


02 SECTION D-D  
REF. K075

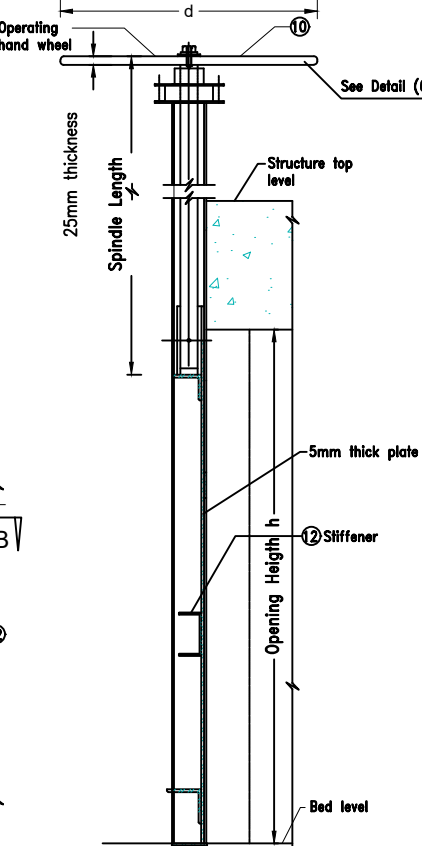
Item	Description
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2	[100 x 50 Channel (Upper beam)
3	[80 x 50 Channel
4	Spindle $\phi$ 40 or 45
5	6x75 bar
6	Guide rail L50x50x6
7	[80x50 lower beam
8	L 50 X 50 X 6 lifting brackets
9	M20 Bolt & Nut
10	Hand Wheel (Steering Wheel)
11	Skin plate 5mm
12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

12 DETAIL 03  
GATE COMPONENT  
K075 REF. K075

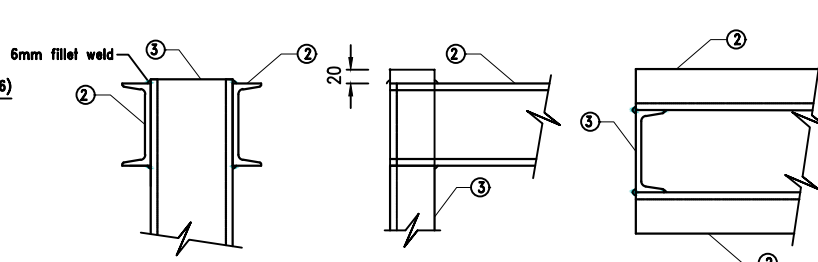
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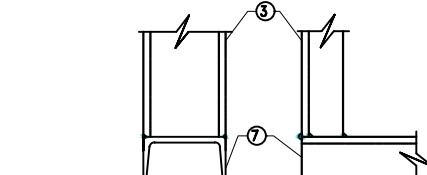
03 SECTION A-A  
REF. K075



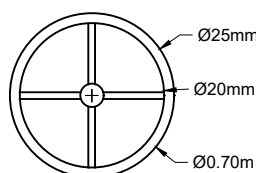
04 SECTION C-C  
REF. K075



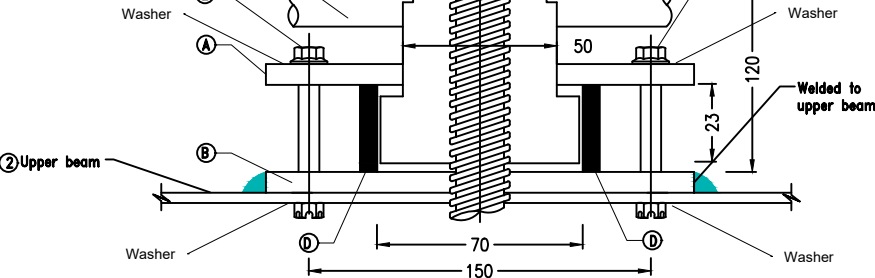
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FRAME CROSS BEAM (TOP)  
REF. K075



