RESTRICTED

STATEMENT OF CASE

DPR FOR CONSTRUCTION/IMPROVEMENT TO NHDL SPECIFICATION DAYALCHAK-RAMKOT (CHALLAN) ROAD BETWEEN KM 8.00 TO KM 25.421 (NET LENGTH 17.421 KM) INCLUDING SHIFTING OF UTILITIES IN J&K (UT)

1. PRELIMINARY

1.1 Back Ground

1. The road Dayalchak-Challan (Ramkot) has been op endorsed by Directorate of Military Operations (MO4) General Staff for Construction / Improvement by BRO (GREF) in the area of responsibility of Project Sampark. The length of road is 24.925 Kms.

2. Road Dayalchak-Challan (Ramkot) takes of from Dayalchaki.e Km 43.00 on road Pathankot-Jammu (Jammu-NH1A) and terminate at Challan (Ramkot) i.e at Km 72.925 on road Dhar-Udhampur. The road portion from Dayalchak to village DingaAmb measuring 10 Kms was constructed by J&K state PWD in year 1954-62 and was being maintained till the physical handing over of the road to the BRO during the Feb 1993. The remaining road portion between km 10 to Km 25.421 from DingaAmb to Challan was originally constructed by CPWD as service road for transportation of materials for the construction of Dhar-Udhampur road was later handed over to the J & K state PWD during the year 1974-75. This road portion was re-aligned and constructed up to the motorable specification and was being maintained by the J&K state PWD till the physical handing over of the road to BRO during Feb 1993. The complete road sector from Km 0 to Km 25.421 was taken over by BRO project Sampark during Feb 1993 from J & K state PWD. The road was maintained by BRO project Sampark from Feb 1993 to 04 Dec 2001 and after then 04 Dec 2001 Road was again handed over to state PWD J & K.

3. The road has again taken over by in the name of BRO from state PWD on 17 June 2020.

4. This road is being extensively used by Army & Civil traffic as shortest route from Dayalchak to Udhampur as it will be shorter by 25 Kms when compare width NH-1A (Via Jammu).

This DPR is initiated for improvement of the road Dayalchak to Ramkot (Challa) roadincluding construction of Bridges bet Km 8.00 to Km 25.421.

1.2 Proposal

DPR amounting to Rs 9695.46 Lakh is initiated for obtaining sanction for construction/improvement of Dayalchak-Ramkot road from Cl-09 to NHDL specification between km 8.00 to km 25.421 including 03 Nos bridge as per AWP 2021-22 **at S/No 67.**

1.3 Necessity/ Justification

The road is included in the BRDB Programme of Ministry of Defence (MOD) Border Roads. At S/No 66LTROWP and work is planned in AWP BE 2021-22 at Sr No **67.**

The riding surface of this road Dayalchak - (Challan) Ramkot is badly damaged and causing in-convenience to road users. Road surface in town and village area have damaged due to plying of heavily loaded vehicles and army vehicles are plying on this road to Udhampur / Srinagar due to short distance. The carriageway between km 8.00 to Km 25.421 is Cl-9 specification. Hence, the CL- 9 road has to be improved in NHDL specification. Due to increase

in intensity of vehicle traffic and condition of road. Thickness of crust catered 490 mm as per design specification IRC -37 2012.

1.3 Terrain, climate, rainfall, snowfall, topographical and geological feature of area

The whole alignment of road passes through rolling/ mountainous terrain.

1.3.2 Climate condition

Temperature of this area varies from 1^0 C to 45^0C Max temperature is recorded during June and minimum temperature is recorded during January.

1.3.3 Rainfal

Rainfall data are enclosed in Appendix '___'

1.3.4 Snowfall data

The area does not experience Snowfall.

1.3.5 Fog condition

The area experiences heavy fog during the winter i.e Dec and Jan in the year.

1.3.6 General topographical and geological feature of the area.

The details are as under:-

(a) Soil condition is generally varying nature. It comprises mainly SMB soil and Soft rock in large portion.
(b) Geology of the area is stable.
(c) There are 03 Nos Nallah namely Thander at KM 9.120, Masa at KM 9.450, Benadi at KM 9.800 crossing the road.
(d) There are Cliff and Gorges existing in this proposed estimate sector.
(e) The area is non-susceptible to flooding.
(f) Altitude of this sector varies from 375 Mtr to 800mtr.
(g) There are ascents and descents in this alignment.
(h) No marshylands and water logged area is involved in this sector.
(i) The road passes though Plain/rolling terrain & hence no landslides, avalanches and snow drift are observed in thearea..
(j) Seismic records are not available and hence not given. Area falls in seismic zone IV.

