

BHARAT HEAVY ELECTRICALS LTD.**(TRANSMISSION BUSINESS GROUP)****TERMS AND CONDITIONS FOR INDIGENOUS TENDER ENQUIRY**

This Format is to be submitted in original duly signed by bidder. Deviation, if any, is to be brought out clearly in Schedule of Commercial Deviation giving clause-wise deviation. Any condition / clarification / deviation mentioned elsewhere may not be accepted.

Sr. No.	Standard Terms & Conditions TENDER ENQUIRY NO. 284E204 DATED: 15/01/15 DUE DATE: 10/02/15
1.	<p>INSTRUCTION TO BIDDERS:</p> <p>a) Sealed quotations are invited for the items mentioned in the enquiry. Quotations should be typed and free from over writing and erasures. Corrections or additions must be clearly written both in words and figures and attested, otherwise offer shall be liable for rejection.</p> <p>b) Bidder must ensure that their quotation is received / dropped in the tender box on or before 14:00 Hrs of the due date of opening.</p> <p><u>Location of Tender Box:</u></p> <p>Bharat Heavy Electricals Limited,</p> <p>Transmission Business Group,</p> <p>Advant Navis Business park, Tower A</p> <p>5 th Floor, 7 , Sector- 142, Greater Noida Expressway, UP -201305</p> <p>c) The same shall be opened at 14.30 Hrs. on the same day. Tenders received late may be rejected. Bidders sending tenders by courier or post, to ensure that it is delivered one day before as same day delivery may not reach above office by due time.</p> <p>d) Bids are to be submitted in Two parts:</p> <p>i) Techno-commercial bid (Part-I): To be submitted in duplicate. A copy of price bid (Part-II) "without prices" is also to be enclosed in Part-I bid.</p> <p>ii) Bidder to strictly ensure submitting the price bids in BHEL format of Rate Contract or as per project requirement.</p> <p>iii) Price bid (Part-II): To be submitted only in one copy in a separate sealed envelope. This should not contain any Technical or Commercial Terms. The rates should be quoted both in figures and words. In case of any difference between figures and words, the quoted rate in words shall prevail over figure. Further in case of difference between unit rate & total price, unit rate in words shall prevail over total price.</p> <p>Both Parts-I and Part-II bids are to be sealed in separate envelope and both envelopes to be kept in another common envelope. Each envelope should be sealed and superscribed with enquiry no., item / package name, project name (if any) and due date of opening.</p> <p>e) "BHEL reserves the right to go for Reverse Auction instead of Opening the submitted sealed bid, which will be decided after technical evaluation".</p>



BHARAT HEAVY ELECTRICALS LIMITED
TRANSMISSION BUSINESS GROUP
ENGINEERING MANAGEMENT, NEW DELHI

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BHEL Document No.	Rev.	Prepared by	Checked by	Approved by
TB-xxx-316-143	02	Name		
Type of Document	STANDARD SPECIFICATION	Sign	-sd-	-sd-
Title	CABLE RACK & HANGER ASSEMBLY	Date		
		Group	TBEM	
		W.O. No		
Customer / Consultant				
Tender				

CONTENTS

SECTION	TITLE	PAGE
I.	SCOPE, BILL OF QUANTITIES, SPECIFIC TECHNICAL REQUIREMENTS.	1.1 - 1.2
	ANNEXURE-1	1.3 - 1.4
II.	STANDARD SPECIFICATION	2.1-2.3
III.	PROJECT DETAILS AND GENERAL SPECIFICATION	3.1 - 3.5
IV.	GUARANTEED TECHNICAL PARTICULARS	4.1 - 4.1
V.	CHECK LIST	5.1 - 5.1

02	10.05.13				Assembly drawings revised.
01	17.06.09	Sd/-	Sd/ 12/05/13	Sd/ 13/5/13	Documents updated
Rev No.	Date	Altered	Checked	Approved	REVISION DETAILS
Distribution				To	
				Copies	

SECTION -1

SCOPE, BILL OF QUANTITIES AND SPECIFIC TECHNICAL REQUIREMENTS

1.0 SCOPE

This technical specification covers design, manufacture, testing at works, packing and despatch of Cable rack assembly complete with accessories as listed below.

This section covers the general technical requirements of Cable Trench Material. In case of any discrepancies between the requirements mentioned in this section and those specified in other sections of this specification, the latter shall prevail and shall be treated as binding requirements.

1.1 SPECIFIC TECHNICAL REQUIREMENTS

A. Rack assembly

Material of cable racks	:	MS
Size and material of cable rack assemblies	:	50x50x6 (thick) mm, 65x65x6 (Thick) or higher angles
Whether Galvanised or Painted	:	Galvanized
Mass of Zinc coating	:	610 gm/m ²

B. Hanger Assembly

Material of cable racks	:	MS
Material of hanger assemblies:	:	50 x 50 x 6 (thick) mm, 65x65x6 (Thick) mm or higher angles and ISMC channel 75/100/150 mm
Whether Galvanised or Painted	:	Galvanized
Mass of Zinc coating	:	610 gm/m ²

1.2 BILL OF QUANTITIES

Sl. No.	Description	Quantity (Domestic)	Quantity (Export)
1	Rack assemblies as per Figures-1 to 6	45 MT	5 MT
2	Hanger assemblies as per Figures-7 to 12	22 MT	3 MT
3.	50x50x6 mm MS Angle	20MT	2 MT

Notes:

- Qty. may vary by $\pm 30\%$.

1.3 SEAWORTHY PACKING FOR EXPORT PROJECT:

For export jobs, sea worthy packing capable of performing all necessary functions like prevention of damage to the contents, sufficient to support frequent handling and lengthy periods of outdoor storage in adverse weather conditions are required. Workmanship and material used shall meet the technical requirements and be in accordance with best commercial export packing practices. Vendor shall be responsible for the packing; however, it shall meet the minimum requirements specified herein. Equivalent or better packing methods may be deployed subject to approval of the purchaser. Vendor shall submit the packing procedure for its equipment for purchaser's approval during detailed engineering.

Minimum requirement for seaworthy packing are as follows:

- i. Individual item shall be wrapped using polyethylene sheets and further lots shall be wrapped in Bitumen coated hessian cloth.
- ii. Markings shall be provided on the boxes/wrapped polyethylene sheet indicating position of boxes for handling, storage and nature of consignment. The ink used for this purpose as well as for marking dispatch instruction shall be indelible/non-washable marking ink
- iii. External front and rear sides of the boxes to be planed for writing instructions.
- iv. Dispatch details such as consignor/consignee address, contract and case details, country of origin, port of delivery, stacking instructions shall be written on one of the side of boxes. An anodized aluminium plate shall be provided on one side of the boxes.
- v. One copy of packing slip wrapped in polyethylene bag covered with aluminium packing slip holder to be nailed on the external surface of the box. One more copy of the packing slip wrapped in polyethylene bag to be kept inside the box at the prominent place.

1.4 QUALITY PLAN:

BHEL Standard manufacturing quality plan shall be followed.

TYPICAL HANGER ASSEMBLY

ANNEXURE-1
TB XXX 316 143
PAGE 1.4 OF 1.4

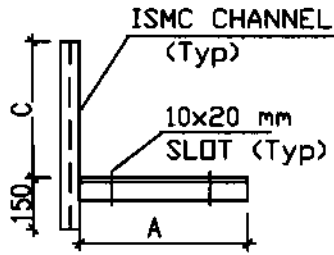


FIG-7: SINGLE TIER, ONE SIDED

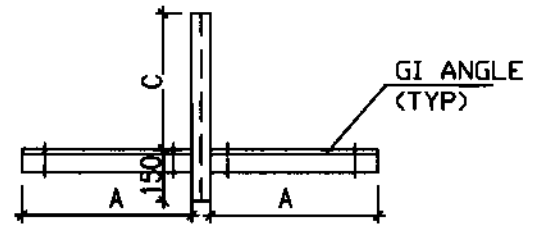


FIG-10: SINGLE TIER, BOTH SIDED

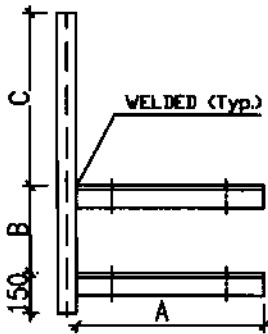


FIG-8: TWO TIERS, ONE SIDED

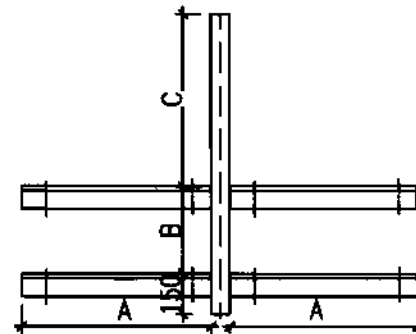


FIG-11: TWO TIERS, BOTH SIDED

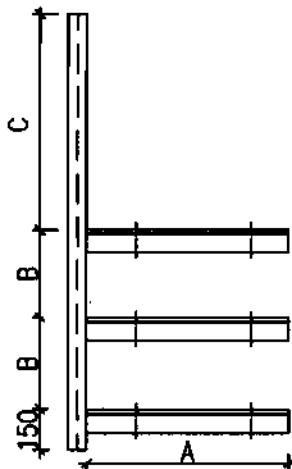


FIG-9: THREE TIERS, ONE SIDED

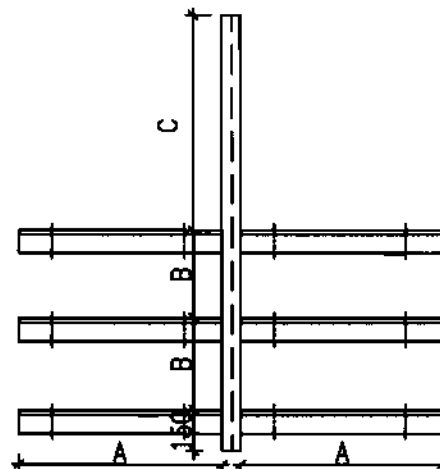


FIG-12: THREE TIERS, BOTH SIDED

NOTES:

- 1) HANGERS MAY BE WITH/WITHOUT STOPPERS. IF STOPPERS HAVE BEEN ASKED, SLOTS WILL NOT BE REQUIRED.
- 2) 'A' MAY VARY BETWEEN 200 TO 750 MM.
- 3) 'B' MAY VARY BETWEEN 200 TO 300 MM.
- 4) 'C' MAY VARY BETWEEN 250 TO 850 MM.
- 5) OFFER SHALL BE ON THE BASIS OF WEIGHT OF HANGER ASSEMBLY.
- 6) THE ABOVE ARE TYPICAL ASSEMBLIES. ORDER CAN BE PLACED FOR QUADRUPLE TIERS ALSO.
- 7) THE ABOVE DRAWING IS INDICATIVE ONLY. BIDDER WILL HAVE TO SUBMIT THE ACTUAL DRAWINGS FOR EACH INDIVIDUAL PROJECT BASED ON THE INPUT FROM BHEL FOR CUSTOMER APPROVAL.

