

शष्ट्रीय श्रामीण अवसंश्चना विकास पुजेंसी (ग्रामीण विकास मंत्रालय, भारत सरकार)

National Rural Infrastructure Development Agency (Ministry of Rural Development, Govt. of India) 5th Floor, 15-NBCC Tower, Bhikaji Cama Place, New Delhi-110066

Dr. I. K. Pateriya Director (Projects-III) □: 011-26714003 □: 011-26179555 □: ik.pateriya@nic.in

D.O. No. Q-17022/2/2006/P-III

Dated: 06th July, 2021

Subject: Revision of inspection formats used by National and State Quality Monitors- regarding

Sir/Madam,

As you are aware, NRIDA had prescribed structured formats for reporting the quality grading of works by National and State Quality monitors. The overall quality grading was incumbent on the individual quality grading awarded to item and sub-item of works.

2. Use of WMM and bituminous base course has significantly increased in upgradation of rural roads sanctioned under PMGSY-II & III projects. However, the quality of these items are not being adequately captured in the present reporting formats of NQMs and SQMs. Integrated concrete block pavements/ panel concrete, retaining structures (*particularly in hill roads*) is also being widely used, the quality of which is also not being appropriately covered in the NQM and SQM reporting formats. It was also felt that information relating to deployment of contractor's engineer at site and other contract related issues may also be captured by the quality monitor.

3. Therefore, the reporting format has been revised and made uniform both for NQMs and SQMs. The draft revised format is enclosed for your perusal please. You are requested to kindly circulate it amongst the stake holders and send us with your comments. I shall be grateful if you could kindly send your comments on the draft format by 20th July, 2021. The comments may kindly be shared through e-mail at: **ik.pateriya@nic.in** also.

With regards,

Encl. as above

To,

Yours Sincerely,

(Dr. I. K. Pateriya)

Chief Engineer (PMGSY) in all States/ UTs

Copy: SQC in all States and UTs.

Director (Projects-III)

National Rural Infrastructure Development Agency Ministry of Rural Development, Government of India

Format QR-21- Part I

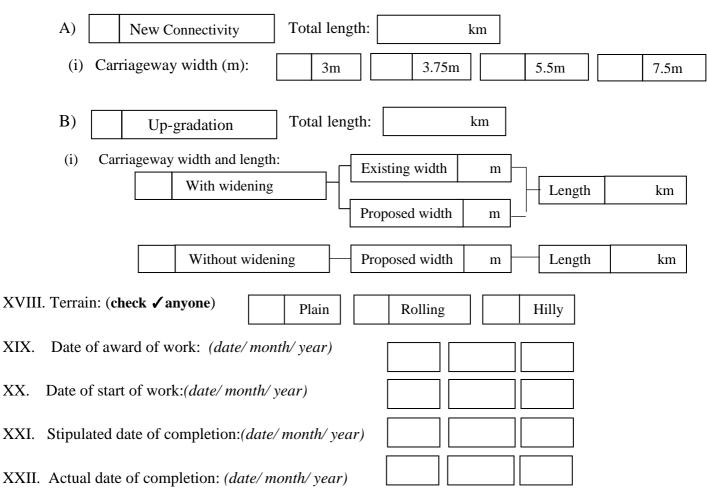
Format for information to QM for Inspection of Ongoing/Completed Work

PART I- Work Information (To be filled-up by PIU)

GENERAL: 1.

Ι.	Work is (<i>check√ any one box</i>)	0	ngoing	Compl	eted
II.	Current stage of work: (<i>check√ any one box</i>)	Stage-	·I	Stage-II	Composite
III.	Date of inspection:				
IV.	Name of Quality Monitor (QM):				Code:
V.	State: District:			Block:	
VI.	Name of Road:				
VII.	Package number.:				
VIII.	Sanction length:km, Flexible pave	ment:	km, Rigio	d/Semi-Rigid pav	ement: km
IX.	Executed length: km, Flexible pave	ment:]km, Rigio	d/Semi-Rigid pav	ement: km
(in cas	se of completed works only)				
X.	Reasons for deviation (<i>if any</i>):				
XI.	Name of new technology (<i>if used</i>)		RD	from km	to km
XII.	Estimated cost (as cleared by GOI):	Rs.		Lakh	
XIII.	Technical sanction Cost:	Rs.		Lakh	
XIV.	Awarded cost:	Rs.		Lakh	
XV.	Expenditure: (if work is ongoing) a. Expendit	ure done:	Rs.		Lakh
	b. Bills pen	ding:	Rs.		Lakh
	Total expendit	ure (a+b)	Rs.		Lakh
XVI.	Completion cost: (if work is completed)	Rs.		Lakh	

XVII. The work is a case of (*check ✓ boxes as applicable*)



(in case of completed work):

2. PHYSICAL PROGRESS: (Ongoing/Completed)

I. Construction Programme and Physical Progress:

Item of work	Units	Quantity As per	Quantity executed	Completed percentage	Fill in star	t and comple	etion dates	Delay in months
		DPR	executed	of item	Progress status	Start Date	Completion Date	monuis
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	(2)	(3)	(1)	(5)	Due			())
i) Preparatory Work					Actual			-
ii) Earth Work&					Due			
Subgrade					Actual			
CD Works					Due			
iii) CD Works					Actual			
iv) Protection works					Due			_
					Actual			
v) Sub Base including					Due			
shoulders					Actual			
vi) WBM/ WMM Base					Due			
Course					Actual			
vii) Bituminous					Due			
Base/Wearing					Actual			
Course								

viii) Bituminous Surface			Due		
Course			Actual		
in) CC Payament			Due		-
ix) CC Pavement			Actual		
			Due		
x) Signage etc.			Actual		

3. QUALITY CONTROL:

- I. Location of field laboratory:
- II. Geo-tagged photograph of laboratory uploaded on: (date/ month/ year)
- III. Reason for delay in establishment of field laboratory(*if so*):
- IV. Details of contractor, executing the work:

Name of contractor	PAN number	Mobile number	E-mail ID.	