1.3.7 Important villages, towns and marketing centers to connected (KM 8.00 to KM 25.421

The following villages falls in J&Kon this road (Estimate stretches):-

(i) J&K (UT)

a)	Challa	Km 7.700
b)	Ding Amba	Km 10.00
c)	They	Km 17.500
d)	Galak	Km 21.000 to KM 22.00

1.3.8 Railway Crossing

The road is crossing railway line at KM 0.200 through ROB constructed at this Loc.

1.3.9 Exposure of sun

Most of the days are sunny except during foggy and rainy days.

2. LAND ACQUISION/FC

2.1 No land Acquisition/Compensation is involved as work is proposed in existing ROW and 75 Ft land available in both side from center line.

2.2 Forest case involved and cost of forest clearance is catered in this DPR.

2.3 Shifting of utility services

Shifting of Electric Line and Shifting of water pipe lineof PHE are catered in this DPR.

2.4 Compensation of crop and fruits etc

No Compensation towards agricultural land, irrigated land and cost of private trees and fruits falling in the stretch (Km 8.00 to Km 2.421) is involved in this DPR.

2.5 Details of forest/environment clearance and action taken

BRO Projects are exempted from obtaining the environments clearance as per Govt of India letter NoJ-21012/11/99-IA-III 22 Dec 2000.Forest land is involved in the some portion of the this stretches alignment for which cost compensation have been catered.

3. STRATEGIC CONDITION IF ANY

3.1 Aspects needing coordination with civil/military authorities

No Co-ordination for land acquisition proceeding is required.

3.2 Sensitive border activities, if any

This road will enhance defence capability of Armed forces deployed in J&K (UT)to counter the antinational activities.

3.3 Hostile activities if any

Yes, the entire road sector is in moderate hostile area.

3.4 Recreation potential available / involved

No recreational potential is available/involved.

4.TOPOGRAPHICAL AND GEOLOGICAL FEATURES

Same as Para 1.3.6.

5.ROAD FEATURES, DESIGN AND SPECIFICATION

5.1Existing and proposed fmn and carriageway width

The existing specification of the road formation from Km 8.00 to Km 25.421 is Class - 9 specification having carriage way width 3.75 Mtr to be constructed in NHDL specification 7.0 mtr carriage way width.

5.2Existing and proposed gradient.

Proposed gradient are as per Dte letter 21801/PC/DGBR/41/TP (Plg) dated 12 Jan 2017.

(i) Ruling gradient3.3%
(ii) Limiting gradient 5%
(iii) Exceptionalgradient 6.7%.

5.3 Proposed camber and super elevation

The cross fall/camber as has been considered from km 8.00 to km 25.421 as2.5% and super elevation 7% as per DGBR TI No.1 (1991).

5.4 Design speed and minimum sight distance

Design speed 60 KM/Hrs (Ruling) & 40 KM/Hrs (Minimum) and Sight distance as per DGBR TI No.01 (1991) and Dte letter 21801/PC/DGBR/41/TP (Plg) dated 12 Jan 2017.

5.5. Description and design of drainage work

RCC culvert has been considered as per IRC SP-13 2004 and Pocket books for Highway Engineers and lined drain proposed in SMB /Soil stretches in Box cover type as per site requirement.

5.6 Specifications for retaining structure

Design of R/B/T wall has been considered in PCC M-10 GDE.

5.7 Particulars of existing structures if any

Existing structures are with RRM and same will be replace as per Para 5.6 and Para 5.5.

5.8 Design of intersection

There are no intersection structure required for construction.

5.9 Existing and proposed side slopes for hill cutting

Existing and proposed side slopes for 65° in SMB and SR cutting portion and 85° in HR cutting portion.

5.10 In case of embankment

(i) Floodability and water logging etc not involved in this sector.

(ii) River bed materials will be used for subgrade/embankment.

