

**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.  
(Ministry of Road, Transport & Highways)  
Government of India**

**Schedule H**

**FOR**

**“Construction of two-Lane with hard shoulders of Chakabama - Zunheboto Road on EPC basis from existing Km 25.760 to Km 52.370 [Design Km. 25+000 to Km. 50+000] (Design Length -25.000 Km) in the state of Nagaland under SARDP-NE Phase A”**

**Engineering, Procurement & Construction (EPC) Mode**

**BID DOCUMENT**

**February 2018**



**National Highways & Infrastructure Development Corporation Ltd  
(A Government of India Undertaking)**

**“Construction of two-Lane with hard shoulders of Chakabama - Zunheboto Road on EPC basis from existing Km 25.760 to Km 52.370 [Design Km. 25+000 to Km. 50+000] (Design Length -25.000 Km) in the state of Nagaland under SARDP-NE Phase A”**

**SCHEDULE – H**

(See Clauses 10.1.4 and 19.3)

**Contract Price Weightages**

1.1 The Contract Price for this Agreement is Rs...../-

1.2 Proportions of the Contract Price for different stages of Construction of the Project Highway shall be as specified below:

<b>ITEM</b>	<b>WEIGHT AGE IN PERCENTAGE TO THE CONTRACT PRICE</b>	<b>STAGE OF PAYMENT</b>	<b>PERCENTAGE WEIGHTAGE</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>5</b>
<b>Road works including Culverts, widening and Repair of Culverts.</b>	<b>72.53%</b>	<b>A- Widening and strengthening of existing road</b>	
		(1) Earthwork upto top of the Sub-grade including excavation in soil/ soft rock/ hard rock and clearing & grubbing	<b>6.33%</b>
		(2) Sub-Base Course.	<b>6.86%</b>
		(3) Non Bituminous Base Course.	<b>9.61%</b>
		(4) Bituminous Base Course	<b>5.94%</b>
		(5) Wearing Coat.	<b>3.81%</b>
		(6) Widening and repair of culverts	<b>0.00%</b>
		(7) Hard Shoulder	<b>1.37%</b>
		<b>B.1- Reconstruction/New 2 lane realignment/bypass (Flexible pavement)</b>	
		(1) Earthwork upto top of the Sub-grade including excavation in soil/ soft rock/ hard rock and clearing & grubbing	<b>5.22%</b>
		(2) Sub-Base Course.	<b>1.78%</b>
		(3) Non Bituminous Base Course.	<b>2.51%</b>
		(4) Bituminous Base Course	<b>1.47%</b>
		(5) Wearing Coat.	<b>0.94%</b>
		(6) Hard Shoulder	<b>0.61%</b>
<b>B.2- Reconstruction/New 2 lane realignment/bypass (Rigid pavement)</b>			
(1) Earthwork upto top of the Sub-grade including excavation in soil, soft rock and hard rock including clearing & grubbing with required site clearance etc.	<b>0.00%</b>		

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		(2) Sub-Base Course.	<b>0.00%</b>
		(3) Dry Lean Concrete (DLC) Course	<b>0.00%</b>
		(4) Pavement Quality Control (PQC) Course	<b>0.00%</b>
		<b><i>C.1-Reconstruction /New Service road (Flexible Pavement)</i></b>	
		(1) Earthwork upto top of the Sub-grade including excavation in soil/ soft rock/ hard rock and clearing & grubbing	<b>0.00%</b>
		(2) Sub-Base Course.	<b>0.00%</b>
		(3) Non Bituminous Base Course.	<b>0.00%</b>
		(4) Bituminous Base Course	<b>0.00%</b>
		(5) Wearing Coat.	<b>0.00%</b>
		<b><i>C.2-Reconstruction /New Service road (Rigid Pavement)</i></b>	
		(1) Earthwork upto top of the Sub-grade including excavation in soil, soft rock and hard rock including clearing & grubbing with required site clearance etc.	<b>0.00%</b>
		(2) Sub-Base Course.	<b>0.00%</b>
		(3) Dry Lean Concrete (DLC) Course	<b>0.00%</b>
		(4) Pavement Quality Control (PQC) Course	<b>0.00%</b>
		<b><i>D-Re-construction and New culverts on existing road, realignment, bypasses.</i></b>	
		(1) Culverts (Length < 6m)	<b>26.08%</b>
<b>Minor Bridges /Underpasses/ Overpasses</b>	<b>0.00%</b>	<b><i>A.1-Widening and Repair of Minor Bridges (length&gt;6m and &lt;60m)</i></b>	
		(1) Minor Bridges	<b>0.00%</b>
		<b><i>A.2-New Minor Bridges (length &gt;6m and &lt;60m)</i></b>	
		(1) <b>Foundation + Sub Structure</b> : On completion of the foundation work including foundations for wing and return walls, abutments, piers up to the abutment/pier cap	<b>0.00%</b>
		(2) <b>Super Structure</b> : On completion of the super structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect.	<b>0.00%</b>
		(3) <b>Approaches</b> : On completion of approaches including Retaining walls, stone pitching, protection works complete in all respect and fit for use.	<b>0.00%</b>



