Address of DG(RD) & SS on 12-05-2023 at 11.00 am with Zonal Heads (N-I, NER and S-I) and respective ROs of MoRTH and CE-NH through Video Conferencing on Field Level Monitoring of NH works and Strategies for increasing the pace of construction of NH projects and preparation of detailed functional NH network maps in 2023-24

General:

- Monitoring of NH works for achieving targets is required at different levels from the highest authority to field level engineers. Broadly, the monitoring at senior level is targeted at removing the administrative bottlenecks in the way of construction of NH works like delays in pre-construction activities by concerned State Governments, lack of action or lack of appropriate intervention at the higher levels of executing agencies and taking decisions in respect of non-performing contracting and consulting agencies etc.
- Major improvements in pace of construction without delays could be achieved only through detailed construction planning and monitoring of deployment of resources including material, machinery and manpower through detailed field level monitoring.
- Detailed planning of project construction activities is the basic requirement to pursue the deployment of adequate resources and achieving of construction targets.
- ➤ Through a detailed planning and monitoring of construction activities / deployment of resources, repeated defaults of the contractor in mobilising and deploying of various resources and in achieving different milestones are to be recorded and brought out so that stringent actions against substantially underperforming contractors especially when they are not improving their performance even after repeated directions could be taken well in time without huge loss of time.
- > For the above process of scrupulous monitoring, basic detailed project construction planning supported with planning of deployment of resources

involving contracting agencies is highly essential. For this broad approach along with an example project is brought out below for reference and guidance.

- ➤ The initial pre-construction planning including, resources deployment schedule are to be worked out jointly by the officers of Regional Office, MoRTH, officers of NH Wing of executing agencies, team of contractor, team of the authority engineer and team of the DPR consultants based on relevant documents and details.
- ➤ Detailed pre-construction activity planning including land acquisition, forest clearances, tree cutting permissions, utility shifting clearances, approval for GADs for ROBs/RUBs etc., should be done with activity wise target dates jointly by the Regional Offices and executing agencies like State PWD/BRO etc.,. These agreed schedules should be placed before the highest authorities of executing agencies like State PWDs/BRO etc., for their information and necessary monitoring of the progress.
- Project Zone of the Ministry should involve themselves in the above broad planning activities of pre-construction activities as well as construction planning and monitoring through joint meetings either at Ministry's Hqrs., or at the Regional Offices or CE-NH offices or project locations as may be feasible and convenient.
- ➤ All the stakeholders should work as a team for optimum results.

Preparation of the project component-wise Bar Chart:

- The optimum time unit for planning and monitoring of highway projects can be taken as a 'week'.
- As most of the highway projects are sequential in nature which can only be executed one activity after the other generally after completion of the previous one, a well prepared detailed Bar Chart will serve the purpose of project planning to a large extent without the need of more complex network planning tools like Critical Path Method (CPM) and Project Evaluation and Review Technique (PERT).

- ➤ Monsoon is a regular cyclic phenomenon which occurs broadly for a specific period in every region as per the seasonal weather cycle of that particular region. While preparing the Bar Chart, the monsoon period in which no outdoor activity can generally be carried out should be duly considered and only indoor activities are to be planned during the monsoon months to make the project planning realistic and feasible.
- ➤ For carrying out the serial activities certain amount of time lag between predecessor activities and successor activities is required to carry out the execution. For example, unless sub-grade preparation is carried out for some length, GSB layer-I cannot be started. Similarly, unless GSB layer-I is completed in some length, GSB layer-II cannot be started and so on.
- After ensuring the above time lag, the activities in different layers which are serial in nature can be executed in a parallel mode deploying adequate machinery and manpower so that the entire project could be executed within the scheduled period.
- The time required for executing a particular component of work say for example WMM layer-I depends on the main BOQ item of that activity and the critical equipment for that main BOQ item. Therefore, considering the requirement of completing a particular component within a particular time period, feasibility of deploying the required quantum of critical machinery, the number of weeks in which the particular component is to be completed along with number of critical construction equipment to be deployed are to be worked out in an iterative manner for firming up the Bar Chart.
- In the above manner, the entire Bar Chart needs to be worked out for all components of the project reflecting time period and time schedule in terms of weeks for each of the activities as shown in the example Bar Chart placed at Annexure-A1 for a real project of km 0.00 to km 19.887 of Phasighat Singer stretch in the State of Arunachal Pradesh. In case completion of a particular project activity based on feasible deployment and critical machinery indicates requirement of long duration which cannot be accommodated within the project

completion schedule, the option of two shifts or three shifts per day can be explored.

Material, Machinery and Manpower Resource Planning:

- ➤ Once the project construction component wise Bar Chart is firmed up, the period required in number of weeks for each project component, the main BOQ item for that component, critical equipment for executing that BOQ item gets firmed up. Generally, taking six days a week, 8 hours a day and suitable effective outputs of the critical machinery, the number of critical machinery/equipment to be deployed, the number of shifts of working required are to be worked out.
- Once the critical component is firmed up, other supporting equipment required to support the output of the main critical equipment including their capacities and numbers are to be firmed up. For example, for carrying out DBM, the critical equipment are the vibratory roller and pneumatic roller. The other supporting equipment are Hot mix plant, pavers, tippers, emulsion sprayer etc. Requirement of all these supporting equipment are also to be worked out and firmed up.
- ➤ Taking into account the critical equipment and other supporting equipment the manpower requirements including the machines, drivers, mechanic, labour, Mistry, Mason, Supervisor etc., should also be worked out and planned.

The physical progress assessment for field level monitoring:

In order to be realistic, while assessing the physical progress, components of work which require larger time need to be given higher weightage compared to those requiring lesser time even though the former ones are low-cost components compared to the latter ones. For example, earth work in cutting warrants higher weightage compared to the DBM layer though the former is less costly than the latter. Therefore, the total number of weeks required for all the project components put together is an appropriate denominator to work out the weightages for each component of work as has been shown in the physical progress assessment of the example project placed at Annexure-A2.

- ➤ The above way of realistic assessment of physical progress gives proper indication about the components of work with higher weightages of physical progress and accordingly the necessity of deploying sufficient quantum of critical equipment and supporting equipment for these components with higher weightage.
- ➤ The physical progress assessment of the project "S" curve of targeted physical progress and actual physical progress etc., for the above example project are placed at Annexure-A3 for reference and guidance. Draft targets for above example project are also placed at Annexure-A4 for reference.
- A format for monitoring the pre-construction activities can be prepared and circulated by the project zones for regular monitoring. Further, break up of pre-construction activities and their monitoring should be done appropriately by Regional Offices, overseen by the Project Zones.

Deployment of material:

- Based on the project planning, Bar Chart firmed up above with time schedules in number of weeks, different materials required can be easily worked out based on the analysis of prices of different BOQ items. Accordingly, the targets for mobilisation of material and their quantities / timing should be fixed with time targets through a joint meeting of all the stakeholders including the Contractor as explained above. The targets for deployment of various resources like materials, manpower and machinery agreed to by the Contractor with signature of the representative of the Contractor should be communicated to them for adherence.
- ➤ Revised resource deployment schedule and failures of the contractor in adhering to the resource deployment agreed to by them should be regularly communicated to them with cautionary advises and warnings.
- Project milestone failures should also be continuously brought and communicated to the Contractor giving cure period notices and other notices

as per contract conditions including intention to termination notice etc., to sensitize and bring the project progress to the track.

➤ It is also emphasised that scrupulous project construction planning including planning for deployment of resources leads to early completion of the project within the stipulated schedule which is also very much beneficial to the Contractor apart from to the Authority which would be a win-win situation. These are to be emphasised and explained to all the stakeholders for effective actions.

Preparation of Detailed Functional NH Network Maps:

➢ Generating a soft copy of detailed functional NH network map for each State indicating each NH in a distinct colour highlighting each district indicating the chainages of intersection of two or more NHs, the starting and ending points of the NHs, the starting and ending points of the NH stretches with NHAI/with NHIDCL/ with BRO etc., in distinct notation while retaining the chosen colour for that NH have all been explained during the meeting. It was decided that the detailed functional NH maps as explained above for each of the States of N-I Zone shall be prepared within 15 days and for NER Zone within 30 days. Such NH maps for S-I Zone have already been prepared. Two such detailed functional NH maps pertaining to Telangana and Karnataka States are placed At Annexure-A5 for reference and guidance.

Ravi Prasad V.V.S. S. Palakodeti

Director General (Road Development) & Special Secretary

12.05.2023

SI.No.											-	Period o	f contra	ct in Mc	onths & v	weeks /	Length	of stretc	h in Km	1	*	_	-				Item of Work
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	
12 (a)																											Construction of GSB Layer 1
	Stretch													0000000	90009000	0 to	19.887 km	loco#coo#coo						Left out	Portions	988	GOD Layer 1
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	
12 (b)																											Construction of GSB Layer 2
	Stretch														-	0	to 19.887 kr	10000000	000 1000					Left out	Portions	200	GSB Layer 2
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	-
13 (a)																											Construction of
	Stretch													0 tc	10 km		1 2008000	10 to 19.887	km					Left out	Portions		WMM Layer 1
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	
13 (b)	A00-01 A000																										Construction of
	Stretch														0 to 10	km	-	-10 to 19.8	87 km					Left o	ut Portions		WMM Layer 2
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	
14																											Construction of
	Stretch																		100	0 to 19	887 km			Let	ft out Portion	100	BM Layer
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	
15	WICHTIS	10/10	11710	1 12/10		02/11		04/11				00/11	03/11	10/11	11/11	12/11	01/12	OZ/1Z	03/12	1	03/12	00/12	07/12	00/12	03/12	10/12	Stone Masonry
	Stretch					+		0.4	5 km						-	to 19.887 km											Toe wall
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11			01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	
16	IVIOTILIS	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	00/12	09/12	10/12	Construction of
	Stretch					HH																					Construction of SDBC
		10/10	11/10	12/10	01/11	02/11	03/11	04/44	05/11	00/44	07/11	00/44	00/44	40/44	44/44	40/44	04/40	00/40	0240		19.887 km	00/40	07/40	08/12	ft out Portion		
17	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	RRM Parapet
	Stretch																										Wall
	-	10/40	11/10	10/10	04/44	00/14	00/44	04/44	05114	00///	07//4	00///	00/14	10/11	0 to 5 km	10111	04440	5 to 19.887	7-00-01H	0.4440	05110	00/40	07/40	00/40	00/40	10/10	
18	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	RCC Retaining
	Ctootol								24-21																		Wall
	Stretch								0 to 2km	202 2 7 3						2 to 19.887 I			1							0 202 002	
19 (a)	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	Construction of
10 (4)																											Minor Bridges (5 Nos Box
	Stretch		_					1		ory activities			-			Box Bridges											`Bridges)
19 (b)	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	Construction of
10 (10)																											Minor Bridges (3 Nos RCC Slab Bridges)
	Stretch				,			-		ry activities			-		3 8	lab Bridges											Slab Bridges)
19 (c)	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	Construction of Minor Bridges
19 (0)	_																										(3 Nos PSC
	Stretch		_			_								*	2	PSC Bridge			———1 PS	SC Bridge							Girder Bridges)
20	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	
20																											Improvement of Road Junction
	Stretch		·																					All	the Junction	ıs	
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	Miscellaneous Works like Km
21																											stones,Bound-
	Stretch																					All the road	side furnitu	re and misce	llenious wor	ks	ary pillars, road marking etc.
																								Mon	500D		:

