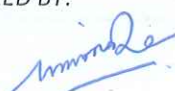
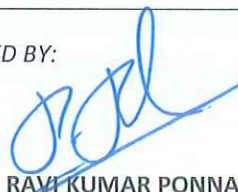
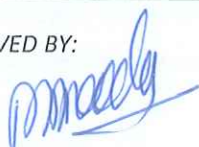
 <p>Maharatna Company ISG-BANGALORE</p>	<p>5X800 MW YADADRI THERMAL POWER STATION: ENQUIRY SPECIFICATION FOR SUPPLY OF GI HANDRAILS</p>	<p>SPECIFICATION NO. IS-1-15-2001/085</p>
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**ENQUIRY SPECIFICATION FOR SUPPLY OF  
GI HANDRAILS**

1. COVER SHEET	PAGE 1 OF 4
2. SECTION – 1 PROJECT & SITE INFORMATION	PAGE 2 OF 4
3. SECTION – 2 SCOPE OF SUPPLY	PAGE 3 OF 4
4. SECTION – 3 TECHNICAL SPECIFICATION	PAGE 4 OF 4
5. SECTION – 4 INSPECTION & TESTING	PAGE 4 OF 4

<p>PREPARED BY: SIGN  NAME: ANIMESH DAS</p>	<p>CHECKED BY: SIGN  NAME: RAVI KUMAR PONNA</p>	<p>APPROVED BY: SIGN  NAME: PENCHAL REDDY</p>
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ISSUED BY: ENGINEERING (CIVIL)	REV. NO. 00	DATE: 21.06.23	SHEET 1 OF 4
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**5X800 MW YADADRI THERMAL POWER STATION:  
ENQUIRY SPECIFICATION FOR SUPPLY OF  
GI HANDRAILS**

SPECIFICATION NO.  
IS-1-15-2001/085

**SECTION – 1:**

**PROJECT & SITE INFORMATION:**


**YADADRI THERMAL POWER STATION**

**PROJECT INFORMATION**

1	Name of the Project	YADADRI Thermal Power Station
2	Station Capacity	5X800 MW ( Coal based )
3	Owner	Telangana State Power Generation Corporation Limited ( <b>TSGENCO</b> )
4	Site Location	Site is located 7 km from the NH5.
5	Latitude	16° 42'20.40 N
6	Longitude	79° 34'41.56 E
7	Nearest Town	30 Km Miryalaguda
8	Nearest Railway Station	6.5 Km Damercherla
9	Nearest Airport	130 Kms (Vijayawada)
10	<b>Site Conditions</b>	
	Ambient Temperature	
	Daily minimum ( average)	10°C
	Daily maximum ( average)	47°C
	Design Ambient Temperature	50°C
	Ambient temperature ( performance)	38°C
	Relative Humidity for design / efficiency	48-84 %
	Annual rainfall, mm	600 mm
	Plant Elevation above MSL	85 m above MSL
	Wind Pressure	As per the latest revision of IS 875/1987

*mmrda*

ISSUED BY: ENGINEERING (CIVIL)	REV. NO. 00	DATE: 21.06.23	SHEET 2 OF 4
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 BHEL Maharatna Company ISG-BANGALORE	<b>5X800 MW YADADRI THERMAL POWER STATION:          ENQUIRY SPECIFICATION FOR SUPPLY OF          GI HANDRAILS</b>	SPECIFICATION NO. IS-1-15-2001/085
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**SECTION – 2:**

**SCOPE OF SUPPLY:**

Galvanized Handrails shall be supplied to the extent of sizes & quantities as given in **Table-1** and as per approved drawing Nos **BCC-SNE-BHEL-ISG-BAH-F12, BCC-SNE-BHEL-ISG-BAH-F13 & BCC-SNE-BHEL-ISG-BAH-F14.**


These materials shall be delivered to project site located at 5x800 MW YADADRI TPS-Nalgonda, Telangana.w

**TABLE 1**

SI No.	Size / Specification	Qty (MT)	Remarks
1.	32 NB heavy class G.I. pipes	8.50	32 NB heavy class G.I. pipes shall be as per IS-1239. All galvanization works shall have 610 gm/sqm of deposit and conform to IS: 2629.

*mmmda*

ISSUED BY: ENGINEERING (CIVIL)	REV. NO. 00	DATE: 21.06.23	SHEET 3 OF 4
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	<b>5X800 MW YADADRI THERMAL POWER STATION: ENQUIRY SPECIFICATION FOR SUPPLY OF GI HANDRAILS</b>	SPECIFICATION NO. IS-1-15-2001/085
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### SECTION – 3

#### TECHNICAL SPECIFICATION:

1. All steel shall be of tested quality and shall be in lengths not less than 6 meters.
2. All steel materials should be free from any non-metallic inclusion, cracks, surface flaws, laminations and imperfect edges. If at any point of time during processing/ fabrication, any structural component is found to contain the defect of lamination the same shall be replaced on intimation at free of cost including transportation.
3. Steel shall not be pitted and should be free from scales and rust.

