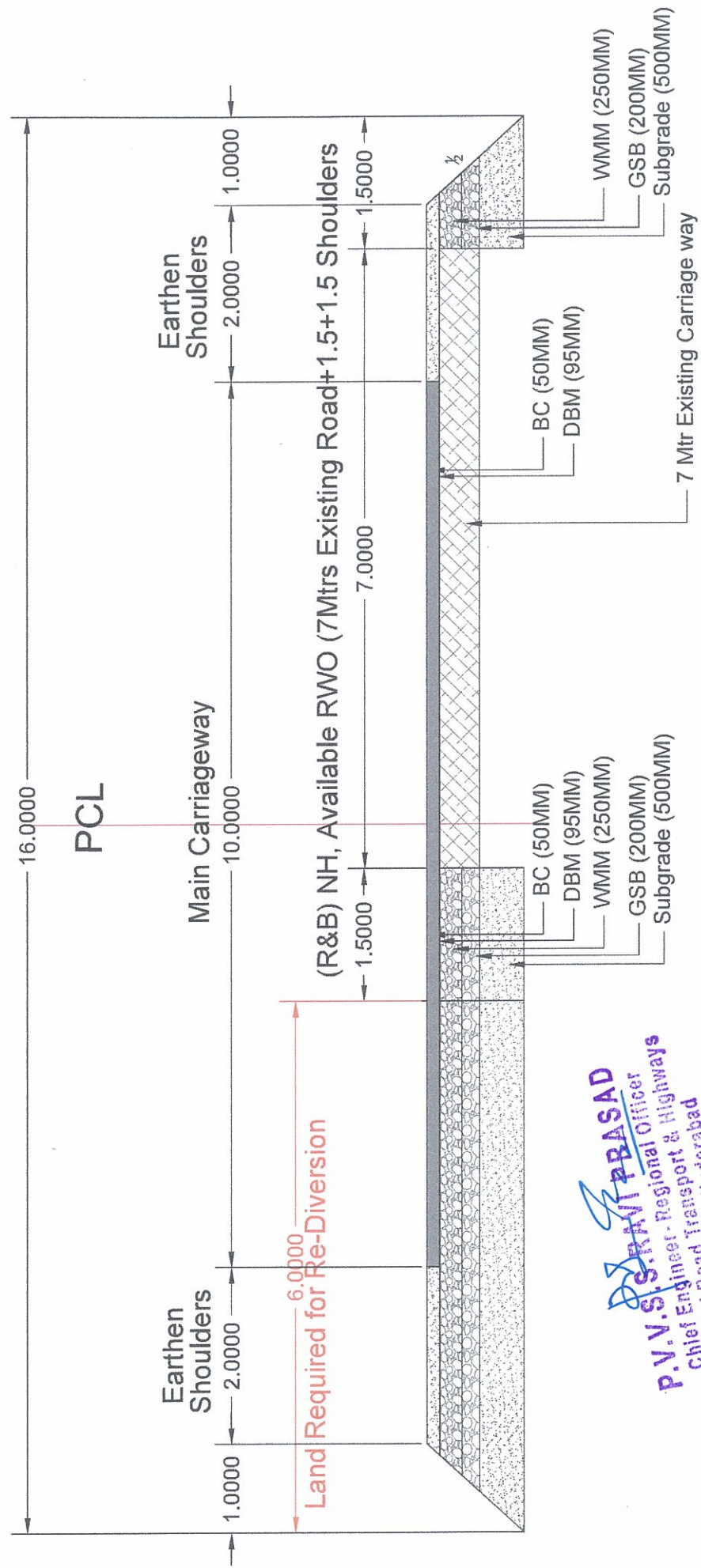


# Cross Section for Re-Diversion

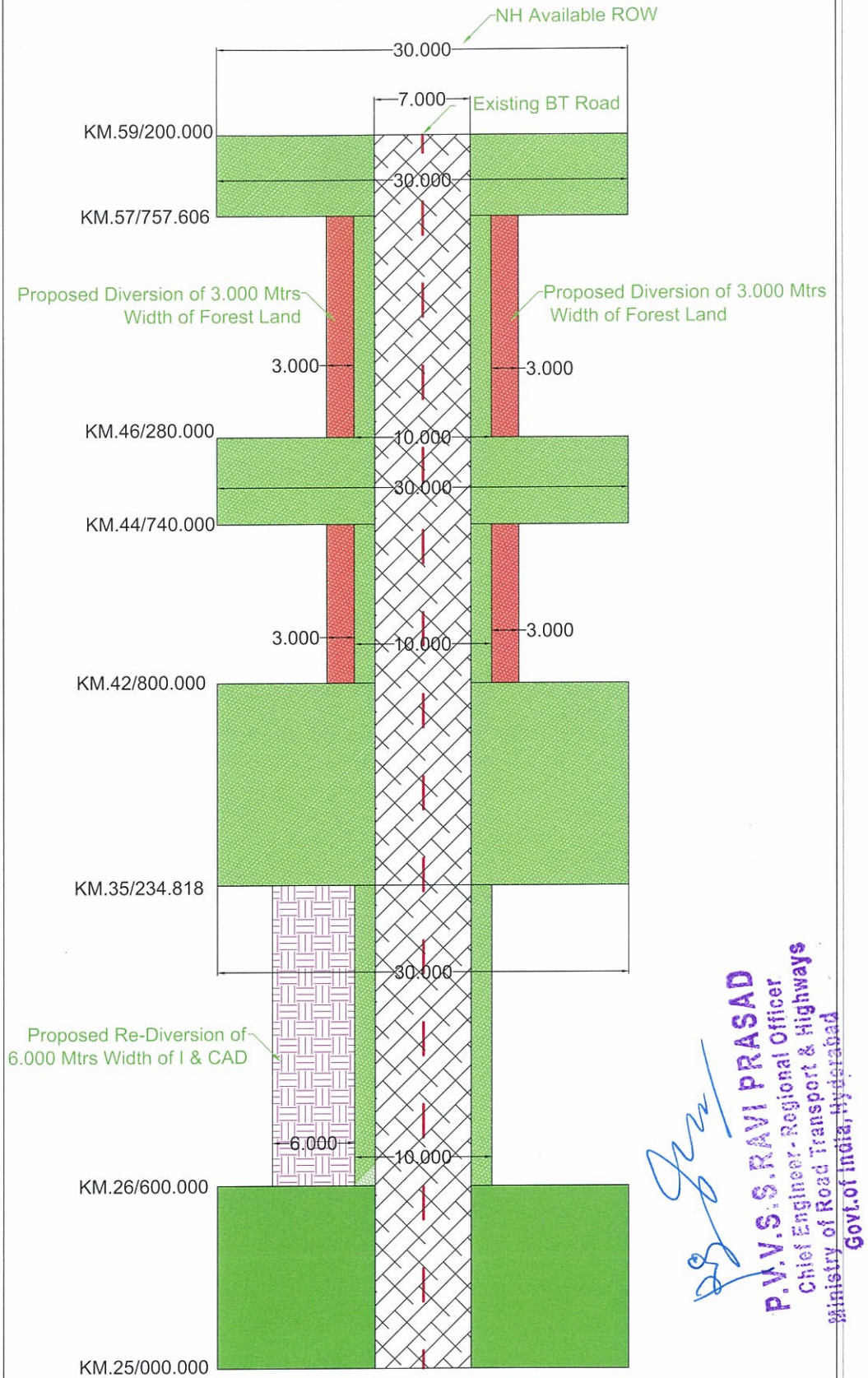


**P.V.S. RAVI PRASAD**  
 Chief Engineer - Regional Officer  
 Ministry of Road Transport & Highways  
 Govt. of India, Hyderabad

[illegible]

  
**P.V.S.S. RAVI PRASAD**  
Chief Engineer, Regional Officer  
Ministry of Road Transport & Highways  
Govt. of India, Hyderabad

Mahadevpur - Bhupalpally Section NH - 353C Strip Plan  
Showing For Diversion and Re-Diversion of Forest Land



