

Construction of service road and improvement of Khareband junction with road safety measures from km 549.850 to km 550.500 on Margao Western bypass section of NH-66 in the state of Goa.

SCHEDULE - H

Contract Price Weightages

1.1 The Contract Price for this Agreement is Rs.

1.2 Proportion of the contract price for different stages of construction of the Project Highway shall be as specified below.

S No.	Item	Weightage in percentage to the Contract Price	Stage for payment	Percentage weightage
	1	2	3	4
I	Road works including culverts, widening and repair of culverts	10.78%	A - Widening and Strengthening of existing Road	
			1. Earthwork up to top of the Embankment	
			2. Sub-Grade	
			3. Sub Base course	
			4. Non Bituminous Base Course	
			5. Bituminous Base course	
			6. Wearing coat	
			7. Widening and repair of culverts	
			B.1 - Reconstruction/ New realignment/ bypass (flexible pavement)	
			1. Earthwork up to top of the Embankment	
			2. Sub-Grade	
			3. Sub Base course	
			4. Non Bituminous Base Course	
			5. Bituminous Base course	
			6. Wearing coat	
			B.2 - Reconstruction/ New realignment/ bypass (Rigid pavement)	
			1. Earthwork up to top of the Embankment	

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			2. Sub-Grade	
			3. Sub Base course	
			4. Dry Lean Concrete(DLC) Course	
			5.Pavement Quality Control(PQC) Course	
			C.1(A) - Reconstruction/ New Service road (flexible pavement)	
			1. Earthwork up to top of the Embankment	19.75%
			2. Sub-Grade	4.63%
			3. Sub Base course	9.40%
			4. Non Bituminous Base Course	14.94%
			5. Bituminous Base course	11.65%
			6. Wearing coat	7.38%
			C.1(B) - Widening and Strengthening of existing Service Road	
			1. Earthwork up to top of the Embankment	4.44%
			2. Sub-Grade	1.50%
			3. Sub Base course	4.70%
			4. Non Bituminous Base Course	8.96%
			5. Bituminous Base course	7.74%
			6. Wearing coat	4.91%
			C.2- Reconstruction/New Service Road (Rigid Pavement)	
			1. Earthwork up to top of the Embankment	
			2. Sub-Grade	
			3. Sub base course	
			4. Dry Lean Concrete(DLC) course	
			5. Pavement Quality Control(PQC) course	
			D- Reconstruction and New Culverts on existing road, realignment, bypasses:	
			Culverts (length<6m)	

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II	Minor Bridges/ Underpasses/ Overpasses	32.78%	A.1 - Widening / Repairs of Minor Bridges (length>6m and <60m)	
			Minor Bridges	
			(1) Foundation: On completion of the foundation work of abutments and piers	4.40%
			(2) Sub-structure: On completion of abutments and piers with abutment/ pier cap.	5.05%
			(3) Super-structure: On completion of the superstructure in all respects including wearing coat, bearings, expansion joints, handrails, crash barriers, road signs and markings, tests on completion etc. complete in all respect.	3.80%
			(4) Approaches: On completion of approaches including wing walls/ return walls, Retaining walls, stone pitching, protection works for floor, embankment slope, etc. complete in all respect and fit for use.	14.66%
			A.2 -New Minor Bridges (length>6m and <60m)	
			(1) Foundation: On completion of the foundation work of abutments and piers	34.72%
			(2) Sub-structure: On completion of abutments and piers with abutment/ pier cap.	8.25%
			(3) Super-structure: On completion of the super-structure upto deck slab including bearings.	15.53%
			(4) Miscellaneous Works : On completion of wearing coat, expansion joint, crash barrier, railings, protection works and any remaining work associated to bridge including tests on bridge.	2.89%

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			(5) Approaches: On completion of approaches including wing walls/ return walls, Retaining walls, stone pitching, protection works for floor, embankment slope etc. complete in all respect and fit for use.	10.70%
			(6) Guide Bunds and River Training Works: On completion of Guide Bunds and river Training Works complete in all respects	
			B.1-Widening / repair of Underpasses/Overpasses	
			Underpasses/Overpasses	
			B.2-New Underpasses/Overpasses	
			(1) Foundation: On completion of the foundation work of abutments and piers	
			(2) Sub-structure: On completion of abutments and piers with abutment/ pier cap.	
			(3) Super-structure: On completion of the super-structure upto deck slab including bearing.	
			(4) Miscellaneous Works: On completion of wearing coat, expansion joint, crash barrier, railings and any remaining work associated to bridge including tests on bridge	
			(5) Approaches: On completion of approaches including Wing walls/ Return walls, Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	
III	Major Bridge (length>60m) works	0.00%	A.1 - Widening & Repairs of Major Bridges	

