

Community Based Agriculture and Rural Development

ABGARMAK AQUEDUCT AND CANAL LINING

BADGHIS-024

Sub Project DRAWINGS

2020

Sheet	SBM0100-04-01
Reference	
Date	20/07/2019
Project No.	24340100-04
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Project Name and Address ABGARMAK AQUEDUCT AND CANAL LINING	
Designed By JAWAHER QANI	
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Checked By JAWAHER QANI	
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Project Location COVERPAGE	
ISLAMIC REPUBLIC OF AFGHANISTAN MINISTRY OF AGRICULTURE AND LIVESTOCK Community Based Agriculture and Rural Development (CBARD)	

LIST OF DRAWINGS

S.#		DRAWING NO.
1	COVER SHEET	CBARD-BDG-024/001
2	DRWINGS LIST	CBARD-BDG-024/002
3	LEGEND AND ABBREVIATIONS	CBARD-BDG-024/003
4	TECHNICAL SPECIFICATION	CBARD-BDG-024/004
5	ABGARMAK AQUDUCT PLAN VIEW	CBARD-BDG-024/005
6	ABGARMAK AQUDUCT ISOMETRY	CBARD-BDG-024/006
7	ABGARMAK AQUDUCT SECTION A-A	CBARD-BDG-024/007
8	ABGARMAK AQUDUCT SECTION B-B AND C-C	CBARD-BDG-024/008
9	ABGARMAK AQUDUCT REINFORCEMENT DETAILS	CBARD-BDG-024/009
10	ABGARMAK AQUDUCT ABUTMENT CAP PLAN	CBARD-BDG-024/010
	ABGARMAK CANAL LINING PLAN AND SECTION DETAILS	CBARD-BDG-024/011

MINISTRY OF AGRICULTURE AND LIVESTOCK
Community Based Agriculture and Rural Development
(CBARD)

























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 Date: _____
 Project No: _____
 Scale: _____

ABBREVIATION:-

	— Center Line	Av	AVERAGE	ST	STATION
	— Direction of flow	BM	BENCH MARK	THK	THICKNESS
	— Dry Stone Pitching/Section	B	WIDTH	TYP	TYPICAL
	— Grouted Stone Masonry/Pitching Section	C/C	CENTER TO CENTER	HFL	HIGH FLOOD LEVEL
	— Brick Masonry	D	DEPTH OF WATER	U/S	UPSTREAM
	— P.C.C Block	DRG	DRAWING	YRS	YEARS
	— Gabion	DIA , ϕ	DIAMETER	Q	DESIGN DISCHARGE
	— Gabion Section	D.W.L	DESIGN WATER LEVEL	W.L	WATER LEVEL
	— Wash/River Bed Material	D/S	DOWNSTREAM		
	— Geotextile Mattress	EL.	ELEVATION		
	— Plain Cement Concrete	F.B	FREE BOARD		
	— Reinforced Cement Concrete	HFL	HIGH FLOOD LEVEL		
	— Bank Protection	HT.	HEIGHT		
	— Compacted Soil	H.G.L	HYDRAULIC GRADE LINE		
	— Hill	KM , km	KILOMETERE		
	— H.F.L / M.W.L	M ,m	METER		
	— Elevation of the point is 100 m	Chkd	CHECKED		
	— Elevation of the point (100m) in Plan view	Apprvd	APPROVED		
	— Traverse Station	M , W .L	MAXIMUM WATER LEVEL		
	— Bench Mark	MIN	MINIMUM		
	— Lined Slope	No(s)	NUMBER(S)		
	— Earthen Slope	N.G.L	NATURAL GROUND LEVEL		
	— Ground Level	P.C.C	PLAIN CEMENT CONCRETE		
	— Stone Masonry	R.C.C	REINFORCED CEMENT CONCRETE		