		(4) <b>Guide Bunds and River Training Works:</b> On completion of Guide Bunds and river Training works complete in all respects.	<b>0.00%</b>
		<b>B.1-Widening and Repair of underpasses/overpasses</b>	
		(1) Underpasses / Overpasses	<b>0.00%</b>
		<b>B.2-New Underpasses / Overpasses</b>	
		(1) <b>Foundation + Sub Structure :</b> On completion of the foundation work including foundation for wing and return walls, abutments, piers upto the abutment/pier cap	<b>0.00%</b>
		(2) <b>Super Structure:</b> On completion of the super structure in all respects including wearing coat, bearing, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. Complete in all respect.  Wearing Coat (a) in case of overpass-wearing coat including expansion joints complete in all respects as specified and (b) in case of underpass-rigid pavement including drainage facility complete in all respects as specified.	<b>0.00%</b>
		(3) <b>Approaches:</b> On completion of approaches including Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	<b>0.00%</b>
<b>Major Bridge (length &gt;60m works and ROB/RUB/elevated sections /flyovers including voiducts, if any</b>	<b>0.00%</b>	<b>A.1-Widening and repairs of Major Bridges</b>	
		(1) Foundation	<b>0.00%</b>
		(2) Sub-structure	<b>0.00%</b>
		(3) Super-structure (including bearings)	<b>0.00%</b>
		(4) Wearing Coat including expansion joints	<b>0.00%</b>
		(5) Miscellaneous items like hand rails, crash barriers, road marking etc	<b>0.00%</b>
		(6) Wing walls/return walls	<b>0.00%</b>
		(7) Guide Bunds, River Training works etc	<b>0.00%</b>
		(8) Approaches (including Retaining walls, stone pitching and protection works)	<b>0.00%</b>
		<b>A.2-New Major Bridges</b>	
		(1) Foundation	<b>0.00%</b>
		(2) Sub-structure	<b>0.00%</b>
		(3) Super-structure (including bearings)	<b>0.00%</b>
		(4) Wearing Coat including expansion joints	<b>0.00%</b>
		(5) Miscellaneous items like hand rails, crash barriers, road markings etc	<b>0.00%</b>
(6) Wing walls/return walls	<b>0.00%</b>		

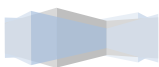
	(7) Guide Bunds, River Training works etc	<b>0.00%</b>
	(8) Approaches (including Retaining walls, stone pitching and protection works)	<b>0.00%</b>
	<b><i>B.1-Widening and Repair of</i></b>	
	<b><i>(a) ROB</i></b>	
	<b><i>(b) RUB</i></b>	
	(1) Foundation	<b>0.00%</b>
	(2) Sub-structure	<b>0.00%</b>
	(3) Super-structure (including bearings)	<b>0.00%</b>
	(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	<b>0.00%</b>
	(5) Miscellaneous items like hand rails, crash barriers, road markings etc	<b>0.00%</b>
	(6) wing walls/return walls	<b>0.00%</b>
	(7) Approaches (including Retaining walls, stone pitching and protection works)	<b>0.00%</b>
	<b><i>B.2-New ROB/RUB</i></b>	
	<b><i>(a) ROB</i></b>	
	<b><i>(b) RUB</i></b>	
	(1) Foundation	<b>0.00%</b>
	(2) Sub-structure	<b>0.00%</b>
	(3) Super-structure (including bearings)	<b>0.00%</b>
	(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	<b>0.00%</b>
	(5) Miscellaneous items like hand rails, crash barriers, road markings etc	<b>0.00%</b>
	(6) Wing walls/return walls	<b>0.00%</b>
	(7) Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	<b>0.00%</b>
	<b><i>C.1-Widening and repair of Elevated Section/Flyovers/Grade Separators</i></b>	
	(1) Foundation	<b>0.00%</b>
	(2) Sub-structure	<b>0.00%</b>
	(3) Super-structure (including bearings)	<b>0.00%</b>
	(4) Wearing Coat including expansion joints	<b>0.00%</b>
	(5) Miscellaneous items like hand rails, crash barriers, road markings etc	<b>0.00%</b>