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and ROB/RUB/elevated sections/flyovers including viaducts,if any	1. Foundation	
	i) Pile Foundation	
	ii) Open Foundation	
	2. Sub-structure	
	3. Super-structure (including Bearings)	
	4. Wearing Coat including expansion joints	
	5. Miscellaneous Items like Hand rails, crash barrier, road markings etc.	
	6. Wing walls/return walls	
	7. Guide bunds, River Training works etc.	
	8. Approaches (including Retaining walls, stone pitching and protection works for floor, Embankment slope, etc.)	
	A.2 -New Major Bridges	
	1. Foundation	
	i) Well foundation	
	ii) Pile foundation	
	iii) Open Foundation	
	2. Sub-structure	
	3. Super-structure (including Bearings)	
	4. Wearing Coat including expansion joints	
	5. Miscellaneous Items like Hand rails, crash barrier, road markings etc.	
	6. Wing walls/return walls	
7. Guide bunds, River Training works etc.		
8. Approaches (including Retaining walls, stone pitching and protection works for floor, Embankment slope, etc.)		

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			B.1 - Widening & Repair of	
			a) ROB	
			b) RUB	
			1. Foundation	
			i) Pile Foundation	
			ii) Open Foundation	
			2. Sub-structure	
			3. Super structure (Including bearings)	
			4. Wearing Coat (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	
			5. Miscellaneous Items like hand rails, crash barriers, road markings, etc.)	
			6. Wing walls/return walls	
			7. Approaches (including Retaining walls, stone pitching and protection works)	
			B.2 New ROB/RUB	
			a) ROB	
			b) RUB	
			1. Foundation	
			i) Well foundation	
			ii) Pile foundation	
			iii) Open Foundation	
			2. Sub-structure	
			3. Super structure (Including bearings)	
			4. Wearing Coat (a) in case of ROB- wearing coat including expansion joints complete in all respects as	

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		specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	
		5.Miscellaneous Items like hand rails,crash barriers,road markings,etc.	
		6.Wing walls/return walls	
		7. Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	
		C.1-Widening and repair of Elevated section/Flyovers/Grade Separators	
		1. Foundation	
		i) Pile Foundation	
		ii) Open Foundation	
		2. Sub-structure	
		3. Super structure (Including bearings)	
		4. Wearing Coat including expansion joints	
		5.Miscellaneous Items like hand rails,crash barriers,road markings,etc.)	
		6.Wing walls/return walls	
		7. Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	
		C.2-New Elevated section/Flyovers/Grade Separators	
		1. Foundation	
		i) Well foundation	
		ii) Pile foundation	
		iii) Open Foundation	

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			2. Sub-structure	
			3. Super structure (Including bearings)	
			4. Wearing Coat including expansion joints	
			5. Miscellaneous Items like hand rails, crash barrier, road markings etc.	
			6. Wing walls/Return walls	
			7. Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	
IV	Other Works	50.16%	Other works	
			1. Toll Plaza	
			2. Road side Drains	
			a) Unlined Toe Drain	
			b) Lined Drain	
			c) RCC Drain	
			d) RCC Cover Slab	
			3. Road signs, Markings, Km stones, Safety devices, etc.	1.56%
			4. Overhead gantry mounted signs.	
			5. Project facilities	
			a) Bus bays/Shelters	
			b) Truck lay-byes	
			c) Rest Areas	
			d) Others	
			6. Road side Plantation	
			7. Protection works other than approaches to the bridges, elevated sections/ flyovers/ grade separators and ROB/RUBs.	
			a) Crash barrier	
i) W Beam Crash barrier				
ii) Thrie Beam Crash Barrier -	13.15%			

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			Single faced	
			ii) Thrie Beam Crash Barrier - Double faced	3.25%
			iv) New Jersey Barrier	
			b) Retaining wall	47.33%
			c) Breast wall	
			d) Tubular Steel Railing	2.66%
			e) Footpath - 60mm thick paver block with 30mm sand filling, base & GSB filling	7.66%
			8. Safety, Traffic Management & Maintenance of Existing road during construction.	
			9. ATMS including video surveillance system, Video incident detection system, Emergancy call system, Variable message signs, Meteorological data system, Automatic traffic counter, Speed violation detection system, Control room, Traffic impact attunators, Ambulance, crane, Patrolling vehicles, Drone video recording for every six months, etc.	
			(i) Dismantling of Structure, C&G	1.42%
			(ii) Junction Development	4.02%
			(iii) PVC Pipe for Utility	1.12%
			(iv) Mural Painting for underpass section, etc.,	9.83%
			(v) Painting on RE Wall	1.45%
			(vi) Street Lighting, etc.,	4.98%
			(vii) Kerb & Crash Barrier Painting, Rumble Strips, Table top Crossings, landscaping/plantation on Islands, etc.,	1.57%
V	Electrical utilities	6.28%	Utilities	