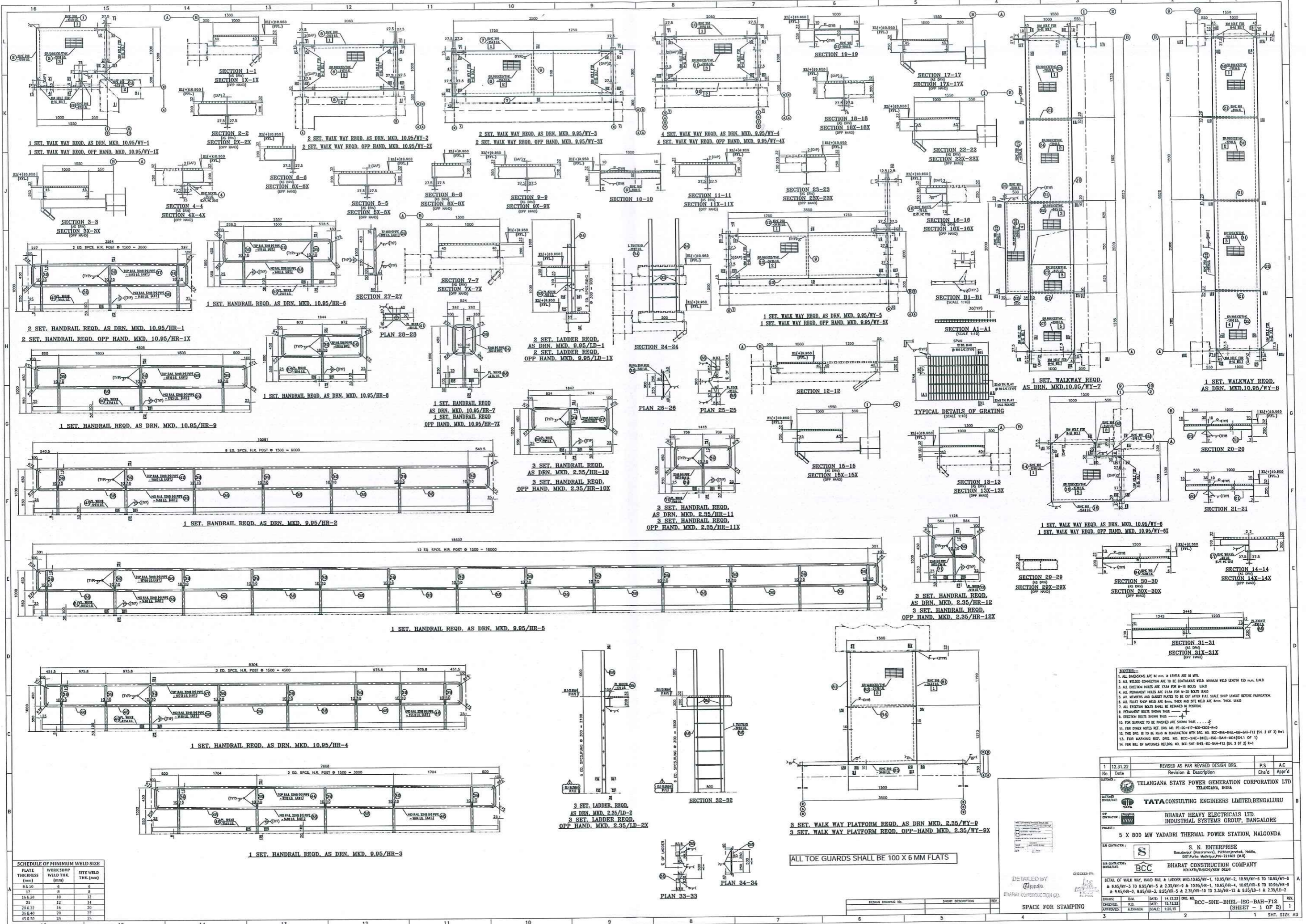
### SECTION – 4:

#### INSPECTION & TESTING:

1. All materials shall be of tested quality.
2. The material inspection and correlated mill test certificates in accordance with relevant IS codes shall be furnished by the supplier in 2 copies along with supply of material.

*mmrda*

ISSUED BY: ENGINEERING (CIVIL)	REV. NO. 00	DATE: 21.06.23	SHEET 4 OF 4
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**SCHEDULE OF MINIMUM WELD SIZE**

PLATE THICKNESS (mm)	WORK SHOP WELD THK. (mm)	SITE WELD THK. (mm)
8.6-10	6	8
12	8	10
16.6-20	10	12
25	12	14
28.3-32	15	20
36.6-40	20	22
45.6-50	25	27

- NOTES:-**
1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN MFL.
  2. ALL WELDED CONNECTIONS ARE TO BE CONTINUOUS WITH MINIMUM WELD LENGTH 100 MM. USED
  3. ALL EJECTION HOLES ARE 1250 FOR W-20 BOLTS USED
  4. ALL PERMANENT HOLES ARE 25MM FOR W-20 BOLTS USED
  5. ALL MEMBERS AND BRACKET PLATES TO BE CUT AFTER FINAL SCALE SHOP LIFT BEFORE FABRICATION
  6. ALL FLUET SHOP HOLES ARE 6MM. THEIR HOLE SIZE WITH ARE 6MM. THICK. USED
  7. ALL EJECTION HOLES SHALL BE RETURNED IN POSITION
  8. PERMANENT BOLTS SHOWN THIS
  9. EJECTION BOLTS SHOWN THIS
  10. FOR SURFACE TO BE FINISHED ARE SHOWN BASE
  11. FOR OTHER NOTES REF. Dwg. No. RC-26-417-400-000-000
  12. THE Dwg. IS TO BE READ IN CONJUNCTION WITH Dwg. No. BCC-SNE-BHEL-EG-SM-F12 (Pt. 2 of 2) & 1
  13. FOR WELDING REF. Dwg. No. BCC-SNE-BHEL-EG-SM-F12 (Pt. 2 of 2) & 1
  14. FOR BILL OF MATERIALS REF. Dwg. No. BCC-SNE-BHEL-EG-SM-F12 (Pt. 2 of 2) & 1

1	12.31.22	REVISED AS PAR REVISED DESIGN DRG.	P.S	A.C
No.	Date	Revision & Description	Ch'd	App'd
<p>DESIGNED BY: <b>TATANGANA STATE POWER GENERATION CORPORATION LTD</b> TELANGANA, INDIA</p> <p>CONSULTANT: <b>TATA CONSULTING ENGINEERS LIMITED, BANGALURU</b></p> <p>BY: <b>BHARAT HEAVY ELECTRICALS LTD.</b> INDUSTRIAL SYSTEMS GROUP, BANGALORE</p> <p>PROJECT: <b>5 X 800 MW YADADRI THERMAL POWER STATION, NALGONDA</b></p> <p>BY CONTRACTOR: <b>S. N. ENTERPRISE</b> BANGALURU (REGISTRATION NO. POK/04/000001), 507 Purus, Madhavapur, PO-721602 (W.R)</p> <p>BY CONTRACTOR: <b>BCC</b> <b>BHARAT CONSTRUCTION COMPANY</b> KALYAN, RAJGIRI, HYDRABAD</p>				
<p>DETAILED BY: <b>BRHANE CONSTRUCTION CO.</b></p> <p>DESIGN DRAWING NO. _____ SHORT DESCRIPTION _____ REV. _____</p> <p>DATE: 14.12.22 Dwg. No. _____ SCALE: 1:20, 1:10, 1:5</p> <p>DATE: 15.12.22 SCALE: 1:20, 1:10, 1:5</p> <p>DATE: 15.12.22 SCALE: 1:20, 1:10, 1:5</p>				

ALL TOE GUARDS SHALL BE 100 X 6 MM FLATS




SPACE FOR STAMPING


DESIGN DRAWING NO.	SHORT DESCRIPTION	REV.