V. Details of contractor's engineer available at site: (Responsible for maintaining quality control register part-1

S1.	Name of contractor's	Identity number	Mobile number	Duration of posting at site		
no.	engineer at site	Identity Inditioer	Woone number	From	То	

VI. Details of Head of PIU supervising the work:

S1.	Head of PIU	Englesseshee	Duration of posting at site		
no.	(Executive engineer)	Employ number	From	То	

VII. Details of Assistant engineer supervising the work and maintaining quality control register Part-II:

Sl.	Name of Assistant	Employ number Mobile number		Duration of posting at site		
51. no.	engineer	Employ number	widdlie number	From	То	

VIII. Details of the Junior engineer supervising the work:

Sl. no.	Name of Junior	Employ number	Mobile number	Duration of posting at site		
	engineer			From	То	

IX. List of equipments available in field lab:

Table (IX) a

Table (IX) a		
Available equipments that are in working co	ondition Available equipments that are not in working	
(1)	condition (2)	

- X. List of equipments not available in field lab:
- XI. Reasons put forth by PIU for non availability of equipments in field lab:

XII. Equipments and documents ready to be made available to QM before or during the inspection:

4. **DETAILS OF MIX DESIGN(s) (if provided in the sanctioned project):**

If not provided (check ✓ the box)

Not applicable

Sl. No.	Mix Design	Mix Design Strength	Institute/laboratory where mix design was done	Date
i.	Cement Concrete M20			
ii.	Cement Concrete M 30			
iii.	Dense Bituminous Macadam			
iv.	Semi Dense Bituminous Concrete			
v.	Bituminous Concrete			

5. EARLIER INSPECTIONS BY NQM, SQM or SENIOR DEPARTMENTAL OFFICERS (SEs & CEs) AND ACTION TAKEN STATEMENT:

(Please indicate chronologically name and designation of the officer who had inspected the work):

Date of Visit	Name and Designation of Inspecting officer		Distance RD)	Level of work at the time of	Major Observations	Action Taken by PIU with Date
(1)	(NQM/SQM/CE/SE) (2)	From (3)	To (4)	inspection (5)	(6)	(7)

	Signature of the Head of PIU
Seal of PIU	Name and Designation of the Head of PIU
	Mobile Number of the Head of PIU
	E-mail of the Head of PIU
	Address of the PIU
	Date:

National Rural Infrastructure Development Agency Ministry of Rural Development, Government of India

Format QR-21- Part II

Report of National Quality Monitor (NQM)/State Quality Monitors (SQM) <u>PART II– Observations of NOM/SOM for Ongoing/Completed Work</u>

(To be filled-up by QM)

1.	GENERAL DETAILS:									
I.	Date of inspection:		Γ							
			L							
II.	Name of Quality Monitor (QM	/I)	Γ							
	· · · ·		L							
III.	State:	District:					Block:			
										
IV.	Name of Road:									
17	De de comunicación									
۷.	Package number:									
VI.	RD of inspection: From RD:		Km	to	RD:		Km			
					L					
VII.	Current stage of work:		Stage-I c	onstri	uction	ļ				
	(check√anyone)									
			Stage-II o	const	ructio	п				
			Composit		atureat					
			Composit		structi	ion				
VIII	Physical status of work:				Г		C 1			
v 111.	(check√anyone)		Ongoin	ng			Complet	ed		
IX.	Present status of work: (<i>check</i> v	boxes as	applicab	le)						
	Earthwork & Subgrade		GSB			Base	e course		Surfa	ce course
	L	J [L	-	
				·						
	Shoulder	oss drainag	ge work		F	Protec	tion work			Drains
	Finishing stage									

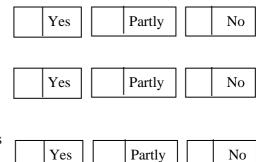
2. *QUALITY ARRANGEMENTS-OBSERVATIONS:* (in case of ongoing works only): (Geo-tagged photograph of the laboratory showing the available equipment's to be uploaded)

I.	Whether field laboratory established:(<i>check ✓ any one box</i>) Yes Partly No
II.	Whether location of field laboratory is same as indicated by PIU in format part-I: (check ✓ any one box) Yes
III.	Whether necessary equipments as indicated in part-1 are actually Yes Partly No available: (check ✓ any one box)
IV.	Whether equipment's have been used: (<i>check</i> ✓ any one box) Yes Partly No
V.	If all necessary equipments are not available, whether you have verified them with the list of deficient equipment's provided by PIU in format Part-I: Yes Verified them with the list of deficient equipment's provided by PIU in format Part-I: (check√any one box)
VI.	Whether contractor's engineer as per Part-I of this format, is available at site:YesNoNo
VII.	If contractor's engineer as per Part-I of this report is not available, Yes Partly No whether you are satisfied with alternative arrangement made to maintain QCR-I: (check ✓ any one box)
	Item Grading-2: S SRI (Check ✓ any one box) S SRI
	If this item is graded SRI/U, write clear reasons and suggestions for improvement, indicating important deficient equipments:

3. ATTENTION TO QUALITY (in case of ongoing works):

I. Maintenance of QC Registers:

(a) Based on executed quantities, whether all mandatory tests conducted: (check√any one box)



- (b) Whether QC Register Part I maintained as per provisions: (check ✓ any one box)
- (c) Whether QC Register Part II maintained and test results monitored as per provisions: (check ✓ any one box)

II. (a): Adequacy of Quality Control Tests, as per QCR-1:

Item of Work	Quantity as per DPR	Quantity Executed	Name of the Test	Number of Tests required (as per executed quantity)	Number of Tests actually conducted	Testing adequate (Yes/No)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Earth Work / Sub Grade						
Granular Sub- Base						
Granular Base Course						
Bituminous Base Course						
Bituminous Surface Course						
Rigid/ Semi rigid pavement						

(b) If testing found inadequate, the reason for less testing: (Check ✓ one or more box)

- Negligence
- Lack of equipment in lab
- Lack of knowledge
- Any other, please specify:

(c) Verification of test results: (C: conforming, N: non-conforming)

Quality control tests to be conducted by QM and the results to be matched with test results previously recorded in QCR-I, at or near the test pit of QM.

Location RD	Name of Test	Results of the test conducted by QM at a defined location.	Test results as per QCR-I at the nearest location. (Mention the Page no. of QC Register)	Results of the test conducted previously by QM at defined location. (C /N)	Whether the test results recorded in QCR-I register and as conducted by QM are in conformity?
(1)	(2)	(C /N) (3)	(4)	(5)	(Yes /No) (6)

Note: QM to choose the location of test pit, which is representative sample of the stretch being inspected by QM and near to the test location recorded in the QCR-I so that it can be compared.

(d) Whether non-conformities recorded in QCR-II by AE have been rectified and recorded in QCR-I again as conformities, after conducting necessary tests:

	(Check√any one box)	Yes No
Item Grading-3: (Check ✓ any one box)	S SRI	U
If this item is graded SRI/U recorded:	, write clear reasons and suggestions	for improvement, are to be

4. **GEOMETRICS:**

The QM should take at least two measurements in 1 Km length, and if it is found that the roadway and carriageway are inadequate at certain locations, QM should take more observations:

(Photographs of measurement of the roadway or carriageway width, superelevation, camber, and in case of roads in rolling or hilly terrain, longitudinal gradients and slopes should be uploaded by NQM/SQM)

I. Observations: Roadway, Carriageway, and Camber

Location	4(I)a Roadway Width (m)			4(I)b Carriageway Width (m)			4(I)c Camber (%)		
RD	As per DPR	Actual at site	Grade (S/U)	As per DPR	Actual at site	Grade (S/U)	As per DPR	Actual at site	Grade (S/U)

II. Observations: Superelevation and extra widening at curves in case of plain terrain -

Location		4 (II)a Super Elevation (%)	4(II)b Extra Widening provided (m)			
RD	As per DPR	Actual at site	Grade (S/U)	As per DPR	Actual at site	Grade (S/U)	

III.Observations: Longitudinal gradient in case of road in hilly/rolling terrain:

(not applicable in case of plain terrain)

Ref. between RD		4(III)a Longitudinal Gradient (%)						
From	То	As per DPR	Actual at site	Grade(S/U)				

Item Grading-4:
$(Check \checkmark any one box)$
(This item should be graded U, if any of the geometric elements provided is inadequate). Also, QM
should bring out the deviations caused due to actual ground conditions vis-à-vis sanctioned DPR.

OBSERVATIONS REGARDING THE QUALITY OF ITEMS OF WORK:

5. EARTHWORK & SUB GRADE:

I. Quality of material for embankment / sub-grade:

(Group symbol of soil used is to be reported based on visual observation)

Sl. No.	Location (RD)	Group Symbol of soil as per DPR	Group Symbol of soil as observed	Suitability from Plasticity angle	Quality of material used
				(Y/N)	(S/U)
(1)	(2)	(3)	(4)	(5)	(6)

	a) Name a	nd location of	source:					7					
	b) Distance	e of source of	earth (lead)	(km)								
	c) Whethe) Whether long lead distance for the transportation of material is justified or not:											
		(Check ✓any one box) Yes No											
	-	ould mandato project is mor	•	on the quality	of local eart	h, if the lea	nd of earth used						
II.	(Check ✓ at (This item i Compact	is graded U, c	lear reasons of	S Sub-grade C	onstruction:		o be recorded).						
Max		ensity (MDD)	-	n ³ , Optimum m		t (OMC)	% - As per	lab record.					
				QCR-I, at the sa									
Sl no.	Location (RD)	(As per QCR-	I)			Compaction ed by QM)						
	(2.2.)	Dry density kN/m ³	% Compaction	Date of test as per QCR-I	Field Moisture Content (%)	Dry Density kN/m ³	% Compaction	Grade (S/U)					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)					
Sub-	Item Gradi	ng 5-II:		S	II		· · · · · · · · · · · · · · · · · · ·						
(chec		-		S	U								

(This item is graded as U, clear reasons and suggestions for improvement are to be recorded)

III. Side slopes and profile of embankment:

(a) Side slope and embankment profile in the plain area:

Record side slopes of embankment proposed in DPR:
(check ✓any one box)2 H: 1 V1.5 H: 1 V

Sl	Location	Side Slopes	Whether Side	Whether profile	Grading
no.	(RD)	Observed by	Slopes	is Satisfactory	(S/U)
		QM- H:V	Satisfactory	(Y/N)	
(1)			(Y/N)		
(1)	(2)	(3)	(4)	(5)	(6)

(b) Cut slope and profile in Hilly/Rolling terrain or high embankments:

Location (RD)	Whether cut slopes & profile appears to be stable
	(S/U)
(2)	(3)
	Location (RD) (2)

(c) Whether stability analysis has been carried out in DPR:

(check √ any one box)	
------------------------------	--

No

Yes

If NO, then write down your observations about adequacy of slopes provided:

Sub-Item Grading 5-III	:
Check √ any one box)	

U

(This item is graded as U, clear reasons and suggestions for improvement are to be recorded).

S

6. GRANULAR SUB-BASE (GSB):

I.	Provision made in the sanctione	Yes	No	
II.	Item execution status: (check √any one box)	Completed Ongo	oing	Not yet started

III.	GSB Gra	ding as per	DPR:		Grade-I		Grade-	II	Grade-II
(chec	ck √any o	ne box)							
IV.	Maximur	n Dry densi	ty-	kN/m^3 (a	s per DP	R)			
V.	Optimum	Moisture (Content-	% (a	as per QC	CR-I)			
	by QM at	t the site)	U			<i>asheet of Sie</i> r orkmanship	ve analysis a	and density t	ests conducted
	6a Location (RD)	6b Conforms to Grading (Y/N)	6c Material Suitable from plasticity	6d Dry density kN/m ³	6e % Comp- action	6f	6g Thickness as per DPR (in mm)	6h Measured Thickness (in mm)	6i Prescribed Thickness provided (Y/N)
	(1)	(2)	angle (Y/N) (3)	(4)	(5)	(6)	(7)	(8)	(9)
. W	/hether G	SB has been	n construct	ted in laye	rs: (<i>check</i>	√any one bo	x)	Ye	es No
			(if yes ,	, check√th	e number	of layers)	In one lay	ver	In two layer
I. W	hether co	mpaction h	as been do	ne as per t	he provisi	ion in DPR: (Check √any		
								Ye	es No
((iny one box)		S reasons a	U nd sugges	stions for imp	provement ar	e to be reco	rded).
· .	BASE (COURSE	: 1 st Lave	er:					

I. Provision made in the first layer in sanctioned DPR: (*Check ✓ any one box*)

	WBM Grade II	WBM Grade-III	WMM	Not Provided
II.	Item execution status: (<i>Check √ any one box</i>)	Completed	Ongoing	Not yet started
III.	Actual execution in first	layer of the Base course: (Check √ any one box)	

III ιε συλ)

	WBM Grade II			WBM Grade-III		WMM	
--	--------------	--	--	---------------	--	-----	--

13

IV. Reason for change in actual execution at site w.r.t provision made in DPR: (if applicable)

V. Observations- Quality of Material and Workmanship:

(Response in 7b and 7e, will be based on test datasheet of Sieve analysis and volumetric analysis for density)

7a	7b	7c	7d	7e	7f	7g	7h
Location	Grading of	Plasticity	Volume of	Compaction	Design	Thickness	Thickness
(RD)	Aggregates	of Filler	filler	based on	thickness	of each	adequate
	(S/U)	material	material	volumetric	as per DPR	layer of	(S/U)
		(S/U)	percent of	analysis	(mm)	WBM/	
			coarse	(S/U)		WMM	
			Aggregate			(mm)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Item Grading- 7:	S	II	
(Check ✓ any one box)	5		
(This item is graded as U, clear read	asons and sugg	gestions for impro	ovement are to be recorded).

