

DETAILED PROJECT REPORT

CONSTRUCTION / IMPROVEMENT OF ALTERNATE ALIGNMENT OF BANDIPUR-GUREIZ (B-G) ROAD FROM KM 79.68 TO KM 84.125 TO CL-9 SBA SPECIFICATIONS AND CONSTRUCTION OF 85 MTR SPAN MARKOOT PMT BRIDGE AT KM 81.375 ON REALIGNMENT PORTION OF BG ROAD INCLUDING LA & FC UNDER 56 RCC/32 BRTF/PROJECT BEACON IN J & K (UT).

EXECUTIVE SUMMARY

1. The road Bandipur-Gureiz was taken over by BRO from MES during the year 1971. The road was included in the BRDB Programme vide Sectt BRDB letter No. F-4(i)/BRDB/Proj/64 dated 19 Mar 1971 for its improvement to CI-5 specifications. The road was further included for improvement from CI-5 to CI-9 specifications vide Sectt BRDB letter No.F-4(I)/BRDB/PE/C/GSWE/MP dated 11 Mar 84 based on the requirement of Army. This road is presently being maintained under scale-I maintenance grant by 56RCC/32BRTF under Project Beacon.
2. The road Bandipur-Gureiz is life line for civil population living in Gureiz sector since this is the only road which connects Gureiz sector from Bandipur. This road is strategically important for Army as well civil population, due to the requirement for winter stocking and transportation of troops deployed in border areas beyond Gureiz.
3. The road stretch of Bandipur-Gureiz road from Wampora Bridge (Km 79.68) to Markoot bridge (Km 81.375) falling on the right side of River Kishan Ganga, which was taken over from PW(R&B) Sub Division Gureiz, Bandipura District is to be developed as per CL-9 Snow Bond Area Specification to meet the strategic requirements.
4. Preparation of DPR for construction / improvement of alternate alignment of Bandipur-Gureiz (B-G) road from Km 79.680 to Km 84.125 to CI-9 SBA specifications and construction of 85 mtr span Markoot Pmt Bridge at Km 81.375 on realignment portion of B-G road under 56 RCC/32 BRTF/Project Beacon in J & K (UT) has been sanctioned vide HQ CE(P) Beacon letter No.750803/CE's Power/36/Estg dated 31 Jul 2020 for Rs 14.68 Lacs under Job No.217/18.
5. The unsanctioned Job for construction / improvement of alternate alignment of Bandipur-Gureiz (B-G) road from Km 79.680 to Km 84.125 to CI-9 SBA specifications and construction of 85 mtr span Markoot Pmt Bridge at Km 81.375 on realignment portion of B-G road has been included in AWP 2020-21 at Srl No.13.
6. Detailed survey of the road stretch has been carried out and accordingly, the present DPR is prepared for the proposed road alignment of length 3.706 Kms for **Rs 3954.56 Lacs** covering the road geometrics as per CI-9 SBA specifications and other features of the road as per SP-48 of 1998 are given as under:-

(a) Width of Formation	:	7.45 Mtr
(b) Width of Carriage Way	:	5.80 Mtr
(c) Gradient	:	1 in 16.7 (Ruling)
(d) Radius of Curve	:	33.00 Mtr (Absolute minimum)
(e) Design Speed	:	40 Km/Hr
(f) Load Class for Bridge/Culverts	:	CI-70 R
(g) Right of Way (ROW)	:	12.00 Mtr

(h) Proposed Crust Thickness	:	565 mm
(i) Wearing Course	:	AC 40 mm

1. Preliminary.

1.1 Name of Work.

Construction / improvement of alternate alignment of Bandipur-Gureiz (B-G) road from Km 79.680 to Km 84.125 to CI-9 SBA specifications and construction of 85 mtr span Markoot Pmt Bridge at Km 81.375 on realignment portion of B-G road including LA & FC under 56 RCC/32 BRTF/Project Beacon in J&K State.

1.2 Authority and Plan Provision.

The road stretch of Bandipur-Gureiz road from Wampora Bridge (Km 79.68) to Markoot bridge (Km 81.375) falling on the right side of River Kishan Ganga, which was taken over from PW(R&B) Sub Division Gureiz, Bandipura District is to be developed as per CL-9 Snow Bond Area Specification to meet the strategic requirements. Preparation of DPR for the same has been sanctioned vide HQ CE(P) Beacon letter No.750803/CE's Power/36/Estg dated 31 Jul 2020 for Rs 14.68 Lacs under Job No.217/18. Detailed survey of the road stretch has been carried out and accordingly, the present DPR is prepared for construction / improvement of the proposed road alignment of length 3.706 Kms including construction of 85 m span major pmt bridge Markoot.