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		(6) Wing walls/return walls	<b>0.00%</b>
		(7) Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	<b>0.00%</b>
		<b><i>C.2-New Elevated Section/Flyovers/Grade Separators</i></b>	
		(1) Foundation	<b>0.00%</b>
		(2) Sub-structure	<b>0.00%</b>
		(3) Super-structure (including bearings)	<b>0.00%</b>
		(4) Wearing Coat including expansion joints	<b>0.00%</b>
		(5) Miscellaneous items like hand rails, crash barriers, road markings etc	<b>0.00%</b>
		(6) wing walls/return walls	<b>0.00%</b>
		(7) Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	<b>0.00%</b>
<b>Other Works</b>	<b>27.47%</b>		
		(i)Toll Plaza	<b>0.00%</b>
		(ii)Road side drains	<b>5.82%</b>
		(iii) Road signs, markings, Km stones, Safety devices etc.	
		(a) Pavement Markings	<b>1.65%</b>
		(b) Crash Barriers/ W metal crash Barriers	<b>1.07%</b>
		(c) Road/Traffic Sign	<b>0.43%</b>
		(d) Road Boundary stones, km Stones, 5th km stones and hectometer stones, rumble strip, other items etc.	<b>0.04%</b>
		(e) Traffic blinker LED delineators, studs, reflective pavement markers, tree reflectors	<b>1.83%</b>
		(f) Road furniture (overhead signboard etc.)	<b>0.00%</b>
		(iv)Project facilities	
		(a)Bus bays / Bus Shelter	<b>0.24%</b>
		(b) Junctions (Major & Minor)	<b>1.28%</b>
		(c) Others including Cable duct & Lighting on Bridges, etc.	<b>0.00%</b>
		(v) Road side Plantation	<b>0.01%</b>
		(vi) Repair of protection works other than approaches to the bridges, elevated sections/ flyovers/grade separators and ROBs /RUBs	<b>0.00%</b>
		(vii) Safety and traffic management during construction	<b>0.00%</b>
		(viii) Slope Protection Works as special requirement for hill road	

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	(a) Hydro Seeding	<b>0.06%</b>
	(b) Seeding and Mulching with Jute net	<b>0.96%</b>
	(c) Catch water Drains	<b>0.10%</b>
	(d) Retaining Structure on valley side of PCC/RCC/Gabion/Cement Masonry of varying height between 1 to 6 metre including parapets	<b>5.20%</b>
	(e) Reinforced Earth wall	<b>0.21%</b>
	(f) Breast wall with PCC/RCC/Gabion/Cement Masonry	<b>7.39%</b>
	(g) Sub Surface drain with perforated pipe	<b>0.01%</b>
	(h) Parapet wall	<b>1.17%</b>
	<b>Total %</b>	<b>100.00%</b>



## 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:

<b>STAGE OF PAYMENT</b>	<b>PERCENTAGE WEIGHTAGE</b>	<b>PAYMENT PROCEDURE</b>
<b>A- Widening and strengthening of existing road</b>		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.
(1) Earthwork upto top of the Sub-grade including excavation in soil/ soft rock/ hard rock and clearing & grubbing	<b>6.33%</b>	Further, If existing road length (excluding bypasses, re-alignment, structure) is say 'L' Km and the unencumbered length along the existing road as handed over on the appointed date is 'L1' Km and the balance length i.e. 'L2' Km (L-L1) is to be handed over on a later date as per the memorandum signed under provision of clause 8.2.1 of the contract document, then the stage payment shall be worked out for the 'L1' Km length handed over on the appointed date. The stage payment for the remaining 'L2' Km shall be worked out on prorata basis from the date of handing over of such length.
(2) Sub-Base Course.	<b>6.86%</b>	
(3) Non Bituminous Base Course.	<b>9.61%</b>	
(4) Bituminous Base Course	<b>5.94%</b>	
(5) Wearing Coat.	<b>3.81%</b>	
(6) Widening and repair of culverts	<b>0.00%</b>	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 at least five culverts.
(7) Hard Shoulder	<b>1.37%</b>	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. Further, If existing road length (excluding bypasses, re-alignment, structure) is say 'L' Km and the unencumbered length along the existing road as handed over on the appointed date is 'L1' Km and the balance length i.e. 'L2' Km (L-L1) is to be handed over on a later date as per the memorandum signed under provision of clause 8.2.1 of the contract document, then the stage payment shall be worked out for the 'L1' Km length handed over on the