8. BASE COURSE: 2nd Layer:

WBM Grade II

I. Provision made in the second layer in the sanctioned DPR: (*check ✓ any one box*)

WBM Grade-III

	WBM Grade II	WBM Grade-III	WMM	Not Provided
II.	Item execution status: (<i>Check √ any one box</i>)	Completed	Ongoing	Not yet started
III. A	Actual execution in the second	ond layer of the Base cour	rse: (check / any one l	box)

IV. Reason for change in actual execution at site w.r.t provision made in DPR: (if applicable)

Not Provided

WMM

14

V. Observations- Quality of Material and Workmanship:

(Response in 8b and 8e, will be based on test datasheet of Sieve analysis and volumetric analysis for density)

8a	8b	8c	8d	8e	8f	8g	8h
Location	Grading of	Plasticity	Volume of	Compaction	Design	Thickness	Thickness
Location	Aggregates	of Filler	filler	based on	thickness	of each	adequate
(RD)	(S/U)	material	material	volumetric	as per DPR	layer of	(S/U)
		(S/U)	percent of	analysis		WBM/	
			coarse	(S/U)	(mm)	WMM	
(1)			Aggregate			(mm)	
	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Item Grading- 8:
(Check ✓ any one box)
(This item is graded as U, clear reasons and suggestions for improvement are to be recorded).

9. BASE COURSE: 3rd Layer:

I. Provision made in the third layer in the sanctioned DPR: (*check ✓ any one box*)

	WBM Grade II	WBM Grade-III	WMM	Not Provided
II.	Item execution status: (check √any one box)	Completed	Ongoing	Not yet started
III.	Actual execution in the	third layer of the Base cou	arse: (check 🖌 any one b	box)
	WBM Grade II	WBM Grade-III	WMM	Not Provided
IV.	e	ctual execution at site n DPR: (<i>if applicable</i>)		

V. Observations- Quality of Material and Workmanship:

(Response in 9b and 9e, will be based on test datasheet of Sieve analysis and volumetric analysis for density)

9a	9b	9c	9d	9e	9f	9g	9h.
Location	Grading of	Plasticity	Volume of	Compaction	Design		Thickness
	Aggregates	of Filler	filler	based on	thickness	of each	adequate
(RD)	(S/U)	material	material	volumetric	as per DPR	layer of	(S/U)
		(S/U)	percent of	analysis	(mm)	WBM/	
			coarse	(S/U)		WMM	
(1)			Aggregate			(mm)	
	(2)	(3)	(4)	(5)	(6)	(7)	(8)
							<u> </u>

Item Grading-9: (Check ✓ any one box)	S U	
(This item is graded as	, clear reasons and suggestions for improvement are to be recorded).	

10. BITUMINOUS BASE COURSE:

(Please do not fill this section if not provided in the DPR)

I. Provision made in the sanctioned DPR: (*check* ✓ *any one box*)

	BM DBM N	lot provided
II.	I. Item execution status: (check √any one box) Completed Ongoing	Not yet started
III.	I. Actual execution at the site: (<i>check</i> \checkmark <i>any one box</i>) BM	DBM
IV.	7. Thickness of layer as per DPR: mm	
V.	7. Type and grade of binder used:	
VI.	I. Brand name of bitumen: (as	per record)
VII.	I. Whether the invoices for the whole quantity of bitumen $(check \checkmark any one box)$	Yes No

VIII. If the invoice of sufficient quantity not available reason thereof:

IX.	Bitumen Content as per DPR: %]
X.	Whether mix design is done: (in case of BM or DBM) (<i>Check√any one box</i>) Yes	No
XI.	Marshal stability as per mix design (in case of BM or DBM):	
XII.	Whether inspection of hot mix plant done by PIU/SE: (<i>Check √ any one box</i>) Yes	No
	Date of inspection:	

Table: 10(XIII) Note: Fill bitumen content in the 5th column compulsorily

а	b	с		d		e	f	
Location	Grading of	Laying Temperature	Bitu	imen content	%	Marshal	Observed thick	mess of
(RD)	Coarse	of the mix as per				stability	layer (mr	n)
	Aggregates	QCR-I	As per	As measured	S/U	as per	As measured by	S/U
	(S/U)		QCR-I	by QM		QCR-1	QM	
				(5)		(KN)	(8)	
(1)	(2)	(3)	(4)		(6)	(7)		(9)

U

Item Grading-10:

(Check ✓ any one box)

S

(This item is graded as U, clear reasons and suggestions for improvement are to be recorded).

11. BITUMINOUS SURFACE COURSE:

I. Provision made in the sanctioned DPR: (*check √any one box*)

	OGPC & seal coat	SDBC	Mix Seal Surface
	Surface dressing in one layer	Surface dressing in two layer	Bituminous Concrete
II.	Item execution status: (check √any one box)	Completed Ongoing	Not yet started
III.	Type of bituminous surface exec	uted: (check √any one box)	
	OGPC & seal coat	SDBC	Mix Seal Surface
Γ	Surface dressing in one layer	Surface dressing in two layer	Bituminous Concrete