1.3 History, Terrain and Climate.

The road Bandipur-Gureiz was taken over by BRO from MES during the year 1971. The road was included in the BRDB Programme vide Sectt BRDB letter No. F-4(i)/BRDB/Proj/64 dated 19 Mar 1971 for its improvement to CI-5 specifications. The road was further included for improvement from CI-5 to CI-9 specifications vide Sectt BRDB letter No.F-4(I)/BRDB/PE/C/GSWE/MP dated 11 Mar 84 based on the requirement of Army. This road is presently being maintained under scale-I maintenance grant by 56RCC/32BRTF under Project Beacon. This road is the Gateway to Ladakh via Razdhan Pass and Kaobal Gali negotiating the Shamshabari Ridge/Himalayas linking the Gureiz valley, with Mushkow valley on Drass side. This road is of vital importance since it runs close to the LOC.

The road Bandipur-Gureiz is life line for civil population living in Gureiz sector since this is the only road which connects Gureiz sector from Bandipur. This road is strategically important for Army as well civil population, due to the requirement for winter stocking and transportation of troops deployed in border areas beyond Gureiz. The road stretch of Bandipur-Gureiz road from Wampora Bridge (Km 79.68) to Markoot bridge (Km 81.375) falling on the right side of River Kishan Ganga, which was taken over from PW(R&B) Sub Division Gureiz, Bandipura District is to be developed as per CL-9 Snow Bond Area Specification to meet the strategic requirements.

The road falls at an altitude ranging from 2100-3600 Mtr and experiences heavy snow fall/rain fall. The road stretch from Km 26.00 to 84.00 remains closed to vehicle traffic due to accumulation of snow during major part of year i.e. Oct to May. Snow accumulation varies from 5-15mtr which needs to be cleared during summer for making the road trafficable so as to do advance winter stocking of ration, clothing, fuel for warming purpose etc for civilians and Army personnel deployed in Gureiz valley.

1.4 Necessity.

The road stretch of Bandipur-Gureiz road from Wampora Bridge (Km 79.68) to Markoot bridge (Km 81.375) falling on the right side of River Kishan Ganga, which was taken over from PW(R&B) Sub Division Gureiz, Bandipura District is to be developed as per CL-9 Snow Bond Area Specification to meet the strategic requirements. Necessary endorsement from MO Dte (MO-4) has already been received vide letter No.A/40076/MO4 dated 07 Apr 2020.

1.5 Engineering Survey and Investigation.

Following field survey and investigations were carried out in form of:-

- (a) Route Selection
- (b) Alignment fixed with Ghat Tracer
- (c) Auto leveling/GPS for taking longitudinal sections
- (d) Compass survey for plotting plan of road
- (e) Hill slope measured by using Abney level
- (f) Trace cutting done by means of manpower

2. Road Features.

2.1 Route Selection.

The road stretch of Bandipur-Gureiz road from Wampora Bridge (Km 79.68) to Markoot bridge (Km 81.375) falling on the right side of River Kishan Ganga is proposed to be developed to CI-9 SBA specifications with 7.45 m formation width.

2.2 Alignment.

The proposed alignment passes through mountainous terrain falling down from an altitude ranging 2401-2700 m.

2.3 Environmental Features.

The total alignment passes through forest and revenue land. Trees coming on the alignment are to be removed. Soil erosion and slope of hill side cutting will be maintained by providing breast walls in hill side and retaining walls in valley side.

2.4 Traffic.

2.4.1 Traffic Studies under taken : Yes, traffic studies have been
Carried out at Km 3.00 on B-G road

2.4.2 Latest traffic data for the sector : 606 CVD

2.4.3 Traffic Projection

:Initial traffic in the year of completion of road in terms of CVD is projected as 737CVD. Design life considered as 15 years and 5% annual traffic growth rate has been considered.

2.4.4 Design Traffic

:7.00 msa

2.5 Cross sectional Elements.

Road alignment plan, longitudinal profile and drawings showing cross section of formation cutting, layer composition of pavement works are enclosed with this DPR.

2.6 Pavement Investigation.

Soil samples were collected from the proposed road alignment and based on the test results and traffic studies pavement design has been done.