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	and public Health Utilities (Water pipe lines and sewage lines)		Water Supply & Sanitary	53.33%
			HT/LT line	46.67%

1.3 Procedure of estimating the value of work done

1.3.1 Road works

Procedure for estimating the value of Road work done shall be as follows:

Table 1.3.1

Stage of Payment	Percentage - Weightage	Payment Procedure
A - Widening and Strengthening of existing Road		
1. Earthwork up to top of the Embankment		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 10 (ten) percent of the total length or 500m whichever is less
2. Sub-Grade		
3. Sub Base course		
4. Non Bituminous Base Course		
5. Bituminous Base course		
6. Wearing coat		
7. Widening and repair of culverts		Cost of completed culverts shall be determined pro rata basis with respect to the total no. of culverts. The payment shall be made on the completion of atleast one culvert. 75% of the cost will be payable on completion of box/ abutments and slab/ pipe and head wall. Remaining 25% will become payable on completion of protection works including return/ wing walls and any other work associated with culverts.
B.1 - Reconstruction/ New realignment/ bypass (flexible pavement)		
1. Earthwork up to top of the		Unit of measurement is linear length.

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Embankment		Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 500 m length, whichever is less
2. Sub-Grade		
3. Sub Base course		
4. Non Bituminous Base Course		
5. Bituminous Base course		
6. Wearing coat		
B.2 - Reconstruction/ New realignment/ bypass (Rigid pavement)		
1. Earthwork up to top of the Embankment		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 500 m length, whichever is less.
2. Sub-Grade		
3. Sub Base course		
4. Dry Lean Concrete(DLC) Course		
5.Pavement Quality Control(PQC) Course		
C.1(A) - Reconstruction/ New Service road (flexible pavement)		
1. Earthwork up to top of the Embankment	19.75%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 500 m length, whichever is less.
2. Sub-Grade	4.63%	
3. Sub Base course	9.40%	
4. Non Bituminous Base Course	14.94%	
5. Bituminous Base course	11.65%	
6. Wearing coat	7.38%	
C.1(B) - Widening and Strengthening of existing Service Road		
1. Earthwork up to top of the Embankment	4.44%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 500 m length, whichever is less.
2. Sub-Grade	1.50%	
3. Sub Base course	4.70%	
4. Non Bituminous Base Course	8.96%	
5. Bituminous Base course	7.74%	
6. Wearing coat	4.91%	

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C.2- Reconstruction/New Service Road (Rigid Pavement)		
1. Earthwork up to top of the Embankment		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 500 m length, whichever is less.
2. Sub-Grade		
3. Sub base course		
4. Dry Lean Concrete(DLC) course		
5. Pavement Quality Control(PQC) course		
D- Reconstruction and New Culverts on existing road, realignment, bypasses:		
Culverts (length<6m)		Cost of each culvert shall be determined on pro rata basis with respect to the total number of culverts. Payment shall be made on the completion of atleast one culvert. 75% of the cost will be payable on completion of box/ abutments and slab/ pipe and head wall. Remaining 25% will become payable on completion of protection works including return/ wing walls and any other work associated with culverts.
*Note- In case of CTB and AIL layer, this stage may be modified suitably to permit separate weightages for each of these layers.		
@ For example, if the total length of bituminous work to be done is 100 km, the cost per km of bituminous work shall be determined as follows:		
Cost per km = $P \times \text{weightage for road work} \times \text{weightage for bituminous work} \times (1/L)$		
Where P= Contract Price		
L = Total length in km		
Similarly, the rates per km for other stages shall be worked out accordingly.		
Note: The length affected due to law and order problems or litigation during execution due to which the Contractor is unable to execute the work, may be deducted from the total project length for payment purposes. The total length calculated here is only for payment purposes and will not affect and referred in other clauses of the Contract Agreement.		

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1.3.2 Minor Bridges and Underpasses/Overpasses.