JKM INFRA PROJECTS LIMITED WORK PROGRAMME IN THE FORM OF BAR CHART FROM KM 0.00 TO 19.887 KM

14-03-2011

Name of the Project:Two Laning of Pasighat - Mariyang-Yingkiong Road (Km 0 -19.887)

Time Duration

: 24 months

		-	ent No: C	E (HW)	/05 of 2 River-Ar.	2010-11		3	,	, , , , , , , , , , , , , , , , , , ,		.,										ate of Co		ement completic			per 2010 per 2012
SI.No.											Ī	Period c	of contra	ct in Mc	onths & v	weeks /	Length	of stretc	ch in Km	1							Item of Work
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	
1																											Clearing and
	Stretch				8886	1 1990	0 to 10 Km	2 8000000						- 10 to	19.887km	_											Grubbing
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	<u></u>
2														77.4												TII	Cutting of Trees
	Stretch				-	0 to 10 km								-	10 to 19.88	7 km											
-	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	
3																										TII	Dismantling of
	Stretch													0 to 5 km				5 to 19.887	km					Left out Po	tions		Culverts
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	
4 (a)	TATOTIC TO					32,11								10/11		12/11	3 1/12	32,12									Excavation in
	Stretch					0 to	10 km								10 to 19	997 km											soil
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	
4 (b)	WOITINS	10/10	11/10	12/10	01/11	02/11	03/11	04/11	03/11	00/11		00/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	03/12	00/12	07/12	00/12	09/12	10/12	Excavation in
	Stretch																										Excavation in Ordinary Rock
	_	10/10	11/10	12/10	01/11	00114	0 to 5 km		05/44	00/44	07/14	00114	00/44	10/11	4444	5 to 19.887 l	km O4/40	00/40	00/40	04/12	05/40	00/40	07/12	08/12	00/40	10/12	
4 (c)	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	Excavation in
	Stretch																										Hard Rock
								0 to 5km						-		-5 to 19.887											-
5	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	Earthwork in
	Charle																										Embankment
	Stretch	T. 1800 N. 1800	0.000	TREE MAN COS		1900 V 10 D		to 5 km	201 Fam. 97 81	700 40000 27 07		AC 100 AT 10				-5 to 19.887				COMPANIO SCENE	20000 04 82	COMPANIE CONTROL	THE ST ASSOCIATION		Portions	-	
6	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	Loosening &
	0																										Recompacting the Subgrade
	Stretch	_						0 to 5 km								5 to 19.887											- the easyrade
7	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12		09/12	10/12	Construction of
,																											Construction of Box Culverts
	Stretch							4 Nos										36 N	os								
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	Drotaction works
8																											Protection works at Box Culverts
	Stretch																0	-	24 Nos	-		,,		16 (Nos		
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	Construction of
9																											Hard/Earthen
	Stretch														0	o 10 km	-	10	to 19.887 km					Left o	ut Portions		Shoulder
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	
10																											Construction of Drain
	Stretch							0 to 5	km —				-			-5 to	15 km								-15 to 19.8	37 km	2.4
	Months	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11	08/11	09/11	10/11	11/11	12/11	01/12	02/12	03/12	04/12	05/12	06/12	07/12	08/12	09/12	10/12	
11																											Construction of Breast Wall
i	Stretch							0	to 5 km				5003000				5 to 15 km	***************************************			2000000000				15 to 19.887	km	Dieast Wall

I st Work Programme - Pasighat-Mariyang-Yingkiong (Km 0-19.887 Pasighat - Singer)

Job No: Pasighat-Singer river-Ar Pkg-2010-11-018

	Period of construction	28th Oct 2010	0-27th October 201	2		06.08.2011			03-12-2011	
	Component of work	(Main BOQ Items o	related to	component	Deploym	ent of Machine	ry		Remarks
SI No	ltem	Quantity in Physical units of monitoring	ltem	period in weeks	Main BOQ Quantity	Type of machine/Critical equipment	Effective capacity	Nos	Shift in Hours	No of working days per week should be indicated in this column)
1	Clearing and grubbing	19.887 km	Clrng & Grbg	9	25.04 hect.	Pockline EX-200- 1No	600 sqm/hr	1	8 Hrs	6 Days
2	Cutting of trees of different girth	6529 Nos	Cutting of trees	26	6529 nos	POWER(Hitachi) Saw Machine-2nos , Manualsaw-2Nos	4x13 (power saw)+2x6 (Manual saw) =64Nos/day	4+2	8 Hrs	6 Days
3	Dismantling of culverts	140 nos	Concrete+masonar	6	740 Cum	Back hoe 1No	3 cum/hr	1	8 Hrs	6 Days
4	Excavation in soil / ordinary Rock									
	a) Soil	19.887Km	Soil excavation	40	851427.08 Cum	Excavator(Hitachi 200) 3Nos + Excavator(Hitachi 270) 1No	80 cum/hr	3Nos+ 1No	16 Hrs	6 Days
	b) Ordinary rock	19.887Km	Ordinary rock excavation	16	150159.65 Cum	Excavator(Hitachi 200) 1 No + Excavator(Hitachi 270) 1No	60cum/hr+ 40 cum/hr	1 each	16 Hrs	6 Days
	c) Hard rock	19.887Km	Hard rock	24	88000 cum	Excavator Hitachi 270 1No	40cum/hr	1	16 Hrs	6 Days
5	Earthwork in embankment	19.887Km	Earth work in embt.	29	212028 Cum	*Vibratory RollerDynapac Soil compactor	80 Cum/hr	2	8 Hrs	6 Days
6	Loosening and recompacting the sub- grade(Additional Item)	19.887 Km	Loosening &compacting	24	124234 Cum	*Vibratory RollerDynapac Soil compactor	60 Cum/hr	2	8 Hrs	6 Days
7		Total 40 Nos								
	· · · · · · · · · · · · · · · · · · ·	19 Nos	1							
	•	8 Nos	_			**RM-800 Concrete Mixer	5 Weeks/ 4			
	-	9 Nos	Concrete	60	7128 Cum	1 No / Shattering required	Culverts	1	8Hrs	6 Days
	† '	1 No	_			for one box culvert - 4 Sets				
	e) 4x5m	3 Nos								

	Component of wor	k	Main BOQ Items	related to	component	Deploym	ent of Machiner	у		Remarks
SI No	ltem	Quantity in Physical units of monitoring	ltem	period in weeks	Main BOQ Quantity	Type of machine/Critical equipment	Effective capacity	Nos	Shift in Hours	No of working days per week should be indicated in this column)
8	Protection works at Box culverts	Total 40 Nos								
	a) 2x2m	19 Nos								
	b) 2x3m	8 Nos				**RM-800 Concrete Mixer	4 Culverts per			
	c) 3x4 m	9 Nos	Concrete/RRM	20	4000 Cum	1 No & 8 Sets of	12days	1	8Hrs	6 Days
	d) 4x3m	1 No				Shutterings	1200,5			
	e) 4x5m	3 Nos								
9	Construction of Hard shoulders/ Earthen shoulder	19.887Km	Soil in shoulder work	12	21682 Cum	*Vibratory RollerDynapac Soil compactor	20 Cum/hr	1	16Hrs	6 Days
10	Construction of Drain	19.887Km	RRM	42	8086.4 Cum	Manual : 8 Teams of (1 Mate + 5 Mason + 5 Mazdoor)	32 cum/Day	1	8Hrs	6 Days
11	Construction of breast wall	6890 m	RRM	45	6500 Cum	Manual : 6 Teams of(1 Mate + 5 Mason + 5 Mazdoor)	24 cum/Day	1	8Hrs	6 Days
12	Construction of GSB									
	a GSB Layer I	19.887 Km	GSB	19	39958 Cum	*Vibratory Roller (2nd Shift)	50 Cum/hr	1	8Hrs	6 Days
	b GSB Layer II	19.887Km	GSB	13	26639 Cum	*Vibratory Roller (2nd Shift)	50 Cum/hr	1	8Hrs	6 Days
13	Construction of WMM									
	a WMM Layer I	19.887Km	WMM	10	18405.08 Cum	*Vibratory Roller (2nd Shift)	45 Cum/hr	1	8Hrs	6 Days
	b WMM Layer II	19.887Km	WMM	10	18405.08 cum	*Vibratory Roller (2nd Shift)	45 Cum/hr	1	8Hrs	6 Days
14	Construction of BM Layer including prime coat and tack coat etc.	19.887 Km	вм	4	7195 Cum	Tandem Roller	20 Cum/hr	2	8 Hrs	6 Days
15	Stone masonry toe wall	1075 m	RRM	32	11545 Cum	Manual :1 6 Teams of(1 Mate + 5 Mason + 5 Mazdoor)	64 Cum/Day	1	8 Hrs	6 Days
16	Construction of SDBC	19.887Km	SDBC	4	1926 Cum	PTR -1,	10 Cum/hr	1	8 Hrs	6 Days
17	RR masonry parapet wall	19.887Km	RRM	4	300 Cum	Manual: 4 Teams of(1 Mate + 5 Mason + 5 Mazdoor)	16 Cum/Day	1	8 Hrs	6 Days
18	RCC retaining wall	1200 m	Concrete	22	5376 cum	3 Sets of Shuttering for 15 m Length each	45 Cum /Day	1	8 Hrs	6 Days

	Component of worl	(Main BOQ Items	related to	component	Deploym	ent of Machiner	у		Remarks
SI No	ltem	Quantity in Physical units of monitoring	ltem	period in weeks	Main BOQ Quantity	Type of machine/Critical equipment	Effective capacity	Nos	Shift in Hours	No of working days per week should be indicated in this column)
19	Construction of Minor Bridges	11 Nos.	Concrete	48	7500 Cum	Mini Batching and mixing plant 1No	15cum/hr	1	8 Hrs	6 Days
	i) At Km 0.686 (6Mx4 M)	1 No								
	ii) At Km 3.800 (1x 40m PSC Box bridge)	1 No	1) 5 nos of box			5 Sets of Shuttering &	24 Weeks for 5			
а	iii)At Km 4.178 (6 Mx6M)	1 No	bridges	24			box bridges.			6 Days
	iv) At Km 4.660 (1x40m PSC Box bridge)	1 No								
	v) At Km 7.537 (1x40m PSC Box bridge)	1 No								
	vi)At Km 8.951 (8Mx6M)	1 No	2) 3 Nos of R.C.C			3 Sets of Shuttering & Centering for foundation &				
b	vii) At Km 9.923 (1x15 m RCC Slab bridge)	1 No	Slab Bridges of 1x15 m	24		Sub structure and One Set for Superstructure			8 Hrs	6 Days
	viii) At Km 10.538(8M x 9M)	1 No								
	ix)At Km 14.769 (1x15 m RCC Slab bridge)	1 No					8Weeks for			
	x)At Km 17.600 (1x15 m RCC Slab bridge)	1 No	3) 3 Nos of PSC			12 Sets of Shuttering &	foundation and substructure			
С	xi) At Km 19.411 (8Mx5 M)	1 No	Bridges (1x 40 m Span)	30		Sub structure & 2 Set for Superstructure	and 12weeks for super structure for each PSC bridge		8 Hrs	6 Days
20	Improvement of road junction	1 No	LUMP SUM	2				1	8 Hrs	6 Days
1 71	Miscellaneous works like Km stones, Boundary pillars, road marking etc.	19.887Km	LUMP SUM	2				1	8 Hrs	6 Days

^{*} Same vibratory soil compactor will be used in second shift for granular pavement layers

^{* *} RM - 800 Concrete mixture has sufficient capacity to cater to different items considered.