ERUCTION MKD.	BOX MKD.	Required Qty	Billed Qty	ITEM NO.	Item Description	WIDTH	LENGTH IN mm.	Qty	UNIT. WT.	GROSS WT. (KGS)	SUBSTRATED	TOTAL WT. (KGS)	Remarks
10.95/WY-1,1X	1	1+1	2	1	ISMC 200X75		1548	1	22.30	69.041		69.041	0.378
			2	2	ISMC 200X75		1298	1	22.30	57.891		57.891	
			2	2A	ISMC 200X75		623	1	22.30	27.785		27.785	
			2	2B	ISMC 200X75		373	1	22.30	16.636		16.636	
10.95/WY-2,2X	1	2+2	4	5	ISMC 200X75		2103	1	22.30	187.588		187.588	0.797
			4	5	ISMC 200X75		2103	1	22.30	187.588		187.588	
			4	6	GR. 32	980	2103	1	51.20	422.081		422.081	
										797.257		797.257	
9.95/WY-3,3X	1	2+2	4	7	ISMC 200X75		3543	2	22.30	632.071		632.071	1.381
			4	8	GR. 32	900	3543	1	51.20	711.094		711.094	
			4	9	ISMC 100X50		988	1	9.56	37.781		37.781	
										1390.946		1390.946	
9.95/WY-4,4X	1	4+4	8	10	ISMC 200X75		2056	1	22.30	366.790		366.790	1.559
			8	10	ISMC 200X75		2056	1	22.30	366.790		366.790	
			8	11	GR. 32	980	2056	1	51.20	825.295		825.295	
										1558.875		1558.875	
9.95/WY-5,5X	1	1+1	2	12	ISMC 200X75		3498	2	22.30	311.843		311.843	0.682
			2	13	GR. 32	980	3498	1	51.20	350.831		350.831	
			2	9	ISMC 100X50		988	1	9.56	38.891		38.891	
										681.565		681.565	
10.95/WY-6,6X	1	1+1	2	14	ISMC 100X50		1288	1	9.56	24.818		24.818	0.260
			2	15	ISMC 100X50		1548	1	9.56	29.598		29.598	
			2	15A	ISMC 100X50		508	1	9.56	11.434		11.434	
			2	15B	ISMC 100X50		348	1	9.56	6.654		6.654	
			2	16	GR. 32	1288	1538	1	51.20	202.849		202.849	
			2	17	ISMC 125X65		60	1	13.10	1.572		1.572	
			2	18	ISMC 175X75		75	1	19.60	2.940		2.940	
										279.865		279.865	
10.95/WY-7	1	1	1	19	ISMC 250X80		6816	2	30.60	417.139		417.139	0.828
			1	20	ISMC 100X50		500	2	9.56	9.560		9.560	
			1	21	ISMC 100X50		988	3	9.56	28.278		28.278	
			1	22	ISMC 100X50		2000	1	9.56	19.120		19.120	
			1	23	GR. 32	980	1753	1	51.20	87.959		87.959	
			1	24	GR. 32	980	1790	1	51.20	89.815		89.815	
			1	25	GR. 32	595	945	2	51.20	57.577		57.577	
			1	26	GR. 32	525	1980	1	51.20	53.222		53.222	
1	27	GR. 32	980	1300	1	51.20	65.229		65.229				
10.95/WY-8	1	1	1	28	ISMC 250X80		6816	2	30.60	417.139		417.139	0.748
			1	21	ISMC 100X50		986	3	9.56	28.278		28.278	
			1	29	GR. 32	980	1753	1	51.20	87.959		87.959	
			1	30	GR. 32	980	1790	1	51.20	89.815		89.815	
9.95/LD-1,1X	1	2+2	4	33	PL 10	82	100	2	78.50	5.150		5.150	0.169
			4	34	ISA 75X75X8		1992	2	8.90	141.830		141.830	
			4	35	PL 8	91	91	2	62.80	4.160		4.160	
			4	36	MS ROUND 20		580	3	2.50	17.400		17.400	
10.95/HR-1,1X	1	2+2	4	37	32 NBMS		4692	1	3.14	58.932		58.932	0.227
			4	38	32 NBMS		1480	2	3.14	37.178		37.178	
			4	39	32 NBMS		982	3	3.14	37.002		37.002	
			4	40	PL 8	100	3544	1	62.80	89.025		89.025	
9.95/HR-2	1	1	1	42	32 NBMS		11607	1	3.14	36.634		36.634	0.152
			1	38	32 NBMS		1480	6	3.14	27.883		27.883	
			1	39	32 NBMS		982	7	3.14	21.584		21.584	
			1	41	PL 8	80	80	7	62.80	2.813		2.813	
9.95/HR-3	1	1	1	43	PL 8	100	10031	1	62.80	62.995		62.995	0.114
			1	44	32 NBMS		9312	1	3.14	29.240		29.240	
			1	38	32 NBMS		1480	2	3.14	9.294		9.294	
			1	39	32 NBMS		982	5	3.14	15.417		15.417	
10.95/HR-4	1	1	1	45	32 NBMS		1884	2	3.14	10.576		10.576	0.146
			1	41	PL 8	80	80	5	62.80	2.010		2.010	
			1	46	PL 8	100	7545	1	62.80	47.383		47.383	
										113.920		113.920	
9.95/HR-5	1	1	1	39	32 NBMS		982	13	3.14	40.085		40.085	0.279
			1	50	32 NBMS		19708	1	3.14	61.883		61.883	
			1	38	32 NBMS		1480	12	3.14	55.766		55.766	
			1	41	PL 8	80	80	13	62.80	5.225		5.225	
10.95/HR-6	1	1	1	51	PL 8	100	18552	1	62.80	116.507		116.507	0.040
			1	39	32 NBMS		982	2	3.14	6.167		6.167	
			1	52	32 NBMS		4119	1	3.14	12.934		12.934	
			1	38	32 NBMS		1480	1	3.14	4.647		4.647	
10.95/HR-7,7X	1	1+1	2	39	32 NBMS		982	1	3.14	6.167		6.167	0.023
			2	54	32 NBMS		1552	1	3.14	9.747		9.747	
			2	41	PL 8	80	80	1	62.80	0.804		0.804	
			2	55	PL 8	100	474	1	62.80	5.953		5.953	
							22.671		22.671				

