

Ref. No.C.E.(Dist.)/D-III/

**23799**

Date :

**28 SEP 2017**

**C I R C U L A R**

**Sub : Guidelines – Preparation of estimates for shifting of existing distribution electrical infrastructure due to road widening, construction of bridges etc. by National Highway Authority of India (NHAI), Public Works Deptt. (PWD), Local bodies, etc.**

MSEDCL receives requests from various Government Authorities like, NHAI, PWD, Local Bodies etc. for shifting of existing distribution electrical infrastructure due to road widening, construction of bridges etc. Presently, representatives of these authorities approach our field offices for providing estimates for shifting of existing distribution electrical infrastructure. Estimates are prepared and approved by the competent authorities as per the value of the estimate. However, it is observed that there is no uniform procedure adopted at field while sanctioning these estimates. No. of complaints have been received at corporate office about preparation of estimates of exorbitant amount. The management has taken a serious note of this and decided to follow uniform procedure of preparation of estimates throughout the State. After due discussion with the field officers, following procedures for preparation of estimates for shifting of existing distribution electrical infrastructure shall be adopted.

1. The application of NHAI, PWD, Local bodies, etc for shifting of existing distribution electrical infrastructure shall be accepted at circle office of MSEDCL and the same will be forwarded to the concerned division office for survey and preparation of estimates accordingly.  
The joint committee of Executive Engineer (MSEDCL), Executive Engineer (NHAI), Executive Engineer (PWD), Executive Engineer (Local Bodies) as applicable will be formed by Superintending Engineer, Circle office for joint survey, preparation of estimate, and monitoring of the work of shifting of distribution electrical infrastructure.---- SOP - 2 days
2. On receipt of application by Dn. Office, joint survey of the site where shifting is to be carried out shall be done by the joint committee and survey report shall be prepared, which will be signed by all the members of the committee.----SOP - One week
3. Estimate shall be prepared on the basis of joint survey report using the prevailing cost-data of MSEDCL, the centages applicable for such type of work shall be considered while preparing estimate.----SOP - 3 days
4. Proper single line diagram showing existing electrical infrastructure and the proposed shifting shall be prepared. The estimate shall be approved by the Division Executive Engineer / Superintending. Engineer / Chief Engineer as per the G.O. powers. Demand note of 1.3% supervision charges shall be issued by the competent authority to the agency for payment.----SOP - 1 week

5. While doing joint survey and preparation of estimate accordingly, following points shall be considered:

- a. Consent shall be obtained from the appropriate authority of the applicant for execution of work as per MSEDCL specifications and under the supervision of MSEDCL by paying 1.3% supervision charge to MSEDCL.
- b. While preparation of estimate right of way shall be taken from NHAI/PWD/ Local bodies etc. as per guidelines given in the "Manual of Specifications & Standards, Planning commission Government of India, New Delhi (Four-laning of Highways through Public Private partnership) and Appendix B-I (Details of proposed Right of Way (ROW)" (Attached herewith).
- c. If road crossing is to be done by underground cable, RCC duct of minimum dia 300 mm with one extra duct shall be provided by the applicant agency.

6. While carrying out the underground cabling work, the materials as per the specifications of MSEDCL shall be used and the standard installation practice of MSEDCL shall be followed. Some of the practices are as under,

- a. The LT cable shall be XLPE armored cable with Aluminum conductor, confirming to IS amended up to date of make CCI / Universal / Polycab / Unicab or equivalent as per specification of bidding documents.
- b. The HT cable shall be XLPE armored with Aluminum conductor for 33kV / 22kV / 11kV lines confirming to IS amended up to date of make CCI / Universal / Polycab / Unicab or equivalent as per specification of bidding documents.
- c. The cable shall be laid 1.0 / 1.2 Meter below ground level for LT / HT respectively.
- d. The work shall be carried out by strictly adhering to the Electricity Act 2003 / IE Rules and as per the standard installation practice of MSEDCL.
- e. The work shall be carried out under supervision of the Joint committee formed for this purpose by Superintending Engineer MSEDCL or their representative.

7. The jointing of cable shall be done in the presence of the Engineer or his representative.

- a. Cable shall be laid as per sketch enclosed herewith, where in cable looping, pole height and road to pole clearance 2.5 meter is specially mentioned.
- b. Standby cable shall be provided for road crossing locations only.
- c. All the over head crossing shall be made underground for safety on all Highways on the request of concerned authority only.