1st Revised Work Programme - Pasighat-Mariyang-Yingkiong (Km 0-19.887) Job No: Pasighat-Singer river-Ar Pkg-2010-11-018

Period of construction 28th Oct 2010-27th October 2012

22--08--2011

REVIEW DATE:30.06.2011

	Component of work	N	lain BOQ Items re	lated to compon	ent of work		De	ployment of Machinery			Remarks
SI No	ltem	Balance Qty in physical units of monitoring	Item	Balance period in weeks after review date	Balance Main BOQ Quantity	Unit	Type of machine/Critical equipment	Effective capacity	Nos	Hours/Day (1 or 2 Shifts)	No of working days per week should be indicated in this column)
1	2	3	4	5	6	7	8	9	10	11	12
1	Clearing and grubbing	8.593 km	Clrng & Grbg	4	10.82	Hectare	*Excavator EX-200- 1No	600 sqm/hr	1	8 Hrs	6 Days
2	Cutting of trees of different girth	2123 Nos.	Cutting of trees	14	2123	Nos.	POWER(Hitachi) Saw Machine-2nos , Manualsaw-2Nos	4x13 (power saw)+2x6 (Manual saw) =64Nos/day	4+2	8 Hrs	6 Days
3	Dismantling of culverts	140 Nos.	Concrete+mason ary	6	140	Nos.	*Back hoe 1No	3 cum/hr	1	8 Hrs	6 Days
4	Excavation in soil / ordinary Rock										
	a) Soil	16.563 km	Soil excavation	20	709115.84	Cum	Excavator(Hitachi 200) 3Nos + Excavator(Hitachi 270) 1No+1 Dozer 6H	80 cum/hr+100 Cum/hr +100 Cu m/hr	3Nos+ 1No+ 1No.	16 Hrs	6 Days
	b) Ordinary rock	17.491 km	Ordinary rock excavation	14	132068.31	Cum	Excavator(Hitachi 200) 1 No + Excavator(Hitachi 270) 1No	60cum/hr+ 40 cum/hr	1 each	16 Hrs	6 Days
	c) Hard rock	19.887 km	Hard rock	21	88000	Cum	Excavator Hitachi 270 1No+ 1 No Excavator with rock breaker attachment	60 cum/hr	1	16 Hrs	6 Days
5	Earthwork in embankment	16.717 km	Earth work in embt.	23	220085.73	Cum	*Vibratory RollerDynapac Soil compactor +1 grader	80 Cum/hr	2	10 Hrs	6 Days
6	Loosening and recompacting the sub- grade(Additional Item)	19.887 km	Loosening &compacting	24	124234	Cum	*Vibratory RollerDynapac Soil compactor	60 Cum/hr	2	8 Hrs	6 Days

SI No	ltem	Balance Qty in physical units of monitoring	ltem	Balance period in weeks after review date	Balance Main BOQ Quantity	Unit	Type of machine/Critical equipment	Effective capacity	Nos	Hours/Day (1 or 2 Shifts)	No of working days per week should be indicated in this column)
1	2	3	4	5	6	7	8	9	10	11	12
7	Construction of Box culverts	39.6 Nos.	Concrete	55	7056.72	Cum					
	a) 2x2m										
	b) 2x3m						**RM-800 Concrete				
	c) 3x4 m						Mixer 1 No /Shutteringrequired for	5 Weeks/ 4 Culverts	1	12 Hrs	6 Days
	d) 4x3m						one box culvert - 5 Sets				
	e) 4x5m										
8	Protection works at Box culverts (Total 40 Nos.)	40 Nos.	Concrete/RRM	20	4000	Cum					
	a) 2x2m(19 Nos.)										
	b) 2x3m(8 Nos.)						**RM-800 Concrete Mixer				
	c) 3x4 m(9 Nos.)						1 No & 8 Sets of	4 Culverts per 12days	1	12 Hrs	6 Days
	d) 4x3m(1 No.)						Shutterings				
	e) 4x5m(3 Nos.)										
9	Construction of Hard shoulders/ Earthen shoulder	19.887 km	Soil in shoulder work	12	21682	Cum	*Vibratory RollerDynapac Soil compactor	20 Cum/hr	1	16Hrs	6 Days
10	Construction of Drain	19.887 km	RRM	42	8086.4	Cum	Manual: 8 Teams of (1 Mate + 5 Mason + 5 Mazdoor)	32 cum/Day	1	8Hrs	6 Days
11	Construction of breast wall	6890 m	RRM	41	6500	Cum	Manual: 7 Teams of (1 Mate + 5 Mason + 5 Mazdoor)	28 cum/Day	1	8Hrs	6 Days
12	Construction of GSB										
	a GSB Layer I	19.887 km	GSB	19	39958	Cum	*Vibratory Roller (2nd Shift)+1 Grader	50 Cum/hr	1	8Hrs	6 Days
	b GSB Layer II	19.887 km	GSB	13	26639	Cum	*Vibratory Roller (2nd Shift)	50 Cum/hr	1	8Hrs	6 Days
13	Construction of WMM										
	a WMM Layer I	19.887 km	WMM	10	18405.08	Cum	*Vibratory Roller (2nd Shift)	45 Cum/hr	1	8Hrs	6 Days
	b WMM Layer II	19.887 km	WMM	10	18405.08	Cum	*Vibratory Roller (2nd Shift) +1 Paver	45 Cum/hr	1	8Hrs	6 Days
14	Construction of BM Layer including prime coat and tack coat etc.	19.887 km	вм	4	7195		Tandem Roller	20 Cum/hr	2	8 Hrs	6 Days
15	Stone masonry toe wall	1075 m	RRM	27	11545	Cum	Manual 18 Teams of (1 Mate + 5 Mason + 5 Mazdoor)	72 Cum/Day	1	8 Hrs	6 Days
16	Construction of SDBC	19.887 km	SDBC	4	1926	Cum	PTR -1,	10 Cum/hr	1	8 Hrs	6 Days

SI No	Item	Balance Qty in physical units of monitoring	ltem	Balance period in weeks after review date	Balance Main BOQ Quantity	Unit	Type of machine/Critical equipment	Effective capacity	Nos	Hours/Day (1 or 2 Shifts)	No of working days per week should be indicated in this column)
1	2	3	4	5	6	7	8	9	10	11	12
17	RR masonry parapet wall	19.887 km	RRM	4	300	Cum	Manual: 4 Teams of (1 Mate + 5 Mason + 5 Mazdoor)	16 Cum/Day	1	8 Hrs	6 Days
18	RCC retaining wall	1200 m	Concrete	22	5376	Cum	3 Sets of Shuttering for 15 m Length each	45 Cum /Day	1	8 Hrs	6 Days
19	Construction of Minor Bridges	10.8 Nos.	Concrete		7500	Cum	Mini Batching and mixing plant 1No	15 cum/hr			6 Days
	i) At Km 0.686 (6Mx4 M) Box Bridge					Nos.					
	ii) At Km 4.178 (6M X 6 M) Box bridge					Nos.					
а	iii)At Km 8.951 (8 Mx6M) Box Bridge		1) 5 nos of box bridges	24		Nos.	5 Sets of Shuttering & Centering	24 Weeks for 5 box bridges.	1	8 Hrs	6 Days
	iv) At Km 10.538 (8 Mx 9 M) Box bridge)					Nos.					
	v) At Km 19.411 (8 M X 5 M) Box bridge)					Nos.					
	vi)At Km 9.923 (1x15M) RCC Slab Bridge					Nos.	3 Sets of Shuttering &				
b	vii) At Km 14.769 (1x15 m RCC Slab bridge		2) 3 Nos of R.C.C Slab Bridges of 1x15 m	24		Nos.	Centering for foundation & Sub structure and One	24 Weeks for 3 RCC Slab bridges.	1	8 Hrs	6 Days
	viii) At Km 17.600 (1 x 15M) RCC Slab Bridge		1/13/111			Nos.	Set for Superstructure				
	ix)At Km 3.800 (1x40 m) PSC Box bridge		3) 3 Nos of PSC			Nos.		8 Weeks for foundation			
С	x)At Km 4.660 (1x40 m)PSC Box bridge		Bridges (1x 40 m Span)	30		Nos.	& Sub structure & 2 Set	and substructure and 12 weeks for super structure	1	8 Hrs	6 Days
	xi) At Km 7.537 (1x40 M) PSC Box Bridge					Nos.	for Superstructure	for each PSC bridge			
20	Improvement of road junction	LS	LUMP SUM	2	LS				1	8 Hrs	6 Days
21	Miscellaneous works like Km stones, Boundary pillars, road marking etc.	19.887 km	LUMP SUM	2	19.887	KM			1	8 Hrs	6 Days

^{*} Same vibratory soil compactor will be used in second shift for granular pavement layers

* RM - 800 Concrete mixture has sufficient capacity to cater to different items considered.

*Same Excavator will be used in clearing & grubbing & Excavation of ordinary rocks.

^{*}Same backhoe will be used in dismantling of culverts & Construction of drains.

Pasighat-Mariyang-Yingkiong (Km 0-19.887) Job No: Pasighat-Singer river-Ar Pkg-2010-11-018

Machinery and Man power requirement assessment calculations

08-09-2011

SI No	Item of work	Out put required per	Main machine type	Nos require	Supporting machine /	Nos requir	Man power Category	Nos required	Remarks
		day		d	equipment type	ed			
1	2	3	4	5	6	7	8	9	10
1			Excavator EX 200	0	Nil	Nil	Excv optr	0	
	Clearing and Grubbing	0.48 Hect					Helper	1	Excavation is directly being done after tree cutting. Hence
	creating and Grassing	0.1011666					Mazdoor	4	Excavator is not required for this item.
							Supervisor	1	
2			Power Saw	2	Tractor trolley	3	Skilled Mazdoor	4	
	Cutting of trees	64 Nos					Tractor driver	3	7 trees per trip, 4trips per day for trolley
			Manual Saw	2			Mazdoor	6	
3			Back hoe	1	Tractor trolley	1	Back hoe operator	1	
							Helper	1	
	Dismantling of culverts	24 cu m					Mate	1	
							Mazdoor	3	
							Tractor driver	1	
4		7040 cu m = 8448 cu m loose qty	Excavator EX 200	3	Tipper(20t) - AMW	3	Excv optr	8	2shifts for excavator and Dozer, Dozer capacity 200 cu m
	Excavation in soil	1274 cu m loose for carriage	Excavator EX 270	1	Dozer D6G	2	Dozer optr	6	per hr,12 cu m per AMW tipper @ 3 trips per hr and16 hrs per day (i.e., two shifts). Helper for Excavator and Dozer Loose quantity = 1.2X Naturally compacted quantity.
		7004 cu m loose for dozing	Dozer D6G	1			Helper	14	Excavation per day = 16X (80X3+100X1+100X1) =7040 Cu m/day
							Tipper driver	6	
5		1600 Cum=2080 Cu m loose quantity	Excavator EX 200	1	Tipper 10t capacity	2	Tipper driver	2	
	Excavation in ordinary rock	240 Cu m=312 Cum loose for carriage	Excavator EX 270	1	Dozer D6G	1	Dozer optr	2	2shifts for excavators and Dozer, Dozer capacity 200 cu m per hr, 7 cu m per tipper @ 3 trips per hr and 8 hrs per day. Helper for Dozer and Excavator and one helper for two tippers.
		1768 Cu m loose for dozing					Helper	7	τιρμει 5.
							Excv optr	4	