6. SCOPE OF WORK

6.1 Broad description of various item catered in scope

The present estimate covers the following scope of works:-

Sl No	Items	A/U	Quantity	Remarks
A	**Fmn Works**			
1	Jungle clearance	10 Sqm	10115.04	
2	Rough excavation in soil/soil mixed with small boulders,	Cum	353554.34	
3	Rough excavation in SR	Cum	204748.17	
4	Rough excavation in HR	Cum	29211.58	
5	Earthwork in embankment by filling	Cum	174374.14	
6	Un-lined Drain in SR	RM	2865.00	
7	Un-lined drain in HR	RM	433.60	
8	The rates for carriage of all type of materials	MT Km	2300941.00	
B	**Pmt Works**			
1	Dismantling of Structures	Cum	830.62	
2	Excavation in SMB	Cum	66745.29	
3	Hard core	Cum	177.59	
4	Plain cement concrete 1:4:8	Cum	7126.27	
5	Plain cement concrete 1:3:6	Cum	57801.29	
6	Plain cement concrete 1:2:4	Cum	11243.16	
7	Reinforced cement concrete 1:2:4 (M-15)	Cum	2695.02	
8	Reinforced Cement concrete M-20	Cum	982.08	
9	Reinforced Cement concrete M-25	Cum	759.73	
10	Reinforced Cement concrete M-30	Cum	186.56	
11	Centering/Shuttering	10 Sqm	13608.57	
12	Laying reinforcement up to 12 mm	100 kg	2805.13	
13	Laying reinforcement bars above 12 mm	100 kg	189.28	
14	HPS Filling	Cum	20689.64	
15	Earthwork in embankment by filling	Cum	238.23	
16	Cost of steel	KG	299441.16	
17	Providing/laying of weep holes of size 4"x4"x1 Mtr using PVC pipe 4" dia	Mtrs	36960.16	
18	White Washing	10Sqm	403.64	
20	Providing and fixing ordinary KM stone	No	17.00	

21	Providing and fixing sub KM stone	No	68.00	
22	Providing and fixing of 5th KM stone	No	4.00	
23	Providing and erecting a 'W' metal beam crash barrier	Mtr	4188.00	
24	Supply of fabricated tubular structure Over head gantry	Nos	2.00	
25	Providing and fixing Warning/Mandatory road signs board	Nos	68.00	
C	**Surf Works (Depttl)**			
1	Scarifying existing BT surface	10 Sqm	6638.00	
2	Preparation of sub-grade in SMB	10 Sqm	14840.10	
3	Preparation of sub-grade in SR	10 Sqm	2483.30	
4	Preparation of sub-grade in HR	10 Sqm	378.00	
5	GSB 15 cm thick	10 Sqm	17701.30	
6	GSB 10 cm thick	10 Sqm	13165.72	
7	Earthwork in embankment by filling	Cum	16197.00	
8	Cat eye	Nos	3746.00	
9	Road marking with thermoplastic paint (2.5 mm thick)	10 Sqm	421.50	
10	Supplying and installation of delineators (900 mm)	Nos	1200.00	
D	**(Surfacing works Execution Contract rate taken as per SSR 2016)**			
1	WMM 75 mm Thick in 02 Layer	10 Sqm	26447.60	
2	Providing and applying primer coat	10 Sqm	13223.80	
3	Providing and applying tack coat	10 Sqm	25989.20	
4	Providing and laying 50 mm thick compacted DBM	10 Sqm	12994.60	
5	Providing and laying 40 mm thick BC	10 Sqm	12994.60	
B	**Bridges Works**			
A	**Departmental Bridges**			
a	**Thander MCBB 60.40 MTR at KM 9.120**			
1	Earthwork in embankment by filling	Cum	64.04	
2	Excavation in trenches	Cum	3493.98	
3	Plain cement concrete 1:4:8	Cum	289.46	
4	Plain cement concrete 1:3:6	Cum	163.08	
5	Plain cement concrete 1:2:4	Cum	144.96	
6	RRM 1:4	Cum	137.72	
7	Stone Paving CM 1:3	Cum	72.48	
8	Staging and shutting for M35	Cum	579.84	
9	Centering/Shuttering	10 Sqm	344.801	
10	Laying reinforcement upto 12 mm	100 Kg	783.921	