06 DETAIL 02  
FRAME BOTTOM CROSS BEAM  
REF. K075



07 DETAIL 03  
HORIZONTAL PLAIN BAR  
REF. K075



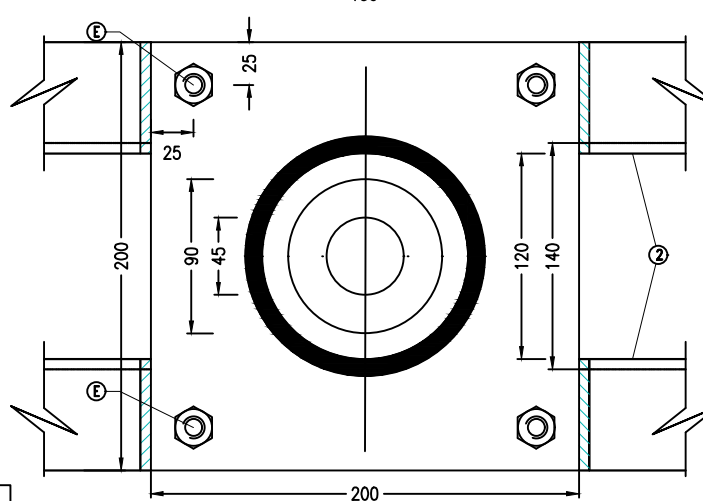
08 DETAIL 04  
HORIZONTAL PLAIN BAR  
REF. K075

05 SECTION A-A  
REF. K075

Item	Description
A	Upper plate 12mm thick
B	Lower plate 12mm thick
C	Bearing nut
D	Spacer
E	Four M12 bolts with nuts + washer