SI	Item of work	Out put	Main machine	Nos	Supporting	Nos	Man power	Nos	Remarks
No		required per	type	require	machine /	requir	Category	required	
		day		d	equipment type	ed			
1	2	3	4	5	6	7	8	9	10
6			Excavator 200 LCI	1	Tipper(20t) - AMW	3	Excv optr	4	
	Excavation in hard rock	960 Cum=1248Cum loose volume entire	Excavator EX 270 with rock breaker attachment	1			Tipper driver	6	2shifts for excavators , 9 cu m per tipper AMW @ 3 trips per hr and 16 hrs per day i.e., two shifts Mazdoor for sundry
		for carriage					Mazdoor	3	work. Helper for Excavator and one helper for two tippers
							Helper	7	
7			Vibratory Roller	2	Water tanker	3	Grader Operator	1	
					Grader	1	Water tanker driver	3	
	Earthwork in embankment	1600 Cum = 1920 Cu m loose quantity			Camber Board with spirit level	3	Roller operator	2	Rolling in single shift, grader capacity 200 cu m per hour, Tanker requirement at 1 hr per 100 cu m due to higher moisture content in the soil prevailing in the site. Helper for
							Helper	7	roller, water tanker and two helpers with Quality engineer.
							Quality Engineer	1	
							Supervisor	1	
8			Vibratory Roller	2	Grader	1	Grader Operator	1	
					Water tanker	1	Water tanker driver	1	
	Loosening and recompacting the sub-				Tractor with ripper attachment	2	Roller operator	2	Loosening and re-compaction in single shift, grader
	grade(Additional Item)	960 Cum			Camber Board with spirit level	3	Tractor driver	2	capacity 200 cu m per hr, tractor capacity 60 cu m per hr
	grade(Additional Item)								

SI No	Item of work	Out put required per day	Main machine type	Nos require d	Supporting machine / equipment type	Nos requir ed	Man power Category	Nos required	Remarks
1	2	3	4	5	6	7	8	9	10
9			RM-800 Concrete Mixer	1	Tractor trolley	2	RM-800 operator	1	4 culverts per 30 days. Out of 30 days, 10 days spent for material carriage for culverts and 10 days for concreting of 4 culverts.
			Shuttering of 15m length (Each set for one culvert)	5 sets	Truck	1	Vibrator operator	5	10trips for one tractor trolley per day,10trips for aggregate,5 trips for sand,2 trips for water. Bar bending will be carried out in 20 days out of 30 working days.
					Backhoe	0	Tractor driver	2	Steel reinforcement requirement per day for bar bending = [72X(10/20)X120 Kg per cu m]/1000=4.32 t say 4t
					Vibrator pin type	5	Truck driver	1	one truck for carrying stee.1Back hoe deployed for dismantling will be used for excavating foundations.
	Construction of Box culverts	72Cum of concrete					Back hoe operator	0	
							Quality Engineer	1	1.68 mate, 6 mason 36 mazdoorfor all operations of shuttering concreting etc complete for 120 cu m of concrete using Batching plant, concrete pump, Trasnsit mixer etc. 0.34 mate, 2 black smith and 6.5 Mazdoor per 1 t of steel.
							Helper	3	Quantity of concrete per day=7056X(4/40)/10=70.56Say 72 Cu m
							Mate	3	Mazdoor for concrete:22 and Mazdoor for steel:26.Total
							Mason	4	:48 say 50.
							Blacksmith	8	1
							Mazdoor	50	1
10			Shuttering of 15m length (Each set for one culvert)	8 sets	Truck	0	Truck driver	0	For Concreting+formwork transport deployed for main Box culverts will be used.No separate requirement.
			·		Vibrator pin type	0	Vibrator operator	0	4 days out of 12 days considered for concreting for 4 culverts. Bar bending will be carried out in 8 days per 12 working days.
							Mate	4	Steel reinforcement per day for bar bending = [100x(4/8)X 120 kg /cu m= 6t
							Mason	5	Same backhoe as above will be used here also for
	Protection works at Box culverts	100 Cum of concrete					Blacksmith	12	excavation .No separate machinery including vibrators are
							Mazdoor	69	required as the concrete mixer vibrator deployed for main box culvert can be used for this item by stagering concreting activity. Labour requirements are as per the rates given for main box culverts. Truck deployed for main box culverts will be used for transporting steel.
							Quality Engineer	1	Two helpers with Quality Engineer.Mazdoor for concrete =30 + Mazdoor for steel 39, total = 69
							Helper	2	Quantity of concrete =4000X(4/40)/4=100 cu m/ day

SI No	Item of work	Out put required per	Main machine type	Nos require	Supporting machine /	Nos requir	Man power Category	Nos required	Remarks
		day		d	equipment type	ed			
1	2	3	4	5	6	7	8	9	10
11	Construction of Hondahandara	220 Cura 204 Cura	Small Vibratory roller(1m)	1	Tractor trolley	5	Roller operator	1	Same Quality Engineer and helper deployed for BM/SDBC will take care of the requirements for this item. 12 tractor
	Construction of Hard shoulders /Earthen shoulder	320 Cum=384 Cum loose quantity			Water tanker	1	Tractor driver	5	trips per day considered. Quantity above WMM level only is considered. Below WMM level rolling will be done along with granular base and sub-base layers.
							Water tanker driver	1	
12					Tipper 10t capacity	1	Tipper driver	1	Tipper used for carrying boulders will carry cement and sand also. 8 tractor trips per day. 0.1 mate, 1.2 mason and
							Mate	4	1.2 mazdoor per cu m of stone masonry.
							Mason	40	
	Construction of Drain	32 Cum masonry					Mazdoor	40	
							Quality Engineer	1	
							Helper	2	
13					Tipper 10t capacity	1	Tipper driver	1	
							Mate	3	Tipper used for carrying boulders will carry cement and
	Construction of breast wall	28 cum					Mason	35	sand also. 8 tractor trips per day. 0.1 mate, 1.2 mason and
							Mazdoor	35	1.2 mazdoor per cu m of stone masonry.
14			Vibratory Roller	1	Grader	1	Grader Operator	2	12 Cum capacity tipper AMW for material transport
					WMM plant(120TPH)	1	WMM Plant Operator	2	GSB material-800x2.3=1760t/day,120 t/hr capacity 1 WMM plant working for 16 hrs a day i.e., two shifts
					Tipper(20t) - AMW	5	Tipper driver	10	12 cum per trip per tipper. 16trips per day i.e., two shifts.
					water tanker	1	Water tanker driver	2	Front End loader 1cum bucket capacity working for 16hrs i.e., in two shifts @50cum/hr.
	Construction of GSB Layer I&II (Not staggered but covered in two shifts)	800 Cum = 1760 t			Front end loaderJCB-4DX	1	Loader Operator	2	Water tanker 10KL capacity working in two shifts taking 3 hrs for 225 cum GSB watering.
					Diesel generator(62KVA)	1	Quality Engineer	1	Grader 50 cum per hour capacity working for 16 hrsper day i.e., in two shifts.
					Water pump	1	Helper	12	One lighting mast 9m high can give lighting for 150 m length. Two shifts for rolling.
					5HP motor		Roller operator	2	
					Lighting Masts(Mobile)	2	Electrician	2	
					Camber board with spirit level	3			

SI No	Item of work	Out put required per day	Main machine type	Nos require d	Supporting machine / equipment type	Nos requir ed	Man power Category	Nos required	Remarks
1	2	3	4	5	6	7	8	9	10
15			Vibratory Roller	1	WMM plant(120TPH)	1	WMM Plant Operator	2	12Cu m per trip @ 8trips per day
					Diesel generator(62KVA)	0	Loader Operator	2	360Cum=850t/day for WMM plant,120 t/hr capacity 1 WMM plant working for 8 hrs
	Construction of WMM Layer I/II	360 Cum=432 Cum			Front end loaderJCB-4DX	1	Tipper driver	1 0	Front End loader 1cum bucket capacity working for 8 hrs@50cum/hr.
	staggered	loose quantity			Tipper(20t) - AMW	5	Paver operator	2	Water tanker 10KL capacity taking 3 hrs per 225 cum GSB watering
					Camber board with spirit level	3	Roller operator	1	Diesel Generator of GSB item will work for this item also
					Sensor paver finisher	1	Helper	6	Helper for plant, paver and roller
16			Tandem vibratory roller	1	Tipper(20t) - AMW	3	Tipper driver	3	160 Cum/day=384t/day,120 t/hr 1 Hot mix plant working for 8 hrs
					Hot mlx plant(120TPH)	1	Hot mix plant operator	2	7 cum per tipper trip working for 8 hrs. 8 trips per day.
	Construction of BM Layer including	160Cum			Diesel generator(62KVA)	1	Bitumen Sprayer operator	1	Sensor Paver capacity 40 cum/hr.
	prime coat and tack coat	10000111			Bitumen Distributer	1	Paver operator	1	Tandem roller capacity 40 cum/hr.
					Diesel generator(10KVA)	1	Tandem roller operator	1	Diesel generator(10KVA) is for office and QC lab.
					Sensor paver finisher	1	Helper	5	
							Quality Engineer	1	
17			Sensor paver finisher	1	Tipper 10t capacity	2	Tipper driver	2	Same Sensor paver & Hot mix plant of BM will be used in SDBC.No separate plant is required
	Construction of SDBC	80Cum			Hot mlx plant(120TPH)	1	Hot mix plant operator	1	This item is not a parallel activity. Machine
					, , ,		Paver operator	1	requirement of this item will be taken care of by other machines freed from other items.
							Helper	1	muchines freed from other items.
18					Tipper(20t) - AMW	2	Tipper driver	2	12 cum per tipper trip working for 8 hrs
	Stone masonry toe wall, parapet wall	88 Cum=114 Cum					Helper		0.1 mate ,1.2 mason & 1.2 mazdoor required for 1 cum RRM
	Stone mason y toe wan,parapet wan	loose material					Mate	22	
							Mason	110	
							Mazdoor	110	