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		appointed date. The stage payment for the remaining 'L2' Km shall be worked out on prorate basis from the date of handing over of such length.
<b>B.1- Reconstruction/New 2lane realignment/bypass (Flexible pavement)</b>		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.
(1) Earthwork upto top of the Sub-grade including excavation in soil/ soft rock/ hard rock and clearing & grubbing	<b>5.22%</b>	Further, Unit of Measurement is linear length of each Bypass/ realignment (excluding structures) and payment of each stage shall be made on prorate basis on completion of a stage in a length of not less than 10 (ten) percent of the total length of each bypass/ realignment taken separately.
(2) Sub-Base Course.	<b>1.78%</b>	
(3) Non Bituminous Base Course.	<b>2.51%</b>	
(4) Bituminous Base Course	<b>1.47%</b>	
(5) Wearing Coat.	<b>0.94%</b>	
(6) Hard Shoulder	<b>0.61%</b>	
<b>B.2- Reconstruction/New 2lane realignment/bypass (Rigid pavement)</b>		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 5(five) km. length, whichever is less.
(1) Earthwork upto top of the Sub-grade including excavation in soil/ soft rock/ hard rock and clearing & grubbing	<b>0.00%</b>	Further, Unit of Measurement is linear length of each Bypass/ realignment (excluding structures) and payment of each stage shall be made on prorate basis on completion of a stage in full length or 5 (Five) Km length of each bypass/ realignment taken separately.
(2) Sub-Base Course.	<b>0.00%</b>	
(3) Dry Lean Concrete (DLC) Course	<b>0.00%</b>	
(4) Pavement Quality Control (PQC) Course	<b>0.00%</b>	
<b>C.1-Reconstruction /New Service road (Flexible Pavement)</b>	<b>0.00%</b>	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 5(five) km. length, whichever is less.
(1) Earthwork upto top of the Sub-grade including excavation in soil/ soft rock/ hard rock and clearing & grubbing	<b>0.00%</b>	
(2) Sub-Base Course.	<b>0.00%</b>	
(3) Non Bituminous Base Course.	<b>0.00%</b>	
(4) Bituminous Base Course	<b>0.00%</b>	
(5) Wearing Coat.	<b>0.00%</b>	
<b>C.2-Reconstruction /New Service road (Rigid Pavement)</b>		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 5(five) km. length, whichever is less.
(1) Earthwork upto top of the Sub-grade including excavation in soil, soft rock and hard rock including clearing & grubbing with required site clearance etc.	<b>0.00%</b>	
(2) Sub-Base Course.	<b>0.00%</b>	
(3) Dry Lean Concrete (DLC)	<b>0.00%</b>	

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Course		
(4) Pavement Quality Control (PQC) Course	<b>0.00%</b>	
<b>D-Re-construction and New culverts on existing road, realignment, bypasses.</b>		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 at least five culverts.
(1) Culverts (Length < 6m)	<b>26.08%</b>	

@. 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:

$$\text{Cost per km} = P \times \text{weightage for road work} \times \text{weightage for bituminous work} \times (1/L)$$