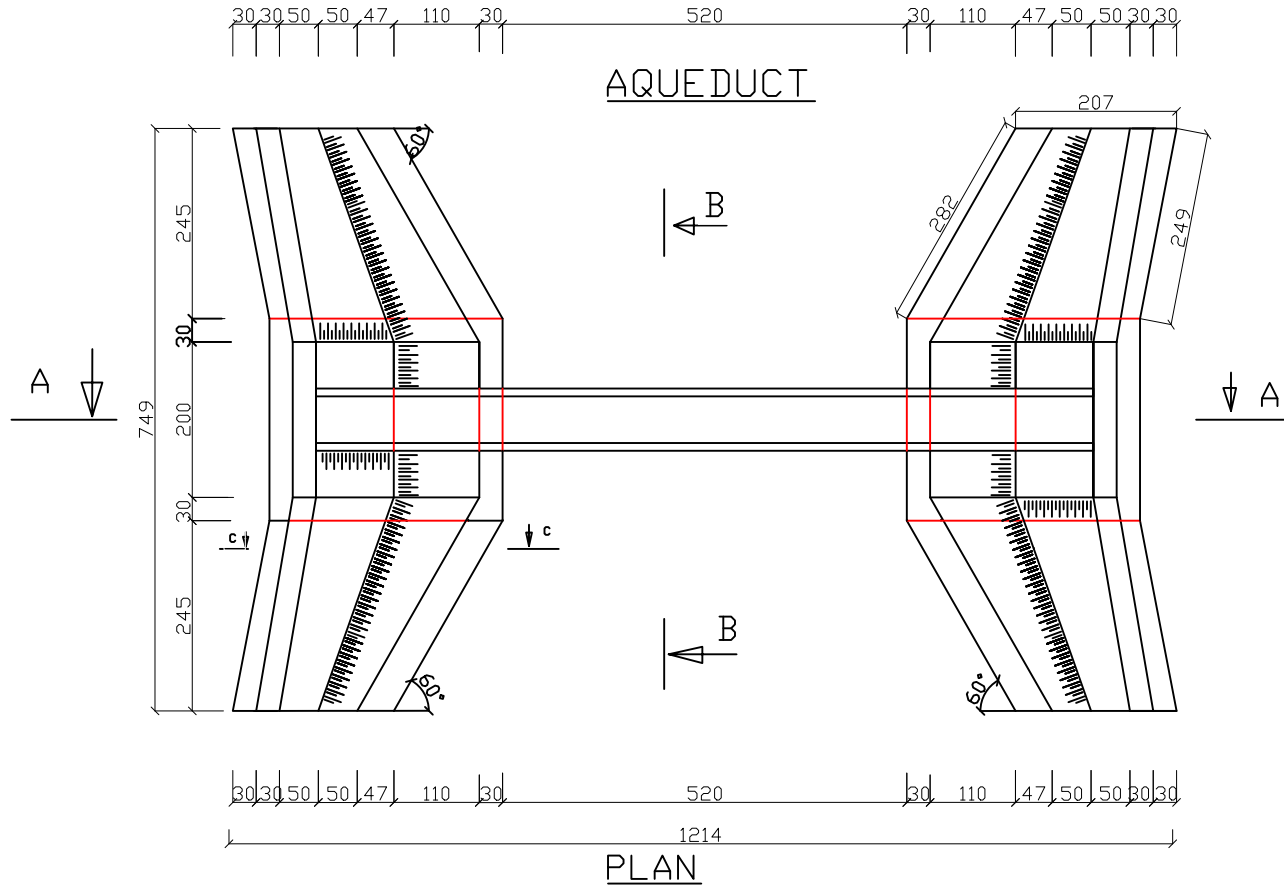
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Drawn By JAWAHAR DAND	Checked By JAWAHAR DAND
Approved By JAWAHAR DAND	Validity 10/10/2024
Sheet No 01	Scale 1:1000

TECHNICAL SPECIFICATIONS

- 1- A maximum of 25% stone with a maximum stone size of 20cm to be used in Plum/ Mass Concrete . The concrete Mark shall be M150 or as specified in Design.
- 2- A good quality Stone for stone masonry, mass concrete, gabion and All stone related construction work should be of and approved by The Engineer.
- 3- All Grouted stone pitching in stilling basin and foundations should be with ratio of 1:3.
- 4- All Masonry cutoff wall shall be with 1:4 Cement Sand Mortar or as specified on the drawing.
- 5- Bitumen coating should be used in all construction / expansion joints.
- 6- The Ratio for Mark of Plain cement concrete as specified on the drawings.
- 7- Backfilling material should be properly tested and selected to be suitable as per standard practice.
- 8- For backfilling maximum thickness of each loose soil layer should not more than 15 cm.
- 9- Standard Compaction tests should be carried out for the backfilling.
- 10- The percentage of compaction should be not less than 95% of the maximum dry density.
- 11- All Quality control tests should be carried out by the Contractor in a specified laboratory as per the attached testing plan.
- 12- Construction joints for walls should be provided as (15-20)m centre to centre.
- 13- Stone size for gabion shall range from (20-30) cm.
- 14- Galvanized iron wire of specified thickness (3mm) should be properly woven and knotted together to form the required mesh in hexagonal / rectangularshape of size (6-8)cm for gabion basket and & gabion mattress to fabricate gabion boxes to the satisfaction of the Engineer.
- 15- Principal wire along the gabion edges (selvedges) for Gabion boxes should be of Galvanized Iron having minimum thickness of 4mm
- 16- Gabion Galvanized Iron wire tensile strength should be 350-575 N/mm² & quantity of zinc should be 275g/m² for 3mm wires and 290 g/m² for 4mm gabion wires. Gabion wire sample shall be tested by the contractor in presence of CBARD engineer to ensure it has required strength and zinc coating layer prior to fabrication of sheets. Crashed Mountain Stone shall be used for all gabion works , round stones are not permissible at all.
- 17- All PCC under footings to have cement, sand and aggregate as specified on the drawings.
- 18- Reinforcement yield stress fy shall not be less than 2500 kg/cm².
- 19- Concrete design should be based on a compressive strength of fc =200 kg/cm² or 150 Kg/ cm² as specified on the draqwings & high quality crashed gravel shall be used for all RCC works.
- 20- Weight per unit volume of concrete W=2400 kgf/m³
- 21- Sand or fine aggregate shall be free from salt, alkali, calcium sulphate or vegetation and it shall not contain more than 0.5 percent by weight of clay.
- 22- Aggregate:- Coarse aggregate shall consist of crushed gravel with the max. size of 20mm.
- 23- The maximum slump for concrete should be between (5-7.5) cm.
- 24- To increase the workability of the concrete provide the chemical admixture (Super plasticizer)
- 25- Water used for concrete mixture and concrete curing shall be from a source approved by the Engineer and at the time of use shall be free from contaminants.
- 26- Concrete compaction should be done by using concrete vibrator at the time of pouring in such a way to form a solid compact concrete.
- 27- Concrete curing should be continued for 14 days.
- 28- During Cold weather concreting should be stopped or the contractor has to consider cold weather concreting procedure as accepted by the engineer.
- 29- Concrete shuttering/formwork should be of Steel type.
- 30- Concrete shuttering can be removed as per below minimum duartion:
Side of beams,walls,columns 16-24 hours
Forms from beneath the slabs(spaning upto 6m) 14 days
Forms from beneath the slabs(spaning above 6m) 21days
- 31- For all concrete works (PCC , RCC , Mass Concrete , Mortar) concrete shall be mixed by Machine , hand mixing is not permissible unless the volume of concrete is less than 1M³.
- 32- The contractor shall have an experienced site engineer full time on the project site for quality control purposes , execution of works without presence of site engineer is not acceptable and payable by CBARD.
- 33- Sample of all materials shall be approved by the CBARD engineer before the contractor use for the project , otherwise , CBARD engineer is authorized to reject the executed works.
- 33- All construction works shall be carried out with close coordination and prior approval of CBARD engineer , otherwise CBARD engineer is authorized to reject the executed works,contractor has to re-do it.

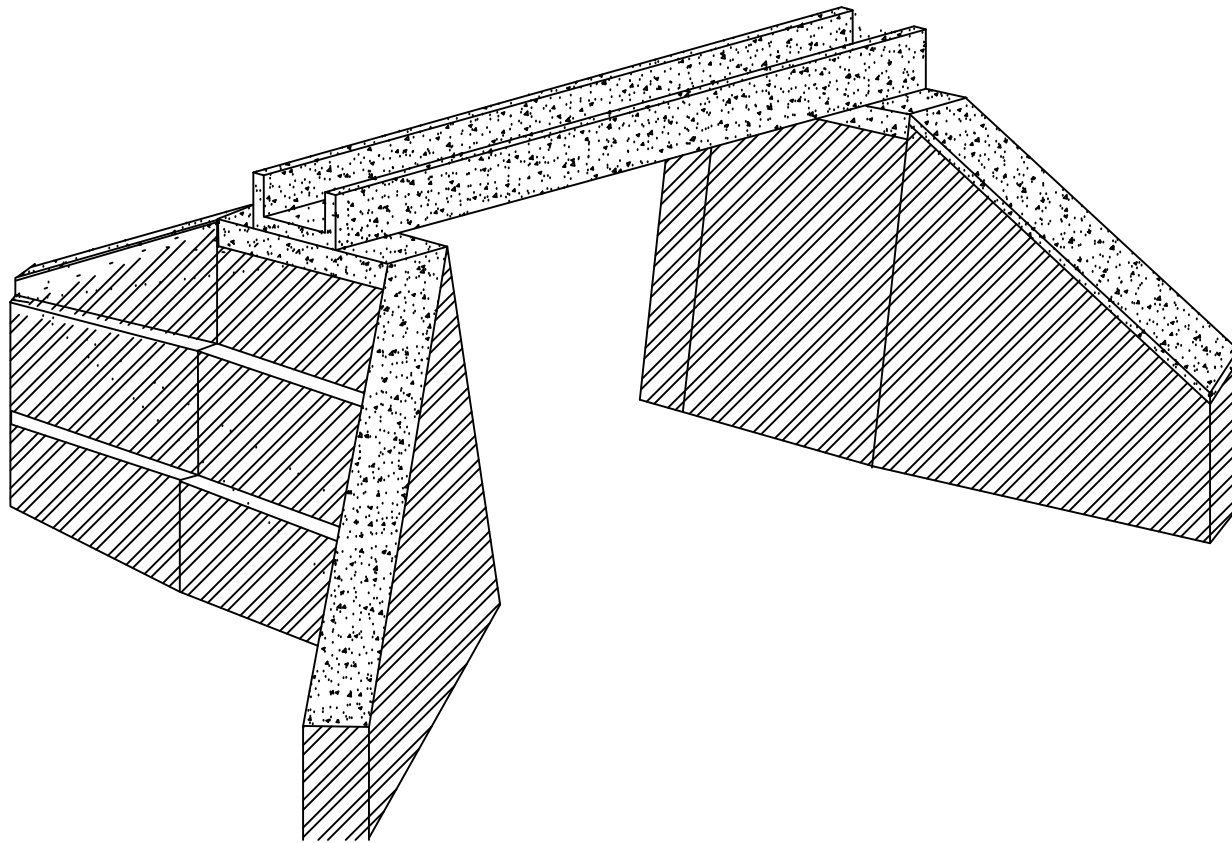
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Sheet Reference Date Scale Author's Name Date	Checked by DRAWN BY CHECKED BY DATE OF DRAWING SCALE

ABGARMAK AQUEDUCT PLAN VIEW



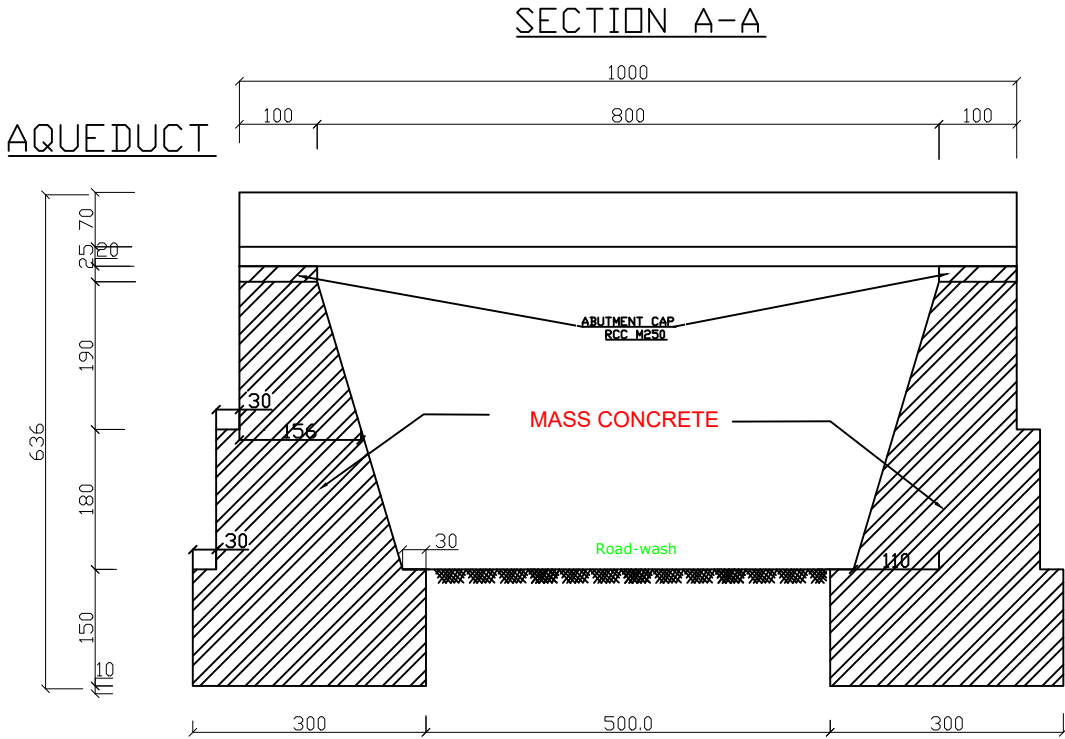
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ABGARMAK AQUEDUCT ISOMETRY



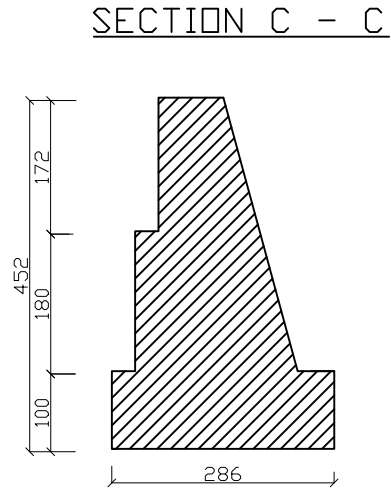
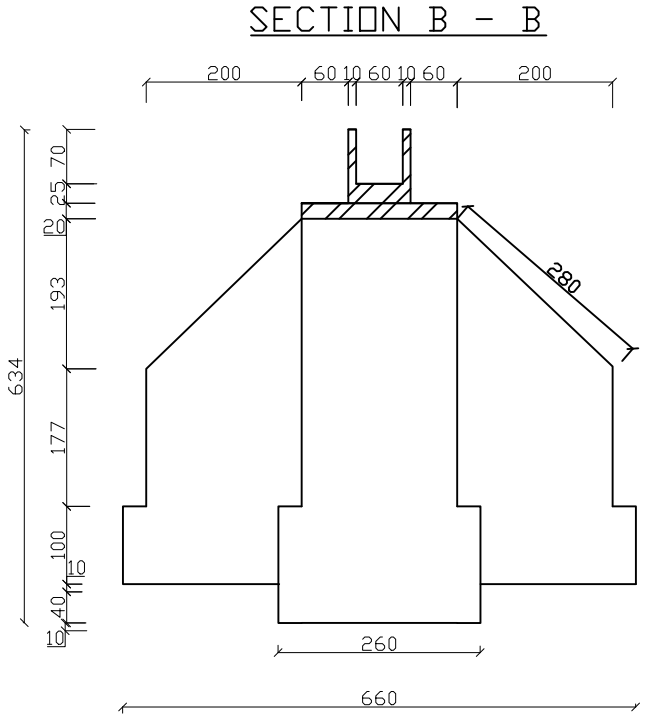
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<p>Supervisor / Advisor</p>	<p>PROJECT SUPERVISOR</p>
<p>SYMBOLS</p>	<p>SYMBOLS</p>
<p>INDEX</p>	<p>INDEX</p>

ABGARMAK AQUEDUCT SECTION A-A



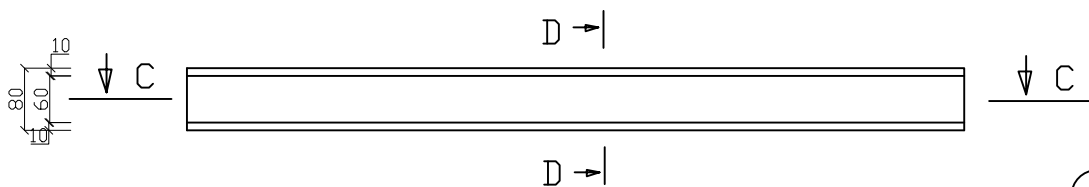
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Drawn By GAVARSHER OJIAN	Approved By GAVARSHER OJIAN
Date of Issue and Revision 01/01/2024	
Sheet Identification SB/01/02/04/001	Project Name ABGARMARK Scale 1:1

ABGARMAK AQUEDUCT SECTION B-B AND C-C

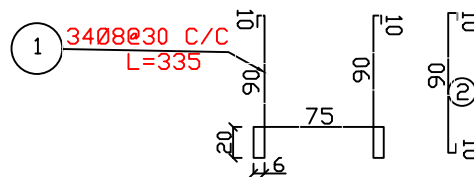
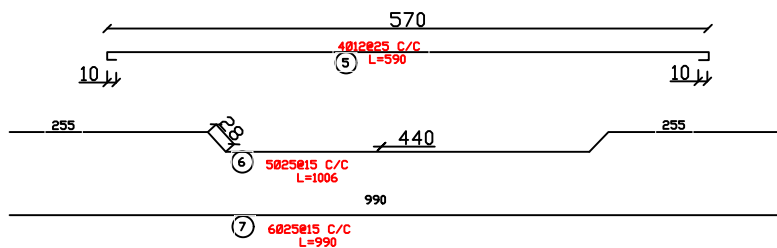
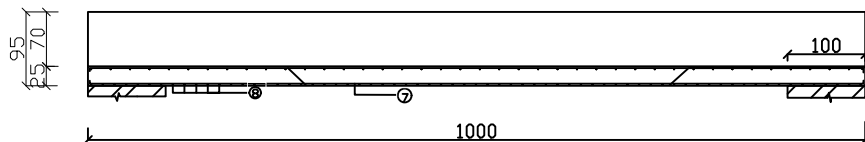


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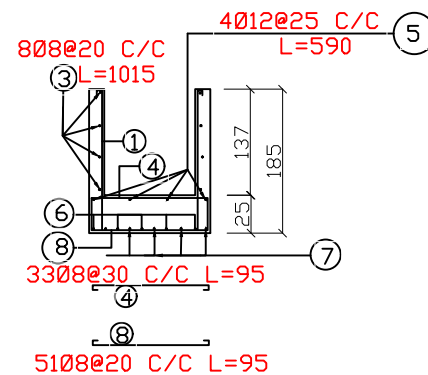
ABGARMAK AQUEDUCT REINFORCEMENT DETAILS



AQUEDUCT SIDE VIEW

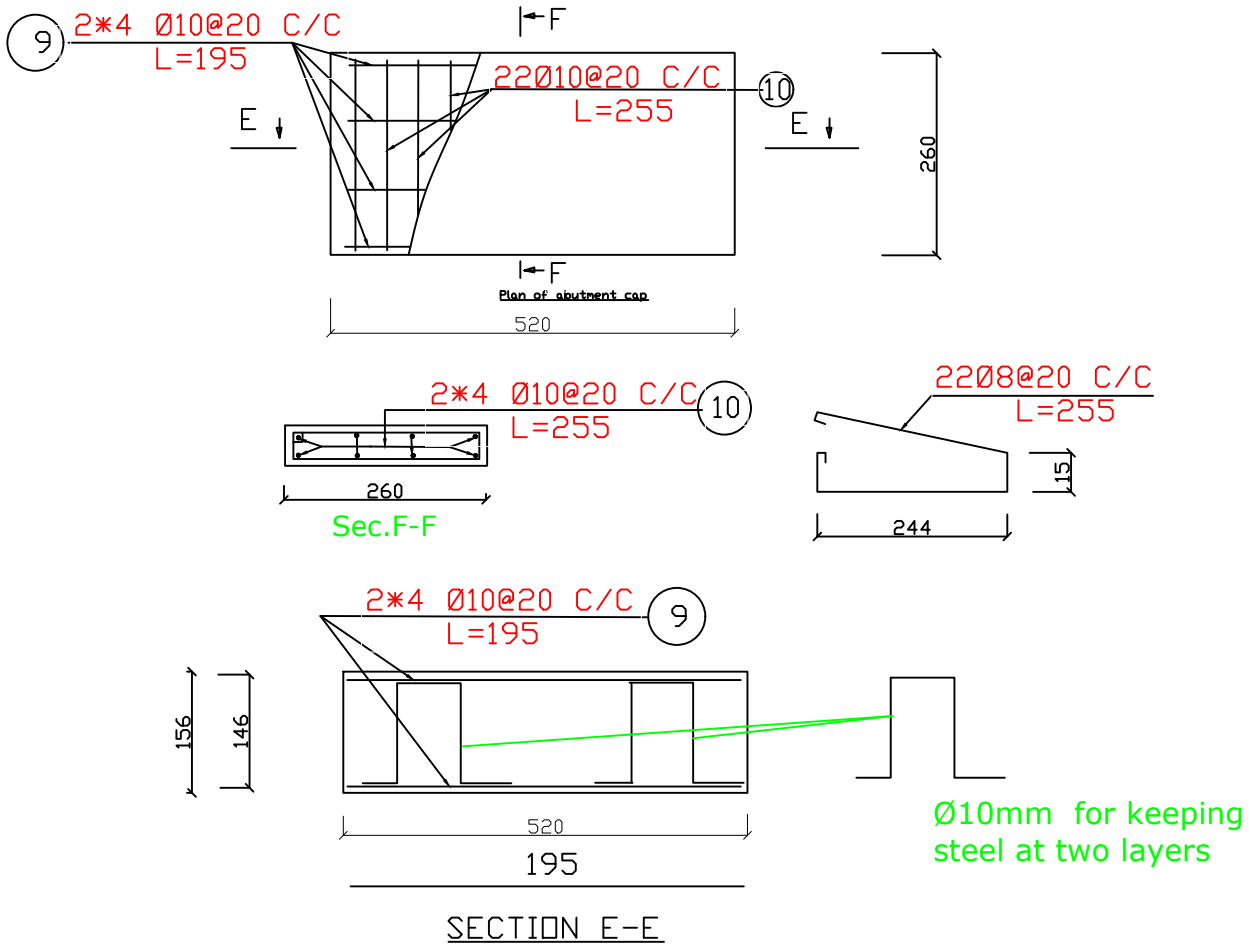


SECTION D-D



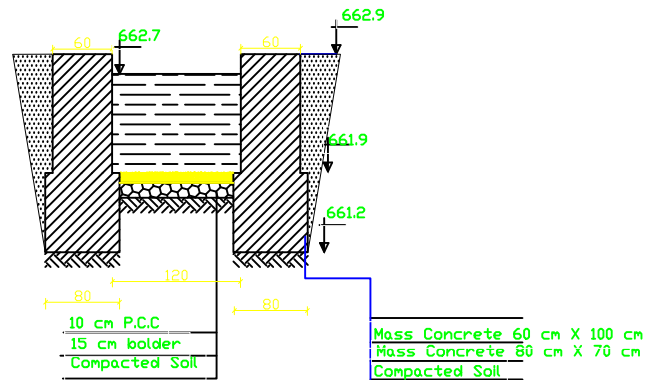
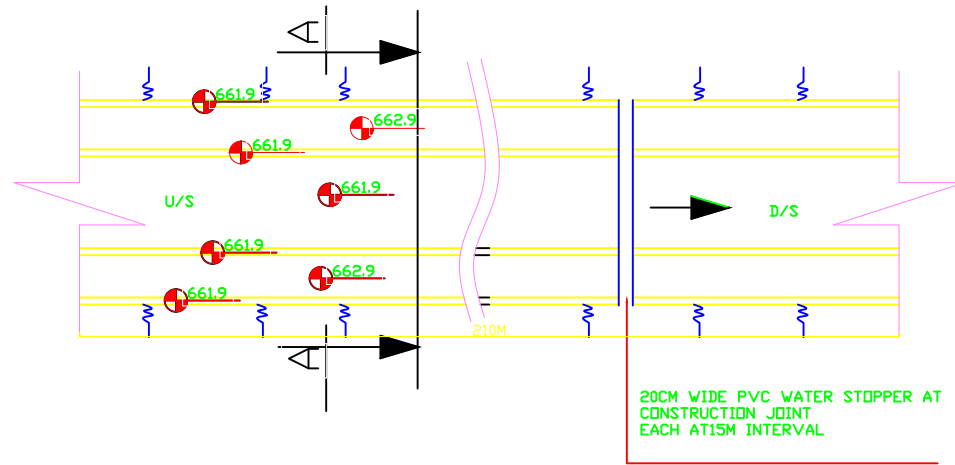
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ABGARMAK AQUEDUCT ABUTMENT CAP PLAN



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Sheet Number and Abbreviation: ABGARMACAP-01-1	Sheet: Reference: Date: Project No. Scale:

ABGARMAK CANAL PLAN AND SECTION VIEW



SECTION A-A
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ORGANIZATION: ... ADDRESS: ...	