2.7 Topographic Survey.

Department has carried out the topographical survey along with the proposed road section. Major activities carried out are:-

- (a) Route Selection
- (b) Alignment fixed with Ghat Tracer
- (c) Auto leveling/GPS for taking longitudinal sections
- (d) Compass survey for plotting plan of road
- (e) Hill slope measured by using Abney level
- (f) Trace cutting done by means of manpower

3. Road Design and Specifications

3.1 Geometric Design Standards.

The relevant standards consulted include:-

- (a) IRC:5-1998 - General Features of Design
- (b) IRC:19-2001 - Survey and Preparation of DPR
- (c) IRC SP:48 (1998) - Hill Road Manual
- (d) DGBR TI No.9 - RSTC of Hill Roads
- (e) DGBR TI No.13 - Drainage for Roads
- (f) DGBR TI No.14 - Design of Flexible Pavement
- (g) DGBR TI No.18 - Linear Progress Report
- (h) IRC:37-2018 - Pavement Design
- (i) MoRT&H Specifications for Roads and Bridges (Fifth Revision-2013)

3.2 Road Design.

The proposed road traverses through mountainous terrain. The following IRC road geometric design standards have been adopted for this road:-

(a) Width of Formation	:	7.45 Mtr
(b) Width of Carriage Way	:	5.80 Mtr
(c) Gradient	:	1 in 16.7 (Ruling)
(d) Radius of Curve	:	33.00 Mtr (Absolute minimum)
(e) Design Speed	:	40 Km/Hr
(f) Super Elevation	:	7%
(g) Load Class for Bridge/Culverts	:	CI-70 R
(h) Right of Way (ROW)	:	12.00 Mtr
(i) Proposed Crust Thickness	:	565 mm
(j) Wearing Course	:	AC 40 mm

3.3 Pavement Design.

Pavement is designed in accordance with IRC 37-2018 'Guidelines for Design of Flexible Pavement'. Following design data have been considered for determining the total pavement thickness:-

(a) Design CBR	:	6.0% (80 th percentile CBR worked out from test results)
(b) CVD	:	606 CVD
(c) Initial traffic in the year of completion of project	:	737 CVD
(d) VDF	:	1.70
(e) Design Life	:	15 Years
(f) Lane Distribution Factor	:	0.75
(g) Annual Growth Rate of Traffic	:	5%

Design **msa** based on above data is worked out as under:-

$$\begin{aligned}
 \text{msa} &= 365 \times 737 \times (1+0.05)^{15-1} \times 1.70 \times 0.75 / 0.05 \\
 &= 7.40 \\
 \text{Say} &= 7.00 \text{ msa}
 \end{aligned}$$

As per Plate No.2 of IRC:37-2018, the following composition of pavements layers have been provisioned in this DPR:-

S/No	Type of Layer	Thickness of Layer	Remarks
01	GSB	150 mm	First layer
02	GSB	150 mm	Second layer
03	WBM	75 mm	First layer
04	WBM	75 mm	Second layer
05	DBM	75 mm	Single layer
06	AC	40 mm	Single layer
	Total	565 mm	

3.4 Specifications for Surfacing Works.

GSB 150 mm thick (compacted) GSB 150 mm thick (compacted) with stone aggregate conforming to grading No 1 as per Tables-400-1 of MORT&H specifications for Road and Bridge Works including supply of material, watering and compaction all complete.

WBM 75 mm thick (compacted) WBM 75 mm consolidated thickness of stone metal size 63 mm to 45 mm, grading No 1, as per Table-400-9 with type 'A' screening as per Table 400-10 and satisfying the physical requirement as per Table-400-8 of MORT&H specifications, spread, rolled, hollow made up to form true surface blinded and compacted to gradient and camber required all as specified.

DBM 75 mm thick (compacted) Providing and laying 75 mm thick DBM layer, precoated stone aggregate physical requirements/grading/mix composition as per Table - 500-8/9/10 respectively of MORT&H specifications for road and bridge works with 4.25% asphalt 80/100 penetration grade as per MoSRT&H data book and rolled to the required specification.

AC 40 mm thick (compacted) Providing and laying 40 mm thick AC on bituminous macadam layer with precoated stone chips grading confirming to Table:500-23 and mix satisfying the requirement of table 500-24 of MORT&H specifications, mixed with 5% binder asphalt 80/100 penetration grade by weight of total mix and 2% cement by weight of mix (for filler) all as specified as per MoSRT&H data book.

3.5 Typical Cross Section.

Cross section of layer composition of pavement work is enclosed with DPR.

3.6 Shoulder Treatment.

No paved shoulders are proposed in this DPR.

3.7 Design Speed.

As per IRC SP:48-1998, Design speed is considered as 40 Km/Hr.

3.8 Traffic Lanes, Carriage way width and Shoulders (Cross Section).

This road stretch has been proposed to be developed to CI-9 SBA specifications with:-

(a) Width of Formation	:	7.45 Mtr
(b) Width of Carriage Way	:	5.80 Mtr
(c) Camber	:	1.70-2.0 %
(d) Super Elevation	:	7%
(e) Right of Way (ROW)	:	12.00 Mtr

3.9 Camber/Cross Fall.

Camber of 1.7-2% has been considered in this DPR as per IRC SP:48 (1998).

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3.10 Horizontal Alignment.

The proposed road traverses through mountainous terrain. The following design parameters has been adopted in this DPR as per IRC SP:48 (1998):-

(a) Radius of Curve	:	33.00 Mtr (Absolute Minimum)
(b) Design Speed	:	40 Km/Hr
(c) Super Elevation	:	7%

3.11 Vertical Alignment.

The proposed road traverses through mountainous terrain. The following design parameters has been adopted in this DPR as per IRC SP:48 (1998):-

(a) Ruling Gradient	:	6% (1 in 16.7)
(b) Limiting Gradient	:	7% (1 in 14.3)

3.12 Road Intersection.

There is no major road intersection on this road stretch and hence no development of intersection has been proposed in this DPR.

3.13 Railway Crossing.

No Railway crossing exists in the road sector.

4. Drainage Facilities and Cross Drainage Structures.

4.1 General Condition, HPL, Water Table, Seepage Flows.

The entire stretch is along a mountainous terrain hence HFL is not relevant. No swamp/water logged stretch exists along the road stretch and little seepage water from hill sides will be taken care of by the surface longitudinal side drains.

4.2 Surface Drains, Catch Water Drains, Longitudinal Side Drains.

Catch water drains are not required as per ground condition. Longitudinal side drains have been proposed as per details given below:-

(a) Lined drain with cover	:	312.00 Mtr
(b) Lined drain without cover	:	3273.00 Mtr

4.3 Sub-Surface Drain, Blanket Courses, Etc.

Sub surface drainage has not been provisioned in this DPR.

4.4 Cross Drainage Structures.

The following cross drainage works have been proposed in this DPR:-

(a) 1.50 m Span RCC Culvert	:	02 Nos (New)
(b) 1.50 m Span RCC Culvert	:	02 Nos (1 m Extension)
(c) 2.00 m Span RCC Culvert	:	04 Nos (New)
(d) 2.00 m Span RCC Culvert	:	01 Nos (1 m Extension)
(e) 2.00 m Span RCC Culvert	:	01 Nos (Vent way repair)
(f) 6.00 m Span RCC Culvert	:	01 Nos

4.5 Major Bridges.

Construction of 85 m span Major Permanent Bridge Markoot over Kishan Ganga River at Km 2.936 (Old Location Km 81.375) 15 mtr downstream of existing 160' DDRBB has been proposed in this DPR. Hydraulic data has been submitted to Dte GBR . Final Bridge Scheme received from B&T Dte has been transferred on ground and feasibility confirmed with following parameters:-

(a) Length	:	85.00 Mtr
(b) Span arrangement	:	Single span
(c) Deck level	:	RL 100.00 Mtr
(d) Type of structure	:	Steel superstructure (through type)
(e) Foundation level	:	91.80 (Open foundation)
(f) HFL	:	RL 96.560 Mtr
(g) OWL	:	RL 93.56 Mtr
(h) LWL	:	RL 93.10 Mtr
(i) Design Discharge	:	2785.38 Cum/Sec
(j) Depth of snow	:	170 Cm
(k) Mode of execution	:	Through Execution Contract
(l) Soil composition (Foundation)	:	SMB
(m) Tentative SBC (Foundation)	:	50 Ton/Sqm (SSI recommended)
(n) River Bed	:	Bouldery

5. Materials, Labour and Plants.

5.1 Prospecting of Borrow Area of Soil with Soil Properties for Embankment as well as subgrade and lead involved.

Not applicable

5.2 Quarries of Aggregates, its Characteristics and Lead Involved.

The stone and sand required for permanent and surfacing works (non-bituminous layer) are available within a lead of 6 Kms.

5.3 Sources of Material, Water and Arrangements for Transportation etc.

The stone and sand required for permanent and surfacing works (non-bituminous layer) are available within a lead of 6 Kms. Necessary provision for royalty charges for stone and sand required has been made in this DPR based on the Govt. Notification. Water is available in nearby Nallahs. Materials required for surfacing works (Bituminous layer) are provisioned to procure through supply contract.

5.4 Labour Availability and Amenities.

Local labourers are available to some extent from nearby villages for construction. Hence imported labourers would be required for completion of task as per work load.

5.5 Bitumen.

Bitumen Grade VG-10 will be procured by the department directly from IOCL/BPCL

5.6 Cement.

Cement of all varieties and compressive strength confirming to IS specifications is available through DGS&D registered suppliers.

5.7 Reinforcement Steel.

Reinforcement steel confirming to IS specifications is available through DGS&D registered suppliers.

5.8 Equipment.

The following equipments are proposed to be utilized for the project:-

- (a) Dozer D-80 and D-50
- (b) Tracked excavator
- (c) Air compressor
- (d) Jack Hammer with accessories
- (e) JCB
- (f) Concrete Mixer and Vibrators
- (g) Paver Finisher
- (h) Hot Mix Plant
- (i) Static Road Roller
- (j) Vibratory Road Roller
- (k) Tipper/Dumper/Load Carriers
- (l) Water Pump
- (m) Water Bowser with water sprinkling system
- (n) Motor Grader

6. Miscellaneous Informations/Provisions.

6.1 Rates adopted

The present DPR has been priced based on DGBR SSR 2016, Zone 'J', All CPLs, Altitude between 2401 to 2700 Mtr for departmental works. Cost of bridge proper has been considered based on the per mtr rate as per DGBR Bridge SSR 2019. Cost of proof checking of design & Drawing of bridge is incorporated in this AE as per HQ DGBR letter No. 44001/DGBR/HMK/Policy/J&K Dte dated 16 Feb 2015.

6.2 Road lift Charges

Road lift charges for all stores have been catered for in this DPR as per DGBR letter No.F-63(21)/BRDB/90/P-II dated 22 Apr 1993.

6.3 Escalation Charges

Provision of escalation charges @ 15.44% has been made in this DPR as per HQ DGBR letter No. 33733/DGBR/SSR-16/29/D&S dated 02 Jul 2019. However, the revised rate of escalation may be catered accordingly on receipt of confirmation from HQ DGBR.

6.4 Physical Contingency Charges

Provision of physical contingency charges @ 5% of estimated cost of work has been made in this DPR as per Sectt BRDB letter No. F-62(Gen)/Project/CCO/GOI dated 08 Apr 1993.

6.5 Quality Control Charges

Quality Control Charges have been provisioned @ 1.0% in this DPR as per DGBR SSR 2016.

6.6 Royalty Charges

Royalty Charges for stone and sand for works being executed through departmentally have been considered in this DPR based on the Govt. of J & K SRO No. 03 dated 06 Jan 2016.

6.7 Extra TPT Charges

Extra TPT Charges for stone and sand has been provisioned in this DPR.

6.8 Labour Cess Charges

Labour Cess Charges @ 1% has been provisioned in this DPR as per HQ DGBR letter No 18324/Payment of cess/DGBR/52/T&C dated 05 May 2011.

6.9 Credit for GREF Tradesmen

Credit for deployment of GREF Tradesmen in place of CP Tradesmen has been made in this DPR as per General Rule 9 of DGBR SSR 2016.

6.10 Credit for Pioneers

Credit for deployment of Pioneers in place of CPLs has been made in this DPR as per HQ DGBR letter No. 33733/DGBR/SSR-2016/31/D&S dated 29 Jul 2019.

6.11 Contract Provision

Construction of 85 m span major permanent bridge has been planned to be executed through execution contract. Materials required for surfacing works (bituminous layer) has been proposed to be procured through supply contract.

7. Construction Planning.

7.1 Working Season and Planning for Execution

The area is susceptible to heavy snow fall and snow accumulation. Working period is only 06 months from May to October. The works included in this DPR are planned for overall completion by the year 2023.

7.2 Schedule of Completing the work

The work is planned for completion as per PDC

7.3 Construction Methods and Mode of Execution

The proposed alignment is passing through mountainous terrain. The total alignment passes through forest and revenue land. The construction works may be carried out from both sides of the stretch.

The construction method would include proper equipment, plant and machinery for achieving quality and efficiency; these are dealt in project implementation plan and equipment of machinery.

Construction of 85 m span major permanent bridge has been planned to be executed through execution contract. Formation, Permanent and Surfacing works are planned to be executed departmentally with materials required for surfacing works (bituminous layer) through supply contract.

8. Miscellaneous.

8.1 Road Side Accommodation

Camp/Dett for GREF personnel is available at Dawar location (2.420 Km distance from end point of work). However, some accommodation is required to be established for accommodating of GREF Camp, CPLs Camp etc for smooth execution of work. Hence road side accommodation has been provisioned in this DPR.

8.2 Road Side Plantation, Turfing, Landscaping etc.

The total alignment passes through forest and revenue land. Trees coming on the alignment are to be removed. Soil erosion and slope of hill side cutting will be maintained by providing breast walls in hill side and retaining walls in valley side. Necessary provisions have been made in this DPR. Details of Forest and Revenue land involved is as under:-

(a) Forest Land	-	1.016 Kms
(b) Revenue Land	-	1.920 Kms

Cost of Forest land and Revenue land yet to be received from concerned authorities.

8.3 Guard Rails, Informatory Sign Boards, Traffic Control Devices.

There is no provision has been made in this DPR.

8.4 Diversion of Land and Traffic Arrangement during Work.

The entire alignment passes through forest and revenue land. Hence, land is required to be transferred from Forest Department/Revenue Authorities.

8.5 Profile Corrective Coarse.

Profile correction work has been provisioned in this DPR wherever required.

9. Economic Appraisal.

9.1 Rough Cost of Work

The cost of the project works out to **Rs 3954.56 Lacs**. For details of cost please refer Cost Estimate Part-I and Part-II of this DPR.

9.2 Rough Cost of Work

The item wise cost of the project as per cost estimate is as follows:-

S/ No	Item of work	A/U	Departmental Execution	Execution Contract	Total
(a)	Cost of Formation works	Rs in Lacs	211.73	-	211.73
(b)	Cost of Permanent works	Rs in Lacs	797.12	-	797.12
(c)	Cost of Surfacing works	Rs in Lacs	1553.95	-	1553.95
(d)	Cost of Bridge works	Rs in Lacs	-	1001.01	1001.01
(e)	Cost of LA/FC works	Rs in Lacs	390.75	-	390.75
	G/Total	Rs in Lacs	2953.55	1001.01	3954.56

9.3 Scope of Works:DPR

S/No	Item of work	Total Scope
(a)	Cost of LA/FC	
	(i) Cost of LA and FC	Rs 390.75 Lacs
(b)	Formation Works	
	(i) Jungle Clearance	9157.00 Sqm
	(ii) Formation cutting in SMB	68960.87 Cum
	(iii) Embankment filling	2257.23 Cum
	(iv) Disposal of excavated earth	66703.64 Cum
	Formation in Km Eqvt CI-9	4.291 Km Eqvt CI-9
	Cost of Formation Work	211.73 Lacs
(c)	Surfacing Works	
	(i) Preparation of Subgrade in SMB	20565.60 Sqm
	(ii) GSB 150 mm thick	41131.10 Sqm
	(iii) WBM 75 mm thick	43719.90 Sqm
	(iv) DBM 75 mm thick	20784.90 Sqm
	(v) AC 40 mm thick	20784.90 Sqm
	(vi) Prime Coat	20784.90 Sqm
	(vii) Tack Coat	41569.80 Sqm
	Surfacing in Km Eqvt CI-9	10.18 Km Eqvt CI-9
	Cost of Surfacing Work	1553.95 Lacs
(d)	Permanent Works	
	1 Retaining Walls (in BM)	
	(i) 4.00 m Height	28.00 Mtr

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	2	<u>RCC Culverts</u>	
	(i)	1.50 m span (New)	02 Nos
	(ii)	1.50 m span (1.00 m extension)	02 Nos
	(iii)	2.00 m span (New)	04 Nos
	(iv)	2.00 m span (1.00 m extension)	01 Nos
	(v)	2.00 m span (Vent way repair)	01 Nos
	(vi)	6.00 m span (New)	01 Nos
	3	<u>Toe Walls (in CM)</u>	
	(i)	1.50 m Height	16.00 Mtr
	4	<u>Breast Walls (in BM)</u>	
	(i)	2.00 m Height	144.00 Mtr
	(ii)	2.50 m Height	104.00 Mtr
	(iii)	3.00 m Height	48.00 Mtr
	5	<u>Lined Drain</u>	
	(i)	Lined drain with Cover	312.00 Mtr
	(ii)	Lined drain without Cover	3273.00 Mtr
	6	<u>Road Furniture</u>	
	(i)	5 th Km Stone	01 Nos
	(ii)	Ordinary Km Stone	03 Nos
	(iii)	Sub Km Stone	14 Nos
		Cost of Permanent Work	797.12 Lacs
(e)	Bridge Works		
	(i)	85 m Span Major Pmt Bridge	01 Nos
		Cost of Bridge Work	1001.01 Lacs
(f)	Overall Cost of Works		3954.56 Lacs

9.4 Snow Clearance and Maintenance during Construction

The entire alignment is susceptible to heavy snow fall. The working season available is from May to October and the axis will be closed during rest of the period due to snow accumulation.

10. Other Information.

10.1 Estimating of Quantities

The estimating of quantities for all items of work is based on the detailed drawings being submitted as part of Detailed Project Report (DPR). The earth work quantities and other different items of work have been computed using MS Excel Work Sheet.

The computed quantities and cost are presented under following major heads:-

- (a) LA and FC
- (b) Bridge Works
- (c) Formation Works
- (d) Permanent Works
- (e) Surfacing Works

10.2 Land Acquisition and Utilities

No shifting of utilities involved. As the proposed entire road alignment passes through Forest and Revenue Land. Cost of LA and FC has been provisioned in this DPR. Final approval for Forest Clearance is to be received.

11. Conclusion.

The road stretch of Bandipur-Gureiz road from Wampora Bridge (Km 79.68) to Markoot bridge (Km 81.375) falling on the right side of River Kishan Ganga, which was taken over from PW(R&B) Sub Division Gureiz, Bandipura District is to be developed as per CL-9 Snow Bond Area Specification to meet the strategic requirement. Necessary endorsement from MO Dte (MO-4) has already been received vide their letter No.A/40076/MO4 dated 07 Apr 2020.

The work for Construction / improvement of alternate alignment of Bandipur-Gureiz (B-G) road from Km 79.680 to Km 84.125 to CL-9 SBA specifications and construction of 85 mtr span Markoot Pmt Bridge at Km 81.375 on realignment portion of B-G road including LA & FC under 56 RCC/32 BRTF/Project Beacon in J&K State has been included in AWP 2020-21 at Srl No.13.

The works proposed in this DPR are the minimum essential as per ground conditions. Accordingly, The DPR for subject work amounting to **Rs 3954.56 Lacs** has been framed. It is recommended that the subject DPR may be processed and sanctioned at the earliest.

Station:C/O 56 APO

Dated: 10 Sep 2020



(Brijesh BN)

Major

Officer Commanding

RESTRICTED
APPROXIMATE ESTIMATE
PART-I


Name of State : Jammu and Kashmir

Name of Unit/Project : 56 RCC/32 BRTF/BEACON

Name of work :

CONSTRUCTION / IMPROVEMENT OF ALTERNATE ALIGNMENT OF BANDIPUR-GUREIZ (B-G) ROAD FROM KM 79.68 TO KM 84.125 TO CL-9 SBA SPECIFICATIONS AND CONSTRUCTION OF 85 MTR SPAN MARKOOT PMT BRIDGE AT KM 81.375 ON REALIGNMENT PORTION OF BG ROAD INCLUDING LA & FC UNDER 56 RCC/32 BRTF/(P) BEACON IN J & K (UT).

S/ No	ITEMS OF WORKS	Cost of LA/ FC (RS)	85 Mtr span Markut Bridge	FMN Works (Rs)	PMT Works (Rs)	SURF Works (Rs)	Total (Rs)
(A)	Work Assessed as per SSR 2016						
1	Cost of works	39075320.00	99110000.00	17678417.00	50821474.00	120874585.00	327559796.00
2	Road Lift Charges	0.00	0.00	282990.00	13910342.00	8584696.00	22778028.00
3	Extra TPT Charges	0.00	0.00	0.00	24336.00	0.00	24336.00
4	Credit for PNR	0.00	0.00	-629022.00	-565672.00	-614304.00	-1808998.00
5	Deduct cost of material as per SSR	0.00	0.00	0.00	0.00	-6526446.00	-6526446.00
6	Credit for GP Tradesmen	0.00	0.00	-505627.00	-1010343.00	-460986.00	-1976956.00
7	Deduct cost of bridge through execution contract	0.00	-99110000.00	0.00	0.00	0.00	-99110000.00
	Total (A)	39075320.00	0.00	16826758.00	63180137.00	121857545.00	240939760.00
(B)	Escalation Charges						
1	Add Escalation Charges @ 15.44% during 2020-21 & 2021-22	0.00	0.00	2598051.00	9755013.00	18814805.00	31167869.00
	Total (B)	0.00	0.00	2598051.00	9755013.00	18814805.00	31167869.00
	Total (A) + (B)	39075320.00	0.00	19424809.00	72935150.00	140672350.00	272107629.00
(C)	Following charges on (A + B)						
1	Add @ 1% for Quality Control Charges	0.00	0.00	194248.00	729352.00	1406724.00	2330324.00
2	Add @ 5% for Physical Contingencies Charges	0.00	0.00	971240.00	3646758.00	7033618.00	11651616.00
3	Add @ 2% for Road Side Accn	0.00	0.00	388496.00	1458703.00	0.00	1847199.00
4	Add @ 1% for Labour Cess Charges	0.00	0.00	194248.00	729352.00	1406724.00	2330324.00
	Total (C)	0.00	0.00	1748232.00	6564165.00	9847066.00	18159463.00
(D)	Cost of contract						
1	Cost of execution contract for bridge	0.00	99110000.00	0.00	0.00	0.00	99110000.00
2	Cost of materials through supply contract	0.00	0.00	0.00	0.00	4295662.00	4295662.00
3	Add @ 1% for Quality Control Charges	0.00	991100.00	0.00	0.00	42957.00	1034057.00
	Total (D)	0.00	100101100.00	0.00	0.00	4338619.00	104439719.00
(E)	Royalty Charges	0.00	0.00	0.00	212404.00	536741.00	749145.00
	G/Total (A to E)	39075320.00	100101100.00	21173041.00	79711719.00	155394776.00	395455956.00
	Say ` in Lacs	390.75	1001.01	211.73	797.12	1553.95	3954.56


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DETAIL OF LAND ACQUISITION / FOREST CLEARANCE

Sl/No.	Location in km (New)		Forest land			Revenue land			Army land			Remarks
	From	To	Length in mtr	Breadth in mtr	Area in sqm	Length in mtr	Breadth in mtr	Area in sqm	Length in mtr	Breadth in mtr	Area in sqm	
(A)	Land required for road work											
	0.000	1.920				1920.00	12.00	23040.00				Widening/Regrading
	1.920	2.936	1016	16.75	17018.00							Widening/Regrading
	Total (A) :-		1016		17018	1920.00		23040.00			0.00	

COST OF FOREST COMPENSATION (ANTICIPATED)

a. Land required for road work			
(i) Forest land			
Area in sqmtr	17018.00		
Area in Hectare	1.702		
Rate/Hect (in Lacs)	9.91		
Total (i) :-	16.87	Lacs	
(ii) Revenue land			
Area in sqmtr	23040.00		
Area in Hectare	2.304		
Area in Kannal	46.080		
Rate/Kanal (in Lacs)	8.04		
Total (ii) :-	370.48	Lacs	
G/Total (a) :-	387.35	Lacs	
c. Land required for disposal of earth			
(i) Forest land			
Area in sqmtr	0.00		
Area in Hectare	0		
Rate/Hect (in Lacs)	9.91		
Total (i) :-	0.00	Lacs	
(ii) Revenue land			
Area in sqmtr	0.00		
Area in Hectare	0		
Rate/Hect (in Lacs)	8.04		
Total (ii) :-	0.00	Lacs	
G/Total (c) :-	0.00	Lacs	

d. Compenstaion afforestation

(i) Forest land		
Area in sqmtr	34036.00	
Area in Hectare	3.4	
Rate/Hect (in Lacs)	1.00	
Total (i) :-	3.40	Lacs
G/Total (d) :-	3.40	Lacs

Summary

Sl No.	Item	A/U	Area/Nos	Amount in Lacs
1	Land for forest clearance	Hectare	1.702	16.87
2	Land for compensation afforestation	Hectare	3.400	3.40
3	Trees involved	Nos	0	0
4	Land for Acquisition		46K 02M	370.48
	G/total :-			390.75
Amunt already sanctioned				0.00
	Net amount of Revenue land			390.75

Say

39075320.00



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