CONT.-A

ERUCTION MKD.	BOX MKD.	Required Qty	Billed Qty	ITEM NO.	Item Description	WIDTH	LENGTH IN mm.	Qty	UNIT. WT.	GROSS WT. (KGS)	SUBSTRATED	TOTAL WT. (KGS)	Remarks
10.95/HR-8	1	1	1	39	32 NBMS		982	1	3.14	3.083		3.083	0.029
			1	56	32 NBMS		4392	1	3.14	13.791		13.791	
			1	41	PL 8	80	80	1	62.80	0.402		0.402	
10.95/HR-9	1	1	1	39	32 NBMS		982	3	3.14	9.250		9.250	0.072
			1	58	32 NBMS		6510	1	3.14	20.441		20.441	
			1	59	32 NBMS		1783	2	3.14	11.197		11.197	
			1	41	PL 8	80	80	3	62.80	1.206		1.206	
			1	60	PL 8	100	4756	1	62.80	29.868		29.868	
										71.962		71.962	
2.35/WY-9,9X	1	3+3	6	61	ISMC 200X75		2442	2	22.30	653.479		653.479	2.384
			6	62	GR. 32	1460	2428	1	51.20	1103.905		1103.905	
			6	63	ISMC 200X75		3600	1	22.30	481.680		481.680	
			6	64	ISMC 100X50		1488	1	9.56	85.352		85.352	
2.35/LD-2,2X	1	3+3	6	65	PL 12	230	230	2	94.20	59.798		59.798	0.404
			6	66	ISA 75X75X8		3090	2	8.90	330.012		330.012	
			6	35	PL 8	91	91	2	62.80	6.241		6.241	
			6	38	MS ROUND 20		580	6	2.50	52.200		52.200	
			6	36A	PL 10	100	170	2	78.50	16.014		16.014	
										404.467		404.467	
2.35/HR-10,10X	1	3+3	6	39	32 NBMS		982	1	3.14	18.501		18.501	0.168
			6	67	32 NBMS		4199	1	3.14	79.109		79.109	
			6	41	PL 8	80	80	1	62.80	2.412		2.412	
			6	68	PL 8	100	1797	1	62.80	67.711		67.711	
2.35/HR-11,11X	1	3+3	6	39	32 NBMS		982	1	3.14	18.501		18.501	0.135
			6	69	32 NBMS		3340	1	3.14	62.926		62.926	
			6	41	PL 8	80	80	1	62.80	2.412		2.412	
			6	70	PL 8	100	1368	1	62.80	51.546		51.546	
2.35/HR-12,12X	1	3+3	6	39	32 NBMS		982	1	3.14	18.501		18.501	0.114
			6	71	32 NBMS		2760	1	3.14	51.998		51.998	
			6	41	PL 8	80	80	1	62.80	2.412		2.412	
			6	72	PL 8	100	1078	1	62.80	40.619		40.619	
							113.530		113.530				
Total WT in MT												11.107	

- NOTES:-**
- ALL DIMENSIONS ARE IN mm. & LEVELS ARE IN MTR.
  - ALL WELDED CONNECTION ARE TO BE CONTINUOUS WELD. MINIMUM WELD LENGTH 150 mm. U.N.O
  - ALL ERECTION HOLES ARE 17.5# FOR M-16 BOLTS U.N.O
  - ALL PERMANENT HOLES ARE 21.5# FOR M-20 BOLTS U.N.O
  - ALL MEMBERS AND GUSSET PLATES TO BE CUT AFTER FULL SCALE SHOP LAYOUT BEFORE FABRICATION.
  - ALL FILLET SHOP WELD ARE 6mm. THICK AND SITE WELD ARE 8mm. THICK. U.N.O
  - ALL ERECTION BOLTS SHALL BE RETAINED IN POSITION.
  - PERMANENT BOLTS SHOWN THUS 
  - ERECTION BOLTS SHOWN THUS 
  - FOR SURFACE TO BE FINISHED ARE SHOWN THUS 
  - FOR OTHER NOTES REF. DRG. NO. PE-DG-417-600-C002-R=0
  - THIS DRG. IS TO BE READ IN CONJUNCTION WITH DRG. NO. BCC-SNE-BHEL-ISC-BAH-F12 (SH. 1 OF 2) R=1
  - FOR MARKING REF. DRG. NO. BCC-SNE-BHEL-ISC-BAH-M04(SH.1 OF 1)

1	12.31.22	REVISED AS PAR REVISED DESIGN DRG.	P.S	A.C
No.	Date	Revision & Description	Che'd	Appr'd
CUSTOMER:  TELANGANA STATE POWER GENERATION CORPORATION LTD TELANGANA, IND				






CONT.-A

ERECTION MKD.	Required Qty	Billed Qty	ITEM NO.	Item Description	WIDTH	LENGTH IN mm.	Qty	UNT. WT.	SUBSTRATED	TOTAL WT. (KGS)	Remarks	
ST-1	1	1	1	ISA 75X75X8		200	2	8.90		3.560		
		1	2	ISMC 250X80		4387	1	30.60			134.242	
		1	2X	ISMC 250X80		4387	1	30.60			134.242	
		1	3	ISMC 250X80		1029	1	30.60			31.487	
		1	3X	ISMC 250X80		1029	1	30.60			31.487	
		1	4	ISMC 250X80		4702	1	30.60			143.881	
		1	4X	ISMC 250X80		4702	1	30.60			143.881	
		1	5	ISMC 250X80		1404	1	30.60			42.962	
		1	5A	PL 12		185	230	1	94.20		4.008	
		1	6	ISMC 250X80		254	1	30.60			7.772	
1	6A	PL 12		185	230	1	94.20		4.008			
1	7	PL 6		63	250	58	0.74		0.676			
1	7A	CHQPL 6		62	1176	28	3.44		7.023			
1	8	FL PL. 32 X 5		1174	198	1.48			340.554			
1	8A	6 MM. SQ. BER		210	308	0.03			1.940			
1	9	PL 8		100	150	6	62.80		5.652			
1	10	GR. 32		1180	1241	1	51.20		74.976			
									1112.351	1.112		
HR-1	1	1	11	32 NB MS		995	4	3.14		12.497		
		1	12	PL 8	80	80	4	62.80		1.608		
		1	13	32 NB MS		6245	1	3.14		19.609		
		1	14	32 NB MS		1212	3	3.14		11.417		
									45.131	0.045		
HR-1X	1	1	11	32 NB MS		995	4	3.14		12.497		
		1	12	PL 8	80	80	4	62.80		1.608		
		1	13	32 NB MS		6245	1	3.14		19.609		
		1	14	32 NB MS		1212	3	3.14		11.417		
									45.131	0.045		
HR-2	1	1	15	32 NB MS		982	2	3.14		6.167		
		1	16	PL 8	70	70	2	62.80		0.615		
		1	17	32 NB MS		2267	1	3.14		7.118		
		1	18	PL 6	100	842	1	47.10		3.966		
1	19	32 NB MS		480	1	3.14		1.507				
									19.373	0.019		
HR-2X	1	1	15	32 NB MS		982	2	3.14		6.167		
		1	16	PL 8	70	70	2	62.80		0.615		
		1	17	32 NB MS		2267	1	3.14		7.118		
		1	18	PL 6	100	842	1	47.10		3.966		
1	19	32 NB MS		480	1	3.14		1.507				
									19.373	0.019		
HR-3	1	1	11	32 NB MS		995	4	3.14		12.497		
		1	12	PL 8	80	80	4	62.80		1.608		
		1	20	32 NB MS		6326	1	3.14		19.864		
		1	14	32 NB MS		1212	3	3.14		11.417		
									45.386	0.045		
HR-3X	1	1	11	32 NB MS		995	4	3.14		12.497		
		1	12	PL 8	80	80	4	62.80		1.608		
		1	20	32 NB MS		6326	1	3.14		19.864		
		1	14	32 NB MS		1212	3	3.14		11.417		
									45.386	0.045		
HR-4	1	1	15	32 NB MS		982	2	3.14		6.167		
		1	16	PL 8	70	70	2	62.80		0.615		
		1	21	32 NB MS		2811	1	3.14		8.827		
		1	22	32 NB MS		780	1	3.14		2.449		
		1	23	PL 6	100	1265	1	47.10		5.958		
									24.016	0.024		
SP-1	1	1	24	PL 16	180	230	2	125.60		10.400		
		1	25	ISMC 200X75		2182	4	22.30		194.634		
		1	26	ISMB 200X100		1420	1	25.40		36.068		
		1	27	PL 16	180	230	2	125.60		10.400		
									251.502	0.252		
SP-2	1	1	28	ISMB 300X140		3995	1	46.00		183.770		
		1	29	ISA 100X100X12		140	1	17.70		2.478		
		1	30	PL 12	120	140	1	94.20		1.583		
		1	31	ISA 100X100X12		200	1	17.70		3.540		
1	32	PL 12	120	200	1	94.20		2.261				
									193.632	0.194		
ST-2	1	1	33	PL 16	100	470	2	125.60		11.806		
		1	34	ISMC 250X80		4285	1	30.60		131.121		
		1	34X	ISMC 250X80		4285	1	30.60		131.121		
		1	35	ISMC 250X80		1091	1	30.60		33.385		
		1	35X	ISMC 250X80		1091	1	30.60		33.385		
		1	36	ISMC 250X80		3997	1	30.60		122.308		
		1	36X	ISMC 250X80		3997	1	30.60		122.308		
		1	37	ISMC 200X75		1313	1	22.30		29.280		
		1	37X	ISMC 200X75		1313	1	22.30		29.280		
		1	38	ISMC 200X75		1168	1	22.30		26.046		
		1	39	PL 10	184	215	2	78.50		6.211		
		1	40	GR. 32	1180	1303	1	51.20		78.722		
		1	41	GR. 32	1180	1244	1	51.20		75.158		
		1	7	PL 6	63	250	52	0.74		0.606		
1	7A	CHQPL 6	62	1176	25	3.44		6.270				
1	8	FL PL. 32 X 5		1174	175	1.48		304.066				
1	8A	6 MM. SQ. BER		210	275	0.03		1.733				
1	9	PL 8	100	150	3	62.80		2.826				
									1145.632	1.146		

