[illegible]

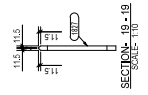
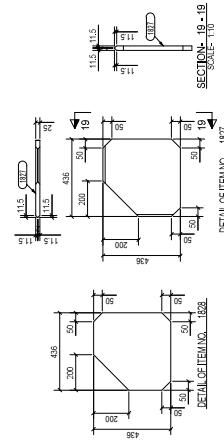
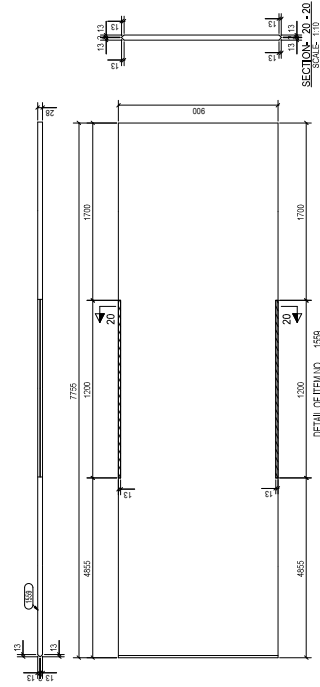
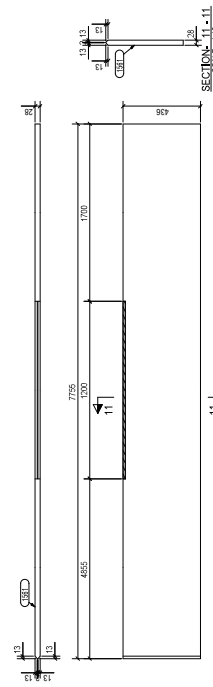
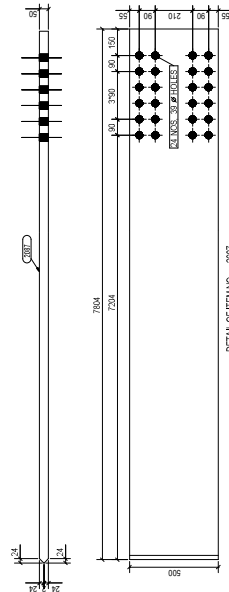
BOLT LIST						
HSG BOLT			WASHER PLATE			
SOURCE	SECTION	LENGTH in mm.	REQD. NOS.	QUANTITY NOS.	SPECIFICATION	REMARKS
E2	10-04-BOLTS	19.0	1	15	AS PER CONTRACT	E2 S/W
E2	16-04-BOLTS	19.0	18	14	AS PER CONTRACT	E2 S/W
					20% WASTAGE	

1. BASE PLATE ITEM'S DETAIL & ASSEMBLY OF
BASE PLATE REFER SH. 3
2. ITEM'S DETAILS OF PART-1 COLUMN &
OTHER'S CONNECTING MEMBER REFER SH. 4
3. FOR WELD SIZE & PROFILE OF PART-1 COLUMN &
CONNECTING MEMBER REFER SH. 1
4. FOR ASSEMBLY DRAWINGS OF COLUMN REFER SH. 1

1. ALL DIMENSIONS ARE IN mm & LEV. ARE IN M. U.S.
2. FOR OTHERS NOTES REFER DRAWING NO. BHFL-S
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH
BHFL-SME-PHIL-COR-ORG-002 (SH 1, 3, 4, 5, 6, 7, 8, 9, 10)

[illegible]