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.***



## 1.3.2 Minor Bridge and Underpasses/Overpasses

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

<b>TABLE 1.3.2</b>		
<b>STAGE OF PAYMENT</b>	<b>PERCENTAGE WEIGHTAGE</b>	<b>PAYMENT PROCEDURE</b>
<b>A.1-Widening and Repair of Minor Bridges (length&gt;6m and &lt;60m)</b>	0.00%	Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length of the minor bridges. Payment shall be made on the completion of widening & repair works of a minor bridge.
<b>A.2-New Minor Bridges (length &gt;6m and &lt;60m)</b>		
(i) <b>Foundation + Sub Structure</b> : On completion of the foundation work including foundation for wing and return walls, abutments, piers upto the abutment/pier cap	0.00%	(i) <b>Foundation + Sub Structure</b> : Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length(m) of the minor bridges. Payment against foundation + sub structure shall be made on pro rata basis on completion of a stage i.e not less than 25% of the scope of foundation + sub structure of each bridge subject to completion of at least two foundations along with sub structure up to abutment/pier cap level of each bridge. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(ii) <b>Super Structure</b> : On completion of the super structure in all respects including wearing coat, bearing, expansion joint, hand rail, crash barriers, road signs & markings, tests on completion etc. Complete in all respect.	0.00%	(ii) <b>Super Structure</b> : 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.
(iii) <b>Approaches</b> : On completion of approaches including Retaining walls, stone pitching, protection works complete in all respect and fit for use.	0.00%	(iii) <b>Approaches</b> : Payment shall be made on pro rata basis on completion of a stage i.e completion of approaches in all respect as specified in the column of "Stage of Payment" in this sub clause.
(iv) <b>Guide Bunds and River Training Works</b> : On completion of Guide Bunds and river Training works complete in all respects.	0.00%	(iv) <b>Guide Bunds and River Training Works</b> : 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.
<b>B.1-Widening and Repair of underpasses/ overpasses</b>	0.00%	Cost of each underpass/overpass shall be determined on pro rata basis with respect to

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		the total linear length of the underpasses/overpasses. Payment shall be made on the completion of widening & repair works of a underpass/overpass
<b>B.2-New Underpasses / Overpasses</b>		
(i) <b>Foundation + Sub Structure</b> : On completion of the foundation work including foundation for wing and return walls, abutments, piers up to the abutment/pier cap	0.00%	(i) <b>Foundation + Sub Structure</b> : Cost of each Underpass/Overpass shall be determined on pro rata basis with respect to the total linear length (m) of the Underpasses/Overpasses. Payment against foundation + sub structure shall be made on pro rata basis on completion of a stage i.e not less than 25% of the scope of foundation + sub structure of each underpasses/overpasses subject to completion of at least two foundation along with sub structure up to abutment/pier cap level each underpass/overpass. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(ii) <b>Super Structure</b> : On completion of the super structure in all respects including wearing coat, bearing, expansion joint, hand rail, crash barriers, road signs & marking, tests on completion etc. Complete in all respect.  Wearing Coat (a) in case of overpass-wearing coat including expansion joints complete in all respects as specified and (b) in case of underpass-rigid pavement including drainage facility complete in all respects as specified as specified.	0.00%	(ii) <b>Super Structure</b> : 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.
(iii) <b>Approaches</b> : On completion of approaches including Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	0.00%	(iii) <b>Approaches</b> : Payment shall be made on pro rata basis on completion of stage i.e completion of approaches in all respect as specified.



## 1.3.3 Major Bridge works, ROB/RUB and Structures.

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

<b>TABLE 1.3.3</b>		
<b>STAGE OF PAYMENT</b>	<b>PERCENTAGE WEIGHTAGE</b>	<b>PAYMENT PROCEDURE</b>
<b>A.1-Widening and repairs of Major Bridges</b>		
(i) Foundation	0.00%	(i) <b>Foundation:</b> Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridge. Payment against foundation shall be made on pro rata basis on completion of a stage i.e not less than 25% of the scope of foundation of the major bridge subject to completion of atleast two foundation of the Major Bridge. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(ii) Sub-structure	0.00%	(ii) <b>Sub Structure :</b> Payment against Sub Structure shall be made on pro rata basis on completion of a stage i.e not less than 25% of the scope of sub structure of the major bridge subject to completion of atleast two sub structure of abutment/piers upto abutment/pier cap level of the major bridge.
(iii) Super-structure (including bearings)	0.00%	(iii) <b>Super Structure:</b> Payment shall be made pro rata basis on completion of a stage i.e completion of super structure including bearings of atleast one span in all respect as specified.
(iv) Wearing Coat including expansion joints	0.00%	(iv) <b>Wearing Coat:</b> Payment shall be made on completion of wearing coat including expansion joint complete in all respects as specified.
(v) Miscellaneous items like hand rails, crash barriers, road markings etc	0.00%	(v) <b>Miscellaneous :</b> Payment shall be made on completion of all miscellaneous work like hand rail, crash barriers, road marking etc. complete in all respect as specified.
(vi) wing walls/return walls	0.00%	(vi) <b>Wing walls/return walls:</b> Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(vii) Guide Bunds, River Training works etc	0.00%	(vii) <b>Guide Bunds, River Training works:</b> Payments shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified.