TABLE 02  
THRUST BEARING ASSEMBLY COMP.  
REF. K075

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



09 PLAN  
THRUST BEARING ASSEMBLY  
REF. K075

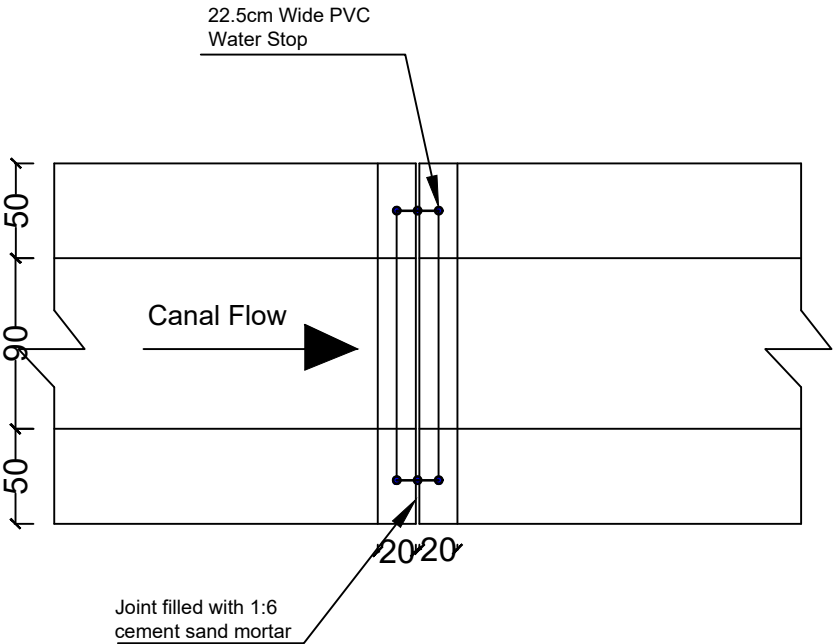
PLAN OF CONSTRUCTION

JOINT FOR COVERED

SECTION

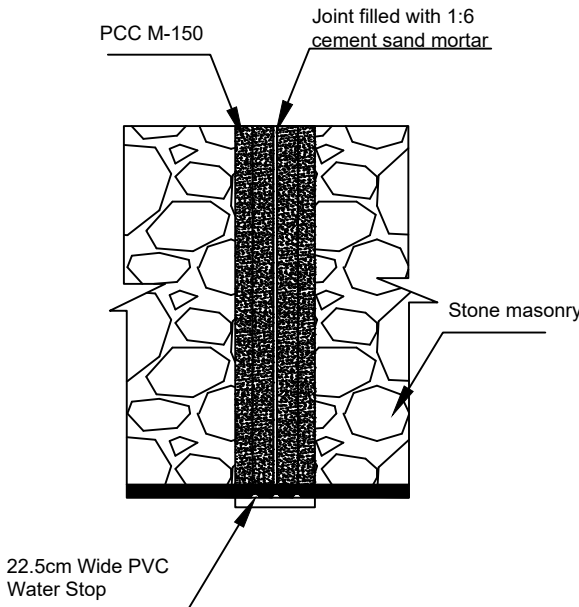
Stone masonry

Scale: 1:50

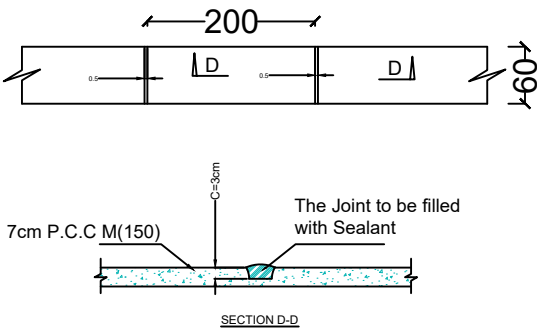


SECTION A-A

Scale: 1:50



PLAN OF WALL COPING



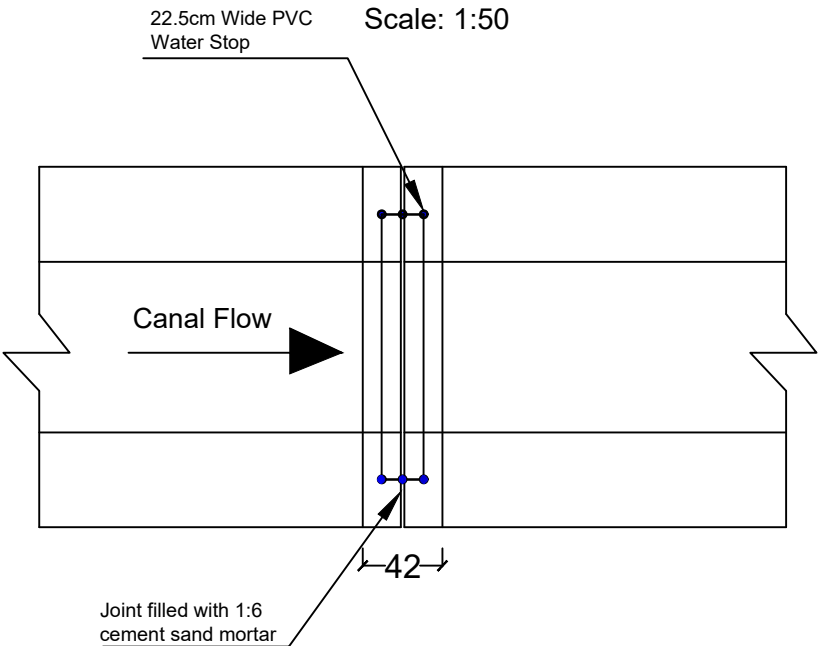
PLAN OF CONSTRUCTION

JOINT FOR COVERED

SECTION

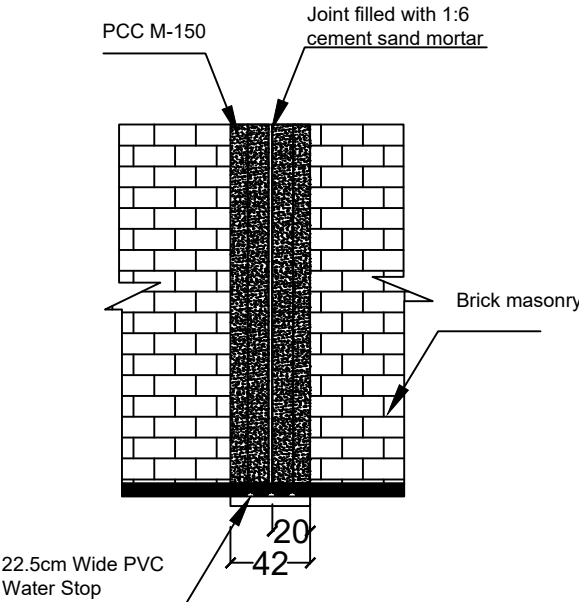
Brick masonry

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 Development Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

**act:onaid**

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE : **UNDP AFGSPA/2024/09/2**

SUB-PROJECT:  
Lahgman Province Mahterlam District  
Nahar Shahee Canal Canstruction