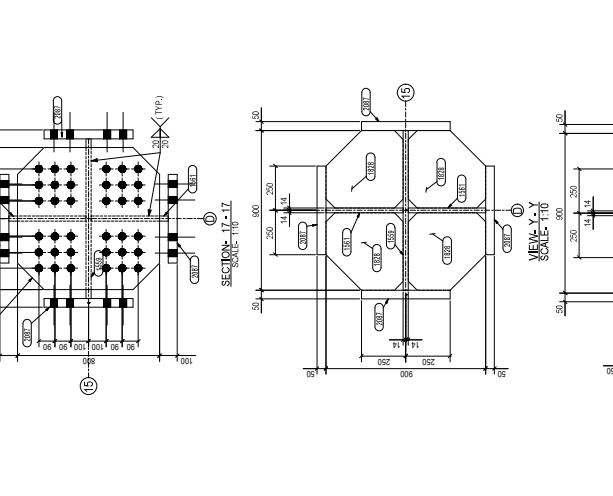
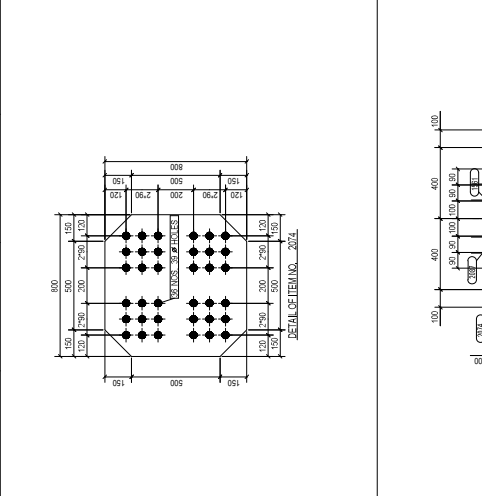
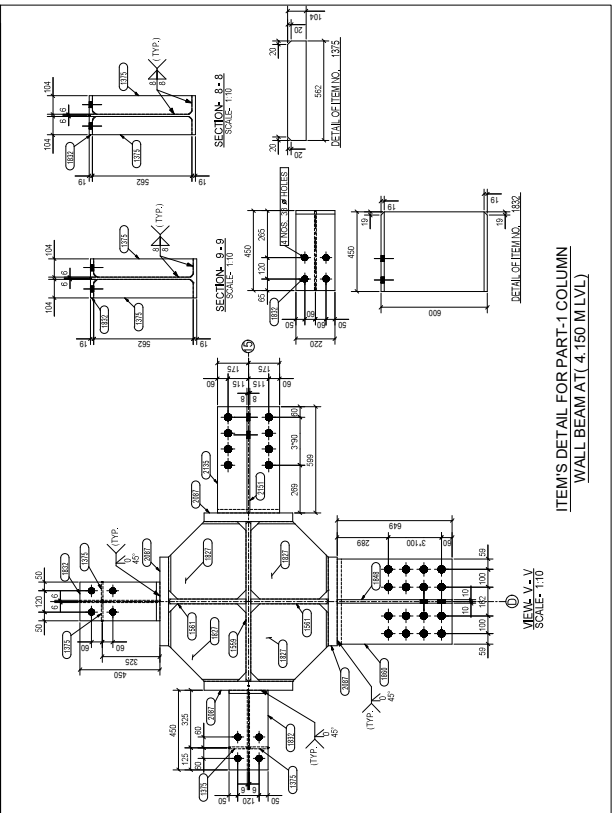
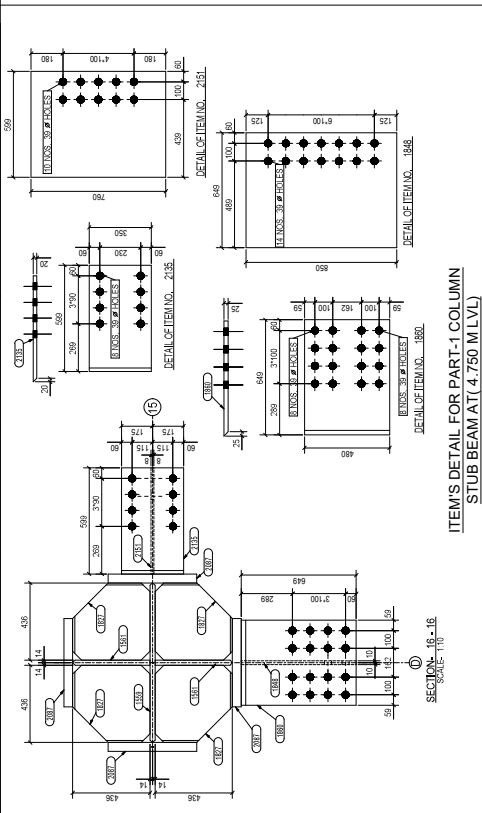
ITEM'S DETAIL OF WEB STIFFENER
CONNECTED TO PART-1 COLUMN

ITEM'S DETAIL FOR PART-1 COLUMN WEB PLATE & FLANGE PLATE

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. FOR OTHERS IN MILLIMETERS
3. THIS DRAWING IS A COPY OF THE ORIGINAL DRAWING

OWNER		TDCS INDIA LIMITED (A PT. OF TDCS - A GOVT. OF INDIA ENTERPRISE)													
ORDER NO.		NTPC LIMITED (A GOVT. OF INDIA ENTERPRISE)													
PROJECT	KINDHA SUPER THERMAL POWER PROJECT (KINDHA - 1366MW)														
CONTRACTOR		BHEL HYDRA ELECTRICALS LTD. POWER SECTION													
DESIGN OFFICE		BHEL HYDRA ELECTRICALS LIMITED DESIGN SECTION													
ORDER NO.		TDCS INDIA LIMITED POWER SECTION													
<table border="1"> <tr> <td>DATE</td> <td>DATE</td> <td>DATE</td> <td>DATE</td> </tr> <tr> <td>10.08.2007</td> <td>10.08.2007</td> <td>10.08.2007</td> <td>10.08.2007</td> </tr> <tr> <td>DESIGNED</td> <td>RECHECK</td> <td>CHECKED</td> <td>DATE</td> </tr> </table>				DATE	DATE	DATE	DATE	10.08.2007	10.08.2007	10.08.2007	10.08.2007	DESIGNED	RECHECK	CHECKED	DATE
DATE	DATE	DATE	DATE												
10.08.2007	10.08.2007	10.08.2007	10.08.2007												
DESIGNED	RECHECK	CHECKED	DATE												
DRAWING TITLE : STRUCTURAL DETAIL DRAWING OF COLUMN NO. 015, ALONG ROW 04															
DRAWING NO. : TDCS/INDIA/POWER/DESIGN/015															
DRAWING DOCUMENT NO. : TEL-396-300-00462															

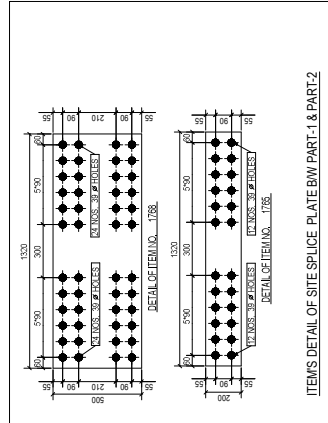
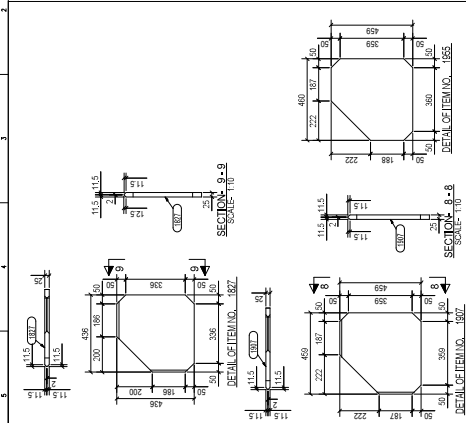


NOTES:

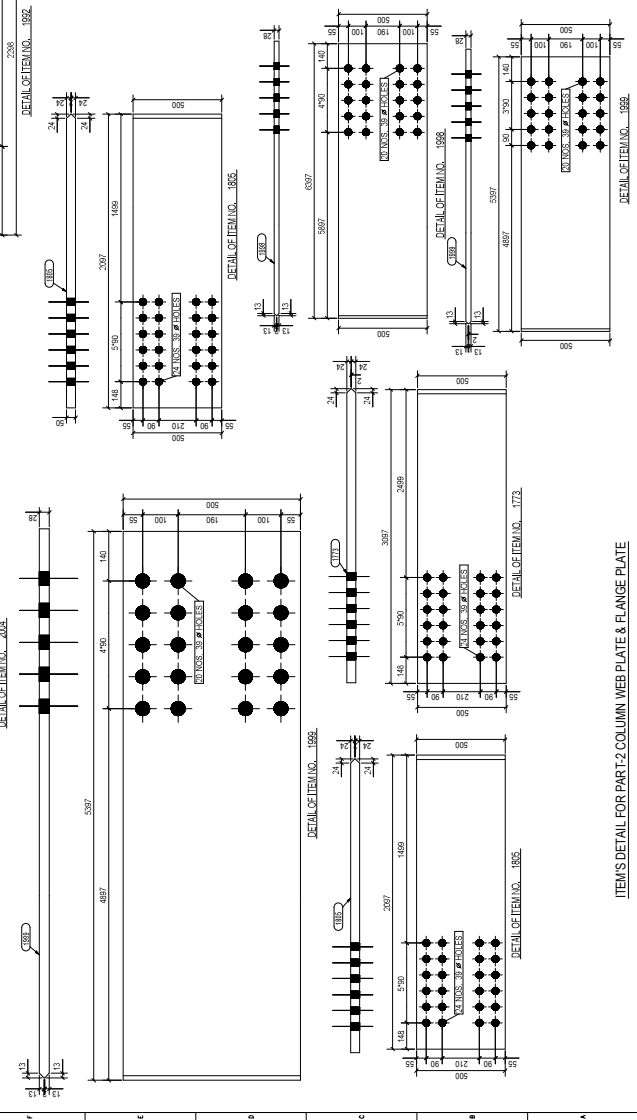
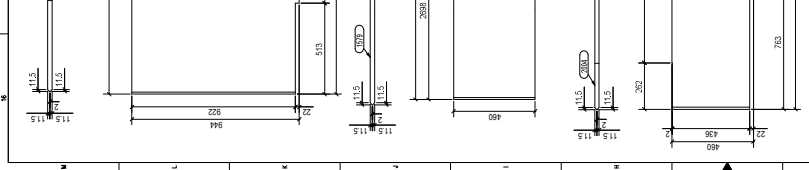
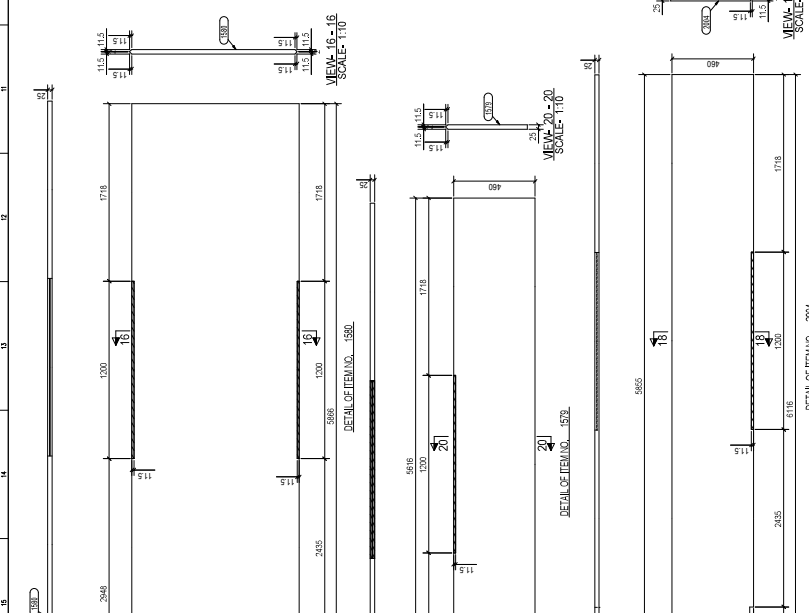
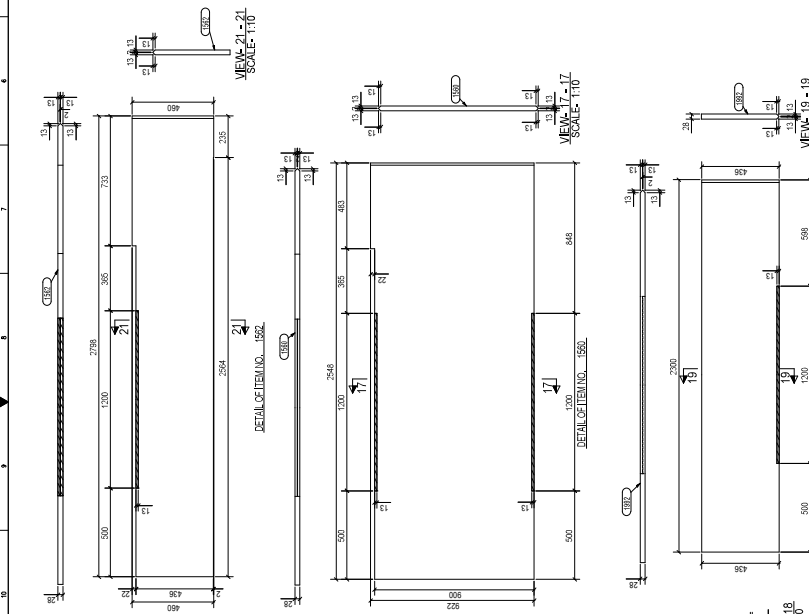
1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
2. FOR OTHERS NOTES REFER DRAWING NO. BHEL-PMB-CORRUG-ACKEN-1.
3. THIS DRAWING IS THE PROPERTY OF BHEL AND IS NOT TO BE REPRODUCED OR COPIED IN ANY FORM WITHOUT THE WRITTEN PERMISSION OF BHEL.
4. BHEL-PMB-CORRUG-ACKEN-1, 1.2.3, 4.5, 6.7, 8.9, 10, 11, 12, 13, 14, 15.

OWNER	THDC INDIA LIMITED
CONSULTANT	NTPC LIMITED
PROJECT	KURJIA SUPER THERMAL POWER PROJECT
CONTRACT	HEAVY HEAVY ELECTRICALS LTD.
DESIGNER	HEAVY HEAVY ELECTRICALS LTD.
CHECKER	HEAVY HEAVY ELECTRICALS LTD.
DATE	20.07.2011
REVISION	1
REVISION	2
REVISION	3
REVISION	4
REVISION	5
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REVISION	9
REVISION	10
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REVISION	97
REVISION	98
REVISION	99
REVISION	100

TYP. SECTION OF PART-1 COLUMN.



ITEM'S DETAIL OF SITE SPLICE PLATE BW PART-1 & PART-2



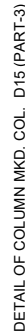
ITEM'S DETAIL FOR PART-2 COLUMN WEB PLATE & FLANGE PLATE

NOTES:

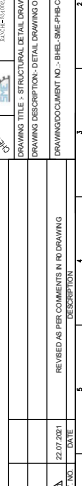
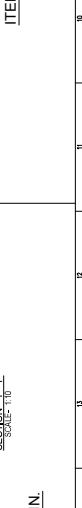
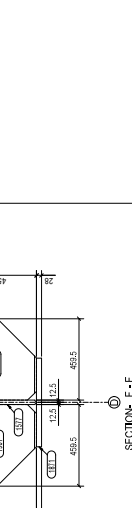
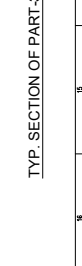
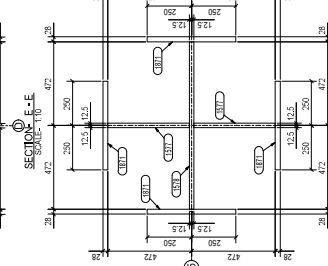
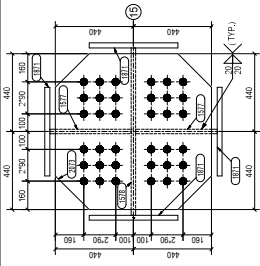
- NOTES:**
1. ALL DIMENSIONS ARE IN mm & LEV. ARE IN M U.O.S.
 2. FOR OTHERS NOTES REFER DRAWING NO. BHEL-SME-PHB-COR-0-RG-042 (SH. 1).
 3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH BHEL-SME-PHB-COR-0-042 (SH. 1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 13 & 14).

OWNER	 NTPC NATIONAL THERMAL POWER CORPORATION	THDC INDIA LIMITED (A P. U. OF GOVT. OF INDIA - GOVT. OF UP)
CONTRACT		NTPC LIMITED NATIONAL THERMAL POWER CORPORATION
PROJECT		KUNJUA SIVTER THERMAL POWER PROJECT (3x660MW)
ENGINEERING	 MWH MWH CONSULTANTS	HEAVY HEAVY ELECTRICALS LTD. HEAVY ELECTRICALS, NEW DELHI
DESIGNER	 MWH MWH CONSULTANTS	HEAVY HEAVY ELECTRICALS LTD. HEAVY ELECTRICALS, NEW DELHI 74-A, MIDC, BANGALORE - 560002, TEL: 080-26540001, FAX: 080-26540002 E-MAIL: hhe@hhe.com, WWW.HHE.COM
DRAWER	 MWH MWH CONSULTANTS	THDC INDIA PROJECTS (PVT. LTD.) ELECTRICITY DIVISION, INDIA E-MAIL: thdc@thdc.co.in, TEL: 011-26104000
DRAWING TITLE	STRUCTURAL DETAIL DRAWINGS FOR CDS	
DRAWING NO.	DRAWING OF COLUMN DETAIL, A1, ALONG R/W	
DRAWING DOCUMENT NO.	THDC-INDIA-CD-000-000	

				DRAWING CODE
R1	2 207 2021		REVISED AS PER COMMENTS IN R10 DRAWING	
REV NO	DATE	DESCRIPTION		



	22.07.2021			DRAWING TITLE - STRUCTURAL DETAIL DRAWINGS FOR PHB CCR
REV NO.	DATE	DESCRIPTION	BY	DRAWING DESCRIPTION - DETAIL DRAWING OF COLUMN AND DS, ALONG ROW D
		REVISED AS PER COMMENTS IN TO DRAWING		
				DRAWING DOCUMENT NO. - BHEL-9ME-PHB-CCR-ORG-0402
				1 SHEET NO. 9 SHEET 1 SCALE 1:1 A0



OWNER	CONSULTANT	PROJECT	CONTRACTOR	SUB CONTRACTOR	DETAILER	OTHER
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[illegible]

- | | | | | | | | | | | | |
|---|------------|---------------------------------------|-------------|--|---|-------------|---|------------|------------|-----------|---|
| A | 22 07 2021 | REVISED AS PER COMMENTS IN RD DRAWING | | DRAWING DOCUMENT NO. - BHEL-SHE-PHIS-CORROSION-042 | | SHEET NO. 1 | | REV. NO. 1 | DATE 12 14 | SCALE 1:1 | |
| | REV. NO. | DATE | DESCRIPTION | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |

ENDORSEMENT SHEET FOR QP REFERENCE/STANDARD/FIELD QUALITY PLAN (RQP/SQP/RFQP/SFQP)

TO BE FILLED BY SUPPLIER AT TIME OF SUBMISSION		To be filled by NTPC	
PROJECT NAME	2X660MW KHURJA-STG PACKAGE	 REVIEW & ENDORSEMENT BY NTPC PROJECT SPECIFIC QP NUMBER ALLOTTED QP NO: REV. NO: **The RQP/SQP/RFQP/SFQP contract shall remain valid for the period of 3 years from the date of signing. If the contract expires before the end of the period, the contract shall be renewed by mutual agreement of the parties. The RQP/SQP/RFQP/SFQP shall be valid for the period of 3 years from the date of signing. If the contract expires before the end of the period, the contract shall be renewed by mutual agreement of the parties. Reason: CAT I Location: NTPCCEOC	
CONTRACT NO	THDC/RKSH/CC-9915-371-FC-NOA-3115 DATED 03.10.2019		
PACKAGE	FACTORY FABRICATED STRUCTURE OF MAIN POWER HOUSE BUILDING (UNIT 1 & 2)		
MAIN SUPPLIER	BHEL		
MANUFACTURERS WORKS & ADDRESS	FSIP, BHEL JAGDISHPUR-AMETHI (U.P.)		
ITEM /EQUIPMENT / SYSTEM/ SUB-SYSTEM DETAILS i.e. MODEL TYPE/SIZE/RATING etc.	COLUMNS, BUILT-UP BEAMS, CRANE GIRDERS, ROOF GIRDERS, PURLINS ETC		
APPROVED QP NO.: RQP/SQP/RFQP/SFQP	AEI/PVUNI./BHEL/NTPC/QAP-01 REV-03 DATED 30.09.2019		
NTPC Approved drawing/ Data Sheet No:	9915-371-110-PEM-QVC-Q-085: MOP FOR STRUCTURAL FABRICATION	(TICK APPLICABLE)	
✓ The project specific technical specification requirements have been incorporated		The QP is endorsed for this project without any change.	
Confirmation by main supplier (TICK WHEREVER APPLICABLE)		The QP is endorsed for this project PACKAGE with changes as indicated.	
I. That the item/ component is identical to that considered for QP approval. OR.		DISTRIBUTION OF ENDORSEMENT OF	
II. That there are minor changes in the item/ component with respect to that considered for QP approval, however the same do not change affect the contents of QP. OR		A) RQP/SQP:	
III. That there are minor changes in the item/ component affect the QP slightly, as-inflated-below / in attached sheet.		1. MAIN SUPPLIER (WITH A COPY OF QP)	
		2. MANUFACTURER	
		3. RIO	
		B) RFQP/SFQP:	
		1. MAIN SUPPLIER (with a copy of QP)	
		2. MANUFACTURER	
SIGN: (Main Supplier) DATE:		NTPC (Reviewed/ Approved by/ Date & Seal)	



Atul Verma, Manager/Q&BE
SIGN: (Manufacturer)

P C Mondal, DGM/Q&BE
DATE: 08.08.2021
P.C. MONDAL

गुण प्रमुख (प्रति पृष्ठ)
Dy. General Manager (Quality-Head)

अधिका. कार्यालय में, अथवा, जहाँ (कोड) 227017
BHEL, FSIP, Jagdishpur, Amethi (U.P.) 227017

Digitally signed by NTPC
Date: 2021.08.17 08:39 IST
Reason: CAT I
Location: NTPCCEOC

ENDORSEMENT SHEET FOR QP/ क्यूपी हेतु पुष्टि शीट
REFERENCE / STANDARD / FIELD QUALITY PLAN (RQP / SQP/RFQP/SFQP)
संदर्भ / मानक / क्षेत्र क्वालिटी प्लान (आरक्यूपी / एसक्यूपी / एसएफक्यूपी / आरएफक्यूपी)

TO BE FILLED IN BY SUPPLIER AT TIME OF SUBMISSION/ जमा करते समय आपूर्तिकर्ता द्वारा भरा जाएगा		To be filled in by NTPC/ एनटीपीसी द्वारा भरा जाएगा	
PROJECT NAME/ परियोजना का नाम		REVIEW & ENDORSEMENT BY NTPC PROJECT	
CONTRACT NO / सविदा सं.		SPECIFIC QP NUMBER ALLOTTED / एनटीपीसी	
PACKAGE/ पैकेज		परियोजना की आवंटित विशिष्ट क्यूपी संख्या द्वारा समीक्षा तथा पुष्टि	
MAIN SUPPLIER/ मुख्य आपूर्तिकर्ता		QP NO क्यूपी सं.:	
MANUFACTURER WORKS & ADDRESS		REV. NO/संशोधन: DATE/ दिनांक:	
निर्माता का कार्य और पता		** The RQP/SQP/RFQP/SFQP once endorsed for a particular contract shall remain valid even though the original QP may have expired or revised, unless / otherwise mutually agreed with the supplier. ①	
ITEM /EQUIPMENT / SYSTEM/ SUB-SYSTEM DETAILS i.e. MODEL TYPE / SIZE /RATING etc.		** आरक्यूपी / एसक्यूपी / आरएफक्यूपी / एसएफक्यूपी एक बार किसी विशेष सविदा (अनुबंध) का समर्थन करता है, तो वही मूल क्यूपी भले ही समाप्त या संशोधित हो गयी हो, वह मान्य होगा, जब तक कि /अन्यथा आपूर्तिकर्ता से पारस्परिक सहमत न हो।①	
मद / उपकरण / प्रणाली / उप-प्रणाली का विवरण अर्थात माडल का प्रकार / आकृति / रेटिंग आदि।		(TICK APPLICABLE)/ (मान्य पर टिक करें)	
APPROVED QP NO.: RQP/SQP/RFQP/SFQP		The QP is endorsed for this project without any change/क्यूपी बिना किसी बदलाव के इस परियोजना के लिए समर्थित है	
अनुमोदित क्यूपी सं.: आरक्यूपी/एसक्यूपी/आरएफक्यूपी/एसएफक्यूपी		The QP is endorsed for this project PACKAGE with changes as indicated./क्यूपी निम्नलिखित बदलाव के साथ इस परियोजना / पैकेज के लिए समर्थित है, जैसा कि नीचे वर्णित है-	
NTPC Approved drawing/Data Sheet No:		DISTRIBUTION OF ENDORSEMENT OF/ निम्नलिखित की पुष्टि -	
एनटीपीसी द्वारा स्वीकृत 00000000/0		A) RQP/SQP: आरक्यूपी / एसक्यूपी:	
सं. 4		1. MAIN SUPPLIER (WITH A COPY OF QP)/ मुख्य आपूर्तिकर्ता (क्यूपी की एक प्रति सहित)	
Signature Not Verified		2. MANUFACTURER/ निर्माता	
SONKAR			
Date: 2021.03.20			
14:58:46 IST			
Reason: CAT-1			
Location: NTPC/QC			
I. That the item/component is identical to that considered for QP approval. OR.			
यह कि मद / अवयव क्यूपी अनुमोदन के लिए विचार किया जा सके। अथवा			
II. That there are minor changes in the component with respect to that considered for QP approval, however the same do not affect the contents of QP. OR			
यह कि क्यूपी अनुमोदन के लिए सुविचारित मद / अवयव में मामूली परिवर्तन हो, हालांकि वही क्यूपी की विषय-सूची को प्रभावित नहीं करता हो। अथवा,			



2021/03/20

FORMAT NO.: QS-01-QAI-P-03/ F3

1/2

ENGG. DIV./ QA&I

ENDORSEMENT SHEET FOR QP/ क्यूपी हेतु पुष्टि शीट
REFERENCE / STANDARD / FIELD QUALITY PLAN (RQP / SQP/RFQP/SFQP)
संदर्भ / मानक / क्षेत्र क्वालिटी प्लान (आरक्यूपी / एसक्यूपी / आरएफक्यूपी / एसएफक्यूपी)

TO BE FILLED IN BY SUPPLIER AT TIME OF SUBMISSION/ जमा करते समय आपूर्तिकर्ता द्वारा भरा जाएगा  **To be filled in by NTPC/ एनटीपीसी द्वारा भरा जाएगा**

That there are minor changes in the item/ component with respect to that considered for QP approval, however the same affect the QP slightly, as indicated below / in attached sheet.

कि क्यूपी अनुमोदन के लिए सुविचारित मद / अवयव में मामूली परिवर्तन हो, हालांकि वही क्यूपी को थोड़ा प्रभावित करता है, जैसा कि नीचे लग्न पत्रक में दर्शाया गया है।

, Columns, Girders and built up beams/bracing shall be treated as inspection CAT-III

3. RIO/ आरआईओ

B) RFQP/SFQP आरएफक्यूपी / एसएफक्यूपी:

1. MAIN SUPPLIER (with a copy of QP)/ मुख्य आपूर्तिकर्ता (क्यूपी की एक प्रति के साथ)
2. MANUFACTURER/ निर्माता

FN.: (Main Supplier)
निर्देश.: (मुख्य आपूर्तिकर्ता)

DATE
तिथि

SIGN.: (Manufacturer)
हस्ताक्षर.: (निर्माता)

DATE: 20.03.21
तिथि

NTPC (Reviewed /Approved by/ Date & Seal)
एनटीपीसी (द्वारा समीक्षा /अनुमोदित/ मुहर सहित तिथि)

Supplier's name:
M/S BHEL
FSIP, BHEL Jagdishpur - Amethi
(U.P.)

		MANUFACTURING QUALITY PLAN (MQP)															
		QAP NO	AEL/PVUNL/BHEL/NTPC/QAP-01				PROJECT :	3X800MW PATRATU VIDYUT UTPADAN NIGAM LTD,PATRATU STPP.									
		Rev	R-03				PACKAGE :	POWER HOUSE STRUCTURE FABRICATION - (UNIT#2)									
		Date	30.09.2019				CONTRACT NO:	01/PVUN-CS-9585-001-2/NOA/SC									
ITEM		Columns, Built UP Beams,Crane girders, Roof Girders				MAIN CONTRACTOR :		BHEL-PSWR (Bharat Heavy Electricals Limited-PSWR)									
Maximum weight of structure in single piece should be 25 MT Approx.(as per approved BHEL Drg)																	
SL- No.	Component & Operations	Characteristics	Class	Type of Check	Quantum of check		Reference Document	Acceptance Standard	Format of Record	AGENCY			Remark				
					M	C/N				M	C	N					
1	2	3	4	5	6	7	8	9	10	11	12	13					
1.0	RAW MATERIAL (The Actual Material Shall Be As Per Drg)																
1.1	Raw Materials: IS 2062 E250 A,BR & E350 B0.	Chemical and Mechanical Properties	A	TC Verification	100%	100%*	As Material Specification		Mfg TC	V	P	V	V				
		Soundness (UT*)	A	TC Verification	100%	100%	A578 Level-B	A578 Level-B	Mfg TC								
For Materials IS 2062 E250BR& E350 B0: i) plates of thickness $t \geq 12\text{mm}$ $\leq 40\text{mm}$ Shall be Normalized rolled and Fully killed. ii) Plates of thickness $t > 40\text{mm}$ shall be fully killed, vacuum degassed and furnace normalized. Impact Testing as per material specification: i) IS 2062 E250BR at room temperature. ii) IS2062E350B0 at 0°C * Raw materials correlated to T for $t > 40\text{mm}$ * for plates > 40 mm thick Only																	
2.0	WELDING :																
2.1	Procedure Qualification	Welding Parameter	B	Test	100%	100%	ASME Sec IX / AWS D1.1	ASME Sec IX / AWS D1.1	Author Signature by R.K. Jha Signature by R.K. Jha Date: 30/09/2019 Time: 12:36 PM Location: NTPCEOC								
2.2	Personal Qualification	Performance	B	Test	100%	100%	ASME Sec IX / AWS D1.1	ASME Sec IX / AWS D1.1	Signature by R.K. Jha Date: 30/09/2019 Time: 12:36 PM Location: NTPCEOC								
 Vivek Pandey		 R. Jadhav	Legend : Records , identified with * tick" shall be essentially included by supplies in QA documentation. M: Manufacturer/sub supplier, C : BHEL/BHEL Appointed TPIA, N : NTPC, A-Critical, B-Major ,C-Minor, P : Perform, V: Verification, W: Witness, R : Report, PT :Penetrant Testing, MT :Magnetic Particle Testing. NDE : Non Destructive Examination NOTE: ALL applicable procedure approved by BHEL to be followed					FOR NTPC USE		REV:		Reviewed by		Approved by		Approved Seal	
M/s. ARTSON ENGINEERING LIMITED		M/s.BHEL-PSWR							Page 1 of 3		M/s.NTPC						

Supplier's name:
M/S BHEL
FSIP, BHEL Jagdishpur - Amethi (U.P.)

SUPPLIERS NAME :				MANUFACTURING QUALITY PLAN (MQP)											
ARTSON ENGINEERING LIMITED PLOT NO. D-1, MIDC UMRED NAGPUR (M.H.) 441203		QAP NO		AEL/PVUNL/BHEL/NTPC/QAP-01		PROJECT :		3X800MW PATRATU VIDYUT UTPADAN NIGAM LTD,PATRATU STPP.							
		Rev		R-03		PACKAGE :		POWER HOUSE STRUCTURE FABRICATION - (UNIT#2)							
		Date		30.09.2019		CONTRACT NO:		01/PVUN-CS-9585-001-2/NOA/SC							
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					M	C/N					M	C	N		
1	2	3	4	5	6	C/N	7	8	9	10		**10		11	
3 In-Process															
3.1	Edge preparations,(Shop Welds)	NDE	C	LPI/MPI	100%		BHEL Approved Drawing		✓	P	V	-			
3.2	Back gouging weld grooves	Surface Check	B	LPI	100%	100% / 10%	BHEL Approved Procedure	R		P	W	V			
4.0 Production Test coupon for main columns,Built-up beams And Crane Girders Of TG hall structures															
4.1	For Butt Welds	Weld Soundness	B	KI & MELH	**	**	ASME Sec-V and BHEL approved Drg. & procedure			P	V	V	** (1) For "s" columns, one test plate per column For other column one test plate per PGMA/Per S/C for each work order For built beams one test plate per PGMA/Per S/C for each work order		
4.2	For Hillet Welds	Weld fusion	B	MACRO ETCH	**	**	AWS D1.1,ASTM E 340	AWS D1.1,ASTM E 340	R		P	W	V	** (1) For "s" columns, columns,Built-up Beams (t>27mm) one test per column	
5 NDT&PWHT															
5.1	Visual Inspection of butt welds	Weld quality	B	Visual	100%	100%	ASME Sec-V & BHEL approved procedure			P	W	V			
5.2	Butt welds-weld quality&weld soundness	Plate thick ≥ 32	B	RT/UT	100% #	100%	ASME Sec-V & BHEL approved procedure	ASME Sec V / AWS D1.1	R		P	W	W	# 100% RT for Butt welds of Tension Flange of Crane Girders	
		25mm ≤ plate thick < 32mm	B	RT&MPI	10% RT, 100% MPI	100% MPI / 10%					P	W	W		
		Plate thick < 25mm	B	MPI/LPI	100%	10%					P	W	V		
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Vivek Pandey										Reviewed by		Approved by		Approved Seal	
M/s. ARTSON ENGINEERING LIMITED		M/s.BHEL-PSWR		NOTE: ALL applicable procedure approved by BHEL to be followed				Page 2 of 3						M/s.NTPC	

SUPPLIERS NAME :		MANUFACTURING QUALITY PLAN (MQP)													
Supplier's Name: M/S BHEL FSIP, BHEL Jagdishpur - Amethi (U.P.)		QAP NO		AEL/PVUNL/BHEL/NTPC/QAP-01		PROJECT :		3X800MW PATRATU VIDYUT UTPADAN NIGAM LTD, PATRATU STPP. POWER HOUSE STRUCTURE FABRICATION - (UNIT#2)							
		Rev		R-03		PACKAGE :									
		Date		30.09.2019		CONTRACT NO:		01/PVUN-CS-9585-001-2/NOA/SC							
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1	2	3	4	5	6	7	8	9	10	11	12	13	14		
5.3	Visual Inspection of fillet welds	weld quality	B	Visual	100%	100%	BHEL approved Procedure			P	W	V			
5.4	Fillet welds	NDE	B	LPI /MPI	100%	10%#	BHEL approved Procedure	R		P	W	V	#25% weld length of tension member of crane girder		
5.5	PWHT	Time & Temperature	B	Review of documents	100%*	100%	As per WPS & Tech. specification, BHEL Approved Procedure	R		P	V	V	*All butt welds when t > 50mm		
6	End Plates/ Splice Joint Plates for bolted Connections														
6.1	Machining/End milling (If Applicable)	Surface finish, Squareness, Flatness	B	Measurement	100%	Random	BHEL Approved Drawing	R		P	W				
6.2	Trial Assy. of columns & Roof girders	Orientation	B	Visual & Measurement	100%	100%	As per BHEL Approved Drawing/ Trial Assembly procedure	R	V	P	W	W*	* Any one assy. in case of roof girders		
Dimensions															
Match marks															
7.0	Verification of completion	Dimensions*	B	Visual & Measurement	100%	100%	*As per BHEL approved Drawing, NDT reports, HT chart extracts, Trial assembly reports & Final CHP clearance	R		P	V	V			
Orientation*															
Data Folder compilation for columns and girders															
8.0	Painting, Preservation & protection	Material	B	Review of hatch TC	100%	100%	As per NTPC Painting scheme	R		P	V	V			
		Surface preparation	B	Physical/visual	100%	10%	As per NTPC Painting scheme	R	V	P	V	V			
		Painting thickness	B	Physical	100%	10%	As per NTPC Painting scheme	R		P	V	V			
 Vivek Pandey				Legend : Records , identified with " tick " shall be essentially included by supplier in QA documentation. M: Manufacturer/sub supplier, C : BHEL /BHEL Appointed TPIA, N : NTPC, A-Critical, B-Major ,C-Minor, P : Perform, V: Verification, W: Witness ,R : Report, PT :Penetrant Testing, MT :Magnetic Particle Testing, NDE : Non Destructive Examination NOTE: ALL applicable procedure approved by BHEL to be followed				FOR NTPC USE		Reviewed by		Approved by		Approved Seal	
M/s. ARTSON ENGINEERING LIMITED		M/s.BHEL-PSWR						Page 3 of 3		M/s.NTPC					

Inspection categorisation is as under:

- 1- Floor beams and bracing made of rolled section, Handrail, staircase, Walkways/galleries, Bolts, Nuts and washers shall be treated as inspection CAT-III.
- 2- All Columns, Girders and built up beams/bracing shall be treated as inspection CAT-I.
3. No inspection by NTPC is envisaged for CAT-III Items. BHEL to submit the COC.
4. Material to be procured from NTPC approved sources with correlated TCs and same shall be verified by RIO.

PAINTING SCHEME FOR KHURJA CCR COLUMNS

Primer:

Extra over ST NO. B2301 & C2301 for blast cleaning of steel structures to near white metal surface (Sa 2 1/2) and applying coat of two component moisture curing zinc (ethyl) Silicate primer (solid by volume Minimum 60+/-2% & zinc dust % on dry film minimum 80 %). Zinc dust composition and properties shall be Type-II as per ASTM D520-00. Primer of minimum 70 micron DFT shall be applied over shot blast cleaned surface including touch-up painting etc all complete. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique.

Intermediate Coat:

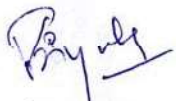
Providing and applying (with airless spray technique) intermediate coat of two component polyamide cured epoxy with MIO Content (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% $\pm$ 2%) of minimum 100 micron DFT to be applied after an interval of minimum 24 hours (from the application of primer coat by airless spray technique.) and of approved make including protection and cleaning, scaffolding etc. all complete as per specification for all structures.

Finish Coat:

Providing and applying Finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% $\pm$ 2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 Δ E) and minimum 70 micron DFT shall be applied after an interval of minimum 24 hours (from the application of sealer coat), Colour and shade of the coat shall be as approved by the Employer) over steel sections already having intermediate coats including protection and cleaning, scaffolding etc. all complete as per specification for all structures .

LIST OF CUSTOMER APPROVED VENDORS FOR PROCUREMENT OF STRUCTURAL STEEL FOR
2X660MW KHURJA STPP (STG PACKAGE)

1. SAIL
2. JSW STEEL LTD.
3. JINDAL STEEL & POWER
4. RINL (For long products/Rolled sections)
5. MONNET ISPAT AND ENERGY LIMITED (For long products/Rolled sections)
6. ESSAR STEEL INDIA LIMITED (For Flat products/steel plates)


(Priyanka)
Deputy Manager / Projects


(RASEEV KUMAR)
Manager / Projects