SI No	Item of work	Out put required per day	Main machine type	Nos require d	Supporting machine / equipment type	Nos requir ed	Man power Category	Nos required	Remarks
1	2	3	4	5	6	7	8	9	10
19			Shuttering of 15m length	9 sets	Tractor trolley	3	Tractor driver	3	Steel required =[135 X(10/20)X80 kg per cu m of concrete]/10
					Vibrator pin type	3	Vibrator operator		Cement Bags=7X45-315 Bags/day,5 trips@ 60 bags/trip. Aggregate+ sand 10 trips. Bar bending will be carried out in 20 days out of 30 working days.
					RM-800 Concrete Mixer	1	Mate	5	1 MT steel reinforcement bending requires 0.4 mate,2 black smith & 6.5 mazdoor.
	RCC retaining wall	135 Cum concrete					RM-800 operator	1	
							Mason		1.68 mate, 6 mason 36 mazdoorfor all operations of shuttering concreting etc complete for 120 cu m of concrete using Batching plant, concrete pump, Trasnsit mixer etc. 0.34 mate, 2 black smith and 6.5 Mazdoor per 1 t of steel.
							Mazdoor	81	Quantity of concrete per day=9X15X1X1=135 Cu m / day
							Blacksmith	12	Time period =5371÷[9X15X1X1X(6/3)] =19.91 weeks say 22 weeks
20					Transit Mixer	3	Mini Batching plant operator	2	10 t capacity 1 truck working for 1 shift@ 1 trip per 1 hr.Steel requirements =[60X120kg/cu mX(10/20)]/1000=3.6t say 4t per day.
			Shuttering of 15m	13 sets	Vibrator pin type	13	Batching plant helper	2	15 cum/hr Mini Batching Plant working for 16 hrs. Mazdoor for concrete = 18 + Mazdoor for steeel=26=44.
			length(each set for 2 abutments)		Truck	1	Transit mixer Driver	6	7 cum capacity 1-Transit mixer working for 16 hrs@ 1 trip per 2 hr
					Diesel generator(125KVA)	1	Helper		1.68 mate, 6 mason 36 mazdoorfor all operations of shuttering concreting etc complete for 120 cu m of concrete using Batching plant, concrete pump, Trasnsit mixer etc. 0.34 mate, 2 black smith and 6.5 Mazdoor per 1 t of steel.
	Minor Bridges	60 Cu m Concrete			Stessing Jack with pump	2	Vibrator operator	12	stressing 16 hours per day
					Grouting pump with agitator	2	Truck driver		One day concreting per 3 working days is possible which gives finished concrete in 3 days.
					Diesel generator 35 KVA	1	Quality Engineer		For five Box bridges quantity of concrete is 2712 Cu m to be done in 144 days . Quantity of concrete for box bridges = 2712÷(144/3)=56.5 cu m say 60 cu m.
					Mini Batching Plant	1	Mate		Out of 30 working days 10 days concreting will be done for box bridges 10 days for RCC slab bridges and 10 days PSC bridges rexpectively.
							Mason		Each shuttering set is for 2 abutments.
							Mazdoor	44	
							Blacksmith	8	

Reporting date:		Р	hysica	al Progre	ess Repo	orting				Weighte %ge of we targeted each we	ork %go	eighted e of work geted in ch week	target	work ed in	Weight %ge of w targeted each we	vork %g din ta	rgeted in	targete	work %	Weighted 6ge of work targeted in each week	k %ge o targe	of work %	Veighted ge of work argeted in ach week	%ge o	of work %	argeted in	I Weig rk %ge o n targe k each	of work eted in	Weighted %ge of wor targeted ir each week	k %ge of targe	eted in t	targeted in	Weighted %ge of wo targeted i each wee	rk %ge n targ	jeted in	Weighted %ge of work targeted in each week	targeted	work %g	Weighted ge of work argeted in each week	target	of work %	Weighted %ge of work targeted in each week	rk %ge of n target	eted in	Weighted %ge of work targeted in each week
tem of work	Physical unit of Monitoring	for the whole work	work Prog.		Weighted No of weeks as per work Prog. Col 5 X Col 6	in the physical units of	%ge of work completed (Col 8 /Col 4) X 100	of work Col 7/ 'A'	10	Jan-11		Feb-11	Mar		Apr-1		May-11	Jun-		Jul-11			Sep-11			Nov-11			Jan-12		eb-12	Mar-12	Apr-12		ay-12	Jun-12	Jul-12		Aug-12	Sep		Oct-12			Dec-12
Cutting of trees & cutting of trunks (Trees area very small)	Nos	18	5	1	5	8	0	0.0118	110				0.24							8 8 8 8									00.00							00.00 00.00									000000000000000000000000000000000000000
Clearing and grubbing	Km	14.597	6	1	6		0	0.0141	0	00.0	0.00	00:00	0.00	0.24	0.00	0.00	00:00	00.0	00:0	0000	0.00	0000	00.00	0000	0.00	0000	00.0		0.24		00:0	0000	0.00	00:0	0.00	0.00	0000	00.00	00.00	0.00	00:00	0000	00.00	0.00	0.00
Dismantling of existing structure (RCC, PCC & Stone Masonry)	Cum	101.55	8	1	8		0	0.0188	0	0.00	0.00	00:0	0.00	00:00	0:0	00.00	00:00	0.00	00:0	00:00	00:00	00.00	00.00	0.24	0.00	0.24	0.00	00.0	0.24	00.0	00.0	00:0	00:00	00:0	0.00	00:0	00:00	00.00	00.00	00.00	0.00	00:00	00.0	00:00	00:00
Excavation in soil / ordinary Rock																																													
a) Soil	Km	14.597	18	1	18		0	0.0424	0	00.00	00.00	00:00	0.00	0.24	0.24	0.00	00.00	00.00	00:00	00.00	0.00	00.00	00:00	0.24	0.24	0.24	0.24	0.24	00:0	00:00	00:0	00.0	00.0	00.00	0.00	00:0	00.00	0.00	00:00	0.00	00:00	00.0	00.0	0.00	00.00
b) Ordinary rock	Km	14.597	11	1	11		0	0.0259	0	0.00	00.00	0.00	0.00	0.00	0.00	0.00	00.00	0.00	00.00	0000	00.00	0.00	0.00	00.00	0000	0.00	0.24	0.24	0.24	00.00	0000	0000	0000	00.00	0.00	0.00	0000	0.00	0000	0.00	0.00	0000	0000	0.00	0000
c)Construction of embankment with material obtained from Borrow area	Km	14.597	26	0	0		0	0	0	00.0	00.0	00.00	00.0	00.0	000	0000	00.0	00.0	00.0	000 000	00.0	00.0	0.00	00.0	0000	00.0	00.0	00:0	00.0	00.0	000	000	00.0	00.0	0.00	00.0	0000	00.0	0000	0.00	00.0	00.0	00.0	00.0	0000
d)Construction of embankment with material deposited from roadway cutting	Km	14.597	21	1	21		0	0.0494	0	00.00	00.00	00.00	00.00	0.00	0.00	00.00	00.00	00.00	00.00	000	00.00	0.00	0.00	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0000	00.0	00.00	00.00	00.0	0000	00.00	0.00	00.00	00.00	00.0	00.00	0.00	0000
e)Excavation in Hilly area in soil and disposal in barren valley	Km	14.597	41	1	41		0	0.0965	0	00.00	0000	00:0	0.00	0.24	0.24	0.00	00.00	00.0	0000	00.0	0000	00.00	0.00	024	0.24	024	0.24	0.24	0.24	0.24	024	0.24	0.24 0.24 0.24	0.24	0.24	00.0	00.0	00.0	00.0	0.00	00:00	00.0	00.0	00.0	0000
f) Hill area in Ordinary rock by Mechanical Means	Km	14.597	23	1	23		0	0.0541	0	0.00	00.00	00.00	0.00	0.24	0.24	0.00	00.00	0.00	00.00	0000	00.00	0000	0.00	0.24	0.24	0.24	0.24	0.24	0.24	0.00	00.0	000 000	00.00	00.00	0.00	00.0	0000	0.00	00:0	0.00	0.00	0000 0000	00.0	0.00	0000
Construction of hard shoulders	Km	14.597	19	1	19		0	0.0447	0	00.00	0000	00:0	0000	00.0	00:0	0000	00.00	00.0	0000	0000	0000	00.00	00.0	0000	00.0	0000	00.0	00:0	0.24	0.24	024	0.24	0.24 0.24 0.24	0.00	0.00	00.0	00.0	00.0	00.0	0.00	00:00	00.0	0.00	0.24	0000
Subgrade (Additional Item)	Km	14.597	19	1	19		0	0.0447	0	00.0	0000	00.00	0000	00.00	0:00	00.00	00.00	00.00	00.00	00.00	00.00	0000	0.00	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.00	000	00:00	0.00	0.00	0000	0.00	00.00	0.00	0.00	0.00	00.00	00:00	0.00	0000
Construction of Granular Sub - base																																													
GSB I Layer	Km	14.597	11	1	11		0	0.0259		00.0	0000	00.00	0000	00.00	0:00	00.00	00.00	0.00	00.00	0000	00.00	0.00	0.00	00.0	0000	00.00	0000	0.00	0.00	00.00	000 000	8 8 8 8	0.00	0.00	0.00	0.00	0.00	00.00	0.00	0.00	0.00	0.24	0.24	0.24	0.00
GSB II Layer	Km	14.597	9	1	9		0	0.0212		00.0	00.0	00.00	00.0	00.0	000	0000	00.0	00.0	00.0	0000	00.0	00.0	0.00	00.0	0000	00.0	00.0	00:0	00.0	00.0	000	000	0.00	0.00	0.00	00.0	0000	00.0	0000	0.00	00.0	0.00	024	0.24	0000
Preperation of Wet Mix Macadam																																													
WMM I Layer	Km	14.597	12	1	12		0	0.0282		00:0	00.0	00.0	00.0	00:0	00:0	00:0	00.0	00.0	00.0	0000	00.0	0000	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00:0	000	000	0.00	0.00	00.0	00.0	0000	00.0	0000	0.00	0.00	0.23 0.23	0.23 0.23 0.23	0.23	0.00
WMM II Layer	Km	14.597	12	1	12		0	0.0282		00.00	00.00	00.00	00.00	00.00	0.00	00.00	00.00	00.00	00.00	0000	00.00	0.00	0.00	000	0000	00.00	00.00	00:00	00.0	00.00	000	000	0.00	0.00	00.00	00.0	0000	00.00	00.0	0.00	0.00	0.23	0.23	0.23	0.23
Dense Bituminous Coucrete	Km	14.597	13	1	13		0	0.0306		00.0	00.0	00.0	00.0	00.0	00:0	00.0	00.0	00.0	00.0	000	00.0	00.0	00.0	00.0	000	00.0	00.0	00.0	0000	00:0	000	000	0.00	0.00	00.0	000	000	00.0	0000	0.00	00.0	0.24 0.24 0.24	0.24 0.24 0.24	0.24	0.24
SDBC	Km	14.597	7	1	7		0	0.0165		00.0	0000	00.00	0000	00.00	0:00	00.00	00.00	0.00	00.00	0000	00.00	0.00	0.00	00.0	0000	00.00	0000	0.00	0.00	00.00	000 000	8 8 8 8	0.00	00.00	0.00	0.00	0.00	00.00	0.00	0.00	0.00	00:00	0.00	0.24	0.24
Construction of Drain	Km	19.570	27	1	27		0	0.0635	0	00.0	0000	00.0	0000	00.0	000	0000	00.0	00.0	00.00	0000	00.0	0000	0.00	00.0	00.0	0000	00.0	00:0	0.23 0.23	0.23	0.23	0.23	0.23 0.23 0.23	0.00	0.00	00.0	0000	00.0	0000	0.00	00.00	0.23	0.23 0.23	0.23	023
Construction of breast wall, Toe Wall & Parapet wall	Km	0.740	20	1	20		0	0.0471	0	0.00	00.00	00.00	00.00	0.00	0.00	0.00	00.00	0.00	00.00	0000	00.00	0000	0.00	00.00	00.0	00.00	00.00	00:00	00.0	0.00	0.00	0.24	0.24	0.00	0.00	00.0	0000	0.00	00.0	0.00	0.00	0.24	0.24	0.24	0.24
Construction of RCC & PCC Retaining Wall	m	564.26	15	1	15		0	0.0353	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	00.00	0.00	0.00	0000	0.00	0.00	0.00	00.00	0000	0.00	0.00	0.00	00.0	00.00	000	0000	0.24	0.00	0.00	00.0	0000	0.00	0000	0.00	0.00	0.24	0.24	0.24	0.24
Miscellaneous works like Km stones	km	14.597	12	1	12		0	0.0282	0	00.00	00:00	00:00	0.00	00:00	0.00	00:00	00.00	00.00	00:00	00.00	0.00	00.00	00:00	00:00	00.00	00.00	00:00	00:00	00:0	00:00	00:0	00.0	00.0	00.00	0.00	00:0	00.00	00:00	00:00	0.00	0.00	0.23	0.23	0.23	0.23
Bus Way and Truck Way	Nos	2	8	1	8		0	0.0188		0.00	0000	0.00	0.00	0.00	0.00	0.00	00.00	0.00	00.00	0000	0.00	00.00	0.00	00.00	0.00	0.00	00.00	00:00	0000	0.00	00.00	0000	0000	00.00	0.00	00.0	0000	0.00	0.00	0.00	00.00	0000	0.00	0.24	0.24
Improvement of Junction at sangam	Nos	1	8	1	8		0	0.0188		00:00	00:00	00:00	00:00	0.00	0:0	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:00	00:0	0.00	00:00	00:00	00:00	00:00	00:0	00.00	800000000000000000000000000000000000000	00.00	0:00	00.00	0.00	00:00	00:00	00:00	00:00	00:00	00:00	0.00	0.24	0.24
Construction of Box culverts	Nos	54	36	1	36		0	0.0847	0	00.00	0.00	0.00	0.00	0.00	000	0000	0000	0.00	0.00	0000	0.00	0.00	0.00	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.00	0000	0.00	0.00	0.00	0000	0.24	0.00	0.00	0.00
Protection works of Box culverts	Nos	54	28	1	28		0	0.0659	0	00.00	00:00	0.00	00:00	0.00	8 8 8	00:00	00.0	00.00	8 8 8 8	0000	0:00	0.00	0.00	00:0	0.00	00.0	00:00	00:00	0.24	0.24	0.24	0.24	0.24	0.24	0.24	00.0	0000	00:00	0:00	00.00	00:00	0.24	0.24	0.24	00.00
a) 2x2m 8Nos	Nos				0		#DIV/0!	0																														<u> </u>							
b) 2x3m 4 Nos	Nos				0		#DIV/0!	0																																					
c)3x3 m 3 Nos	Nos				0		#DIV/0!	0																													$\rfloor ^{-}$				$\lfloor \rfloor \rfloor$				