Procedure for estimating the value of Minor bridge and Underpasses/Overpasses shall be as stated in table 1.3.2:

Table 1.3.2

Stage of Payment	Percentage - Weightage	Payment Procedure
A.1 - Widening / Repairs of Minor Bridges (length>6m and <60m)		
Minor Bridges		Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length (m) of the minor bridges.
(1) Foundation: On completion of the foundation work of abutments and piers	4.40%	(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e completion of atleast one foundations of each bridge. In case where load testing is specified for foundation, the trigger of first payment shall include load testing also.
(2) Sub-structure: On completion of abutments and piers with abutment/ pier cap.	5.05%	(2) Sub - structure – Payment shall be made on pro-rata basis on completion of stage i.e. completion of atleast one sub-structure upto abutment/ pier cap level of each bridge.
(3) Super-structure: On completion of the superstructure in all respects including wearing coat, bearings, expansion joints, handrails, crash barriers, road signs and markings, tests on completion etc. complete in all respect.	3.80%	(3) Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e., completion of super-structure of at least one span in all respects as specified in the column of "Stage of Payment" in this sub-clause.
(4) Approaches: On completion of approaches including wing walls/ return walls, Retaining walls, stone pitching, protection works for floor, embankment slope, etc. complete in all respect and fit for use.	14.66%	(4) Approaches: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of either side of the abutment approaches including wing walls/ return walls, retaining walls, stone pitching in all respect as specified for each bridge.

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A.2 -New Minor Bridges (length>6m and <60m)		Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length (m) of the minor bridges.
(1) Foundation: On completion of the foundation work of abutments and piers	34.72%	(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one foundations of each bridge. In case where load testing is specified for foundation, the trigger of first payment shall include load testing also.
(2) Sub-structure: On completion of abutments and piers with abutment/ pier cap.	8.25%	(2) Sub - structure – Payment shall be made on pro-rata basis on completion of stage i.e. completion of atleast one sub-structure upto abutment/ pier cap level of each bridge.
(3) Super-structure: On completion of the super-structure upto deck slab including bearings.	15.53%	(3) Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e., completion of super-structure of at least one span upto deck slab including bearing as specified in the column of "Stage of Payment" in this subclause. If pre-cast girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from MoRTH Data Book, applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.
(4) Miscellaneous Works : On completion of wearing coat, expansion joint, crash barrier, railings, protection works and any remaining work associated to bridge including tests on bridge.	2.89%	(4) Miscellaneous Works: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of wearing coat, expansion joint, crash barrier, railing, protection works, drainage and any other remaining work associated to bridge including tests on bridge for each bridge
(5) Approaches: On completion of approaches including wing walls/ return walls, Retaining walls, stone pitching, protection works for floor, embankment slope etc. complete in all respect and fit for	10.70%	(5) Approaches: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of either side of the abutment approaches including wing walls/ return walls, retaining walls, stone pitching in all respect as specified for each bridge.

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use.		
(6) Guide Bunds and River Training Works: On completion of Guide Bunds and river Training Works complete in all respects		(6) Guide Bunds and River Training Works: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of Guide Bunds and River training Works in all respects as specified for each bridge.
B.1-Widening / repair of Underpasses/Overpasses		
Underpasses/Overpasses		Cost of each underpass/overpass shall be determined on pro rata basis with respect to the total linear length of the underpasses/overpasses. Payment shall be made on the completion of widening & repair works of a underpass/overpass.
B.2-New Underpasses/Overpasses		Cost of each Underpass/Overpass shall be determined on pro rata basis with respect to the total linear length (m) of the Underpasses/Overpasses.
(1) Foundation: On completion of the foundation work of abutments and piers		(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. completion of foundation(s) of each underpass/overpass. In case where load testing is specified for foundation, the trigger of first payment shall include load testing also.
(2) Sub-structure: On completion of abutments and piers with abutment/ pier cap.		(2) Sub-structure: Payment shall be made on pro-rata basis on completion of stage i.e. completion of atleast one sub-structure upto abutment/ pier cap level of each bridge.
(3) Super-structure: On completion of the super-structure upto deck slab including bearing.		(iii) Super-structure: Payment shall be made on pro-rata basis on completion of a stage 'i.e. completion of super-structure of at least one span upto deck slab including bearing as specified in the column of "Stage of Payment" in this subclause: If pre-cast girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from

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		MoRTH Data Book, applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.
(4) Miscellaneous Works: On completion of wearing coat, expansion joint, crash barrier, railings and any remaining work associated to bridge including tests on bridge		(4) Miscellaneous Works: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of wearing coat, expansion joint, crash barrier, railing, protection works and any other remaining work associated to bridge including tests on bridge for each bridge.
(5) Approaches: On completion of approaches including Wing walls/ Return walls, Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.		(v) Approaches: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of approaches including wing wall/ return wall, retaining walls, Reinforced Earth walls, stone pitching, protection works complete in all respect for each bridge.

1.3.3 Major Bridge works, ROB/RUB Structures.

Procedure for estimating the value of Major Bridge works, ROB/RUB and Structures shall be as stated in table 1.3.3:

Table 1.3.3

Stage of Payment	Percentage - Weightage	Payment Procedure
A.1 - Widening & Repairs of Major Bridges		Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridges.
1. Foundation		(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one foundation of each of the major Bridge as specified hereinunder.

