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Road construction along River embankment (A Case Study)

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Abstract: ***The construction of a road along the banks of a river is a very tricky process as one has to satisfy the road characteristics as well as the waterway of the river shall not be encroached upon. This study reveals the construction of one such road wherein the road constructed has a dual purpose viz, providing connectivity as well as acting as a flood protection measure.***
Keywords: RBM, GSB, PRR; Road construction; river; River bed material (RBM); Granular sub base (GSB)

I. INTRODUCTION

Road construction is a process as old as the human civilization itself. Over time the methods of construction of roads have improved and roads now constructed are better and are completed in lesser time. The design parameters of a road depend on a lot of factors ranging from topography of the area to the type of strata on which the road is to be constructed. The present study describes the process of construction of a road along the bank of one of the largest rivers of Kashmir valley viz., Vi show. This road was constructed at a place where the whole residential area gets inundated under water during floods and the connectivity through all the other roads is cut off. This new road provides the connectivity in case of floods also as the road is built along the embankment of the road and is above HFL. Also the embankments of the got strengthened by construction of the roads and there are lesser chances of breaches in the embankment. This study explains the process of construction of the road along the embankment.

Table .1 SALIENT FEATURES OF THE ROAD

Name of District	Kulgam
Name of state	Jammu and Kashmir, India
Length of Road	1.00Kms.
Type of Road	Village Road(New Construction).
Existing Carriageway	Nil
Proposed Carriageway	3.65 Mtrs.
Existing Formation Width:	Nil.
Proposed Formation Width:	5.50Mtrs.
Proposed Status	WBM G-II Single lane.
No. of Village Benefitted	5.
Pop. to be Benefitted	9,000 Souls.
No. of Market centers to be connected	03 (Three).

Fig.1: Existing embankment along the bank of river.

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II. PROPOSALS/PHYSICAL DETAILS

The dilapidated and deteriorated road surface shall be upgraded / widened by way of:-

Step1) To achieve the formation of the road Earth filling was carried out because of the fact that the area gets inundated and the road has to act as embankment in case of floods. Due to the low permeability of good earth, it was preferred over RBM (River bed material) or GSB (Granular sub base) , the good earth filling was compacted in layers using compactors.

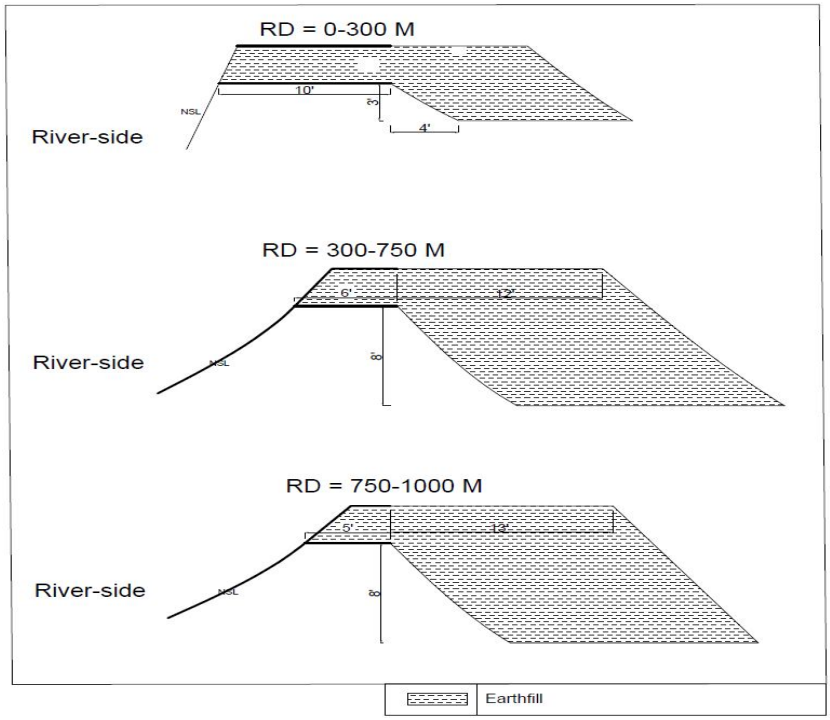

Fig.2: Proposal for earth filling.

Step2) After the formation width of the road was achieved, GSB Was laid over the earth filling and compaction of the base course was carried by using 8-10T PRR.

Step3) Riding Surface was developed by way of Providing/Laying Water bound macadam (WBM G-II) To rectify the surface profile. WBM Gr-II comprised of quarry stone of size range 63-45mm. and provides a smooth riding surface when fully compacted with 8-10 T capacity PRR.

Step4) Construction of Retaining / Breast Walls/ Crate bund was carried out at needy spots where the fill material could not retain on its own.

III. CONCLUSIONS

This study gives the detailed account of the process of construction of a difficult road along the banks of a river. This road not only provides road connectivity to the people of Khudwani area but also provides them with safe route in case of extreme floods and the road also acts as a strong embankment.

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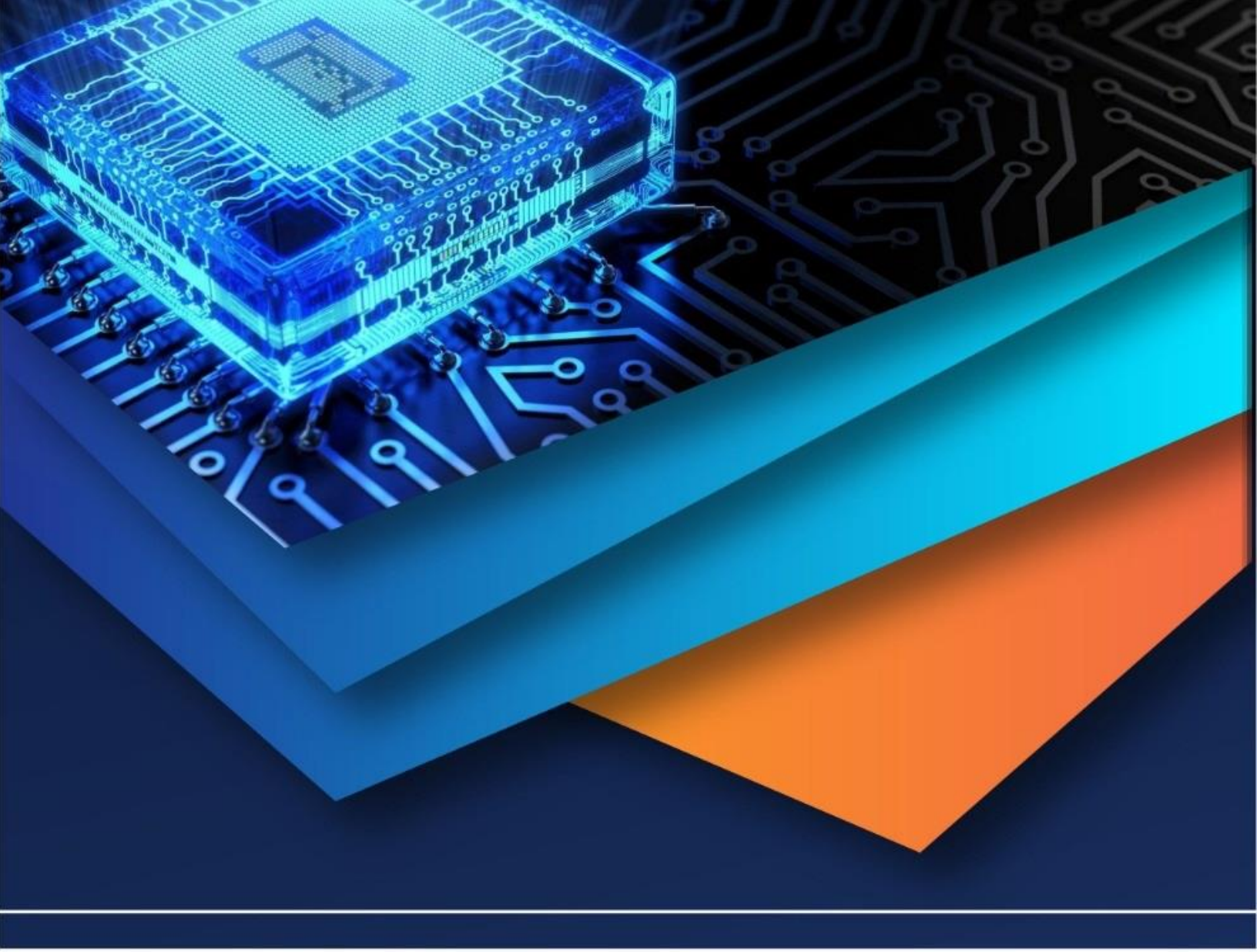

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