d)3x4 m 1 Nos	Nos			0	#DIV/0!	0																																							
e) 4x3m 1 No	Nos			0	#DIV/0!	0																															+								
																																					#								
f) 4x4m 1 Nos	Nos			0	#DIV/0!	0																															_								
18 Protection works at Box culverts	Nos			0	#DIV/0!	0																															\perp								
a) 2x2m 8Nos	Nos			0	#DIV/0!	0																																							
b) 2x3m 4 Nos	Nos			0	#DIV/0!	0																																							
c)3x3 m 3 Nos	Nos			0	#DIV/0!	0																																							
d)3x4 m 1 Nos				0	#DIV/0!	0																																							
e) 4x3m 1 No	Nos			0	#DIV/0!	0																																							
f) 4x4m 1 Nos	Nos			0	#DIV/0!	0																																							
15 Construction of Pipe Culverts				0	#DIV/0!	0																																							
1R of 1200mm Dia	Nos			0	#DIV/0!	0																																							
2R of 1200mm Dia	Nos			0	#DIV/0!	0																																							
19 Construction of PSC Bridges	Nos	1 36	1	36	0	0.0847			0 0 0	0 0 0	0 0 0	0 0 0			0 0 0		0 0	0 0 0	0 0	0 0 0	0 0 0		0 0	0 0 0	0 4	4 4	4 4 4	4 4 4	4 4	4 4 4	4 4	4 4 4	4 4 4	4 4	4 4 ,	1 4 4	4 4	4 0 0	0 0	0 0 0	0 4	4 4 4		0 0	
a Open Foundation								00 00	0.0	00 00	00 00	00 00	8 8 8	0.0	00 00	0.0	0.0	0.0	0.0	0.0	0.0	8 8 8	0.0	00 00	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	00 00	0.0	0.2	0.0	0.0	0.00
i) At chainage 4.352 km & 5.360 Km(1 x 10 Mtr.)	Nos																																				+								
ii) At chainage 6.825 Km (1 x 24 Mtr.)	Nos																																												
b Well Foundation	Nos								+							+																					+								
									+			+		+	+	+								+					\mathbb{H}								+								
i) At chainage .659 Km (1 x 16Mtr)	Nos											+		+	+	+								+					H		+						+								
ii) At chainage 2.923 Km (1 x 18Mtr)	Nos								+																												\perp								
iii) At chainage 8.785 Km (1 x 24Mtr)	Nos																																				\perp								
25 Improvement of Junction at NH 52A	Nos																																				\perp								
Total				425		1.00	0																																						1 2.35 4 2.35 3 1.88 0 0.70