STANDARD SPECIFICATION

SECTION -2

2.1 APPLICABLE STANDARDS

The Cable Trench Material shall conform to latest revision of the following Indian Standards:

Steel for general structural purpose	IS: 2062
Method for testing uniformity of coating on Zinc coated articles	: IS: 2633
Recommended practice for hot dip galvanising on iron & steel	: IS: 2629
Hot dip Zinc coating on structural steel and other allied products	: IS: 4759
Method for determination of mass of zinc coating on zinc coated iron and steel articles	: IS: 6745
Rolled steel beams, channel and angles	: IS: 808
Rolling and Cutting tolerances for rolled steel products	: IS: 1852
Recommended practice for red oxide And zinc chromate on iron & steel	: IS: 2074

Latest version of all the standards shall be referred.

2.2 TECHNICAL REQUIREMENTS

2.2.1 The material (Mild Steel) used for the supply shall be in sound condition and of recent manufacture, free from defects, loose mill scale, slag, pitting, rust, etc.

The cable rack and hanger assembly shall be hot dip galvanised.

2.2.2 Galvanising of the hanger assembly shall be done. The min. thickness of coating shall be 85 microns for all items thicker than 6mm. For items with thickness lower than 6mm requirement of coating thickness shall be as per relevant ASTM. Coating shall be adherent, smooth and reasonably bright, continuous and free from such imperfection as flux, ash, bare and black spot, pimples, lumpiness, rust stains, bulky white deposits and blisters and zinc chromate/red oxide shall conform to IS : 2074.

- 2.2.3 The hanger assemblies shall not have sharp edges cuts, abrasions etc. and the zinc coating shall be adherent, smooth and reasonably bright, continuous and free from such imperfections as flux, ash, bare and black spot, pimples, lumpiness, rust stains.
- 2.2.4 All drilling, cutting, bending etc. of fabricated steel work shall be carried out before galvanising.
- 2.2.5 All angles shall be cut with shearing machine / power hack-saw, cutting with gas welding is not permitted.
- 2.2.6 The BIDDER shall indicate in his offer, the final weight of the rack after punching and galvanising.

2.3 TESTS

Details of tests for Cable Trench Material shall be as per latest versions of the standards as follows:

1. Dimensional and visual examination - As per BHEL approved drawing.
2. Mass of Galvanisation - IS: 6745
3. Test for galvanising (Acceptance Test)
The test shall be done as per approved standards
4. Uniformity of zinc coating - IS: 2633
5. Mass of zinc coating – IS: 6745
6. Chemical composition test -As per IS: 2062.
7. Tensile - As per IS: 2062.
8. Bending test -As per IS: 2062.

SECTION - 3

PROJECT DETAILS AND GENERAL SPECIFICATIONS

SL.NO.	DESCRIPTION	
3.1	PROJECT INFORMATION	
	a) Customer	
	b) Project	
	c) Project location	
	d) Transport facilities Nearest Railway Station/Gauge Distance from Railway Station	
	e) Access roads	
3.2	SITE CONDITIONS	
3.2.1	Ambient Temp.	
	a) Maximum Design Ambient air temp. (max.) °C	
	b) Minimum Design Ambient air temp. (max.) °C	
3.2.2	Relative humidity	
3.2.3	Height above mean sea level	
3.2.4	Pollution Severity	
3.2.5	Earth quake data	
	a) Seismic zone as per IS 1893:84	
	b) Seismic acceleration	
3.2.6	Wind data	
	a) Wind velocity m/sec.	
3.2.7	Average annual rainfall	

3.3 INSPECTION AND TESTING

All tests and inspection of the equipment specified shall be performed to the extent and in the manner as stipulated in the relevant standards and in this specification. All type test/routine tests/acceptance tests as specified shall be conducted as per the details mentioned in the Purchase order for this equipment.

3.4 DOCUMENTATION

3.4.1 DRAWINGS

All drawings for cable trays , etc. shall be prepared in AutoCAD. All dimensions and data shall be in SI metric units.

All items of the equipment should be clearly identified by proper part number in the contract drawings. Such parts which are to be dispatched to site from works in dispatch able units and are re-assembled at site should be marked by proper identification marks at works and indicated in the drawings and quantified. All the items of the shipping list should be identified in the drawings.

The drawings submitted by the subcontractor shall be reviewed by the purchaser as far as practicable within 4 weeks of receipt of drawings and shall be modified by the subcontractor if any modifications and / or corrections are required by the purchaser. The subcontractor shall incorporate such modifications and / or corrections and submit the final drawings within 2 weeks of receipt of commented drawings for approval. Any delay arising out of failure of the subcontractor to rectify the drawings in good to time shall not alter the contract completion date.

Approval of drawings or work by the purchaser/consultant shall not relieve the subcontractor of any of his responsibilities and liabilities under the contract.

In case of any modification that may be necessary during erection or commissioning of the equipment, the subcontractor shall carry out modifications in the original drawing & submit 'As Built' drawings.

The title block of drawings shall contain the following information incorporated in all contract drawings

Title block for _____ project:

1. **Customer** :
2. **Project** :
3. **Contract No./LOA No.** :
4. **Main Contractor** : Bharat Heavy Electricals Limited
5. **BHEL Order No. & Date** :

3.4.2 DOCUMENTS TO BE SUBMITTED ALONGWITH OFFER

- 1) Guaranteed Technical Particulars

3.4.3 DOCUMENTATION SCHEDULE AT CONTRACT STAGE

A (No. of Copies)	For Approval
	Copies of GA drawings with projects details, dimension, equipment weight, fixing details, tolerances and terminal details etc.
	Copies of GTP
	Copies of type test reports
	Copies of manufacturing quality plan.
B (No. of Copies)	After Approval and For Information/Distribution.
	Copies of GA drawings
	Copies of GTP
	Copies of type, Routine & Acceptances tests.
	Copies of manufacturing quality plan.
	Copies of shipping list detailing the description & quantities of all items being dispatched separately, with shipping weights, number of cases and dimensions.

- 3.4.5 Material shall not be dispatched without the approval of test certificates by purchasers.

3.5 MATERIALS AND WORKMANSHIP

Equipment materials and components shall be new, of high grade and good quality and be to the latest engineering practice. The material and workmanship throughout shall be in accordance with the purpose for which they are intended. Each component shall be designed to be consistent with its duty.

In general, screw threads shall be standard metric threads. The use of other thread from will be used only after prior approval. The supplier shall furnish locking devices for threaded fasteners, which will lock them in such a manner so as to prevent them from coming loose in transport and in service.

All joints and fastening shall be so designed, constructed and registered that the component part may be accurately positioned and restrained to fulfill their required function. The heads of all bolts shall register flush on the surface, which they fasten. All the information concerning materials or components to be used in manufacturing, machinery, equipment, materials and components supplied, installed or used shall be submitted for approval. Without such approval the supplier shall run risk of

subsequent rejection. The cost as well as time delay associated with such rejection shall be borne by the supplier.

Whenever possible, all similar parts of the works shall be made to gauge and shall also be made interchangeable with similar parts. All spare parts shall be interchangeable with, and shall be made of the same materials and workmanship as the corresponding parts of the equipment supplied under the specification. Where feasible, common component units shall be employed in different pieces of equipment in order to minimize spare parts stocking requirements. All equipment of the same type and rating shall be physically and electrically interchangeable.

The supplier shall apply all lubricants used for installation and operation of the equipment. All consumable required for one-year operation shall be in the scope of supplier.

All components exposed to rain shall be designed with sloped upper surface to avoid water pools.

3.6 SURFACE TREATMENT

All metal surfaces shall be treated to provide anti-corrosion protection. All ferrous surfaces for external use shall be hot-dip galvanized after fabrication. High Tensile steel nuts and bolts and spring washers shall be electro-galvanized to service condition.

3.9 WELDING

All welding shall be done by a qualified welder.

3.10 PACKING AND MARKING

3.10.1 PACKING

Cable Tray Material may be supplied in open condition. However, while stacking the materials for transportation it should be ensured that, similar items are grouped and tied with steel wires / strips for convenient handling and shall be done in such a way to avoid damage during transits.

For export project, the packing shall be SEAWORTHY as explained in section 1.

3.10.2 MARKINGS

The following details shall be marked on the packing:

- i) Name and address of the consignee
- ii) Purchase Order No:
- iii) Name of supplier

Doc No: TB XXX 316 141

Sheet. No. 3-5 of 3-5

Rev No: 02

iv) . Description of material

v) Tare weight

vi) Gross weight

Doc No: TB xxx 316 143

Sht. No. : 4-1 of 4-1

Rev No: 02

SECTION -4

GUARANTEED TECHNICAL PARTICULARS (To be submitted by the supplier at the contract execution stage)

- 1.0 Name of the Project :
- 2.0 Tenderer's Name and Address :
- 3.0 Manufacturer's Name and Address :
- 4.0 Applicable Standards :
- 5.0 Application :
- 6.0 Material specification :
- 7.0 Weight of Zinc coating :
- 8.0 Min. thickness of Zinc coating at any spot :
- 9.0 Weight of assembly :

Name of the firm:-----

Signature of the Tenderer:-----

Designation:-----

Date:

Place:

Doc No: TB xxx 316 143

Sht. No. : 5-1 of 5-1

Rev No: 02

**CHECK LIST FOR INFORMATION TO BE FURNISHED WITH OFFER
RETURN THIS CHECKLIST AS PART OF THE OFFER DULY SIGNED**

The offer may not be considered if the following information and this Checklist are not enclosed with the Offer.

BHEL ENQUIRY. NO:

BIDDER OFFER REFERENCE:

(1)	(2)	(3)	(4)	(5)
S.No.	Parameter	Requirement	Yes / No	Remarks in case reply in Col (4) is <i>NO</i>
1.	Equipment	Rack/hanger assembly		
2.	Material of rack	MS	YES / NO	
3.	Material certificate	As per Standard specification	YES / NO	
4.	Weight of zinc coating	610gm/m ²	YES / NO	
5.	Required accessories	Included	YES / NO	
6.	Conformance to the Applicable standard	As specified in clause 2.1 , Section -2 of the specification	YES / NO	
7.	All type of assemblies	Considered	YES / NO	



BHARAT HEAVY ELECTRICALS LIMITED

TRANSMISSION BUSINESS GROUP
ENGINEERING MANAGEMENT, NEW DELHI

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BHEL Document No.	Rev.	Prepared by	Checked by	Approved by
TB-xxx-316-141	04	Name		
Type of Document	STANDARD SPECIFICATION	Sign	--Sd--	--Sd--
Title	CABLE TRAY MATERIAL	Date		
		Group	TBEM	
		W.O. No		

Customer / Consultant

Tender

CONTENTS

SECTION	TITLE	PAGE
I.	SCOPE, BILL OF QUANTITIES, SPECIFIC TECHNICAL REQUIREMENTS.	1.1 - 1.2
	ANNEXURE-1	1.3 - 1.6
II.	STANDARD SPECIFICATION	2.1 - 2.3
III.	PROJECT DETAILS AND GENERAL SPECIFICATION	3.1 - 3.5
IV.	GUARANTEED TECHNICAL PARTICULARS	1.1 - 4.1
V.	CHECK LIST	5.1 - 5.1

04	10.05.13	<i>AM</i>	<i>Amal</i>	<i>Ramesh</i>	Tray Bends have been included.
03	10.11.10	--Sd--	--Sd--	--Sd--	Thickness of tray has been revised from 2.5 mm to (2.0 to 3.0 mm)
02	08.07.09	--Sd--	--Sd--	--Sd--	Documents updated
01	10.08.07	--Sd--	--Sd--	--Sd--	Different types of tray added and technical specification revised as per project requirement.
Rev No.	Date	Altered	Checked	Approved	REVISION DETAILS

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	Copies				

SECTION-1

SCOPE, SPECIFIC TECHNICAL REQUIREMENTS AND QUANTITIES

1.0 SCOPE

This technical specification covers the requirements of design, manufacture, testing at works, packing and dispatch of Cable Tray Material complete with accessories as listed below.