DRAWING:  
Plan Aqueduct structure and details

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: LGM-MHL-01, Str-1

DRAWING PAGE NO:016

REVISION NO: 1

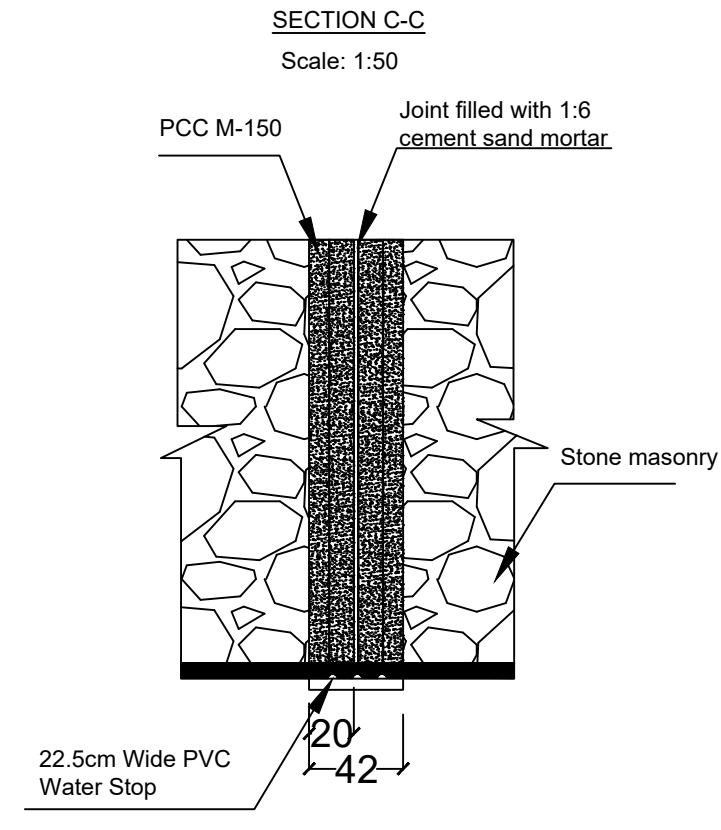
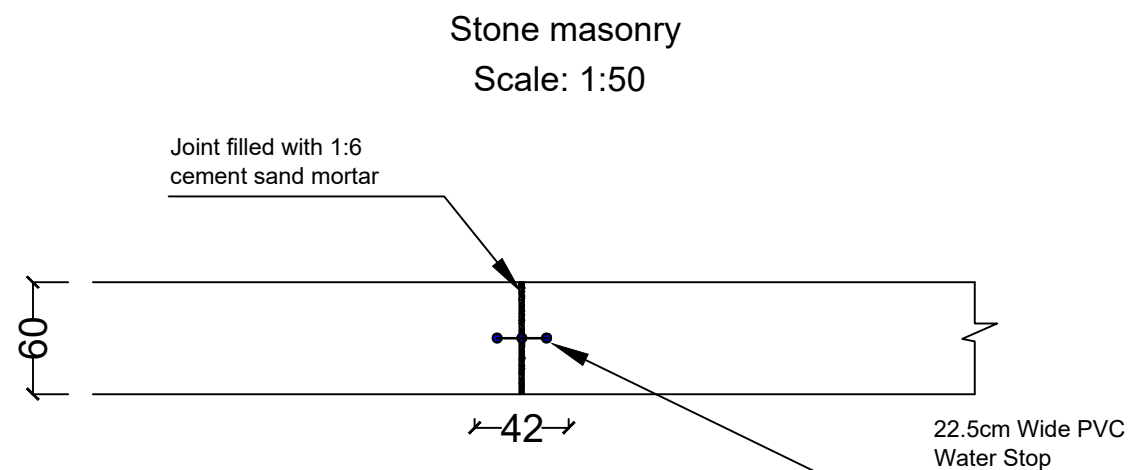
Action Taken	Name	Designation
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Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date: August, 2024



### PLAN OF CONSTRUCTION JOINT FOR ONE SIDE WALL



PCC and all necessary material for Joint Preparation.

1- Implementation of Construction joint at every 25 m with 22.5 cm wide PVC water stop(The water stopper shall be of extruded polyvinyl chloride complying with BS 2571: Class 3, Compound Type G4 ) or equivalent and (2) cm thick cork filling including all material and labor all as per relevant drawing, specification and complete satisfaction of the site engineer.

2- Length of water stopper depend to the cross section.

All expansion joint should have 2cm gap with the PVC water stop.the canal side of the gap should be packed with bitumen and sand Mastic.

### 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 Development Program



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

**act:onaid**

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION  
PROJECT CODE: : **UNDP AFGSPA/2024/09/2**

SUB-PROJECT:  
Laghman Province Mahterlam District  
Nahar Shahee Canal Canstruction

DRAWING:  
structure Section and details

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE: LGM-MHTL01,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