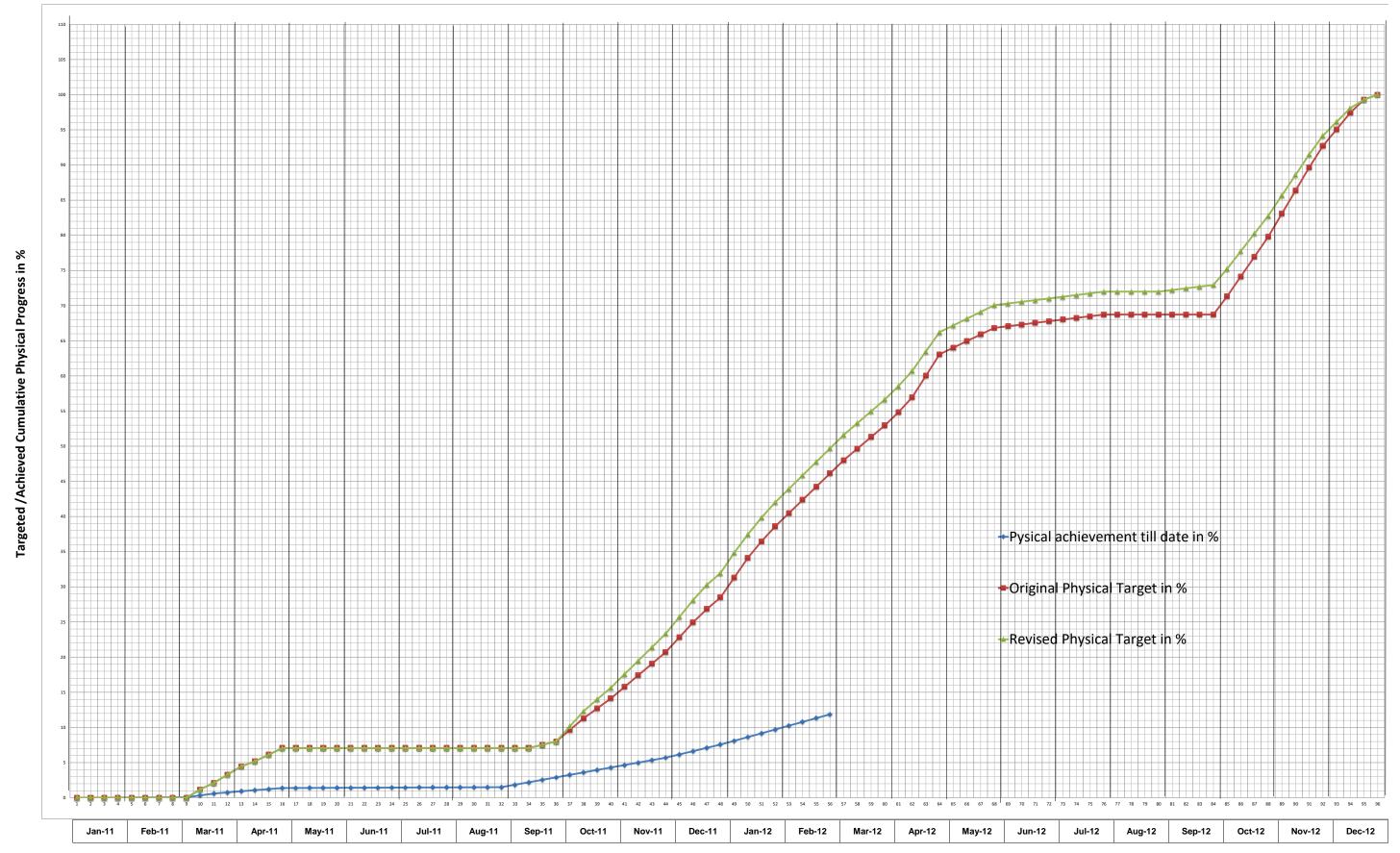
Reporting date:	Phys	ical Prog	ress o	data for	Target to	tal progres	s curve		targeted	ork %ge	geted in	Weight	vork %	argeted in	targeted	in targete	work %ge ed in tar	rgeted in	Weighted %ge of work targeted in	targeted i	ork %ge o	f work % ted in t	argeted in	targeted	ork %ge	eted in	Weighted %ge of wo targeted i	in targe	f work ted in	Weighted %ge of wo targeted i	rk %ge o	f work % ted in	targeted	ork %ge o in targe	of work %	targeted	ed We ork %ge	eighted of work geted in	targeted	ed Wei	ighted of work jeted in	Wei
Item of work	Physical unit of Monitoring	Quantity for the whole work	apprd work Prog.	of shifts per day	per work	completed in the physical units of	completed (Col 8 /Col 4) X 100	for the Item of work Col 7/ 'A' Col 9 X Col 10	Jan-1	ı F	eb-11	each w	1	Apr-11	May-1	1 Jun-1	11 .	Jul-11	Aug-11	Sep-11	Oct	t-11	Nov-11	Dec-11	Ja	n-12	Feb-12	Ма	r-12	Apr-12	Ма	y-12	Jun-12		I-12	Aug-12	2 S	ep-12	Oct-12	? No	h week	De
Cutting of trees & cutting of trunks (Trees area very small)	Nos	6	2	1	2	8	0	0.0052	8 8 8			00 42 8		8 8 8		8 8 8 8	8 8 8		0 0 0 0 0						8 8 8	П	8 8 8			8 8 8		8 8 8		8 8 8	8 8 8	8 8 8	8 8	8 8 8	00: 00:	00.00		
Clearing and grubbing	Km	9.11	2	1	2		0	0.01	000	0 000	0 000	0.00 0	3.24 0	0 00:0	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000	0 0000	0 000	000000000000000000000000000000000000000	0000	000	000000000000000000000000000000000000000	0.00 0.24 0	0 000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	0 000	0 0000	000000000000000000000000000000000000000	0 000	0 000	0 000	000	000	0000	000000000000000000000000000000000000000	0 000		0000	
Dismantling of existing structure (RCC, PCC & Stone Masonry)	Cum	64	7	1	7		0	0.02	000	0.00	0.00	0000	000	0.00	00.00	0000	00.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	000	0.00	0.00	0.00	0.00	000 000	0.00	0.00	0.00	0.00	000	0.00	0.00	0.00		000	
Excavation in soil / ordinary Rock																																										
a) Soil	Km	12.89	11	2	22		0	0.06	0000	0.00	0000	0.00	0.24	0.24	00.0	00.00	0.00	00.00	00.00	0.00	0.00	0.48	0.48	0.48	0000	0.00	0000	0000	00:00	0000	0000	0000	0.00	0.00	0000	0000	0000	0000	0.00	00.00	00.0	0.00
b) Ordinary rock	Km	13.15	9	1	9		0	0.02	0000	0.00	00.00	00.00	00.0	0.00	00.00	00.00	0.00	0.00	00.00	0.00	0.00	0.00	0.00	0.24	0.24	0.00	0.00	00.00	0.00	0.00	00.00	00.00	0.00	0.00	0.00	00.00	0.00	0.00	0.00	00.00	0.00	0.00
c)Construction of embankment with material obtained from Borrow area	Km	14.13			0		0	0.00	00.0	0.00	00:0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00:0	00.0	00.0	00.0	00.0	00:0	00.0	00:0	00.0	00.0	00.0	00:0	00.0	00:0	00.0	00.0	0.00	00.0	00.0	00.0	00:0
d)Construction of embankment with material deposited from roadway cutting	Km	14.13	21	1	21		0	0.05	00.00	00.00	00.0	00.00	0000	00.00	00.0	0000	0.00	00.00	0000	00.00	0.00	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.00	00.00	00.0	00.00	00.00	00.00	00.0	00.0	00.00	00.0	00.00	00.00	00:0	0.00
e)Excavation in Hilly area in soil and disposal in barren valley	Km	13.19	32	1	32		0	0.08	00:00	0.00	00:0	0.00	0.24	0.24	00.0	0.00	0.00	00.00	0.00	0.00	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	00:00	00.00	00:0	00:0	00:00	00:0	00.00	00.00	00:00	00.0 00.0
f) Hill area in Ordinary rock by Mechanical Means	Km	14.13	16	1	16		0	0.04	0000	0.00	00:0	0.00	0.24	0.24	0000	00.00	0.00	0000	0000	0.00	0.00	0.24	0.24	0.24	0.24	0.24	0000	0000	00:00	0000	0000	0.00	0.00	0000	00.00	00:00	0000	000 000	0000	00.00	00:00	0.00
Construction of hard shoulders	Km	14.13	19	1	19		0	0.05	0.00	0.00	0.00	00.00	00.0	0.00	00.00	8 8 8 8	00.00	0.00	8 8 8 8 8 8 8	0.00	0.00	0.00	8 8 8 8	8 8 8 8	0.00	0.24	0.24	0.24	0.24	0.24	0.00	0.00	0.00	00.00	8 8 8	80.00	00.00	0.0 0.0	0.00	0.00	0.00	00.00
Subgrade (Additional Item)	Km	14.13	19	1	19		0	0.05	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.00	0000	00.0	00.0	00.0	0.00	0.24	0.24	0.24	0.24	0.24	0.24	00.0	00:0	00.0	0000	00.0	0.00	00.0	00:0	00.0	00.0	00.0	00.0	00.0	00.0	00:00
Construction of Granular Sub - base																	++	+																							#	+
GSB I Layer	Km	14.13	11	1	11		0	0.03	00:00	0.00	0.00	0.00	00:0	00.0	00:0	0.00	00.0	00.00	0.0 0.0 00.0	0.00	0.00	00:00	0.00	8. 8. 8. 8.	00:00	00:0	0.00	0.00	00:00	0.00	0.00	00:00	0.00	0.00	00:0	00:0	0.00	0.00	0.24	0.24	0.24	0:00
GSB II Layer	Km	14.13	9	1	9		0	0.02	0000	0.00	0.00	00.00	0.00	0.00	00.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	00.0	0.00	0.00	0.00	0.24	0.24	0.00
Preperation of Wet Mix Macadam WMM I Layer	Km	14.13	12	0.5	6		0	0.02									++	+																					++	++	+	_
WMM II Layer	Km	14.13	12	0.5	6		0	0.02	00:0	0:0	8. 8. 8.	0.0	0:00	80:0	00.00	00.0	00:00	0.0	00.0	0.00	0:0	8 8 8	8 8 8	00:0	00:0	0:0	0:00	0:0	0:00	0.00	0.00	00:00	0:00	00:00	8 8 8	8 8 8	00:00	8 8 8 8	0.12	0.12	0.12	0.12
Dense Bituminous Coucrete	Km	14.13	12	0.5	6		0	0.02	00:0	0:00	000	00:0	00.0	00:0	0000	0.00	00:0	0000	0000	0000	000	00:0	000	0.00	00:0	00:0	00:0	000	00:0	0.00	0.00	00:0	00:0	0000	00:0	00:0	00:0	00:0	0.12	0.12	0.12	0.12
SDBC	Km	14.13	6	0.7	4.00		0	0.01	00:0	00:0	0.00	0.0	0.00	0.0	00.0	0.0	0.00	0.0	0.0	0.00	0.0	0.0	8 8 8 8	0.0	00:0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.0	00:0	8:00	8: 0:0	00:0	0.0	0.12	0.12	0.12	0.12
Construction of Drain	Km	14.13	27	1	27		0	0.07	0 0 0		0 0 0	000							0000																							
Construction of breast wall, Toe Wall & Parapet wall	Km	14.13	20	1	20		0	0.05											000000000000000000000000000000000000000																							
Construction of RCC & PCC Retaining	Km	14.13	14	1	14		0	0.04											0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.																							
Miscellaneous works like Km stones	km	14.597	12	1	12		0	0.03											0000																							
Bus Way and Truck Way	Nos	2	8	1	8		0	0.02											0.00.0																							
Improvement of Junction at sangam	Nos	1	8	1	8		0	0.02											0.00																							
Construction of Box culverts	Nos	53	40	1	40		0	0.10											0.00.0																							
Protection works of Box culverts	Nos	53	28	1	28		0	0.07											0.00																							
a) 2x2m 8Nos	Nos				0		#DIV/0!	0.00																																		
b) 2x3m 4 Nos	Nos				0		#DIV/0!	0.00																																		
c)3x3 m 3 Nos	Nos				0		#DIV/0!	0.00																																		
d)3x4 m 1 Nos	Nos				0		#DIV/0!	0.00									Ш																									
e) 4x3m 1 No	Nos				0		#DIV/0!	0.00									Ш	$\perp \perp$																					'	\coprod	$\perp \downarrow$	\perp
f) 4x4m 1 Nos	Nos				0		#DIV/0!	0.00									Ш	$\perp \perp$																					'	\coprod	$\perp \downarrow$	\perp
Protection works at Box culverts	Nos				0		#DIV/0!	0.00									\coprod	$\perp \downarrow$																						\coprod	\bot	\perp
a) 2x2m 8Nos	Nos				0		#DIV/0!	0.00									\coprod	+																					'	\coprod	$\perp \!\!\! \perp$	\perp
b) 2x3m 4 Nos	Nos				0		#DIV/0!	0.00			$\perp \downarrow$						\coprod	+								\Box				+										\coprod	\bot	+
c)3x3 m 3 Nos	Nos				0		#DIV/0!	0.00									\coprod	+								\Box														\coprod	$\perp \!\!\! \perp$	4
d)3x4 m 1 Nos					0		#DIV/0!	0.00									\coprod	+																						\coprod	\bot	4
e) 4x3m 1 No	Nos				0		#DIV/0!	0.00																																		Ш

						0.00							П																							\prod				ПТ	ПП		
f) 4x4m 1 Nos	Nos			0	#DIV/0!	0.00																														44				ш	$\perp \! \! \perp \! \! \perp$		
15 Construction of Pipe Culverts				0	#DIV/0!	0.00																																					
1R of 1200mm Dia	Nos			0	#DIV/0!	0.00																																					
2R of 1200mm Dia	Nos			0	#DIV/0!	0.00																																					
19 Construction of PSC Bridges	Nos	2	36 1	36	0	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.00	0.00	0.00	0.24	0.24	0.00	0.00
a Open Foundation																																							Ш				
i) At chainage 4.352 km & 5.360 Km(1 x 10 Mtr.)	Nos																																										
ii) At chainage 6.825 Km (1 x 24 Mtr.)	Nos																																										
b Well Foundation	Nos																																										
i) At chainage .659 Km (1 x 16Mtr)	Nos																																										
ii) At chainage 2.923 Km (1 x 18Mtr)	Nos																																										
iii) At chainage 8.785 Km (1 x 24Mtr)	Nos																																										
25 Improvement of Junction at NH 52A	Nos																																										
Total			393	384		1.00	00.00	00.00	0.00	1.18	1.18	0.94	0.00	0.00	0.00	0.00	0.00	0.00	00.00	0.47 0.47 2.16	2.16	1.92	1.92	2.40	2.87	2.40	1.92	1.92	1.68	1.92	2.75	96.0	0.96	0.24	0.24	0.24	0.00	0.00	0.24	2.28	2.52	2.91	1.96
				∢		;	0.0 0.0	0.00	0.00	2.12	5.18	7.06	7.06	7.06	7.06	7.06	7.06	7.06	7.06	8.01 10.16	12.32	17.59	23.33	30.28	34.83	39.86	43.94	49.69	53.28 55.0 56.6	58.6	66.2	69.1	70.1	70.8	71.3	77.0	72.0	72.0	72.7	7.77	82.8	88.6 91.5	96.1 98.1 99.3

WEIGHTED % age OF WORK COMPLETED IN WEEK UPTO 31 st JULY 2011 NAME OF WORK-2- LANING PASIGHAT TO PANGIN FROM KM 56+920 TO 71+051 (PACKAGE 'IV') JOB NO: 229/Ar.Pkg/2010-11/016