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<p>(i) Pile Foundation</p> <p>(a) Piling – On completion of pile upto bottom of pile cap</p> <p>(b) Pile Cap : On completion of pile cap</p>		<p>(i) Pile Foundation</p> <p>(a) Piling : Payment of 70% shall be made on completion of piling upto bottom of pile cap for each pile on prorata basis.</p> <p>(b) Pile Cap : Payment of 30% on prorata basis shall be made on completion of pile cap.</p> <p>In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.</p>
<p>ii) Open Foundation</p>		<p>(ii) Open Foundation: Payment shall be made on completion of a stage i.e. on completion of atleast one foundation.</p>
<p>2. Sub-structure</p>		<p>(2) Sub-Structure: Payment against Sub-structure shall be made on prorata basis on completion of a stage i.e. completion of atleast one substructure of abutments/piers upto abutment/pier cap level of each of the major bridge.</p>
<p>3. Super-structure (including Bearings)</p>		<p>(3) Super-structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of superstructure upto deck slab including bearings of at least one span as specified here in under :</p> <p>If pre-cast RCC/PSC/Steel girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from MoRTH Data Book, applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.</p>
<p>4. Wearing Coat including expansion joints</p>		<p>(4) Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified for each major bridge.</p>
<p>5. Miscellaneous Items like Hand rails, crash barrier, road markings etc.</p>		<p>(5) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified for each major bridge.</p>

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6. Wing walls/return walls		(6) Wing walls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified for each major bridge.
7. Guide bunds, River Training works etc.		(7) Guide Bunds, River Training works: Payments shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified for each major bridge.
8. Approaches (including Retaining walls, stone pitching and protection works for floor, Embankment slope, etc.)		(8) Approaches: Payments shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified for each major bridge.
A.2 -New Major Bridges		Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridge.
1. Foundation		(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one foundation of each of the major Bridge as specified here in under:
(i) Well Foundation (a) On completion of Cutting Edge + Well Curb (b) Wellsteining : On completion of well steining upto bottom of well cap. (c) On completion of bottom plug + top plug (if provisioned as per design) + well cap		(i) Well Foundation (a) Cutting Edge + Well Curb: Payment of 10% shall be made on completion of a stage i.e. completion of cutting edge + well curb. (b) Well steining : Payment of 65% shall be made on completion of well steining upto bottom of well cap. The payment stage shall be further sub-divided on pro-rata basis i.e. (i) on completion upto 10 m and (ii) on completion of each subsequent 5 m or part thereof. (c) Bottom plug + top plug (if provisioned as per design) + well cap: Payment of 25% shall be made on completion of a stage i.e. completion of bottom plug, back fill, top

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		plug and well cap.
(ii) Pile Foundation (a) Piling – On completion of pile upto bottom of pile cap (b) Pile Cap : On completion of pile cap		(ii) Pile Foundation (a) Piling : Payment of 70% shall be made on completion of piling upto bottom of pile cap for each pile on prorota basis. (b) Pile Cap : Payment of 30% shall be made on completion of pile cap. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(iii) Open Foundation		(iii) Open Foundation: Payment shall be made on completion of a stage i.e. on completion of atleast one foundation.
2. Sub-structure		(ii) Sub-Structure:.. Payment against Sub-structure shall be made on prorata basis on completion of a stage i.e. completion of atleast one substructure of abutments/piers upto abutment/pier cap level of each of the major bridge.
3. Super-structure (including Bearings)		(3) Super-structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of superstructure upto deck slab including bearings of at least one span as specified here in under: If pre-cast girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from MORTH Data Book, applicable SOR of State

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		PWD on Base Date with tender discount/premium applied thereon. (For cable stayed bridge and suspension cable bridge, detailed payment stage may be included on case to case basis)
4. Wearing Coat including expansion joints		(4) Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified for each major bridge.
5. Miscellaneous Items like Hand rails, crash barrier, road markings etc.		(5) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified for each major bridge.
6. Wing walls/return walls		(6) Wing walls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified for each major bridge.
7. Guide bunds, River Training works etc.		(7) Guide Bunds, River Training works: Payments shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified for each major bridge.
8. Approaches (including Retaining walls, stone pitching and protection works for floor, Embankment slope, etc.)		(8) Approaches: Payments shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified for each major bridge.
B.1 - Widening & Repairs of a) ROB b) RUB		Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m) of the ROB/RUBs.
1. Foundation		(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one foundation of each of the ROB/RUB as specified here in under.

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<p>(i) Pile Foundation</p> <p>(a) Piling – On completion of pile upto bottom of pile cap</p> <p>(b) Pile Cap : On completion of pile cap</p>		<p>(i) Pile Foundation</p> <p>(a) Piling : Payment of 70% shall be made on completion of piling upto bottom of pile cap for each pile on prorata basis.</p> <p>(b) Pile Cap : Payment of 30% on prorata basis shall be made on completion of pile cap.</p> <p>In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.</p>
<p>ii) Open Foundation</p>		<p>(ii) Open Foundation: Payment shall be made on completion of a stage i.e. on completion of atleast one foundation.</p>
<p>2. Sub-structure</p>		<p>(2) Sub-Structure:.</p> <p>Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one substructure of abutments/piers upto abutment/pier cap level of each of the ROB/RUB.</p>
<p>3. Super structure (Including bearings)</p>		<p>(3) Super-structure:</p> <p>Payment shall be made on prorata basis on completion of a stage i.e. completion of superstructure upto deck slab including bearings of at least one span as specified here in under:</p> <p>If pre-cast girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from MoRTH Data Book, applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.</p>
<p>4. Wearing Coat</p> <p>(a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and</p> <p>(b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified</p>		<p>(4) Wearing Coat: Payment shall be made on completion of (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified for each of the ROB and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified for each of the RUB.</p>

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5.Miscellaneous Items like hand rails, crash barriers, road markings,etc.)		(5) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified for each of the ROB/ RUB.
6.Wing walls/return walls		(6) Wing/ Return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified for each of the ROB/ RUB.
7. Approaches (including Retaining walls, stone pitching and protection works)		(7) Approaches: Payments shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified for each of the ROB/ RUB.
B.2 New ROB/RUB		Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m) of the ROB/RUBs.
a) ROB		
b) RUB		
1. Foundation		(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one foundation of each of the ROB/RUB as specified here in under:
<p>(i) Well Foundation</p> <p>(a) On completion of Cutting Edge + Well Curb</p> <p>(b) Wellsteining : On completion of well steining upto bottom of well cap.</p> <p>(c) On completion of bottom plug + top plug (if provisioned as per design) + well cap</p>		<p>(i) Well Foundation</p> <p>(a) Cutting Edge + Well Curb: Payment of 10% shall be made on completion of a stage i.e. completion of cutting edge + well curb.</p> <p>(b) Well steining : Payment of 65% shall be made on completion of well steining upto bottom of well cap. The payment stage shall be further sub-divided on pro-rata basis i.e. (i) on completion upto 10 m and (ii) on completion of each subsequent 5 m or part thereof.</p> <p>(c) Bottom plug + top plug (if provisioned as per design) + well cap: Payment of 25% shall be made on completion of a stage i.e. completion of bottom plug, back fill, top</p>

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		plug and well cap.
(ii) Pile Foundation (a) Piling – On completion of pile upto bottom of pile cap (b) Pile Cap : On completion of pile cap		(ii) Pile Foundation (a) Piling : Payment of 70% shall be made on completion of piling upto bottom of pile cap for each pile on prorota basis. (b) Pile Cap : Payment of 30% shall be made on completion of pile cap. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(iii) Open Foundation		(iii) Open Foundation: Payment shall be made on completion of a stage i.e. on completion of atleast one foundation.
2. Sub-structure		(2) Sub-Structure:. Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one substructure of abutments/piers upto abutment/pier cap level of each of the ROB/RUB.
3. Super structure (Including bearings)		(3) Super-structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of superstructure upto deck slab including bearings of at least one span as specified here in under: If pre-cast girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from

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		MoRTH Data Book, applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.
4. Wearing Coat (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified		(4) Wearing Coat: Payment shall be made on completion of (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified for each of the ROB and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified for each of the RUB.
5. Miscellaneous Items like hand rails, crash barriers, road markings, etc.		(5) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified for each of the ROB/ RUB.
6. Wing walls/return walls		(6) Wing/ Return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified for each of the ROB/ RUB.
7. Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)		(7) Approaches: Payments shall be made on completion of both approaches of each ROB including stone pitching, protection works, etc. complete in all respects as specified here in under : If reinforced soil wall is used with facia panel/blocks, interim payment shall be made @75% of the Cost of that element as derived from MoRTH data Book. Applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.
C.1-Widening and repair of Elevated section/Flyovers/Grade Separators		Cost of each structure shall be determined on pro rata basis with respect to the total linear length (m) of the structures.
1. Foundation		(1) Foundation : Payment against foundation shall be made on pro-rata basis

