

**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]**



**NANGARHAR PROVINCE KHOGYANI, DISTRICTS  
AHMAD KHIL / DUSARAKA CANAL REHABILITATION**

**CONSTRUCTION DRAWINGS**

**STRUCTURES OF CANAL**

**DATE: August-2024**

**act!onaid**

**ACTION AID AFGHANISTAN (AAA)**

SL#	DESCRIPTION	DRAWING/SHEET NO.
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LEGEND:-

FUNDED BY:  
United Nation Developement Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

**act:onaid**

PROJECT:  
CBARD ALL PROJECTS EASTERN REGION

SUB-PROJECT:  
Repairing of Commercial Green Houses

DRAWING: List of Key Drawing

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE:

DRAWING PAGE NO:001

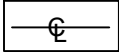


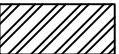
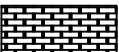
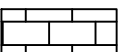
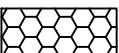
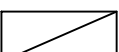

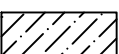


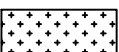

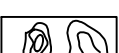
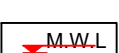
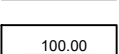
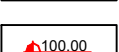


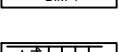
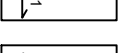
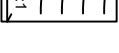

REVISION NO: 0

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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

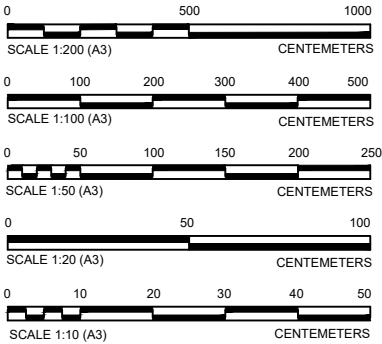
Date:August, 2024

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)



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

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khili Canal Construction

DRAWING:  
Legends

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

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 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 wokeabltly 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

LEGEND:-

FUNDED BY:  
United Nation Developement Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



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

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khili Canal Construction

DRAWING:  
Key Elements

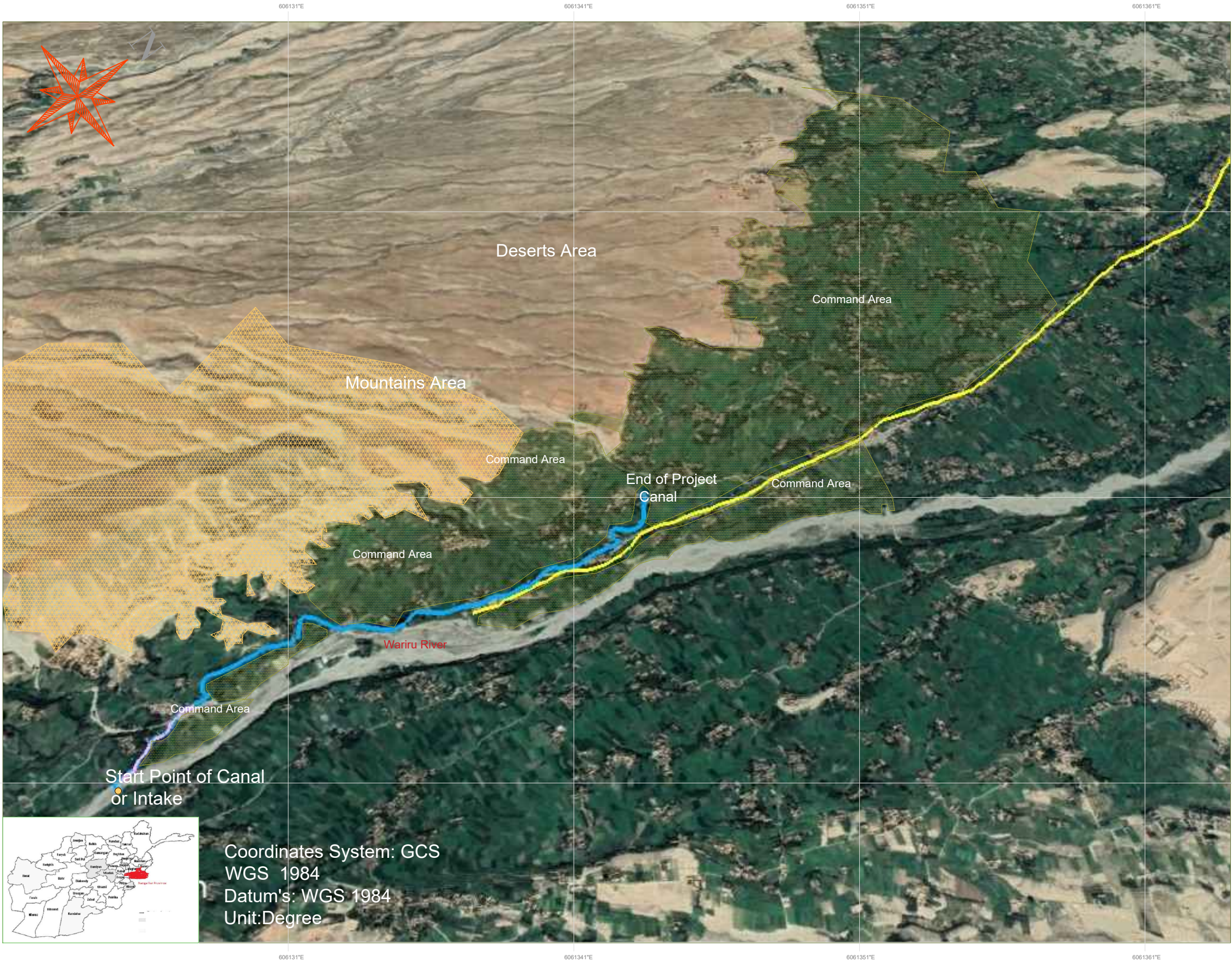
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SUB-PROJECT CODE: NGR-KHGN-01,Str-1  
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REVISION NO: 1

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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:August. 2024



Khogyani Distdriect Ahmad Khil /Dosaraka Canal Scheme GIS MAP For CBARD ALL Project



Coordinates System: GCS  
WGS 1984  
Datum's: WGS 1984  
Unit:Degree

- 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/2024/01/29J**

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khil Canal Construction

DRAWING:  
Ahmad khil GIS MAP

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: NGR-KHGN-01,Str-1  
DRAWING PAGE NO:004  
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



Khogyani Distdriect Ahmad Khil /Dosaraka Canal Scheme 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)

**act:onaid**

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

**SUB-PROJECT:**  
Nangarhar Province Khogyani District  
Ahmad Khil Canal Canstruction

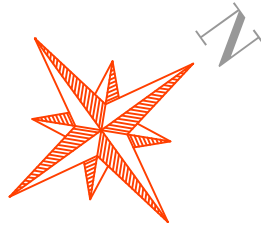
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Ahmad khil / Dosarak GIS MAP First Page

**PROJECT SYMBOL:** CBARD ALL /AFG/EAST  
**SUB-PROJECT CODE:** NGR-KHGN-01,Str-1  
**DRAWING PAGE NO:**005  
**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

BENCH MARKS COORDINATES TABLE				
Point #	Elevation	Northing	Easting	Description
4	1496.705m	N34° 10' 22.81	E70° 09' 04.44	bm1
86	1500.800m	N34° 10' 22.79"	E70° 09' 04.20"	bm2
100	1493.850m	N34° 10' 24.36"	E70° 09' 06.08"	bm3
150	1496.710m	N34° 10' 22.81"	E70° 09' 07.85"	bm4





Khogyani Distdriect Ahmad Khil /Dosaraka 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:  
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IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

act:onaid

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

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khil Canal Canstruction

DRAWING:  
Ahmad khil Dosarak GIS MAP Second Page

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

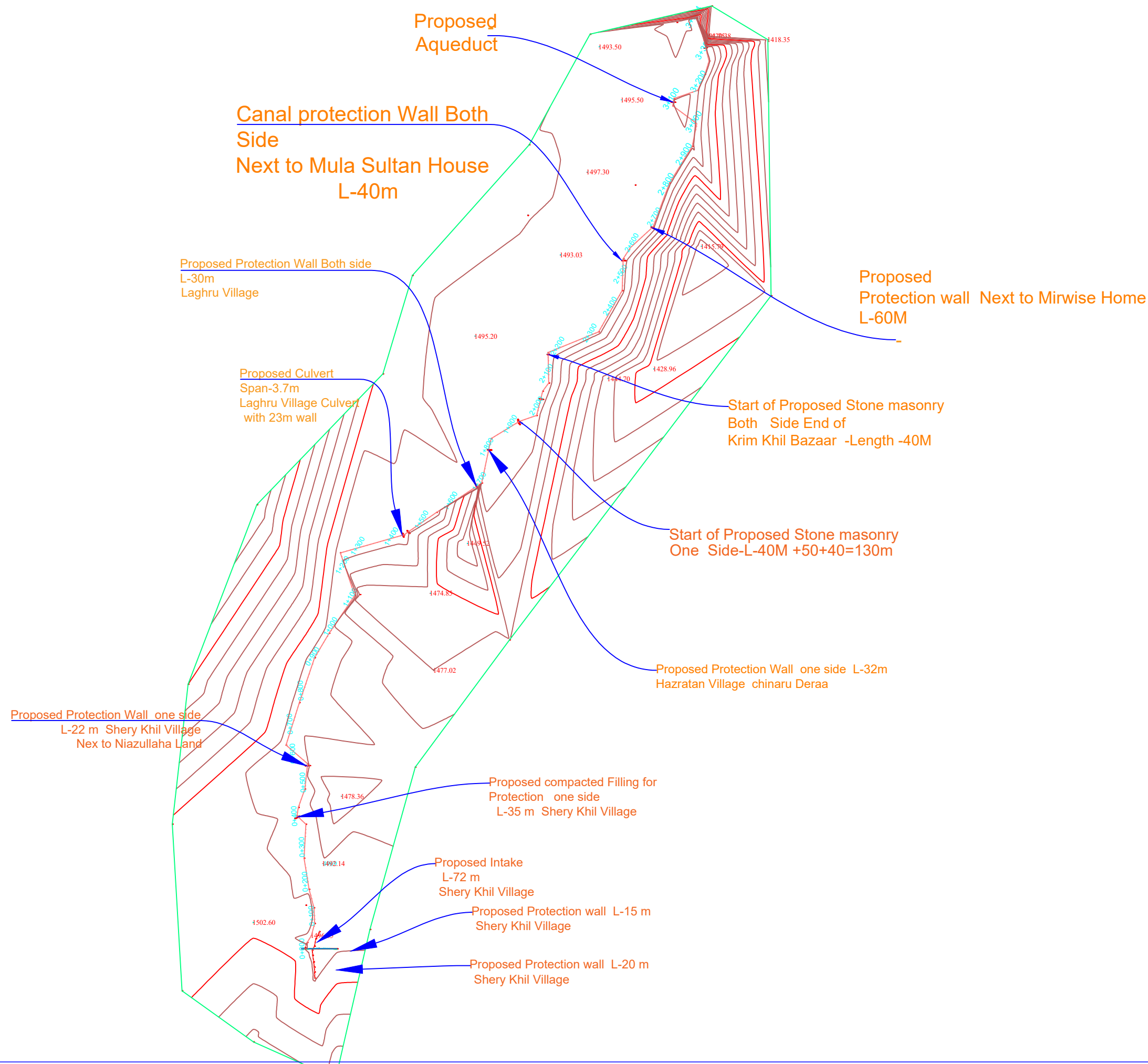
Date:August. 2024

BENCH MARKS COORDINATES TABLE

Point #	Elevation	Northing	Easting	Description
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86	1500.800m	N34° 10' 22.79"	E70° 09' 04.20"	bm2
100	1493.850m	N34° 10' 24.36"	E70° 09' 06.08"	bm3
150	1496.710m	N34° 10' 22.81"	E70° 09' 07.85"	bm4



**Khogyani Distdriect Ahmad Khil /Dosaraka Canal Scheme Contour MAP For CBARD ALL Project**



**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
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

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United Nation Develepment Proggmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



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

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khill Canal Canstruction

DRAWING:  
Ahmad Khill Dusrak Canal Contour Map or Plan

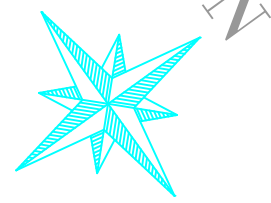
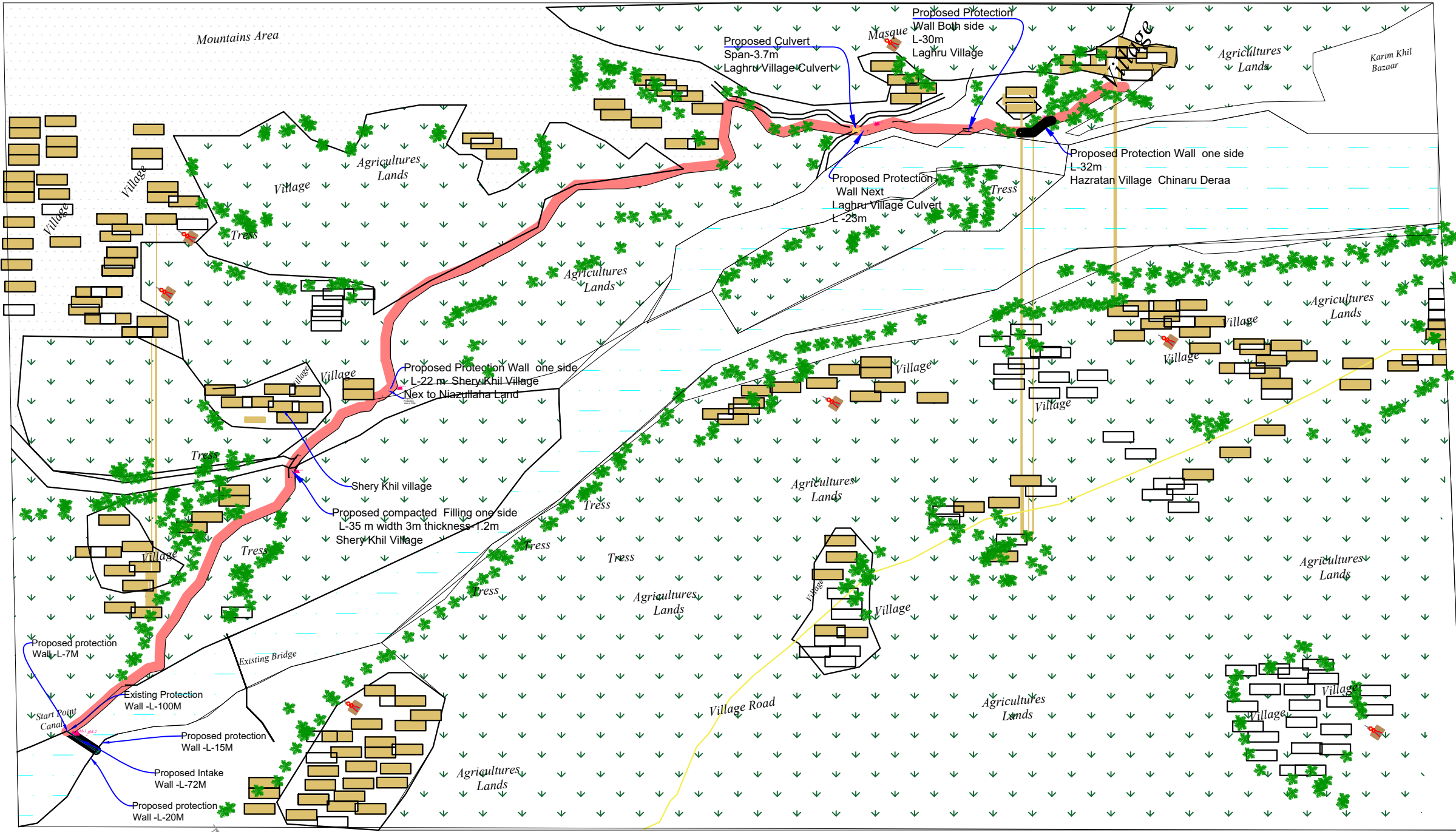
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SUB-PROJECT CODE: NGR-KHGN-01,Str-1  
DRAWING PAGE NO:002  
REVISION NO: 1

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

Khogyani Distdriect Ahmad Khil Canal Schem Site PPlan



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 Develepment Progrmm

IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



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

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khil Canal Canstruction

DRAWING:  
Ahmad khil Canal Sit Plan

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: NGR-KHGN-01,Str-1  
DRAWING PAGE NO:007  
REVISION NO: 1

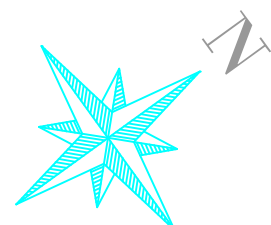
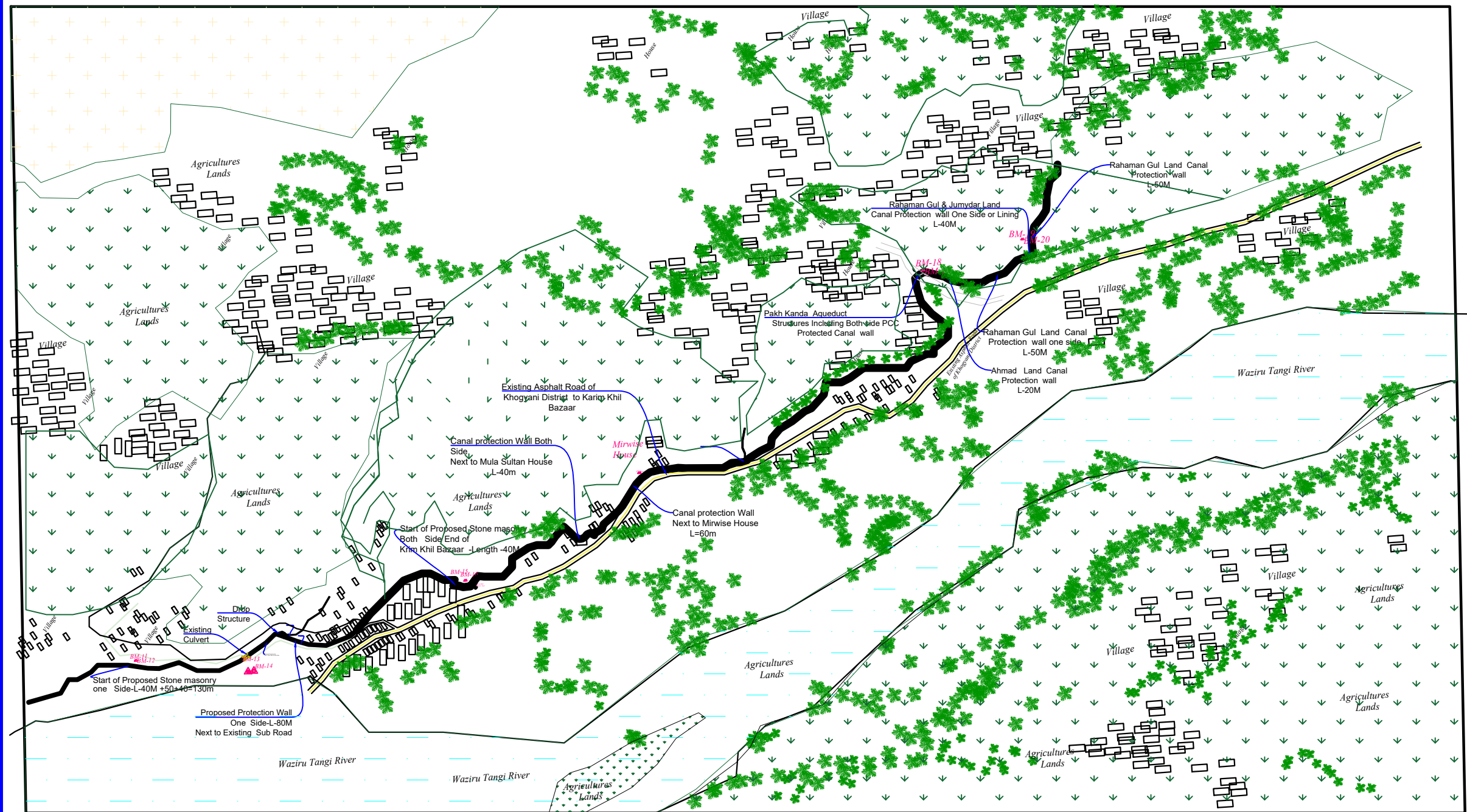
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Point #	Elevation	Northing	Easting	Description
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150	1496.710m	N34° 10' 22.81"	E70° 09' 07.85"	bm4

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



Khogyani Distdrikt Ahmad Khil and Dosarak Canal Site Plan



- 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 Progrmm

**IMPLEMENTATION PARTNER:**  
ACTION AID AFGHANISTAN (AAA)



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

**SUB-PROJECT:**  
Nangarhar Province Khogyani Distrikt  
Ahmad Khil Canal Construction

**DRAWING:**  
Ahmad khil Canal Sit Plan

**PROJECT SYMBOL:** CBARD ALL /AFG/EAST  
**SUB-PROJECT CODE:** NGR-KHGN-01,Str-1  
**DRAWING PAGE NO:**008  
**REVISION NO:** 1

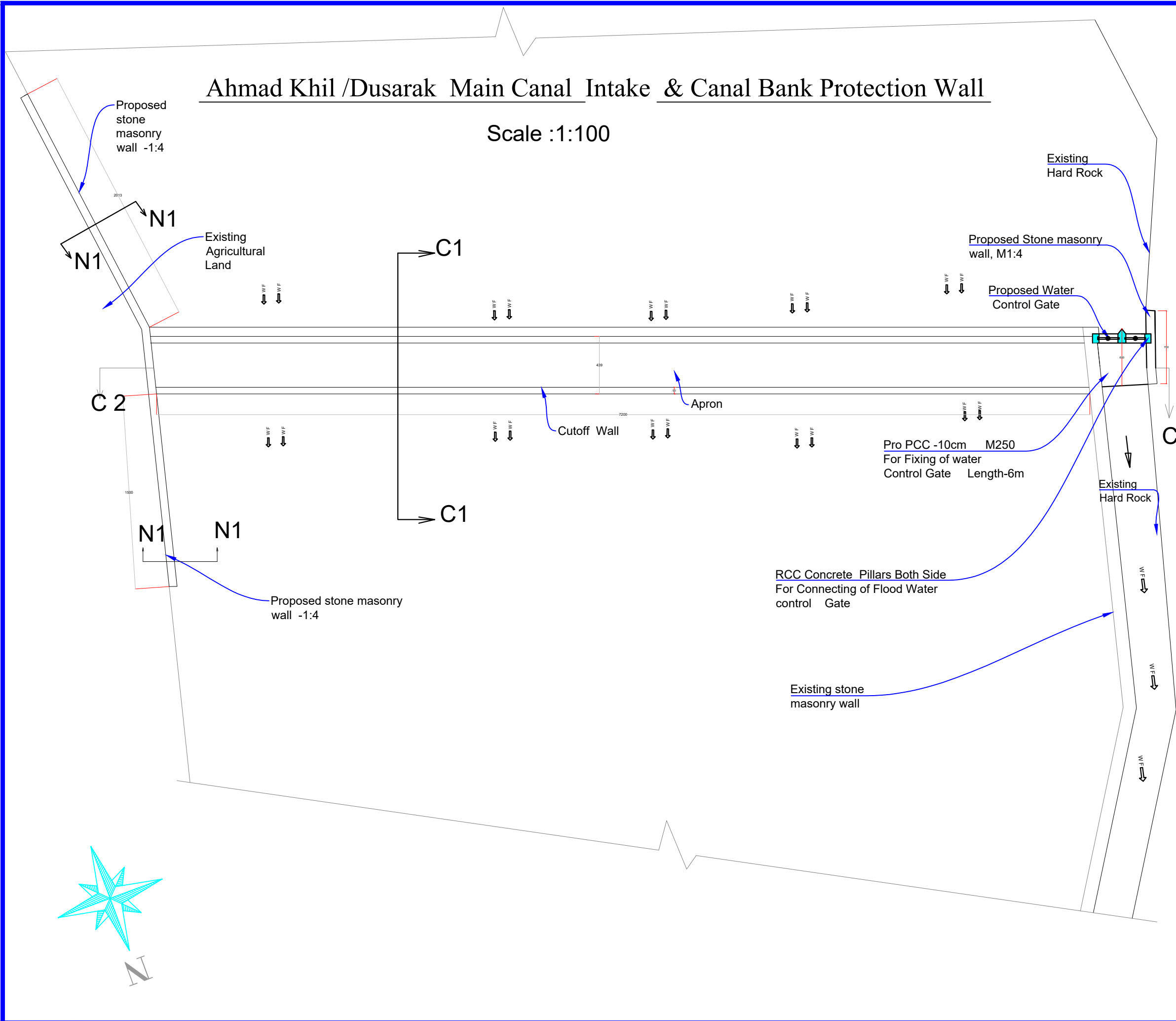
BENCH MARKS COORDINATES TABLE				
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86	550.83	3810270.80	639633.50	bm2
100	551.75	3810307.10	639629.01	bm3
150	552.92	3810887.31	639401.44	bm4
300	557.95	3812637.82	639847.95	bm5

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

Ahmad Khil /Dusarak Main Canal Intake & Canal Bank Protection Wall

Scale :1:100



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 Elevation
- Elevation of the point (100m) in Plan view
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

Abbavation

- 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 Develpement Proggm

IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



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

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khill Canal Canstruction

DRAWING:  
Ahmad khil Canal site intake and water control Sit Plan

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

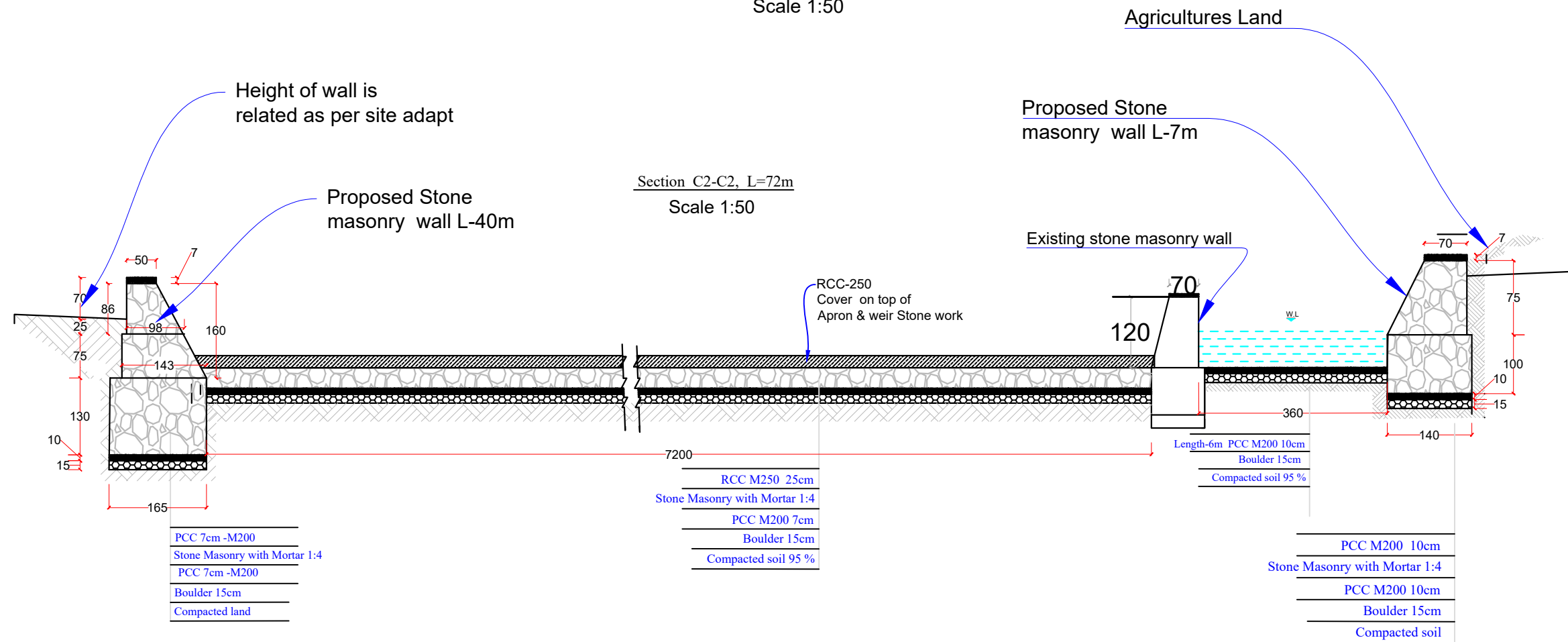
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Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown Date:August, 2024



# Section C2-C2 ,L=72m

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 Elevation
- Elevation of the point (100m) in Plan view
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

## Abbrravation

- 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 Deveoplement Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

**act:onaaid**

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

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khili Canal Construction

DRAWING:  
Ahmad khil Canal Sit Plan

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: NGR-KHGN-01,Str-1

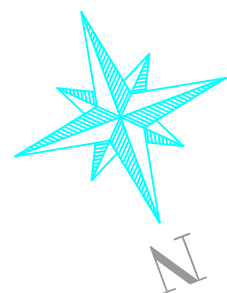
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REVISION NO: 1

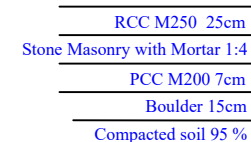
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Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:August, 2024



Scale 1:50



RCC M250 25cm
Stone Masonry with Mortar 1:4
PCC M200 7cm
Boulder 15cm
Compacted soil with compactor

	—	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

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 AFRGPA/2024/01/29]**

SUB-PROJECT:

Nangarhar Province Khogyani District

Ahmad Khill Canal Construction

**DRAWING:**

Ahmad khil Canal Sit Plan

PROJECT SYMBOL: CBARD ALL /AFG/EAST

SUB-PROJECT CODE:	NGR-KHGN-01,Str-1
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DRAWING PAGE NO:002

REVISION NO: 1

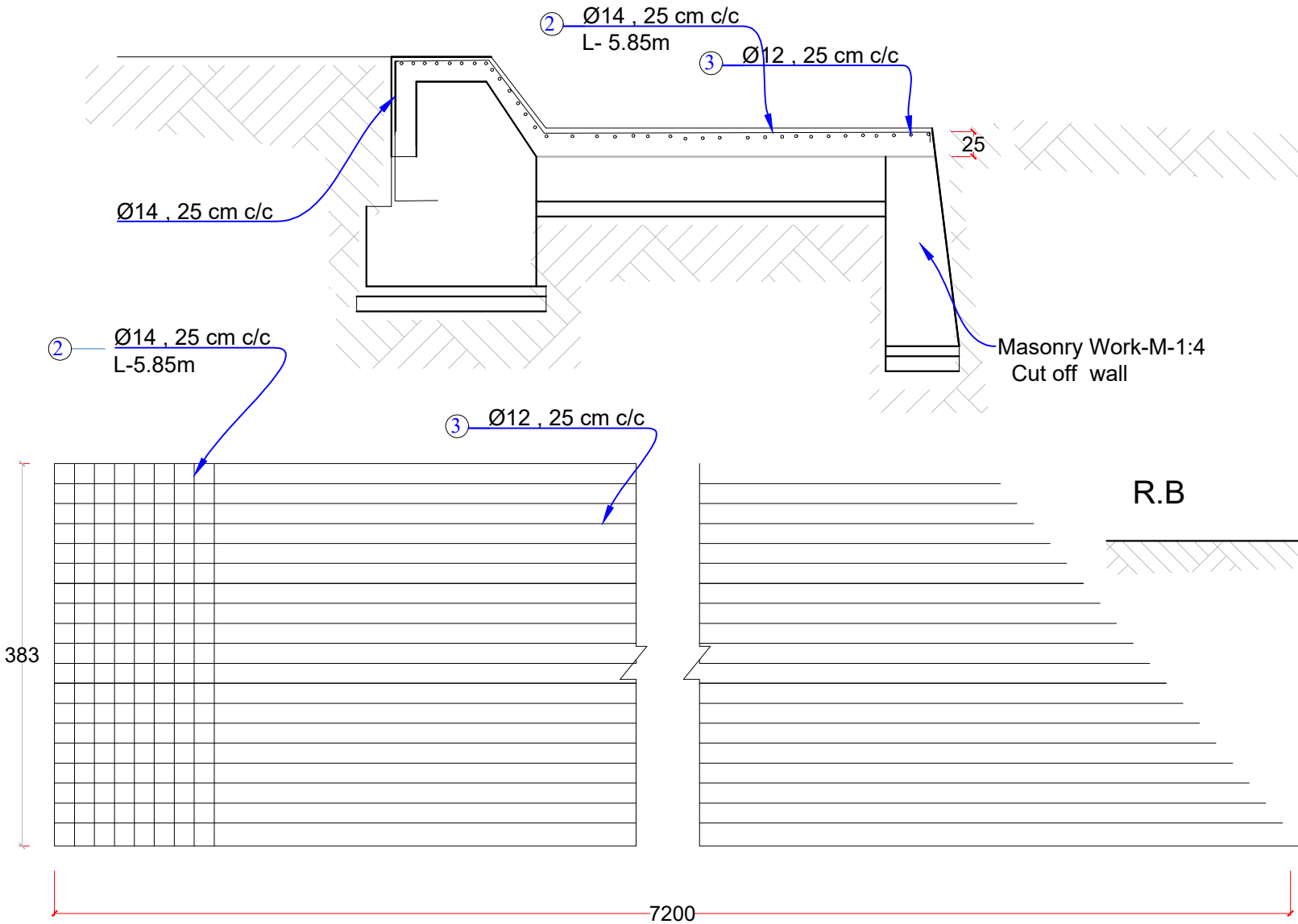
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Approved By:		

Drawing Scale: As Shown

Date: August, 2024

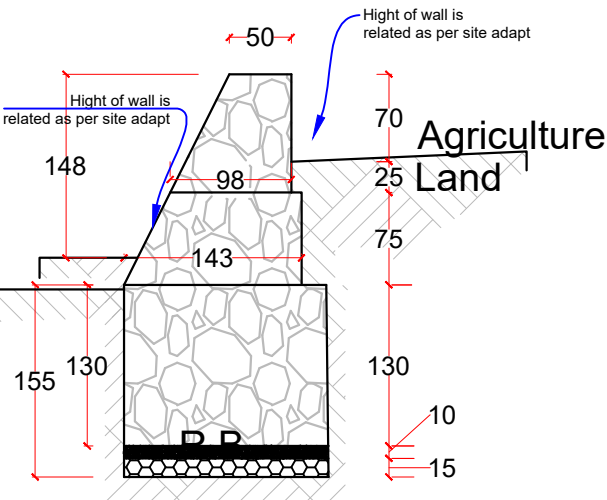
Steel Fixing of Apron Structure

Scale 1:50



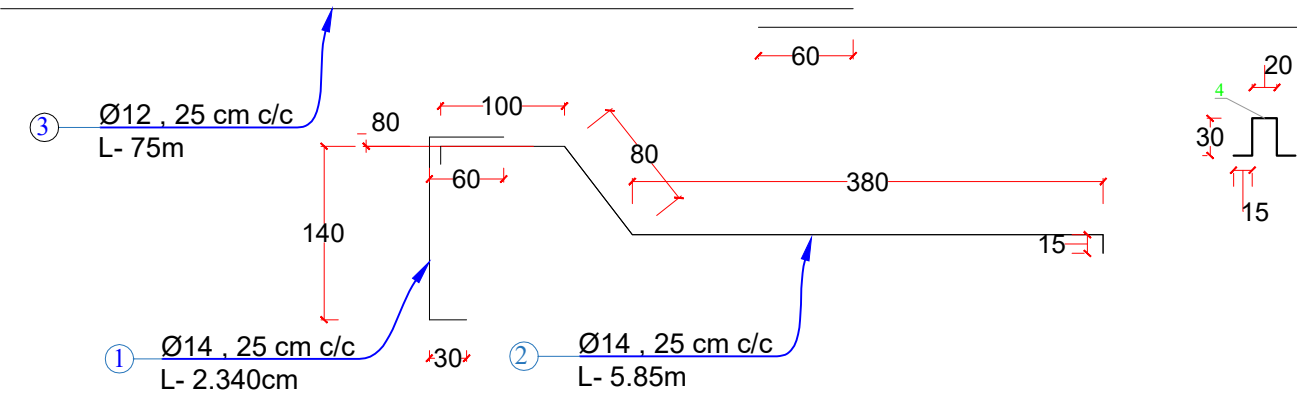
Section N1- N1, L=40m

Scale 1:50



Reinforcement Detail for weir

Scale 1:100



Bar Schedule

Bar no.	Bar dia (mm)	Num. of bar	Length (m)	Total length (m)	Weight (kg/m)	Total weight (kg)	Total weight + 10 % (kg)
1	14	290	2.34	679	1.2086	821	903
2	14	290	5.85	1696	1.2086	2051.	2256
3	12	25	75	1875	0.888	1665	1831
4	12	100	0.91	91	0.888	89	89
Total weight of Apron =5079kg							5079

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 Program



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



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

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khill Canal Cnstruction

DRAWING:  
Weir Apron Structure Steel fixing

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
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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 AFGRPA/2024/01/29]

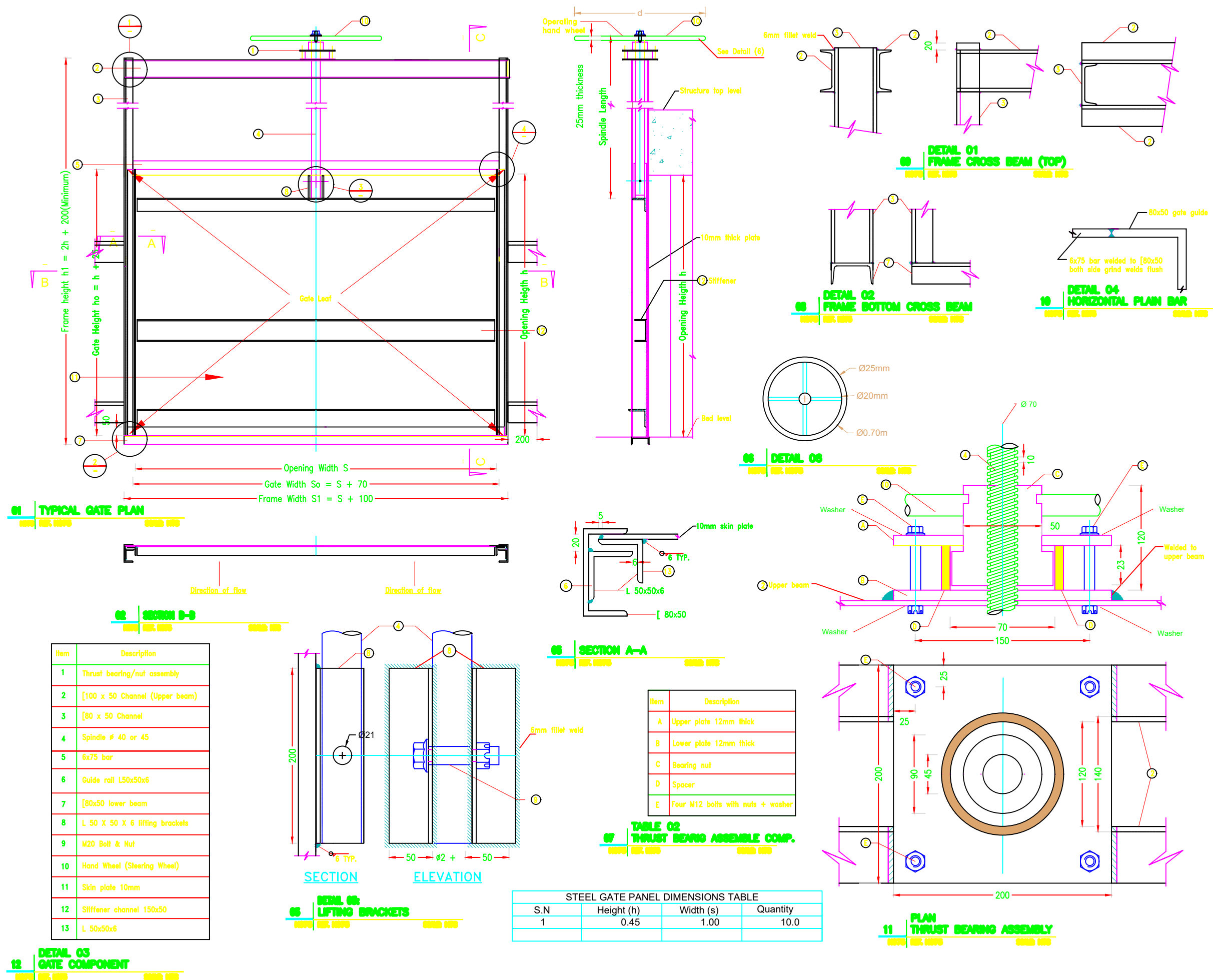
SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khili /Dosarak Canal Construction

DRAWING:  
Plan of water Control Gates and details of structure and details of steel fixing

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

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Checked By:		
Approved By:		

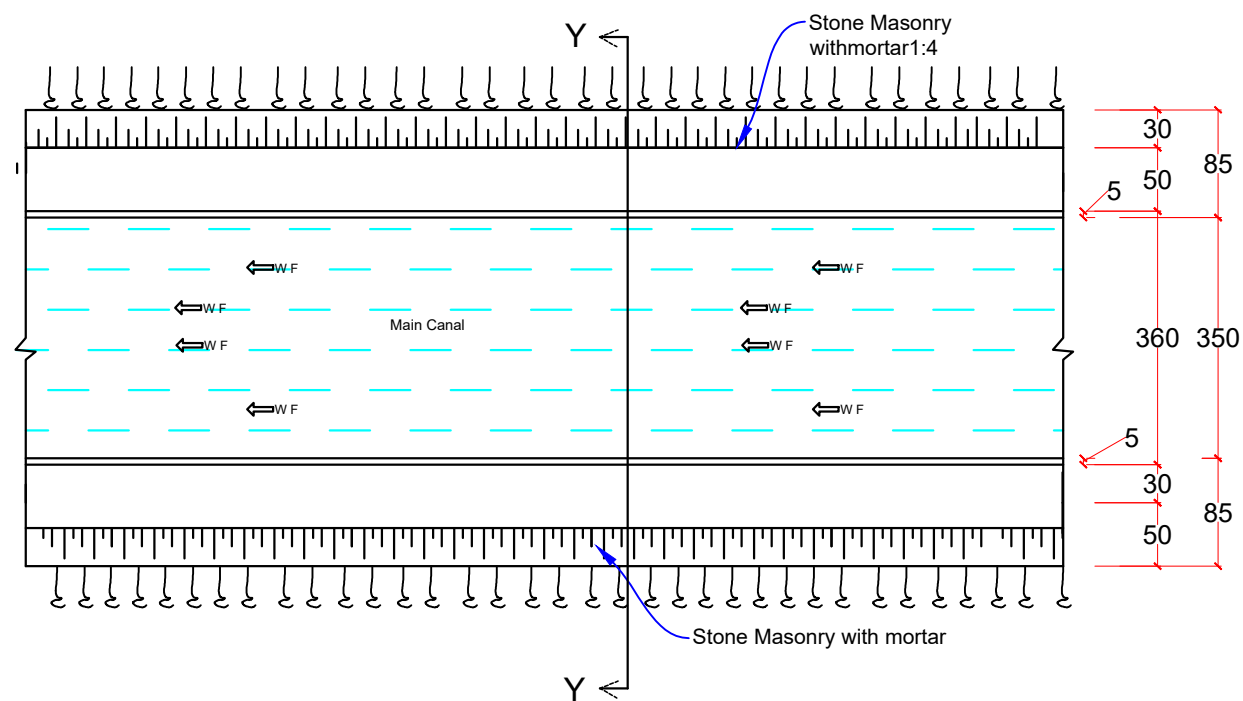
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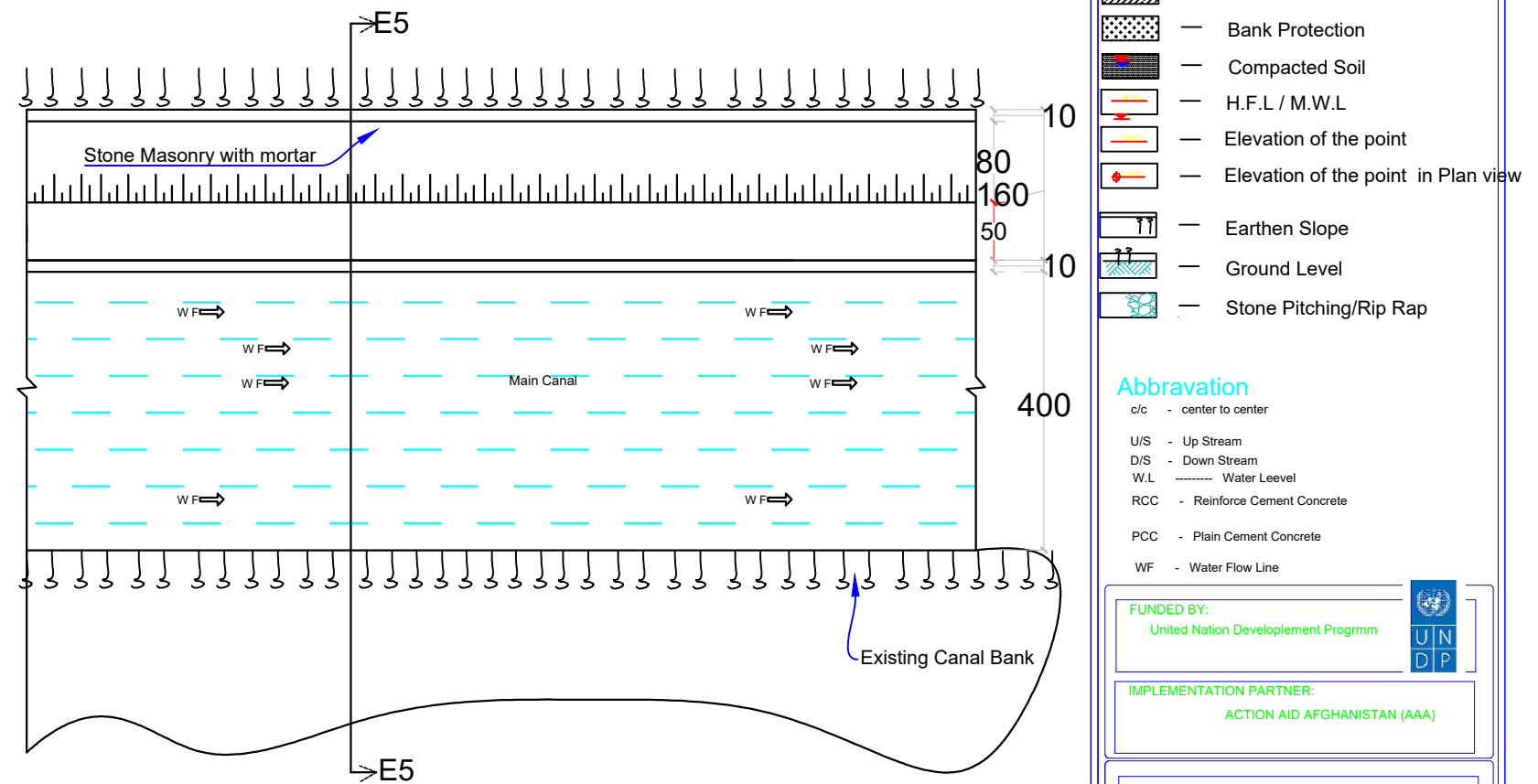
## Plan of Canal Protection wall or lining

Scale 1:100



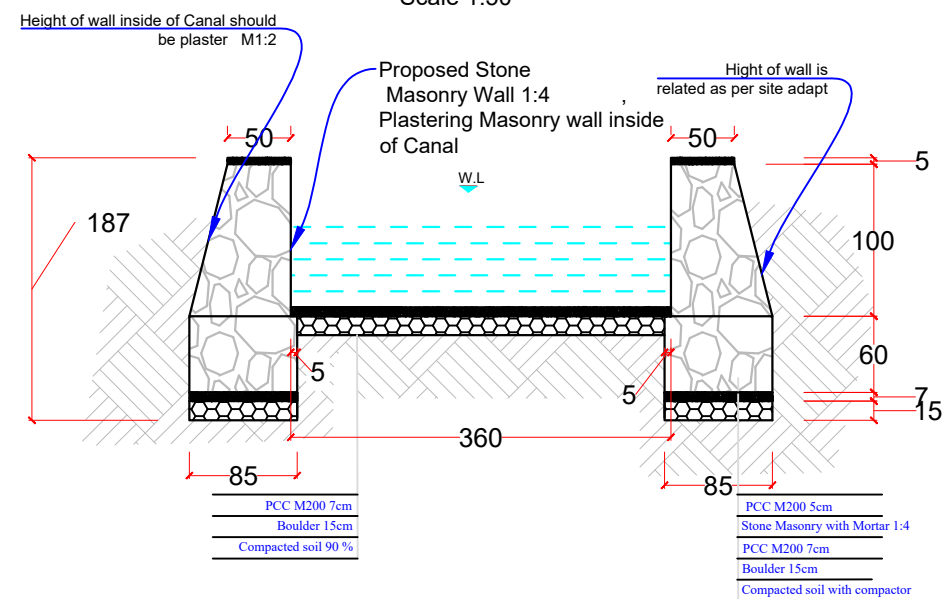
## Irrigation Canal Bank Protection Wall Plan, L=275m

Scale :1:100



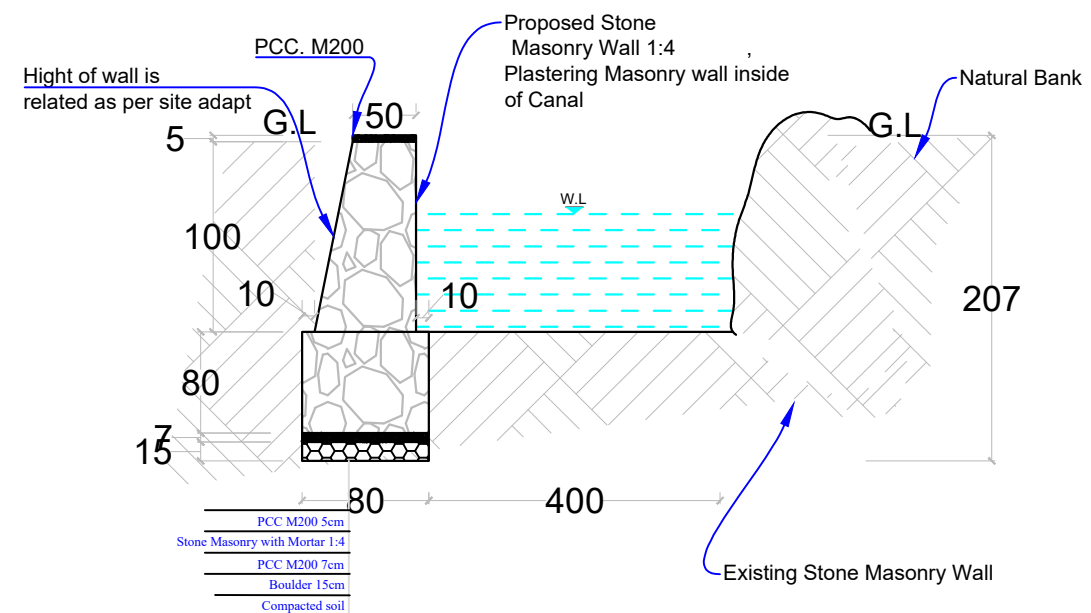
## Section Y-Y ,L=50+60+40+40=190M

Scale 1:50



## Section E5-E5, L=22M+23M+32M+80M+20+50M+50M+50+40+40+40=445M

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 AFGPA/2024/01/29]

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khill Canal Construction

DRAWING:  
Plan of water Control Gates and details of structure  
and details of steel fixing

PROJECT SYMBOL: CBARD ALL /AFG/EAST

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

DRAWING PAGE NO:002

REVISION NO: 1

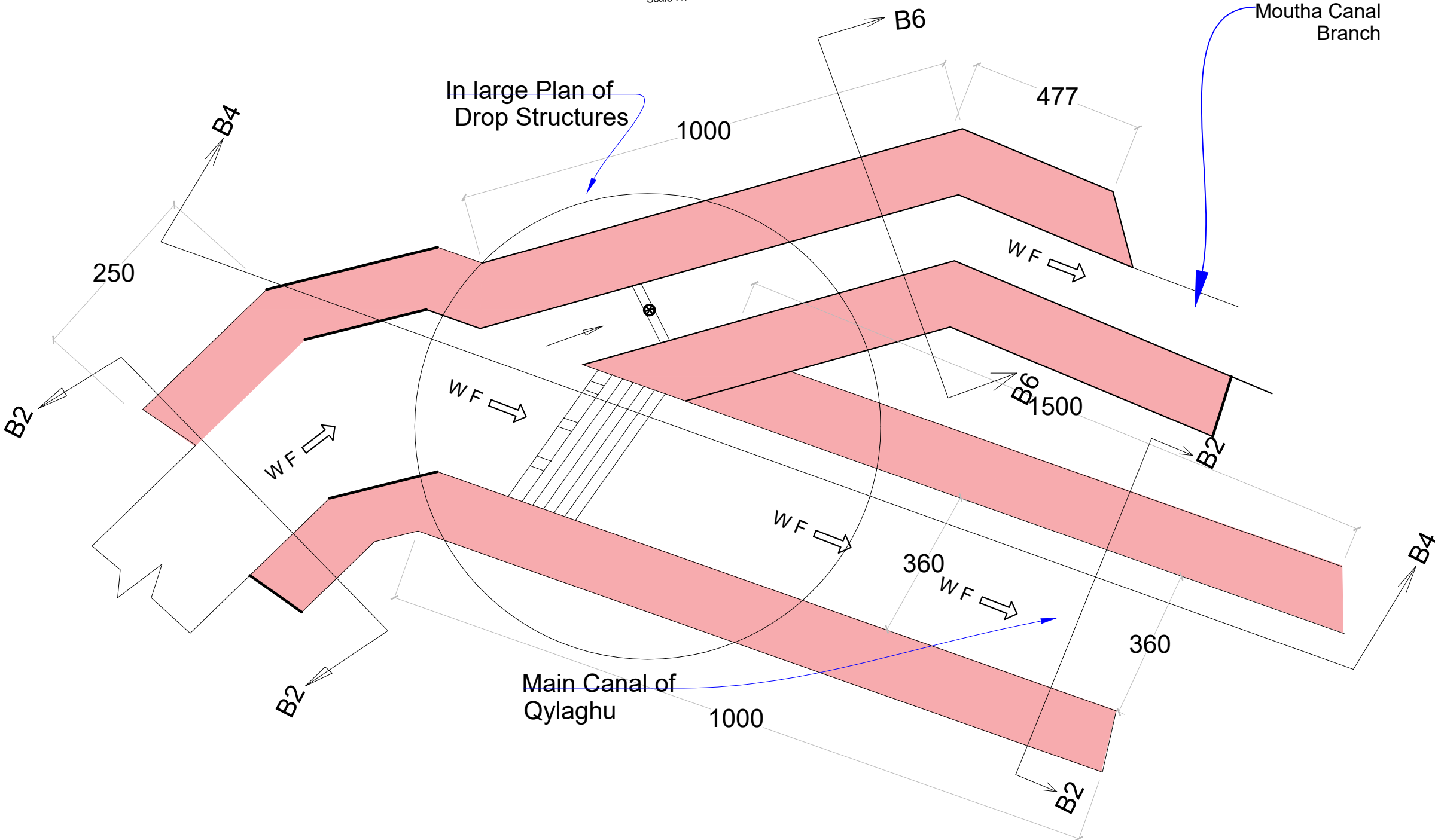
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Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date: August, 2024

Mowtha Canal Vertical Irrigation drop Plan

Scale :1:150



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 Leel
- 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/2024/01/291**

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khili Canal Construction

DRAWING:  
Mowtha Drop structure of of structure and details

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
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Approved By:		

Drawing Scale: As Shown

Date:August, 2024

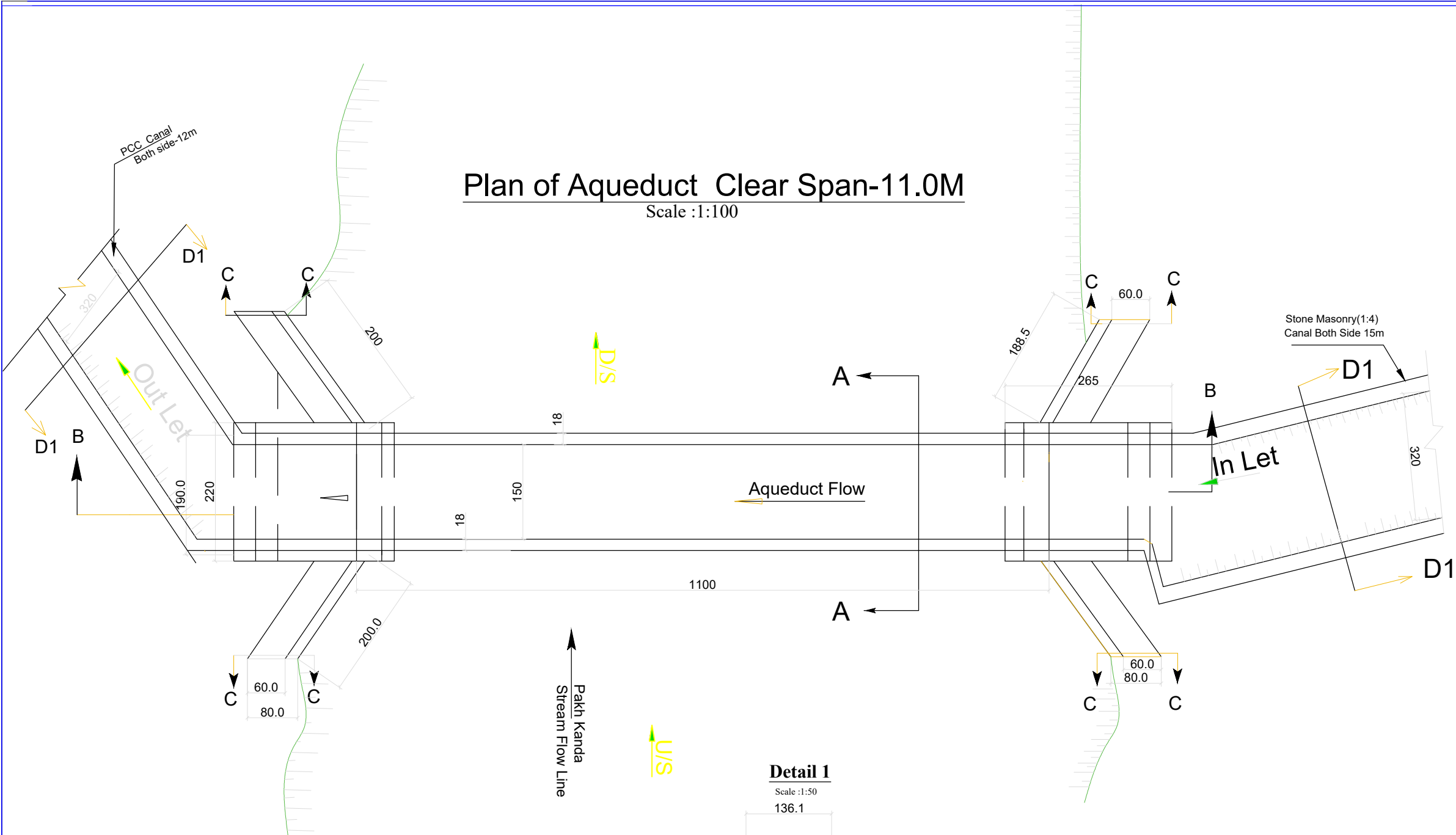






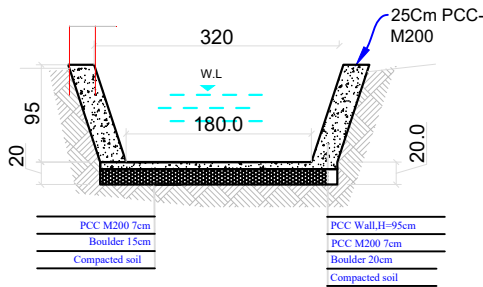
Plan of Aqueduct Clear Span-11.0M

Scale :1:100



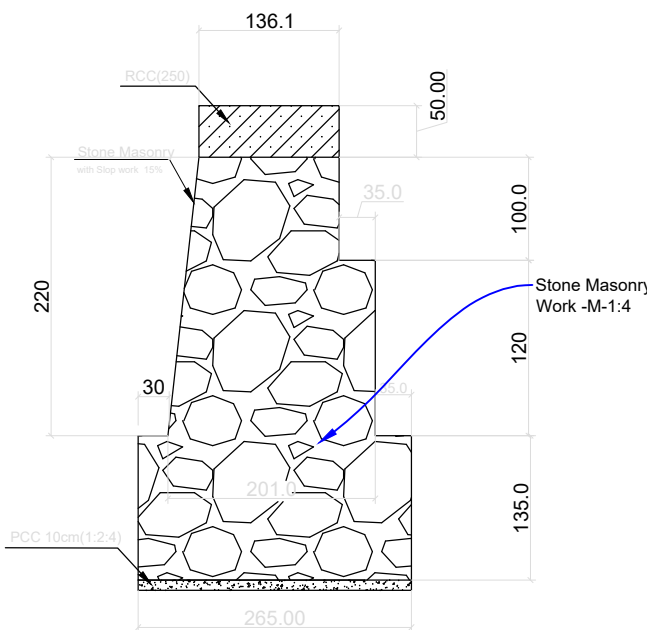
Section D1-D1,L=12+15=27m

Scale :1:50



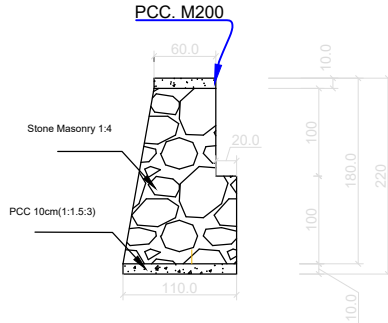
Detail 1

Scale :1:50



Sec B-B

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

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 Deveoplement Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

act:onaaid

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

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khili Canal Construction

DRAWING:  
Plan Aqueduct structure and details

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: NGR-KHGN-01,Str-1

DRAWING PAGE NO:002

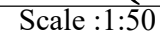
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Date:August, 2024

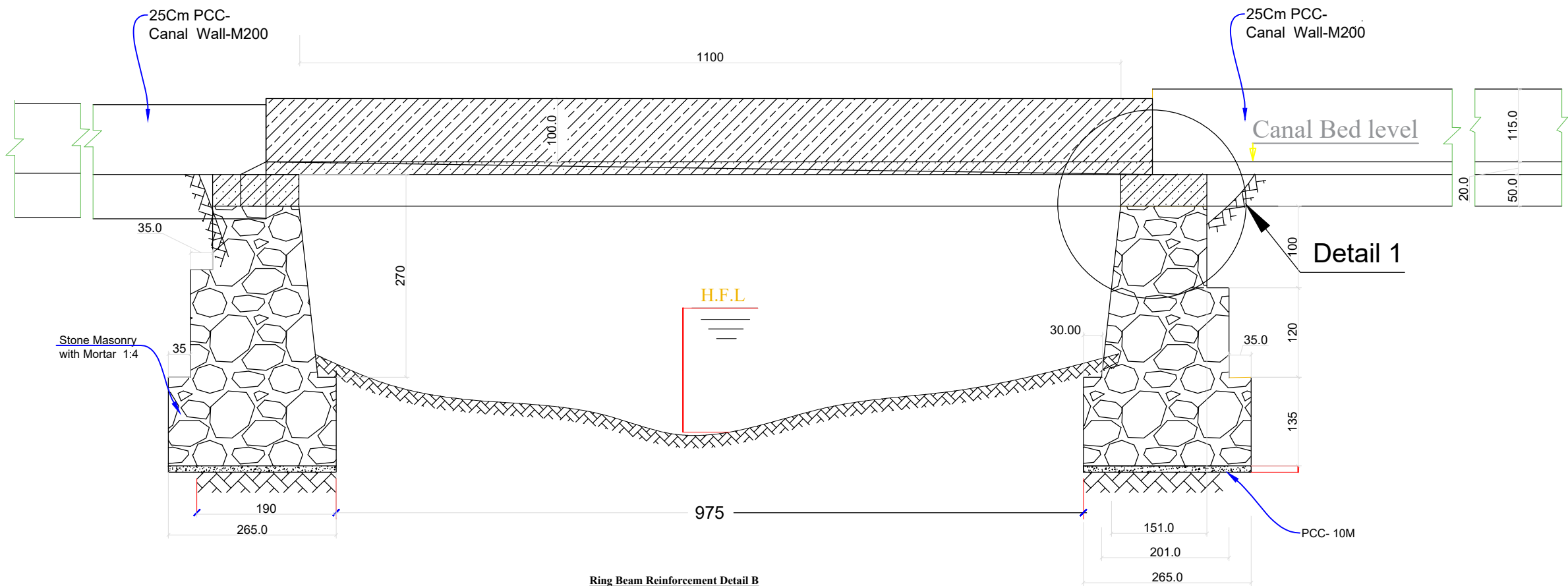
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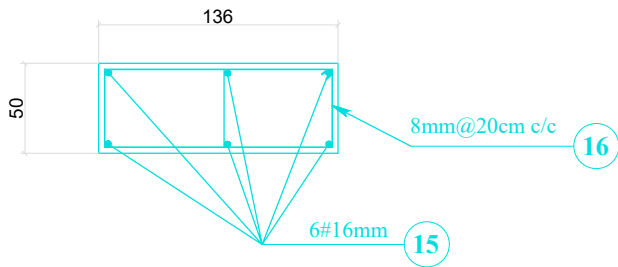
# Section(B-B)

Scale :1:100



Ring Beam Reinforcement Detail B

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

## Abbrravation

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

FUNDED BY:  
United Nation Deveoplement Progrmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

act:onaaid

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

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khili Canal Construction

DRAWING:  
Aqueduct structure Section and details

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: NGR-KHGN-01,Str-1

DRAWING PAGE NO:002

REVISION NO: 1

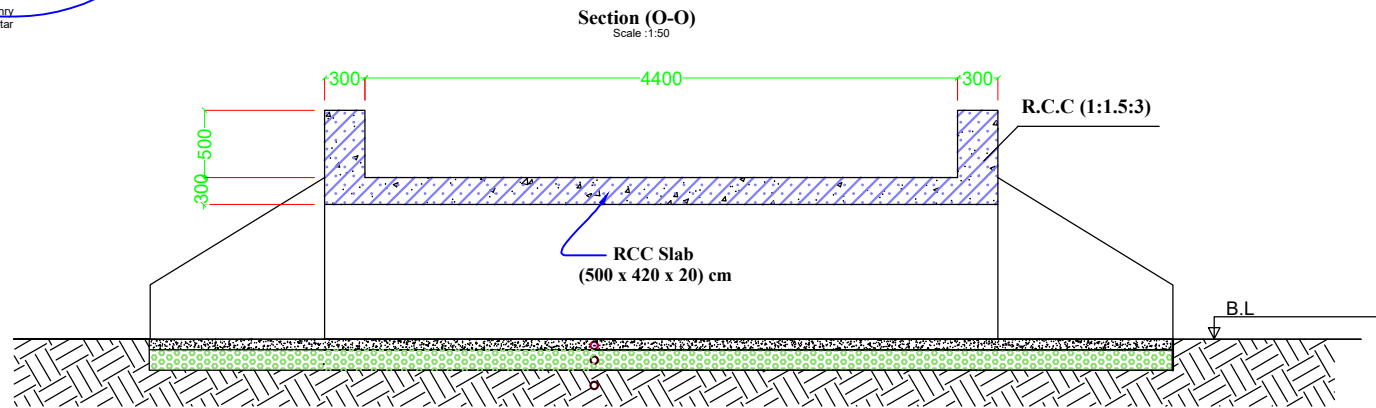
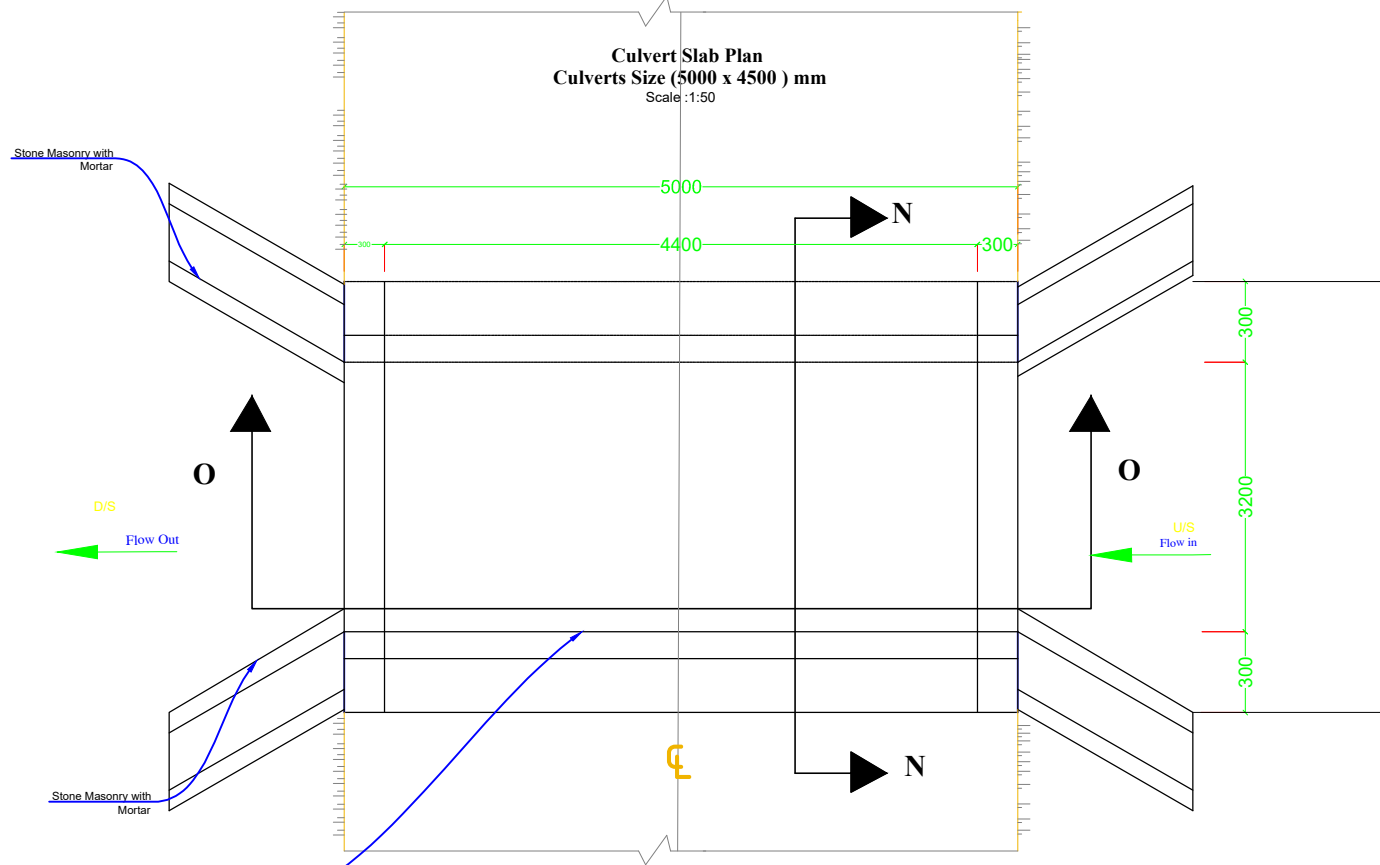
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Drawing Scale: As Shown

Date:August, 2024

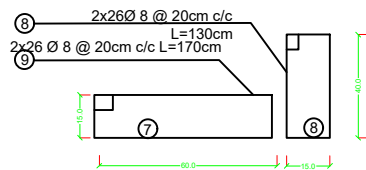
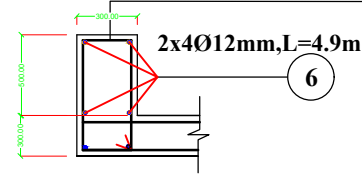


# Laghru Village Culvert Slabs (5x4.9)m

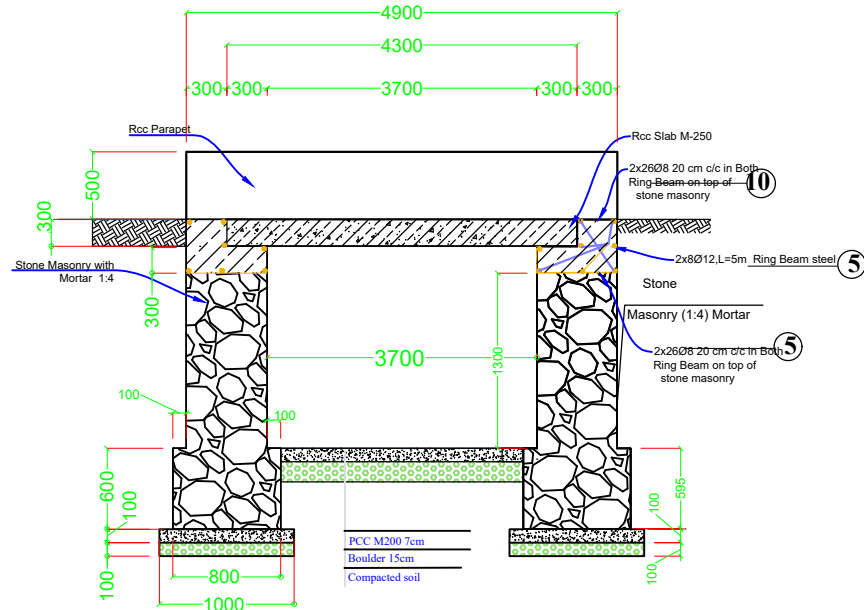


Reinforcement Schedule										
Sl/N	Shape	No. of culverts	No. of bars for one culvert	Dia(Ø) mm	Length m	WT (Kg/m)	T.Wt(Kg)			Remarks
							Ø8	Ø12	Ø16	
1		1	41	16	4.4	1.58			285	
2		1	26	16	4.4	1.58			180.7	
3		1	23	12	5.10	0.88		105		
4		1	23	12	5.10	0.88		105		
5		1	16	12	5	0.888		71		for Abutment
6		1	8	12	4.9	0.888		35		for parapets
7		1	52	8	2.1	0.3946	43			for Parapet
8		1	52	8	1.3	0.395	27			for Abutment
9		1	52	8	1.7	0.395	35			for Abutment
	Sub Total (kg)						115	316	466	
	Grand Total (kg)						888*1.2 = 1074 kg			
	Binding Wire (kg)						6 kg			

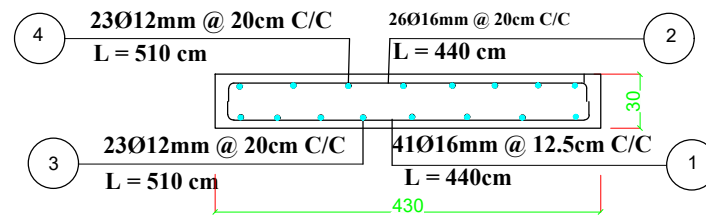
**Curb Wall Reinforcement**  
Scale :1:50  
2x26Ø8mm @ 20cm,L=2.1m c/c



**Section (N-N)**  
Size (5000 x 4500 ) mm  
Scale :1:50



**Slab Reinforcement**  
Scale :1:50



- 1- All P.C.C under footings to have cement,sand and agg. ratio 1:2:4 or as specified
- 2- The Reinforcement yield stress  $f_y$  Shall not be less than 3000 kg/cm<sup>2</sup> or as specified
- 3- Concrete design based on a compressive strength of  $f_c$  =250 kg/cm<sup>2</sup> or as specified
- 4- Weight per unit volume of concrete W=2400 kg/m<sup>3</sup>
- 5- 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.
- 6- Aggregate:- Coarse aggregate Shall consist of crush ed gravel with the max. size of 20mm.
- 7- The Max slump Should be between 5-7.5 cm.
- 8- To increase the workability of the concrete provide the chemical admixture (Supper elasticized)
- 9- 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.
- 10- Concrete is poured and vibrate in such a way to form a solid compact concrete.
- 11- The concrete is to be cured for 14 days.
- 12- During the cold wether concreting Should be stop or the contractor has to consider the cold wether concreting procedure.
- 13- All Shuttering Should be from steel type.
- 14- 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
- 15- Steel bar overlap Should not be less than 60 Ø bar

## 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 Deveoplement Progrmm



## IMPLEMENTATION PARTNER:

ACTION AID AFGHANISTAN (AAA)



## PROJECT:

CBARD ALL PROJECTS EASTERN REGION

PROJECT CODE: : UNDP AFGRPA/2024/01/291

## SUB-PROJECT:

Nangarhar Province Khogyani District

Ahmad Khill / Dosarak Canal Constructions

## DRAWING:

Plan of Culvert structure Section and details

## PROJECT SYMBOL: CBARD ALL /AFG/EAST

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

DRAWING PAGE NO:002

REVISION NO: 1

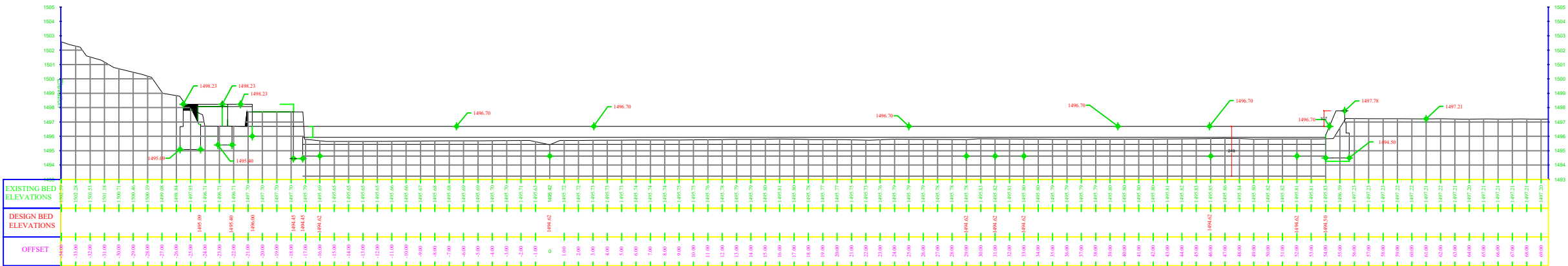
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Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:August, 2024

Ahmad Khil /Dusarak Main Canal Intake & Canal Bank Protection Wall Cross Section

Scale :1:100



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 Leavel
- RCC - Reinforce Cement Concrete
- PCC - Plain Cement Concrete
- WF - Water Flow Line

FUNDED BY:  
United Nation Developement Proggmm



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)



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

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khil Canal Itake cross Section

DRAWING:  
Plan of water Control Gates and details of structure  
and details of steel fixing

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:		

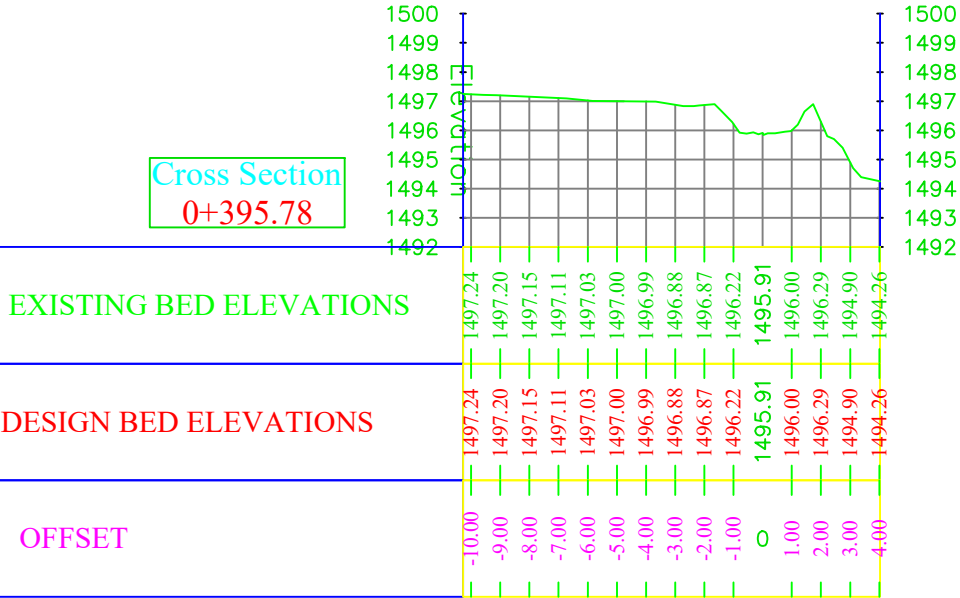
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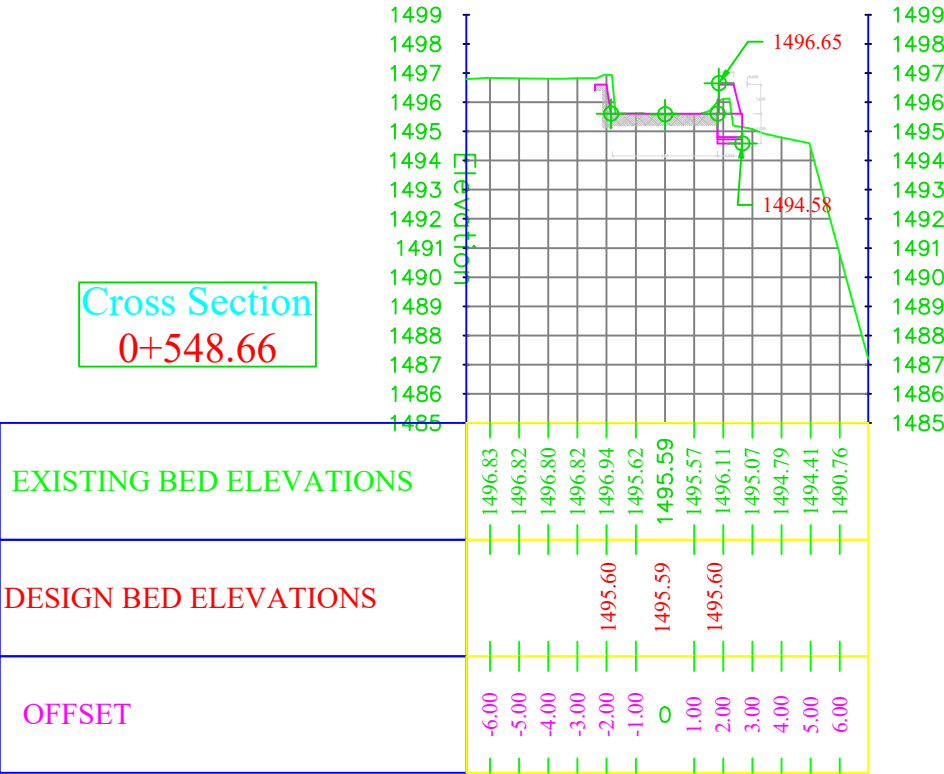


Khogyani Distdriect Ahmad Khil /Dosaraka village Canal Cross Section of Protection wall for CBARD ALL Project

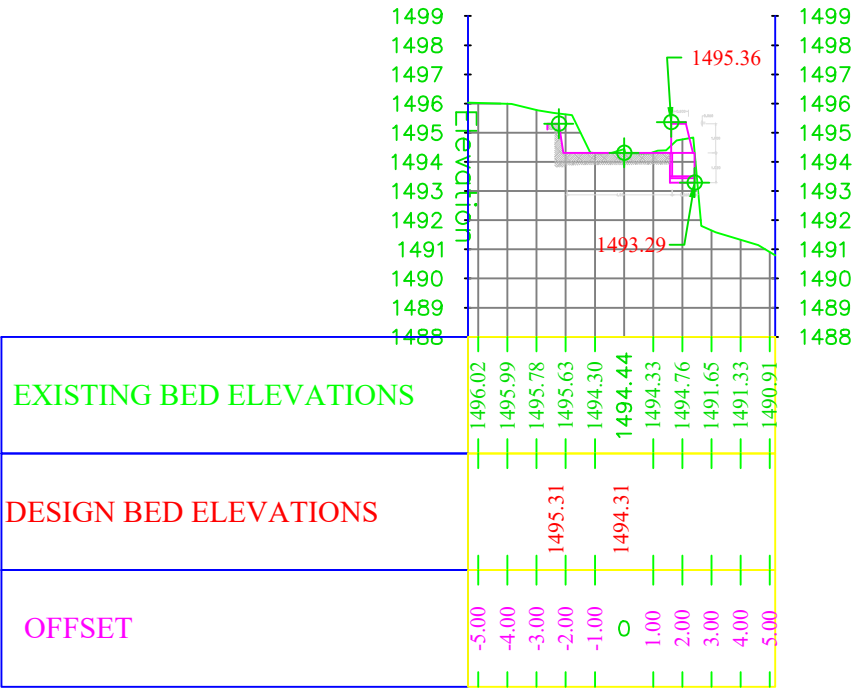
Cross Section  
0+395.78



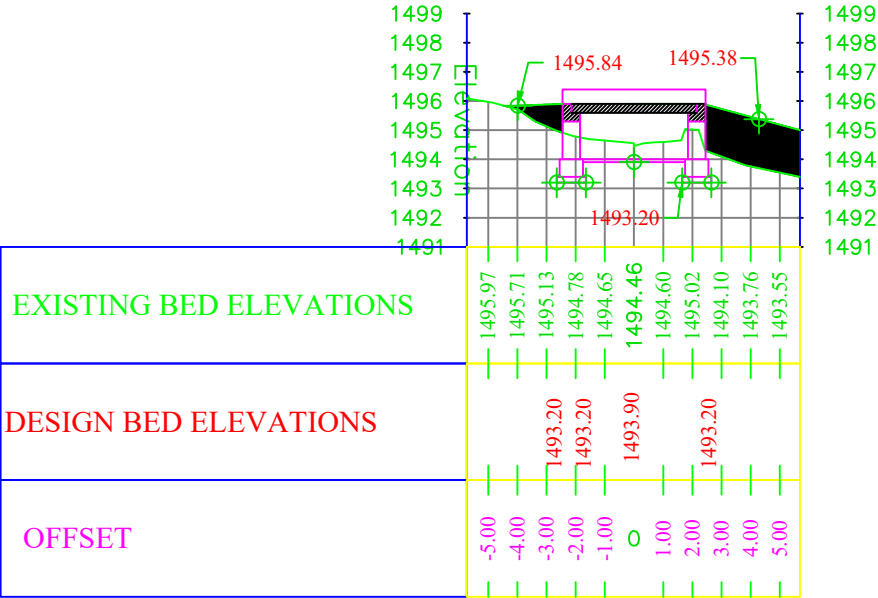
Cross Section  
0+548.66



Cross Section  
1+444.53



Cross Section  
1+427.02



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
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

FUNDED BY:  
United Nation Developement Prog



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

act:onaaid

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

SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khill Canal Construction

DRAWING:  
Ahmad Khill Dusrak Canal Cross Sections for  
Protection ,Culvert , Aqueducts

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

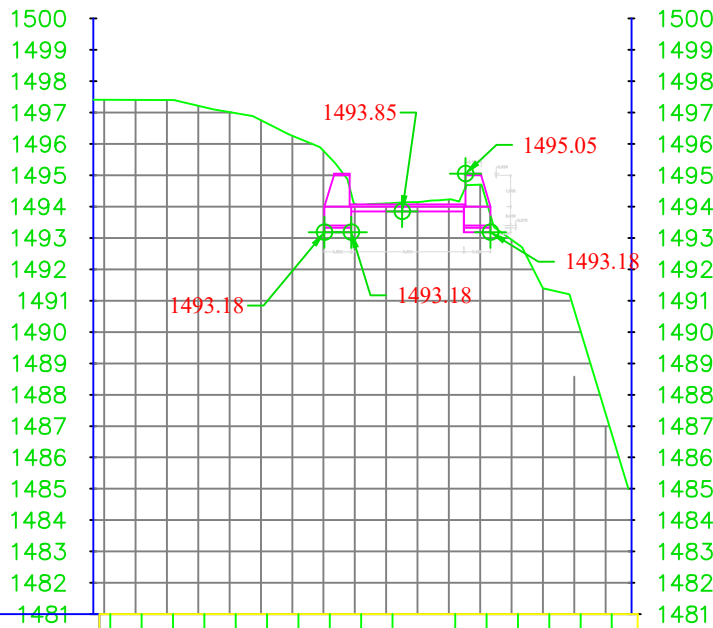
Action Taken	Name	Designation
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Design/Drawn By:	AAA Design Team	AAA Design Team
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Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown

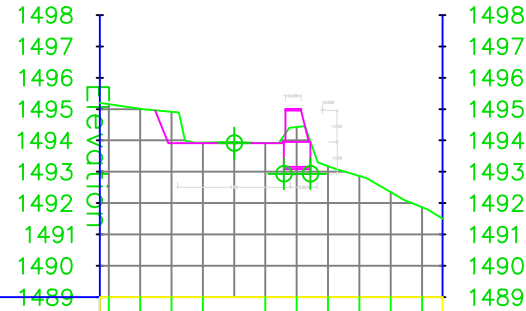
Date:August. 2024

Khogyani Distdriect Ahmad Khil /Dosaraka village Canal Cross Section of Protection wall for CBARD ALL Project

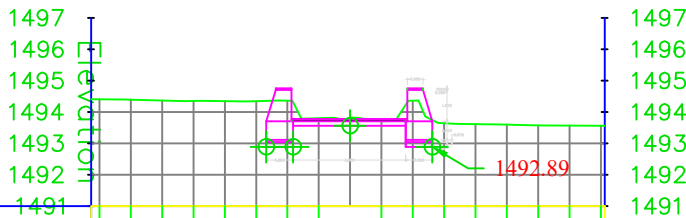
Cross Section  
1+680.31



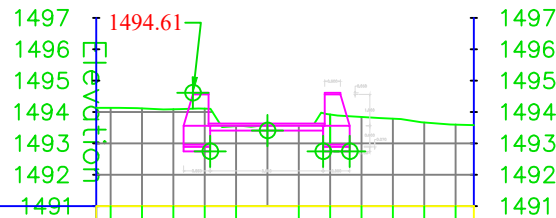
Cross Section  
1+795.31



Cross Section  
1+919.41



Cross Section  
2+024.39



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
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

FUNDED BY:  
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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 Khogyani District  
Ahmad Khil Canal Construction

DRAWING:  
Ahmad Khil Dusrak Canal Cross Sections for  
Protection ,Culvert , Aqueducts

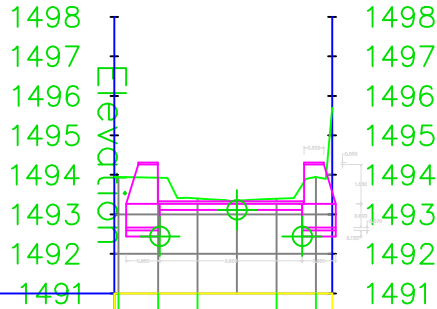
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SUB-PROJECT CODE: NGR-KHGN-01,Str-1  
DRAWING PAGE NO:002  
REVISION NO: ①

Action Taken	Name	Designation
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Checked By:		
Approved By:		

Drawing Scale: As Shown Date:August. 2024

Khogyani Distdriect Ahmad Khil /Dosaraka village Canal Cross Section of Protection wall for CBARD ALL Project

Cross Section  
2+157.90

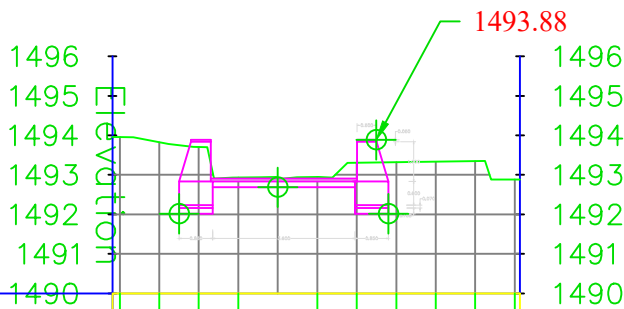


EXISTING BED ELEVATIONS

DESIGN BED ELEVATIONS

OFFSET

Cross Section  
2+542.71

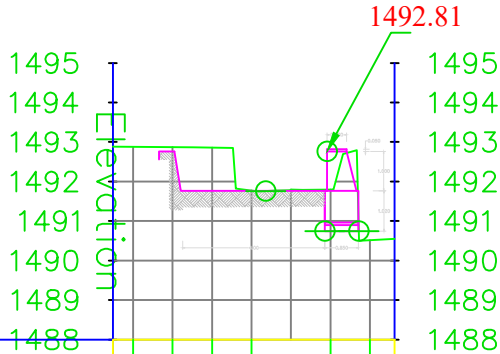


EXISTING BED ELEVATIONS

DESIGN BED ELEVATIONS

OFFSET

Cross Section  
3+306.03

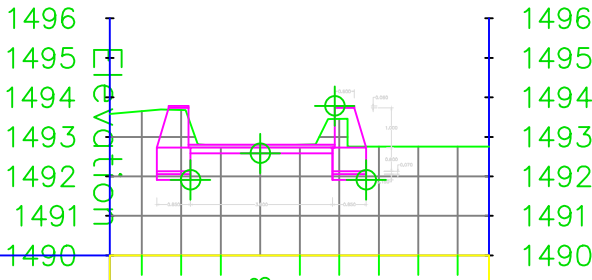


EXISTING BED ELEVATIONS

DESIGN BED ELEVATIONS

OFFSET

Cross Section  
2+669.97



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
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

FUNDED BY:  
United Nation Developement Progi



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  
Ahmad Khill Canal Cnstruction

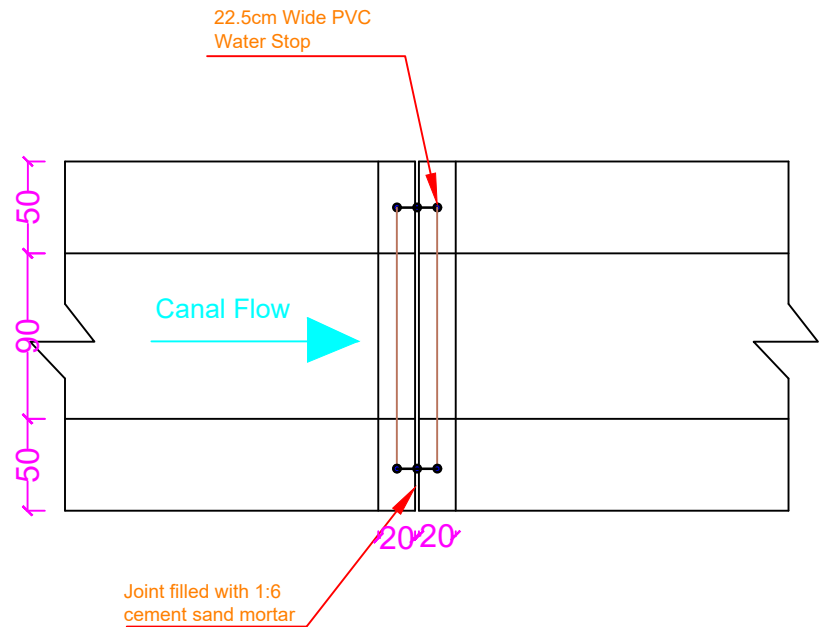
DRAWING:  
Ahmad Khill Dusrak Canal Cross Sections for  
Protection ,Culvert , Aqueducts

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

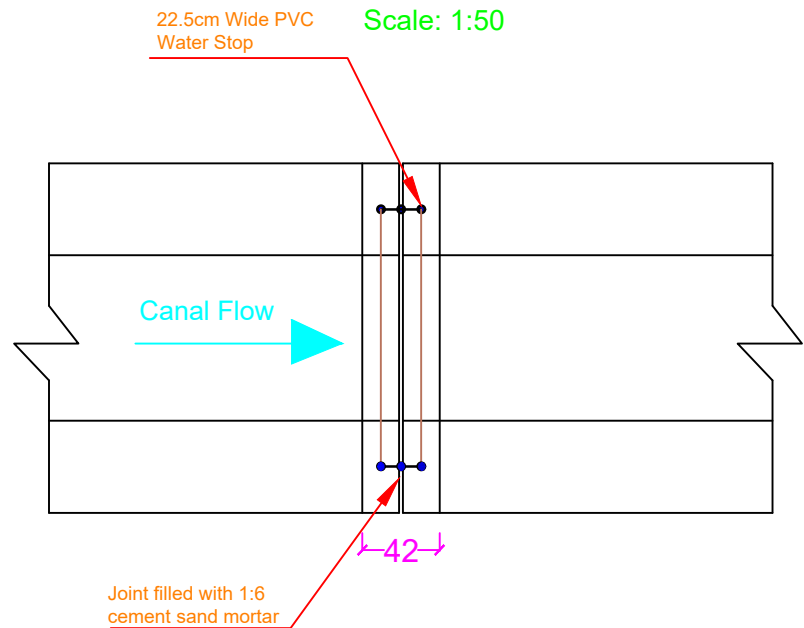
Action Taken	Name	Designation
Surveyed By:	AAA Survey Team	AAA Survey Team
Design/Drawn By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Reviewed By:	AAA Design Team	AAA Design Team
Checked By:		
Approved By:		

Drawing Scale: As Shown Date:August. 2024

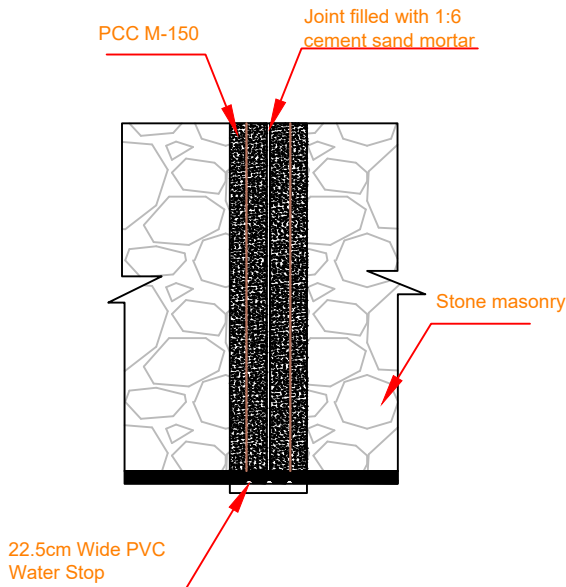
PLAN OF CONSTRUCTION  
JOINT FOR COVERED  
SECTION  
Stone masonry  
Scale: 1:50



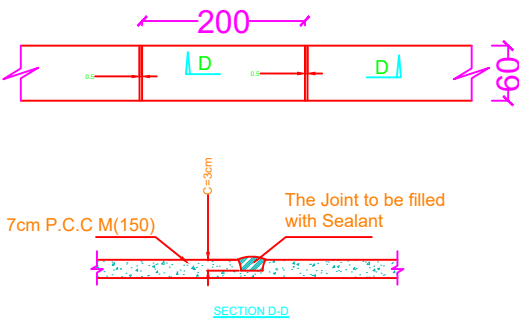
PLAN OF CONSTRUCTION  
JOINT FOR COVERED  
SECTION  
Brick masonry  
Scale: 1:50



SECTION A-A  
Scale: 1:50



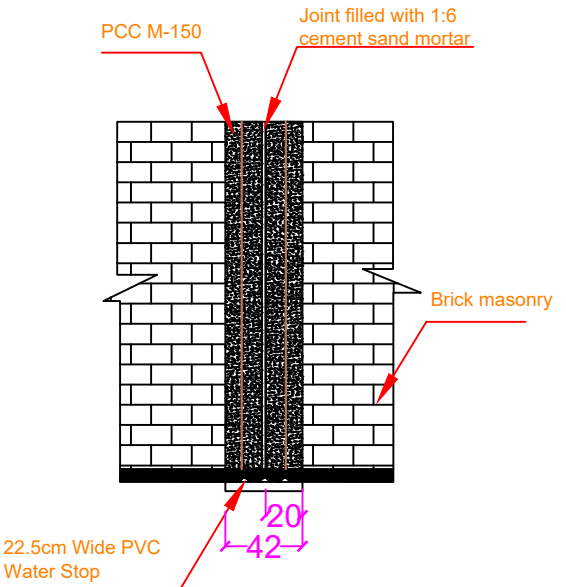
PLAN OF WALL COPING



Sample of 22.5cm Wide PVC Water Stop



SECTION B-B  
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
- Earthen Slope
- Ground Level
- Stone Pitching/Rip Rap

FUNDED BY:  
United Nation Development Program



IMPLEMENTATION PARTNER:  
ACTION AID AFGHANISTAN (AAA)

act:onaaid

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

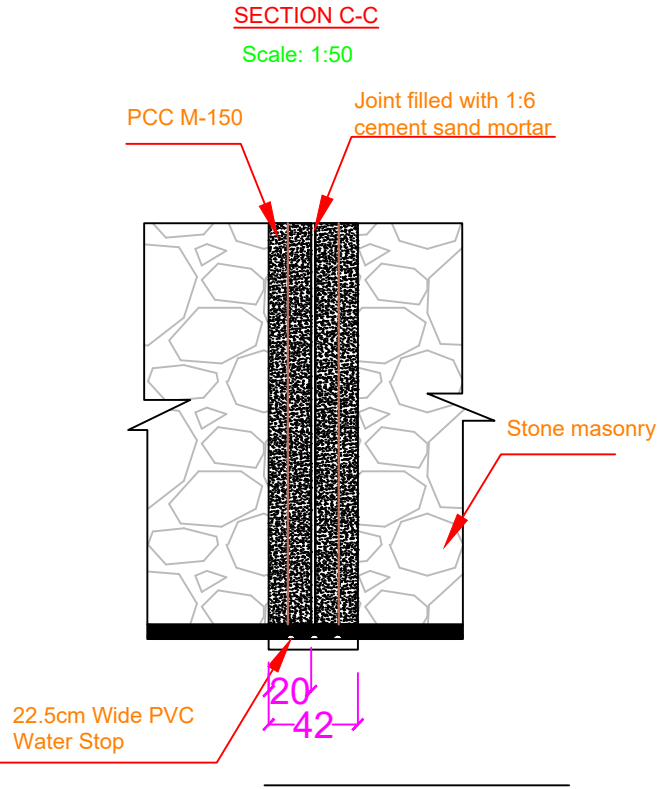
SUB-PROJECT:  
Nangarhar Province Khogyani District  
Ahmad Khill Canal Construction

DRAWING:  
Ahmad Khill Dusrak Canal wall water Stopper Plan & Section

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: NGR-KHGN-01,Str-1  
DRAWING PAGE NO:0021  
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
  - Earthen Slope
  - Ground Level
  - Stone Pitching/Rip Rap

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 Khogyani District  
Ahmad Khill Canal Construction

DRAWING:  
Ahmad Khill Dusrak Canal wall water Stopper Plan & Section

PROJECT SYMBOL: CBARD ALL /AFG/EAST  
SUB-PROJECT CODE: NGR-KHGN-01,Str-1  
DRAWING PAGE NO:0022  
REVISION NO: 1

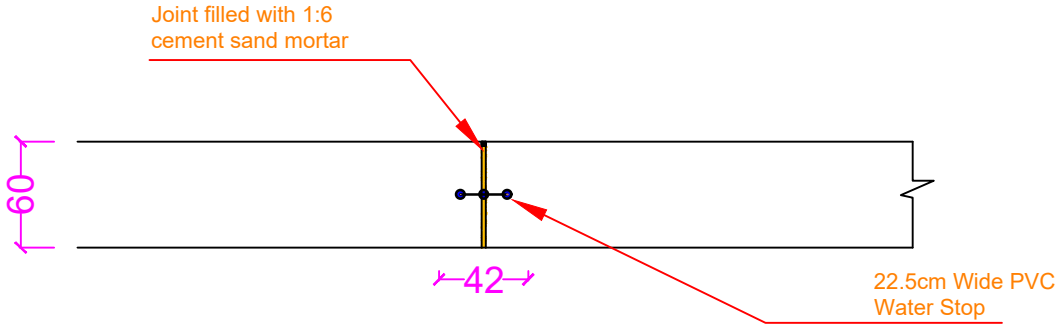
Action Taken	Name	Designation
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Checked By:		
Approved By:		

Drawing Scale: As Shown

Date:August, 2024

**PLAN OF CONSTRUCTION  
JOINT FOR ONE SIDE WALL**

Stone masonry  
Scale: 1:50



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.