Re	eporting date:29.02.2012			Physica	al Progr	ess Repo	orting				of comp	nted %ge work leted in veek		eighted % of work mpleted week	_	eighted ^o of work ompleted week	k d in co	eighted of work ompleted week	rk ed in d	Weighted of wo complete weel	rk ed in	Weighted of wo complete wee	rk ed in	Weighte of wo complet wee	ork ted in c	Veighted of wor complete week	k din _v	Veighted %g	of work	Weigh	nted %ge o	f work	Weighte comple	ed %ge of wo	rk V	Veighted %	ge of work in weekly	Weight	ed %ge of w	ork W	Veighted %ç	
SI No	Item of work	Physical unit of Monitoring	Quantity for the whole work	No of weeks as per apprd work Prog.	Number of shifts	weeks as	completed in the physical units of	%ge of work completed (Col 8 /Col 4) X 100	Weightage for the Item of work Col 7/ 'A'	Weighted %ge of work completed Col 9 X Col 10	Ja	an-11		Feb-11		Mar-11		Apr-11	1	May-1	1	Jun-ʻ	11	Jul-1	11	Aug-1		Sep-1			Oct-11			Nov-11		Dec			Jan-12		Feb-	2
ı	2	3	4	5	6	7	8	9	10	11	1 11	III IV	/ 1	11 111	IV I	11 111	IV I	11 111	ıl IV	1 11 1	II IV	1 11	III IV	1 11	III IV I	11 11	IV I	п	III IV	1	11 111	IV	1 1	I III	IV I	1 11	III IV	1	II III	IV I	П	111
Cu (T	utting of trees & cutting of trunks Frees area very small)	Nos	18	2	0.5	1	18	100	0.0025	0.25	0.0	0.0	0.0	0.0	0.0	0.0	10:0	0.0	0.0	0.01	ρ. Ο.Ο	0.0	0.01	0.0	0.00	0.0	0.0	00:00	8 8	0.00	0.00	0.0	0:00	0.00	0.00	0.00	8 8	8.00	0.00	0.0	0.00	0.0
Cle	earing and grubbing	Km	14.131	2	1	2	7.127	50.44	0.005	0.25	0.00	0.0	00.0	0.00	0.00	0.12	0.01	00.0	0.00	0.00	00:00	00.0	00:00	0.00	0.00	00.0	0.00	00:00	00.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	00.00	0.00	0.00	0.00	0.00	0.00
Di:	smantling of existing structure (RCC, CC & Stone Masonry)	Nos	69	7	1	7	15	21.74	0.0176	0.38	0.00	00.0	0.00	0.00	0.00	0.00	00.0	00.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	00.0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02
Ex	cavation in soil / ordinary Rock																																									
a)	Soil	Km	14.131	11	2	22	7.127	50.44	0.0553	2.79	00:00	8 8 8	00.00	00.00	00.00	0.05	90	30.3	0.05	00.00	00.0	00.00	00.00	00.00	00.0	00 00	8 8	80.08	80.0	80.0	80.08	80.0	80.0	80.0	90'	80.0	80.0	4	4 4	41.	4 41.	14
b)	Ordinary rock	Km	14.131	9.000	1	9	1.200	8.490	0.023	0.190	00 8	8 8 8	000	00 00	00 00	914	4 4	24 04	410	00 00	00 00	00 00	00 00	00 00	00 00 3	8 8 8	8 8	8 88	500	800	800	80	5000	500	800	500	80 83	908	900	900	900	900
c)(Construction of embankment with aterial obtained from Borrow area	Km	14.131		1			0	0	0	00 00	3 8 8	00 00	00 00	00 00	00 00	00 00	00 8	00 00	00 00	00 00	00 00	00 00	00 00	0 0 0	0 0 8	3 8	0 0	00 00	00	8 8	8 00	00	0 0	00	00 00	0 8	8 8	00 00	00	8 8	00
	Construction of embankment with aterial deposited from roadway cutting	Km	14.131	29	1	29	1.25	8.85	0.0728	0.64	000	3 8 8	0 00	0 0	0 00	0 0	00 00	00 8	00 00	0 00	0 00	0 00	00 00	0 0	0 0 0	00 00 00	8 8	0 20.	20.	.02	20.	00 0	0 70.	0 0 0	.02 0	0 0	0 0 0	03	0 0 0	03 0	03 0	03 0
e)l	Excavation in Hilly area in soil and sposal in barren valley	K m	14.131	34	1	34	7.127	50.44	0.0854	4.31	00 00	8 8 8	000	0 0	00 00	80 80	80 80	80 80	80 80	00 00	00 00	0 0	0 0	00 00	0 0 0	9 9 8	8 8	5 5	13 0	13	6 6	13 0	13 0	13 6	.13 0	19 0	6 6	9 6	19 0	.19 0	19 0	19 0
f) I	Hill area in Ordinary rock by echanical Means	Km	14.131	16	1	16		0	0.0402	0	00 00	8 8 8	0 00	0 0	0 001	00 00	0 0	000	00 00	0 00	0 00	0 0	000	000	00 00 0	8 8	8 8	0 0	000	000	0 0	003	000	0 0	000	0000	00 00	00	0 0	000	00 00	003
-	onstruction of hard shoulders	Km	14.131	19	1	19		0	0.0477	0	8 8	3 8 8	00.	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8 8	8 8 8	3 8	8 8	8 8	8 8	8. 8	8 8	00.	8 8	0.	00.	8 8	8 8	00 00	8 :	8 8	00:
Su	ubgrade (Additional Item)	Km	14.131	19	1	19	0.62	4.39	0.0477	0.21	8 8	8 8	00.00	8 8	00.00	8. 8.	8 8	8 8	8 8 8	8 8	8 8	8 8	8 8	0 00	8 8 8	8 8 8	8 8	ρ. ο	5 6	ρ.	9. 8	δ. δ.	Ю.	ρ. ο	0.01	ρ. ο	6. 9	5 5	ρ. Ο Ο	Б.	D. 0.	0.01
Co	onstruction of Granular Sub - base												0						7																							
GS	SB I Layer	Km	14.131	11	1	11		0	0.0276		00.00	8 8 8	00.	00.00	00:00:00:00:00:00:00:00:00:00:00:00:00:	00.00	0 0	90 8	00:	00.00	00.00	000	00:	00.00	00.00	00 00	8 00	000	00:	00.	00:00	00.	00:	00:	00.0	00.00	00 8	90.	000	00:	00:	00.
GS	SB II Layer	Km	14.131	9	1	9		0	0.0226		8 8	8 8 8	00.00	8 8	8 8	8 8	8 8	8 8	8 8 1	8 8	8 8	8 8	8 8	8 8	8 8 8	8 8 8	8 8	8 8	8 8	8 8	8 8	8 8	8	8 8	00'	8 8	8 8	8 8	8 8	8	8 8	00.0
Pr	eperation of Wet Mix Macadam												0						7																							
w	MM I Layer	Km	14.131	12	0.5	6		0	0.0151		000	000	000	00.00	00.00	00.00	000	00.0	000	000	000	000	000	000	00.00	000	000	000	000	000	000	000	000	000	0.00	00.0	000	000	000	000	000	000
WI	MM II Layer	Km	14.131	12	0.5	6		0	0.0151		00.00	0.00	0.00	0.00	0.00	00.0	00.0	0.00	0.00	0.00	00.0	0.00	0.00	0.00	0.00	00.0	0.00	0.00	00.00	0.00	0.00	00.0	0.00	0.00	0.00	0.00	00.00	0.00	0.00	0.00	0.00	0.00
De	ense Bituminous Coucrete	Km	14.131	13	0.5	6.5		0	0.0163		0.00	00.0	0.00	0.00	0.00	0.00	00.0	00.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	00.0	0.00	0.00	00.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SE	DBC	Km	14.131	7	0.7	4.7		0	0.0117		0.00	00 0	000	00.0	000	000	000	000	000	000	000	000	000	000	000	000	000	0000	000	000	000	000	000	000	000	00.0	000	000	000	000	000	000
Co	onstruction of Drain	Km	14.131	27	1	27		0	0.0678	0	000	000	0.00	000	00.0	000	000	000	000	000	000	000	000	000	00.00	000	000	000	000	000	000	000	000	000	0.00	000	000	000	000	000	000	000
	onstruction of breast wall, Toe Wall & arapet wall	Km	14.131	20	1	20		0	0.0502	0	8 8	8 8 8	00.00	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8 8	8 8 8	8 8	8 8	8 8	8 8	8 8	8 8	8	8 8	00'	8 8	8 8	8 8	8 8	8	8 8	00.0
Co	onstruction of RCC & PCC Retaining	km	14.131	18	1	18		0	0.0452	0	8 8	3 8 8	00.	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8	8 8 8	8 8 8	3 8	8 8	8 8	8	0 0	8 8	00	8 8	8	00 00	8 8	8 8	8 8	8	8 8	00:
	scellaneous works like Km stones	km	14.131	12	1	12		0	0.0301	0	00.0	00.0	00.0	00.0	0.00	0.00	00.0	00.00	00.00	00.0	0.00	0.00	00.0	0.00	0.00	0.00	00:0	0.00	00.00	0.00	00.0	00.0	00.0	00.00	00:0	0.00	00.0	000	0.00	00.0	0.00	00.0
Вι	us Way and Truck Way	Nos	2	8	1	8		0	0.0201		00.00	00.0	00.0	000	0000	00.00	8 8	000	000	000	000	000	000	000	000	00 00	00.0	000	00.0	000	00.00	000	000	0000	00.0	0000	000	000	000	000	00.00	000
lm	provement of Junction at sangam	Nos	1	8	1	8		0	0.0201		0.0	8 8 8	00.0	8 8	00.00	8 8	8 8	80.8	80.00	00.00	8 8	8 8	00.00	0.00	8 8 8	8 8 8	8 8	00.0	8 8	0.0	8 8	0.0	0.00	00.00	00.00	00.0	0.0	8 8	0.00	80	8 8	00.0
Co	onstruction of Box culverts	Nos	53	40	1	40	15	28.3	0.1005	2.84	00.00	00 0	00.0	00.00	00.00	0.0	8 8	00.0	00:	00.0	0.0	00.00	00.00	00.0	00.00	8 8 8	8 00	0.10	0.10	1,10	0.10	10 0	01.10	0.10	0.10	0.14 (0.14	41	7 4 1	0.14	0.14 0	14 0
+	otection works of Box culverts	Nos	53	28	1	28		0	0.0703	0	00 0	8 8 8	00	00 00	00:00:	0 0	8 8	0 0	0 0 0	8 8	8 8	0 0	00 00	00 00	00 00 0	8 8 8	8 8	00 00	9 6	8	00 00	8 8	00	00 00	8	00 00	8 8	8 8	00 00	00:	0 00	00.
	onstruction of PSC Bridges & T Beam x24)	Nos	2	36	1	36		0	0.0904		000	0 0	0 00.0	0 00	0 00:	0000	0 0	000	0 00	000	0000	0000	0000	0000	0 000	000	8 8	000	0 00	000	0 00	000	000	0000	000	0000	000	000	0 00	000	00 00:	000
				409		398			1.00	11.86	,				, ,		۔ ای		2									, is	y :	, .,		, ,	2	10	5	, ,					#	-
Т	otal		-						-		10.0	0.0	0.01	0.01	0.01	0.27	0.16	0.15	0.15	0.01	0.0	0.0	0.0	0.0	0.01	0.0	0.0	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.47	0.47	9.5	- 0 - 3 - 3 - 3	9.5	2 0.5 2 5.0	2 0.54
						<					0.01	0.02	0.03	0.05	0.06	0.34	0.76	1.08	1.23	1.40	1.41	1.42	1.44	1.46	1.48	1.49	1.51	2.21	2.56	3.25	3.60	4.30	4.65	5.00	5.70	6.16	7.10	8.10	8.64	9.71	10.2	11.32

Cumulative Physical Achieved Curve 2 Laning Pashighat to Pangin Km-56+920 to 71+051 Upto 31st July,2011 (PACKAGE-'IV') JOB NO-229/Ar.Pkg/2010-11/016



Draft Targets fixed by RO MORT&H Itanagar through discussion with Mr K.S Goel and Mr Pramod Kumar of JKM infra on 09-03-2011 for the work of two laning of Pasigaht- Singer Job No SARDP-NE -Ar.Pkg-2010-11-018

Date:-10-03-2011

MILESTONE	PERIOD	MAJOR ACTIVITIES COMPLETED	
Milestone - I	28 th Oct. 2010 to 27 th April, 2011	 Clearing & grubbing, tree cutting etc. Excavation in soil/ordinary rock/ Hard rock Embankment work Box culvert i) 6m X 4m ii) 2m X 2m 	0 to 10 km 0 to 5.0 km 0 km to 5.0 km 1 No 3 Nos.
Milestone – II	28 th April, 2010 to 27 th Oct, 2011	MONSOON PERIOD Box culvert	4 Nos.
Milestone – III	28 th Oct, 2011 to 27 th April, 2012	 All Road work except Bridge Approaches and Miscellaneous items like road marking/traffic sign etc. Box culvert Minor Bridges 	32 Nos. 8 Nos. RCC minor bridges completion 3 Nos. PSC Bridges Part completion
Milestone - IV	28 th April, 2012 to 27 th Oct, 2012	Completion of all culverts and Bridges with complete road works including miscellaneous items like Road Junction, road markings, traffic sign etc. including all balance items required for completion of the work as per contract agreement.	100% complete

Annexure - A5