IV.	Thicknes	s of layer as p	er DPR:	m	ım				
V.	Type and	Grade of Bin	der used:						
VI.	Brand na	me of bitumer	n supplier:] (as per reco	ord)	
VII.		the invoices for the invoices for the invoices for the second sec	or the whole qua le: (<i>check √</i>	ntity of bi ány one bo			Yes		No
VIII.	If invoice	e of sufficient	quantity not ava	ilable reas	on thereof:				
IX.	Bitumen	Content as pe	r DPR:	%					
X.		mix design do nly in case of S	one: (<i>check √any</i> SDBC or BC)	one box)		Ye	s No		
XI.		stability as per	-		KN				
XII.		nly in case of S s of distress o	DBC or BC) n surface: (<i>check</i>	x √any one	,)	Ye	es	No)
		(If yes, check	\checkmark one or more b	oxes)					
	D	ue to laying at 1	low temperature		Due te	o poor	workmanship	of base	e course
	D	ue to over rolli	ng		Due te	o less/	excess bitumer	n conte	nt
Ta	able (XIII)								
]	a Location (RD)	b Grading of Coarse Aggregate	c Laying Temperature of the mix as	Bitu	d 1men content %	6	e Observe thickness layer		f surface un evenness
		(S/U)	per QCR-I	As per QCR-I	As measured by NQM/SQM	S/U	As measured by NQM/SQM		(S/U)
_	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
-									
-									
	- ~								
		ading-11: any one box)		S	SRI		U		
	•	•	RI/U, clear reason	s and sugg	estions for impr	oveme	ent are to be re	corded	<i>(</i>).

18

12. SHOULDERS:

- I. Item execution status: (check √any one box) Completed Ongoing Not yet started
- II. Observations- Quality of Shoulders (in case of completed works only):-

Location (RD)	Quality of the Material from	Degree of Compaction			Camber			
(KD)	hand feel test (S/SRI/U)	As per QCR-I	As measured by QM (%)	Grading (S//U)	As per DPR (%)	As measured by QM (%)	Grading (S//U)	
(1)	(2)	(3)	(4)	(5)	(6)	(70)	(8)	

$(check \checkmark any one box)$
(check V any one box)
(This item is graded as SRI/U, clear reasons and suggestions for improvement are to be recorded).

13. CROSS DRAINAGE WORKS: (Pipe Culverts):

- I. Total number of pipe culverts as per sanctioned DPR:
- II. Cushion over Pipe Culverts as per DPR: cm
- III. Type of Pipes provided in DPR: (write numbers of each type))
 NP2
- IV. Grade of Concrete for headwall as per DPR: (*Check √any one box*)

M20

M15

Table-13 (V)

RD at	Type of Pipe	Measured Cushion	Strength of concrete	Quality of material and
which CD	used at Site	over Pipes	used in head walls as	workmanship
is located		(mm)	per QCR	(S/SRI/U)
(1)	(2)	(3)	(4)	(5)

VI.	If cushion over the pipes is inadequate, whether appropriate protection to the pipes as concrete cover or concrete jacketing has been provided: (<i>check $\sqrt{any one box}$) Yes NO</i>
VII.	Whether invert level of pipe at upstream end has been appropriately placed to avoid silting of pipes (<i>check</i> ✓ any one box)
	Item Grading-13: S SRI U (Check ✓ any one box) S SRI U (This item is graded as SRI/U, clear reasons and suggestions for improvement are to be recorded).

14. CROSS DRAINAGE WORK: (Slab Culverts):

- I. Grade of Concrete for slab culvert as per DPR:
 M15
 M20
 M25

 (check √any one box)
 M15
 M20
 M25
- II. Total number of slab culverts as per sanctioned DPR:

Table-14 (III)

RD at	Thie	ckness of Slab	Grade of concrete	Strength of	Quality of material
which CD is located	As per DPR (mm)	As measured by QM (mm)	proposed as per DPR	concrete used in head walls as per QCR	and Quality of workmanship is acceptable(Y/N)
(1)	(2)	(3)	(4)	(5)	(6)

Item Grading-14:	S	SRI	U
(check ✓ any one box)			

(This item is graded as SRI/U, clear reasons and suggestions for improvement are to be recorded).

15. PROTECTION WORK:

- I. Whether sanctioned DPR has the provision of protection works:
 Yes
 No

 (check√any one box)
 No
- II. Type of protection work: (check < boxes as applicable, and write the corresponding length)

Retaining wall	Length	m		Breast wall	Length	m
Parapet wall	Length	m		Any other type of Protection work	Length (m	n)
ł			a.			
				b.		

III. Total length of all protection work provided in DPR: (m)

IV. Quality of Materials:

Location /	Structure Type	Type of	General quality of		Width and	Wheth	er
RD		Protection	material conforms	Hei	ght	compressive	
	(Retaining Wall/	work (CC/	to specifications	mm x	x mm	strength	of
	Breast Wall/	Masonry/wire	(Y/N)	As per	As per	material is	as per
	Parapets)	crate)		DPR	records	design from	QCR-
						Ι	
(1)	(2)	(3)	(4)	(5)	(6)	(Y/N)	(7)

V. Workmanship of retaining structures:

Location / RD	Workmanship of retaining structures (S/SRI/U)	Whether honeycombing/any other defects are	Have weep holes been provided (Yes/No)	(if pro	weep holes ovided) m)
(1)	(2)	observed (Y/N) (3)	(4)	As per drawing (5)	Actual at site (6)

a)	Workmanship of stone masonry is acceptable: (check√any one box) Yes	No
b)	Bond stone has been provided in stone masonry: (check√any one box) Yes	No
(Check	state state <th< th=""><th>corded).</th></th<>	corded).

16. CRASH BARRIERS AND ROAD SAFETY SIGNBOARDS:

I. Whether sanctioned DPR has the provision of crash barriers & road safety boards:

			(check \checkmark any one box)	Xes No
II.	Total lengt	th of crash barrier	s: (m)		
r	Table-16 (III)			
	Location (RD)	Type of Crash Barrier	Whether provision of crash barriers and safety measures made in the DPR	Overall quality of safety measures in road (S/SRI/U)	Mandatory and cautionary signboards fixed at appropriate location
	(1)	(2)	(Yes / No (3)	(4)	(Yes / No) (5)

IV. Total number of road safety signboards:

Item Grading-16:	S SRI U	
(check ✓ any one box)		
(This item is graded as SRI/U	clear reasons and suggestions for impro	vement are to be recorded).