H	**Retaining walls, B/Walls & T/Walls**		
1	T/Wall (8 x 2) (PCC 1:3:6)	Nos	71
2	B/wall(8 x 2) (PCC 1:3:6)	Nos	494
3	B/wall(8 x 3) (PCC 1:3:6)	Nos	150
4	R/wall(8 x 1.50) (PCC 1:3:6)	Nos	12
5	R/wall(8 x 2) (PCC 1:3:6)	Nos	68
6	R/wall(8 x 2.5) (PCC 1:3:6)	Nos	73
7	R/wall(8 x 3) (PCC 1:3:6)	Nos	78
8	R/wall(8 x 3.5) (PCC 1:3:6)	Nos	125
9	R/wall(8 x 4) (PCC 1:3:6)	Nos	218
10	R/wall(8 x 5) (PCC 1:3:6)	Nos	151
11	R/wall(8 x 6) (RCC M20)	Nos	36
I	**Lined drain**		
1	Lined drain covered	Mtrs	5262.00
2	Lined drain without cover	Mtrs	1680.00
J	**Road furniture items**		
1	Fifth Km stone	Nos	4
2	Ord Km Stone	Nos	17
3	Sub Km Stone	Nos	68
4	Overhead Gantry	Nos	2
5	Road Sign post	Nos	68
6	W-Beam crash barrier	Mtr	4188
7	Delineator 900mm	Nos	1200

7 SOIL INVESTIGATIONS

7.1 Soil test resultincluding CBR

The Soil test have been carried out by Field Lab sec western sector (GREF) and result are attached at Appendix ___.Average CBR value 10.00 has been considered in this DPR.

7.2 Location borrow area for soil where applicable

Materials required for embankment filling and GSB works are collected from nearby quarry and quarry chart is attd with DPR.

8.1 Details of cross drainage/surface drainage with drawing and design

RCC culvert has been considered as per IRC SP-13 2004 and Pocket books for Highway Engineers and lined drain proposed in SMB /Soil stretches in covered drain. Details of cross drainage/surface drainage with drawing and design are attached.

9. TRAFFIC

9.1 Volume of traffic as per format given in IRC- 9 to be enclosed in DPR

Details are enclosed with DPR at page No._____

12	Cost of Steel	Kg	80893.54	
13	Stone pitching	Cum	263.50	
14	RCC M-35	Cum	987.74	
15	Fixing of Expansion Joint	Mtr	24.00	
16	Fixing of Drainage Spout	Nos	06.00	
17	White washing	10 Sqm	12.873	
18	Painting (2coats)	10 Sqm	12.873	

E	**Shifting of Utilities**	A/U	Amount	
1	Cost of shifting of electric utilities received from electric dept Kathua vide letter No. KED/TS/3950-52 dt 25 Nov 2021	Rs	30965000.00	
2	Cost of shifting of water pipe lines received from PHE dept Kathua vide letter No. PHEK/C 5742-46 dt 14 Aug 2021	Rs	11040000.00	
3	DFO Cost of Forest clearance and cutting trees	Rs	30000000.00	Tentative cost
4	Cost for shifting of BSNL cable received vide letter No.	Rs	24421115.00	

Structure wise details are given below-

F	**Bridges**				
Structure wise details are given below-					
S/No	**Loc**	**Proposed Span**	**Type of Bridge**	**Mode of execution**	**Rate Applied**
1	At Km 9.120	60.40 M	MCBB	Excution Departmental	SSR - 2016
2	At Km 9.450	60.40 M	MCBB	Excution Departmental	SSR - 2016
3	At Km 9.800	30.20 M	MCBB	Excution Departmental	SSR - 2016

Hydraulic data details (Approved) as fallows:-

F	**Bridges**			
S/No	**Loc**	**Proposed Span**	**Type of Bridge**	**HYD data appd FBS received through HQ DGBR DWG No.**
1	At Km 9.120	60.40 M	MCBB	Hyd data submitted by RCC and approval of competent authority awaited
2	At Km 9.450	60.40 M	MCBB	
3	At Km 9.800	30.20 M	MCBB	

G	**Cross section drainage works**		
S/No	**Description**	**A/U**	**Total Qty**
1	RCC Culvert 2.0 m Span 12.0 m Length	Nos	49
2	RCC Culvert 3.0 m Span 12.0 m Length	Nos	21
3	RCC Culvert 6.0 m Span 12.0 m Length	Nos	3

11	Laying reinforcement above 12 mm	100 Kg	806.790	
12	Cost of Steel	Kg	159071.10	
13	Stone pitching	Cum	527.84	
14	RCC M-35	Cum	1934.03	
15	Fixing of Expansion Joint	Mtr	48.00	
16	Fixing of Drainage Spout	Nos	12	
17	White washing	10 Sqm	25.746	
18	Painting (2coats)	10 Sqm	25.746	
b	**Masa MCBB 60.40 MTR at KM 9.450**			
1	Earthwork in embankment by filling	Cum	64.04	
2	Excavation in trenches	Cum	3918.06	
3	Plain cement concrete 1:4:8	Cum	289.46	
4	Plain cement concrete 1:3:6	Cum	163.08	
5	Plain cement concrete 1:2:4	Cum	144.96	
6	RRM 1:4	Cum	137.72	
7	Stone Paving CM 1:3	Cum	72.48	
8	Staging and shutting for M35	Cum	579.84	
9	Centering/Shuttering	10 Sqm	296.987	
10	Laying reinforcement upto 12 mm	100 Kg	788.174	
11	Laying reinforcement above 12 mm	100 Kg	806.710	
12	Cost of Steel	Kg	159496.42	
13	Stone pitching	Cum	527.00	
14	RCC M-35	Cum	1934.03	
15	Fixing of Expansion Joint	Mtr	48.00	
16	Fixing of Drainage Spout	Nos	12.00	
17	White washing	10 Sqm	25.746	
18	Painting (2coats)	10 Sqm	25.746	
c	**Benadi MCBB 30.20 MTR at KM 9.800**			
1	Earthwork in embankment by filling	Cum	32.02	
2	Excavation in trenches	Cum	1899.59	
3	Plain cement concrete 1:4:8	Cum	144.73	
4	Plain cement concrete 1:3:6	Cum	81.54	
5	Plain cement concrete 1:2:4	Cum	72.48	
6	RRM 1:4	Cum	68.86	
7	Stone Paving CM 1:3	Cum	36.24	
8	Staging and shutting for M35	Cum	289.92	
9	Centering/Shuttering	10 Sqm	149.868	
10	Laying reinforcement upto 12 mm	100 Kg	405.540	
11	Laying reinforcement above 12 mm	100 Kg	403.40	

9.2 Traffic projections

Minimum annual growth rate of commercial vehicle is 5% as per IRC SP 73.

9.3 Justification of proposed CBR curve/MSA as applicable

Details of number of commercial vehicle per day (CVD) is attached at Page No.____

9.4 In case of new road CBR curve can be adopted as the minimum

This is existing road and proposed for construction to NHDL specification.

10. PAVEMENT DESIGN AND SHOULDER TREATMENT

10.1 Pavement design and shoulder treatment

The crust thickness of Pavement has been designed as per CBR value of the sub grade and projected cumulative traffic volume for the design period of 15 year. The design traffic is 10.00msa as per traffic census carried out during 28 Sep 2020 to 05Oct 2020.Plate No7 ofIRC 37-2012 for 10 MSA referred for crust composition as under.

Sl No.	Crust Thickness	Avg CBR Value considered	GSB 15Cm (Ist Layer full width in 12 mtr	GSB 10 Cm 2nd layer in width 7.60 mtr	WMM 7.5 Cm in two Layer	DBM 5cm	BC 4Cm	Remarks
1	490	10	150	100	150 mm (75mm each layer)	50	40	Designed through IIT Paved software and copy attached with DPR

11. MATERIAL

11.1 Prospective borrows areas with properties of soil for embankment as well as subgrade and lead involved

Details of quarry location and extra lead required for transportation for constructional material is enclosed.

11.2Locationand name of quarries for aggregate its characteristics

Details for lead and quarries are enclosed with this DPR.

11.3 Mode of execution/procurement of materials:

(i) Material of Pmt work has been proposed through supply of material contract.

(ii) Surf work like WMM, DBM,BC, prime coat and tack coat have been proposed through execution contract.

(iii) Material for GSBC has been proposed through departmental collection.

11.4 Soil and material result

CBR test result is attached at Appendix.____.

12. LABOUR AND EQUIPMENT

12.1 Availability of labour and equipment

Local & migrant labour are available to complete the work and required equipment are also available for this work.

13 RATE

13.1 SSR, Zone

This DPR is prepared based on SSR 2016 with all CPL Zone "E"and altitude upto 2100 Mtr.

14. PROGRAMME OF CONSTRUCTION

14.1 Year wise split up work

Year wise Planning of work is as under:-

	PLANNING							
	FMN		PMT		Maj Br		SURF	
Total scope	Phy	%age	Phy	%age	Phy	%age	Phy	%age
	51.61	100%	3619.95	100%	151	40%	58.38	100%
Year-wise planning								
2021-22	15.483	30.00%	362.00	10.00%	30.2	20%	-	0.00%
2022-23	25.805	50.00%	1447.98	40.00%	120.8	80%	23.35	40.00%
2023-24	10.322	20.00%	1809.98	50.00%	-		35.03	60.00%
Total scope	**51.61**	**100%**	**3619.95**	**100%**	**151**	**100%**	**58.38**	**100%**

14.2. APPROXIMATE COST

The financial effect of this DPR will be 9695.46 Lakh.

5. SCOPE OF FMN EQVT CL-9, PMT WORK IN LAKH

Fmn CL-9 Eqvt CL-9	-	51.61 Km
Pmt Works	-	3619.95 Lakh
Surf work Eqvt CL-9	-	58.38 Km
Bridge Works	-	705.52 Lakh (151.00 Mtr)
Shifting of utilities cost	-	964.26 Lakh

16. MISCELLANEOUS

16.1 Protective works such as Pitching, Aprons, R/wall, B/wall, T/wall, Check wall etc.

Protective works considered wherever necessary.

16.2 Road sign post, Parapet wall, Guard stones and other Road furniture

Road Sign Post, Parapet Wall, Guard Stones and other Road Furniture are considered wherever necessary.

16.3 Diversion and haul road if any.

Diversion and haul road is not required.

16.4 Camp site and provision of road side accommodation

Road side Accns has not been considered in this DPR.

16.5 Quality control measures

Provision for QCC @ 1% has been made in this estimate.

16.6 Wherever quantities are more than laid down norms proper justification for excess quantities to be given.

Details calculations of earth work and protective works are as per ground requirement and as per standard specifications.

(a). Road lift charges has been catered in this estimates in accordance with HQ DGBR letter No. 33376/DGBR/21/SSR dated Jul 1993 taking railhead at Pathankot and Supply Coy Pathankot via Samba (69 RCC loc).

(b). Royalty charge has been catered as per J & K (UT) Govt. Geology and Mining Department SRO No. 03 of 2016 dated 06 Jan 2016.

(c,). Credit for deployment of GP tradesman to CP tradesman Ratio 1:2 for formation, Pmt and surfacing works has been given as per actual holding strength.

(d). Physical contingency charges @ 5% have been considered as per BRDB letter No.21002/Policy/12/E2E dated 16 Jun 1993.

(e). Escalation charges **@ 15.44 %** for the year 2021-22 is catered for in this DPR.

(f). Extra TPT charges has been considered as per policy in vogue.

(g) Labour Cess @ 1% has been catered in this estimate.

(j) Credit for retrieve stone from dismantling existing has been considered in this estimate.

17. CERTIFICATE

It is certified that:-

17.1 The scope of works provisioned in this estimate is essential as per prevailing site conditions.

17.2 The designs provided thereof are as per sound engineering practice.

17.3 The minimum inescapable requirement has been considered.

17.4 The work proposed in this DPR is not covered in any estimate has been checked and is correct.

17.5. All arithmetical calculation have been checked and found correct.

17.6. The quantities proposed as supported with drawing/ details.

17.7 It is certified that nearest quarries of constructional materials have been considered in this DPR.

17.8 It is certified that extra lead considered in this DPR for collection of material is minimum for the proposed work site.

CONCLUSIONS

18. The work is operational nature and road is already included in AWP 2021-22 at Serial No. 66. Therefore, it is requested to accord sanction at the earliest to complete the work in stipulated time.

Station: C/O 56 APO

Dated: 30 Nov 2021

(Vinay Singh)
EE (Civ)
Officer Commanding