#### 8. **Horizontal directional drilling (HDD) :**

HDD is generally required wherever underground cable is laid for road crossing. The issue of HDD has been discussed with NHAI/PWD authorities during the meeting on 19/07/2017 at MSRDC office, Bandra and it is decided that NHAI/PWD/local body shall provide RCC duct of minimum dia.300 mm with one spare duct wherever road crossing of U/G cable is to be done. Hence no HDD shall be considered in the estimate unless insisted by these authorities. If insisted, the length of bore shall be restricted to 25 meters or actual size of the road whichever is less.

9. **Utilization of old material:**

- a. If the existing materials like conductor, Cables, Distribution Transformers etc. are in good conditions and can be reused, the same shall not be considered in the estimate.
- b. If the old materials are not of standard capacity/rating then new material of standard rating shall be used

For ex. (i) If the existing DT is of 63 KVA which is not used in MSEDCL nowadays, 100 KVA DT shall be used.

(ii) If conductor size of existing HT line is 34/80 sq.mm AAAC which is not used by MSEDCL nowadays, 55/100 sq.mm AAAC conductor shall be used.

(iii) Similarly for cables 300 sq.mm size cables shall be used in case of O/H to U/G cable conversion etc.

(iv) For distribution transformer 95 sq.mm. HT cable shall be used.

(v) For HT line road crossing 300 Sq.mm cable shall be used.

- c. However the final decision regarding reuse of old material will be taken by MSEDCL and will prevail.

10. The estimates shall be verified by the concerned Superintending Engineer of MSEDCL.

11. After payment of 1.3% supervision charges, the agency of NHAI/PWD/Local body shall be allowed to execute the work

12. The work shall be supervised by MSEDCL officers during execution for quality and quantity as per safety regulations

13. Normally, no deviation to the sanctioned work shall be allowed. However, in case due to some reason, deviations in the scope of work becomes necessary during the execution of works, the same shall be done by taking approval from the estimate sanctioning authority.

14. Plan approval & charging permission shall be obtained by concerned agency of NHAI/PWD/Local body from Electrical Inspector Office.

15. After completion of work, WCR is to be prepared on the basis of actual work executed by the agency and commissioning permission is given.

16. **Review of estimates sanctioned and not operated so far:** All the estimates, that are already prepared / sanctioned, and not yet operated should be reviewed by the Joint committee within a week after receipt of this circular and revised estimates shall be approved accordingly and issued to the agency within 2 weeks.

17. The above guidelines are applicable for preparing the estimates of road widening works carried out under NHAI project/PWD/Local bodies etc. and other shifting works of electrical infrastructure due to bridge construction.

The said circular shall come into force with immediate effect.

This circular is available on [www.mahadiscom.in](http://www.mahadiscom.in) website



(K. S. Shegokar)

**Chief Engineer (Distribution)**

**Copy s. w. r to:**

1. The Chairman and Managing Director, MSEDCL
2. The Director (Operations)/ The Director (Projects), MSEDCL
3. The Executive Director (Dist-I,II,III,IV), MSEDCL
4. The Joint Managing Director, MSEDCL, Aurangabad Region, Aurangabad.
5. Regional Director (Pune/Nagpur/Konkan Region), MSEDCL, Pune / Kalyan / Nagpur.

**Copy to:**

1. The OSD to Hon CMD, MSEDCL, Corporate office, Mumbai.
2. All Superintending Engineers, O & M Circles, MSEDCL



**Four-laning of Highways  
through  
Public Private Partnership**

**MANUAL  
OF  
SPECIFICATIONS & STANDARDS**

**Planning Commission  
Government of India  
New Delhi**

GEOMETRIC DESIGN AND GENERAL FEATURES

- (iii) In embankments with height more than 6.0 m, the granular shoulder may be raised with provision of kerb channel to channelize the drainage as an erosion control device in accordance with Section 6.
- (iv) The composition and specification of the paved shoulder shall be same as of the main carriageway.

2.7 Roadway Width

- 2.7.1 The width of roadway shall depend upon the width of carriageway, shoulders and the median.
- 2.7.2 On horizontal curves with radius up to 300 m, width of pavement and roadway in each carriageway shall be increased as per Table 2.5.