Legend

-  Existing BT Road
-  NH ROW
-  Proposed Diversion Land
-  Proposed Re-Diversion Land

*[Signature]*  
**P.V.S.S. RAVI PRASAD**  
Chief Engineer - Regional Officer  
Ministry of Road Transport & Highways  
Govt. of India, Hyderabad

GOVERNMENT OF INDIA  
MINISTRY OF ROAD TRANSPORT & HIGHWAYS  
(Zone-III)

1, Parliament Street, Transport Bhavan,  
New Delhi - 110 001,

No. RW/NH-12014/70/2017-TS/P-7

Dated: -26 February, 2018

To

The Secretary,  
Government of Telangana,  
Transport, Roads & Building Department,  
Hyderabad - 500 082.

Sub:- Widening & strengthening of existing carriageway to 2 lane with paved shoulders from existing km. 25/0 - km. 59/2 (Design Chainage km. 25.467 to km. 59.200) of NH-353C on EPC mode in the State of Telangana.

[Job No. NH-353C-TS-2017-18-42]

Ref:- Engineer-in-Chief (R&B) NH, CRF, LWE, PPP, Telangana Lr. No. 1252/DCE(NH&CRF/EE(PPP)/DIEE-VAEE/2017/2017-18 dated 30.10.2017 & 17.11.2017.

Sir,

I am directed to convey the technical, financial sanction and administrative approval of the President of India to the estimate for the work mentioned in the subject heading as per the following details subject to the condition stipulated in the attached technical note:

- |    |   |                  |
|----|---|------------------|
| 1. | Amount as indicated in the estimate sent by the State Govt. of Andhra Pradesh | Rs. 230.24 Crore |
| 2. | Amount as modified in the Ministry  | Rs. 206.13 Crore |
| 3. | Amount of technical approval (Inclusive of agency charges @ 3%)               | Rs. 206.13 Crore |
| 4. | Amount of financial sanction (Inclusive of agency charges @ 3%)               | Rs. 206.13 Crore |

(Rupees Two Hundred Six Crore and Thirteen Lakh Only)

2. This sanction is further subject to the following conditions.

- (i) The work shall be executed by inviting the tender on EPC mode
- (ii) The work should be completed as targeted and indicated in the enclosed technical note.
- (iii) In accordance with the order contained in this Ministry's Circular letter No. RW/NH-11026/2/99-US (D-I) dated 29.10.2001 issued in supersession of earlier Circular No. RW/NH-11026/2/99-US (D-I) dated 13-1-2000, if the cost of tender exceeds 5% of the sanctioned estimated cost, the revised estimate be got sanctioned from the Ministry. Further, the tenders for the work shall be invited by adopting e-procurement / e-tendering procedure as per Ministry's Circular No. RW/NH-24035/4/2008-P & M/PIC dated 21.05.2011, in addition to guidelines issued by this Ministry vide Circular letter No. 11024/3/99-US (D-I) dated 09.03.2000, No. RW/NH-24035/4/2008-P&M dated 21.05.2010 and No. NH-12037/67/2010/LWE dated 02.08.2010. The work shall be awarded as per guidelines issued by the Ministry vide Letter No. NH-15015/29/2001-PI, dated 05.07.2001.
- (iv) On completion of 50% work if the appraisal of the project shows that it will necessitate revision of the estimate based upon the physical completion of the project vis-a-vis financial expenditure immediate action should be taken to submit the revised estimate so as to ensure that the sanction revised estimate is available before necessity for incurring expenditure beyond permissible limits arises and;
- (v) The expenditure during the current financial year on this work as also on other sanctioned work should not exceed the allotment placed at the disposal of the State Government during the year.

3. The expenditure is debitable to Major Head - 505 - Capital Outlays on Roads & Bridges; Sub Major Head : 01 - National Highways; Minor Head : 01.337-Road Works; 01-Works under Road Wing; 01.02-Other Scheme; 01.02.53-Major Works for which the corresponding Demand No. for the current financial year 2017-2018 is '81' - Ministry of Road Transport & Highways.

*Asst. Secy* 26/2/18

4. Quarterly progress reports in the stipulated proforma may be sent to this Ministry as is being done for all sanctioned works.
5. The technical approval and financial sanction may lapse after six months from the date of its issue in case the work is not awarded within that period.
6. The following physical and financial target shall be strictly adhered subject to availability of fund:

Financial Year	Cumulative Progress (Rs crore)				
	% age progress	Construction including centages	LA and other pre-construction	Maintenance	Total
2017-18	Preliminary	0.00	5.00	0	5.00
2018-19	50%	105.50	9.50	0	115.00
2019-20	100%	188.36	9.50	0	197.86
2020-21	100%	188.36	9.50	0.83	198.69
2021-22	100%	188.36	9.50	2.48	200.34
2022-23	100%	188.36	9.50	4.96	202.82
2023-24	100%	188.36	9.50	8.26	206.13

7. The Regional Officer, Hyderabad will be the Drawing and Disbursing Officer.
8. This sanction issues with the concurrence of the Finance Division vide their U.O No.2253/TF-II/2018 dated 04.01.2018.

Yours faithfully,

Encl: As above

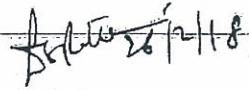
  
 (D.S. Pathania)

Under Secretary to the Government of India

Copy with a copy of technical note forwarded to: -

1. The Accountant General, Andhra Pradesh, Hyderabad
  2. The Pay & Accounts Officer, Department of R.T. & H, IDA Building, Jamnagar House, New Delhi.
  3. R.O., Hyderabad: it is requested that you will be the DDO in respect of this sanction.
  4. Regional Pay & Accounts Officer, Ministry of Road Transport and Highways, Quality Control Building, Erram Manzil, Hyderabad -500 082.
  5. The Principal Director of Audit, Economics & Services Ministries, A.G.C.R Building, New Delhi.
  6. The Chief Engineer (R&B), National Highways & CRP, Vijayawada, Andhra Pradesh.
- (A copy of the sanctioned/approved estimate is also enclosed)

Encl: -As above.

  
 (D.S. Pathania)

Under Secretary to the Government of India

Copy with enclosures also forwarded to: -

1. The Supdt. Engineer (Mech.), Deptt of R.T. & H., M.S. Building, K.R. Circle, Bangalore.
2. CE (Zone-II) / SE (Zone-III) / AEE (Zone-III) / SE (Mon.) / W.A. Section / FW (TF-II) / Guard file.

Encl: As above.



 (Mohinder Singh)  
 Section Officer (Zone-III)

No. RW/NH-12014/70/2017-TS/P-7

Government of India

Ministry of Road Transport & Highways

(Zone-III Section)

Transport Bhawan, 1, Parliament Street, New Delhi-110001

Dated February, 2018

TECHNICAL NOTE

[Job No. NH-353C-TS-2017-18 -42]

1.	Name of work	Widening & Strengthening of Existing carriageway to 2 lane with paved shoulders from existing Km. 25/0 -Km. 59/2 [Design Chainage Km. 25.467 to Km. 59.200] of NH-353C on EPC mode in the state of Telangana	
2.	State/Division	R&B Department, Telangana	
3.	NH No.	353C	
4.	Estimated cost including 3% agency charges	As proposed by the State PWD (Rs. in cr.)	As agreed in the Ministry (Rs. in cr.)
		230.24	206.13
5.	Length (in km)	33.733	33.733
6.	Cost per km (Rs. in cr.)	6.82	6.11
7.	Reference	Letter No 1252/DCE (NH&CRF)/EE (PPP)/DEE-V/AEE/2017-18 dated 30.10.2017 & 17.11.2017 received from Engineer-in-Chief(R&B), NH & CRF, Telangana.	

COMMENTS

1. Scope of the project: The scope of the instant project for upgradation from Km. 25.467 to Km. 59.200 (Design Chainage) of NH-353C to two lane with paved shoulder including 4 laning in 2.713 km length envisaged as under:-

1.1 The scheme of the improvement is as follows:-

Sl. No.	Design Chainage		Length	Improvement proposed
	From	To		
1	25.467	25.850	0.383	4 Laning
2	25.850	36.500	10.650	2 lane with paved shoulder
3	36.500	38.530	2.030	4 Laning
4	38.530	41.600	3.070	2 lane with paved shoulder
5	41.600	41.900	0.300	4 Laning
6	41.900	59.200	17.300	2 lane with paved shoulder
	Total		33.733	

*Prabhat*

Note:-

(i) In Forest reach of 27.670 Kms where RoW reported is 10.00m, 2L+PS with 2.00 earthen shoulder has been provided. The width of Bridges proposed in forest stretches is 16.00m (12 Nos.-reconstruction & 3-Widening).

- 1.2 4 laning in built-up area in a length of 2.713 Kms. RCC drains and Utility corridor in built-up area in a length of 2.713 kms(Both sides). Central median lightening in built-up area in a length of 2.713 Kms.
- 1.3 The road is to be improved along the existing alignment. No realignments & bypasses.
- 1.4 Reconstruction of 13 Nos existing Minor Bridges (12 Nos. in Forest Stretch), Widening of 04 Nos. Minor Bridge.
- 1.5 Reconstruction of existing 09 nos. Pipe/Box culverts, widening of 29 nos. Pipe culverts.
- 1.6 Toe wall in al length of 6.703 Kms(including 6.432 kms in Forest Stretch) & Retaining wall in a length of 2.710 Kms (including 2.710 Kms in Forest stretch)
- 1.7 Construction of 16 Nos. at-grade major/minor junctions, 15 nos. bus bays/bus shelter.
- 1.8 01 No. Toll Plaza at design Km. 40.000
- 1.9 Provisions of road marking, traffic sign boards, roadside furniture, road safety works, crash barrier, delineators, boundary/ hectometre/kilometre, pedestrian facilities, etc. have been proposed in the scope of work

## 2. Technical proposal:

### 2.1 Alignment, land Acquisition, Shifting of Utilities, R&R and Forest Clearance:

2.1.1 Out of total project length of 33.733 Kms, raising has been proposed in 7.860 Kms (including 6.39 Kms in Forest Stretch), reconstruction has been proposed in a length of 14.883 Kms (including 11.360 Kms in Forest Stretch). Balance 10.99 kms has been proposed for strengthening & widening.

2.1.2 Provision for Land Acquisition: Provision amounting to Rs 2.50 Crores has been included in the proposal for land acquisition. The land is to be acquired for Toll plaza

1	Total Land Required	:	49.4623 hectares.
2	Land Available including 10m in Forest Area	:	47.26 Hectares
3	Balance land to be acquired	:	2.2023 hectares for Toll Plaza.
4	MoEF clearance	:	Not Applicable.
5	Wildlife clearance	:	NA

*Prasanna*

12	Forest Clearance	The project is passing through the Forest Stretch in a length of 27.67 Kms. In this regard, E-in-C(R&B), Telangana vide letter dated 17.11.2017 has mentioned that as per Gazette Notification the land available for the construction of Road is 33 feet i.e 10.00m which is sufficient for construction of 2L+PS in forest area. Earthen shoulder 2.0m on either side may be retained as same can be executed by convincing forest authorities at the time of implementation of the project.
13	Tree Cutting	600 Nos. of Tress to be Cut.

2.1.3 Provision for shifting of utilities amounting Rs. 6.00 Crores has been made in the estimate. State PWD shall take necessary action to ensure shifting of the utilities well in advance so that the progress of the work is not affected.

## 2.2 Geometric Design:

The road has reportedly been designed for ruling/minimum design speed of 100 Kmph/80Kmph for plain terrain.

2.3 4 laning in built-up area:-2.713 Kms.

S. No.	Built-up stretch	Design Chainage		Length	Width
	(Township)	From	To	(Km)	(m)
1	Mahadevpur	25.467	25.850	0.383	2x9.0=18.0
2	Garepally	36.500	38.530	2.030	2x9.0=18.0
3	Kotapally	41.600	41.900	0.300	2x9.0=18.0
			Total	2.713	

RCC Dain, Utility corridor on both sides in built-up area. Central median lightening in Built-up area.

## 2.4 Pavement Design:

A) For Widening, reconstruction and raising stretches, the minimum crust composition over subgrade is as follows: -portions,

Layer Type	Thickness (mm)
Bituminous Concrete (BC)	50
Dense Bituminous Macadam (DBM)	100

*Prashant*

Wet Mix Macadam (WMM)	250
Granular Subbase (GSB)	200

B) For Overlay portions

For Overlay portions, the minimum pavement composition shall be as given below table

Design MSA for Bituminous Layers	BC	DBM	Profile Corrective Course
Minimum 60 MSA	50	50	As required from plan and profile

C) Rigid Pavement at Toll Plaza with following minimum crust composition:-

Layer Type	Thickness (mm)
Pavement quality Concrete (PQC)	300
Dry Lean concrete (DLC)	150
Granular Subbase (GSB)	150

## 2.5 Culverts:-

Reconstruction/widening/new construction of 38 culverts have been proposed and considered for estimation purposes as given below:-

S.No.	Type of culvert	Reconstruction	Widening	New	Total
1	Hume Pipe	8	29	0	37
2	Box Culvert	1	0	0	01
	Total	9	29	0	38

## 2.6 Bridges:

2.6.1 The existing bridges at the following locations shall be re-constructed as new Structures:-

- (i) Major Bridge to be reconstructed:- NIL
- (ii) Minor Bridge to be reconstructed: 13 Nos.

S.No	Existing Chainage (km)	Design Chainage (km)	Minimum Waterway (m)	Proposed width (m)
1	26+062	26+062	24.9	16m

*proposed*

S.No	Existing Chainage (km)	Design Chainage (km)	Minimum Waterway (m)	Proposed width (m)
2	28+585	28+585	30.00	
3	33+493	33+436	18.00	
4	34+278	34+223	10.00	
5	35+435	35+382	21.00	
6	36+218	36+167	10.00	
7	42+121	42+078	6.60	
8	43+008	42+961	13.60	
9	47+151	47+108	9.00	
10	47+962	47+920	7.60	
11	54+129	54+087	15	
12	54+937	54+895	30	
13	56+892	56+850	12.00	

2.6.2 The existing bridges at the following locations shall be widened:-

- (i) Major Bridge to be widened: NIL
- (ii) Minor Bridge to be widened:-04 No.

S.No	Existing Chainage (km)	Design Chainage (km)	Type of Structure			span (m)	Proposed Width (m)
			Super structure	sub structure	Foundation		
1	38+700	38+651	Slab	RCC wall	Open	2 x 5.5	16m
2	39+908	39+859	Slab	RCC wall	Open	(2 x 3.7) + (2 x 3.6)	
3	46+264	46+220	Slab	RCC wall	Open	(1 x 6.2) + (1 x 5.6)	
4	58+683	58+649	Slab	Masonry wall	Open	7 x 3	

*Prabhat*

2.6.3 Additional new bridges: -NIL

2.7 The provision of Toe wall in al length of 6.703 Kms(including 6.432 kms in Forest Stretch) & Retaining wall in a length of 2.710 Kms (including 2.710 Kms in Forest stretch)

2.8 Construction of 16-Nos. at-grade major/minor junctions, 15 nos. bus bays/bus shelter.

2.9 01 No. Toll Plaza at design Km. 40.000(Km. 44.400 to Km. 45.931).

2.10 Provisions of road marking, traffic sign boards, roadside furniture, road safety works, crash barrier, delineators, boundary/ hectometre/kilometre, pedestrian facilities, etc. have been proposed in the scope of work

3. Design specifications including deviations, if any:

All material, design and construction operations for the project are proposed conforming to IRC: SP: 73-2015 published by IRC, Manual of Specifications and Standards for Two-laning and Four lane of Highways with following deviations:-

Sr. No.	Manual	Clause referred in Manual	Item	Modified Provision
1	Two Lane	Clause 2.16	Typical Cross sections	As per the TCS-3 Drawing specified in Schedule B

3. Contract Documents including deviations, if any:-

3.1 RFP is proposed to be invited from fresh bidders in single stage two cover systems by prescribing necessary eligibility (qualifying) criteria of the bidders as per RFP document as per Ministry's circular.

3.2 RFP and draft contract documents shall be as per the draft Model RFP and EPC documents approved by the Ministry after making project specific changes as well as amondments circulated by Ministry vide circular No. RW/NH-37010/4/2010/PIC-EAP (Printing) dated 05.10.2015 and incorporating subsequent amendments thereafter.

3.3 Construction period for this work has been proposed as 24 months including the rainy period. Defects liability period and maintenance period has been considered as 4 years as specified in the Model EPC Document approved by the Ministry.

4. Cost estimates:-

4.1 The estimate is based on the Ministry's Standard Data Book and Schedule of Rates, 2017-18 for Telangana, PWD. Following is the abstract of Cost:-

Sr. No	Description	Amount (Rs. Crores)
1	Site Clearance and Dismantling	4.03
2	Earth Works	15.48
3	Granular Base Courses and Sub Base Courses	45.06
4	Bituminous Courses	37.85

*Prabhat*

Sr. No	Description	Amount (Rs. Crores)
5	Culverts	1.65
6	Minor/Major bridges	14.14
7	Drainage and Protection Works (Retaining wall & Crash Barrier)	18.66
8	Traffic Signs , Road Markings and other Road Appurtenances	1.79
9	Toll Plaza	5.50
10	Central median lightening in built-up area	1.05
11	Bus bays, Paver Blocks & Chequered tiles	2.37
A	Civil Works Cost (A)	147.57

4.2 The details of the cost estimate are as given below:-

Sr. No.	Details	Estimated Cost (Rs. In cr.)	
		As proposed by State PWD/Consultant	As agreed in Ministry
A	Civil Construction Cost	158.32	147.57
B	Add GST @12% on (A)	19.00	17.71
1	Civil cost Including GST	177.32	165.28
2	Contingencies @ 2.8% of (1) above	4.96	4.63
3	Total cost Including Contingencies	182.28	169.91
4	Supervision Charges @ 3% of (3) above	5.47	5.10
5	Agency charges @ 3% of (3) above	5.47	5.10
6	Maintenance charges @ 5.0 % for 4 years [0.5% for 1st year & 1%, 1.5% & 2% for 2nd, 3rd and 4th year respectively ; total 5.0% of (1) above]	8.87	8.26
7	Road Safety @ 0.25% of (3) above	0.46	0.00
8	Quality Control @ 0.25% of (3) above	0.46	0.00
9	Escalation @ 5%	17.73	8.26
10	Land Acquisition and Rehabilitation & Resettlement	2.50	2.50
11	Shifting of Utilities	6.00	6.00

*Prabhat*

Sr. No.	Details	Estimated Cost (Rs. In cr.)	
		As proposed by State PWD/Consultant	As agreed in Ministry
12	Environmental & Mitigation Cost	1.00	1.00
	Total	230.24	206.13

5. The cost estimate submitted by the State PWD has been modified due to following reasons:-

(i) The provision for central median lightening was made in the estimate for a length of 6.06 kms. As the 4 lane in built-up area is being provided in a length of 2.713 kms. Hence, the provision for central median lightening has been restricted to 2.713 Kms. The provision for central street lightening has been considered for estimate purpose only. However, before executing this item R&B Department Telangana shall obtain an undertaking from concerned local authorities regarding bearing the Operation & Maintenance cost for the same. Ministry of Road Transport & Highways shall not bear the O&M Cost for the street lightening.

(ii) Rates of GSB was considered for 150mm top layer in earthen shoulder, the same has been modified and rate of subgrade has been considered.

(iii) The provision for rain water harvesting and maintenance of Road during construction have been deleted from the estimate.

(iv) Rs. 8.51 crores have been proposed for the construction of Toll Plaza. The same has been restricted to Rs. 5.50 crores as per provisions proposed in other 2L+PS project of Telangana and as per Ministry's circular No. No-RW/NH-24036/27/2011/PPP dated 17.01.2012 considering escalation.

6. Specifications:- The work shall be strictly executed as per Ministry's specification for road & Bridge(Vth Edition-2012) and relevant IRC norms and guidelines of the Ministry issued from time to time.

7. General observations:

7.1 The provision of contingencies should be utilized as per Ministry's circular letter no. RW/G-20011/8/98-WA(R) dated 16.08.2002 & Ministry's circular No. NH-15017/17(2)/2016-P&M dt. 16.06.2016, delegation of powers for acceptance of variations vide NH 18011/1/2012-P&M dated 23.09.2016 and subsequent amendments/ministry's circular in this regard.

7.2 Collection of material should be so planned that it should commensurate with the physical progress of work and the collected material should not cause any hindrance to the traffic. It must be ensured that the contractor arranges for separate land for storage of road construction material and machinery and these shall not be allowed to be stacked on roadside.

*Prabhat*

7.3 No work beyond the scope of the sanctioned estimate leading to increase in the scope of the work or change in specification should be undertaken without obtaining prior written approval of the Ministry. In case, the estimate needs revision due to change in rates/tender rates for any reasons, the revised estimate shall be submitted immediately for Ministry's approval.

7.4 In order to ensure that there is no slippage in achieving the targets, the progress may be closely monitored by E-in-C(R&B), NH & CRF, Telangana; RO, MoRT&H, Hyderabad and quarterly status report furnished to the Ministry in the prescribed proforma.

7.5 During the course of execution, the traffic may be regulated in accordance with guidelines laid down vide Ministry's letter no. NHIII-33 (126)/72 dated 20.03.1973 and letter No.RW/NH-11060/1/1998-D.O.1 dated 07.10.1987. Smooth flow of the traffic may be ensured by providing adequate traffic control devices in accordance with stipulation of IRC: SP: 55:2001 "Guidelines on Safety in construction Zone".

7.6 The display boards on development activities of the work shall be made as per guidelines issued vide Ministry's letter no. RW/NH-33044/10/2002-S&R (R) dated 26<sup>th</sup> May, 2003. The cost of the same will be met out of the provision of contingencies allowed in the estimate.

7.7 Median/Street lightening provided in the built-up area has to be operated and maintained by the local authorities at their own cost. Necessary agreement in this regard has to be done by State R&B department with local authorities. Ministry of Road transport & Highways shall not bear the Operation and maintenance cost for Street/Median lightening.

8. **Special Condition:-** The project has been approved/sanctioned subject to following conditions:-

8.1 The work shall be awarded by 31.03.2018.

8.2 The extra cost of Utility Shifting and the extra cost arising due to default of the Authority/unavailability of work front shall be borne by the State Government.

9. **Award for the work:-**

9.1 The works shall be awarded as per Ministry's norms for EPC projects and tenders evaluated as per Ministry's circular No. H-39011/30/2015-P&P(Pt.) dated 12.05.2017.

9.2 Time period for the completion of work has been kept 24 months.

9. **Phasing of expenditure:-** Following phasing of Expenditure shall be aimed at depending upon the availability of funds:-

Financial Year	Cumulative Progress (Rs crore)				
	% age progress	Construction including centages	LA and other pre-construction	Maintenance	Total
2017-18	Preliminary	0.00	5.00	0	5.00
2018-19	50%	105.50	9.50	0	115.00

Financial Year	Cumulative Progress (Rs crore)				
	% age progress	Construction including centages	LA and other pre-construction	Maintenance	Total
2019-20	100%	188.36	9.50	0	197.86
2020-21	100%	188.36	9.50	0.83	198.69
2021-22	100%	188.36	9.50	2.48	200.34
2022-23	100%	188.36	9.50	4.96	202.82
2023-24	100%	188.36	9.50	8.26	206.13

*Prabhat*

(Prabhat Ranjan)  
Asst. Executive Engineer (Zone-III)  
For Director General (RD) & SS