This section covers the general technical requirements of Cable Tray Material. In case of any discrepancies between the requirements mentioned in this section and those specified in other sections of this specification, the latter shall prevail and shall be treated as binding requirements.

1.1 TECHNICAL PARAMETERS

Material of cable trays:	Ladder Type	Perforated Type
Thickness of sheet metal for trays & fittings etc.	2.0 to 3.0 mm	2.0 to 3.0 mm
Accessories:	2 Nos. side plate along 8 Nos., M8 bolts with nuts and washers	2 Nos. side plate along 8 Nos., M8 bolts with nuts and washers

1.2 BILL OF QUANTITIES (TYPICAL)

S. No.	Item	Quantity (Domestic)	Quantity (Export)
1.	150 -750mm wide, 100mm high, 2.5 M galvanised iron ladder type cable trays along with 2 nos. side coupler plate & hardware (Clause no. 1.1)	180 MT	20MT
2.	100-750mm wide, 100mm (50mm for 100mm wide) high, 2.5 M galvanised iron perforated type cable trays along with 2 nos. side coupler plate & hardware (Clause no. 1.1)	90 MT	10MT
3.	150-750 mm wide, 100mm high Galvanized iron ladder type 90° Cable tray BENDS/ELBOW (Horizontal/vertical/outside/inside), Tee bends, Cross, reducer along with 2 nos. side coupler plate & hardware (Clause no. 1.1)	22 MT	3MT
4.	100-750 mm wide, 100mm high Galvanized iron perforated type 90° Cable tray BENDS/ELBOW (Horizontal/vertical/outside/inside), Tee bends, Cross, reducer along with 2 nos. side coupler plate & hardware (Clause no. 1.1)	18 MT	2MT
5.	M8 Bolts along with Nut and plain washers (On both sides) (Refer Note-3)	1 MT	0.1MT

Notes:

1. Qty. may vary by $\pm 30\%$.
2. 10% extra hardware shall be supplied along with the item no. 1 to 4 above.

3. M8 bolts along with nuts & washers as per clause no. 1.1 are deemed to be included with respective trays/bends (item no. 1 to 4). M8 bolts mentioned at serial no. 5 are for additional use of fixing tray with racks and if required shall be separate in project wise indented BOQ.

1.3 SEAWORTHY PACKING FOR EXPORT PROJECT:

For export jobs, sea worthy packing capable of performing all necessary functions like prevention of damage to the contents, sufficient to support frequent handling and lengthy periods of outdoor storage in adverse weather conditions are required. Workmanship and material used shall meet the technical requirements and be in accordance with best commercial export packing practices. Vendor shall be responsible for the packing; however, it shall meet the minimum requirements specified herein. Equivalent or better packing methods may be deployed subject to approval of the purchaser. Vendor shall submit the packing procedure for its equipment for purchaser's approval during detailed engineering.

Minimum requirement for seaworthy packing are as follows:

- i. Individual item shall be wrapped using polyethylene sheets and further lots shall be wrapped in Bitumen coated hessian cloth.
- ii. Markings shall be provided on the boxes/wrapped polyethylene sheet indicating position of boxes for handling, storage and nature of consignment. The ink used for this purpose as well as for marking dispatch instruction shall be indelible/non-washable marking ink
- iii. External front and rear sides of the boxes to be planed for writing instructions.
- iv. Dispatch details such as consignor/consignee address, contract and case details, country of origin, port of delivery, stacking instructions shall be written on one of the side of boxes. An anodized aluminium plate shall be provided on one side of the boxes.
- v. One copy of packing slip wrapped in polyethylene bag covered with aluminium packing slip holder to be nailed on the external surface of the box. One more copy of the packing slip wrapped in polyethylene bag to be kept inside the box at the prominent place.

1.4 QUALITY PLAN:

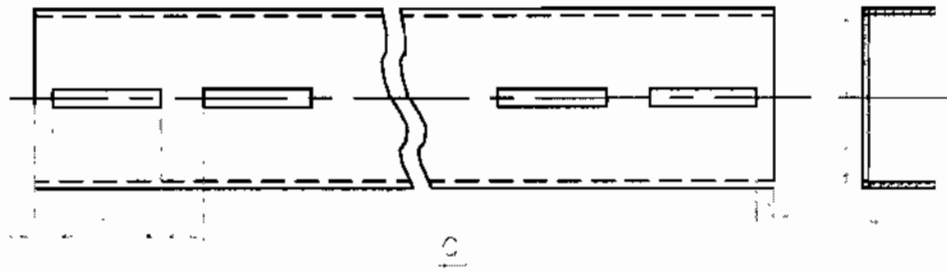
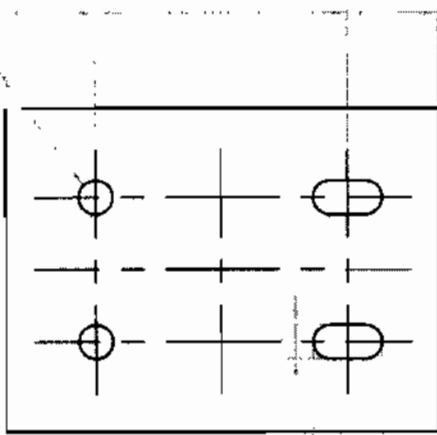
BHEL Standard manufacturing quality plan shall be followed.

TYPICAL LADDER TRAY

ANNEXURE-I

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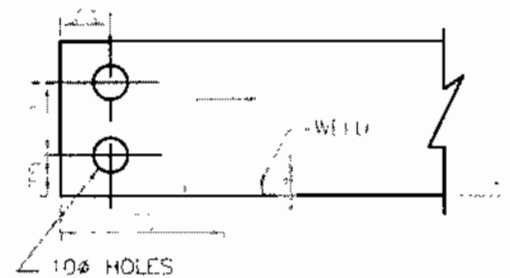
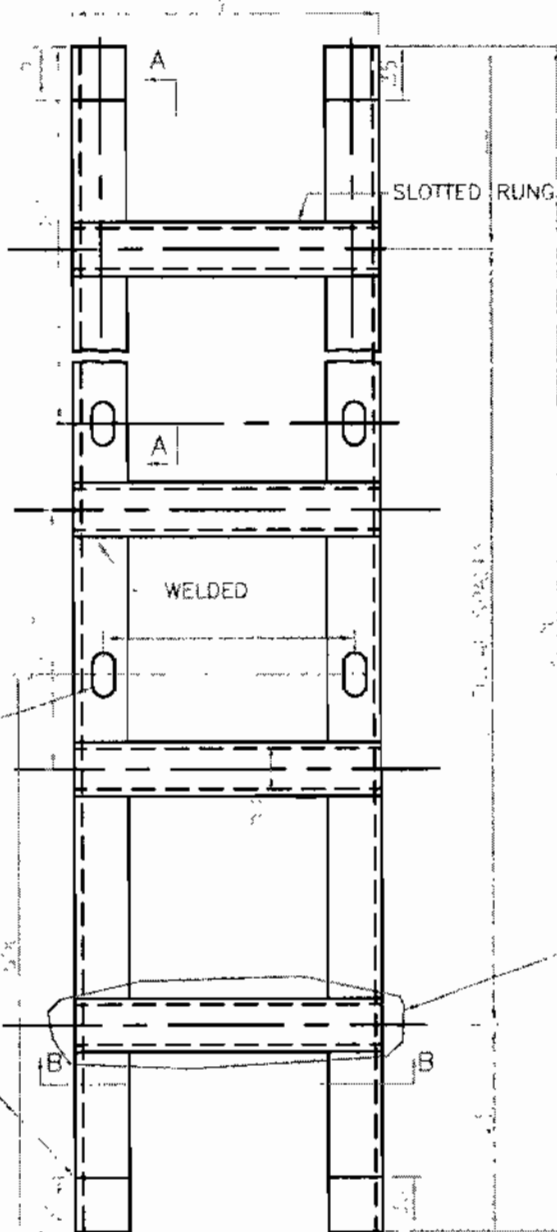
Page 1.3 of 1.6



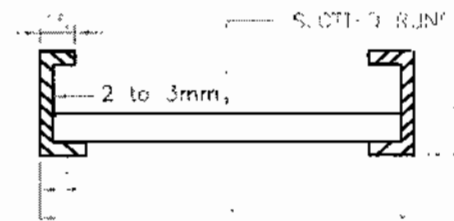
SIDE COUPLER PLATE

SLOTTED RUNG

FIG-2



SEC-AA



SEC-BB

2 to 3 mm THICK (100 mm ± 2%)

2 NOS. 10 ϕ HOLES FOR SIDE COUPLER PLATE

WIDTH W = 150 MM TO 750 MM IN INTERVAL OF 50 MM

WIDTH A = 'A' SHALL VARY ACCORDING TO TRAY WIDTH.

NOTE:

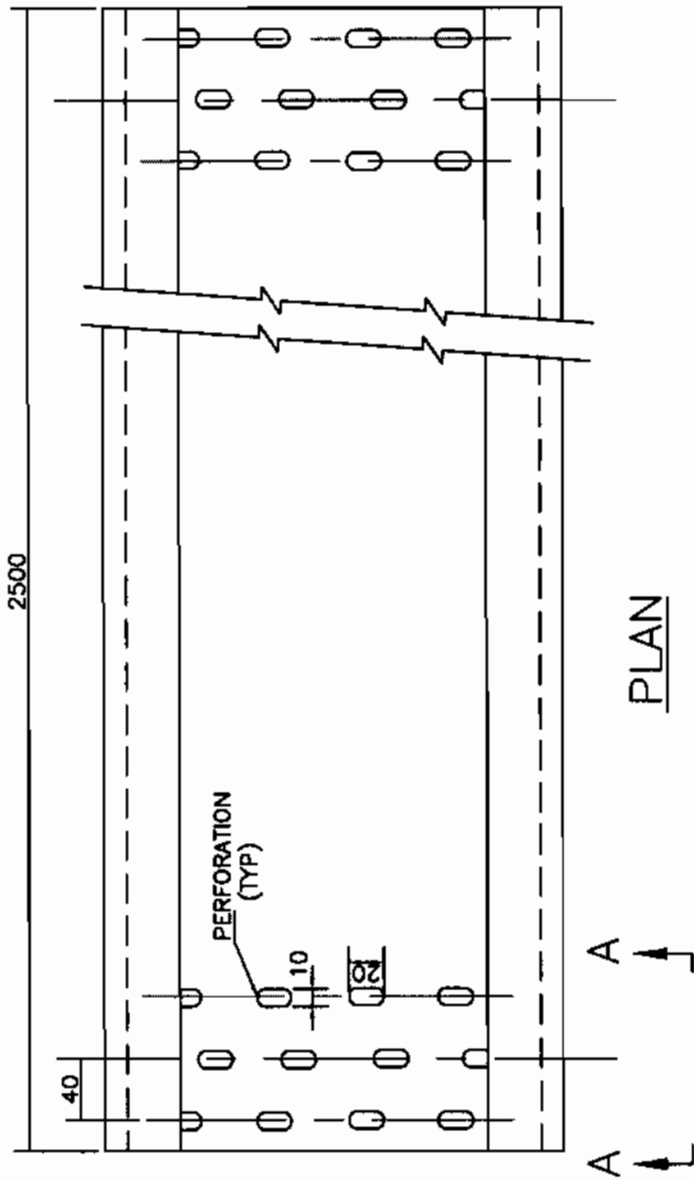
- 1) THE ABOVE DRAWING IS INDICATIVE ONLY
- 2) BIDDER WILL HAVE TO SUBMIT THE ACTUAL DRAWINGS FOR EACH INDIVIDUAL PROJECT BASED ON THE INPUT FROM BHEL FOR CUSTOMER APPROVAL

TYPICAL PERFORATED TRAY

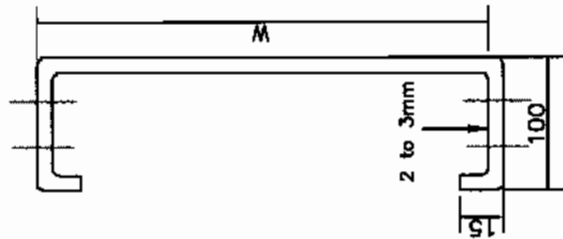
ANNEXURE-1

Doc. No. TB-XXX-316-041

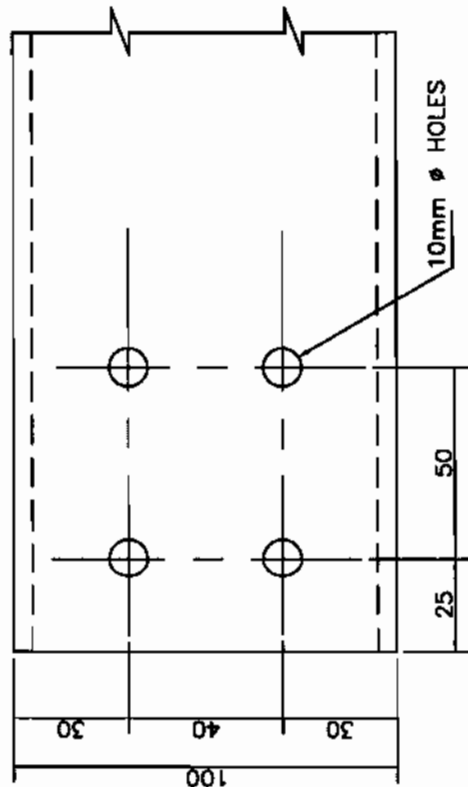
Page 1.4 of 1.6



PLAN



END VIEW



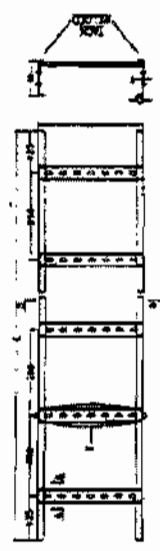
SECTION A-A

WIDTH W = 100 TO 750 MM IN INTERVAL OF 50 MM

NOTE:

- 1) THE ABOVE DRAWING IS INDICATIVE ONLY.
- 2) BIDDER WILL HAVE TO SUBMIT THE ACTUAL DRAWINGS FOR EACH INDIVIDUAL PROJECT BASED ON THE INPUT FROM BHEL FOR CUSTOMER APPROVAL.

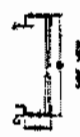
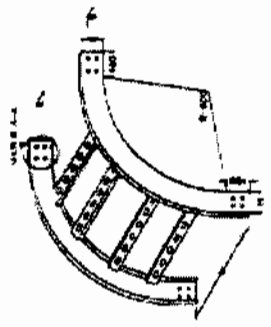
THIS DRAWING USE IN mm



SEE VIEW SECTION A-A

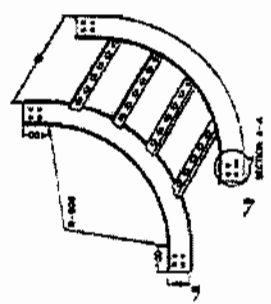
SIZE	A	B	C	D	E	F	G
1	100	150	200	250	300	350	400

LADDER TYPE CABLE TRAY



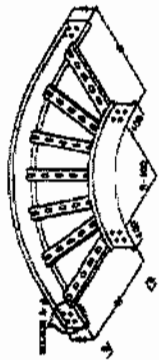
SEE VIEW SECTION B-B

90° VERTICAL OUTSIDE BEND



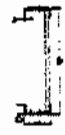
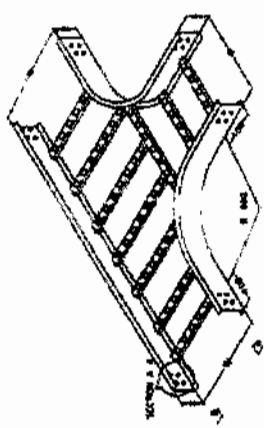
SEE VIEW SECTION B-B

90° VERTICAL INSIDE BEND



SIZE	A	B	C	D	E	F	G
1	100	150	200	250	300	350	400

90° HORIZONTAL ELBOW



SIZE	A	B	C	D	E	F	G
1	100	150	200	250	300	350	400

TEE

ANNEXURE I
PAGE 1.5 OF 1.6
LADDER TRAY BENDS/ ELBOW/
TEE/ REDUCER

- NOTE:-
- 1) ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED
 - 2) ALL DIMENSIONS ARE TO BE TAKEN FROM THE CENTER LINE OF THE RUNG
 - 3) ALL DIMENSIONS ARE TO BE TAKEN FROM THE CENTER LINE OF THE TRAY
 - 4) ALL DIMENSIONS ARE TO BE TAKEN FROM THE CENTER LINE OF THE TRAY
 - 5) ALL DIMENSIONS ARE TO BE TAKEN FROM THE CENTER LINE OF THE TRAY
 - 6) ALL DIMENSIONS ARE TO BE TAKEN FROM THE CENTER LINE OF THE TRAY
 - 7) ALL DIMENSIONS ARE TO BE TAKEN FROM THE CENTER LINE OF THE TRAY
 - 8) ALL DIMENSIONS ARE TO BE TAKEN FROM THE CENTER LINE OF THE TRAY
 - 9) ALL DIMENSIONS ARE TO BE TAKEN FROM THE CENTER LINE OF THE TRAY
 - 10) ALL DIMENSIONS ARE TO BE TAKEN FROM THE CENTER LINE OF THE TRAY

THE DIMENSIONS ON THIS DRAWING IS THE PROPERTY OF BSNL AND SHOULD NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.

SECTION -2

STANDARD SPECIFICATION

2.1 TECHNICAL PARAMETERS

CABLE TRAYS & BENDS

Material of cable trays:	Galvanised
Thickness of sheet metal for trays & fittings etc:	Slotted Rung & Side member- 2.0 to 3.0 mm thick
Whether Ladder type or perforated type:	Ladder/Perforated
Mass of Zinc coating:	460 gm/m ²
Accessories:	Coupler plates and associated hardwares.

2.2 APPLICABLE STANDARDS

The Cable trench material shall conform to the following Indian Standards:

Structural steel (Standard quality)	:	IS:2062
Hot Rolled Carbon Steel Sheets and Strips - Specification	:	IS:1079
Mechanical testing of metals - Tensile Testing	:	IS:1608
Dimensions for steel plates, sheets strips and flats for general engineering purposes	:	IS:1730
Method for tensile testing of steel sheet and strip of thickness 0.5 mm to 3 mm	:	IS:1608
Method for bend test	:	IS:1599
Recommended practice for red oxide and zinc chromate on iron & steel	:	IS:2074
General technical delivery requirements for steel and steel products	:	IS:8910

Methods of chemical analysis of pig iron, cast iron and plain carbon and low alloy steel , Part-I	:	IS:228
Method for testing uniformity of coating on Zinc coated articles	:	IS:2633
Recommended practice for hot dip galvanising on iron & steel	:	IS:2629
Hot dip zinc coating on structural steel and other allied products	:	IS:4759
Method for determination of mass of zinc coating on zinc coated iron and steel articles	:	IS:6745

Latest version of all the standards shall be referred.

2.3 TECHNICAL REQUIREMENTS

- 2.3.1 The cable trays & bends shall be ladder/perforated type.
- 2.3.2 The material (Mild Steel) used for the supply shall be in sound condition and of recent manufacture, free from defects, loose mill scale, slag, pitting, rust, etc.
- 2.3.3 The cable trays shall be hot dip galvanised (zinc coating).
- 2.3.4 The min. weight of zinc coating shall be 460 gm/m.²
- 2.3.5 The trays shall not have sharp edges cuts, abrasions etc. and the zinc coating shall be adherent, smooth and reasonably bright, continuous and free from such imperfections as flux, ash, bare and black spot, pimples, lumpiness, rust stains, bulky white deposits and blisters.
- 2.3.6 All drilling, cutting, bending etc. of fabricated steel work shall be carried out before galvanising. After galvanising, no drilling or welding shall be performed on the galvanized parts of the equipment excepting that nuts may be threaded after galvanizing. Sodium dichromate treatment shall be provided to avoid formation of white rust after hot dip galvanisation.
- 2.3.7 Bolts and nuts shall be of steel with hexagonal head by approved supplier. All bolts shall be galvanised including threaded portions. The threaded portions of all bolts shall be cleared of smear by spinning / brushing. All washers and nuts shall also be galvanised but threading of nuts shall be oiled / greased.
- 2.3.8 The tenderer shall indicate in his offer the final weight of the tray after punching and galvanising.

2.3 TESTS

Details of tests for Cable Tray Material shall be as follows:

1. Dimensional and visual examination - As per approved drawing.
2. Deflection Test: (Type test)
A 2.5 m straight section of tray shall be simply supported at two ends. A uniform distributed load of 76 kg/m shall be applied along the length of the tray. The maximum deflection at the mid span shall not exceed 7 mm.
3. Mass of Galvanisation - IS: 6745
4. Uniformity of zinc coating - IS: 2633

SECTION - 3

PROJECT DETAILS AND GENERAL SPECIFICATIONS

SL.NO.	DESCRIPTION	
3.1	PROJECT INFORMATION	
	a) Customer	
	b) Project	
	c) Project location	
	d) Transport facilities Nearest Railway Station/Gauge Distance from Railway Station	
	e) Access roads	
3.2	SITE CONDITIONS	
3.2.1	Ambient Temp.	
	a) Maximum Design Ambient air temp. (max.) °C	
	b) Minimum Design Ambient air temp. (max.) °C	
3.2.2	Relative humidity	
3.2.3	Height above mean sea level	
3.2.4	Pollution Severity	
3.2.5	Earth quake data	
	a) Seismic zone as per IS 1893:84	
	b) Seismic acceleration	
3.2.6	Wind data	
	a) Wind velocity m/sec.	
3.2.7	Average annual rainfall	

3.3 INSPECTION AND TESTING

All tests and inspection of the equipment specified shall be performed to the extent and in the manner as stipulated in the relevant standards and in this specification. All type test/routine tests/acceptance tests as specified shall be conducted as per the details mentioned in the Purchase order for this equipment.

3.4 DOCUMENTATION

3.4.1 DRAWINGS

All drawings for cable trays etc. shall be prepared in AutoCAD. All dimensions and data shall be in SI metric units.

All items of the equipment should be clearly identified by proper part number in the contract drawings. Such parts which are to be dispatched to site from works in dispatch able units and are re-assembled at site should be marked by proper identification marks at works and indicated in the drawings and quantified. All the items of the shipping list should be identified in the drawings.

The drawings submitted by the subcontractor shall be reviewed by the purchaser as far as practicable within 4 weeks of receipt of drawings and shall be modified by the subcontractor if any modifications and / or corrections are required by the purchaser. The subcontractor shall incorporate such modifications and / or corrections and submit the final drawings within 2 weeks of receipt of commented drawings for approval. Any delay arising out of failure of the subcontractor to rectify the drawings in good to time shall not alter the contract completion date.

Approval of drawings or work by the purchaser/consultant shall not relieve the subcontractor of any of his responsibilities and liabilities under the contract.

In case of any modification that may be necessary during erection or commissioning of the equipment, the subcontractor shall carry out modifications in the original drawing & submit 'As Built' drawings.

The title block of drawings shall contain the following information incorporated in all contract drawings

Title block for _____ project:

1. **Customer** :
2. **Project** :
3. **Contract No./LOA No.** :
4. **Main Contractor** : Bharat Heavy Electricals Limited
5. **BHEL Order No. & Date** :

3.4.2 DOCUMENTS TO BE SUBMITTED ALONGWITH OFFER

- 1) Guaranteed Technical Particulars

3.4.3 DOCUMENTATION SCHEDULE AT CONTRACT STAGE

A (No. of Copies)	For Approval
	Copies of GA drawings with projects details, dimension, equipment weight, fixing details, tolerances and terminal details etc.
	Copies of GTP
	Copies of type test reports
	Copies of manufacturing quality plan.
B (No. of Copies)	After Approval and For Information/Distribution.
	Copies of GA drawings
	Copies of GTP
	Copies of type, Routine & Acceptances tests.
	Copies of manufacturing quality plan.
	Copies of shipping list detailing the description & quantities of all items being dispatched separately, with shipping weights, number of cases and dimensions.

- 3.4.5 Material shall not be dispatched without the approval of test certificates by purchasers.

3.5 MATERIALS AND WORKMANSHIP

Equipment materials and components shall be new, of high grade and good quality and be to the latest engineering practice. The material and workmanship throughout shall be in accordance with the purpose for which they are intended. Each component shall be designed to be consistent with its duty.

In general, screw threads shall be standard metric threads. The use of other thread from will be used only after prior approval. The supplier shall furnish locking devices for threaded fasteners, which will lock them in such a manner so as to prevent them from coming loose in transport and in service.

All joints and fastening shall be so designed, constructed and registered that the component part may be accurately positioned and restrained to fulfill their required function. The heads of all bolts shall register flush on the surface, which they fasten. All the information concerning materials or components to be used in manufacturing, machinery, equipment, materials and components supplied, installed or used shall be submitted for approval. Without such approval the supplier shall run risk of

subsequent rejection. The cost as well as time delay associated with such rejection shall be borne by the supplier.

Whenever possible, all similar parts of the works shall be made to gauge and shall also be made interchangeable with similar parts. All spare parts shall be interchangeable with, and shall be made of the same materials and workmanship as the corresponding parts of the equipment supplied under the specification. Where feasible, common component units shall be employed in different pieces of equipment in order to minimize spare parts stocking requirements. All equipment of the same type and rating shall be physically and electrically interchangeable.

The supplier shall apply all lubricants used for installation and operation of the equipment. All consumable required for one-year operation shall be in the scope of supplier.

All components exposed to rain shall be designed with sloped upper surface to avoid water pools.

3.6 SURFACE TREATMENT

- 3.6.1** All metal surfaces shall be treated to provide anti-corrosion protection. All ferrous surfaces for external use shall be hot-dip galvanized after fabrication. High Tensile steel nuts and bolts and spring washers shall be electro-galvanized to service condition .

3.7 FABRICATED COMPONENTS

All components machined or fabricated from plate, sheet or bar stock shall meet the material requirements of ASTM. Structural steel rolled shapes, bars, etc. shall comply with the latest ASTM for A36.

All or a representative number of such components shall be subjected to one or more of the tests: visual, dye penetration, magnetic particle (transverse and longitudinal), ultrasonic or radiograph. These tests shall be in accordance with the ASTM. The acceptance shall be as per ASTM Specifications.

3.9 WELDING

All welding shall be done by a qualified welder.

Doc No: TB xxx 316 141

Sheet. No. 3-5 of 3-5

Rev No: 04

3.10 PACKING AND MARKING

3.10.1 PACKING

Cable Tray Material may be supplied in open condition. However, while stacking the materials for transportation it should be ensured that, similar items are grouped and tied with steel wires / strips for convenient handling and shall be done in such away to avoid damage during transits.

3.10.2 MARKINGS

The following details shall be marked on the packing:

- i) Name and address of the consignee
- ii) Purchase Order No:
- iii) Name of supplier
- iv) Description of material
- v) Tare weight
- vi) Gross weight

SECTION-4

GUARANTEED AND TECHNICAL PARTICULARS

(To be filled and submitted at Contract stage)

- 1.0 Name of the Project :
- 2.0 Tenderer's Name and Address :
- 3.0 Manufacturer's Name and Address:
- 4.0 Applicable Standards :
- 5.0 Application :
- 6.0 Material specification :
- 7.0 Thickness of sheet metal :
for cable trays, fittings etc.
- 8.0 Maximum permissible :
loading for a 2.5 m. long
simply supported at both ends
- 9.0 Corresponding deflection :
at centre, for the loading
as in 4.0 above
- 10.0 Weight of Zinc coating :
- 11.0 Length of single cable tray :
piece
- 12.0 weight of single piece :

**CHECK LIST FOR INFORMATION TO BE FURNISHED WITH OFFER
 RETURN THIS CHECKLIST AS PART OF THE OFFER DULY SIGNED**

The offer may not be considered if the following information and this Checklist are not enclosed with the Offer.

**BHEL ENQUIRY. NO:
 BIDDER OFFER REFERENCE:**

(1)	(2)	(3)	(4)	(5)
S.No.	Parameter	Requirement	Yes / No	Remarks in case reply in Col (4) is NO
1.	Equipment	Cable tray		
2.	Thickness of Tray	2.0 to 3.0 mm		
a)	2.0 mm		YES / NO	
b)	2.5 mm		YES / NO	
c)	3.0 mm		YES / NO	
3.	Type of cable-tray	Ladder/Perforated		
a)	Ladder type		YES / NO	
b)	Perforated type		YES / NO	
4.	Material certificate	As per Relevant Standard (cl.2.2)	YES / NO	
5.	Weight of zinc coating	460gm/m ²	YES / NO	
6.	Maximum permissible deflection at centre of 2.5m long tray simply supported at both ends after applying the uniformly distributed uniform distributed load of 76 kg/M shall be applied.	≤ 7mm	YES / NO	
7.	Required accessories (as per cl. 1.1 of standard spec.)	Included	YES / NO	
8.	Conformance to the Applicable standard	As specified in clause 2.2 , Section -2 of the specification	YES / NO	
9.	90° Horizontal Bend	Included	YES / NO	
10.	90° Vertical Bend	Included	YES / NO	
11.	90° Horizontal elbow	Included	YES / NO	
12.	Tee	Included	YES / NO	
13.	Reducer	Included	YES / NO	

ANNEXURE-3 , rev-0

Project –SURATGARH :-

BOQ OF CABLE TRENCH MATERIAL:-

Sl. No.	DESCRIPTION	UNIT	Qty.	Tentative Unit wt(kg)
1.	4-tier cable rack assembly as per Fig. 1	Nos.	250	25.43
2.	3-tier cable rack assembly as per Fig. 2	Nos.	830	16.27
3.	2-tier cable rack assembly as per Fig. 3	Nos.	725	8.85
4.	2-tier cable rack assembly as per Fig. 4	Nos.	540	6.53
5.	4 tier under hung (both side) cable rack assembly as per fig. 5	Nos.	85	70.17
6.	4 tier under hung (one side) cable rack assembly as per fig. 6	Nos.	15	52.30
7.	750mm wide, 100mm high, 2 mm tk.(min.) galvanised mild steel slotted rung type ladder cable trays each 2.5 m long with 2 Nos. Side coupler plate, along with 8 mm dia bolts with nuts and washers for each number of cable tray	Nos.	1000	22.80
8.	600mm wide, 100mm high, 2 mm tk.(min.) galvanised mild steel slotted rung type ladder cable trays each 2.5 m long with 2 Nos. Side coupler plate, along with 8 mm dia bolts with nuts and washers for each number of cable tray	Nos.	1910	20.50
9.	300mm wide, 100mm high, 2 mm tk.(min.) galvanised mild steel slotted rung type ladder cable trays each 2.5 m long with 2 Nos. Side coupler plate, along with 8 mm dia bolts with nuts and washers for each number of cable tray	Nos.	760	15.90
10.	200mm wide, 100mm high, 2 mm tk.(min.) galvanised mild steel slotted rung type ladder cable trays each 2.5 m long with 2 Nos. Side coupler plate, along with 8 mm dia bolts with nuts and washers for each number of cable tray	Nos.	330	14.40

Note:

1. The quantity may vary by $\pm 25\%$ at contract stage.
2. For details of figure 1 to 6 refer enclosed Annexure-1.
3. For details of ladder type cable tray refer enclosed Annexure-2.

Seena M
13/11/14

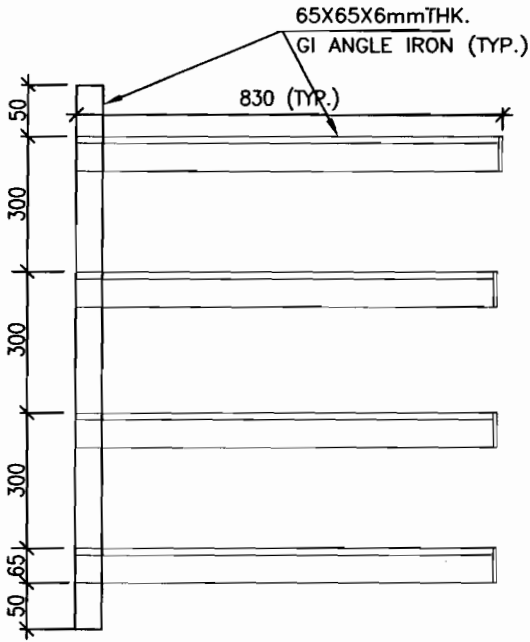


FIGURE -1

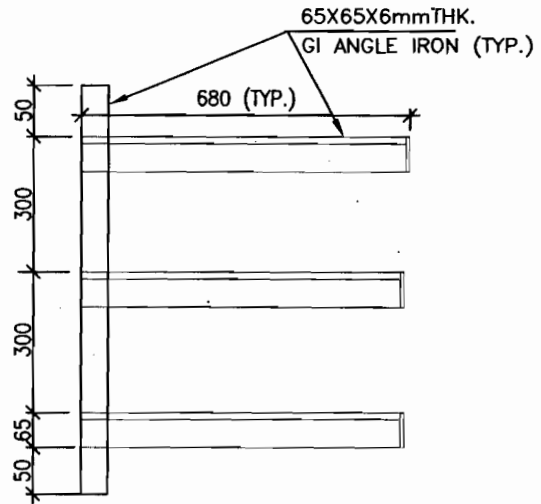


FIGURE -2

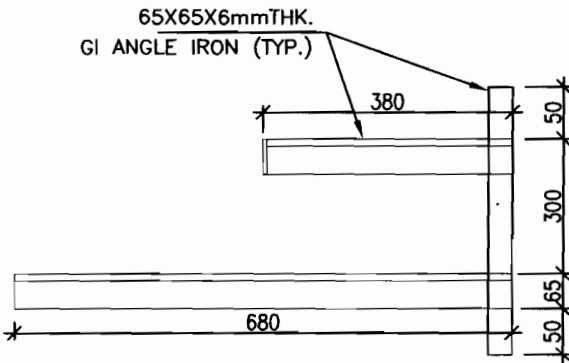


FIGURE -3

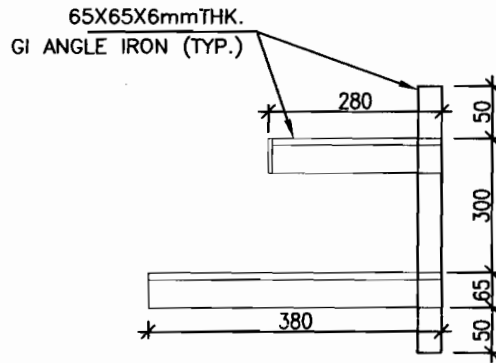


FIGURE -4

NOTE:-

- 1. ALL DIMENSIONS ARE IN MM.

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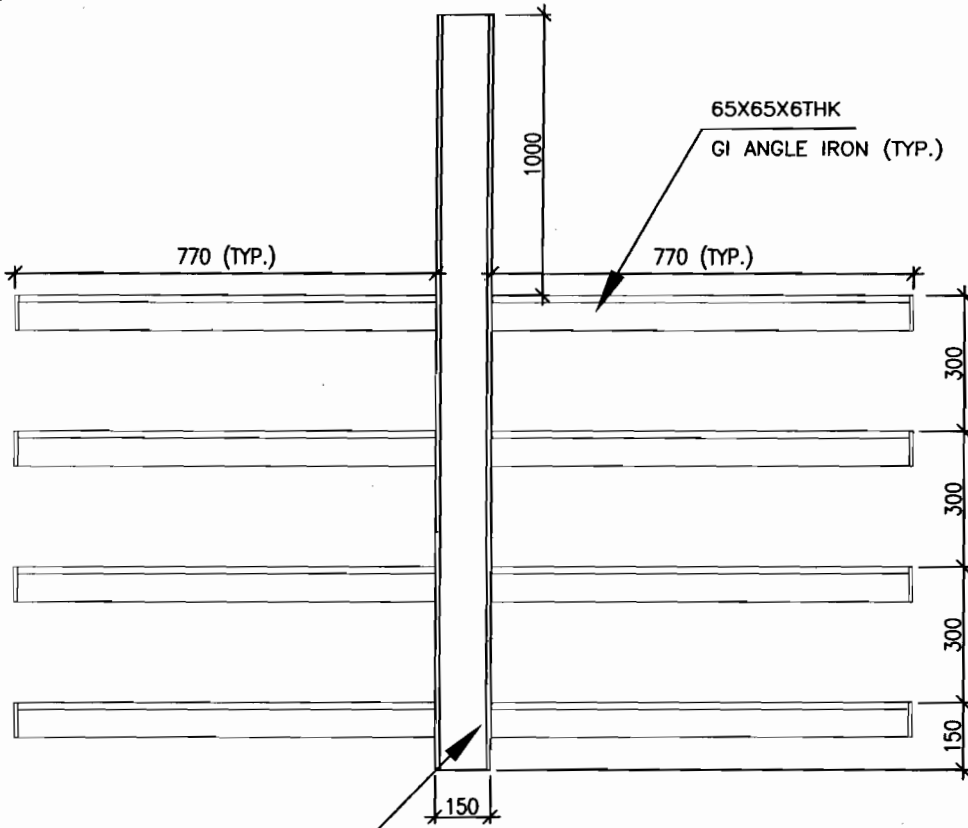


FIGURE-5

ISMC 150 TO SUPPORT
PRE-FEBRICATED CABLE RACK

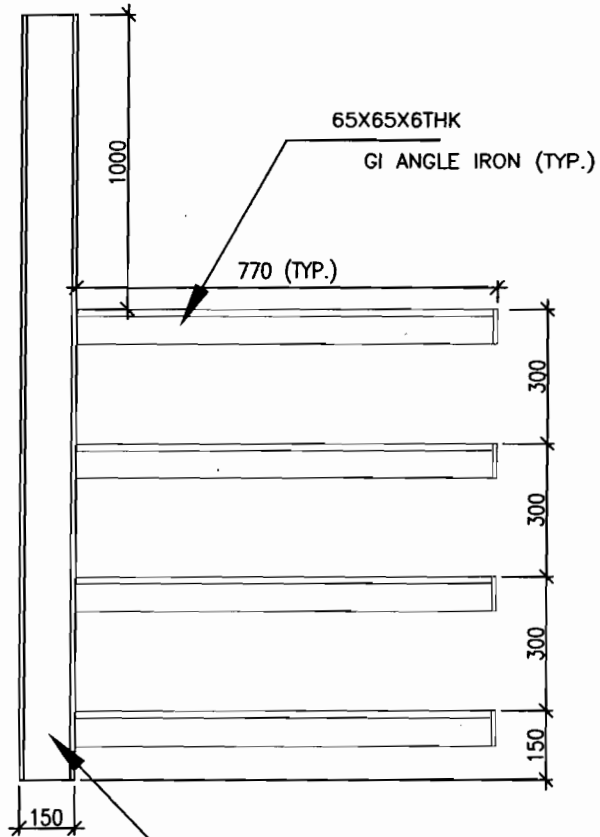


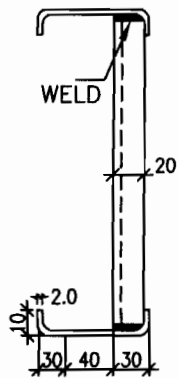
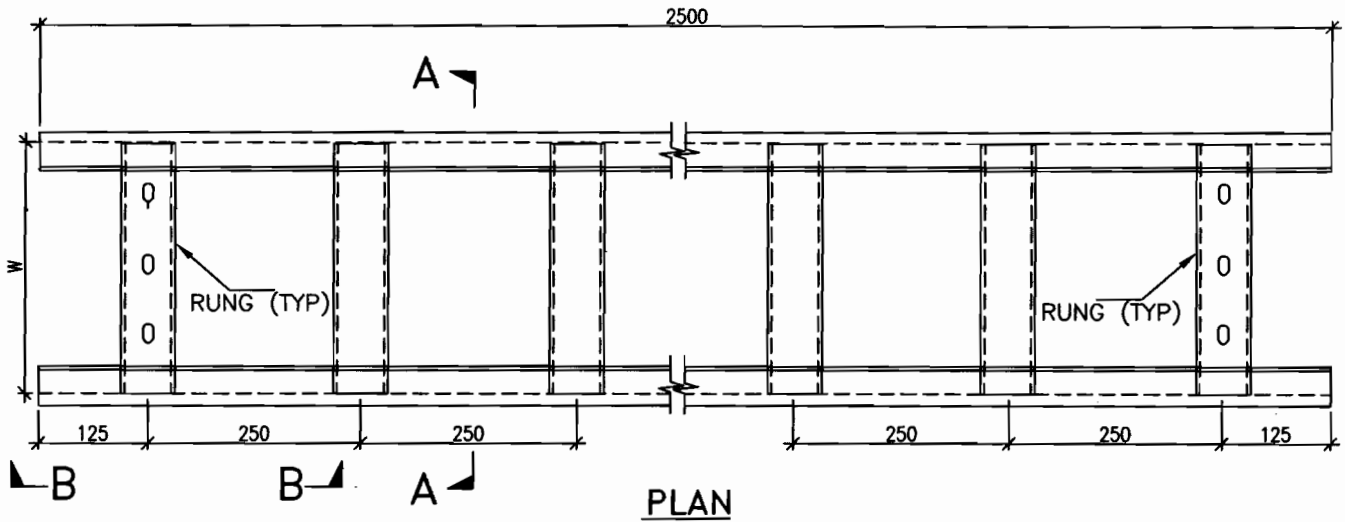
FIGURE-6

ISMC 150 TO SUPPORT
PRE-FEBRICATED CABLE RACK

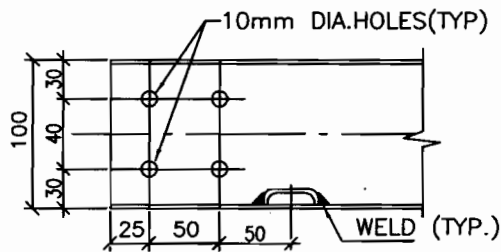
NOTE:-

- 1. ALL DIMENSIONS ARE IN MM.

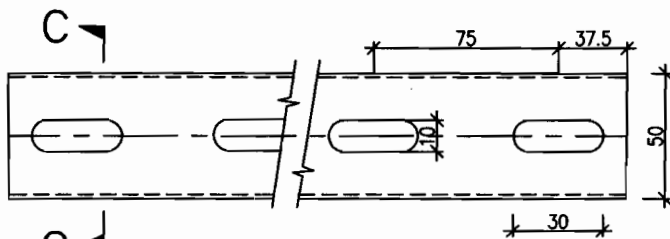
Signature



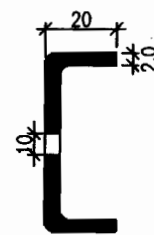
SECTION A-A



SECTION B-B



RUNG PLAN

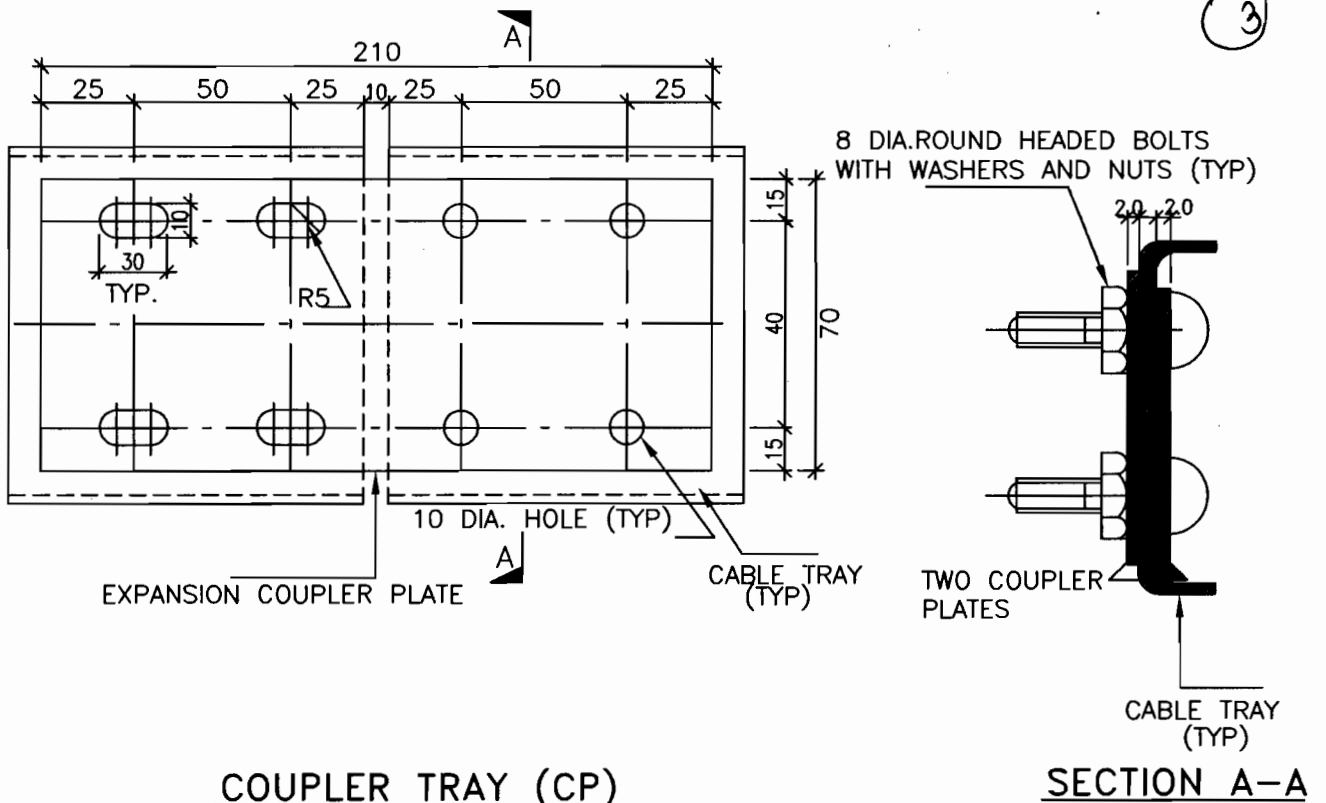


SECTION C-C

W	750	600	300	200
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Saon' Un

3



**COUPLER TRAY (CP)
(TYP) FOR LADDER TYPE**

MATERIAL -14 GAUGE (2.00MM) GALVANISED M.S SHEET

NOTE:-

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
2. LADDER TYPE CABLE TRAY SHALL BE FABRICATED FROM MILD STEEL WITH 2MM THICK.
3. SIDE COUPLER PLATE SHALL BE FABRICATED FROM 2MM THICK GALVANISED M.S. FLAT.
4. ALL NUTS, BOLTS AND WASHERS SHALL BE ZINC PASSIVATED.
5. CABLE TRAY ASSEMBLIES SHALL BE FABRICATED AS PER IS : 1079 GRADE "O" / IS : 2026 GRADE "A". OTHERWISE SPECIFIED.
6. CABLE TRAYS, SIDE COUPLER PLATES & CABLE RACK ASSEMBLIES SHALL BE HOT DIP GALVANISED AS PER IS : 2629
7. FABRICATION TOLERANCE ±5MM TO BE ALLOWED.
8. TOLERANCE ON THICKNESS ±0.2 MM TO BE ALLOWED. OTHERWISE SPECIFIED.
TOLERANCE ON DIMENSION - AS PER IS 1852.

Signature

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

Sr. No.	Standard Terms & Conditions TENDER ENQUIRY NO. 284E204 DATED: 15/01/15 DUE DATE: 10/02/15
	<p>f) For any technical clarification please contact :</p> <p>Sh. Saroj Kumar, Manager (TBEM), TBG, BHEL, Advant Navis Business park, Tower A 5th Floor, Sector- 142, Greater Noida Expressway, UP -201305 Email: sarojkumar@bhel.in Tel No 0120-6748527</p> <p>For any commercial clarification please contact official below :</p> <p>Shri Himanshu Kanaskar, Dy. Manager (TBMM), TBG, BHEL, Advant Navis Business park, Tower A 5 th Floor, 7 , Sector- 142, Greater Noida Expressway, UP -201305 Email: kanaskar@bhel.in Tel No 0120- 6748532 , 8470</p> <p>g) Price bid should contain only rates / prices, otherwise bid shall be liable for rejection.</p> <p>h) Price bid submitted along with the bid shall remain valid up to validity of offer. Unsolicited Supplementary / Revised price bid submitted during validity period of offer, unless asked by BHEL, shall not be considered. Withdrawal of quotation by the bidder, at any stage after its opening, may entail blacklisting of vendor.</p> <p>i) Enquiry condition for where the scope against this tender includes Installation and Commissioning of the equipment / material: NOT APPLICABLE</p>
2.	<p>PRICES:</p> <p>A. Prices shall be on PVC basis as per IEEMA Formula for TLA&H with ceiling of $\pm 30\%$. (IEEMA formula for TLA & H is applicable as on date, Any revisions in future, The IEEMA formula applicable as on date of dispatch)</p> <p>B. The prices shall be quoted on domestic basis.</p> <p>C. The prices are to be quoted on Ex-works basis. The break-up of prices shall be as under : -</p> <p>a) Ex-works Price: Ex-Works price including packing & forwarding Charges.</p> <p>b) Excise Duty: Exempted Against PAC (Project Authority Certificate by RRVUNL) and Mega Power Status Certificate issued by GOI.</p> <p>c) Sales Tax: ST / VAT / CST (against C form) as applicable to be quoted extra as percentage in un-priced and price bid. In case of inter-state sale-in-transit supplier/vendor will have to provide E1/E2 form.</p> <p>d) Entry tax / Octroi Charges: Any Entry tax / Octroi applicable at destination / destination state shall be paid extra on proof of such payment.</p> <p>e) Freight & Insurance: Freight and Transit Insurance for door delivery up to destination/store is to be quoted.</p> <p>f) Type Test charges: If asked in the technical specification, is to be quoted</p>

Sr. No.	Standard Terms & Conditions TENDER ENQUIRY NO. 284E204 DATED: 15/01/15 DUE DATE: 10/02/15
	<p>separately for each Test along with taxes and duties applicable on them.</p> <p>g) Erection / Commissioning supervision charges: If asked in the technical specification, to be quoted separately along with taxes and duties applicable on them.</p> <p>Note: The purchase order shall be placed on Ex-works basis.</p>
3.	<p>TERMS OF PAYMENT:</p> <p>100% payment along with taxes, duties, Freight & Insurance within 60 days from the date of receipt of complete invoice in TBG, BHEL with following documents in 3 sets (Original + 2 copies).</p> <ul style="list-style-type: none"> • Received LR & Material Receipt Confirmation (MRC) from site • Excise invoice (where ED re-imburement is required) • Packing List (Case-wise) • Copy of Contract Performance Bank Guarantee • Transit insurance Certificate from insurance Co or intimation of Transit Insurance duly endorsed by insurance Co. • MICC issued by BHEL • Guarantee Certificate
4.	<p>INTEREST LIABILITY: In case of any delay in payment due to any reason, BHEL shall not pay any interest on delayed payment.</p>
5.	<p>GUARANTEE: The equipment / material shall be guaranteed for 18 months from the date of material receipt at destination or 12 months from the date of commissioning, whichever is earlier. The defective material / component shall be replaced free of cost at site.</p>
6.	<p>PERFORMANCE BANK GUARANTEE: Bidder shall furnish along with first invoice Performance BG / deposit as per one of following 3 options.</p> <p><u>Option A</u> A single rolling Bank Guarantee of Rs 20 lakhs initially valid for one year for all the orders being executed for Transmission Business Group, BHEL.</p> <p><u>Option B</u> BG for 10% of the total Ex-works PO value, valid for 24 months from the date of first delivery. PO value at the time of first invoice for the particular order shall be considered for calculation of BG amount.</p> <p><u>Option C</u> Retention of 10% of the total Ex-works PO value by BHEL from the first bill in lieu of Performance Bank Guarantee, to be released after expiry of 24 months from the date of first delivery.</p> <p>The Bank guarantee shall be from State Bank of India / State bank of Hyderabad / State Bank of Travancore / State Bank of Mysore / Canara Bank / Bank of Baroda / Punjab National Bank / Deutsche Bank / HDFC Bank / Standard Chartered Bank / CITI Bank /</p>

Sr. No.	Standard Terms & Conditions TENDER ENQUIRY NO. 284E204 DATED: 15/01/15 DUE DATE: 10/02/15
	ICICI Bank / IDBI Bank / HSBC / any other Nationalized Bank. The original BG should be sent by issuing Bank directly to AGM (Finance), TBG, BHEL
7.	FINAL ENGINEERING DOCUMENTATION: Final documentation as called in the specification is to be submitted within 3 months from the date of dispatch of material.
8.	INSPECTION: BHEL / customer / third party shall inspect equipment / material before despatch. Stage inspection during manufacturing may also be carried out. Material to be despatched only after getting Despatch Clearance from BHEL. Supplier shall send inspection call on prescribed format or website only, with an advance notice of 15 days. Vendor shall forward all inspection and test reports for issue of MICC by BHEL. Road Permit Form request should also be given along with Inspection call.
9.	DESPATCH DOCUMENTS: Following despatch documents are to be immediately sent to purchaser on despatch: <ul style="list-style-type: none"> • Copy of Invoice and LR • Packing List (Case-wise) • Insurance Certificate
10.	DELIVERY PERIOD: Bidder to specify delivery period in weeks from the date of LOI/PO. Note: LR date or Invoice date whichever is later shall be considered as delivery date.
11.	DELAYED DELIVERY: In case of delay in execution of order beyond the lot wise contractual delivery, an amount of ½ % of total Ex-Works Value per week or part thereof subject to maximum of 10% of total Ex-Works Value of P.O. will be withheld.
12.	VALIDITY: The offer shall be valid for 120 days from the due date of opening.
13.	ACCEPTANCE / REJECTION OF TENDER: BHEL reserves the right to reject in full or part, any or all tenders without assigning any reason thereof. BHEL also reserves right to vary the quantities mentioned in the tender.
14.	EVALUATION: Comparative statement shall be prepared based on quantity basis unless otherwise indicated in the enquiry. Evaluation of offers shall be done on the basis of delivered cost to BHEL.
15.	DEVIATION: The bids having deviation(s) w.r.t. tender are liable for rejection. However, BHEL, at its

Sr. No.	Standard Terms & Conditions TENDER ENQUIRY NO. 284E204 DATED: 15/01/15 DUE DATE: 10/02/15
	discretion, may load the prices for evaluation of offer as per Loading Criteria for identified deviations mentioned in clause No. 22.
16.	ARBITRATION: All cases of disputes emanating from and relating to this contract shall be referred to the sole arbitration of Unit Head / GM, BHEL or any other person (including an employee of BHEL, even though he had to deal with the matter relating to this contract in any manner) nominated by him to act as sole arbitrator. The arbitration shall be under 'The Arbitration and Conciliation Act 1996' and the rules thereunder as amended from time to time. The arbitrator may from time to time with the consent of the parties enlarge the time for making and publishing the award. The arbitrator shall give a reasoned award. The decision of the arbitrator shall be final & binding upon both the parties. The venue of arbitration shall be Delhi.
17.	LEGAL SETTLEMENT: All suits/claims in respect of this contract shall be in the courts having jurisdiction at Delhi.
18.	SUBCONTRACTING : In case further subcontracting of BHEL order or part thereof is envisaged by supplier, the same can be done after written permission is obtained from BHEL. However it shall not absolve the supplier of the responsibility of fulfilling BHEL purchase order requirements.
19.	RISK PURCHASE: In case the successful bidder fails to supply or fails to comply with the terms & conditions of the purchase order, BHEL reserves the right to source such material / component / equipment / system from any other agency at the risk and cost of the successful bidder.
20.	ADJUSTMENT OF RECOVERY: Any amount payable by the supplier / vendor under any of the condition of this contract shall be liable to be adjusted against any amount payable to the supplier / vendor under any other works / contract awarded to him by any BHEL unit. This is without prejudice to any other action as may be deemed fit by BHEL.
21.	FORCE MAJEURE CONDITION: If by reason of war, civil commotion, act of god, Government restrictions, strike, lockout which are not in control of supplier the deliveries are delayed, supplier shall not be held responsible.
22.	LOADING CRITERIA FOR DEVIATIONS TAKEN BY BIDDER ON: <u>25.1.TERMS OF PAYMENT:</u> If a bidder asks for payment within specified no. of days from the date of receipt of invoice with complete documents as per "Terms of Payment" at sr. No. 3 above, loading to be done as follows: a) Base rate of SBI (as applicable on the date of techno commercial bid opening) + 6 % shall be considered for loading for the period of relaxation sought by the bidder. b) 60 days - No loading <u>25.2. DELAYED DELIVERY / PENALTY DUE TO DELAYED DELIVERY:</u> Loading for not accepting this clause / accepting only on un delivered portion shall be the maximum amount specified in this clause. <u>25.3 GUARANTEE:</u> Normally BHEL will not accept deviation against this clause and offer

Sr. No.	Standard Terms & Conditions TENDER ENQUIRY NO. 284E204 DATED: 15/01/15 DUE DATE: 10/02/15
	may be ignored on this deviation, however If the offered guarantee period is less than the tender guarantee period the ex- works prices shall be loaded for the difference in the period (higher of the difference with respect to guarantee required from date of delivery and date of commissioning) @ 2.5 % per year for number of months(fractional months to be rounded off to next higher)
23.	QUANTITY VARIATION: Quantity may change to the order of +/- 25 % during contract stage as well as completion of execution of purchase order.
24.	TECHNICAL SPECIFICATIONS: 1. TB-XXX-316-143 Rev.No.02 for Cable Rack Assembly 2. TB-XXX-316-141 Rev.No.04 for Cable Tray Material
25.	INTENDED BENEFITS FOR MSE SUPPLIERS: MSE suppliers can avail the intended benefits only if they submit along with offer, attested copies of either EM II certificate having deemed validity (Two years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or EM II certificate along with CA certificate (Format enclosed as per Annexure I) applicable for the year, certifying quantum of investment in plant & machinery within the permissible limit as per the act for relevant status (Micro or Small) where the deemed validity of EM II is over. Date to be reckoned for determining the deemed validity will be the last date of technical bid submission. Non submission of such documents will lead to consideration of their bids at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier till the supplier submits these documents.
26	Pre Qualifying Requirement : 1. Bidder shall be manufacturer of Cable Trench Material. 2. Bidder must have supplied the Cable Trench Material for substation/switchyard/power plant in 2 years from the date of technical bid opening i.e. 03.12.12. Only those Techno-Commercially acceptable Vendors will be considered for Reverse Auction/ Price bid opening whose approval is obtained from Customer M/s. RRVUNL. It shall be the responsibility of respective bidder to provide the requisite documents as required by customer for vendor approval after techno-commercial evaluation of the bids.”

Seal of the bidder

Signature of the bidder

SCHEDULE OF PRICE

Enquiry No 284E204 Date: 15/01/15
(BIDDERS TO STRICTLY ENSURE SUBMITTING THE PRICE BIDS IN THIS FORMAT)

RRVUNL SURATGARH

SL. NO.	DESCRIPTION OF ITEM	UNIT	QUANTITY	UNIT PRICE EX. WORKS (Rs.)	TOTAL EX. WORKS (Rs.)	UNIT FREIGHT & INSURANCE UP TO SITE (Rs.)	TOTAL FREIGHT & INSURANCE UP TO SITE (Rs.)	Excise DutyNIL..... OF COL 6 (Rs.)	CST/VAT/ST @.....% OF COL 6 +9 (Rs.) AGAINST FORM "C"	F.O.R. DESTINATION PRICE (Rs.) COL (6+8+9+10)
1	2	3	4	5	6	7	8	9	10	11
1	4- Tier cable Rack Assembly as per Fig. 1 of Technical specification	MT	6.35750					Exempted against PAC		
2	3- Tier cable Rack Assembly as per Fig. 2 of Technical specification	MT	13.05410							
3	2- Tier cable Rack Assembly as per Fig. 3 of Technical specification	MT	6.41625							
4	2- Tier cable Rack Assembly as per Fig. 4 of Technical specification	MT	3.52620							
5	4- Tier under hung (both side) cable Rack Assembly as per Fig. 5 of Technical specification	MT	5.96445							
6	4- Tier under hung (one side) cable Rack Assembly as per Fig. 6 of Technical specification	MT	0.78450							
7	750MM wide, 100MM high, 2mm thickness (min) galvanised mild steel slotted rung type ladder cable trays each 2.5m long with 2 nos. side coupler plate, along with 8 mm dia bolts with nuts washers for each number of cable tray	MT	22.80000							
8	600MM wide, 100MM high, 2mm thickness (min) galvanised mild steel slotted rung type ladder cable trays each 2.5m long with 2 nos. side coupler plate, along with 8 mm dia bolts with nuts washers for each number of cable tray	MT	39.15500							
9	300MM wide, 100MM high, 2mm thickness (min) galvanised mild steel slotted rung type ladder cable trays each 2.5m long with 2 nos. side coupler plate, along with 8 mm dia bolts with nuts washers for each number of cable tray	MT	12.08400							
10	200MM wide, 100MM high, 2mm thickness (min) galvanised mild steel slotted rung type ladder cable trays each 2.5m long with 2 nos. side coupler plate, along with 8 mm dia bolts with nuts washers for each number of cable tray	MT	4.75200							
Total										

NOTE:

- PLEASE NOTE THAT UNPRICED COPY OF PRICE BID (i.e. WITH ALL PRICES BLANKED) SHALL BE FURNISHED ALONG WITH TECHNO-COMMERCIAL BID.
- REQUIRED COPIES OF FORMAT BE MADE & DETAILS MAY BE ANNEXED.
- THE PRICES MUST BE QUOTED IN THE PRESCRIBED UNIT ONLY.
- SALES TAX RATE AS APPLICABLE FOR SPECIFIED DESTINATION SHALL BE QUOTED. IN CASE OF CST, RATE AGAINST "C" FORM SHALL BE QUOTED.
- IN CASE OF VARIED ED SLAB RATES, CONFIRM YOUR OPTION FOR "X" OR "Y". (STRIKE OFF WHICH IS NOT APPLICABLE) IF NO OPTION IS MENTIONED "X" SHALL BE TAKEN.
- For any variation in Item description/quantity given in Tech. Spec shall be final.

- THE VENDORS MUST INDICATE THE APPLICABLE TARIFF NOS. UNDER WHICH ED AND / OR CST WOULD BE PAID BY THEM TO THE TAX AUTHORITIES.
- IF A VENDOR SUBMITS AN OFFER WITH REDUCED ED AND OR CST APPLICABLE THAN NORMALLY PAID ON SUCH ITEMS, THEY SHOULD SUBMIT NECESSARY DOCUMENTARY PROOF FOR THE SAME.
- "X" THE MAXIMUM ED SLAB RATE BE CONSIDERED FOR PRICE COMPARISON. IN THE EVENT OF ORDER ED AT ACTUAL BE PAID.
- "Y" THE QUOTED ED RATE BE CONSIDERED FOR PRICE COMPARISON. IN THE EVENT OF ORDER ED AT ACTUAL RATE LIMITED TO QUOTED RATE BE PAID.

SIGNATURE & SEAL OF TENDERER



TENDER ENQUIRY NO. 284E204 DATE: 15/01/15

SCHEDULE OF COMMERCIAL DEVIATION

The following are the deviations/ variations exception from the General Terms and Conditions:

SL. NO.	CLAUSE NO. OF GENERAL TERMS AND CONDITION	STATEMENT OF DEVIATION

- **In case, this schedule is not submitted, it will be presumed that the equipment/ material to be supplied under this contract is deemed to be in compliance with the General Terms and Conditions.**
- If there is NIL deviation, even then the format to be filled as **NIL DEVIATION**.

Note: Continuation Sheets of like size and format may be used as per the Bidder's Requirement and shall be annexed to this scheduled.

Place: -

Date: -

Signature of the authorized representative of

Bidder's name:.....

Designation.....

Company Seal:.....



SCHEDULE OF TECHNICAL DEVIATION

The following are the deviations/ variations exception from the Specification:

SECTION	CLAUSE NO. / PAGE NO.	STATEMENT OF DEVIATION/ VARIATIONS/EXCEPTIONS

- **In case, this schedule is not submitted, it will be presumed that the equipment/ material to be supplied under this contract is deemed to be in compliance with the General Terms and Conditions.**
- If there is NIL deviation, even then the format to be filled as **NIL DEVIATION**.

Note: Continuation Sheets of like size and format may be used as per the Bidder's Requirement and shall be annexed to this scheduled.

Place: -

Date: -

Signature of the authorized representative of

Bidder's Name:.....

Designation:.....

Company Seal:.....

ACTIVITY SCHEDULE**(To be filled – up by the supplier)**

NOTE: This format is to be submitted in original only, duly filled in. Reproduction of this format on bidder's letter head or on other paper is not acceptable.

SL. NO.	ACTIVITY		ACTIVITY TIME IN WEEKS	CUMULATIVE TIME IN WEEKS FROM LOI/PO DATE	REMARKS IF ANY
1.	Submission of P.O Acceptance	Max 1 week			
2.	Submission of documents necessary for getting manufacturing clearance like Drawings, date sheet etc.				
3.	Review and Approval of documents and issue of manufacturing clearance	'BY BHEL'			
4.	Manufacturing Time				
5.	Inspection	'BY BHEL'			
6.	Issue of MICC and other documents like Road Permits etc.	'BY BHEL'			
7.	Dispatch				

- Note :
- 1) For Sl. No. 4) Inspection call for entire lot to be issued 2 weeks in advance. Date given in call for inspection should be within the period indicated in "A" for completion of activity at Sl. No. 5.
 - 2) Supplier must ensure the completeness and correctness of the requisite documents before submission for approval. Delay in approval on account of incomplete / inadequate information shall be the responsibility of supplier.
 - 3) Inspection call should be given in the prescribed format only. Inspection calls not in the prescribed format shall not be entertained.
 - 4) Qty to be offered for inspection should be in accordance within Delivery-schedule – lot. BHEL reserves the right not to entertain multiple inspection calls for a Delivery – lot and delay on this account shall be the responsibility of Supplier.

Signature & Seal of
Supplier
Date: