

**Government of India**  
**Ministry of Railways**  
**Research, Designs & Standards Organisation**  
**Manak Nagar, Lucknow - 226 011**

No.EL/3.2.3/CG

Dated:11.09.1985

**MODIFICATION SHEET NO. RDSO/WAM4/147**

**Modification to smoothing reactor connection cable cleats.**

**1. Object of modification:**

- 1.1** In the smoothing reactor type SL-42 manufactured by CLW threaded blind holes are provided in the fixed cleat (connected to the winding) for tightening with the screws to secure cables with both the cleats. These threads in the electrolytic copper cleat wear out due to frequent tightening resulting in improper gripping of the cable lugs particularly under the vibration conditions in service. This results in overheating of the gripping junction and is likely to further develop into a major fire accident.
- 1.2** In order to overcome the above problem, It has been decided to,
- i)** Increase the thickness of the cleats:
  - ii)** Drill the existing blind holes through:
  - iii)** Replace the existing screws by high tensile cadmium plated bolts and nuts arrangement, and
  - iv)** Braze a wider copper connection bar at the terminals so as to cover the fixed cleat fully as shown in the drawing No. SKEL-3345 (enclosed).

**2. Work to be done.**

- 2.1** The thickness of both the fixed and the matching electrolytic copper cleats to be increased from 18 mm to 23 mm.
- 2.2** The existing blind holes to be drilled through with 13 mm dia holes in both the cleats.
- 2.3** Both the cleats to be cadmium plated.
- 2.4** Both the cleats to be secured in position by high tensile Cadmium plated M-12 bolts and nuts. The length of the bolts excluding the head should not be less than 80 mm with 45 mm threaded length.
- 2.5** The existing copper bus bar connecting the fixed cleat to the winding to be replaced by brazing 50 mm wide copper bar of the same thickness covering the full width of the fixed cleat as shown in the enclosed drawing.

**3. APPLICATION**

- 3.1** On all the a.c. locos fitted with SL-42 smoothing reactor.

**4. MATERIAL REQUIRED**

- i)** 23 mm thick hard drawn cadmium plated electrolytic copper cleats to replace the existing cleats -4 sets.

- ii) Set of bolts and nuts-High tensile cadmium plated: M-12 size, 80 mm long (excluding head) with 45 mm threaded length bolts-8 sets.
- iii) (a) 235x50x10 mm thick flats electrolytic copper connecting bar to connect fixed cleat with internal coil end-2 nos.  
(b) 161x50x10 mm thick flats electrolytic copper connecting bar to connect fixed cleat with external coil end -2 nos.

5. **MATERIAL SURPLUS**

- 1. Existing screws to secure the cleats.
- 2. Existing electrolytic copper cleat.
- 3. Existing flat electrolytic copper bar connecting the cleat and the winding.

6. **REFERENCE:**

Ghaziabad Electric Loco Shed's Drg. No. 139/Elect. pts/82 and CLW's drawing No.TWD.073 and No. 3 TWD.073.057

7. **RDSOs Modification Drawings**

SKEL-3845 (Enclosed)

8. **Agency of implementation**

All sheds and shops holding a.c. locos fitted with SL-42 Smoothing reactors, and CLW for new manufacture.

9. **Distribution:**

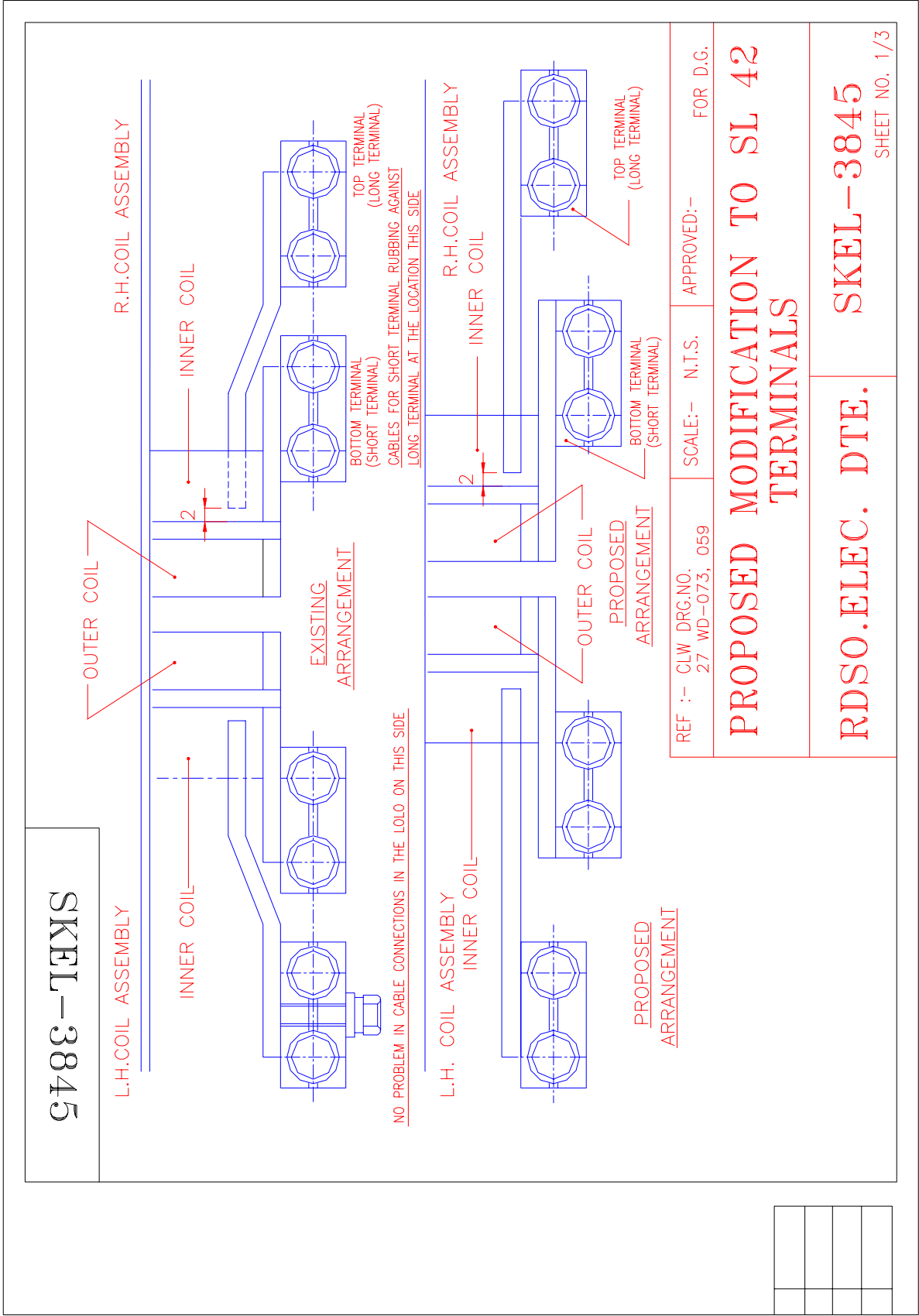
As per enclosed list.

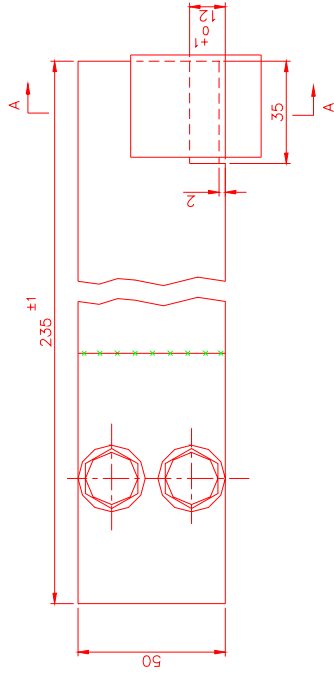


Encl: Drawing No. 3845  
(In three sheets)  
(Elec)

(ARUN SRIVASTAVA)  
for Director General

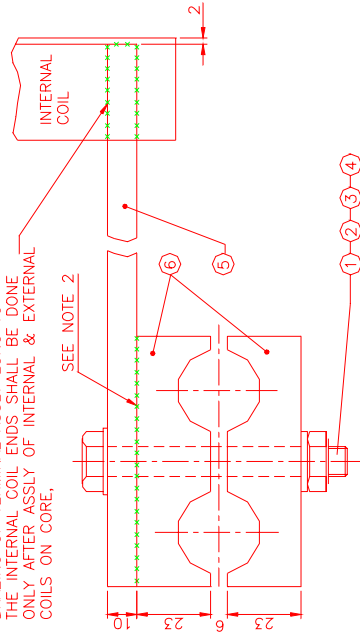






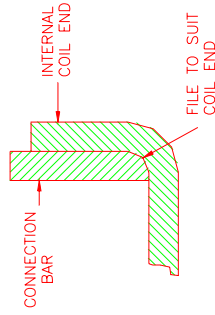
BRAZING OF TERMINAL ASSLY LONG TO THE INTERNAL COIL ENDS SHALL BE DONE ONLY AFTER ASSLY OF INTERNAL & EXTERNAL COILS ON CORE,

SEE NOTE 2



NOTE :-

1. ALL DIMENSION ARE IN mm.
2. TERMINAL CLEAT (PART6) TO BE BRAZED WITH THE CONNECTION BAR (PART5) BEFORE BRAZING CONNECTION BAR WITH THE EXTERNAL COIL END.



SECTION 'AA'

6	TERMINAL CLEAT	2	PAIRS
5	CONNECTION BAR 235x50x10 THICK	2	IS : 1897
4	SPRING WASHER M12 CAD. PLATED	8	IS : 3063
3	PLAIN WASHER M12 CAD. PLATED	8	IS : 2016
2	HEX. NUT M 12 CAD. PLATED	8	IS : 1364
1	HEX. HD BOLT M12x80 CAD. PLATED	8	IS : 1364
PART NO.	DESCRIPTION	QTY.	MATL/SPEC
REF:-	CLW DRG. NO. 3T WD. 073.056	SCALE:- 1 : 1	APPROVED BY:- FOR D.G.

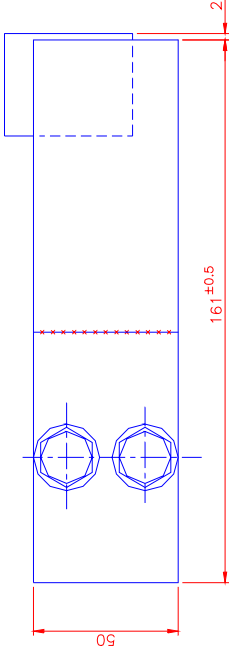
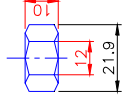
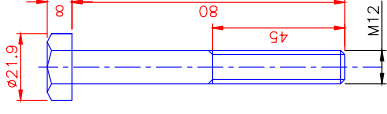
## MODIFIED TERMINAL ASSEMBLY

RDSO.ELEC.DTE.

SK.EL-3845

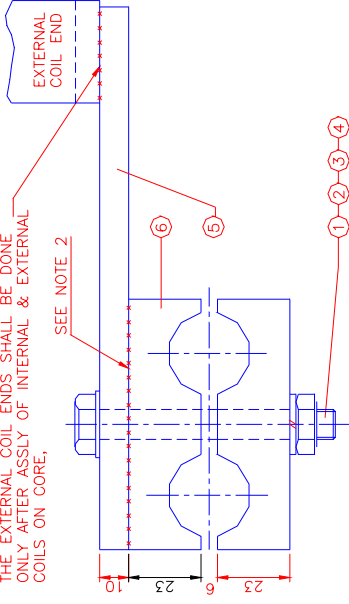
SHEET NO. 2/3

Dt:16.2.79
D
T
C



BRAZING OF TERMINAL ASSLY SHORT TO THE EXTERNAL COIL ENDS SHALL BE DONE ONLY AFTER ASSLY OF INTERNAL & EXTERNAL COILS ON CORE.

SEE NOTE 2



NOTE :- 1. ALL DIMENSION ARE IN mm.  
2. TERMINAL CLEAT (PART 6) TO BE BRAZED WITH THE CONNECTION BAR (PART 5) BEFORE BRAZING CONNECTION BAR WITH THE EXTERNAL COIL END.

6	TERMINAL CLEAT	2	PAIRS
5	CONNECTION BAR 161x50x10 THICK	2	IS : 1897
4	SPRING WASHER M12 CAD. PLATED	8	IS : 3063
3	PLAIN WASHER M12 CAD. PLATED	8	IS : 1363
2	HEX. NUT M 12 CAD. PLATED	8	IS : 1364
1	HEX. HD. BOLT M12x80 CAD. PLATED	8	IS : 1364
PART NO.	DESCRIPTION	QTY.	MATL./SPEC

REF:-	CLW DRG. NO. 37 WD. 073.057	SCALE:- 1 : 1	APPROVED BY:- 
-------	--------------------------------	---------------	--

## MODIFIED TERMINAL ASSEMBLY (SHORT)

RDSO.ELEC.DTE.

SKEL-3845

SHEET NO. 3/3

Dt.	16.2.79
D	
T	
C	