(viii) Approaches (including Retaining walls, stone pitching and protection works)	0.00%	(viii) <b>Approaches:</b> Payments shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respect as specified.
<b>A.2-New Major Bridges</b>		
(i) Foundation	0.00%	(i) <b>Foundation:</b> Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridge. Payment against foundation shall be made on pro rata basis on completion of stage i.e not less than 25% of the scope of foundation of the major bridge subject to completion of at least two foundation of the major bridge. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(ii) Sub-structure	0.00%	(ii) <b>Sub Structure:</b> Payment against Sub-structure shall be made on pro rata basis on completion of a stage i.e not less than 25% of scope of sub structure of the major bridge subject to completion of atleast two sub structure of abutment/piers upto abutment/pier cap level of the major bridge.
(iii) Super-structure (including bearings)	0.00%	(iii) <b>Sup Structure :</b> Payment shall be be made on pro rata basis on completion of a stage i.e completion of super structure including bearing of atleast one span in all respects as specified.
(iv) Wearing Coat including expansion joints	0.00%	(iv) <b>Wearing Coat:</b> Payment shall be made on completion of wearing coat including expansion joint complete in all respects as specified.
(v) Miscellaneous items like hand rails, crash barriers, road markings etc	0.00%	(v) <b>Miscellaneous :</b> Payment shall be made on completion of all miscellaneous work like hand rail, crash barriers, road marking etc. Complete in all respects as specified.
(vi) wing walls/return walls	0.00%	(vi) <b>Wing walls/Return walls :</b> Payment shall be made on completion of all wing walls/return walls complete in all respects as specified.
(vii) Guide Bunds, River Training works etc	0.00%	(vii) <b>Guide Bunds, River Training works :</b> Payment shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified.
(viii) Approaches (including Retaining walls, stone pitching and protection works)	0.00%	(viii) <b>Approaches:</b> Payment shall be made on completion of both approaches including stone pitching, protection works, etc complete in all respects as specified.
<b>B.1-Widening and Repair of</b>		
<b>(a) ROB</b>		
<b>(b) RUB</b>		
(i) Foundation	0.00%	(i) <b>Foundation:</b> Cost of each ROB/RUB shall be

“Construction of two-Lane with hard shoulders of Chakabama - Zunheboto Road on EPC basis from existing Km 25.760 to Km 52.370 [Design Km. 25+000 to Km. 50+000] (Design Length -25.000 Km) in the state of Nagaland under SARDP-NE Phase A”

		determined on pro rata basis with respect to the total liner length (m) of the ROB/RUBs. Payment against foundation shall be made on pro rata basis on completion of a stage i.e not less than 25% of the scope of foundation of the ROB/RUB subject to completion of at least two foundations of the ROB/RUB. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(ii) Sub-structure	0.00%	(ii) <b>Sub Structure:</b> Payment against sub structure shall be made on pro rata basis on completion of a stage i.e not less than 25% of the scope of sub structure of the ROB/RUB subject to completion of atleast two sub structure of abutments/piers upto abutment/pier cap level of the ROB/RUB.
(iii) Super-structure (including bearings)	0.00%	(iii) <b>Super Structure :</b> Payment shall be made on pro rata basis on completion of a stage i.e completion of super structure including bearing of atleast one span in all respects as specified.
(iv) Wearing Coat including expansion joints in case of ROB. In case of RUB, rigid pavement under RUB including drainage facility as specified	0.00%	(iv) <b>Wearing Coat :</b> Payment shall be made on completion of (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 as specified.
(v) Miscellaneous items like hand rails, crash barriers, road markings etc	0.00%	(v) <b>Miscellaneous:</b> Payment shall be made on completion of all miscellaneous work like hand rail, crash barriers, road marking etc. Complete in all respects as specified.
(vi) wing walls/return walls	0.00%	(vi) <b>Wing walls/return walls:</b> Payment shall be made on completion of all wing walls/return walls complete in all respects as specified.
(vii) Approaches (including Retaining walls, stone pitching and protection works	0.00%	(vii) <b>Approaches:</b> Payment shall be made on completion of both approaches including stone pitching, protection works, etc complete in all respect as specified.
<b>B.2-New ROB/RUB</b>		
<b>(a) ROB</b>		
<b>(b) RUB</b>		



(i) Foundation	0.00%	(i) <b>Foundation:</b> Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total liner length (m) of the ROB/RUBs. Payment against foundation shall be made on pro rata basis on completion of a stage i.e not less than 25% of the scope of foundation of the ROB/RUB subject to completion of atleast two foundations of the ROB/RUB. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(ii) Sub-structure	0.00%	(ii) <b>Sub Structure :</b> Payment against sub structure shall be made on pro rata basis on completion of a stage i.e not less than 25% of the scope of sub structure of the ROB/RUB subject to completion of atleast two sub structures of abutments/piers upto abutment/pier cap level of the ROB/RUB.
(iii) Super-structure (including bearings)	0.00%	(iii) <b>Super Structure:</b> Payment shall be made on pro rata basis on completion of a stage i.e completion of super structure including bearing of atleast one span in all respects as specified.
(iv) Wearing Coat including expansion joints in case of ROB. In case of RUB, rigid pavement under RUB including drainage facility as specified	0.00%	(iv) <b>Wearing Coat :</b> Payment shall be made on completion of (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.
(v) Miscellaneous items like hand rails, crash barriers, road marking etc	0.00%	(v) <b>Miscellaneous :</b> Payment shall be made on completion of all miscellaneous work like hand rail, crash barriers, road marking etc. Complete in all respects as specified.
(vi) wing wall/return walls	0.00%	(vi) <b>Wing walls/return walls :</b> Payment shall be made on completion of all wing walls/return walls complete in all respects as specified.
(vii) Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection work	0.00%	(vii) <b>Approaches :</b> Payment shall be made on completion of both approaches including stone pitching, protection works, etc complete in all respect as specified.
<b>C.1-Widening and repairs of Elevated Section/Flyovers/Grade Separators</b>		
(i) Foundation	0.00%	(i) <b>Foundation :</b> Cost of each structure shall be determined on pro rata basis with respect to the total liner length (m) of the structure Payment against foundation shall be made on pro rata basis on completion of a stage i.e not less than 25% of the scope of foundations of the structure subject to completion of atleast two foundation of the structure. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.

(ii) Sub-structure	0.00%	(ii) <b>Sub Structure</b> : Payment against sub structure shall be made on pro rata basis on completion of a stage i.e not less than 25% of the scope of sub structure of the structure subject to completion of atleast two sub structures of abutments/piers upto abutment/pier cap level of the structure.
(iii) Super-structure (including bearings)	0.00%	(iii) <b>Super Structure</b> : Payment shall be made on pro rata basis on completion of a stage i.e completion of super structure including bearings of atleast one span in all respects as specified.
(iv) Wearing Coat including expansion joints	0.00%	(iv) <b>Wearing Coat</b> : Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified
(v) Miscellaneous items like hand rails, crash barriers, road marking etc	0.00%	(v) <b>Miscellaneous</b> : Payment shall be made on completion of all miscellaneous work like hand rail, crash barriers, road marking etc. Complete in all respects as specified.
(vi) wing wall/return walls	0.00%	(vi) <b>Wing walls/return walls</b> : Payment shall be made on completion of all wing walls/return walls complete in all respects as specified.
(vii) Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection work)	0.00%	(vii) <b>Approaches</b> : Payment shall be made on completion of both approaches including stone pitching, protection works, etc complete in all respect as specified.
<b>C.2-New Elevated Section/Flyovers/Grade Separators</b>		
(i) Foundation	0.00%	(i) <b>Foundation</b> : Cost of each structure shall be determined on pro rata basis with respect to the total liner length (m) of the structure Payment against foundation shall be made on pro rata basis on completion of a stage i.e not less than 25% of the scope of foundation of the structure subject to completion of atleast two foundations of the structure. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(ii) Sub-structure	0.00%	(ii) <b>Sub Structure</b> : Payment against sub structure shall be made on pro rata basis on completion of a stage i.e not less than 25% of the scope of sub structure of the structure subject to completion of atleast two sub structures of abutments/piers upto abutment/pier cap level of the structure.
(iii) Super-structure (including bearings)	0.00%	(iii) <b>Super Structure</b> : Payment shall be made on pro rata basis on completion of a stage i.e completion of super structure including bearings of atleast one span in all respects as specified.
(iv) Wearing Coat including expansion joints	0.00%	(iv) <b>Wearing Coat</b> : Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified

(v) Miscellaneous items like hand rails, crash barriers, road marking etc	0.00%	(v) <b>Miscellaneous:</b> Payment shall be made on completion of all miscellaneous work like hand rail, crash barriers, road marking etc. Complete in all respects as specified.
(vi) wing wall/return walls	0.00%	(vi) <b>Wing walls/return walls :</b> Payment shall be made on completion of all wing walls/return walls complete in all respects as specified.
(vii) Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection work)	0.00%	(vii) <b>Approaches:</b> Payment shall be made on completion of both approaches including stone pitching, protection works, etc complete in all respect as specified.

*Note: (1) In case of innovate Major Bridge projects like cable suspension/cable stayed/Extra Dozed and exceptionally long span bridges, the schedule may be modified as per site requirements before bidding with due approval of DG (RD) & SS, MoRT&H.*

*Note: (2) The Schedule for exclusive tunnel project may be prepared as per site requirement before bidding with due approval of DG (RD) & SS, MoRT&H*



## 1.3.4 Others works

Procedure for estimating the value of others works done shall be as stated in table 1.3.4:

<b>TABLE 1.3.4</b>			
<b>STAGE OF PAYMENT</b>	<b>PERCENTAGE WEIGHTAGE</b>	<b>PAYMENT PROCEDURE</b>	
(i)Toll Plaza	<b>0.00%</b>	Unit of measurement is each completed toll plaza. Payment of each toll plaza shall be made on pro rata basis with respect to the total of all toll plazas.	
(ii)Road side drains	<b>5.82%</b>	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 10% (ten per cent) of the total length.	
(iii) Road signs, markings, Km stones, Safety devices etc.			
(a) Pavement Markings	<b>1.65%</b>		
(b) Crash Barriers/ W metal crash Barriers	<b>1.07%</b>		
(c) Road/Traffic Sign	<b>0.43%</b>		
(d) Road Boundary stones, km Stones, 5th km stones and hectometre stone, rumble strip, other items	<b>0.04%</b>		
(e) Traffic blinker LED delineator, stud, reflective pavement marker, tree reflector	<b>1.83%</b>		
(f) Road furniture (overhead signboard etc.)	<b>0.00%</b>		
(iv)Project facilities			Payment shall be made on pro rata basis for completed facilities.
(a)Bus bays & Bus Shelter	<b>0.24%</b>		
(b) Junctions (Major & Minor)	<b>1.28%</b>		
(c) Others including Cable duct & Lighting on Bridges, etc.			
(v) Road side Plantation	<b>0.01%</b>	Unit of measurement is linear length. Payment 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.	
(vi) Repair of protection works other than approaches to the bridges, elevated section/flyovers/grade separators and ROBs/RUBs	<b>0.00%</b>		
(vii) Safety and traffic management during construction	<b>0.00%</b>	Payment shall be made on pro rata basis every six month.	
(viii) Slope Protection Works as special requirement for hill road	<b>0.00%</b>	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 10% (ten per cent) of the total length.	
(a) Hydro Seeding	<b>0.06%</b>	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 10% (ten per cent) of the total length.	
(b)Seeding and Mulching with Jute net	<b>0.96%</b>		

“Construction of two-Lane with hard shoulders of Chakabama - Zunheboto Road on EPC basis from existing Km 25.760 to Km 52.370 [Design Km. 25+000 to Km. 50+000] (Design Length -25.000 Km) in the state of Nagaland under SARDP-NE Phase A”

(c) Catch water Drains	<b>0.10%</b>	
(d) Retaining Structure on valley side of PCC/RCC/Gabion/Cement Masonry of varying height between 1 to 6 metre with parapet walls	<b>5.20%</b>	
(e) Reinforced Earth wall	<b>0.21%</b>	
(f) Breast wall with PCC/RCC/Gabion /Cement Masonry	<b>7.39%</b>	
(g) Sub Surface drain with perforated pipe	<b>0.01%</b>	
(h) Parapet wall	<b>1.17%</b>	

## 2. Procedure for payment for Maintenance

2.1 The cost for maintenance shall be as stated in Clause 14.1.1

2.2 Payment for Maintenance shall be made in quarterly installment in accordance with the provisions of Clause 19.7