17. SIDE DRAINS AND CATCH WATER DRAINS: (Earthen)

I.	Whether sanctioned DPR has the provision of side drains and catch water drains:
----	---

	(check √any one box)	Yes
II.	Whether the drains have adequate longitudinal slope:	

(check √any one box)

Yes No

No

Table-17 (III)

1 4010	17 (III)			
Location (RD)		Location (RD) of	Whether general quality of	Whether side drains are
where side		drain at which	the side drains/catch-water	integrated to outfall.
dra	ins	observation	drains is acceptable.	(Y/N)
constr	ucted.	made.	(Y/N)	
From	То			
(1)	(2)	(3)	(4)	(5)
1				

Item Grading-17:	S	SDI	II
(Check ✓ any one box)	5	SKI	U

(This item is graded as SRI/U, clear reasons and suggestions for improvement are to be recorded).

18. CEMENT CONCRETE/SEMI-RIGID (SR) PAVEMENTS:

I.	Item execution status: (check √any one box)	Completed	Ongoing	Not yet started
II.	Type of Cement Concrete Pavement: (check √any one box)	Conventional	Cell filled	Panelled concrete
		Interlo	ocking concrete block	x pavement (ICBP)
III.	Grade of Concrete as per DPR: (check √any one box)	M30	M35	M40
IV.	CC /SR pavement length proposed a	s per sanctioned DPR	Proposed length:	(m)
			Executed length:	(m)

Table-1a	$S(\mathbf{v})$		ation should b	e made for ea	ach portion of		.50	
Reference		RD at	Quality of	28 days	Quality of	Thickness		
RD of CC /		which	material	Strength	Workmans			
S	R	observati	Concrete/	of	hip	As	As	Accept
paven	nents	on made	stone/ CC	Concrete	wearing	per	Measured by	-able
(n	1)	(m)	blocks	as per	surface,	DPR	QM (mm)	(Y/N)
From	То		pavements	QCR-I	joints,	(mm)		
			etc.	MPa	edges etc.			
			(Visual		(S/SRI/U)			
			inspection)					
			(S/SRI/U)					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Partly

Partly

Partly

Partly

No

No

No

No

No

No

No

Table 18 (V) Note: Observation should be made for each portion of CC course

VI.	Quality of	cuts and joints	is acceptable:	(check√	'any one	box)
-----	------------	-----------------	----------------	---------	----------	------

VII.	Whether the joints have been properly filled with a sealant
	$(check \checkmark any one box)$

- VIII. Whether surface texture of the pavement is acceptable: (check√any one box)
 - IX. Whether any honeycombing observed on edges of pavement: (check√any one box)
 - Х. Whether adequate camber is provided: (check√any one box)
- XI. Check strength with rebound hammer; is it acceptable: (check√any one box)
- XII. Whether CC pavement was existing earlier and credit for the same was given in DPR: (*check√any one box*)

Item Grading-18: (Check ✓ any one box)SU
(This item is graded as U, clear reasons and suggestions for improvement are to be recorded).

19. I.			PUCCA DRA		d catch water	drains:	
			-	eck √any one		Yes	No
II.	Shape of CC/P	Pucca side drain (check √any	-	U		V	L
III.	Length of CC of	drain as per DP	R:	m			
IV.	Item execution (<i>check √any or</i>		Completed	Ong	oing	Not yet sta	arted
V.	Grade of concr	rete proposed fo (chec	r side drains: k √any one box)	Ν	M20	M25	
	Table 19(VI)	Note: Observati	on should be made	de for the eac	ch portion of t	he drain	
	Location	RD at	Cro	ss-section siz	e	Strength of	General
	(RD) of CC/Pucca	which observation	size as per DPR		size of	Concrete as per QCR –I	quality of material
	side drains	made	B x D in mm	measured B x D in mm	drains is acceptable (Y/N)	MPa	and work- manship
	From To (1) (2)	(3)	(4)	(5)	(1/1()) (6)	(7)	(8)
VII.	Whether the pr	-	oucca side drains (check √any one l		R is justified	in your opinion	n: NO
VIII.	Whether the si		been constructed	,	DR ·	res	NO
·	Whether the st			ny one box)		Yes	NO
IX.	If not, in your adversely affe	-	er the pavement p Ccheck √any one l		s likely to be	Yes	NO
X.	•		drain is acceptal (check √any one	ble:			
XI.	Whether any h	•	bserved on edges	s of drain:		Yes	NO
XII.	Whether longit	tudinal gradient	(check √any one i is sufficient:	box)		Yes	NO
VIII	Check that dra	in is tormination	(check √any one	,		Yes	NO
XIII. XIV.	Check that drain is terminating in stormwater drain: (check √any one box) Slope of gap between pavement and drain is towards drain Yes					NO	
		1	(check √any one	box)		Yes	NO
XV.	Whether the dr stormwater dra	-	re serving the pu (<i>check √any one</i>	-		Yes	NO

Item Grading-19: (Check ✓ any one box) (This item is graded as U, clear	S U reasons and suggestions for improvement are to be recorded	l).

20. ROAD FURNITURE AND MARKINGS:

I. Observations - Quality Road Furniture and Markings (in case of ongoing/completed works):

(Photographs to be uploaded)

- a) Main Informatory Board Fixed: (*check √any one box*)
- b) Citizen Information Board Fixed: (*check √any one box*)
- c) Maintenance Board Fixed: (check √any one box) (in case of completed works only)
- II. Observations Quality Road Furniture and Markings (in case of completed works):

Sl. No.	Furniture Type:	Number of furniture to be provided	Furniture provided at site
i.	Logo Boards Fixed		
ii.	200 m Stones Fixed		
iii.	1 Km. Stone Fixed		
iv.	Guard Stones fixed on Curves		

Note: Numbers and quality of the furniture should be taken into consideration while grading for this item

Item Grading-20:	S U
(Check ✓ any one box)	
(if this item is graded as U, clea	r reasons and suggestions for improvement should be recorded)
Č ,	

NO

NO

NO

Yes

Yes

Yes

21. General Observations of QM, (including the observations made during the interaction with PIU staff and Contractor/Consultant Engineers):

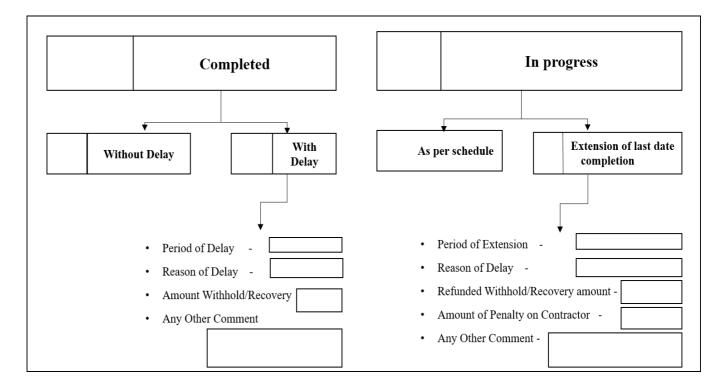
A. Observations about deficiency in project preparation: (Give detailed observations about deficiencies in general and items which have been left but are required as per site conditions): (check√ I or II)

I. No deficiency in project preparation noticed during the interaction with PIU Staff and
Contractor/Consultant engineers:

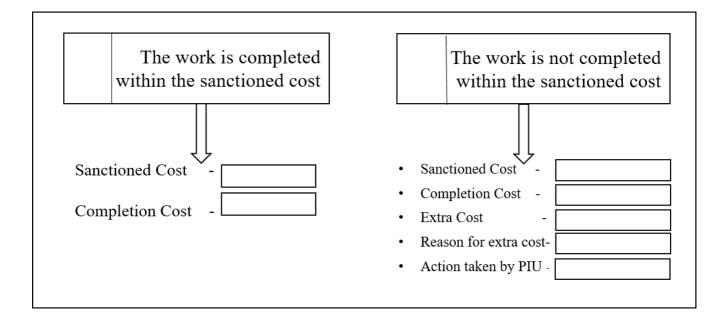
II.	Deficiencies Observed: (Check√ one or multiple box)
a)	Nomenclature of BOQ Items is not clearly stated such as what type of binder (VG Grade/Emulsion) has to be used and the quantity of such items.
b)	Location & Invert levels of cross drainage structures are incorrect and causing flooding situation.
c)	CD structures numbers are insufficient as per the site's hydrological condition.
d)	No provision of side drain in DPR but as per site conditions it is required.
e)	Hydraulic Design & calculation for CD structures and side drains not provisioned in DPR.
f)	Junction design and its selected parameter (i.e. Junction's radius, Sightline, Islands size) are inappropriate and can leads to accidents.
g)	Guard stone/Crash barrier/Road studs shall be provisioned in DPR on horizontal curves.
h)	Deviation from proposed Alignment.
i)	Proposed earthwork quantity (in Cut & fill) is not balanced, hence required external source of material for earthwork and subsequently increased project cost.
j)	Proposed pavement layers & thickness is not as per projected traffic.

Any other comment :

B. Whether the work has been completed/is in progress as per work programme or the delay has occurred. If delay has occurred, whether the liquidated damages have been withhold or recovered: (check √relevant box and fill details)

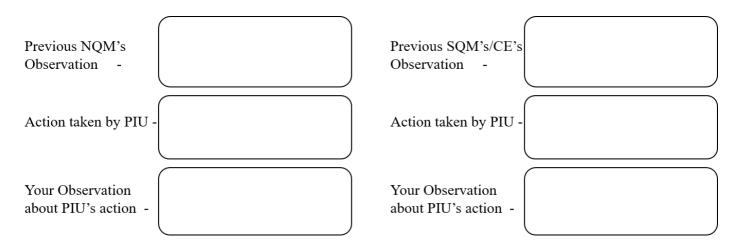


C. Whether the work has been completed within the sanctioned cost, if not, what is the action taken by the PIU (in case of complete works): (*check √ relevant box and fill details*)

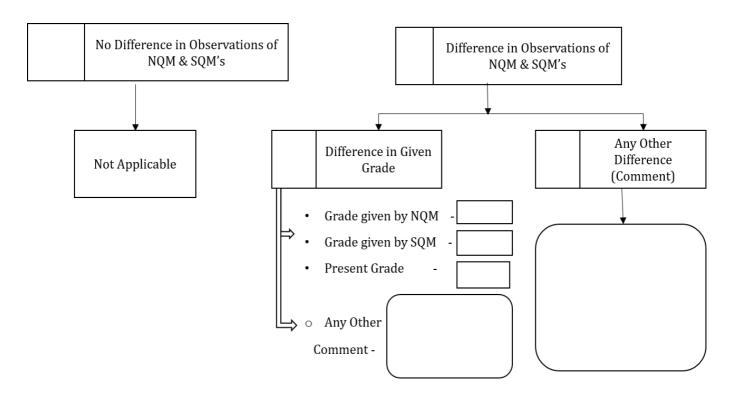


D. Observations about the action taken by the PIU on the observations of inspecting officers including SQMs and NQMs. (clearly offer comments about the action taken on the observations of Departmental Officers, State Quality Monitors and National Quality Monitors).

29



E. Comments about difference in observations made by NQMs/SQMs in earlier inspections (the NQM/SQM shall study the earlier inspection reports of NQMs/SQMs, if any and offer his clear comments about the differences in observations, if any). (check √relevant box and fill details)



F. Other observations, if any:

22. QUALITY GRADING OF ITEMS AND SUB-ITEMS OF WORK:

The grading of every sub- item and item of work is givenbelow.

#	Sub item for observation	k is givenbelow. In case of work	Awardable Grades	Awarded Grade
1	2	3	4	5
	1. Genera	l details		
	Item 2 - Qua	lity Arrangemen	ts	
	Quality Arrangements	On-going	S/SRI/U	
	Item Grading		S/SRI/U	
	Item 3 - Atte	ntion to Quality		
a	Maintenance of QC Registers	On-going	S/SRI/U	
b	Verification of test results	On-going/ Complete	S/U	
	Item Grading		S/SRI/U	
	Item 4 –	Geometrics		
a	Road way width	Ongoing /	S/U	
b	Carriageway width	complete	S/U	
c	Camber		S/U	
d	Super elevation	Ongoing / complete	S/U	
e	Extra Widening at Curves	Ongoing / complete	S/U	
f	Longitudinal Gradient in case of road in hilly/ rolling terrain.	Ongoing/ complete	S/U	
	Item Grading		S/U	
	Item 5 - Earth Work and Sub	-grade in Embar	hkment/ Cutting	
	Quality of Material for Embankment/			
a	Sub-grade	Ongoing or	S/U	
b	Compaction	complete	S/U	
c	Side Slopes	Complete	S/U	
d	Profile	Complete	S/U	
e	Adequacy of Slope Protection (in case of high embankments /hilly / rolling terrain)	Ongoing or complete	S/U	
	Item Grading		S/U	
	Item 6 – Granul	ar Sub-Base (GS	B)	
a	Grain Size		S/U	
		Ongoing or complete	S/U	
b c	Plasticity Compaction	Ongoing or	S/U S/U	
d	Total Thickness of Layer	complete Ongoing or complete	S/U	
	Item Grading		S/U	

	Item 7 - Base Course – Water Bo	und Macadam (W	BM-Grade-II)	
a	Grain Size of Course Aggregate		S/U	
b	Plasticity of Crushable Aggregate used as fillers	Ongoing or complete S/U S/U		
c	Adequacy of Compaction through Volumetric analysis.		S/U	
d	Thickness of every layer of WBM.		S/U	
	Item Grading		S/U	
	Item 8 - Base Course – Water Bo	und Macadam (W		
a	Grain Size of Course Aggregate		S/U	
b	Plasticity of Crushable Aggregate used as fillers	Ongoing or	S/U	
c	Adequacy of Compaction through Volumetric analysis.	Ongoing or complete	S/U	
d	Thickness of every layer of WBM.	-	S/U	
	Item Grading		S/U	
	Item 9 - Base Course – W	et Mix Macadam ((WMM)	
a	Grain Size of Course Aggregate		S/U	
b	Plasticity of Crushable Aggregate used as fillers		S/U	
с	Adequacy of Compaction through Volumetric analysis.	Ongoing or complete	S/U	
d	Thickness of every layer of WMM.		S/U	
	Item Grading		S/U	
	Item 10- Bituminous Base Course: Bitu	ıminous Macadan	n (BM) and Dense	e BM
a	Grading of Coarse Aggregate		S/U	
b	Bitumen Content	complete	S/U	
c	Thickness of Layer	-	S/U	
	Item Grading		S/U	
It	em 11 - Bituminous Surface Course: – O SDB		urface Dressing (SD) /
а	Gradation of Aggregate	Ongoing	S/U	
b	Laying Temperature of Mix.	Ongoing	S/U	
c	Bitumen content	Ongoing	S/U	
d	Thickness of layer	Ongoing or complete	S/U	
e	Surface Evenness	Ongoing or complete	S/U	
	Item Grading		S/U	

	Item 12 –	Shoulders		
a	Quality of material for shoulders	Complete	S/SRI/U	
b	Degree of compaction	Complete	S/SRI/U	
c	Camber.	Complete	S/SRI/U	
	Item Grading		S/SRI/U	
	Item 13 - Cross Drainag	ge Works (Pipe Cu	lvert)	
a	Cushion over Hume pipes including size etc.	Ongoing or complete	S/SRI/U	
b	Quality of Workmanship such as positioning of pipes, wing walls, cushion over Hume Pipes etc.		S/SRI/U	
	Item Grading		S/SRI/U	
	Item 14 - Cross Draina	ge Works (Slab Cu	ılvert)	
a	Thickness of Slab	Ongoing or	S/SRI/U	
b	Quality of material & workmanship	complete	S/SRI/U	
	Item Grading		S/SRI/U	
	Item 15- Protection Work (Re	taining wall /Breas	st wall/Parapets:	:
a	Quality of Material	Ongoing or	S/SRI/U	
b	Workmanship of retaining structure	complete	S/SRI/U	
	Item Grading	1	S/SRI/U	
	Item 16- Crash Barriers	and Road Safety S	ign Boards	
a	Overall quality of safety measures in road	l Completed	S/SRI/U	
b	Fixing of mandatory and cautionary sign boards	Completed Projects	S/SRI/U	
	Item Grading		S/SRI/U	
	Item 17 - Side Dra	in and Catch Wate	er Drain (Earthe	en)
	General quality of Side Drains/ Catch Water Drains and their integration with CDs.	Ongoing or complete	S/SRI/U	
	Item Grading	•	S/SRI/U	
	Item 18 – Cement Conc	rete / Semi Rigid F	Pavements	
a	Quality of Material – Concrete, Stone/ Concrete Block Pavement etc.	Ongoing or	S/U	
b	Strength of CC in Concrete Pavement/ Concrete Block Pavement	complete	S/U	

c	Quality of Workmanship – Wearing surface texture, Adequacy of setting of concrete, Joints, Edges etc.		S/U	
d	Thickness of Layer		S/U	
	Item Grading		S/U	
	Item 19- Cement Concrete Pucca Drains			
a	Thickness of concrete layer		S/U	
b	Strength of concrete	Ongoing or	S/U	
с	General Quality of material and Workmanship	complete	S/U	
	Item Grading		S/U	
	Item 20 - Road Furniture and Markings			
a	Citizen Information Board, Main Informatory Board, Quality and whether fixed during construction.	Ongoing	S/U	
b	Logo boards, 200 m stones and Km stones, quality and whether fixed after completion.	Complete	S/U	
c	Whether the information in boards is given in local language.	Complete/ Ongoing	S/U	
	Item Grading		S/U	

23. OVERALL GRADING OF WORK:

The overall grading calculated on the basis of item and sub-item wise grading is given below:

#	Item	Awardable Grades	Awarded Grade
1	Quality Control Arrangements	S/SRI/U	
2	Attention to Quality	S/SRI/U	
3	Geometrics	S/U	
4	Earthwork and Sub-grade in Embankment/Cutting	S/U	
5	Granular Sub-base	S/U	
6	Base Course (WBM-II)	S/U	
7	Base Course (WBM-III)	S/U	
8	Base Course (WMM)	S/U	
9	Bituminous Course (BM and DBM)	S/U	
10	Bituminous Surface Course (OGPC/ Seal coat/ SD/SDBC)	S/U	
11	Shoulders	S/SRI/U	
12	Cross Drainage Work (Pipe Culvert)	S/SRI/U	
13	Cross Drainage Work (Slab Culvert)	S/SRI/U	
14	Protection Work (Retaining wall /Breast wall/Parapets	S/SRI/U	
15	Crash Barriers and Road Safety Sign Boards	S/SRI/U	
16	Side Drains and Catch Water Drains	S/SRI/U	
17	Cement Concrete / Semi Rigid Pavements	S/U	
18	Cement Concrete Pucca Drains	S/U	
19	Road Furniture and Markings	S/U	
	Overall Grading	S/SRI/U	

Whether the work can be considered as excellent based on the test results and visual observations made by the quality monitor (*check* \checkmark *any one box*) Yes No

Signature of QM:.....

Name Of QM:....

Date: