



सत्यमेव जयते

**GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS**

**TECHNICAL SPECIFICATION FOR**

**STANDARDS DRAWING FOR POWER SUPPLY INSTALLATION**

**FINAL DRAFT SPECIFICATION No. TI/SPC/PSI/DRWING/0210**

**This Specification supersedes the Specification No. ETI/PSI/31 (5, 76).**

**ISSUED BY**

**TRACTION INSTALLATION DIRECTORATE  
RESEARCH, DESIGNS & STANDARDS ORGANISATION  
MANAK NAGAR, LUCKNOW – 226 011.**

	Prepared By	Checked By	Approved By
Signature			
Date			
Designation			

## 1.0 Scope

1.1 This Specification applies to all drawings for power supply installations and equipment's including those for Traction Sub Stations, Switching Stations, & LT supply Transformer stations.

All drawings shall comply with the standards laid down in this specification.

## 2.0 Size of Drawings:

2.1 The standard size shall be 210 X 297 mm or any integral multiple of this standard size, either in length or Width such as:

SN	Trimmed size of print		Size of tracing	
	mm		Mm	
i.	210 X 297	420 X 494	240 X 330	450 X 630
ii.	420 X 297	630 X 524	450 X 330	660 X 630
iii.	630 X 297	840 X 594	660 X 330	870 X 630
iv.	840 X 297	1050 X 594	870 X 330	1080 X 630
v.	1050 X 297	1260 X 594	1080 X 330	1290 X 630

A border line should be providing within the trimmed print as shown in forms 1, 2 & 3 attached.

## 3.0 Folding of drawings

3.1 All drawings shall be trimmed to size as specified in Para 2 and shall be neatly and fully folded alternately up and down and finally presented in 210 X 297 mm size without any parts of folds being short or overlapping, keeping the title of the drawings exposed on the top folds so that it may easily be identified without opening the folds. Short lines are to be shown on edge of the drawing to indicate folding position.

3.2 All site/locations/layouts plants showing tracks shall be prepared in such a way that distance from the main terminal increases from left to right. In the case of such drawings, not showing tracks, north orientation shall be given.

## 4.0 Scales:

4.1 The following standard scale shall be adopted:

### 4.1.1 Reduced Sizes:

Site/location plans	1 : 1000
Layout Plans, cross - section	1 : 200
Drawings for structures and foundations,	1 : 100
general arrangement drawings	1 : 50
Fittings assembly drawings	1 : 10
structures component drawings	1 : 5
and other detailed drawings	1 : 2

### 4.2.2 Full Size:

Component and fittings drawings 1 : 1

#### 4.2.3 Enlarge size:

Component and fittings drawings 2 X 1  
5 X 1

### 5.0 Scales- Indication:

5.1 In the legend panel, the main scale of the drawing shall be given in large lettering and the remaining scales in smaller lettering. The latter shall be repeated alongside the diagrams concerned. Dimensioned figures which do not correspond with the drawing should be underlined.

### 6.0 Lettering

6.1 Standard square upright lettering of the following dimensions shall be used as necessary:-

Main titles	5, 8 mm
Sub-Titles and headings	4 & 5 mm
Notes such as legends, schedules materials and dimensions	2 X 3 mm

### 7.0 Layout of legend panel and title sheet:

7.1 Form shall be adopted for all departmental drawings other than those for components and fittings. Form 2 shall be adopted for departmental drawings of components and fittings. Form 3 shall be adopted by contractors for submission of drawings. All notes on drawings shall be incorporated in the space provided on the title sheet.

### 8.0 Use of various columns in the legend panel and title sheet:

8.1 The word "Working" in the lowest portion of the title space indicates that, the drawing is a working drawing in accordance with which works will be done at site. In case of fittings drawings, working drawing shall be manufacturing drawings.

8.2 In case the word in this row is completion, it will mean that, the drawing incorporates all changes from the working drawing made at site during work and actually represents the work as completed.

8.3 Cross reference to the drawing should be indicated against the observation 'Cross ref.'

### 9.0 Revision of drawings:

9.1 Successive revisions of drawings shall be indicated by A, B, C, D at appropriate location on the drawing.

#### 10.0 Components and fittings drawings:

10.1 All components and fitting drawing shall be indicated with various style numbers and the standard identification number of the component or fitting. All component and fitting drawings shall indicate the usage of the component for fitting in the general arrangement drawings. Every component and fitting drawing shall indicate the approximate weight of the component or fitting, material and specification.

#### 11.0 Sub-assembly and assembly drawing:

11.1 In the case of any sub-assembly and assembly drawings of a group of components or fittings, the complete list of parts shall be tabulated, indicating thereon.

- i. The numbers off of each part to make up an assembly.
- ii. Standard identification number of parts.
- iii. Reference to drawing number where required. Which there are no drawings for parts or individual components, the material of the parts and specification of the material shall also be indicated.

#### 12.0 Scheme of numbering:

##### 12.1 Departmental drawings:

12.1.1 All departmental general and basic arrangements drawings are issued under the series ETI/PSI/..... All departmental component and fittings drawing are issued under series of issue ETI/PSI/P ..... The drawing number shall be the same as the identification number of the component or fitting. A different style of fitting for the same purpose shall be identified by suffixing hyphen and a number 1, 2, 3 etc.

12.1.2 In all standard departmental drawings the following note shall be incorporated as a standard practice in every drawing, as shown in form 1 and 2 enclosed.

"This drawing is the property of Research Designs & Standards Organisation (Ministry of Railway), Lucknow-11, India shall not be used copied or reproduced in part or whole without prior consent in writing."

##### 12.2 Contractor's drawings:

The contractor's drawing shall be numbered as indicated in Annexure-I.

.....

Annexure-ISCHEME FOR NUMBERING OF CONTRACTOR'S DRAWINGS

S N	Item	Drawing No.	Remarks
i.	General arrangement drawing including Layout location plan etc.	Rly/name of sub-station/switching station/100 series.	e.g. NR/Etawah/101
ii.	Cross section drawings for foundations and structure.	Rly/name of sub-station/switching station/200 series.	
iii.	Cabling and Wiring drawing	Rly/name of sub-station/switching station/300 series.	
iv.	Fitting drawing	Rly/Section/component of fitting identification No./400 series.	e.g. NR/CNB/TDL/1570/401.
v.	Small part steel work drawing	Rly/Section/500 series.	
vi.	Miscellaneous drawing	Rly/Section/700 series.	

\*\*\*\*\*

Appendix-I

FOLDING MARK

FORM-2

210

297

95 25 20

75

5 5 5

THIS DRAWING IS THE PROPERTY OF RESEARCH DESIGNS & STANDARDS ORGANISATION (MINISTRY OF RAILWAYS), LUCKNOW-11, INDIA. AND SHALL NOT BE USED COPIED OR REPRODUCED IN PART OR WHOLE WITHOUT PRIOR CONSENT IN WRITING.

TITLE OF DRAWING

DDS/PSI

ADS/PSI

MANUFACTURING DRAWINGS

R. D. S. O

DATE	MOD.	NATURE OF MOD.	INITIALS
4.5.76	DR		<i>Redner</i>
4.5.76	TC		<i>Redner</i>
	CK		

SCALE :- 1:1

SHEET NO.

SUB-SCALE :-

SHEET NO.

ETI



Appendix-II

FOLDING MARK CONTRACTOR'S NAME FORM-3	GROUP NO. CONTRACTOR'S DRG. NO. DATE	NOTE:- THIS TITLE SHEET IS APPLICABLE TO ALL CONTRACTOR'S DRAWINGS * COL. FOR IDENTIFICATION NO. TO BE FILLED UP ONLY FOR COMPONENT OR FITTING DRAWINGS	ANNEXURE-1
TITLE OF DRAWING		APPROVED IN PRINCIPLE FOR DIRECTOR GENERAL (TI) R.D.S.O. SIGNATURE OF RESIDENT ENGINEER (CONTRACTOR) SIGNATURE OF DESIGN ENGINEER (CONTRACTOR) CROSS REF.	INDIAN RAILWAYS IDENT NO. # SCALE:- 1:1 SHEET NO. MOODRAM
WORKING DATE MOD. NATURE OF MOD. INITIALS		DATE NAME DR 5.5.76 TC 5.5.76 CK 6.5.76	