CONT.-A

ERECTION MKD.	Required Qty	Billed Qty	ITEM NO.	Item Description	WIDTH	LENGTH IN mm.	Qty	UNT. WT.	SUBSTRATED	TOTAL WT. (KGS)	Remarks
HR-5	1	1	11	32 NB MS		995	4	3.14		12.497	
		1	12	PL 8	80	80	4	62.80		1.608	
		1	42	32 NB MS		1212	3	3.14		11.417	
		1	43	32 NB MS		5656	1	3.14		17.760	
									43.282	0.043	
HR-5X	1	1	11	32 NB MS		995	4	3.14		12.497	
		1	12	PL 8	80	80	4	62.80		1.608	
		1	42	32 NB MS		1212	3	3.14		11.417	
		1	43	32 NB MS		5656	1	3.14		17.760	
									43.282	0.043	
HR-6	1	1	15	32 NB MS		982	2	3.14		6.167	
		1	16	PL 8	70	70	2	62.80		0.615	
		1	44	32 NB MS		2314	1	3.14		7.266	
		1	45	32 NB MS		590	1	3.14		1.853	
1	46	PL 6	100	880	1	47.10		4.145			
									20.046	0.020	
HR-6X	1	1	15	32 NB MS		982	2	3.14		6.167	
		1	16	PL 8	70	70	2	62.80		0.615	
		1	44	32 NB MS		2314	1	3.14		7.266	
		1	45	32 NB MS		590	1	3.14		1.853	
1	46	PL 6	100	880	1	47.10		4.145			
									20.046	0.020	
HR-7	1	1	11	32 NB MS		995	4	3.14		12.497	
		1	12	PL 8	80	80	4	62.80		1.608	
		1	47	32 NB MS		5258	1	3.14		16.510	
		1	48	32 NB MS		1089	3	3.14		10.258	
									40.873	0.041	
HR-7X	1	1	11	32 NB MS		995	4	3.14		12.497	
		1	12	PL 8	80	80	4	62.80		1.608	
		1	47	32 NB MS		5258	1	3.14		16.510	
		1	48	32 NB MS		1089	3	3.14		10.258	
									40.873	0.041	
HR-8	1	1	15	32 NB MS		982	2	3.14		6.167	
		1	16	PL 8	70	70	2	62.80		0.615	
		1	49	32 NB MS		2752	1	3.14		8.641	
		1	50	32 NB MS		780	1	3.14		2.449	
1	51	PL 6	100	1219	1	47.10		5.741			
									23.613	0.024	
HR-8A	1	1	15	32 NB MS		982	2	3.14		6.167	
		1	16	PL 8	70	70	2	62.80		0.615	
		1	52	32 NB MS		2486	1	3.14		7.806	
		1	53	32 NB MS		740	1	3.14		2.324	
1	54	PL 6	100	880	1	47.10		4.145			
									21.057	0.021	
PF-1	1	1	55	GR. 32	1239	3595	1	51.20		228.055	0.228
PS-1	1	1	56	ISMC 250X80		2545	1	30.60		77.877	0.078
PS-2	1	1	57	ISMC 250X80		3738	1	30.60		114.383	0.114
HR-9	1	1	15	32 NB MS		982	2	3.14		6.167	
		1	16	PL 8	70	70	2	62.80		0.615	
		1	58	32 NB MS		3568	1	3.14		11.197	
		1	59	32 NB MS		730	2	3.14		4.584	
1	60	PL 6	100	1990	1	47.10		9.373			
									35.327	0.035	
HR-10	1	1	15	32 NB MS		982	2	3.14		12.334	
		1	16	PL 8	70	70	2	62.80		1.231	
		1	61	32 NB MS		4767	1	3.14		14.968	
		1	62	32 NB MS		880	3	3.14		8.290	
1	63	PL 6	100	3140	1	47.10		14.789			
									51.612	0.052	
Total WT In MT										3.707	

**NOTES:-**  
 1. ALL DIMENSIONS ARE IN mm. & LEVELS ARE IN MTR.  
 2. ALL WELDED CONNECTION ARE TO BE CONTINUOUS WELD. MINIMUM WELD LENGTH 150 mm. U.N.O  
 3. ALL ERECTION HOLES ARE 17.5φ FOR M-16 BOLTS U.N.O  
 4. ALL PERMANENT HOLES ARE 21.5φ FOR M-20 BOLTS U.N.O  
 5. ALL MEMBERS AND GUSSET PLATES TO BE CUT AFTER FULL SCALE SHOP LAYOUT BEFORE FABRICATION.  
 6. ALL FILLET SHOP WELD ARE 6mm. THICK AND SITE WELD ARE 8mm. THICK. U.N.O  
 7. ALL ERECTION BOLTS SHALL BE RETAINED IN POSITION.  
 8. PERMANENT BOLTS SHOWN THUS   
 9. ERECTION BOLTS SHOWN THUS   
 10. FOR SURFACE TO BE FINISHED ARE SHOWN THUS   
 11. FOR OTHER NOTES REF. DRG. NO. PE-DG-417-600-C002-R1  
 12. THIS DRG. IS TO BE READ IN CONJUNCTION WITH DRG. NO. BCC-SNE-BHEL-ISG-BAH-F13 (SH. 1 OF 2) R=2  
 13. FOR MARKING REF. DRG. NO. BCC-SNE-BHEL-ISG-BAH-M05(SH.1 OF 1)

2	18.03.23	REVISED AS MKD.	S.S	A.C
1	17.03.23	REV		

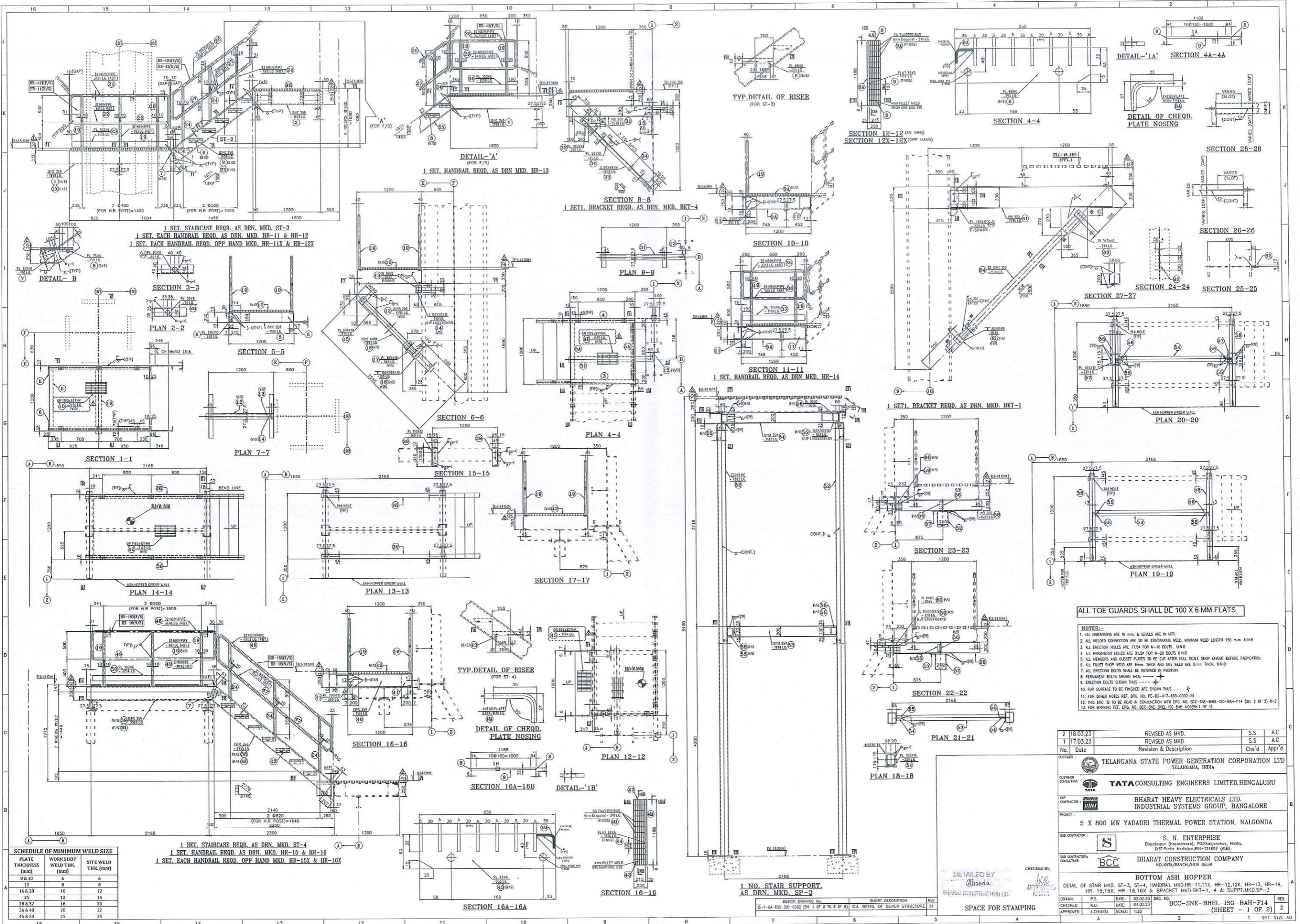


PLATE THICKNESS (mm)	WORK SHOP WELD THK (mm)	SITE WELD THK (mm)
8 & 10	6	6
12	8	8
16 & 20	10	12
25	12	14
28 & 32	16	20
36 & 40	20	22
45 & 50	25	25

- ALL TOE GUARDS SHALL BE 100 X 6 MM FLATS**
- NOTES:-**
1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN MTR.
  2. ALL WELDED CONNECTION ARE TO BE CONTINUOUS WELD. MINIMUM WELD LENGTH 150 MM. UNDO
  3. ALL ERECTION HOLES ARE 175# FOR M-14 BOLTS UNDO
  4. ALL PERMANENT HOLES ARE 215# FOR M-20 BOLTS UNDO
  5. ALL MEMBERS AND GUSSET PLATES TO BE CUT AFTER FINAL SCALE SHOP LAYOUT BEFORE FABRICATION.
  6. ALL FLEET SHOP WELD ARE 8mm THICK AND SITE WELD ARE 8mm THICK UNDO.
  7. ALL ERECTION BOLTS SHALL BE RETAINED IN POSITION.
  8. PERMANENT BOLTS SHOWN THIS --->
  9. ERECTION BOLTS SHOWN THIS --->
  10. TOP SURFACE TO BE FINISHED ARE SHOWN THIS --->
  11. FOR OTHER NOTES REF. Dwg. No. PE-DC-117-600-C002-R1
  12. THIS Dwg. IS TO BE READ IN CONJUNCTION WITH Dwg. No. BCC-SNE-BHEL-15G-BAH-F14 (SH. 2 OF 2) R-2
  13. FOR MARKING REF. Dwg. No. BCC-SNE-BHEL-15G-BAH-MG(SH.1 OF 1)

2	18.03.23	REVISED AS MKD.	S.S	A.C
1	17.03.23	REVISED AS MKD.	S.S	A.C
No.	Date	Revision & Description	Ch'e'd	App'r'd
OWNER: <b>TELANGANA STATE POWER GENERATION CORPORATION LTD</b> TELANGANA, INDIA				
CONSULTANT: <b>TATA CONSULTING ENGINEERS LIMITED, BENGALURU</b>				
CONTRACTOR: <b>BHARAT HEAVY ELECTRICALS LTD.</b> INDUSTRIAL SYSTEMS GROUP, BANGALORE				
PROJECT: <b>5 X 800 MW YADADRI THERMAL POWER STATION, NALGONDA</b>				
SUB CONTRACTOR: <b>S. N. ENTERPRISE</b> Boudupur (Hapuram), P.O. Kharajanchik, Midsi, Dist. Purnia, Madhya Pradesh - 214602 (M.P.)				
SUB CONTRACTOR'S CONSULTANT: <b>BCC BHARAT CONSTRUCTION COMPANY</b> KOLKATA/RANCHI/NEW DELHI				
DETAIL OF STAIR MKD. ST-3, ST-4, HANDRAIL MKD. HR-11, 11X, HR-12, 12X, HR-13, HR-14, HR-15, 15X, HR-16, 16X & BRACKET MKD. BKT-1, 4 & SUPPLY MKD. SP-3				
DRAWN	P.S.	DATE: 02.02.23	ERC NO.	REV.
CHECKED	K.D.	DATE: 04.02.23		
APPROVED	A.CHANDRA	SCALE: 1:20		

DETAILED BY: **Alindia**  
BHPARAT CONSTRUCTION CO.  
SPACE FOR STAMPING




DESIGN DRAWING No.	SHORT DESCRIPTION	REV.
IS-1-GA-699-301-C002 (SH. 1 OF 8 TO 8 OF 8)	G.A. DETAIL OF SUPER STRUCTURE	01

CONT.-A


ERECTION MKD.	Required Qty	Billed Qty	ITEM NO.	Item Description	WIDTH	LENGTH IN mm.	Qty	UNIT. WT.	SUBSTRATED	TOTAL WT. (KGS)	Remarks	
ST-3	1	1	1	ISMC 250X80		1958	1	30.60		59.915		
		1	1X	ISMC 250X80		1958	1	30.60		59.915		
		1	2	ISMC 250X80		1903	1	30.60		58.232		
		1	2X	ISMC 250X80		1903	1	30.60		58.232		
		1	3	ISMC 250X80		1353	1	30.60		41.402		
		1	4	ISMC 250X80		1753	1	30.60		53.642		
		1	5	ISMC 250X80		1166	1	30.60		35.680		
		1	5A	ISMC 250X80		1166	2	30.60		71.359		
		1	6	PL 10		215	230	2	78.50		7.764	
		1	7	PL 8		100	150	2	62.80		1.884	
		1	8	PL 6		63	250	12	0.74		0.140	
		1	8A	CHQPL 6		62	1176	5	3.44		1.254	
		1	9	FL PL. 32 X 5		1174	35	1.48		60.813		
		1	9A	6 MM. SQ. BER		210	55	0.03		0.347		
		1	9B	GR. 32		1155	1180	1	51.20		69.780	
		1	10	GR. 32		1180	2196	1	51.20		132.674	
		1	11	PL 10		200	230	4	78.50		14.444	
		1	12	ISMB 200X100		1235	1	25.40		31.369		
1	13	PL 12		120	200	1	94.20		2.261			
1	14	ISA 100X100X12		130	1	17.70		2.301				
1	15	PL 10		370	375	1	78.50		10.892			
1	16	ISMC 100X50		1297	2	9.56		24.799				
1	17	PL 10		365	365	1	78.50		10.458			
1	18	ISA 100X100X10		130	4	14.90		7.748				
									817.305	0.817		
HR-11	1	1	19	32 NB MS		982	3	3.14		9.250		
		1	20	PL 8		70	70	3	62.80		0.923	
		1	21	32 NB MS		3124	1	3.14		9.809		
		2	22	32 NB MS		680	2	3.14		8.541		
1	23	PL 6		100	1776	1	47.10		8.365			
									36.888	0.037		
HR-11X	1	1	19	32 NB MS		982	3	3.14		9.250		
		1	20	PL 8		70	70	3	62.80		0.923	
		1	21	32 NB MS		3124	1	3.14		9.809		
		2	22	32 NB MS		680	2	3.14		8.541		
1	23	PL 6		100	1776	1	47.10		8.365			
									36.888	0.037		
HR-12	1	1	24	32 NB MS		993	3	3.14		9.354		
		1	25	PL 8		80	80	3	62.80		1.206	
		1	26	32 NB MS		3069	1	3.14		9.637		
1	27	32 NB MS		601	2	3.14		3.774				
									23.971	0.024		
HR-12X	1	1	24	32 NB MS		993	3	3.14		9.354		
		1	25	PL 8		80	80	3	62.80		1.206	
		1	26	32 NB MS		3069	1	3.14		9.637		
1	27	32 NB MS		601	2	3.14		3.774				
									23.971	0.024		
HR-13	1	1	19	32 NB MS		982	2	3.14		6.167		
		1	20	PL 8		70	70	2	62.80		0.615	
		1	28	32 NB MS		2421	1	3.14		7.602		
		1	29	32 NB MS		840	1	3.14		2.638		
1	30	PL 6		100	1208	1	47.10		5.690			
									22.712	0.023		
BKT-4	1	1	31	ISMB 200X100		1579	1	25.40		40.107		
		1	13	PL 12		120	200	1	94.20		2.261	
		1	32	PL 10		185	265	1	78.50		3.848	
		1	33	ISA 65X65X6		1803	2	5.80		20.915		
1	34	PL 10		50	85	2	78.50		0.667			
									67.798	0.068		
HR-14	1	1	19	32 NB MS		982	2	3.14		6.167		
		1	35	32 NB MS		2513	1	3.14		7.891		
		1	20	PL 8		70	70	2	62.80		0.615	
		1	36	32 NB MS		780	1	3.14		2.449		
1	37	PL 6		100	1100	1	47.10		5.181			
									22.303	0.022		
ST-4	1	1	38	ISMC 250X80		2985	1	30.60		91.341		
		1	38X	ISMC 250X80		2985	1	30.60		91.341		
		1	39	ISMC 250X80		2389	1	30.60		73.103		
		1	38X	ISMC 250X80		2389	1	30.60		73.103		
		1	39	PL 12		110	350	2	94.20		7.253	
		1	40	ISMC 250X80		1166	1	30.60		35.680		
		1	41	PL 10		200	230	2	78.50		7.222	
		1	7	PL 8		100	150	1	62.80		0.942	
		1	42	GR. 32		1180	2180	1	51.20		131.707	
		1	43	PL 6		63	250	18	0.74		0.210	
		1	43A	CHQPL 6		62	1176	8	3.44		2.007	
1	44	FL PL. 32 X 5		1174	56	1.48		97.301				
1	44A	6 MM. SQ. BER		210	88	0.03		0.554				
1	45	GR. 32		352	1174	1	51.20		21.158			
									632.922	0.633		


CONT.-A


ERECTION MKD.	Required Qty	Billed Qty	ITEM NO.	Item Description	WIDTH	LENGTH IN mm.	Qty	UNIT. WT.	SUBSTRATED	TOTAL WT. (KGS)	Remarks	
HR-15	1	1	24	32 NB MS		993	3	3.14		9.354		
		1	25	PL 8		80	80	3	62.80		1.206	
		1	46	32 NB MS		4043	1	3.14		12.695		
		1	47	32 NB MS		1045	2	3.14		6.563		
									29.818	0.030		
HR-15X	1	1	24	32 NB MS		993	3	3.14		9.354		
		1	25	PL 8		80	80	3	62.80		1.206	
		1	46	32 NB MS		4043	1	3.14		12.695		
		1	47	32 NB MS		1045	2	3.14		6.563		
									29.818	0.030		
HR-16	1	1	19	32 NB MS		982	3	3.14		9.250		
		1	20	PL 8		70	70	3	62.80		0.923	
		1	48	32 NB MS		3696	1	3.14		11.605		
		1	49	32 NB MS		880	2	3.14		5.526		
1	50	PL 6		100	2254	1	47.10		10.616			
									37.920	0.038		
HR-16X	1	1	19	32 NB MS		982	3	3.14		9.250		
		1	20	PL 8		70	70	3	62.80		0.923	
		1	48	32 NB MS		3696	1	3.14		11.605		
		1	49	32 NB MS		880	2	3.14		5.526		
1	50	PL 6		100	2254	1	47.10		10.616			
									37.920	0.038		
SP-3	1	1	51	PL 16		180	230	2	125.60		10.400	
		1	52	ISMC 200X75		7882	4	22.30		703.074		
		1	53	ISMB 250X125		1998	1	37.30		74.525		
		1	54	ISMB 250X125		2132	1	37.30		79.524		
		1	55	ISA 100X100X12		130	4	17.70		9.204		
		1	56	PL 12		120	130	4	94.20		5.878	
1	57	PL 12		180	230	2	94.20		7.800			
1	58	ISMB 200X100		1527	2	25.40		77.572				
1	59	ISA 100X100X12		120	2	17.70		4.248				
1	60	PL 12		120	120	2	94.20		2.713			
									974.938	0.975		
BKT-1	1	1	61	ISMB 300X140		2235	1	46.00		102.810		
		1	62	PL 12		120	200	1	94.20		2.261	
		1	63	PL 10		365	370	1	78.50		10.601	
		1	64	ISMC 100X50		2520	2	9.56		48.182		
		1	65	ISA 100X100X10		130	4	14.90		7.748		
									171.602	0.172		
Total WT in MT										2.967		

- NOTES:-
- ALL DIMENSIONS ARE IN mm. & LEVELS ARE IN MTR.
  - ALL WELDED CONNECTION ARE TO BE CONTINUOUS WELD. MINIMUM WELD LENGTH 150 mm. U.N.O
  - ALL ERECTION HOLES ARE 17.5φ FOR M-16 BOLTS U.N.O
  - ALL PERMANENT HOLES ARE 21.5φ FOR M-20 BOLTS U.N.O
  - ALL MEMBERS AND GUSSET PLATES TO BE CUT AFTER FULL SCALE SHOP LAYOUT BEFORE FABRICATION.
  - ALL FILLET SHOP WELD ARE 6mm. THICK AND SITE WELD ARE 8mm. THICK. U.N.O
  - ALL ERECTION BOLTS SHALL BE RETAINED IN POSITION.
  - PERMANENT BOLTS SHOWN THUS 
  - ERECTION BOLTS SHOWN THUS 
  - FOR SURFACE TO BE FINISHED ARE SHOWN THUS 
  - FOR OTHER NOTES REF. DRG. NO. PE-DG-417-600-C002-R1
  - THIS DRG. IS TO BE READ IN CONJUNCTION WITH DRG. NO. BCC-SNE-BHEL-ISC-BAH-F14 (SH. 1 OF 2) R=2
  - FOR MARKING REF. DRG. NO. BCC-SNE-BHEL-ISC-BAH-M05(SH.1 OF 1)


2	18.03.23	REVISED AS MKD.	S.S	A.C
1	17.03.23	REVISED AS MKD.	S.S	A.C
No.	Date	Revision & Description	Che'd	Appr'd


CUSTOMER :  **TELANGANA STATE POWER GENERATION CORPORATION LTD**  
TELANGANA, INDIA

CUSTOMER CONSULTANT:  **TATA CONSULTING ENGINEERS LIMITED, BENGALURU**

CHP CONTRACTOR :  **BHARAT HEAVY ELECTRICALS LTD.**  
INDUSTRIAL SYSTEMS GROUP, BANGALORE

PROJECT : **5 X 800 MW YADADRI THERMAL POWER STATION, NALGONDA**

SUB CONTRACTOR :  **S. N. ENTERPRISE**  
Basudevapur (Hazaremore), PO:Khanjanachak, Haldia,  
DIST:Purba Medinipur, PIN-721602 (W.B)

SUB CONTRACTOR'S CONSULTANT:  **BCC BHARAT CONSTRUCTION COMPANY**  
KOLKATA/RANCHI/NEW DELHI

DETAILED BY  
*Ahanda*  
BHARAT CONSTRUCTION CO.

CHECKED BY:  
*K.P.*  
BCC

SPACE FOR STAMPING

DESIGN DRAWING No.	SHORT DESCRIPTION	REV
IS-1-GA-699-301-C002 (SH. 1 OF 8 TO 8 OF 8)	G.A. DETAIL OF SUPER STRUCTURE	01

BILL OF MAT. STAIR MKD. ST-3, ST-4, HAND RAIL MKD. HR-11,11X, HR-12,12X, HR-13, HR-14, HR-15,15X, HR-16,16X, BRACKET MKD. BKT-1 & 4 & SUPPT. MKD. SP-3

DRAWN:	P.S.	DATE:	02.02.23	DRG. NO.	
CHECKED:	K.D.	DATE:	04.02.23	BCC-SNE-BHEL-ISC-BAH-F14	REV.
APPROVED:	A.CHANDA	SCALE:	1:20	(SHEET - 2 OF 2)	2