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		on completion of a stage i.e. completion of atleast one foundation of each of the structure as specified here in under :
(i) Pile Foundation (a) Piling – On completion of pile upto bottom of pile cap (b) Pile Cap : On completion of pile cap		(i) Pile Foundation (a) Piling : Payment of 70% shall be made on completion of piling upto bottom of pile cap for each pile on prorata basis. (b) Pile Cap : Payment of 30% on prorata basis shall be made on completion of pile cap. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
ii) Open Foundation		(ii) Open Foundation: Payment shall be made on completion of a stage i.e. on completion of atleast one foundation.
2. Sub-structure		(2) Sub-Structure:. Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one substructure of abutments/piers upto abutment/pier cap level of each of the Structure.
3. Super structure (Including bearings)		(3) Super-structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of superstructure upto deck slab including bearings of at least one span as specified here in under: If pre-cast girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from MoRTH Data Book, applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.
4. Wearing Coat including expansion joints		(4) Wearing Coat: Payment shall be made on completion wearing coat including expansion joints complete in all respects as specified for each of the Structure.

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5.Miscellaneous Items like hand rails,crash barriers,road markings,etc.)		(5) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified for each of the Structure.
6.Wing walls/return walls		(6) Wing/ Return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified for each of the Structure.
7. Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)		(7) Approaches: Payments shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects of each structure.
C.2-New Elevated section/Flyovers/Grade Separators		Cost of each structure shall be determined on pro rata basis with respect to the total linear length (m) of the structures.
1. Foundation		Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one foundation of each of the structure as specified here in under :
(i) Well Foundation (a) On completion of Cutting Edge + Well Curb (b) Wellsteining : On completion of well steining upto bottom of well cap. (c) On completion of bottom plug + top plug (if provisioned as per design) + well cap		(i) Well Foundation (a) Cutting Edge + Well Curb: Payment of 10% shall be made on completion of a stage i.e. completion of cutting edge + well curb. (b) Well steining : Payment of 65% shall be made on completion of well steining upto bottom of well cap. The payment stage shall be further sub-divided on pro-rata basis i.e. (i) on completion upto 10 m and (ii) on completion of each subsequent 5 m or part thereof. (c) Bottom plug + top plug (if provisioned as per design) + well cap: Payment of 25% shall be made on completion of a stage i.e. completion of bottom plug, back fill, top plug and well cap.

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<p>(ii) Pile Foundation (a) Piling – On completion of pile upto bottom of pile cap (b) Pile Cap : On completion of pile cap</p>		<p>(ii) Pile Foundation (a) Piling : Payment of 70% shall be made on completion of piling upto bottom of pile cap for each pile on prorota basis. (b) Pile Cap : Payment of 30% shall be made on completion of pile cap. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.</p>
<p>(iii) Open Foundation</p>		<p>(iii) Open Foundation: Payment shall be made on completion of a stage i.e. on completion of atleast one foundation.</p>
<p>2. Sub-structure</p>		<p>(2) Sub-Structure:. Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. completion of atleast one substructure of abutments/piers upto abutment/pier cap level of each of the Structure.</p>
<p>3. Super structure (Including bearings)</p>		<p>(3) Super-structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of superstructure upto deck slab including bearings of at least one span as specified here in under: If pre-cast girders/ segments are used, interim payments shall be made at 75% of the cost of that element, as derived from MoRTH Data Book, applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.</p>
<p>4. Wearing Coat including expansion joints</p>		<p>(4) Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified for each of the structure.</p>
<p>5. Miscellaneous Items like hand rails, crash barrier, road markings etc.</p>		<p>(5) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road</p>

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		markings etc. complete in all respects as specified for each of the Structure.
6. Wing walls/Return walls		(6) Wing/ Return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified for each of the Structure.
7. Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)		(7) Approaches: Payments shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified here in under : If reinforced soil wall is used with fascia panel/blocks, interim payment shall be made @75% of the Cost of that element as derived from MoRTH data Book. Applicable SOR of State PWD on Base Date with tender discount/premium applied thereon.

1.3.4 Other Works

Procedure for estimating the value of other works done shall be as stated in table 1.3.4.

Table 1.3.4

Stage of Payment	Percentage - Weightage	Payment Procedure
Other Works		
1. Toll Plaza		Unit of measurement is each completed toll plaza. Payment for each toll plaza shall be made on pro rata basis with respect to the total of all toll plazas as specified here in under :
a) DLC (LHS)		(a) DLC (LHS) : Payment of 12.5% on pro-rata basis shall be made on completion of a stage i.e. completion of DLC on LHS.
(b) DLC (RHS)		(b) DLC (RHS) : Payment of 12.5% on pro-rata basis shall be made on completion of a stage i.e. completion of DLC on RHS.
(c) PQC (LHS)		(c) PQC(LHS): Payment of 25% on pro-rata basis shall be made on

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		completion of a stage i.e. completion of PQC on LHS.
(d) PQC (RHS)		(d) PQC(RHS): Payment of 25% on pro-rata basis shall be made on completion of a stage i.e. completion of PQC on RHS.
(e) Admin Building		(e) Admin Building: Payment of 10% on pro-rata basis shall be made on completion of a stage i.e. completion of Admin Building and miscellaneous works.
(f) Toll Booth, canopy, safety items and all other associated works		(f) Toll Booth, canopy, safety items and all other associated works: Payment of 15% on pro-rata basis shall be made on completion of a stage i.e. completion of Toll Booth, canopy, safety items and all other associated works.
2. Road side Drains		
a) Unlined Toe Drain		Unit of measurement is linear length in metre. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 100 m on one side.
b) Lined Drain		Unit of measurement is linear length in metre. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 100 m on one side.
c) RCC Drain		Unit of measurement is linear length in metre. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 100 m on one side.
d) RCC Cover Slab		Unit of measurement is linear length in metre. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 100 m on one side.
3. Road signs, Markings, Km stones, Safety devices, etc.	1.56%	Unit of measurement is linear length in km. Payment shall be made on pro rata basis on completion of a stage in a length of not less than one Km on both sides.
4. Overhead gantry mounted signs.		Unit of measurement is each number. Payment shall be made on pro-rata basis on completion of each overhead gantry mounted sign

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5. Project facilities		Unit of measurement is each number.
a) Bus bays/Shelters		Payment shall be made on pro rata basis for completed facilities.
b) Truck lay-byes		
c) Rest Areas		
6. Road side Plantation		Unit of measurement is linear length in Km. Payment shall be made on pro rata basis on completion of one Km.
7. Protection works other than approaches to the bridges, elevated sections/ flyovers/ grade separators and ROBs/RUBs.		Unit of measurement is linear length. Payment against items (a), (b), 'c) & (d) shall be made on pro rata basis on completion of a stage in a length of not less than 10% (ten per cent) of the total length and 100 m whichever is less.
a) Crash barrier		
i) W Beam Crash barrier		
ii) Thrie Beam Crash Barrier - Single faced	13.15%	
ii) Thrie Beam Crash Barrier - Double faced	3.25%	
iv) New Jersey Barrier		
b) Retaining wall	47.33%	
c) Breast wall		
d) Tubular Stainless Steel Railing	2.66%	
e) Footpath - 60mm thick paver block with 30mm sand filling, base & GSB filling	7.66%	
8. Safety, Traffic Management & Maintenance of Existing road during construction.		
9. ATMS including video surveillance system, Video incident detection system, Emergency call system, Variable message signs, Meteorological data system, Automatic traffic counter, Speed violation detection system, Control room, Traffic impact attunators, Ambulance, crane, Patrolling vehicles, Drone video recording for every six		Payment shall be made on Completion of the scope in all respects.

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months, etc.		
10. Other miscellaneous works like slope protection works, junctions, dismantling, Street Lighting, Anti glare screen, kerbs, Table Top Crossing etc.		Payment shall be made on Completion of the scope in all respects.
(i) Dismantling of Structure, C&G	1.42%	
(ii) Junction Development	4.02%	
(iii) PVC Pipe for Utility	1.12%	
(iv) Mural Painting for underpass section, etc.,	9.83%	
(v) Painting on RE Wall	1.45%	
(vi) Street Lighting, etc.,	4.98%	
(vii) Kerb & Crash Barrier Painting, Rumble Strips, Table top Crossings, landscaping/plantation on Islands, etc.,	1.57%	

1.3.5 Utility shifting

Procedure for estimating the value of Utility shifting done shall be as stated in table 1.3.5.

Table 1.3.5

Stage of Payment	Percentage - Weightage	Payment Procedure
Utility Shifting		

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Water Supply & Sanitary	53.33%	Unit of measurement is as per completed activities. Cost per activity shall be determined on Pro-rate basis as per its weightage with reference to total cost of Water/Sewer Pipeline Shifting. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is laying of pipe - 50%, charging of line including all miscellaneous works and dismantling and site clearance - 50%)
HT/LT line	46.67%	Unit of measurement is as per completed activities. Cost per activity shall be determined on pro-rata basis as per its weightage with reference to total cost of LT/HT line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is (i) Erection of Poles-20%, (ii) Conductor stringing including laying of cable-30%, (iii) DTR erection (if involved)-10% and (iv) Charging of line including dismantling and site clearance-40% (with DTR) and 50% without DTR)