

CASE HISTORY

Rev:01, Date : 14.05.2020

REINFORCED SOIL WALLS AND SLOPE PROTECTION MEASURES AT STATUE OF UNITY, GUJARAT

GUJARAT, INDIA



RS Wall & Slope Protection

Client:

SARDAR SAROVAR NARMADA NIGAM LIMITED

Main contractor:

L&T CONSTRUCTION, BUILDINGS & FACTORIES

Manufacturer & Supplier:

TECHFAB (INDIA) INDUSTRIES LTD.

Year of construction:

2019

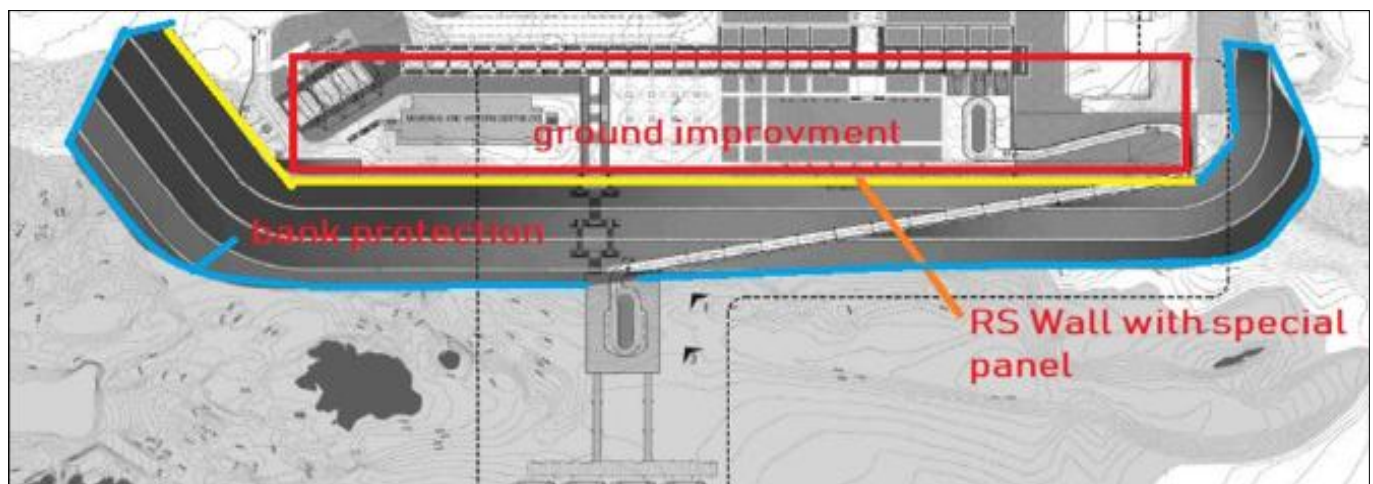
Products used:

- TECHFAB METAL GABION MATTRESS - ZINC+PVC COATED
- TECHGRID BIAXIAL GEOGRID - HIGH STRENGTH BIAXIAL GEOGRID
- TECHGRID UNIAXIAL GEOGRID - VARIOUS GRADES OF UNIAXIAL GEOGRID
- TECHGEO PR SERIES - NONWOVEN POLYPROPYLENE GEOTEXTILE

Project Description:

The Statue of Unity, the dream project of the honourable Prime Minister of India, is a colossal statue of 'The Iron Man of India', Sardar Vallabhbhai Patel. It is the world's tallest statue with a height of 182 metres and is located on a river island facing the Sardar Sarovar Dam on the river Narmada in Kevadiya colony, Gujarat.

Techfab India Industries Ltd. is proud to participate in the making of history – as a Technology Provider and Supplier of Techgrid Geogrid & TechFab Metal Gabion Mattress for the project. The statue was inaugurated by honourable Prime Minister of India on 31st October 2018, the 143rd anniversary of Vallabhbhai Patel's birth.

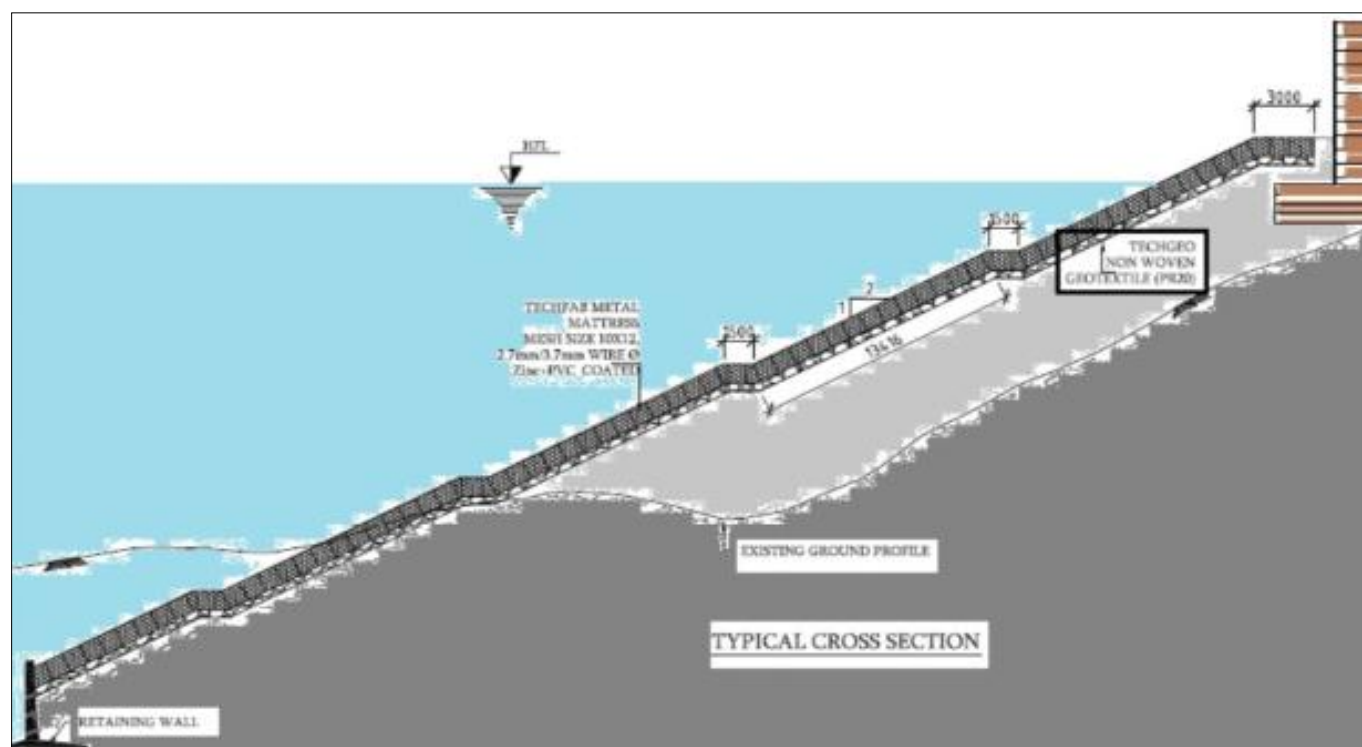


Areas of Applications:

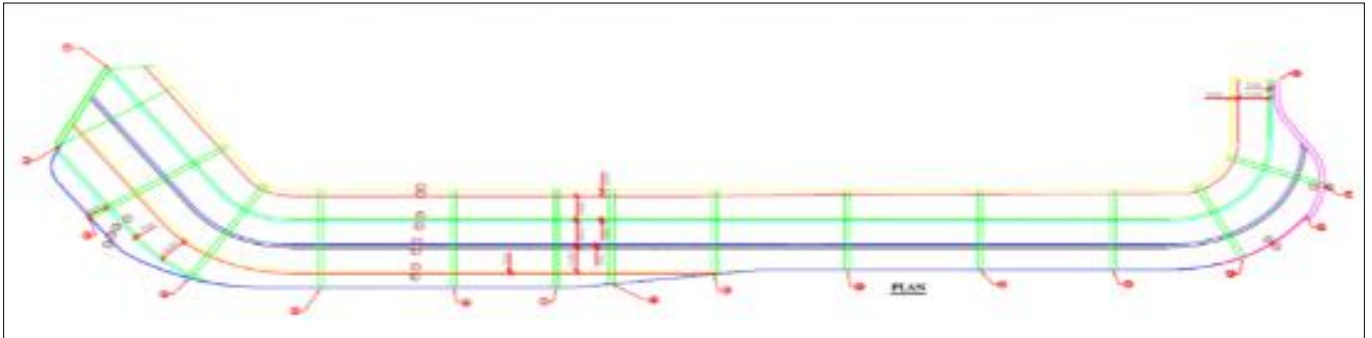
- A. Slope Protection works
- B. Ground Improvement Works
- C. Reinforced Soil Wall Works

A. Slope Protection Works

- Memorial and Visitors Centre (M&VC Area) is located on nearest river bank side. The 'platform' for M&VC structures and other amenities including large landscape works was created on top of river bank with the help of gentle and stable slope from the river bed level.
- The level of M&VC base / platform was kept above HFL. The ramp may come in submerged condition when the water is discharged from dam. Hence, it is susceptible to erosion at large scale considering the proximity of the dam and the discharge carrying capacity of the river.
- In order to protect the ramp, slope protection works consisting of TechFab Metal Gabion Mattress along with Techgeo Nonwoven Geotextile were proposed and adopted.
- TechFab Metal Gabion Mattress, (10x12, 2.7mm/3.7mm wire ϕ , Zinc+PVC Coated) of 1.0m thickness were used on the ramp having slope 1:2 with few intermediate berms.
- Techgeo nonwoven geotextiles are manufactured from high quality polypropylene staple fibres for durability. It is used for separation, filtration & drainage function below TechFab Metal Gabion Mattress.
- Project specific construction methodology was prepared and submitted in addition to detailed drawings for the proper execution and performance of the system.



Typical section illustrating the application of TechFab Metal Gabion Mattress on Ramp



Plan details illustrating the application area of TechFab Metal Gabion Mattress



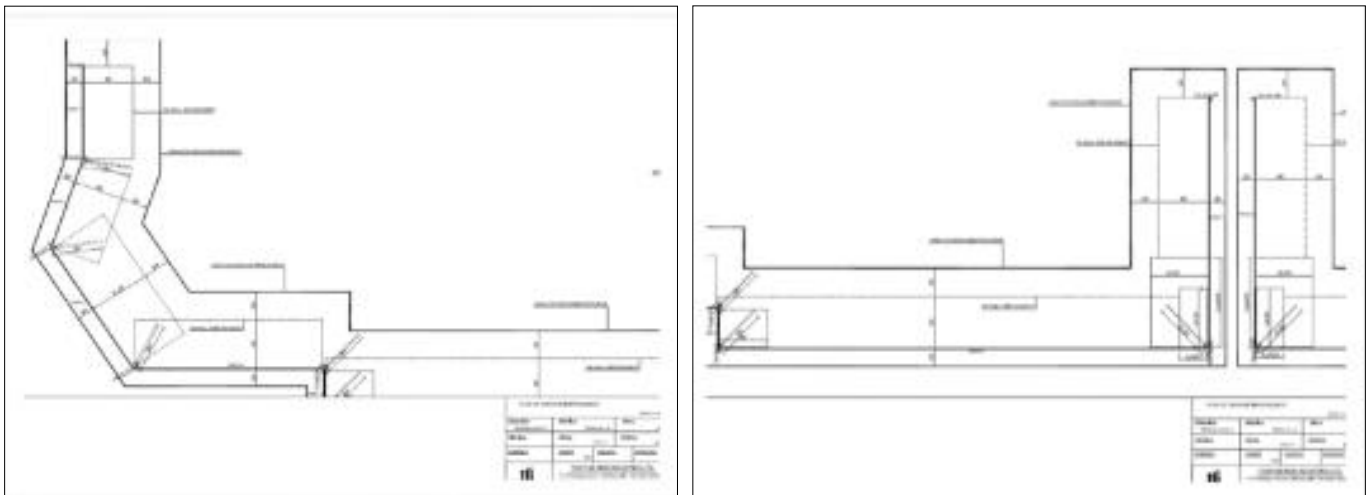
TechFab Metal Gabion Mattress laying in progress



TechFab Metal Gabion Mattress - Panoramic View

B. Ground Improvement Works

- The Memorial and Visitors Centre and other structures are to be built on reinforced soil walls all around the area. The reinforced soil walls were positions mostly over 'filled up' space created along with stable ramp. Hence, ground improvement was warranted.
- The ramp was created by compacting the soil in number of layers to ensure proper stiffness of the sloped area. Although, to minimize settlement, layers of Techgrid geogrid are considered as subgrade stabilization.
- Ground improvement in the form of three layers of Techgrid Biaxial Geogrid was proposed. TechGrid Biaxial series comprise biaxial geogrids manufactured from select grades of high tenacity, high molecular weight, and low carboxyl end group polyester yarn to ensure high strength, low creep and excellent durability.
- The three layers were laid with 500mm vertical spacing between each layer and were extended 3.0m and 5.0m in front and back respectively beyond the design reinforcement length of the reinforcement soil walls to be built over the area.



Plan Drawings for Ground Improvement with TechGrid Geogrid



Laying of TechGrid Geogrid in Progress



Marking in progress for RS Walls



Geogrid Laying for RS Walls



Finished view of RS Wall Panels



L&T Construction BUILDINGS & FACTORIES
STATUE OF UNITY PROJECT, GUJARAT
UNITY



METHOD STATEMENT
FOR
RSW PANEL ERECTION WORKS
TIFURW-9471

Rev No.	Date	Description	Prepared (vendor)	Checked	Reviewed (QA/QC)	Approved
01	20.04.2017	Method statement for RSWC	PS		RSK	MSR

UNITY The Statue of Unity Project, Gujarat TIFURW-9471 Rev: 00 1

L&T Construction BUILDINGS & FACTORIES
STATUE OF UNITY PROJECT, GUJARAT
UNITY



METHOD STATEMENT
OF
GABION MATTRESSES FOR SLOPE PROTECTION
TIFURW-9471

Rev No.	Date	Description	Prepared (vendor)	Checked	Reviewed (QA/QC)	Approved
01	04.04.2017	Method statement for Gabion Mattress	PS		RSK	MSR

UNITY The Statue of Unity Project, Gujarat TIFURW-9471 Rev: 00 1

Project specific Construction Methodology for Reinforced Soil Walls and Gabion Mattress Installation



Panoramic View of TechFab products in the vicinity of Sardar Sarovar Dam



Panoramic View of TechFab products in the vicinity of Sardar Sarovar Dam

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