Table 2.5: Extra Width of Pavement and Roadway in each carriageway

Radius of Curve	Extra Width
75-100 m	0.9 m
101-300 m	0.6 m

2.8 Crossfall

- 2.8.1 The crossfall on straight sections of road carriageway, paved shoulders and paved portion of median shall be 2.5 per cent for bituminous surface and 2.0 per cent for cement concrete surface.
- 2.8.2 The crossfall shall be unidirectional for either side carriageway sloping towards the shoulder in straight reaches and towards the lower edge on horizontal curves. The camber on the existing road shall be modified to unidirectional crossfall.
- 2.8.3 The crossfall for granular shoulders on straight portions shall be at least 0.5 per cent steeper than the slope of the pavement and paved shoulder subject to a minimum of 3.0 per cent. On super elevated sections, the earthen portion of the shoulder on the outer side of the curve would be provided with reverse crossfall of 0.5 per cent so that the earth does not drain on the carriageway and the storm water drains out with minimum travel path.

## MANUAL OF SPECIFICATIONS AND STANDARDS

(i) Vehicular underpass	5.5 m
(ii) Pedestrian and Cattle underpass	3.0 m (to be increased to 4.5m, in case certain categories of animals such as elephant/camel are expected to cross the Project Highway frequently. This will be as specified in Schedule-B.)

Wherever existing slab culverts and minor bridges allow a vertical clearance of more than 2 m, these can be used in dry season for pedestrian and cattle crossing by providing necessary flooring. This will not be a substitute for normal requirements of pedestrian and cattle crossings as per para 2.13.3.

## 2.11 Lateral and Vertical Clearance at Overpasses

Wherever any structure is provided over the Project Highway; the minimum clearances at overpasses shall be as follows:

### 2.11.1 Lateral Clearance

Full roadway width shall be carried through the overpass structure unless otherwise specified in Schedule-B. Provision shall also be made for future widening of the Project Highway to 6-lane with service roads. The abutments and piers shall be provided with suitable protection against collision of vehicles. Crash barriers shall be provided on abutment side and on sides of piers for this purpose. The ends of crash barriers shall be turned away from the line of approaching traffic.

### 2.11.2 Vertical Clearance

A minimum 5.5 m vertical clearance shall be provided at all points of the carriageway of the Project Highway.

## 2.12 Access Control

### 2.12.1 Access

Access to the Project Highway shall be partially controlled. In general, access to the Project Highway shall be provided at the following locations:

- (i) Intersection with National Highways



# **National Highways Authority of India**

**(Ministry of Road, Transport & Highways)  
Government of India**

**PREPARATION OF FEASIBILITY CUM PRELIMINARY DESIGN REPORT FOR  
CONSTRUCTION OF STAND ALONE RING ROAD/BYPASS AROUND JAMMU CITY  
IN THE STATE OF J&K UNDER NHDP PHASE-VII**

**TECHNICAL SCHEDULE (A TO D)**

**OCTOBER 2016**

**G-5 & 6, Sector – 10, Dwarka, New Delhi – 110 075**



Annex - II  
(Schedule-A)

**Dates for providing Right of Way**

The dates on which the Authority shall provide Right of Way to the Contractor on different stretches of the Site are stated below:

Sl. No	From km to km	Length (km)	Width (m)	Date of providing ROW *
1	2	3	4	5
(i) Full Right of Way (full width) (a) Stretch (b) Stretch (c) Stretch	Km 86 of NH-1A (Design Chainage 0) to Km 14.7 at Nagrota bypass of NH-1A (Design Chainage 57.206)	57.206	45m to 120m as per Appendix B-I	90 days
(ii) Part Right of Way (part width) (a) Stretch (b) Stretch (c) Stretch	Km 85.312 of NH-1A (Design Chainage-0.687) to Km 86 of NH-1A (Design Chainage 0)	0.687	45m	30 days
	Km 14.7 of Nagrota bypass (Design Chainage 57.206) to Km 15.068 of NH-1A (Design Chainage 57.568)	0.362		
(iii) Balance Right of Way (width) a) Stretch b) Stretch c) Stretch	Km 85.312 of NH-1A (Design Chainage-0.687) to Km 86 of NH-1A (Design Chainage 0)	0.687	More than 45m to 120m as per Appendix B-I	90 days
	Km 14.7 of Nagrota bypass (Design Chainage 57.206) to Km 15.068 of NH-1A (Design Chainage 57.568)	0.362		

\* The dates specified herein shall in no case be beyond 150 (one hundred and fifty) days after the Appointed Date.

## Appendix B-I

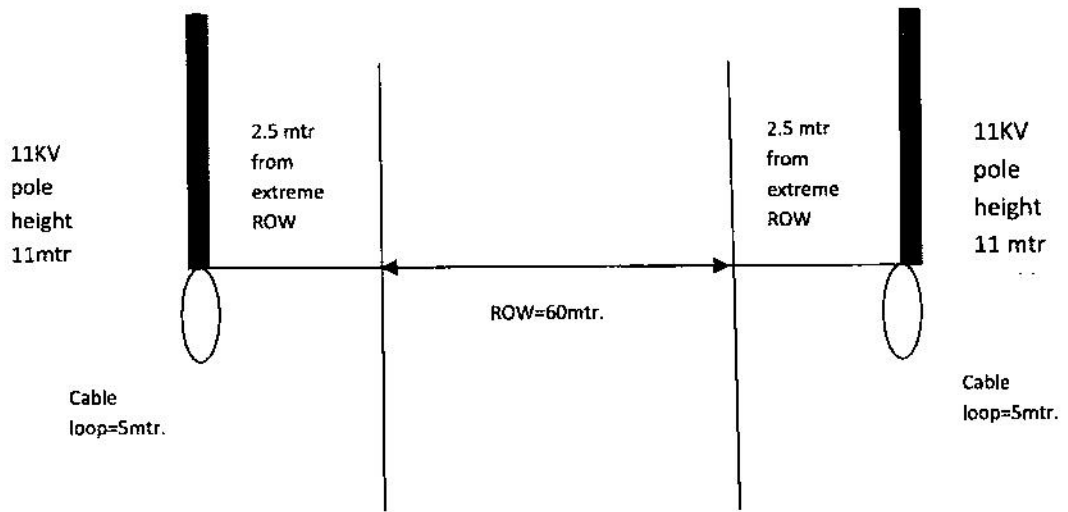
## Details of Proposed Right of Way (ROW)

Proposed Right of way is provided in the table below in the entire length of project road except where additional width is required to accommodate Junction development as per requirement given in IRC SP:84 -2014 etc.

Details of Proposed Right of Way (PROW)						
S. No.	Chainage		Length km	Section	Proposed ROW* (meter)	Remarks
	From	To				
1	-0.687 (85.312 Existing Km)	0.000	0.687	Plain	45	
2	0.000	7.990	7.990	Plain	60	
3	7.990	8.130	0.140	Plain	84	Truck Lay bye
4	8.130	8.950	0.820	Plain	60	
5	8.950	9.650	0.700	Plain	45	
6	9.650	12.265	2.615	Plain	60	
7	12.265	12.365	0.100	Plain	45	
8	12.365	21.150	8.785	Plain	60	
9	21.150	21.750	0.600	Plain	90	Toll Plaza
10	21.750	31.480	9.730	Plain	60	
11	31.480	31.720	0.240	Plain	150 - 170	Truck Lay bye
12	31.720	43.170	11.450	Plain	60	
13	43.170	43.370	0.200	Plain	70 - 85	Truck Lay bye
14	43.370	46.650	3.280	Plain	60	
15	46.650	47.850	1.200	Hilly	45	
16	47.850	48.590	0.740	Hilly	75	
17	48.590	48.690	0.100	Hilly	82.5	
18	48.690	49.050	0.360	Hilly	68 - 81	
19	49.050	49.330	0.280	Hilly	75	
20	49.330	49.700	0.370	Hilly	45 - 60	
21	49.700	49.850	0.150	Hilly	90	High Hill cutting
22	49.850	50.200	0.350	Hilly	75	
23	50.200	50.430	0.230	Hilly	85	
24	50.430	50.630	0.200	Hilly	75	
25	50.630	50.710	0.080	Hilly	85 - 105	High Hill cutting
26	50.710	51.470	0.760	Hilly	45	Tunnel
27	51.470	51.710	0.240	Hilly	70 - 108	High Hill cutting
28	51.710	52.370	0.660	Hilly	55	
29	52.370	52.650	0.280	Hilly	65	
30	52.650	53.780	1.130	Hilly	70 - 118	High Hill cutting
31	53.780	54.480	0.700	Hilly	45	Tunnel
32	54.480	56.390	1.910	Hilly	50 - 120	High Filling
33	56.390	57.130	0.740	Hilly	75	
34	57.130	57.200	0.070	Hilly	75 - 90	Junction Part
35	57.200	57.562	0.362	Hilly	45-90	

\*Actual PROW has been marked in plan and profile drawings

**Sketch of cable length indicating cable looping, pole height and road to pole clearance**



**Cable length for ROW of 60 mtr is as follows**

Particulars	Pole height in mtr	Utility allowed location from extreme ROW	Cable loop	ROW	Utility allowed location from extreme ROW	Cable loop	Pole height in mtr	Total in mtr
Length of cable in mtr.	11	2.5	5	60	2.5	5	11	97