

BHARAT HEAVY ELECTRICALS LIMITED
HEEP HARIDWAR INDIA-PIN 249403
PHONE NO: 0091 1334 285120

Sub: Procurement of ACC STEAM DUCT
Projects: Patratu-2

A. SCOPE OF ENQUIRY:

The Heavy Electricals Equipment Plant (HEEP) located in Haridwar, India is one of the major manufacturing plants of Bharat Heavy Electricals Ltd. The core business of HEEP includes design and manufacture of large steam turbines, turbo generators and so on.

Bids are invited from Indian indigenous suppliers for following items through GeM Portal <https://gem.gov.in>

Scope of Work: - **PRE-FAB. M/C & FAB. ONLY** as per Drawing/Standard & QP requirements.

SLNO	MATERIAL CODE	DESCRIPTION	TOTAL QTY	UNIT	DELIVERY IN DAYS
1	0170997000901	ACC DUCT ELBOW TEE DIA 8000	1	NO.	120

(Total qty in numbers= 1 nos. of 0170997000901 & Fab. Weight= 100032.2 kg. /pc)

TOTAL LOAD = 100032.2 KG. (TOLERANCE IN TOTAL LOAD MAY BE (+/-) 25%)

B. Buyers Specific Additional Terms & Conditions in addition to GTC:

Sl. No.	Terms	Description	Bidder's Confirmation
1.	Confirmation to compliance of General terms and conditions on GeM	In addition to the terms & conditions mentioned in below table, latest General terms and conditions on GeM or subsequent rules/policies issued by GeM shall be applicable against this enquiry. Kindly confirm same is acceptable to you.	
2.	Documents Checklist:	Kindly confirm that the following documents have been submitted along with your offer: 1. Requisite EMD 2. Pre-Qualification Requirements 3. Quality Requirements & Plan 4. Drawings & CBOM 5. make in india (Self-certification) 6. Integrity pact 7. Vendor credentials in NTPC formats (SUB-VENDOR QUESTIONNAIRE & MAIN CONTRACTOR attached) 8. Any other document as specified in "Buyers Specific Additional Terms & Conditions in addition to GTC"	

3.	Pre-Qualification Requirements	The Pre-Qualification Requirements are attached. All the bidders should ensure submission of duly-filled and signed with complete details and documents as called for in these requirements.	
4.	Special Instruction of Technical requirement	1. Items to be supplied directly to Patratu Site. DELIVERY TERM: F.O.R. PATRATU SITE Patratu site address: GENERAL MANAGER (PROJECTS) , PATRATU STPP (3X800 MW), PATRATU VIDYUT UTPADAN NIGAM LIMITED, PO – PTPS, DIST – RAMGARH, JHARKHAND – 829119. Please confirm.	
		4.All ACC STEAM DUCT are required as per NIT document and specification only. Please confirm.	
5.	Prices	Prices shall remain firm and fixed during entire tender process and execution of the contract. Kindly confirm that Quoted prices on GEM against the GEM bid for each schedule is F.O.R. Patratu site on firm basis & inclusive of all cost components (Packing & Forwarding, Freight, GST, Insurance etc.). Also inform the percentage of GST considered by you in your FOR prices.	
6.	MDCC clause	Material shall be dispatched only after issue of material dispatch clearance certificate (MDCC) by BHEL. All test certificates, applicable TPIA verified documents, Quality Plan and relevant documents are to be sent to BHEL before dispatch of material for issue of MDCC, which will be issued after review of test certificates, applicable TPIA verified documents, Quality Plan and all relevant documents. MDCC will be issued within 07 days of receipt of these documents once found complete in all respects. In case of any delay on account of BHEL in issuing MDCC, delivery shall be extended by no. of days in excess of 7 days taken by BHEL in issuing MDCC and delays shall be dealt on merit basis. This period of 7 days is included in the delivery period. Material is to dispatched within 07 days of receipt of MDCC from BHEL without waiting for PO amendment.	
7.	Quality Requirements	Quality Requirements are attached with this tender document. All the bidders should ensure submission of duly filled and signed the attached QP with complete details and documents as called for in these requirements.	

8.	Delivery Period	Bidders are requested to quote their best possible delivery period in terms of days from date of PO.									
9.	Penalty / LD Clause :	LD/Penalty for delayed supplies shall be as per latest General terms and conditions on GeM.									
		The date of LR (Lorry receipt) would be treated as the date of delivery for penalty purposes.									
10.	Payment Terms	100% payment will be made after receipt and acceptance of material at site and after issue of consignee receipt-cum acceptance certificate (CRAC) as per the below details:									
		<table><tr><th>Type of Bidder</th><th>Payment Terms (Number of Days)</th></tr><tr><td>Micro & Small Enterprises (MSEs)</td><td>45 days</td></tr><tr><td>Medium Enterprises</td><td>60 days</td></tr><tr><td>Non MSME</td><td>90 days</td></tr></table>		Type of Bidder	Payment Terms (Number of Days)	Micro & Small Enterprises (MSEs)	45 days	Medium Enterprises	60 days	Non MSME	90 days
		Type of Bidder		Payment Terms (Number of Days)							
		Micro & Small Enterprises (MSEs)		45 days							
		Medium Enterprises		60 days							
Non MSME	90 days										
		Subject to submission of 8 sets of non-discrepant documents along with original MDCC & LR as per terms & conditions of GEM contract.									
11.	Quantity Variation	BHEL reserves the right to cancel tender or reject any or all the quotations without assigning any reasons thereof. BHEL also reserves the right to Increase or decrease the tendered quantities. Vendors should be prepared to accept order for reduced Quantity without any extra charges. Vendor should also be prepared for giving discount in case of Increase in Quantity. Vendor has to take dispatch clearance from BHEL before starting supplies of item. In case ordered quantity is reduced, then payment shall be made accordingly, as per decreased quantity. Kindly confirm.									
12.	Bid to RA	Opening of Price bid & RA shall be conducted for only those bidders who qualifies PQR, Quality requirements and whose techno-commercial bid is acceptable to BHEL & customer PVUNL.RA will be conducted as per GeM rules & guidelines.									
13.	Risk Purchase	In case of abnormal delays (beyond the maximum late delivery period as per LD clause) in supplies / defective supplies or non-fulfilment of any other terms and conditions given in Purchase Order, BHEL may cancel the Purchase Order in full or part thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier. BHEL will take all reasonable steps to get the material from alternate source at optimum cost. If bidder does not agree to the above Risk Purchase Clause, BHEL reserves the right to reject the offer. In case for compelling reasons BHEL accepts the offer without acceptance of this clause by the bidder and in the eventuality of Risk Purchase, appropriate action will be taken as per BHEL									

		extant rules. This will be without prejudice to any other right of BHEL under the contract or under General Law. Kindly confirm.	
14.	Action against Bidders / vendor / supplier / contractor in case of default	In order to protect the commercial interests of BHEL, BHEL shall take action against supplies / contractors by way of suspension of business dealings, who either fail to perform or are in default without any reasonable cause, cause loss of business/ money/ reputation, indulge in malpractices, cheating, bribery, fraud or any other misconduct or formation of cartels so as to influence the bidding process or influence the price etc. Suspension of Business Dealings could be in the form of “Hold” or “Banning” a supplier/ contractor or a bidder and shall be as per “Guidelines for Suspension of Business Dealings with Suppliers/ Contractors” available at BHEL’s website https://www.bhel.com/guidelines/suspensionbusiness-dealings-supplierscontractors	
15.	Conflict of Interest	A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. The bidder found to have a conflict of interest shall be disqualified. A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if: a) they have controlling partner (s) in common; or b) they receive or have received any direct or indirect subsidy/ financial stake from any of them; or c) they have the same legal representative/agent for purposes of this bid; or d) they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder; or e) Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly/ Assemblies from. One bidding manufacturer in more than one bid; or f) In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a	

		particular tender enquiry. One manufacturer can also authorise only one agent/dealer. There can be only one bid from the following: 1. The principal manufacturer directly or through one Indian agent on his behalf; and 2. Indian/foreign agent on behalf of only one principal, or g) A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid, or h) In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/ common business/ management units in same/ similar line of business. "	
16.	EMD Applicability	EMD will be applicable as per GEM bid, however EMD is waived in following cases- - Central/ State – PSUs *MSE suppliers are exempted for submission of EMD (Valid Documentary proof against MSE must be submitted along with offer to avail the benefits). - BHEL-HEEP registered vendors (if applicable) are exempted from submission of EMD. - Other exemptions on EMD will be as per GeM Terms and conditions. *Benefits of MSE (such as EMD Waiver, Tender fee exemption, Price preference, Payment preference etc.) will be given only to those MSE Vendors who are manufacturers of offered items against the NIT. No MSE benefits shall be provided to Agents / Stockiest / Dealers / Traders etc. for the items offered but not manufactured by themselves.	
17.	In course of evaluation, if more than one bidder happens to occupy L-1 status	In course of evaluation, if more than one bidder happens to occupy L-1 status, effective L-1 will be decided by soliciting discount from respective L-1 bidders. In case more than one bidder happens to occupy the L-1 status even after soliciting discounts, the L-1 bidder shall be decided by a toss/draw of lots, in the presence of respective L-1 bidders or their representatives."	

18.	GUARANTEE CERTIFICATE: -	The vendor shall warrant that the supplied fabricated assemblies comply fully with the drawings and other technical conditions. If the fabrications/items are found defective owing to faulty workmanship/incomplete work within a period of eighteen (18) months from Supply completion date. Supply completion date shall be reckoned from the actual date of last supply made by the vendor (date of LR) for the quantities awarded (in terms of number(s)). During guarantee period, the vendor shall make good of items/replace the same free of cost. Alternatively, the rework/replacement charges may be recovered.	
19.	RECTIFICATION: -	Any defect (noticed at SITE) arising out of the fabrication/machining done by the Sub-Contractor, will have to be rectified or items replaced by the sub-contractor within 10 days of intimation of same at their own cost. Otherwise BHEL will be free to take necessary action as deemed fit and consequence/cost of the same will be to subcontractors' account.	

SPECIAL REMARKS FOR BIDDERS:

Following documents are an integral part of this tender enquiry and endorsed copies of these documents (duly signed and stamped on each page, as a token of acceptance) are to be uploaded along with offer on e-procurement portal.

1. Please submit signed & Stamped copy (each page) of duly filled of confirmation column of "Buyers Specific Terms & Conditions" and supporting documents where required.
2. Please submit signed & stamped copy (each page) of PQR documents with proper filled information and related supporting documents as mentioned in PQR.
3. Vendor scope includes complete manufacturing of item as per drawing including all NDT requirements, painting & preservation as per drg.
4. Vendor scope also includes any mock up of assemblies required in drg
5. Transportation of items as per shipping list/packing list provided by BHEL to Patratu site is also in the scope of vendor.
6. MDCC is required before dispatch of items & MDCC is required for all items.
7. Patratu site address is:
General Manager (projects), 3x800 mw Patratu stpp
Patratu vidyut utpadan nigam limited
po-ptps, Dist-Ramgarh, jharkhand-829119.
8. Tolerance in total load may be (+/-) 25%
9. Guarantee period will be 18 months from the date of last supply by the vendor.
10. Vendors to confirm, endorse and return back MQP no- PAT/ACC/DUCT U-2 rev00 (attached).
11. Inspection by NTPC / PVUNL and BHEL / BHEL nominated inspection agency as per finally NTPC / PVUNL approved QP.
12. Offers that are found suitable techno-commercially & approved by customer PVUNL will be considered for further process.
13. Notes available in drawing to be fulfilled by the vendor for manufacturing.
14. All items to be manufactured with party material only. No further subcontracting is permissible, without prior approval.
15. Supplier must furnish material test certificates for all the items.
16. Guarantee Certificate will be required.
17. Aesthetic appearance shall also be ensured and inspected before delivery to SITE.
18. Cleaning of parts, removal of mill scale from components prior to assembly will be in scope of vendor.
19. CHP Clearance may be obtained from NTPC/LLOYD/RITES/NPC at party's end.
20. Final Assembly shall undergo cleaning to ensure that all parts are free from dents, mills, spatters.
21. Customer's seal (if Any on supplied Material) to be transferred.
22. Copies of the relevant certificates to be supplied to the receiving shop.
23. All special tests viz., UT, RT, HYDRAULIC & KEROSENE etc. are to be performed as per drg. requirements.
24. Rest all terms and conditions shall be as per general terms and conditions of **GeM**.

Raw material

Raw material shall be procured from following PVUNL enlisted main steel producers only:

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SAIL, JSW Steel Limited, Jindal Steel & Power, Tata Steel Ltd (for reinforcement steel / TMT bars), RINL (for long products/ rolled sections and Reinforcement steel / TMT bars), Essar Steel India Ltd (for flat products/ Steel plates), Electrosteel Steel Ltd (for Reinforcement steel / TMT bars) and Monnet Ispat and Energy Ltd (for long products/ rolled sections and Reinforcement steel / TMT bars).

In addition to above, the approved sources of plates are:

“SAIL, JSW Steel Limited, Jindal Steel & Power, Tata Steel Ltd, RINL, Essar Steel India Ltd), and Monnet Ispat and Energy Ltd”

PQR

Item : ACC Duct Elbow TEE dia.8000, ACC Steam duct, Acc Steam duct Riser, D Liasioning 8000mm-2800mm, Y piece, Blank Plate for ground duct (Partatu: drg: 01709970009-01, 01709970017-01, 01709970022-00, 01709970023-00, 01709970025-00, 11709970121-00, 11709970172-00)

PRE-QUALIFICATION REQUIREMENT

01.00	TECHNICAL REQUIREMENT	Required	Vendor's Offer
01.01	Experience: Vendors should have experience of fabricating (cutting/bending/assembly/welding/pre-fabrication machining) and supplying of atleast 1 no. ACC Duct Elbow TEE dia.8000, ACC Steam duct, Acc Steam duct Riser, D Liasioning 8000mm-2800mm, Y piece, Blank Plate for ground duct or equivalent components in last 7 years from the date of enquiry as per following details: i) Dimensions of job: Diameter=4000 mm and Length= 3000 mm and above. (ii) Weight: 4 Tons and above	Vendor to Comply & submit suitable evidence including technical specifications, drawings etc.	
01.02	Facility: i) Lifting facility and capacity at vendor works should EOT crane 10 Tons and above. ii) Vendor must have levelled bed plate having size : Length/height= 4000mm, Dia./Breadth=8600mm and above to fabricate the job ((Either machined bed plate or bed plate constructed by steel plates is allowed but concrete floor not allowed). iii) Vendor must have rolling/bending facility to bend/roll cylinder of thickness 20mm or above with width 2500mm or above. (iv) Vendor must have suitable WPS/PQR and qualified welders for welding approved by third party and submit documentary evidence with offer. (v) Vendor must have cutting facility to cut plate of thickness 50mm and above.	Vendor to Comply & submit suitable evidence including technical specifications, technical brochure, photographs etc. of the facilities.	
01.03	Vendor to furnish certificate or documentary evidence against clause 01.01 from the customer / company or end user duly confirming that fabricated ACC Duct Elbow TEE dia.8000, ACC Steam duct, Acc Steam duct Riser, D Liasioning 8000mm-2800mm, Y piece, Blank Plate for ground duct or equivalent job was supplied and used for Hydro Pump or turbine/power plant/capital goods/infrastructure application OR Vendor to submit documentary evidence as per clause 1.04.	Vendor to Comply & submit suitable documents	
01.04	Vendor to furnish name of customer/company with complete contact details and month /year of previous supply along with copy of PO, type of manufacturing facility used for fabrication (assembly/welding/pre-fabrication machining), supply documents, Payment details(invoice copy) and inspection documents of supplied ACC Duct Elbow TEE dia.8000, ACC Steam duct, Acc Steam duct Riser, D Liasioning 8000mm-2800mm, Y piece, Blank Plate for ground duct or equivalent.	Vendor to Comply & submit suitable documents	
01.05	All PQR documents are to be stamped and signed in original by Vendor. In case documents and official stamp is in language other than English, documents and details of official stamp are to be translated in English and duly certified by Government agency/approved agency of Government/Embassy.	Vendor to Comply & submit suitable documents	
01.06	BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/ incorrect, their offers shall be rejected.	Vendor to agree	

NOTE: PQR is not restrictive

20/06/2023
[Ravi Deshmukh
Manager (WTS)]

20/06/2023
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Manager (WTS)]

20/06/2023
(As Am) AG-47

complete name and address of manufacturing works of vendor

MANUFACTURING QUALITY PLAN														
PROJECT: PATRATU 3 X 800MW														
PACKAGE: EPC(TG/ACC)														
CONTRACT No: 9585-001														
CONTRACTOR : BHEL HARIDWAR														
ITEM: FABRICATION OF DUCTS AND MANIFOLDS														
Q.P. No: PAT/ACC/DUCT U-2														
Page No. 1of1														
REV 00,														
SUB SYSTEM :- AS PER PO														
S. No.	COMPONENTS/OPERATION	CHARACTERISTICS/CHEK	CLASS	TYPE / METHOD OF CHEK	QUANTUM OF CHEK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY	REMARKS		
					M	C/N			9	D*			M	C
1	2	3	4	5	6		7	8	9	D*	10		11	
A	RAW MATERIAL	Dimension	Major	Meas.	100%		Approved Drg./Tech. Spec.		IR		P	V	V	Co-related Milli TC to be submitted for review. Refer note 1 and 2. Direct procurement from NTPC approved sources.
		Chemical Composition	Major	Lab. Test	1/Heat				TC		P	V	V	
		Mechanical Properties	Major	Lab. Test	1/Heat				TC		P	V	V	
		Internal Flaw	Major	UT Report	100%		ASTM A578 Level B-S2		UT Report		P	V	V	
		(UT on Plate > 40mm Thk)												
B	INSPECTION - IN PROCESS													
B.1	Marking, Cutting and Preparation	Completeness	Major	Visual & Measurement	100%				IR		P	V		WPS shall be approved by BHEL & welders qualified by BHEL or BHEL appointed TPIA like BVQI, Lloyds, TUV shall be deployed for welding. If lifting lugs are to be welded to ducts and manifold for site erection, 100% DPT will be carried out for even fillet weld and witnessed by BHEL
		Dimension	Major	Measurement	Random		ASME Sec. IX		IR		P	V		
		Rolling Process	Major	Visual & Dimensional	100%		Approved Drg. / Tech. Spec.		IR		P	V		
		Edge Preparation	Major	Visual	100%				IR		P	V		
B.2	Rolling & Fit-up	Fit-up	Major	Visual	100%				IR		P	V		
		Dimensions	Major	Meas.	100%				IR		P	V		
		WPS, PQR, WPQ	Major	Review	100%		ASME Sec. IX		Record		P	V	V	
		Size	Major	Meas.	100%		Approved Drg. / Tech. Spec.		IR		P	V	V	
B.3	Welding	Weld Defects												
		i) Butt Weld	Major	RT/UT	10%		ASME Sec VIII Div. 1 Appendix 12		RT/UT Report		P	W	V	
			Major	DPT	100%		ASME Sec VIII Div. 1 Appendix 8		PT Report		P	W	V	
		ii) Fillet Weld	Major	DPT	10%		ASME Sec VIII Div. 1 Appendix 8		PT Report		P	W	V	
C	FINAL INSPECTION	iii) Heat Treatment	If Applicable	HEAT Treatment chart	100%		ASME Sec VIII Div. 1 Appendix 8		SR Report		P	R	R	
		Completeness	Major	Visual	100%		Approved Drg. / Tech. Spec.		IR		P	W	V	
		Dimensions	Major	Meas.	Randomly from offered lot		Approved Drg. / Tech. Spec.		IR		P	W	W	
		Match Marking	Major	Visual	100%		Approved Drg. / Tech. Spec.		IR		P	W	W	
D	TRIAL ASSEMBLY FOR LARGE SIZE DUCTS REDUCER, Y-PIECE, BRANCH, TRANSITION DUCTS	Identification	Major	Visual			Approved Drg. / Tech. Spec.		IR		P	W	V	
		Orientation	Major											
		Dimensions	Major											
		Match Marking	Major	Visual & Measurement	100%		Approved Drg. / Tech. Spec.		IR		P	W	W	
E	SUEFACE PREP. & PAINTING	Visual & Measurement	Major	Random	100%		Approved Drg./ Tech. Spec.		IR & Paint Report		P	V	V	Refer to Note 3
F	PACKING AND TRANSPORTATION	Visual & Measurement	Major	Random	100%		Approved Drg./ Tech. Spec.		Packing List		P	W	V	
MFD. SUB SUPPLIER	MAIN SUPPLIER	LEGEND:- *RECORDS, IDENTIFICATION WITH "TICK"(V) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. **M:- MANUFACTURER/SUB-SUPPLIER, C:- MAIN SUPPLIER, N:- NTPC, P: PERFORM, W:- WITNESS AND V:- VERIFICATION AS APPROPRIATE, CHP: NTPC SHALL IDENTIFY IN COLUMN "N" AS "W"							DOC. NO. :					
SIGNATURE		SIGNATURE							FOR NTPC USE		APPROVED BY	APPROVAL SEAL		

Note-1 : Rolled sections shall be of grade designation E250 Quality A/BR semi killed / killed conforming to IS 2062. All steel plated shall be of grade designation E250, Quality BR (fully killed), conforming to IS 2062 and shall be tested for impact test value at room temperature. Plates beyond 12mm thickness and upto 40mm thickness shall be normalized rolled.

Plates beyond 40mm thickness shall be vacuum degassed furnace normalized and shall also be 100% ultrasonically tested as per ASTM-A578 level B-S2. (FOR MILD STEEL)

Note-2:- Rolled sections shall be of grade designation E350 or higher Quality BO (Fully Killed) conforming to IS 2062. Plates beyond 12mm thickness and upto 40mm thickness shall be normalized rolled.

Plates beyond 40mm thickness shall be vacuum degassed furnace normalized and shall also be ultrasonically tested as per ASTM-578 level B-S2. (FOR MEDIUM AND HIGH TENSILE STEEL)

Note-3:- Proper lockingof circular duct parts shall beensuredin such a way that site weld edgesand circularduct curvature is intact during transportation and handling at **site**

Note-4:- All material of construction shall be as per NTPC/PVUN approved drawing/ data sheet.

Self-certification

As per Government Public procurement order no. P-45021/2/2017-BE-II dt.15.06.2017 & P-45021/2/2017-PP(BE-II) dated 28.05.2018,29.5.2019 & 04.6.2020, it is hereby certifying that we

.....

(supplier name) are(Class-I/Class-II) local supplier and will meet the requirement of minimum local content of (50%/20%) as defined in public procurement order dated 04.6.2020 for material against Enquiry no.

.....

Details of location at which local value addition will be made is as follows: -

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We also understand, false declarations will be in breach of the code of integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the general financial rules along with such other actions as may be permissible under law.

Seal & Signature of Supplier

	CORPORATE QUALITY ASSURANCE			
	MAIN CONTRACTOR'S PROPOSAL CUM EVALUATION REPORT			

Ref No:				Date:			
i.	Main Contractor						
ii.	Project						
iii.	Package Name				Package No		
iv.	Proposed Item/Scope of Sub-contracting						
v.	Item covered under	Schedule-1			As per contract clause No-		
		Schedule-2					
vi.	If item is Schedule-1 and proposed sub-vendor is indigenous, Main Contractor to explain how the contractual provisions will be fulfilled						
vii.	Name and Address of the proposed Sub-vendor's works						
viii.	PO placement date/ Start of manufacturing (if self-manufactured) as per L2 network						
ix.	Item Description (Type/Size/Rating/Scope of Sub-Contracting)	Total quantity of proposed item envisaged in this package (Nos/ Running Meters/ Kgs/ Tons etc)	Quantity proposed to be procured from proposed sub-vendor (Nos/ Running Meters /Kgs /Tons etc)	Timeline for quantity requirements as per project schedule & whether the proposed Sub-vendor equipped with adequate capacity to supply proposed order quantity in time			
x.	Supply experience of the proposed sub-vendor (including supplies to Main Contractor, if any) for similar item/scope of sub-contracting, for last 3 years (Note:- Only relevant experience details w.r.t. proposed item/scope of subcontracting to be brought out here)						
	Project/Package	Customer Name	Supplied Item (Type/Rating/Model /Capacity/Size etc)	PO ref no/date	Supplied Quantity	Date of Supply	
We confirm that as per our assessment, the proposed sub-vendor has requisite capabilities & supply experience and is suitable for supplying the proposed item/scope of sub-contracting.							
Name:				Desig:			
				Sign:			
				Date:			

Company's Seal/Stamp:-

Format No. : QS-01-QAI-P-04/F1-R3

1/1

Engg. div./QA&I

	CORPORATE QUALITY ASSURANCE SUB-VENDOR QUESTIONNAIRE
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i.	Item/Scope of Sub-contracting			
ii.	Address of the registered office	Details of Contact Person (Name, Designation, Mobile, Email)		
iii.	Name and Address of the proposed Sub-vendor's works where item is being manufactured	Details of Contact Person: (Name, Designation, Mobile, Email)		
iv.	Annual Production Capacity for proposed item/scope of sub-contracting			
v.	Annual production for last 3 years for proposed item/scope of sub-contracting			
vi.	Details of proposed works			
1.	Year of establishment of present works			
2.	Year of commencement of manufacturing at above works			
3.	Details of change in Works address in past (if any)			
4.	Total Area			
	Covered Area			
5.	Factory Registration Certificate	Details attached at Annexure – F2.1		
6.	Design/ Research & development set-up (No. of manpower, their qualification, machines & tools employed etc.)	Applicable / Not applicable if manufacturing is as per Main Contractor/purchaser design Details attached at Annexure – F2.2 (if applicable)		
7.	Overall organization Chart with Manpower Details (Design/Manufacturing/Quality etc)	Details attached at Annexure – F2.3		
8.	After sales service set up in India, in case of foreign sub-vendor (Location, Contact Person, Contact details etc.)	Applicable / Not applicable Details attached at Annexure – F2.4		
9.	Manufacturing process execution plan with flow chart indicating various stages of manufacturing from raw material to finished product including outsourced process, if any	Details attached at Annexure – F2.5		
10.	Sources of Raw Material/Major Bought Out Item	Details attached at Annexure – F2.6		

	CORPORATE QUALITY ASSURANCE SUB-VENDOR QUESTIONNAIRE					

11.	Quality Control exercised during receipt of raw material/BOI, in-process , Final Testing, packing			Details attached at Annexure – F2.7		
12.	Manufacturing facilities (List of machines, special process facilities, material handling etc.)			Details attached at Annexure – F2.8		
13.	Testing facilities (List of testing equipment)			Details attached at Annexure – F2.9		
14.	If manufacturing process involves fabrication then-			Applicable / Not applicable		
	List of qualified Welders			Details attached at Annexure – F2.10		
	List of qualified NDT personnel with area of specialization			(if applicable)		
15.	List of out-sourced manufacturing processes with Sub-Vendors' names & addresses			Applicable / Not applicable Details attached at Annexure. –F2.11 (if applicable)		
16.	Supply reference list including recent supplies			Details attached at Annexure – F2.12 (as per format given below)		
	Project/ package	Customer Name	Supplied Item (Type/Rating/Model /Capacity/Size etc)	PO ref no/date	Supplied Quantity	Date of Supply
17.	Product satisfactory performance feedback letter/certificates/End User Feedback			Attached at annexure - F2.13		
18.	Summary of Type Test Report (Type Test Details, Report No, Agency, Date of testing) for the proposed product (similar or higher rating) Note:- Reports need not to be submitted			Applicable / Not applicable Details attached at Annexure – F2.14 (if applicable)		
19.	Statutory / mandatory certification for the proposed product			Applicable / Not applicable Details attached at Annexure – F2.15 (if applicable)		
20.	Copy of ISO 9001 certificate (if available)			Attached at Annexure – F2.16		
21.	Product technical catalogues for proposed item (if available)			Details attached at Annexure – F2.17		
Name:				Desig:		
				Sign:		
				Date:		

Company's Seal/Stamp:-



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

RECORD OF CHANGES

Drawing No	Var	Revno	Rev Date	Description
01709970009	01	1	03.05.2023	Main CBOM & Item No. 48 Weight Revised.
01709970009	01	2	17.05.2023	Auto Revision 21709970124/00
01709970009	01	3	17.05.2023	Auto Revision 21709970125/00
01709970009	01	4	17.05.2023	Auto Revision 21709970126/00
01709970009	01	5	17.05.2023	Auto Revision 21709970127/00
01709970009	01	6	17.05.2023	Auto Revision 21709970128/00
01709970009	01	7	17.05.2023	Auto Revision 21709970129/00
01709970009	01	8	17.05.2023	Auto Revision 21709970130/00
01709970009	01	9	17.05.2023	Auto Revision 21709970131/00
01709970009	01	10	17.05.2023	Auto Revision 21709970132/00
01709970009	01	11	17.05.2023	Auto Revision 21709970133/00
01709970009	01	12	17.05.2023	Auto Revision 21709970134/00
01709970009	01	13	17.05.2023	Auto Revision 21709970135/00
01709970009	01	14	17.05.2023	Auto Revision 21709970136/00

CBOM - 01709970009 01

	ENGG		WTX	
	Initial	Date	Initial	Date
Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



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Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
0	01709970009 01			99239.6						
1(1)	ACC DUCT ELBOW TEE DIA 8000			Y						
MF CD	ELBOW TEE D8000 SUPPORTS S2&S3		Y	100032.2	SITE					
1	21709970123 00			1749.7						
3(3)	ELBOW TEE PART 1			Y						
MF CD			N	1754.4	0306-0314-000D					
1-1		AA1011819104	AA10119	1475.1	8363.0X1605.0	1	3	1549.0	0.0	4647.0
1(3)	SHELL PLATE			Y	PL 14			MAY BE MADE IN TWO PARTS		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306-0301-0306					KG
1-2		AA1011052628	AA10152	98.3	6811.0	1	6	6.811	0.0	40.866
2(6)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
1-3		AA1011052628	AA10152	27.1	1858.0	1	6	1.858	0.0	11.148
2(6)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
1-4		AA1011819155	AA10119	5.9	186.0X250.0	1	6	9.6	0.0	57.6
2(6)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
1-5		AA1011819104	AA10119	0.6	100.0X100.0	1	12	1.2	0.0	14.4
4(12)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG
1-6		AA1011819104	AA10119	4.8	350.0X125.0	1	6	5.0	0.0	30.0
2(6)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
2	21709970124 00			3753.9						
1(1)	ELBOW TEE PART 2			Y						
MF CD			N	3788.81	0306-0314-000D					
2-1		AA1011819104	AA10119	2589.1	8363.0X2817.0	1	1	2719.0	0.0	2719.0
1(1)	SHELL PLATE			Y	PL 14			MAY BE MADE IN TWO PARTS		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306-0301-0306					KG

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



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Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
2-2		AA1011052628	AA10152	98.3	6811.0	1	2	6.811	0.0	13.622
2(2)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
2-3		AA1011052628	AA10152	27.1	1858.0	1	2	1.858	0.0	3.716
2(2)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
2-4		AA1011819155	AA10119	5.9	186.0X250.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
2-5		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG
2-6		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.0	0.0	10.0
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
2-7		AA1011819155	AA10119	445.1	1155.0X4460.0	1	2	1061.5	0.0	2123.0
2(2)	STIFFENER PLATE			Y	PL 25			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
3	21709970125 00			3035.4						
1(1)	ELBOW TEE PART 3			Y						
MF CD		N		3070.21	0306-0314-0306					
3-1		AA1011819104	AA10119	2133.3	8363.0X2817.0	1	1	2719.0	0.0	2719.0
1(1)	SHELL PLATE			Y	PL 14			MAY BE MADE IN TWO PARTS		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306-0301-0306					KG
3-2		AA1011052628	AA10152	59.4	4260.0	1	1	4.26	0.0	4.26
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
3-3		AA1011052628	AA10152	8.2	560.0	1	1	0.56	0.0	0.56
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0306-0315-0306					MR

ENGG

WTX

Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



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Printed On:13.07.2023

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CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
3-4		AA1011052628	AA10152	98.3	6811.0	1	1	6.811	0.0	6.811
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
3-5		AA1011052628	AA10152	27.1	1858.0	1	1	1.858	0.0	1.858
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
3-6		AA1011819155	AA10119	5.9	250.0X186.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
3-7		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG
3-8		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.0	0.0	10.0
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
3-9		AA1011819155	AA10119	423.9	4260.0X1100.0	1	1	965.5	0.0	965.5
1(1)	STIFFENER PLATE		REFER ASSLY.	Y	PL 25			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
3-10		AA1011819155	AA10119	261.4	2710.0X750.0	1	1	419.2	0.0	419.2
1(1)	STIFFENER PLATE		REFER ASSLY.	Y	PL 25			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
4	21709970126 00			3014.2						
1(1)	ELBOW TEE PART 4			Y						
MF CD		N		3049.01	0306-0314-000D					
4-1		AA1011819104	AA10119	2133.3	8363.0X2817.0	1	1	2719.0	0.0	2719.0
1(1)	SHELL PLATE			Y	PL 14			MAY BE MADE IN TWO PARTS		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306-0301-0306					KG
4-2		AA1011052628	AA10152	59.4	4260.0	1	1	4.26	0.0	4.26
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0301-0306-0301-0306					MR

ENGG

WTX

Worked By	Initial	Date	Initial	Date
Checked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Approved By	hxeaxk	26.12.2022	wtxskg	27.12.2022
	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

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Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Type Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
4-3		AA1011052628	AA10152	8.2	560.0	1	1	0.56	0.0	0.56
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
4-4		AA1011052628	AA10152	98.3	6811.0	1	1	6.811	0.0	6.811
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
4-5		AA1011052628	AA10152	27.1	1858.0	1	1	1.858	0.0	1.858
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
4-6		AA1011819155	AA10119	5.9	250.0X186.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
4-7		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG
4-8		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.0	0.0	10.0
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
4-9		AA1011819155	AA10119	402.7	4070.0X1040.0	1	1	873.0	0.0	873.0
1(1)	STIFFENER PLATE			Y	PL 25			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
4-10		AA1011819155	AA10119	261.4	2710.0X750.0	1	1	419.2	0.0	419.2
1(1)	STIFFENER PLATE			Y	PL 25			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
5	21709970127 00			2798.8						
1(1)	ELBOW TEE PART 5 & 8			Y						
MF CD			N	2820.2	0306-0314-000D					
5-1		AA1011819104	AA10119	1621.9	6272.0X2353.0	1	1	1703.0	0.0	1703.0
1(1)	SHELL PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxebds	30.11.2022	bk2gau	27.12.2022
Checked By	hxexk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



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CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
5-2		AA1011052628	AA10152	78.1	5476.0	1	2	5.476	0.0	10.952
2(2)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
5-3		AA1011052628	AA10152	15.1	1032.0	1	2	1.032	0.0	2.064
2(2)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
5-4		AA1011819155	AA10119	5.9	250.0X186.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
5-5		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG
5-6		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.2	0.0	10.4
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
5-7		HW1011819953	AA10119	580.0	3170.0X1115.0	1	1	874.8	0.0	874.8
1(1)	STIFFENER PLATE			Y	PL 30			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
5-8		AA1011819139	AA10119	386.7	3170.0X1115.0	1	1	583.2	0.0	583.2
1(1)	STIFFENER PLATE			Y	PL 20			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
6	21709970128 00			2002.5						
1(1)	ELBOW TEE PART 6 & 10			Y						
MF CD		N		2032.11	0306-0314-000D					
6-1		AA1011819104	AA10119	1117.0	5615.0X2353.0	1	1	1525.0	0.0	1525.0
1(1)	SHELL PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
6-2		AA1011052628	AA10152	33.6	2677.0	1	1	2.677	0.0	2.677
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR

ENGG

WTX

Worked By	Initial	Date	Initial	Date
Checked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Approved By	hxeaxk	26.12.2022	wtxskg	27.12.2022
	hxenp	20.01.2023	wtxskg	27.12.2022



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Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Type Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
6-3		AA1011052628	AA10152	2.6	175.0	1	1	0.175	0.0	0.175
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
6-4		AA1011052628	AA10152	67.3	4770.0	1	1	4.77	0.0	4.77
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
6-5		AA1011052628	AA10152	10.7	733.0	1	1	0.733	0.0	0.733
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
6-6		AA1011819155	AA10119	5.9	250.0X186.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
6-7		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG
6-8		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.0	0.0	10.0
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0315-0306					KG
6-9		HW1011819953	AA10119	476.8	2620.0X1020.0	1	1	661.42	0.0	661.42
1(1)	STIFFENER PLATE			Y	PL 30			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
6-10		AA1011819104	AA10119	45.1	2052.0X200.0	1	1	47.4	0.0	47.4
1(1)	INTERNAL PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
6-11		AA1011819139	AA10119	225.6	2250.0X890.0	1	1	330.4	0.0	330.4
1(1)	STIFFENER PLATE			Y	PL 20			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
7	21709970129 00			2002.5						
1(1)	ELBOW TEE PART 7 & 9			Y						
MF CD		N		2032.11	0306-0314-000D					

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



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Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
7-1		AA1011819104	AA10119	1117.0	5615.0X2353.0	1	1	1525.0	0.0	1525.0
1(1)	SHELL PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
7-2		AA1011052628	AA10152	33.6	2677.0	1	1	2.677	0.0	2.677
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
7-3		AA1011052628	AA10152	2.6	175.0	1	1	0.175	0.0	0.175
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
7-4		AA1011052628	AA10152	67.3	4770.0	1	1	4.77	0.0	4.77
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
7-5		HW1041055684	AA10455	10.7	733.0	1	1	0.733	0.0	0.733
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 114.3X6.02					
MF DR	ST-B-HFS-PIPES				0072-0315-0306					MR
7-6		AA1011819155	AA10119	5.9	250.0X186.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
7-7		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG
7-8		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.0	0.0	10.0
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
7-9		HW1011819953	AA10119	476.8	2620.0X1020.0	1	1	661.42	0.0	661.42
1(1)	STIFFENER PLATE			Y	PL 30			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
7-10		AA1011819104	AA10119	45.1	2052.0X200.0	1	1	47.4	0.0	47.4
1(1)	INTERNAL PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG

ENGG

WTX

Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Type Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
7-11		AA1011819139	AA10119	225.6	2250.0X890.0	1	1	330.4	0.0	330.4
1(1)	STIFFENER PLATE			Y	PL 20			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
8	21709970127 00			2798.8						
1(1)	ELBOW TEE PART 5 & 8			Y						
MF CD			N	2820.2	0306-0314-000D					
8-1		AA1011819104	AA10119	1621.9	6272.0X2353.0	1	1	1703.0	0.0	1703.0
1(1)	SHELL PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
8-2		AA1011052628	AA10152	78.1	5476.0	1	2	5.476	0.0	10.952
2(2)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
8-3		AA1011052628	AA10152	15.1	1032.0	1	2	1.032	0.0	2.064
2(2)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
8-4		AA1011819155	AA10119	5.9	250.0X186.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
8-5		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG
8-6		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.2	0.0	10.4
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
8-7		HW1011819953	AA10119	580.0	3170.0X1115.0	1	1	874.8	0.0	874.8
1(1)	STIFFENER PLATE			Y	PL 30			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
8-8		AA1011819139	AA10119	386.7	3170.0X1115.0	1	1	583.2	0.0	583.2
1(1)	STIFFENER PLATE			Y	PL 20			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

ENGG

WTX

Worked By	Initial	Date	Initial	Date
Checked By	Initial	Date	Initial	Date
Approved By	Initial	Date	Initial	Date



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Type Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
9	21709970129 00			2002.5						
1(1)	ELBOW TEE PART 7 & 9			Y						
MF CD		N		2032.11	0306-0314-000D					
9-1		AA1011819104	AA10119	1117.0	5615.0X2353.0	1	1	1525.0	0.0	1525.0
1(1)	SHELL PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
9-2		AA1011052628	AA10152	33.6	2677.0	1	1	2.677	0.0	2.677
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
9-3		AA1011052628	AA10152	2.6	175.0	1	1	0.175	0.0	0.175
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
9-4		AA1011052628	AA10152	67.3	4770.0	1	1	4.77	0.0	4.77
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
9-5		HW1041055684	AA10455	10.7	733.0	1	1	0.733	0.0	0.733
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 114.3X6.02					
MF DR	ST-B-HFS-PIPES				0072-0315-0306					MR
9-6		AA1011819155	AA10119	5.9	250.0X186.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
9-7		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG
9-8		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.0	0.0	10.0
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
9-9		HW1011819953	AA10119	476.8	2620.0X1020.0	1	1	661.42	0.0	661.42
1(1)	STIFFENER PLATE			Y	PL 30			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
9-10		AA1011819104	AA10119	45.1	2052.0X200.0	1	1	47.4	0.0	47.4
1(1)	INTERNAL PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
9-11		AA1011819139	AA10119	225.6	2250.0X890.0	1	1	330.4	0.0	330.4
1(1)	STIFFENER PLATE			Y	PL 20			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
10	21709970128 00			2002.5						
1(1)	ELBOW TEE PART 6 & 10			Y						
MF CD			N	2032.11	0306-0314-000D					
10-1		AA1011819104	AA10119	1117.0	5615.0X2353.0	1	1	1525.0	0.0	1525.0
1(1)	SHELL PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
10-2		AA1011052628	AA10152	33.6	2677.0	1	1	2.677	0.0	2.677
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
10-3		AA1011052628	AA10152	2.6	175.0	1	1	0.175	0.0	0.175
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
10-4		AA1011052628	AA10152	67.3	4770.0	1	1	4.77	0.0	4.77
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
10-5		AA1011052628	AA10152	10.7	733.0	1	1	0.733	0.0	0.733
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
10-6		AA1011819155	AA10119	5.9	250.0X186.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
10-7		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
10-8		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.0	0.0	10.0
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0315-0306					KG
10-9		HW1011819953	AA10119	476.8	2620.0X1020.0	1	1	661.42	0.0	661.42
1(1)	STIFFENER PLATE			Y	PL 30			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
10-10		AA1011819104	AA10119	45.1	2052.0X200.0	1	1	47.4	0.0	47.4
1(1)	INTERNAL PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
10-11		AA1011819139	AA10119	225.6	2250.0X890.0	1	1	330.4	0.0	330.4
1(1)	STIFFENER PLATE			Y	PL 20			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
11	21709970130 00			3308.8						
1(1)	ELBOW TEE PART 11			Y						
MF CD		N		3334.11	0306-0314-000D					
11-1		AA1011819104	AA10119	2589.1	8363.0X2817.0	1	1	2719.0	0.0	2719.0
1(1)	SHELL PLATE			Y	PL 14			MAY BE MADE IN TWO PARTS		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306-0301-0306					KG
11-2		AA1011052628	AA10152	98.3	6811.0	1	2	6.811	0.0	13.622
2(2)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
11-3		AA1011052628	AA10152	27.1	1858.0	1	2	1.858	0.0	3.716
2(2)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
11-4		AA1011819155	AA10119	5.9	250.0X186.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
11-5		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG

ENGG

WTX

Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
11-6		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.0	0.0	10.0
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
11-7		AA1011819155	AA10119	445.1	4460.0X1060.0	1	1	1067.0	0.0	1067.0
1(1)	STIFFENER PLATE			Y	PL 25			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
12	21709970131 00			2611.4						
1(1)	ELBOW TEE PART 12			Y						
MF CD			N	2636.71	0306-0314-000D					
12-1		AA1011819104	AA10119	2133.3	8363.0X2817.0	1	1	2719.0	0.0	2719.0
1(1)	SHELL PLATE			Y	PL 14			MAY BE MADE IN TWO PARTS		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306-0301-0306					KG
12-2		AA1011052628	AA10152	59.4	4260.0	1	1	4.26	0.0	4.26
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
12-3		AA1011052628	AA10152	8.2	560.0	1	1	0.56	0.0	0.56
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
12-4		AA1011052628	AA10152	98.3	6811.0	1	1	6.811	0.0	6.811
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
12-5		AA1011052628	AA10152	27.1	1858.0	1	1	1.858	0.0	1.858
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
12-6		AA1011819155	AA10119	5.9	250.0X186.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
12-7		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG

ENGG

WTX

Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
12-8		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.0	0.0	10.0
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
12-9		AA1011819155	AA10119	261.4	2710.0X750.0	1	1	419.2	0.0	419.2
1(1)	STIFFENER PLATE			Y	PL 25			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
13	21709970132 00			2611.4						
1(1)	ELBOW TEE PART 13			Y						
MF CD		N		2636.71	0306-0314-000D					
13-1		AA1011819104	AA10119	2133.3	8363.0X2817.0	1	1	2719.0	0.0	2719.0
1(1)	SHELL PLATE			Y	PL 14			MAY BE MADE IN TWO PARTS		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306-0301-0306					KG
13-2		AA1011052628	AA10152	59.4	4260.0	1	1	4.26	0.0	4.26
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40			MAY BE MADE IN TWO PARTS		
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
13-3		AA1011052628	AA10152	8.2	560.0	1	1	0.56	0.0	0.56
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
13-4		AA1011052628	AA10152	98.3	6667.0	1	1	6.667	0.0	6.667
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
13-5		AA1011052628	AA10152	27.1	1858.0	1	1	1.858	0.0	1.858
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
13-6		AA1011819155	AA10119	5.9	250.0X186.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
13-7		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG

ENGG

WTX

Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
13-8		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.0	0.0	10.0
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
13-9		AA1011819155	AA10119	261.4	2710.0X750.0	1	1	419.2	0.0	419.2
1(1)	STIFFENER PLATE			Y	PL 25			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
14	21709970133 00			2251.0						
1(1)	ELBOW TEE PART 14			Y						
MF CD		N		2265.81	0306-0314-000D					
14-1		AA1011819104	AA10119	1849.1	8363.0X2190.0	1	1	2114.0	0.0	2114.0
1(1)	SHELL PLATE			Y	PL 14			MAY BE MADE IN TWO PARTS		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306-0301-0306					KG
14-2		AA1011052628	AA10152	54.0	3918.0	1	1	3.918	0.0	3.918
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
14-3		AA1011052628	AA10152	6.7	458.0	1	1	0.458	0.0	0.458
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
14-4		AA1011052628	AA10152	98.3	6811.0	1	1	6.811	0.0	6.811
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
14-5		AA1011052628	AA10152	27.1	1858.0	1	1	1.858	0.0	1.858
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
14-6		AA1011819155	AA10119	5.9	250.0X186.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
14-7		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



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Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
14-8		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.0	0.0	10.0
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
14-9		HW1011819783	AA10119	192.1	4070.0X1050.0	1	1	528.85	0.0	528.85
1(1)	STIFFENER PLATE			Y	PL 15			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
15	21709970134 00			2261.2						
1(1)	ELBOW TEE PART 15			Y						
MF CD		N		2276.01	0306-0314-000D					
15-1		AA1011819104	AA10119	1849.1	8363.0X2190.0	1	1	2114.0	0.0	2114.0
1(1)	SHELL PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
15-2		AA1011052628	AA10152	54.0	3918.0	1	1	3.918	0.0	3.918
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
15-3		AA1011052628	AA10152	6.7	458.0	1	1	0.458	0.0	0.458
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
15-4		AA1011052628	AA10152	98.3	6811.0	1	1	6.811	0.0	6.811
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
15-5		AA1011052628	AA10152	27.1	1858.0	1	1	1.858	0.0	1.858
1(1)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
15-6		AA1011819155	AA10119	5.9	250.0X186.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
15-7		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG

ENGG

WTX

Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
15-8		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.0	0.0	10.0
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
15-9		HW1011819783	AA10119	202.0	4260.0X1100.0	1	1	579.9	0.0	579.9
1(1)	STIFFENER PLATE			Y	PL 15			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
16	21709970135 00			2727.4						
1(1)	ELBOW TEE PART 16			Y						
MF CD		N		2748.2	0306-0314-000D					
16-1		AA1011819104	AA10119	2012.8	8363.0X2190.0	1	1	2114.0	0.0	2114.0
1(1)	SHELL PLATE			Y	PL 14			MAY BE MADE IN TWO PARTS		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
16-2		AA1011052628	AA10152	98.3	6811.0	1	2	6.811	0.0	13.622
2(2)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
16-3		AA1011052628	AA10152	27.1	1858.0	1	2	1.858	0.0	3.716
2(2)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
16-4		AA1011819155	AA10119	5.9	250.0X186.0	1	2	9.6	0.0	19.2
2(2)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
16-5		AA1011819104	AA10119	0.6	100.0X100.0	1	4	1.2	0.0	4.8
4(4)	PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG
16-6		AA1011819104	AA10119	4.8	350.0X125.0	1	2	5.0	0.0	10.0
2(2)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
16-7		HW1011819783	AA10119	212.3	4460.0X1060.0	1	1	644.23	0.0	644.23
1(1)	STIFFENER PLATE			Y	PL 15			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
16-8		HW1011819953	AA10119	227.7	2417.0X400.0	1	1	239.1	0.0	239.1
1(1)	STIFFENER PLATE			Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
17	21709970136 00			2049.9						
2(2)	ELBOW TEE PART 17			Y						
MF CD			N	2076.11	0306-0314-000D					
17-1		AA1011819104	AA10119	1428.5	8363.0X3464.0	1	2	3343.0	0.0	6686.0
1(2)	SHELL PLATE			Y	PL 14			MAY BE MADE IN TWO PARTS		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306-0301-0306					KG
17-2		AA1011052628	AA10152	92.1	6397.0	1	2	6.397	0.0	12.794
1(2)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
17-3		AA1011052628	AA10152	22.6	1550.0	1	2	1.55	0.0	3.1
1(2)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
17-4		AA1011052628	AA10152	37.7	2918.0	1	2	2.918	0.0	5.836
1(2)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
17-5		AA1011052628	AA10152	3.2	220.0	1	2	0.22	0.0	0.44
1(2)	TECHNOLOGICAL SUPPORT			Y	PI 115.0X5.40					
MF DR	ST-ERW-TUBE				0072-0315-0306					MR
17-6		AA1011819155	AA10119	5.9	250.0X186.0	1	4	9.6	0.0	38.4
2(4)	LIFTING LUG PLATE			Y	PL 25					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
17-7		AA1011819104	AA10119	0.6	100.0X100.0	1	8	1.2	0.0	9.6
4(8)	PLATE			Y	PL 14			OD100/ID50		
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0317-0306					KG
17-8		AA1011819104	AA10119	4.8	350.0X125.0	1	4	5.0	0.0	20.0
2(4)	PAD PLATE			Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG

ENGG

WTX

Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

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CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
17-9		HW1011819783	AA10119	141.6	3170.0X720.0	1	2	282.45	0.0	564.9
1(2)	STIFFENER PLATE			Y	PL 15			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
17-10		HW1011819953	AA10119	300.4	3189.0X400.0	1	2	315.42	0.0	630.84
1(2)	STIFFENER PLATE		400X3189	Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
18	31709970017 00	HW1011819953	AA10119	653.4	4320.0X1250.0	1	3	1336.5	0.0	4009.5
3(3)	STIFFENER RING			Y	PL 30			MAY BE MADE IN TWO PARTS		
MF CD					0072-0301-0306-0314-000D					KG
19	31709970018 00	AA1011819155	AA10119	456.7	4270.0X1145.0	1	3	1008.4	0.0	3025.2
3(3)	STIFFENER RING			Y	PL 25			MAY BE MADE IN TWO PARTS		
MF CD					0072-0301-0306-0314-000D					KG
20	31709970019 00	HW1011819953	AA10119	828.0	3975.0X1250.0	1	4	1229.77	0.0	4919.08
4(4)	STIFFENER RING			Y	PL 30			MAY BE MADE IN TWO PARTS		
MF CD					0072-0301-0306-0314-000D					KG
21		HW1011819953	AA10119	227.1	2411.0X400.0	1	2	238.7	0.0	477.4
2(2)	SIDE STIFFENER		400X2411	Y	PL 30					
MF CD	ST-FE410 WB-PLATE				0072-0301-0306-0314-000D					KG
22	31709970022 11			48.6						
2(2)	ELBOW TEE LOOSE ITEM		DIA 150,L=350	Y						
MF CD			N		0306-0314-000D					
22-1		AA1010209302	AA10109	48.6	350.0	1	4	0.35	0.0	1.4
2(4)	SUPPORT BAR			Y	RND 160					
MF DR	ST-C20-HR-RND				0072-0315-0317-0306					KG
23	31709970020 00			948.8						
4(4)	SADDLE TOP RING			Y						
MF CD			N	950.54	0306-0314-000D					
23-1		HW1011819953	AA10119	473.4	6700.0X300.0	1	4	2302.9	0.0	9211.6
1(4)	SADDLE RING		300X6700	Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



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CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
23-2		HW1011819953	AA10119	381.5	3200.0X840.0	1	4	665.3	0.0	2661.2
1(4)	RIB			Y	PL 30			MAY BE MADE IN TWO PARTS		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
23-3		HW1011819953	AA10119	79.7	677.0X650.0	1	4	108.9	0.0	435.6
1(4)	ROD HOLDER			Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
23-4		AA1011819139	AA10119	7.1	470.0X300.0	1	8	23.2	0.0	185.6
2(8)	BRACKET			Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
24	31709970022 08			12.9						
8(8)	ELBOW TEE LOOSE ITEM			Y						
MF CD			N		0306-0314-000D					
24-1		HW1011819953	AA10119	12.9	522.0X261.0	1	8	33.7	0.0	269.6
1(8)	ROD HOLDER COVER			Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
25	11709970122 00			3740.2						
4(4)	SADDLE-ELBOW TEE DUCT			Y						
MF CD			N	3801.43	0306-0314-000D					
25-1		HW1011819953	AA10119	619.3	4383.0X900.0	1	4	975.4	0.0	3901.6
1(4)	SIDE PLATE		900X4383	Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
25-2		HW1011819953	AA10119	18.1	625.0X325.0	1	4	50.3	0.0	201.2
1(4)	LUG			Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
25-3		AA1011819139	AA10119	256.0	3749.0X435.0	1	8	268.8	0.0	2150.4
2(8)	RIB PLATE		435X3749	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
25-4		AA1011819139	AA10119	158.3	2317.0X435.0	1	8	118.5	0.0	948.0
2(8)	RIB PLATE		435X2318	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

ENGG

WTX

Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

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CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
25-5		AA1011819139	AA10119	112.8	1652.0X435.0	1	8	118.5	0.0	948.0
2(8)	RIB PLATE		435X1652	Y	PL 20					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
25-6		HW1011819953	AA10119	1333.6	4379.0X4411.0	1	4	4776.3	0.0	19105.2
1(4)	CENTER PLATE			Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
25-7		HW1011819945	AA10119	579.7	1400.0X900.0	1	4	623.1	0.0	2492.4
1(4)	BOTTAOM PLATE			Y	PL 60					
MF DR	ST-FE410 WB-PLATE				0072-0301-0317-0306					KG
25-8		AA1011819104	AA10119	135.3	6445.0X950.0	1	4	706.5	0.0	2826.0
1(4)	PAD PLATE		950X6445	Y	PL 14					
MF DR	STRUCTURAL STEEL WELDABLE				0072-0301-0306					KG
26		AA1012808149	AA10108	462.0	7487.0	1	2	7.484	0.0	14.968
2(2)	BEAM		L=7484	Y	ISMB 400X140					
MF CD	ST-A(FE410 WA)BEAM				0072-0301-0306					KG
27	31709970022 01			312.9						
1(1)	ELBOW TEE LOOSE ITEM			Y						
MF CD		N			0306-0314-000D					
27-1		HW1011819953	AA10119	312.9	1675.0X1170.0	1	1	484.6	0.0	484.6
1(1)	SUPPORT BRACKET			Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
28	31709970022 02			515.0						
1(1)	ELBOW TEE LOOSE ITEM			Y						
MF CD		N			0306-0314-000D					
28-1		HW1011819953	AA10119	515.0	2050.0X1675.0	1	1	849.1	0.0	849.1
1(1)	SUPPORT BRACKET			Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
29	21709970139 01	AA1011819139	AA10119	761.2	3232.0X2107.0	1	1	1122.6	0.0	1122.6
1(1)	GUIDE VANE			Y	PL 20			BENDING ALLOWANCE INCLUDED.		
MF CD					0072-0301-0306-0314-000D					KG

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15
Rev Date: 18.05.2023
Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Type Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
30	21709970139 02	AA1011819139	AA10119	1053.0	3723.0X2234.0	1	1	1371.1	0.0	1371.1
1(1)	GUIDE VANE			Y	PL 20			BENDING ALLOWANCE INCLUDED.		
MF CD					0072-0301-0306-0314-000D					KG
31	21709970139 03	AA1011819139	AA10119	1230.8	4062.0X2234.0	1	1	1496.0	0.0	1496.0
1(1)	GUIDE VANE			Y	PL 20			BENDING ALLOWANCE INCLUDED.		
MF CD					0072-0301-0306-0314-000D					KG
32	21709970139 04	AA1011819139	AA10119	1339.7	4242.0X2234.0	1	1	1562.2	0.0	1562.2
1(1)	GUIDE VANE			Y	PL 20			BENDING ALLOWANCE INCLUDED.		
MF CD					0072-0301-0306-0314-000D					KG
33	21709970139 05	AA1011819139	AA10119	1384.0	4248.0X2234.0	1	1	1564.4	0.0	1564.4
1(1)	GUIDE VANE			Y	PL 20			BENDING ALLOWANCE INCLUDED.		
MF CD					0072-0301-0306-0314-000D					KG
34	21709970139 06	AA1011819139	AA10119	1210.9	3457.0X2234.0	1	1	1273.1	0.0	1273.1
1(1)	GUIDE VANE			Y	PL 20			BENDING ALLOWANCE INCLUDED.		
MF CD					0072-0301-0306-0314-000D					KG
35	21709970139 07	AA1011819139	AA10119	761.2	3232.0X2107.0	1	1	1122.6	0.0	1122.6
1(1)	GUIDE VANE			Y	PL 20			BENDING ALLOWANCE INCLUDED.		
MF CD					0072-0301-0306-0314-000D					KG
36	21709970139 08	AA1011819139	AA10119	1053.0	3723.0X2234.0	1	1	1371.1	0.0	1371.1
1(1)	GUIDE VANE			Y	PL 20			BENDING ALLOWANCE INCLUDED.		
MF CD					0072-0301-0306-0314-000D					KG
37	21709970139 09	AA1011819139	AA10119	1230.8	4062.0X2234.0	1	1	1496.0	0.0	1496.0
1(1)	GUIDE VANE			Y	PL 20			BENDING ALLOWANCE INCLUDED.		
MF CD					0072-0301-0306-0314-000D					KG
38	21709970139 10	AA1011819139	AA10119	1339.7	4242.0X2234.0	1	1	1562.2	0.0	1562.2
1(1)	GUIDE VANE			Y	PL 20			BENDING ALLOWANCE INCLUDED.		
MF CD					0072-0301-0306-0314-000D					KG
39	21709970139 11	AA1011819139	AA10119	1384.0	4248.0X2234.0	1	1	1564.4	0.0	1564.4
1(1)	GUIDE VANE			Y	PL 20			BENDING ALLOWANCE INCLUDED.		
MF CD					0072-0301-0306-0314-000D					KG

ENGG

WTX

	Initial	Date	Initial	Date
Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
40	21709970139 12	AA1011819139	AA10119	1210.9	3457.0X2234.0	1	1	1273.1	0.0	1273.1
1(1)	GUIDE VANE			Y	PL 20			BENDING ALLOWANCE INCLUDED.		
MF CD					0072-0301-0306-0314-000D					KG
41	31709970024 00			794.4						
4(4)	SIDE SUPPORT			Y						
MF CD			N	805.5	0306-0314-000D					
41-1		HW1011819953	AA10119	400.7	4254.0X400.0	1	4	420.8	0.0	1683.2
1(4)	SIDE SUPPORT		400X4254	Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
41-2		HW1011819953	AA10119	393.7	4254.0X393.0	1	4	413.4	0.0	1653.6
1(4)	SIDE SUPPORT		393X4254	Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
42	21709970139 13	AA1011819139	AA10119	1809.7	6153.0X2043.0	1	1	2072.3	0.0	2072.3
1(1)	GUIDE VANE			Y	PL 20					
MF CD					0072-0301-0306-0314-000D					KG
43	21709970139 14	AA1011819139	AA10119	1809.7	6153.0X2043.0	1	1	2072.3	0.0	2072.3
1(1)	GUIDE VANE			Y	PL 20					
MF CD					0072-0301-0306-0314-000D					KG
44	31709970022 04			98.0						
2(2)	ELBOW TEE LOOSE ITEM			Y						
MF CD			N		0306-0314-000D					
44-1		HW1011819953	AA10119	98.0	1388.0X350.0	1	2	120.12	0.0	240.24
1(2)	PLATE			Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
45	31709970022 05			26.5						
2(2)	ELBOW TEE LOOSE ITEM			Y						
MF CD			N		0306-0314-000D					
45-1		HW1011819953	AA10119	26.5	375.0X350.0	1	2	32.05	0.0	64.1
1(2)	PLATE			Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

ENGG

WTX

Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

Rev Date: 18.05.2023

Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
46		HW1011819953	AA10119	85.0	1443.0X250.0	1	2	89.2	0.0	178.4
2(2)	PLATE		250X1443	Y	PL 30					
MF CD	ST-FE410 WB-PLATE				0072-0301-0306-0314-000D					KG
47	31709970022 06			207.2						
1(1)	ELBOW TEE LOOSE ITEM			Y						
MF CD			N		0306-0314-000D					
47-1		HW1011819953	AA10119	47.6	595.0X340.0	1	2	50.0	0.0	100.0
2(2)	GUIDE BEAM		340X595	Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
47-2		HW1011819953	AA10119	56.0	595.0X400.0	1	2	58.8	0.0	117.6
2(2)	GUIDE BEAM		400X595	Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
48	31709970022 03			235.6						
2(2)	ELBOW TEE LOOSE ITEM			Y						
MF CD			N	248.9	0306-0314-000D					
48-1		HW1011819953	AA10119	61.8	250.0X220.0	1	2	13.6	0.0	27.2
1(2)	BOTTOM SUPPORT			Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
48-2		HW1011819953	AA10119	11.2	1050.0X250.0	1	10	65.0	0.0	650.0
5(10)	BOTTOM SUPPORT			Y	PL 30					
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG
49		AA1011819198	AA10119	379.9	1100.0X1100.0	1	1	399.0	0.0	399.0
1(1)	BOTTOM PLATE		1100X1100	Y	PL 40					
MF CD	ST-FE410 WB-PLATE				0072-0301-0306-0314-000D					KG
50	31709970022 07			173.0						
4(4)	ELBOW TEE LOOSE ITEM			Y						
MF CD			N		0306-0314-000D					
50-1		HW1011819953	AA10119	173.0	2092.0X400.0	1	4	207.0	0.0	828.0
1(4)	STIFFENER PLATE			Y	PL 30			BENDING ALLOWNACE INCLUDED		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

ENGG

WTX

Worked By	hxebsd	30.11.2022	bk2gau	27.12.2022
Checked By	hxeaxk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022



COMBINED BILL OF MATERIAL

Printed On:13.07.2023

Printed By:

CBOM No: 01709970009 CBOM Var: 01
Description: ACC DUCT ELBOW TEE DIA 8000

Revno: 15

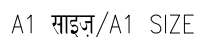
Rev Date: 18.05.2023

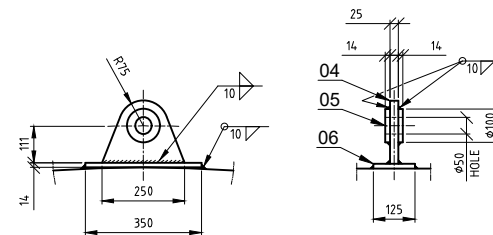
Total weight: 99239.6

Item No	Drawingno Var Mvar	Mat Code	Mat Spec	Weight	Blank Sizes	Nos	Qty	Norm/pc	Extra Norm	Total Norm
Qty(Total)	Description		Assy. Remarks	Inclusion?	Mat Shape			Remarks		
Typ Cat Zone	Var/Matl. Description		ENGG SIZE/GRP	Fab Wt	Route				Spare Code	Unit
51	31709970022 10			8.9						
24(24)	ELBOW TEE LOOSE ITEM			Y						
MF CD			N		0306-0314-000D					
51-1		AA1011819198	AA10119	8.9	200.0X200.0	1	24	13.2	0.0	316.8
1(24)	PLATE		200X200	Y	PL 40			OD200/ID64		
MF DR	ST-FE410 WB-PLATE				0072-0301-0306					KG

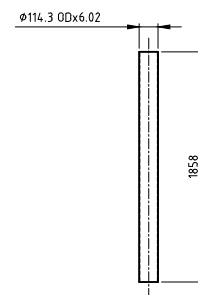
CBOM - 01709970009

	ENGG		WTX	
	Initial	Date	Initial	Date
Worked By	hxebds	30.11.2022	bk2gau	27.12.2022
Checked By	hxexk	26.12.2022	wtxskg	27.12.2022
Approved By	hxenp	20.01.2023	wtxskg	27.12.2022





VIEW - B



SECTION H1-H1



- At ends: Da 2800 mm – 4900 mm = ± 7 mm
Da 4900 mm – 6300 mm = ± 8 mm
Da 6300 mm – 8100 mm = ± 10 mm

(b) ADMISSIBLE OVALITY

- At ends: Da 2800 mm – 4900 mm $x = 14$ mm
Da 4900 mm – 6300 mm $x = 16$ mm
Da 6300 mm – 8100 mm $x = 20$ mm

Permissible ovality at any cross-section, other than ends of section, will be as per ASME Section VIII Div 1 UG-80

(c) ADMISSIBLE OBLATENESS

- $$D_a \leq 9220 \text{ mm} \quad q = 6 \text{ mm}$$

7. TRIAL ASSEMBLY OF INTER FACING PARTS TO BE DONE AT VENDOR WORKS FOR 10% OF COMPONENTS FOR LARGE ITEMS (NO. 1,2,3)
8. FABRICATION WEIGHT IS INCLUSIVE OF TECHNOLOGICAL SUPPORTS / STIFFENERS.
9. SUITABLE HOLE IN ITEM NO.2 IS TO BE MADE FOR WELDING WITH ITEM NO.3.
10. PROPER LOCKING OF CIRCULAR DUCT PARTS SHALL BE ENSURED IN SUCH A WAY THAT CURVATURE IS INTACT DURING TRANSPORTATION AND HANDLING AT SITE. TECHNOLOGICAL SUPPORTS / STIFFENERS TO BE PROVIDED FOR THIS.
11. IF REQUIRED, PLATE & STIFFENER MAY BE MADE WITH ONE/TWO JOINTS AND WELDED AS PER DETAIL F-F SO THAT JOINT DOES NOT FOUL WITH AND IS AT LEAST 300 mm AWAY FROM ANY OTHER WELD SEAM/HOLE / NOZZLE/ PAD AND SIZE (MIN. DIM.) OF ANY ONE PLATE IS AT LEAST 1000 mm. WELDED CLASSIFICATION GROUPS AND TEST SCOPE AS PER T.R.1
12. A SEMI CIRCULAR GROOVE OF RADIUS 25mm MAY BE PROVIDED IN THE STIFFENER AT THE LOCATION WHERE STIFFENER CROSSES A WELD SEAM TO MAINTAIN CONTACT BETWEEN PLATE (IT. 1) AND STIFFENER.



	14	10	6	SIZE & SYMBOL OF SEAM
	1.6	4.26	2.87	WELD LENGTH (M)
	1.8	2.31	0.61	WT. OF WELD METAL
E-7018				TYPE OF ELECTRODE

संशोधन REV.	दिनांक DATE	परामर्शदाता AUTHORED BY
		अनुमोदित CND

अत्यन्त विमोक्षण का गुण GRADE OF INTOLERANCE DIMENSION			श्री. जी. ओ. ए.ए. C.B.O.M. 01709870009/01			निरीक्षण का STATUS OF O.I.		
मास्टर-एण्ड A0230208 एण्ड MACHINE- A0230208 m			आदेश/आदेश ORDER/AGT			नाम/NAME		
वेल्डिंग- एण्ड A0621104 की श्रेणी बी WELDING-CLASS 'B' OF A0621104			WTX			Sd/-		
गुण कटिंग - एण्ड A0621101 की श्रेणी 3 GAS CUTTING-TABLE 3 OF A0621101								
मास्टर REV.	दिनांक DATE	निरीक्षण अनुमति BY मास्टर CBO	मास्टर REV.	दिनांक DATE	निरीक्षण अनुमति BY मास्टर CBO			

उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT	
--	--

ACC, PATRATU

	नाम / NAME	हस्ताक्षर / SIGN	दिनांक / DATE	संकेत संख्या No. of W
प्रमाणित पत्रिका पर अभिज्ञान आपका अपना	M.SINGH	Sd/-	09.11.2022	
	BHASHKAR	Sd/-	09.11.2022	
	N.Prakash	Sd/-	09.11.2022	

क.ग.ग.
(KG)
5.3

आपकी अभिलेख का मध्य
REFER TO ASSLY. DRG.

नमा नमांक
01709970009/01

नमा की संख्या
01

RECV. NO. OF ITEMS

आई कार्ड
CARD CODE

अभिलेख संख्या/DRAWING NO.

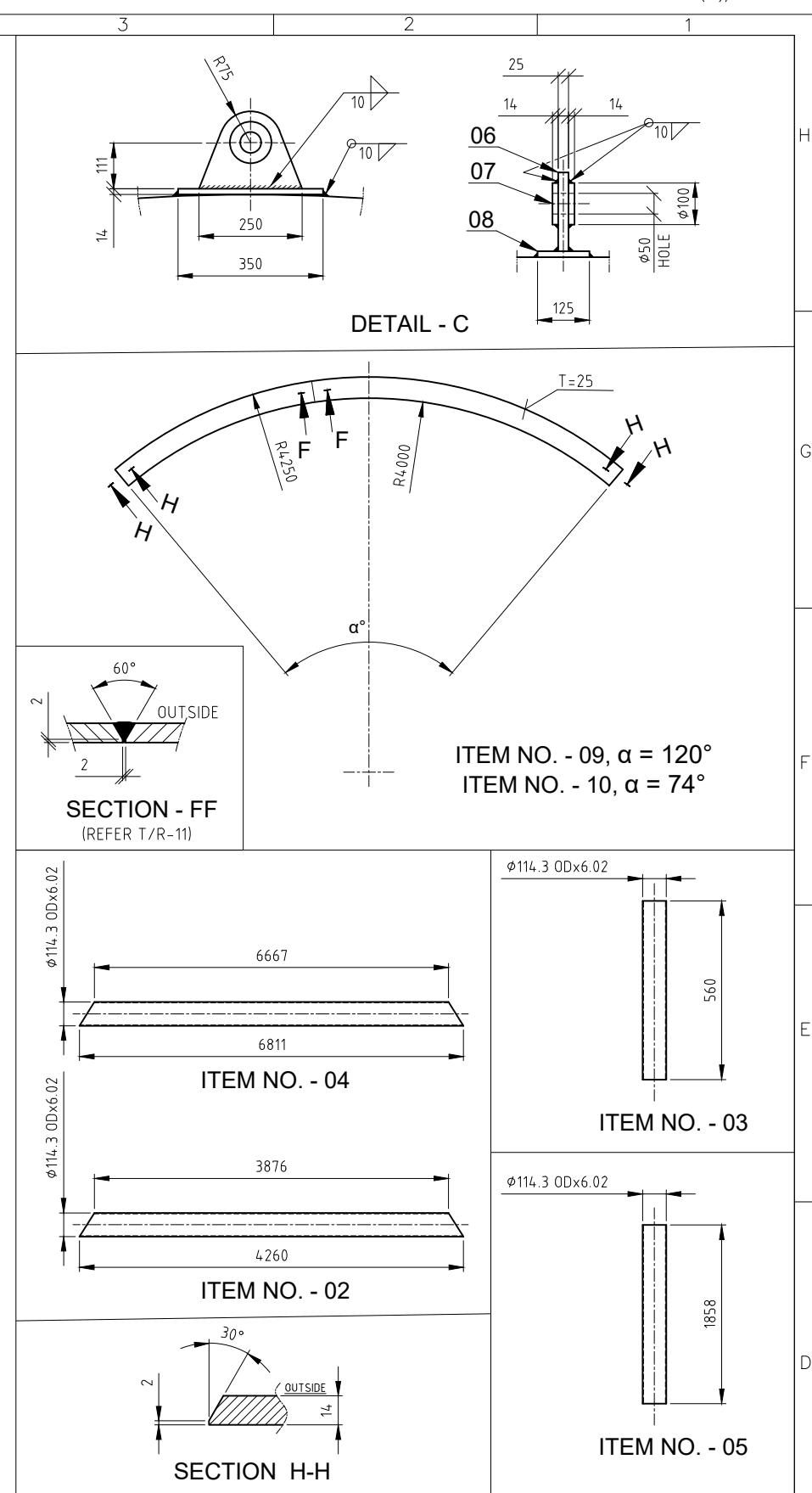
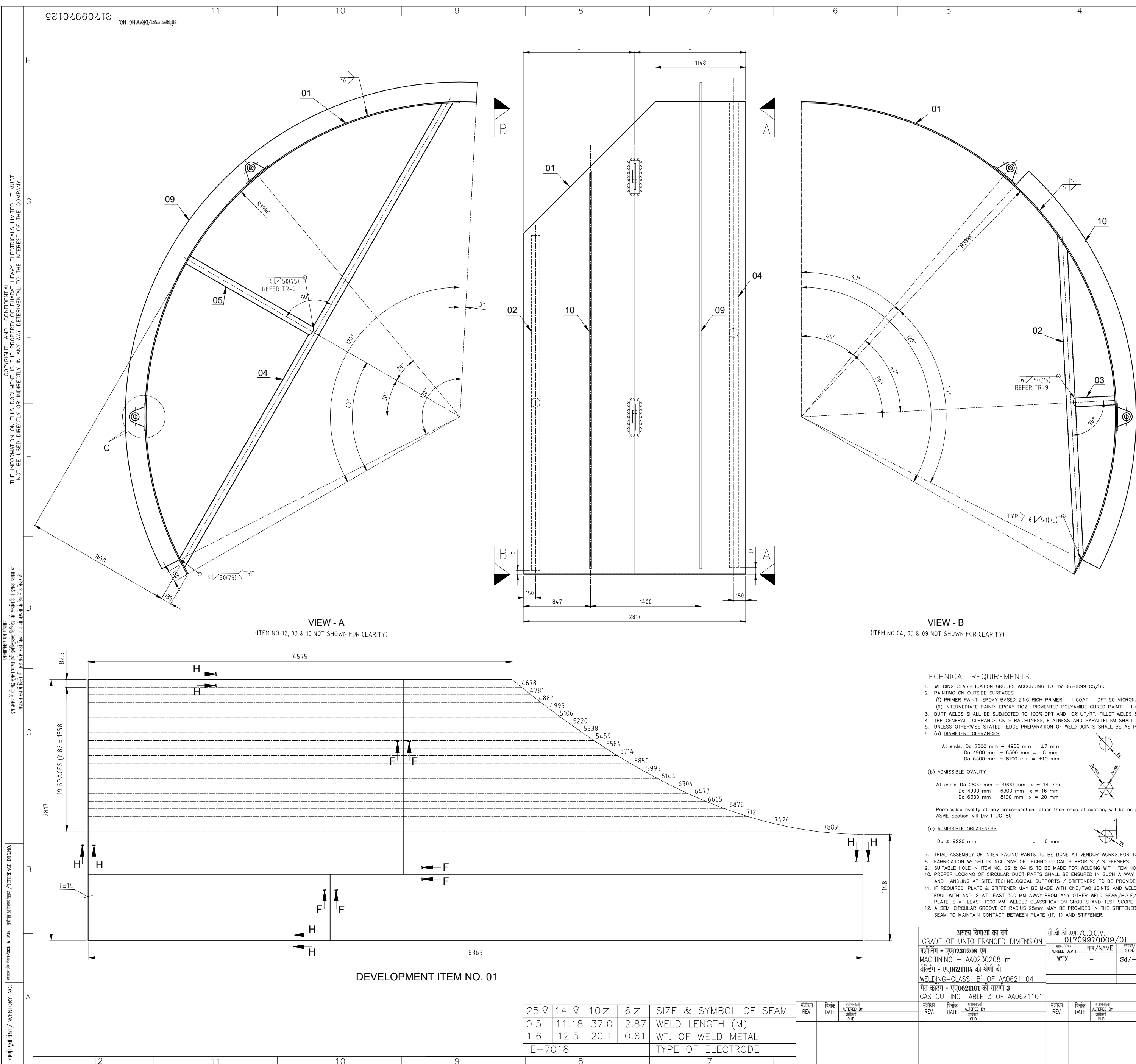
REV. 00

7

पृष्ठ संख्या/Sheets No. 01

पृष्ठों की संख्या/No. of Sheets 01

23



TECHNICAL REQUIREMENTS: –

1. WELDING CLASSIFICATION GROUPS ACCORDING TO HW 0620909 CS/BK.
2. PAINTING ON OUTSIDE SURFACES:
 - (I) PRIMER PAINT: EPOXY BASED ZINC RICH PRIMER - 1 COAT - 50 MICRON.
 - (II) INTERMEDIATE PAINT: EPOXY TiO2 PIGMENTED POLYAMIDE CURD PAINT - 1 COAT - 50 MICRON.
3. BUTT WELDS SHALL BE SUBJECTED TO 100% DPT AND 10% UT/RT. FILLET WELDS SHALL BE SUBJECTED TO 100% DPT.
4. THE GENERAL TOLERANCE ON STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE-F.
5. UNLESS OTHERWISE STATED EDGE PREPARATION OF WELD JOINTS SHALL BE AS PER AA0620502.
6. (a) DIAMETER TOLERANCES

At ends: Da 2800 mm – 4900 mm = ± 7 mm
Da 4900 mm – 6300 mm = ± 8 mm
Da 6300 mm – 8100 mm = ± 10 mm

(b) ADMISSIBLE QUALITY

At ends: Da 2800 mm – 4900 mm $x = 14$ mm
Da 4900 mm – 6300 mm $x = 16$ mm
Da 6300 mm – 8100 mm $x = 20$ mm

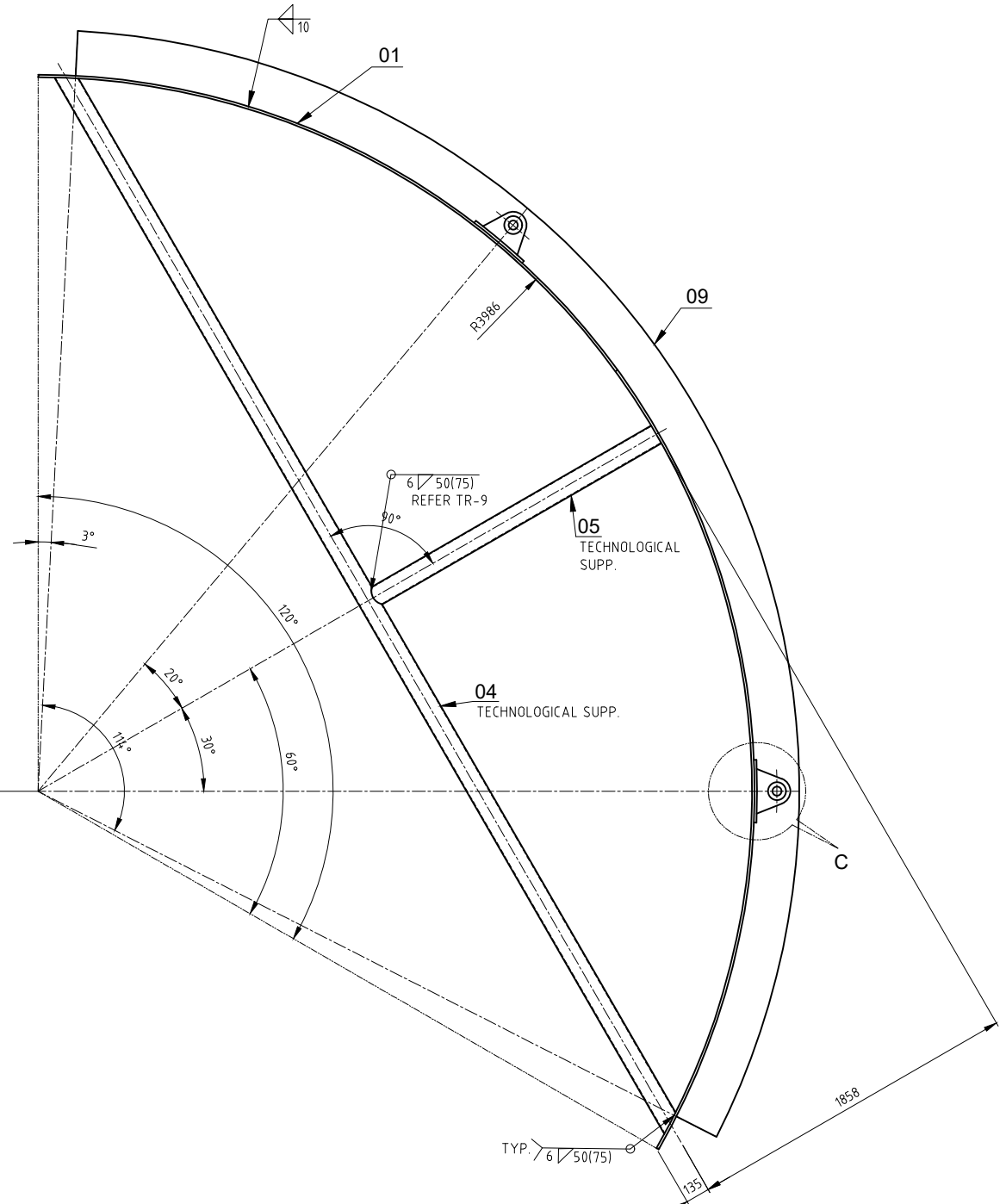
Permissible ovality at any cross-section, other than ends of section, will be as per ASME Section VIII Div 1 UG-80

(c) ADMISSIBLE OBLATENESS

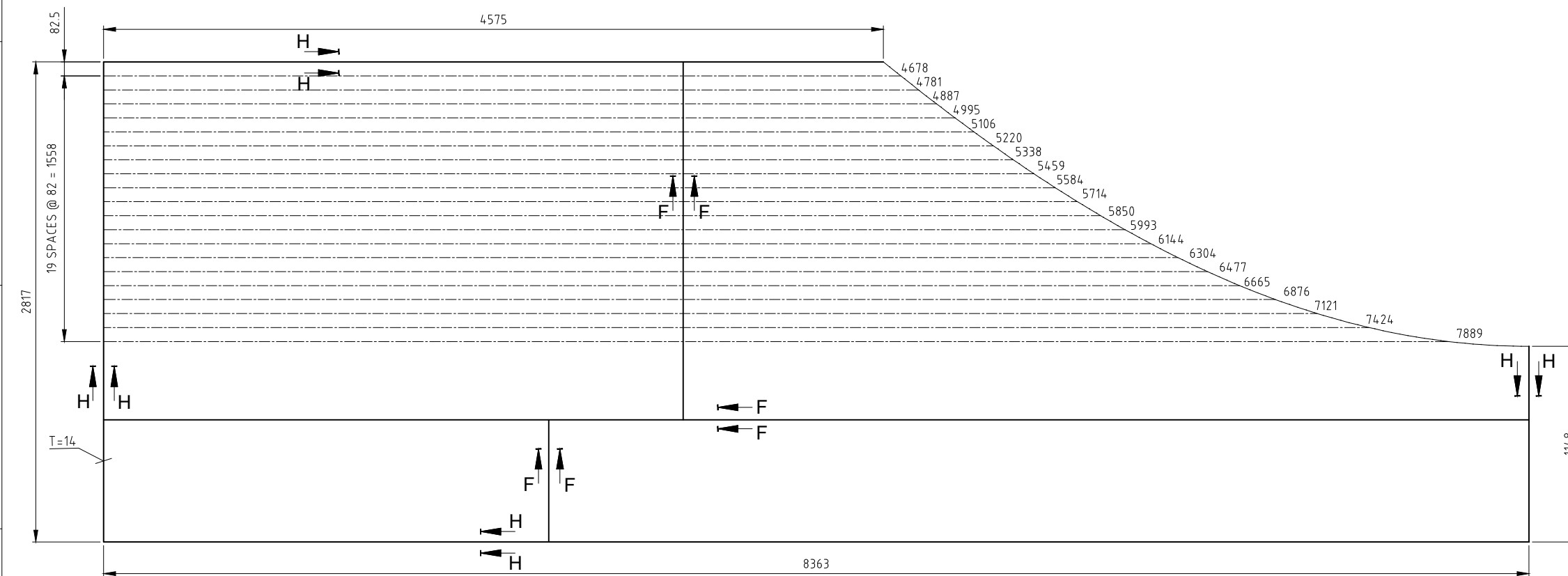
$$D_o \leq 9220 \text{ mm} \quad q = 6 \text{ mm}$$

7. TRAIL ASSEMBLY OF INTER FACING PARTS TO BE DONE AT VENDOR WORKS FOR 10% OF COMPONENTS FOR LARGE ITEMS (NO. 1,2,3)
8. FABRICATION WEIGHT IS INCLUSIVE OF TECHNOLOGICAL SUPPORTS / STIFFENERS.
9. SUITABLE HOLE IN ITEM NO. 02 & 04 IS TO BE MADE FOR WELDING WITH ITEM NO. 03 & 05.
10. INSPECTION LOCATION OF EACH REGULAR BUILT PARTS SHALL BE ENSURED THAT THE STRUCTURE IS INTACT DURING TRANSPORTATION AND HANDLING AT SITE. TECHNOLOGICAL SUPPORTS / STIFFENERS TO BE PROVIDED FOR THIS.
11. IF REQUIRED, PLATE & STIFFENER MAY BE MADE WITH ONE/TWO JOINTS AND WELDED AS PER DETAIL F-F SO THAT JOINT DOES NOT FOUL WITH WELD AND IS AT LEAST 300 MM AWAY FROM ANY OTHER WELD SEAM/HOLE/ NOZZLE/ PAD PERALD & SIZE (MIN. DIM.) OF ANY ONE PLATE IS AT LEAST 100 MM. WELD CLASSIFICATION GROUP AND TEST SPEC. AS PER 1.1.
12. A BEVEL GROOVE OF RADIUS 25mm MAY PROVIDED AT THE STIFFENER AT THE LOCATION WHERE STIFFENER CROSSES A WELD SEAM TO MAINTAIN CONTACT OF RADIUS PLATE (GT. 1) AND STIFFENER.

अध्यय विमाओं का वर्ग GRADE OF UNTOLERANCE DIMENSION				मी.मी.ओ.एफ./C.R.O.M. 01709970009/01		ऑथरिज्ड का नम. STATUS OF DRG. U		उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT				ACC, PATRATRU											
मशीनिंग - एए0230208 एफ MACHINING - AA0230208 m				आदेश द्वारा जारी ASSEMBY DRAWN		नाम/NAME		दिनांक/DATE		भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED RANIPUR, HARDWAR													
वील्डिंग - एए0621104 की श्रेणी बी WELDING-CLASS "B" OF AA0621104				WTX		-		Sd/-						-									
गम कटिंग - एए0621101 की साराणी 3 GAM CUTTING-TABLE 3 OF AA0621101																							
मशीन REV.		दिनांक DATE		ऑथरिज्ड BY आदेश CDR		मशीन REV.		दिनांक DATE		HXE		कोड/CODE4222				अनुपात/SCALE		पाक जि.ग. WEIGHT (KG)		आमंत्रणा ऑथरिज्ड का संदर्भ REFER TO ASSLY. DRG.		मशीन क्रमांक NO. OF ITEMS	
												शीर्षक/TITLE		काई कार्ड CARO CODE		अधिष्ठापन संख्या/DRAWING NO.		REV.					
												ELBOW TEE PART 3		-		7		21709970125		22 23 24			
																प्रति पन्ना/Sheets No.		01		प्रति की मात्रा/No. of Sheets 01			



VIEW - A
(ITEM NO 02, 03 & 10 NOT SHOWN FOR CLARITY)



DEVELOPMENT ITEM NO. 01

25 ∅	14 ∅	10 ∅	6 ∅	SIZE & SYMBOL OF SEAM
0.5	11.18	37.0	2.87	WELD LENGTH (M)
1.6	12.5	20.1	0.61	WT. OF WELD METAL
E-7018				TYPE OF ELECTRODE

संशोधन REV.	

नांक DATE	पंजी ALTER
	जर्न O

क्र.सं. V.	दिनांक DA

ALTERED BY
CHD

	सं.
	R

दिनांक DATE	
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APPROVED BY
DATE
HD

विभाग	DEPTT
कोड	
शीर्षक	

HXE
DE422
TITLE

BOW

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संख्या/D
17099

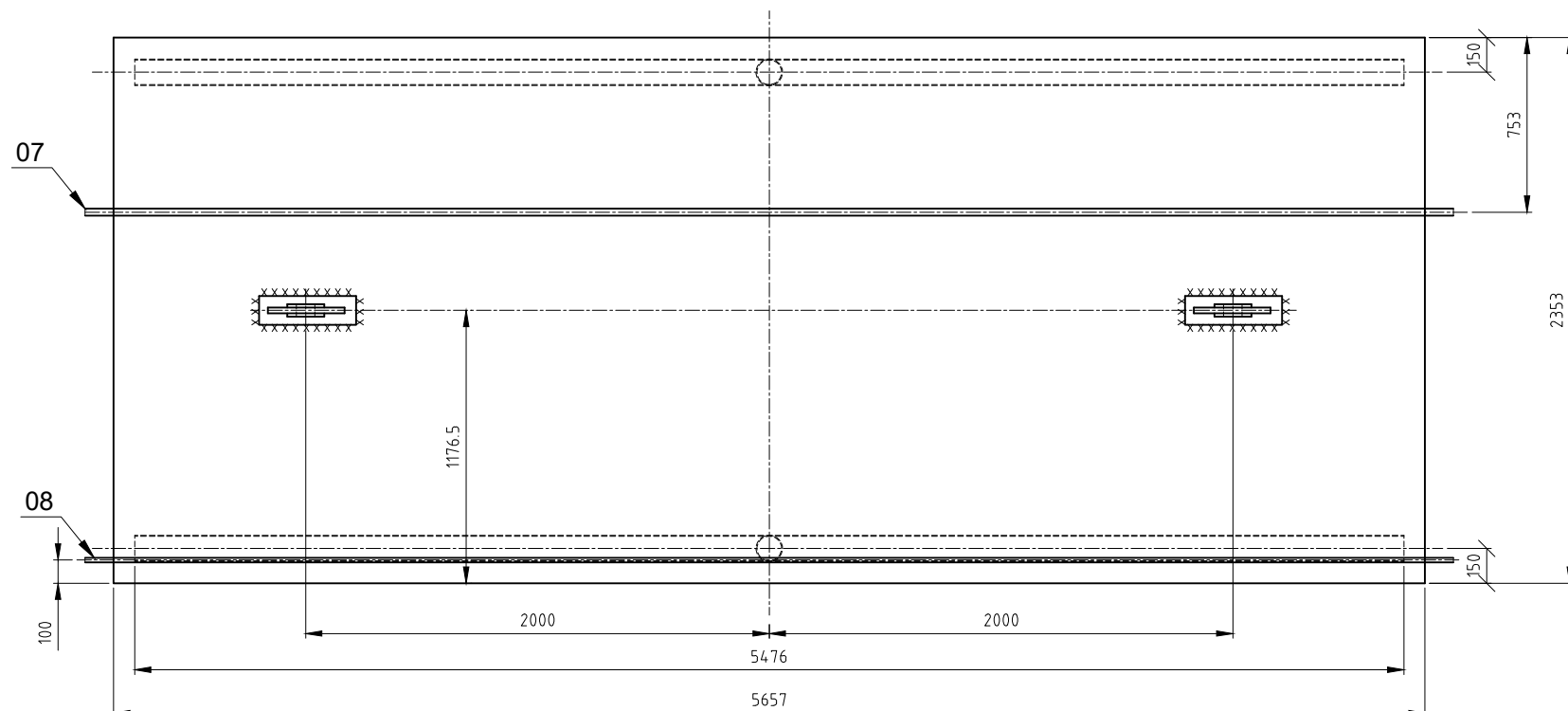
DRG. 9/01
WING N
0126

पृष्ठ क्रमांक	04
	22

OF	V.
MS	0
	24

A1 साइज़/A1 SIZE

सामग्री सूची संख्या/INVENTORY NO.	समाप्त और लिंक/SIGN & DATE	संदर्भ अभिक्रम संख्या/REFERENCE DRG.NO.
-----------------------------------	----------------------------	---



30 ∇	20 ∇	14 ∇	10 ∇	6 ∇	SIZE & SYMBOL OF SEAM
0.4	0.4	2.35	29.0	2.87	WELD LENGTH (M)
1.6	0.9	2.6	15.7	0.61	WT. OF WELD METAL
E-7018					TYPE OF ELECTRODE

संशोधन REV.	

दिनांक DATE	मॉडिफाई ALTERED BY अपडेट CHD
----------------	---------------------------------------

	RE

अमृत्य विभाओं का कार्य	सी.बी.ओ.ए./C.B.O.M.
MADE OF UNZIPPED DIMENSION	01709970009/01
निगा - ए0230208 एम	आगत डाटा AGRD DEPT
CHINING - AA0230208 m	नाम/NAME
एम - ए0621104 को श्रेणी दो	WTX
DING-CLASS 'B' OF AA0621104	-
कटिंग - ए0621101 को मापणी 3	Sd/-
C CUTTING-TABLE 3 OF AA0621101	

कोषिका वा मूल STATUS OF DRG. U दिनांक/DATE -	उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT भारत हेवी इलेक्ट्रिकल्स लिमिटेड BHARAT HEAVY ELECTR RANIPUR, HAR
--	--

 भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार
BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARDWAR

	नाम /NAME	हस्ताक्षर /SIGN	दिनांक /DATE	संलग्नक संख्या No. of V
निर्वाहक DRN	M.SINGH	Sd\—	09.11.2022	—
जर्जिल CHD	BHASKAR	Sd\—	09.11.2022	
सहायक APRO	N.Prakash	Sd\—	09.11.2022	

विभाग DEPTT. HXE		अनुपात/SCALE
कोड/CODE 4222		-

भार. कि. ग्रा. WEIGHT (KG) 2817.6	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 01709970009/01	नग क्रमांक - 05	संगीत के NO. OF ITEMS -
---	--	-----------------------	----------------------------------

शीर्षक/TITLE	ELBOW TEE PART 5 & 8
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कार्ड कोड CARD CODE	अभिकल्प संख्या/DRAWING NO.	REV.
7	21709970127	00
	22	23



1. WELDING CLASSIFICATION GROUPS ACCORDING TO HW 0620099 CS/BK.

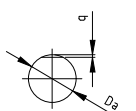
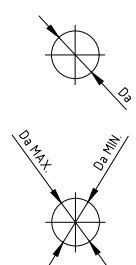
3. WELDING CLASSIFICATION GROUPS ACCORDING TO HW 0620099 CS/BK.
2. PAINTING ON OUTSIDE SURFACES:
 - (i) PRIMER PAINT: EPOXY BASED ZINC RICH PRIMER – 1 COAT – DFT 50 MICRON.
 - (ii) INTERMEDIATE PAINT: EPOXY TiO2 PIGMENTED POLYAMIDE CURED PAINT – 1 COAT – 50 MICRON.
3. BUTT WELDS SHALL BE SUBJECTED TO 100% DPT AND 10% UT/RT. FILLET WELDS SHALL BE SUBJECTED TO 10% DPT.
4. THE GENERAL TOLERANCE ON STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE-F.
5. UNLESS OTHERWISE STATED EDGE PREPARATION OF WELD JOINTS SHALL BE AS PER AA0620502.
6. (a) DIAMETER TOLERANCES

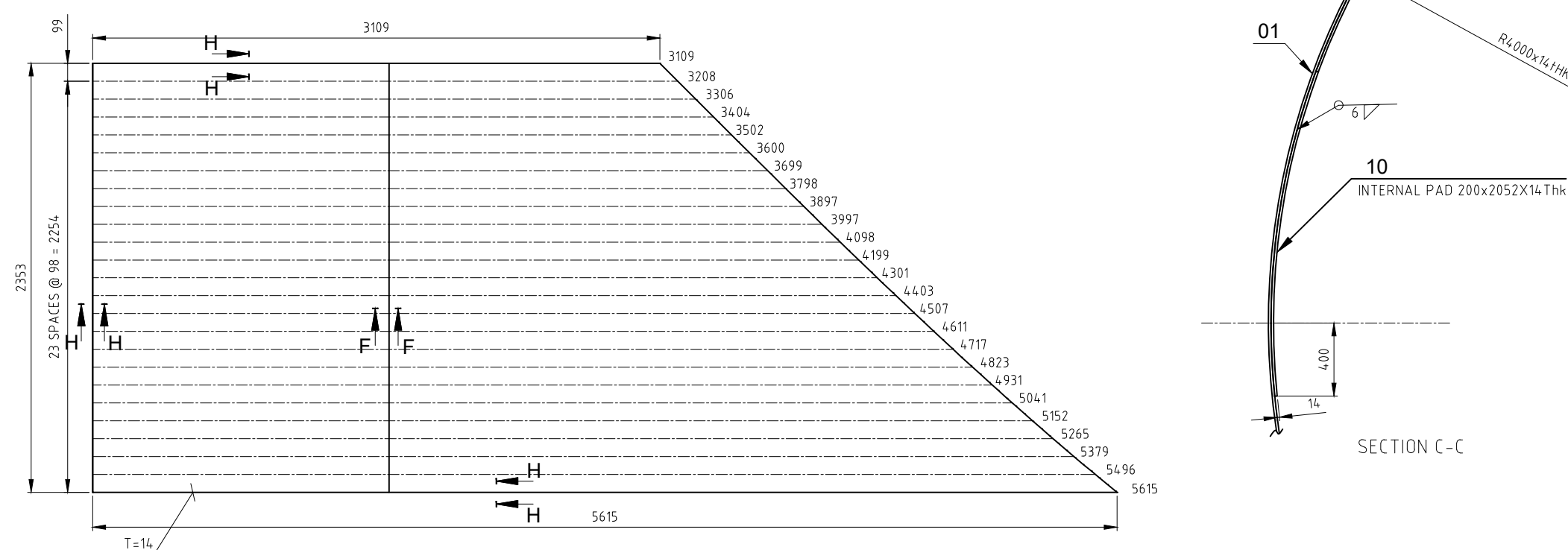
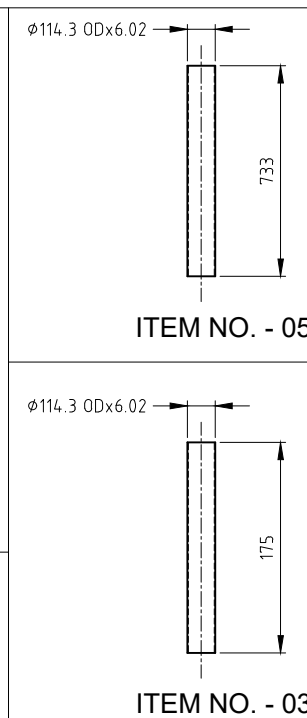
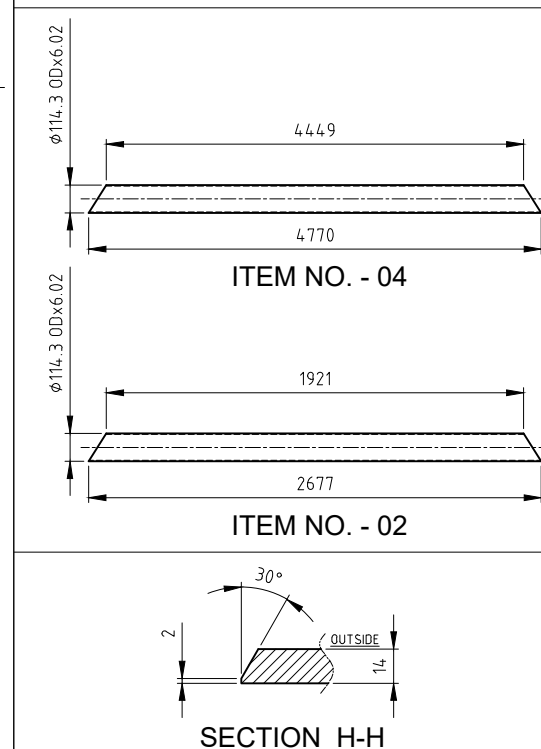
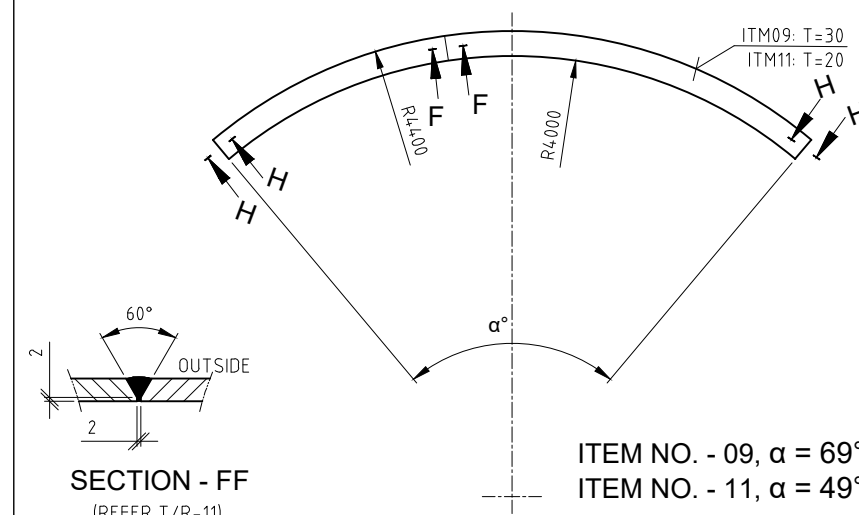
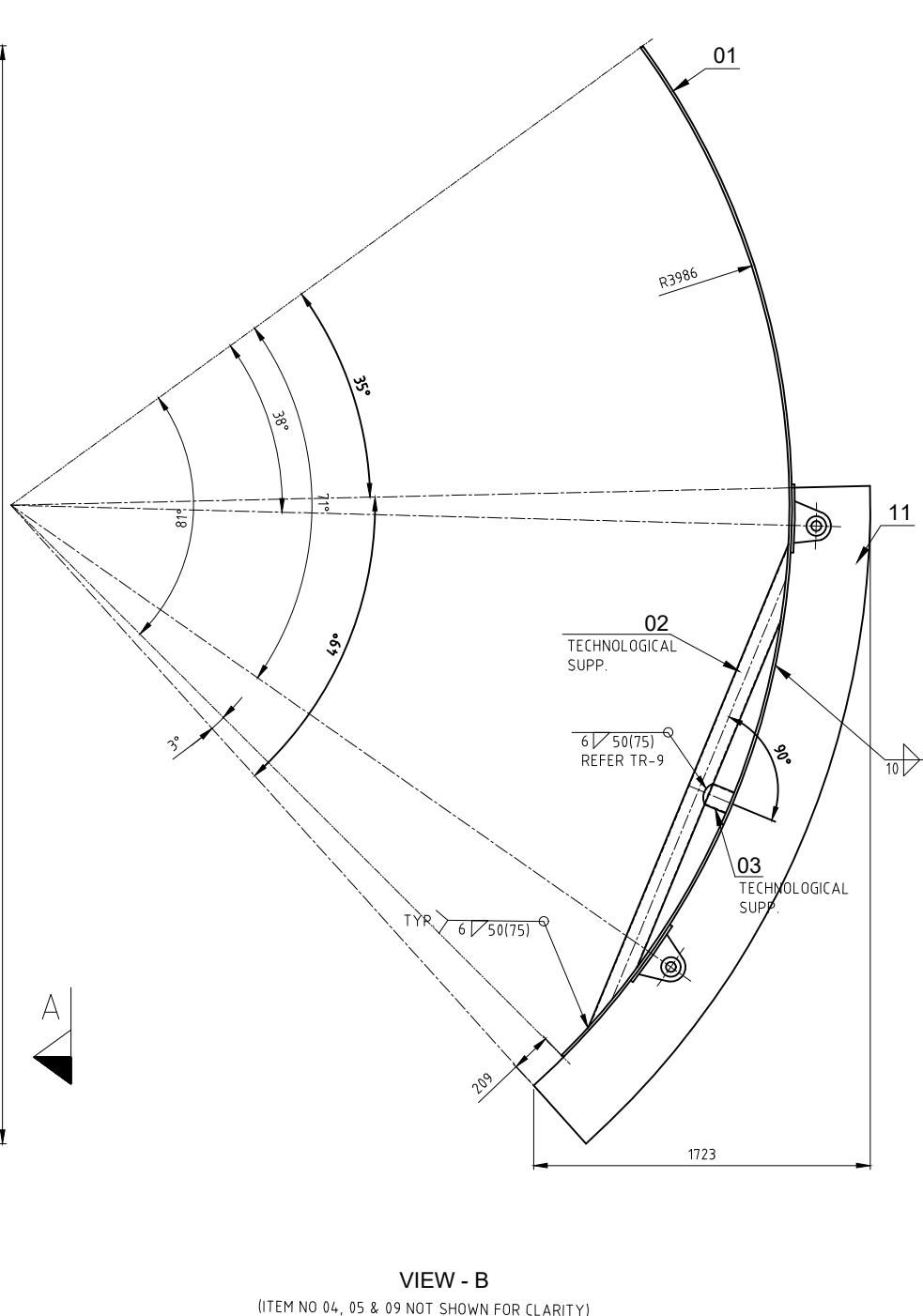
At ends: Da 2800 mm – 4900 mm = ± 7 mm
 Da 4900 mm – 6300 mm = ± 8 mm
 Da 6300 mm – 8100 mm = ± 10 mm
- (b) ADMISSIBLE OVALITY

At ends: Da 2800 mm – 4900 mm x = 14 mm
 Da 4900 mm – 6300 mm x = 16 mm
 Da 6300 mm – 8100 mm x = 20 mm

Permissible ovality at any cross-section, other than ends of section, will be as per ASME Section VIII Div 1 UG-80
- (c) ADMISSIBLE OBLATENESS

Da ≤ 9220 mm q = 6 mm
7. TRIAL ASSEMBLY OF INTER FACING PARTS TO BE DONE AT VENDOR WORKS FOR 10% OF COMPONENTS FOR LARGE ITEMS (NO. 1,2,3)
8. FABRICATION WEIGHT IS INCLUSIVE OF TECHNOLOGICAL SUPPORTS / STIFFENERS.
9. SUITABLE HOLE IN ITEM NO.2 IS TO BE MADE FOR WELDING WITH ITEM NO.3.
10. PROPER LOOKING OF CIRCULAR DUCT PARTS SHALL BE ENSURED IN SUCH A WAY THAT CURVATURE IS INTACT DURING TRANSPORTATION AND HANDLING AT SITE. TECHNOLOGICAL SUPPORTS / STIFFENERS TO BE PROVIDED FOR THIS.
11. IF REQUIRED, PLATE & STIFFENER MAY BE MADE WITH ONE/TWO JOINTS AND WELDED AS PER DETAIL F-F SO THAT JOINT DOES NOT FOUL WITH AND IS AT LEAST 300 MM AWAY FROM ANY OTHER WELD SEAM/HOLE/ NOZZLE/ PAD AND SIZE (MIN. DIM.) OF ANY ONE PLATE IS AT LEAST 1000 MM. WELDED CLASSIFICATION GROUPS AND TEST SCOPE AS PER T.R.1
12. A SEMI CIRCULAR GROOVE OF RADIUS 25mm MAY BE PROVIDED IN THE STIFFENER AT THE LOCATION WHERE STIFFENER CROSSES A WELD SEAM TO MAINTAIN CONTACT BETWEEN PLATE, (IT. 1) AND STIFFENER.





SECTION C-C

1. WELDING CLASSIFICATION GROUPS ACCORDING TO HW 0620099 CS/BK.

2. PAINTING ON OUTSIDE SURFACES:

(I) PRIMER PAINT: EPOXY BASED ZINC RICH PRIMER - 1 COAT - DFT 50 MICRON.

(II) INTERMEDIATE PAINT: EPOXY TiO2 PIGMENTED POLYAMIDE CURED PAINT - 1 COAT - 50 MICRON.

3. BUTT WELDS SHALL BE SUBJECTED TO 100% DPT AND 10% URT. FILLET WELDS SHALL BE SUBJECTED TO 10% DPT.

4. THE GENERAL TOLERANCE ON STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE-F.

5. OTHERWISE STATED EDGE PREPARATION OF WELD JOINTS SHALL BE AS PER AA0620502.

6. (a) DIAMETER TOLERANCES

At ends: Da 2800 mm - 4900 mm = ± 7 mm
Do 4900 mm - 6300 mm = ± 8 mm
Do 6300 mm - 8100 mm = ± 10 mm

(b) ADMISSIBLE OVALITY

At ends: Da 2800 mm - 4900 mm $x = 14$ mm
Do 4900 mm - 6300 mm $x = 16$ mm
Do 6300 mm - 8100 mm $x = 20$ mm

Permissible ovality at any cross-section, other than ends of section, will be as per ASME Section VIII Div 1 UG-80

(c) ADMISSIBLE OBLATENESS

Da ≤ 9220 mm $q = 6$ mm

7. FINAL ASSEMBLY OF INTER FACING PARTS TO BE DONE AT VENDOR WORKS FOR 10% OF COMPONENTS FOR LARGE ITEMS (NO. 1,2,3).

8. TRIBARIATION HEIGHT IS INCLUSIVE OF TECHNOLOGICAL SUPPORTS / STIFFENERS.

9. SUITABLE HOLE IN ITEM NO. 02 & 04 IS TO BE MADE FOR WELDING WITH ITEM NO. 03 & 05.

10. PROPER LOCKING OF CIRCULAR DUCT PARTS SHALL BE ENSURED IN SUCH A WAY THAT CURVATURE IS INTACT DURING TRANSPORTATION AND HANDLING AT SITE.

TECHNOLOGICAL SUPPORTS / STIFFENERS TO BE PROVIDED FOR THIS.

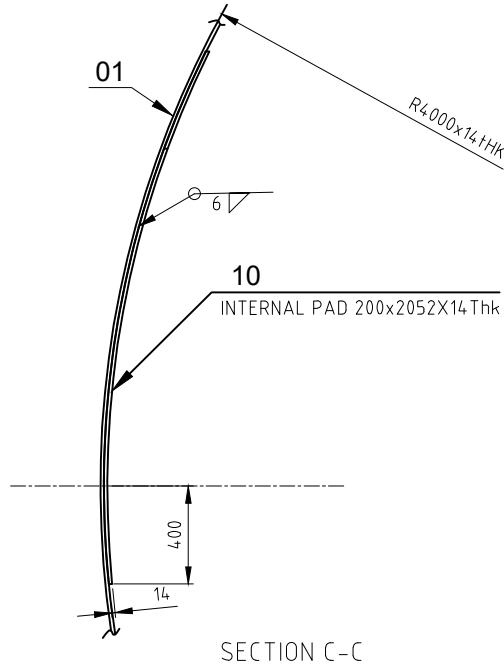
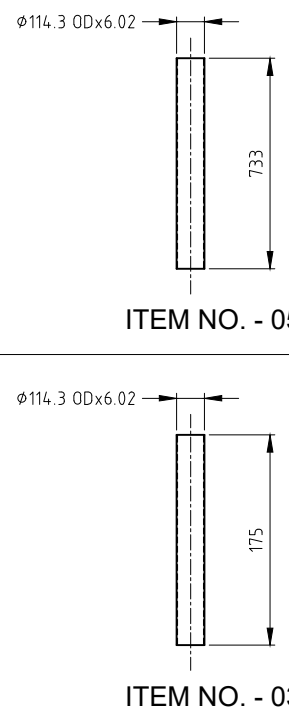
11. IF REQUIRED, PLATE & STIFFENER MAY BE MADE WITH ONE/TWO JOINTS AND WELDED AS PER DETAIL F-F SO THAT JOINT DOES NOT FOUL WITH AND IS AT LEAST 300 MM AWAY FROM ANY OTHER WELD SEAM/HOLE/ NOZZLE/ PAD AND SIZE (MM. DIM.) OF ANY ONE PLATE IS AT LEAST 1000 MM. WELDED CLASSIFICATION GROUPS AND TEST SCOPE AS PER TR.1

12. A SEMI CIRCULAR GROOVE OF RADIUS 25mm may be PROVIDED IN THE STIFFENER AT THE LOCATION WHERE STIFFENER CROSSES A WELD SEAM TO MAINTAIN CONTACT BETWEEN PLATE (IT. 1) AND STIFFENER.

उत्पाद का प्रकार STATUS OF DRG. U	उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT
दिनांक/DATE -	

ACC, PATRATU

 भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED RANIPUR, HARDWAR		संपन्नक/सं. (S/N) M.SINGH भा.प्र.सं. (P.N) BHASKAR प्र.सं. (S.N) N.Prakash		कक्षा/सं. (S/N) Sd/- Sd/- Sd/-		तिथि/Date 09/11/2022 09/11/2022 09/11/2022		शीट नं. (S.N) 01 01 01	
डिजा. (DESIGN) HXE ऑर्डर/ORDER CODE/4222		 अनुपात/SCALE -		भा. कि.ग. (WT) 2013.9 01709970009/01		ऑपरेटिंग असेम्बली का संदर्भ REFER TO ASSLY. DRG. 01709970009/01		भा. कि.ग. (WT) 06 01709970128	
गैरवर्क/TITLE ELBOW TEE PART 6 & 10		कार्ड कोड (CARD CODE) -		ड्रिंग/DRG 01		ड्रिंग/DRG 01		रिवीज/REV 00 01	



1. WELDING CLASSIFICATION GROUPS ACCORDING TO HW 0620099 CS/BK.

2. PAINTING ON OUTSIDE SURFACES:

(i) PRIMER PAINT: EPOXY BASED ZINC RICH PRIMER – 1 COAT – DFT 50 MICRON.

(ii) INTERMEDIATE PAINT: EPOXY TiO2 PIGMENTED POLYAMIDE CURED PAINT – 1 COAT – 50 MICRON.

3. BUTT WELDS SHALL BE SUBJECTED TO 100% DPT AND 10% UT/RT. FILLET WELDS SHALL BE SUBJECTED TO 10% DPT.

4. THE GENERAL TOLERANCE ON STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE-F.

5. UNLESS OTHERWISE STATED EDGE PREPARATION OF WELD JOINTS SHALL BE AS PER AA0620502.

6. (a) DIAMETER TOLERANCES

At ends: Da 2800 mm – 4900 mm = ± 7 mm
Da 4900 mm – 6300 mm = ± 8 mm
Da 6300 mm – 8100 mm = ± 10 mm

(b) ADMISSIBLE OVALITY

At ends: Da 2800 mm – 4900 mm x = 14 mm
Da 4900 mm – 6300 mm x = 16 mm
Da 6300 mm – 8100 mm x = 20 mm

Permissible ovality at any cross-section, other than ends of section, will be as per ASME Section VIII Div 1 UG-80

(c) ADMISSIBLE OBLATENESS

Da ≤ 9220 mm q = 6 mm

7. TRIAL ASSEMBLY OF INTER FACING PARTS TO BE DONE AT VENDOR WORKS FOR 10% OF COMPONENTS FOR LARGE ITEMS (NO. 1,2,3)

8. FABRICATION WEIGHT IS INCLUSIVE OF TECHNOLOGICAL SUPPORTS / STIFFENERS.

9. SUITABLE HOLE IN ITEM NO. 02 & 04 IS TO BE MADE FOR WELDING WITH ITEM NO. 03 & 05.

10. PROPER LOCATION OF CIRCULAR DUCT PARTS SHALL BE ENSURED IN SUCH A WAY THAT CURVATURE IS INTACT DURING TRANSPORTATION AND HANDLING AT SITE.

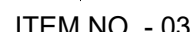
TECHNOLOGICAL SUPPORTS / STIFFENERS TO BE PROVIDED FOR THIS.

11. IF REQUIRED, PLATE & STIFFENER MAY BE MADE WITH ONE/TWO JOINTS AND WELDED AS PER DETAIL F-F SO THAT JOINT DOES NOT FOUL WITH AND IS AT LEAST 300 mm AWAY FROM ANY OTHER WELD SEAM/HOLE/ NOZZLE/ PAD AND SIZE (MIN. DIM.) OF ANY ONE PLATE IS AT LEAST 1000 mm. WELDED CLASSIFICATION GROUPS AND TEST SCOPE AS PER T.R.1

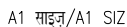
12. A SEMI CIRCULAR GROOVE OF RADIUS 25mm MAY BE PROVIDED IN THE STIFFENER AT THE LOCATION WHERE STIFFENER CROSSES A WELD SEAM TO MAINTAIN CONTACT

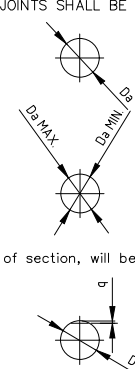
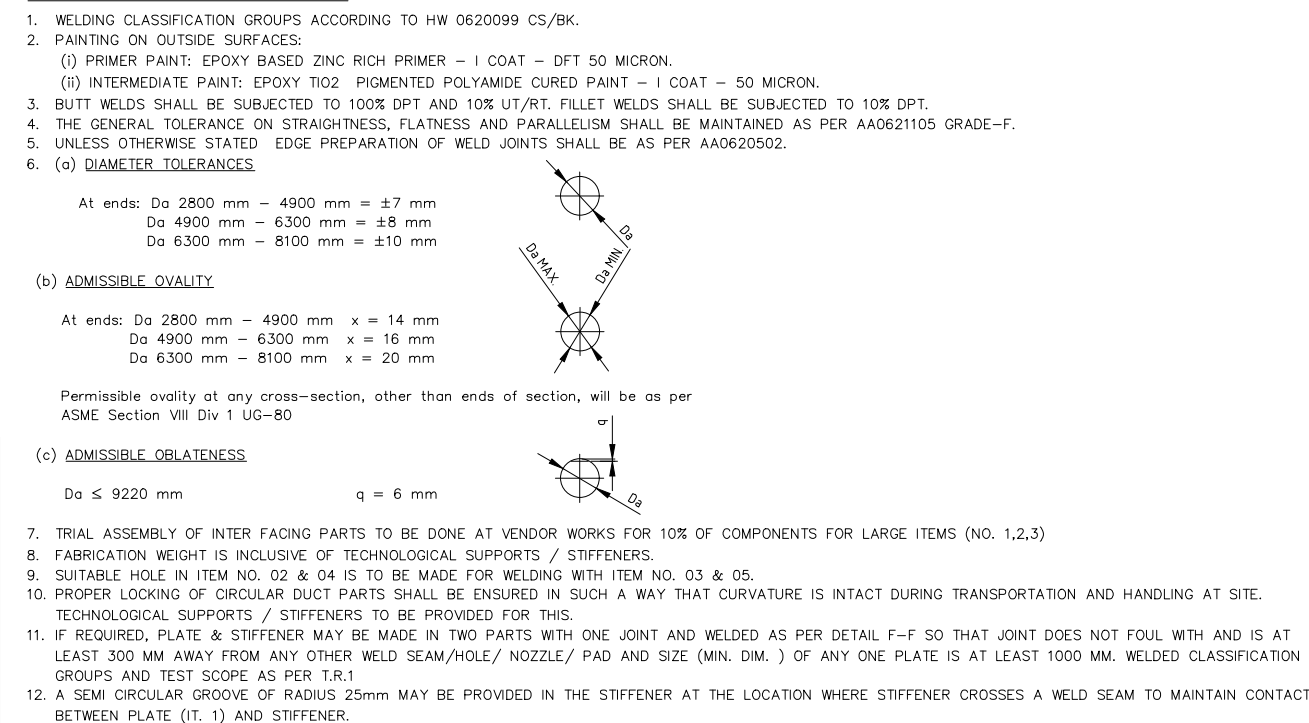
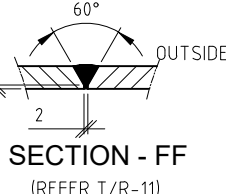
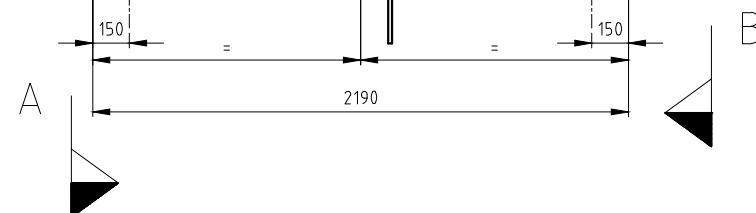
BETWEEN PLATE (T-1) AND STIFFENER		बी.बी.ओ./C.B.O.M		ऑडिटर का नाम STATUS OF DRG.		उपडा का प्रकार या ग्राहक/परियोजना का नाम		ACC, PATRATU	
आयत विमाओं का क्रम		01709970009/01		U		TYPE OF PRODUCT OR NAME OF			
GRADE OF UNFOLTERED DIMENSION						CUSTOMER/PROJECT			
मशीन - एल0230208 एल		कार्ड नम्बर A00203208	नाम/NAME	पंजी/SON	दिनांक/DATE				
MACHINING A0203208 m		WTX	Sd/-						
वेल्डिंग - एल0621104 की श्रेणी बी									
WELDING-CLASS 'B' OF A0621104									
मम कटिंग - एल0621101 की श्रेणी 3									
GAS CUTTING-TABLE 3 OF A0621101									
मशीन	दिनांक REV. DATE	दस्तावेज BY CHP	ऑडिटर BY CHP	मिप्रा DEPT.	HXE	अनुपात/SCALE	मा. कि. ग. WEIGHT (KG)	अप्रमानी ऑडिटर/का नमून REFER TO ASSLY. DRG.	मा. कटिंग NO. OF ITEMS
				कोड/COE4222		-	2013.9	01709970009/01	07.09
शीर्षक/TITLE						कार्ड कोड CARD CODE	अधिकृत संख्या/DRAWING NO.		REV.
ELBOW TEE PART 7 & 9						-	21709970129		00
						पृष्ठ संख्या/Sheets No.		पृष्ठों की संख्या/No. of Sheets	
						01		01	

प्राप्ति मूल्यांकन संख्या / INVENTORY NO.	प्राप्ति की तिथि / DATE	प्राप्ति का विवरण / REFERENCE DRG.NO.
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OF MS	V. 0 24
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अमेचली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 01709970009/01	नग क्रमांक 15	मशी का संख्या NO. OF ITEMS —
अधिकल्प संख्या/DRAWING NO. 21709970134	22	REV. 00 23 24

THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

संपत्ति का अधिकार सुरक्षित है। इस दस्तावेज़ का उपयोग केवल उद्देश्य के लिए किया जाना चाहिए। इस दस्तावेज़ का उपयोग किसी भी अन्य उद्देश्य के लिए किया जाना नहीं चाहिए।

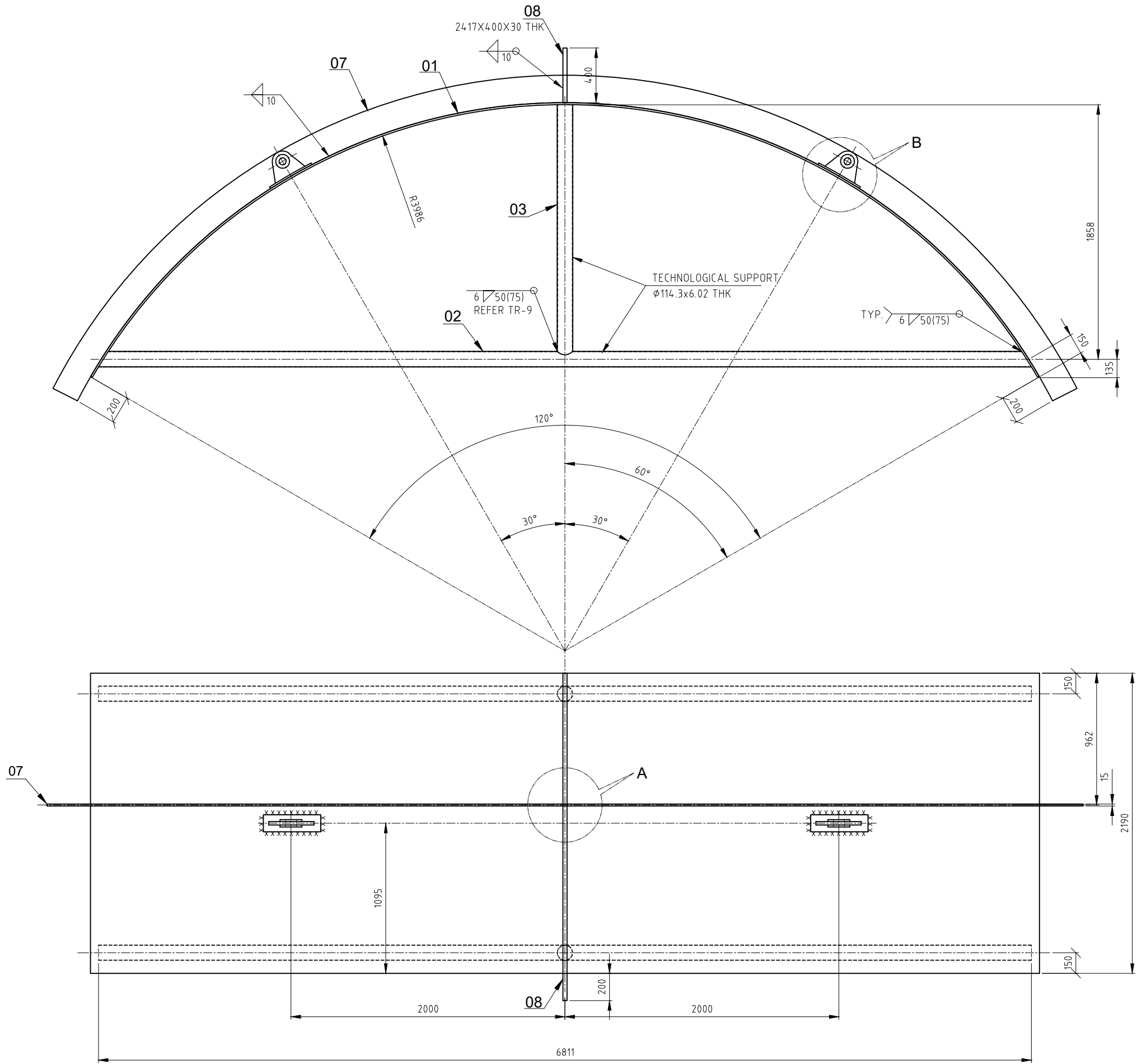
संपत्ति का अधिकार सुरक्षित है। इस दस्तावेज़ का उपयोग केवल उद्देश्य के लिए किया जाना चाहिए। इस दस्तावेज़ का उपयोग किसी भी अन्य उद्देश्य के लिए किया जाना नहीं चाहिए।

प्रथम कोण प्रक्षेपण/FIRST ANGLE PROJECTION

सभी विमाएं मिलीमीटर में हैं।/ALL DIMENSIONS ARE IN mm.

फॉर्म 45 (बी)/FORM 45 (B)

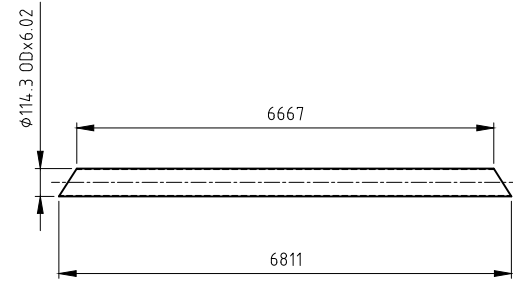
21709970135



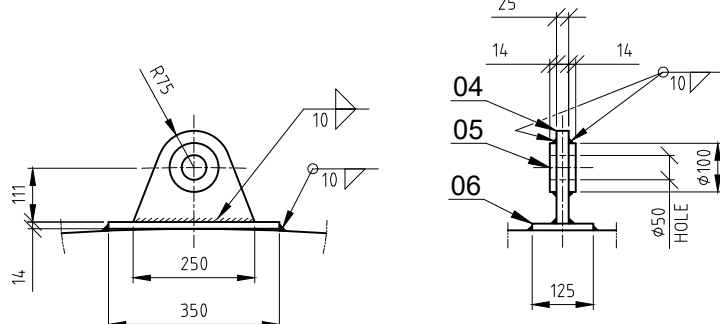
DEVELOPMENT ITEM NO. - 01

SIZE & SYMBOL OF SEAM	WELD LENGTH (M)	WT. OF WELD METAL	TYPE OF ELECTRODE
15 ▽ 14 ▽ 10 ▽ 6 ▽	0.2 2.19 26.0 2.87	0.3 2.5 14.1 0.61	E-7018

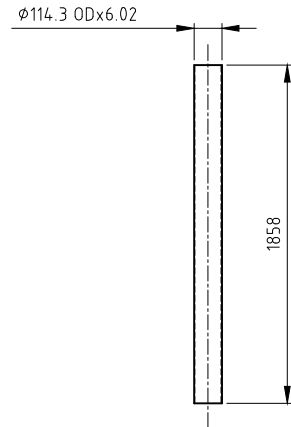
ITEM NO. - 02



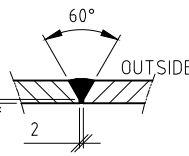
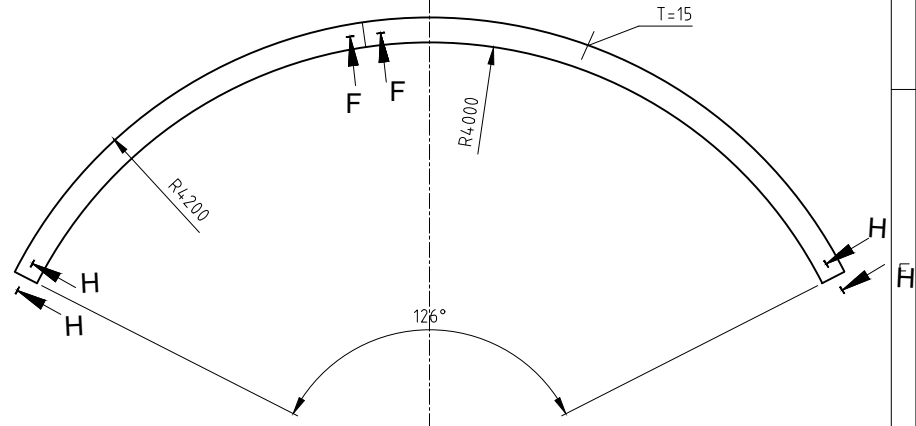
VIEW - B



ITEM NO. - 03

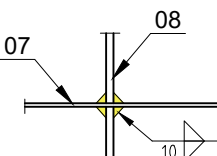
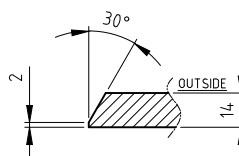


ITEM NO. - 07



SECTION - FF
(REFER T/R-11)

SECTION H-H



DETAIL - A

TECHNICAL REQUIREMENTS:-

- WELDING CLASSIFICATION GROUPS ACCORDING TO HW 0620099 CS/BK.
- PAINTING ON OUTSIDE SURFACES:
 - PRIMER PAINT: EPOXY BASED ZINC RICH PRIMER - I COAT - DFT 50 MICRON.
 - INTERMEDIATE PAINT: EPOXY TIO2 PIGMENTED POLYAMIDE CURED PAINT - I COAT - 50 MICRON.
- BUTT WELDS SHALL BE SUBJECTED TO 100% DPT AND 10% UT/RT. FILLET WELDS SHALL BE SUBJECTED TO 10% DPT.
- THE GENERAL TOLERANCE ON STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE-F.
- UNLESS OTHERWISE STATED EDGE PREPARATION OF WELD JOINTS SHALL BE AS PER AA0620502.
- (a) DIAMETER TOLERANCES
At ends: Da 2800 mm - 4900 mm = ± 7 mm
Da 4900 mm - 6300 mm = ± 8 mm
Da 6300 mm - 8100 mm = ± 10 mm
(b) ADMISSIBLE OVALITY
At ends: Da 2800 mm - 4900 mm x = 14 mm
Da 4900 mm - 6300 mm x = 16 mm
Da 6300 mm - 8100 mm x = 20 mm
Permissible ovality at any cross-section, other than ends of section, will be as per ASME Section VIII Div 1 UG-80
(c) ADMISSIBLE OBLATENESS
Da ≤ 9220 mm q = 6 mm
- TRIAL ASSEMBLY OF INTER FACING PARTS TO BE DONE AT VENDOR WORKS FOR 10% OF COMPONENTS FOR LARGE ITEMS (NO. 1,2,3)
- FABRICATION WEIGHT IS INCLUSIVE OF TECHNOLOGICAL SUPPORTS / STIFFENERS.
- SUITABLE HOLE IN ITEM NO.2 IS TO BE MADE FOR WELDING WITH ITEM NO.3.
- PROPER LOCKING OF CIRCULAR DUCT PARTS SHALL BE ENSURED IN SUCH A WAY THAT CURVATURE IS INTACT DURING TRANSPORTATION AND HANDLING AT SITE. TECHNOLOGICAL SUPPORTS / STIFFENERS TO BE PROVIDED FOR THIS.
- IF REQUIRED, PLATE & STIFFENER MAY BE MADE WITH ONE/TWO JOINTS AND WELDED AS PER DETAIL F-F SO THAT JOINT DOES NOT FOUL WITH AND IS AT LEAST 300 MM AWAY FROM ANY OTHER WELD SEAM/HOLE/ NOZZLE/ PAD AND SIZE (MIN. DIM.) OF ANY ONE PLATE IS AT LEAST 1000 MM. WELDED CLASSIFICATION GROUPS AND TEST SCOPE AS PER T.R.1
- A SEMI CIRCULAR GROOVE OF RADIUS 25mm MAY BE PROVIDED IN THE STIFFENER AT THE LOCATION WHERE STIFFENER CROSSES A WELD SEAM TO MAINTAIN CONTACT BETWEEN PLATE (IT. 1) AND STIFFENER.

असह्य विमाओं का वर्ग
GRADE OF UNTOLERANCED DIMENSION

मशीनिंग - एप0230208 एप
MACHINING - AA0230208 m

वेल्डिंग - एप0621104 को श्रेणी बी
WELDING-CLASS 'B' OF AA0621104

गैस कटिंग - एप0621101 को सारणी 3
GAS CUTTING-TABLE 3 OF AA0621101

मौ.बी.ओ.ए.प./C.B.O.M.
01709970009/01

मौ.बी.ओ.ए.प./C.B.O.M.
01709970009/01

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01709970009/01

मौ.बी.ओ.ए.प./C.B.O.M.
01709970009/01

उत्पाद का प्रकार या ग्राहक/परियोजना का नाम
TYPE OF PRODUCT OR NAME OF

उत्पाद का प्रकार या ग्राहक/परियोजना का नाम
CUSTOMER/PROJECT

उत्पाद का प्रकार या ग्राहक/परियोजना का नाम
CUSTOMER/PROJECT

उत्पाद का प्रकार या ग्राहक/परियोजना का नाम
CUSTOMER/PROJECT

ACC, PATRATU

भारत हेवी इलेक्ट्रिकल्स लिमिटेड, राणीपुर, हरिद्वार
BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARDWAR

नाम/NAME	हस्ताक्षर/SIGN	दिनांक/DATE	श्रीमान/मान
M.SINGH	Sd/-	09.11.2022	No. of Var.
BHASKAR	Sd/-	09.11.2022	-
N.Prakash	Sd/-	09.11.2022	-

भारत हेवी इलेक्ट्रिकल्स लिमिटेड, राणीपुर, हरिद्वार
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BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARDWAR

आवृत्ति/REPEAT NO. OF SHEETS

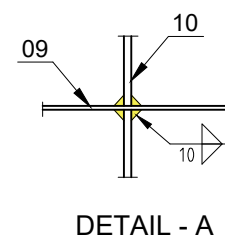
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आवृत्ति/REPEAT NO. OF SHEETS

सामग्री सूची संख्या / INVENTORY NO.	लगाए जा दिनांक / SIGN & DATE
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2000	21709970136/01		
कार्ड कोड CARD CODE	अभिकल्प संख्या/DRAWING NO. 21709970136	REV 00	22 23

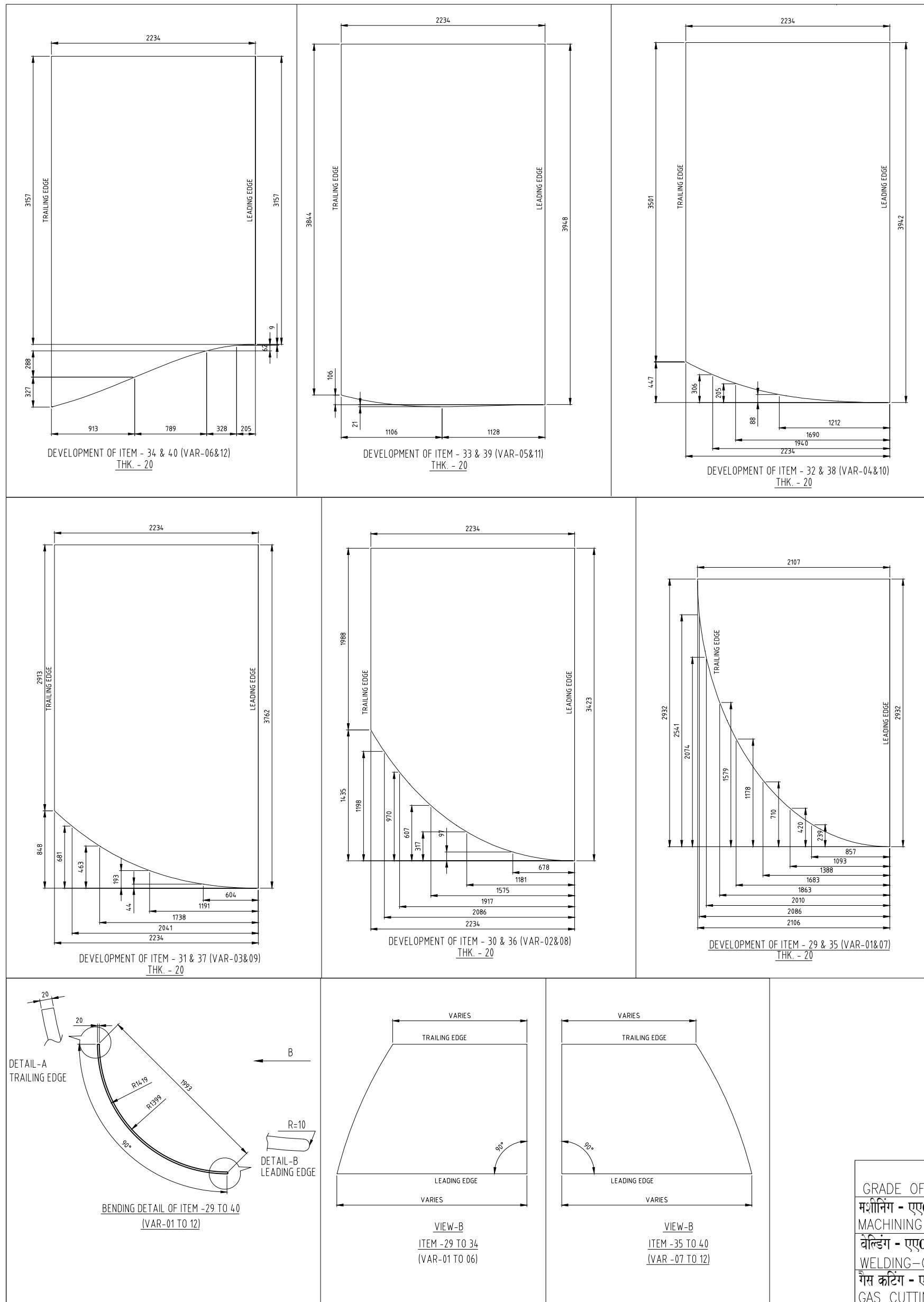
A1 साइज/A1 SIZE

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गामगी मूवा संख्या /INVENTORY NO.	रजिस्ट्रार और दिनांक /SIGN & DATE	संबंधित अभिलेख संख्या /REFERENCE DRG.NO.
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स्वाधिकार एवं गोपनीय
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संपत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकार हो।

संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY
—	—	जावेदकर्ता CHD

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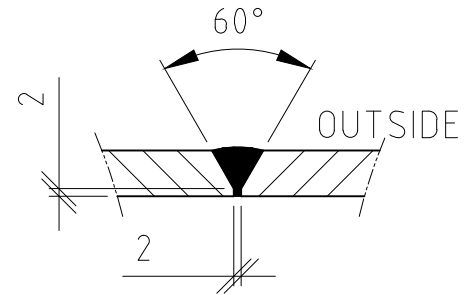
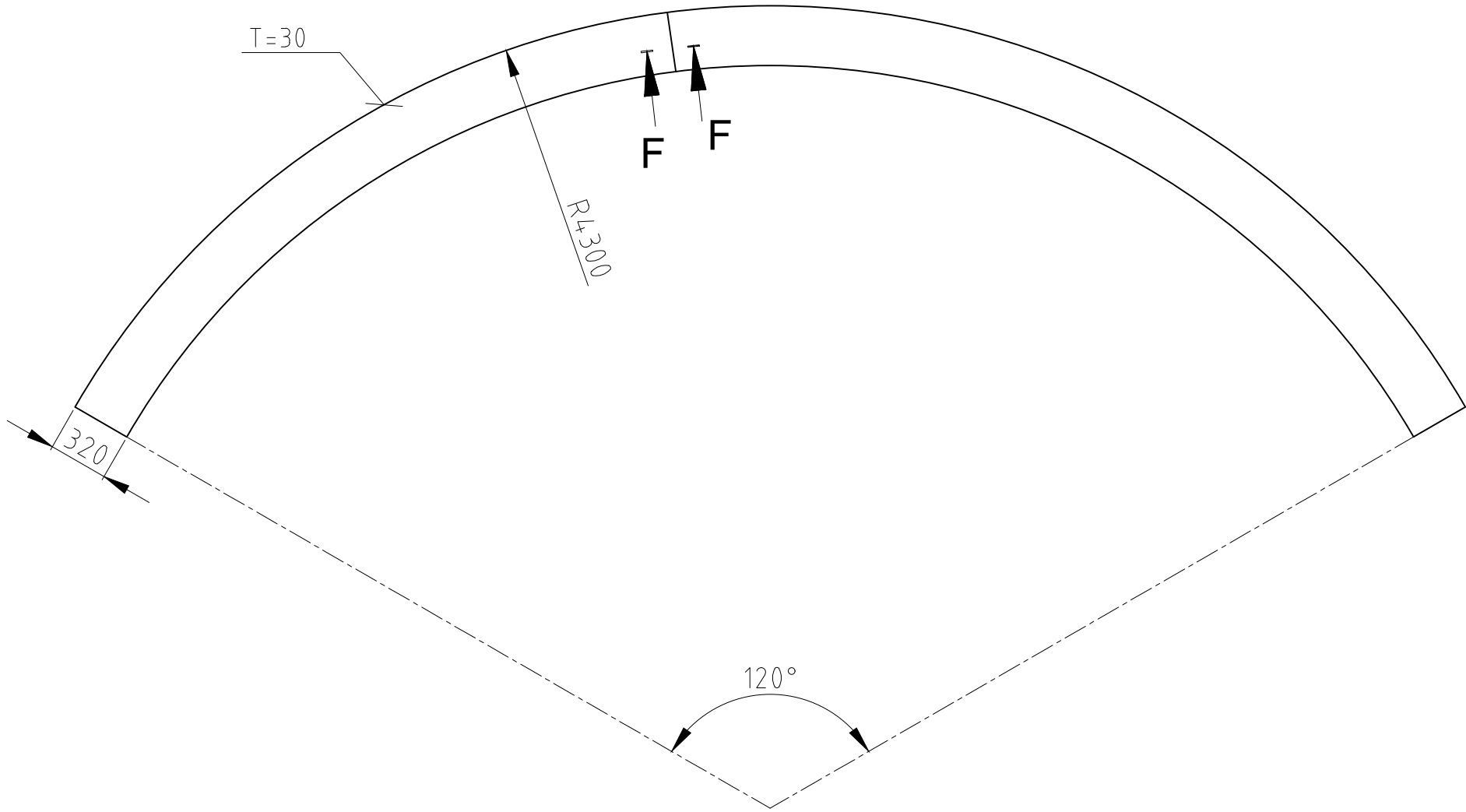
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31709970017
अभिकल्प संख्या/DRAWING NO.



SECTION - FF

TECHNICAL REQUIREMENTS:—

- WELDING CLASSIFICATION GROUPS ACCORDING TO HW 0620099 CS/BK.
- PAINTING ON OUTSIDE SURFACES:
 - PRIMER PAINT: EPOXY BASED ZINC RICH PRIMER — I COAT — DFT 50 MICRON.
 - INTERMEDIATE PAINT: EPOXY TIO₂ PIGMENTED POLYAMIDE CURED PAINT — I COAT — 50 MICRON.
- BUTT WELDS SHALL BE SUBJECTED TO 100% DPT AND 10% UT/RT. FILLET WELDS SHALL BE SUBJECTED TO 10% DPT.
- THE GENERAL TOLERANCE ON STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE—F.
- UNLESS OTHERWISE STATED EDGE PREPARATION OF WELD JOINTS SHALL BE AS PER AA0620502.
- IF REQUIRED, STIFFENER MAY BE MADE IN TWO PARTS WITH ONE JOINT AND WELDED AS PER DETAIL F—F

	30 ∇	SIZE & SYMBOL OF SEAM
	0.32	WELD LENGTH (M)
	1.25	WT. OF WELD METAL
E-7018		TYPE OF ELECTRODE

असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 01709970009/01			अभिकल्प का स्तर STATUS OF DRG.
मशीनिंग - एए0230208 एम MACHINING — AA0230208 m			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE
वेल्डिंग - एए0621104 की श्रेणी बी WELDING—CLASS ‘B’ OF AA0621104			WT.	—	Sd.	—
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING—TABLE 3 OF AA0621101						
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY	जावेदकर्ता CHD
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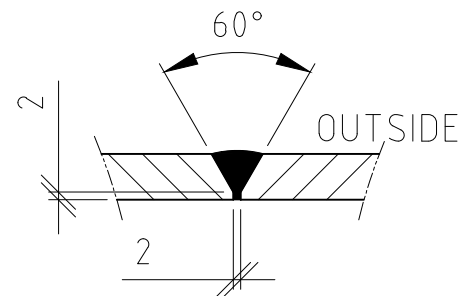
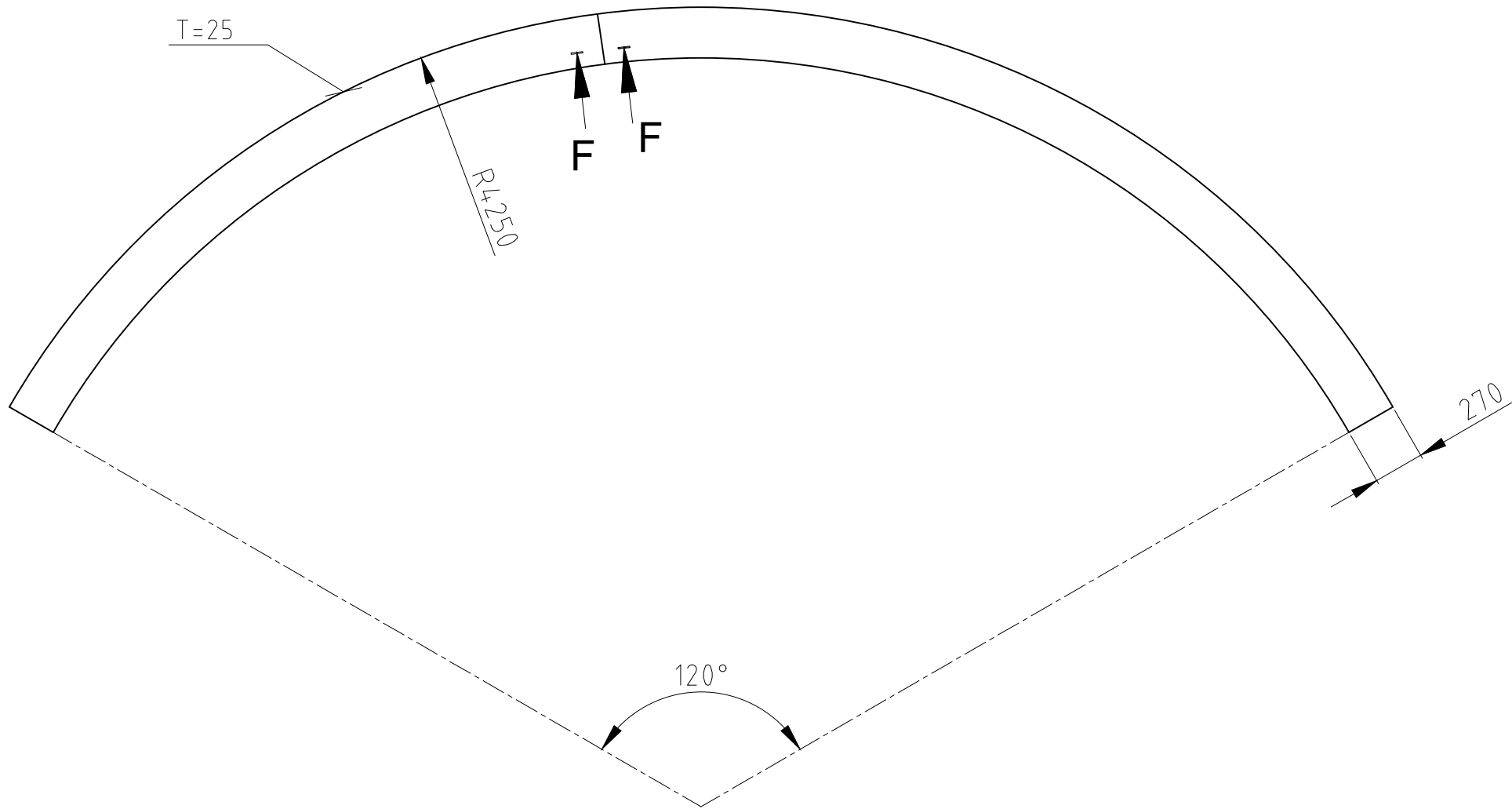
उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT						ACC, PATRATU									
		भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR				नाम/NAME		हस्ताक्षर/SIGN		दिनांक/DATE		वेरिफाई संख्या No. of Ver.			
						निर्माणकर्ता DRN.		M.SINGH		Sd.		17/11/2022		वेरिफाई संख्या No. of Ver.	
						जांचकर्ता CHD		BHASKAR		Sd.		17/11/2022		—	
						स्वीकृतिदाता APPD		N.PRAKASH		Sd.		17/11/2022		—	
विभाग DEPTT.		HXE				अनुपात/SCALE N.T.S		भार कि.ग्रा. WEIGHT (KG) 653.4		असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG. 01709970020		नग क्रमांक - 18		नगों की संख्या NO. OF ITEMS	
कोड/		CODE 4222													
शीर्षक/TITLE STIFFENER RING						अभिकल्प संख्या/DRAWING NO.						00			
						7 31709970017 22 23 24									
						पृष्ठ संख्या/Sheets No. 01						पृष्ठों की संख्या/No. of Sheets 01			

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स्वाधिकार एवं गोपनीय
इस प्रोपर्टी में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की
संपत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकार हो।

31709970018

अभिकल्प संख्या/DRAWING NO.



SECTION - FF

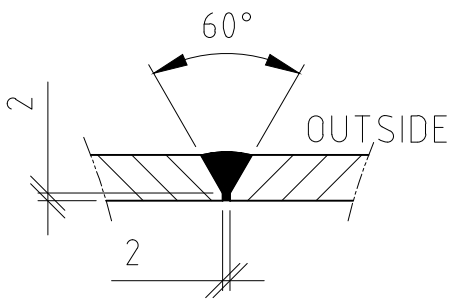
TECHNICAL REQUIREMENTS:—

1. WELDING CLASSIFICATION GROUPS ACCORDING TO HW 0620099 CS/BK.
2. PAINTING ON OUTSIDE SURFACES:
(i) PRIMER PAINT: EPOXY BASED ZINC RICH PRIMER – I COAT – DFT 50 MICRON.
(ii) INTERMEDIATE PAINT: EPOXY TIO₂ PIGMENTED POLYAMIDE CURED PAINT – I COAT – 50 MICRON.
3. BUTT WELDS SHALL BE SUBJECTED TO 100% DPT AND 10% UT/RT. FILLET WELDS SHALL BE SUBJECTED TO 10% DPT.
4. THE GENERAL TOLERANCE ON STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE–F.
5. UNLESS OTHERWISE STATED EDGE PREPARATION OF WELD JOINTS SHALL BE AS PER AA0620502.
6. IF REQUIRED, STIFFENER MAY BE MADE IN TWO PARTS WITH ONE JOINT AND WELDED AS PER DETAIL F–F

	25 ∇	SIZE & SYMBOL OF SEAM
	0.27	WELD LENGTH (M)
	0.9	WT. OF WELD METAL
E–7018		TYPE OF ELECTRODE

असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 01709970009/01			अभिकल्प का स्तर STATUS OF DRG.		उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT					
मशीनिंग - एए0230208 एम MACHINING – AA0230208 m			सहमत विभाग AGREED DEPTT.		नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	ACC, PATRATU					
वेल्डिंग - एए0621104 की श्रेणी बी WELDING–CLASS ‘B’ OF AA0621104			WT.		–	Sd.	–						
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING–TABLE 3 OF AA0621101													
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY	संशोधनकर्ता CHD	विभाग DEPTT.	HXE	अनुपात/SCALE	भार कि.ग्रा. WEIGHT (KG)	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG.	नग क्रमांक -	नगों की संख्या NO. OF ITEMS
		जांचकर्ता CHD	–	–	जांचकर्ता CHD	–	कोड /CODE 4222		N.T.S	457	01709970020	19	–
							शीर्षक/TITLE				अभिकल्प संख्या/DRAWING NO.		00
							STIFFENER RING				31709970018		7 22 23 24
											पृष्ठ संख्या/Sheets No. 01		पृष्ठों की संख्या/No. of Sheets 01

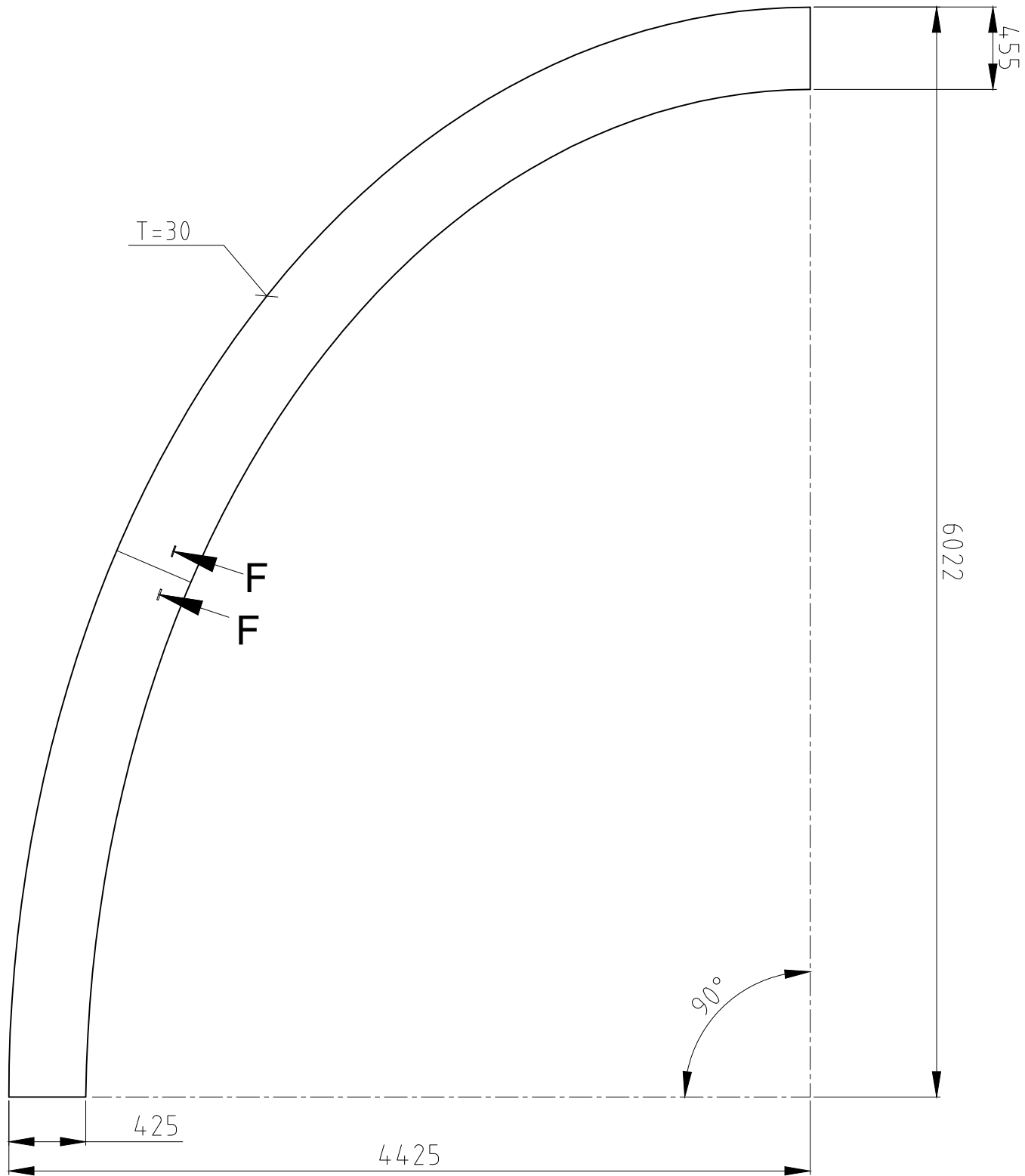
31709970019
अभिकल्प संख्या/DRAWING NO.



SECTION - FF

TECHNICAL REQUIREMENTS:—

1. WELDING CLASSIFICATION GROUPS ACCORDING TO HW 0620099 CS/BK.
2. PAINTING ON OUTSIDE SURFACES:
(i) PRIMER PAINT: EPOXY BASED ZINC RICH PRIMER – I COAT – DFT 50 MICRON.
(ii) INTERMEDIATE PAINT: EPOXY TIQ2 PIGMENTED POLYAMIDE CURED PAINT – I COAT – 50 MICRON.
3. BUTT WELDS SHALL BE SUBJECTED TO 100% DPT AND 10% UT/RT. FILLET WELDS SHALL BE SUBJECTED TO 10% DPT.
4. THE GENERAL TOLERANCE ON STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE–F.
5. UNLESS OTHERWISE STATED EDGE PREPARATION OF WELD JOINTS SHALL BE AS PER AA0620502.
6. IF REQUIRED, STIFFENER MAY BE MADE IN TWO PARTS WITH ONE JOINT AND WELDED AS PER DETAIL F–F

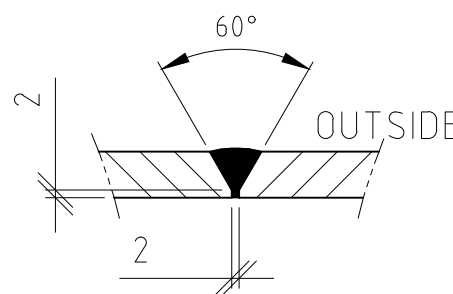
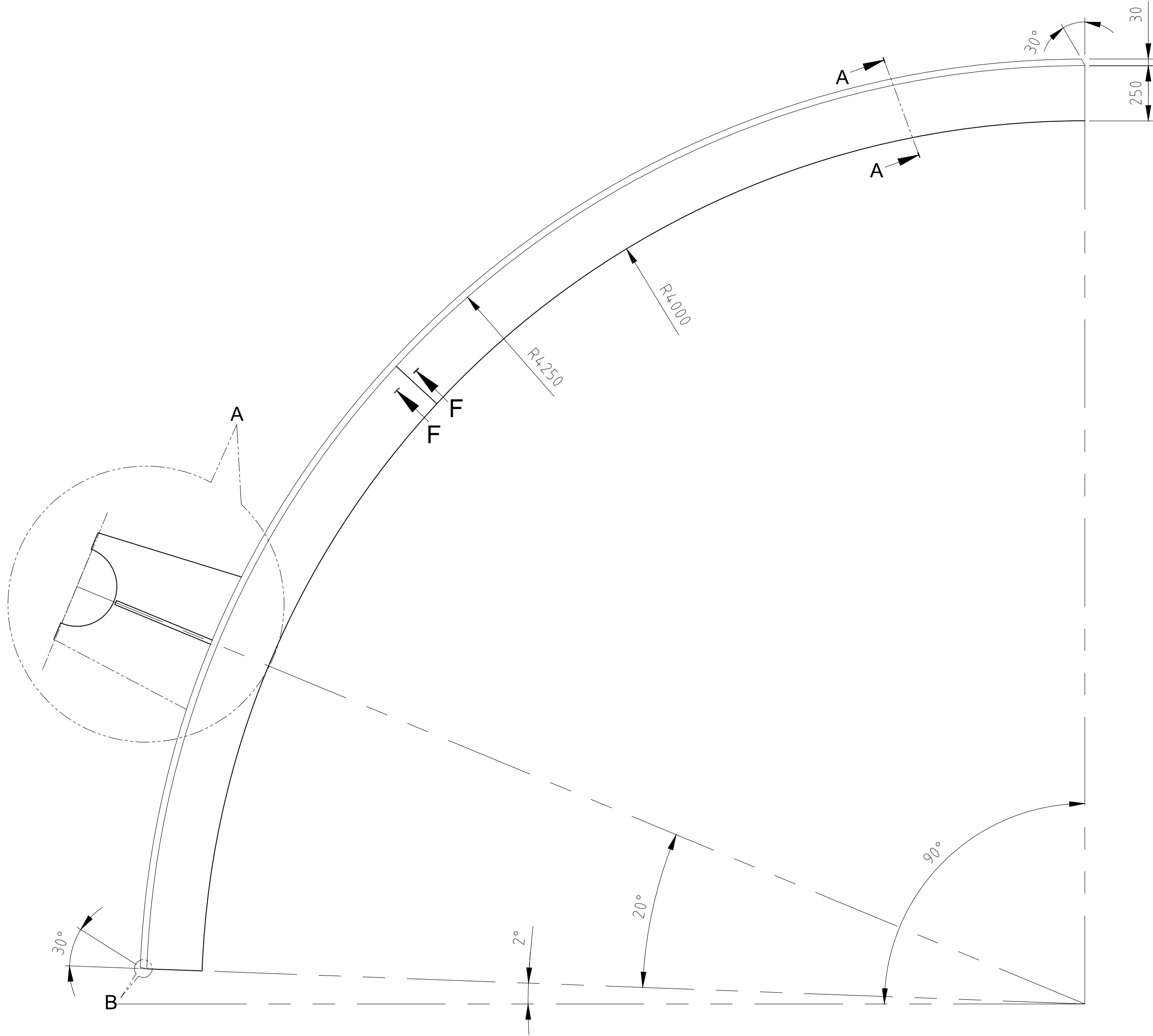


ELLIPTICAL PLATE

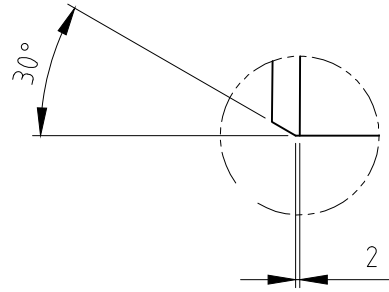
	30 ∇	SIZE & SYMBOL OF SEAM
	0.425	WELD LENGTH (M)
	1.66	WT. OF WELD METAL
E–7018		TYPE OF ELECTRODE

असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 01709970009/01			अभिकल्प का स्तर STATUS OF DRG.			उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT												
मशीनिंग - एए0230208 एम MACHINING – AA0230208 m			सहमत विभाग AGREED DEPTT.		नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	ACC, PATRATU													
वेल्डिंग - एए0621104 की श्रेणी बी WELDING–CLASS ‘B’ OF AA0621104			WT.		–	Sd.	–														
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING–TABLE 3 OF AA0621101																					
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY	संशोधनकर्ता CHD	–	विभाग DEPTT.	HXE	कोड /CODE	4222	अनुपात/SCALE	N.T.S	भार कि.ग्रा. WEIGHT (KG)	828	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG.	01709970020	नग क्रमांक -	20	नगों की संख्या NO. OF ITEMS	–
							–	शीर्षक/TITLE			STIFFENER RING			अभिकल्प संख्या/DRAWING NO.			31709970019			00	
							–							पृष्ठ संख्या/Sheets No.			01	पृष्ठों की संख्या/No. of Sheets			01

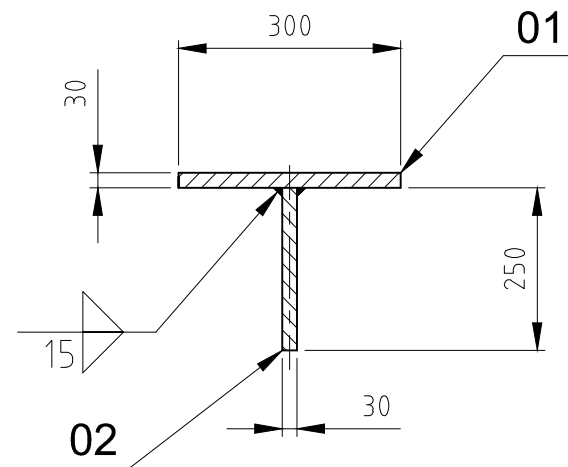
अभिकल्प संख्या/DRAWING NO.
31709970020



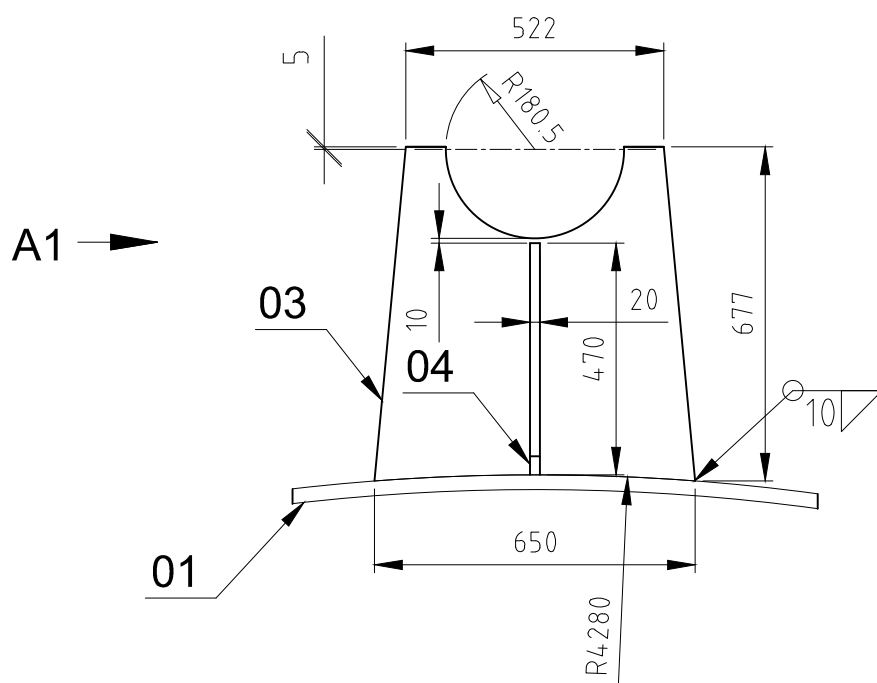
SECTION - FF



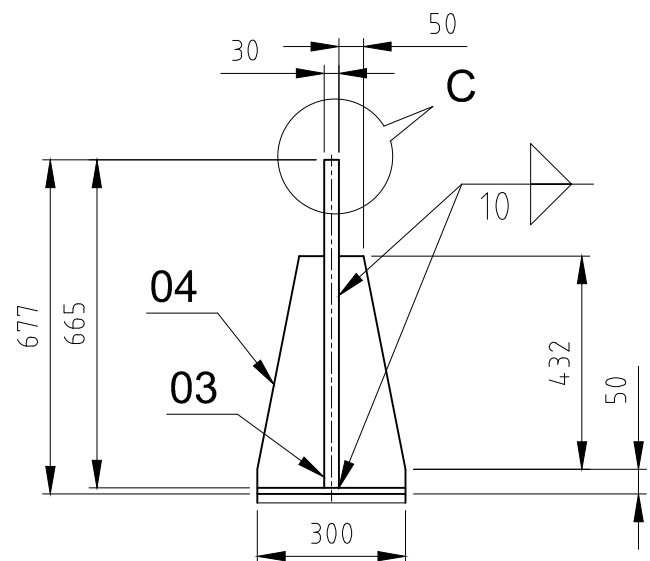
DETAIL - B



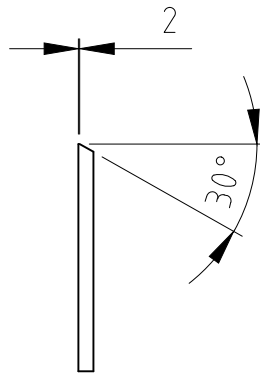
SECTION - AA



DETAIL - A



VIEW - A1



DETAIL - C

TECHNICAL REQUIREMENTS:—

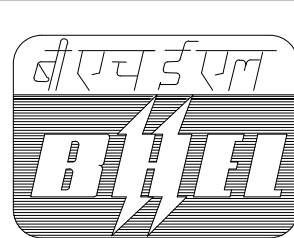
- WELDING CLASSIFICATION GROUPS ACCORDING TO HW 0620099 CS/BK.
- PAINTING ON OUTSIDE SURFACES:
 - PRIMER PAINT: EPOXY BASED ZINC RICH PRIMER — I COAT — DFT 50 MICRON.
 - INTERMEDIATE PAINT: EPOXY TIQ PIGMENTED POLYAMIDE CURED PAINT — I COAT — 50 MICRON.
- BUTT WELDS SHALL BE SUBJECTED TO 100% DPT AND 10% UT/RT. FILLET WELDS SHALL BE SUBJECTED TO 10% DPT.
- THE GENERAL TOLERANCE ON STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE—F.
- UNLESS OTHERWISE STATED EDGE PREPARATION OF WELD JOINTS SHALL BE AS PER AA0620502.
- IF REQUIRED, ITEM NO. 01&02 MAY BE MADE IN TWO PARTS WITH ONE JOINT AND WELDED AS PER DETAIL F—F

15	30	10	SIZE & SYMBOL OF SEAM
13.2	0.55	3.2	WELD LENGTH (M)
17.16	2.15	1.74	WT. OF WELD METAL
E-7018			TYPE OF ELECTRODE

असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.वी.ओ.एम./C.B.O.M. 01709970009/01		अभिकल्प का स्तर STATUS OF DRG.
मशीनिंग - एए0230208 एम MACHINING — AA0230208 m	सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	
वेल्डिंग - एए0621104 की श्रेणी बी WELDING—CLASS ‘B’ OF AA0621104	WT.	—	Sd.	—	
गैस कटिंग - एए0621101 की सागणी 3 GAS CUTTING—TABLE 3 OF AA0621101					
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY	—	संशोधनकर्ता ALTERED BY	—
		जांचकर्ता CHD	—	जांचकर्ता CHD	—
—					

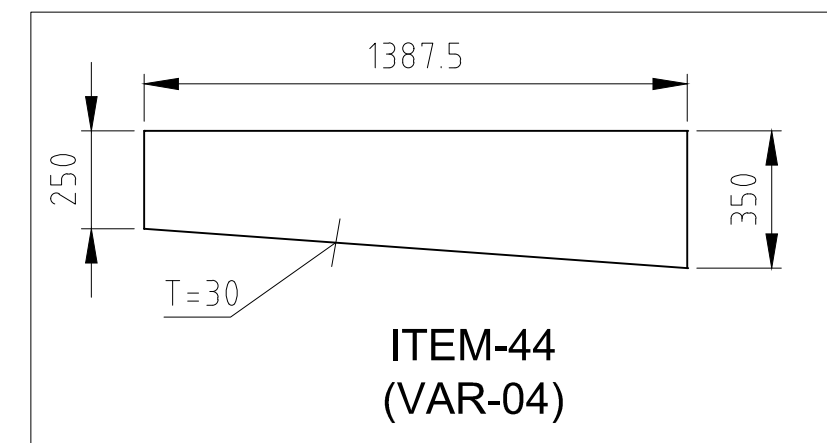
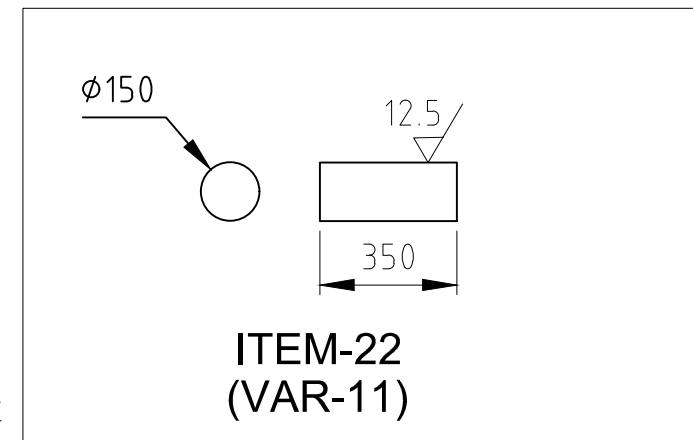
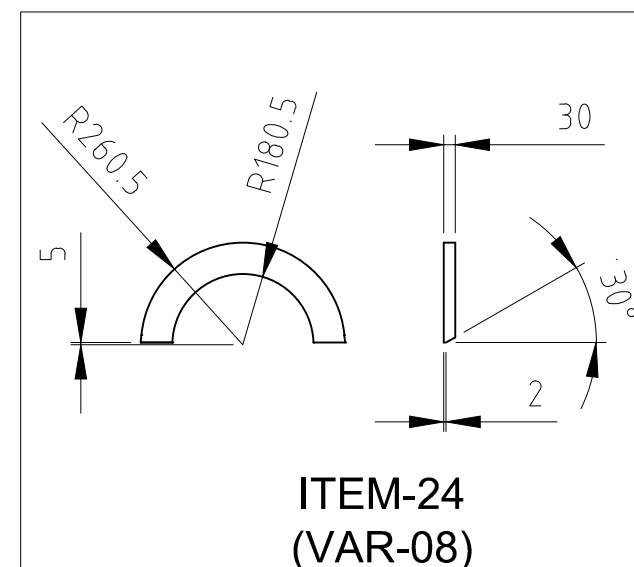
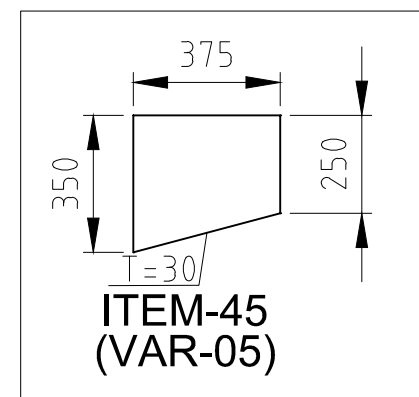
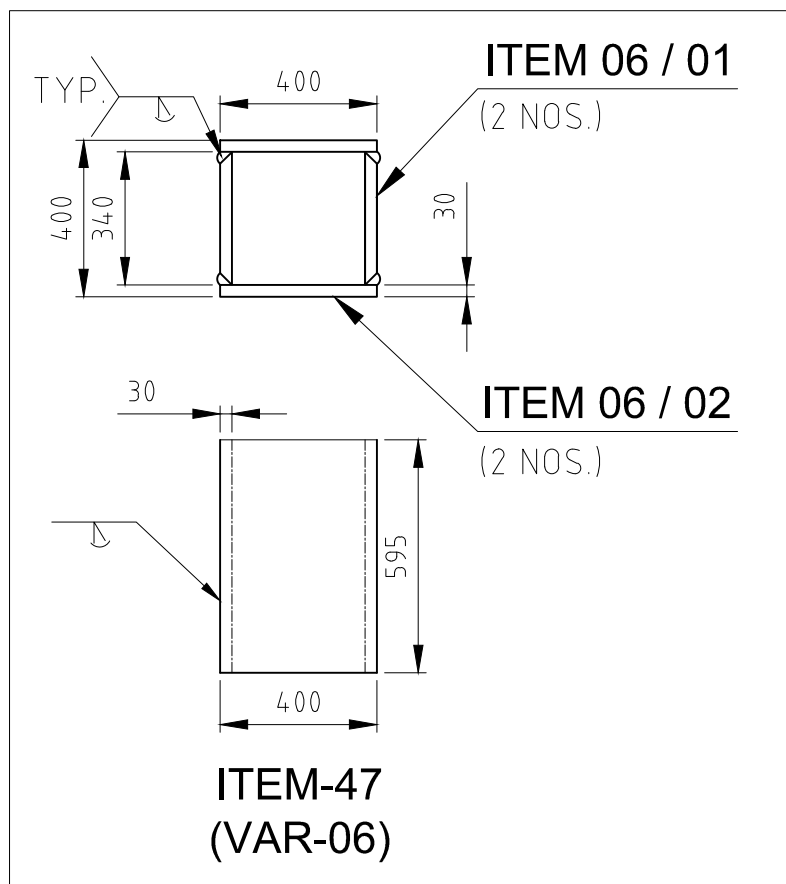
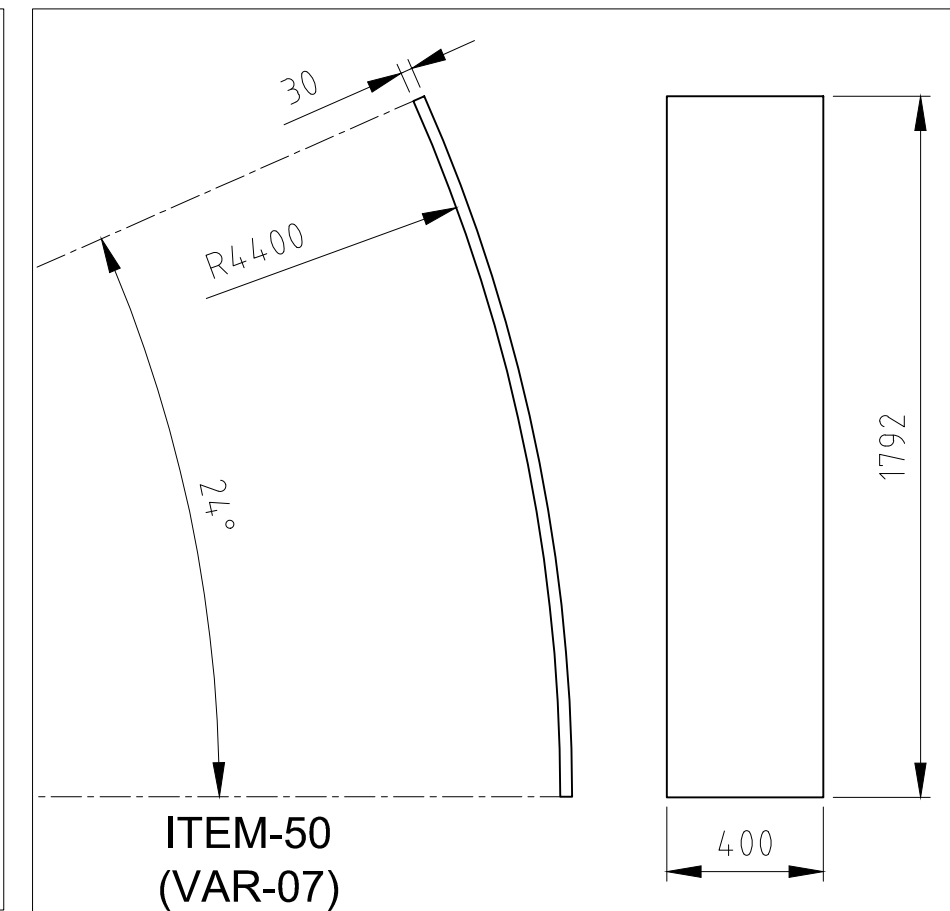
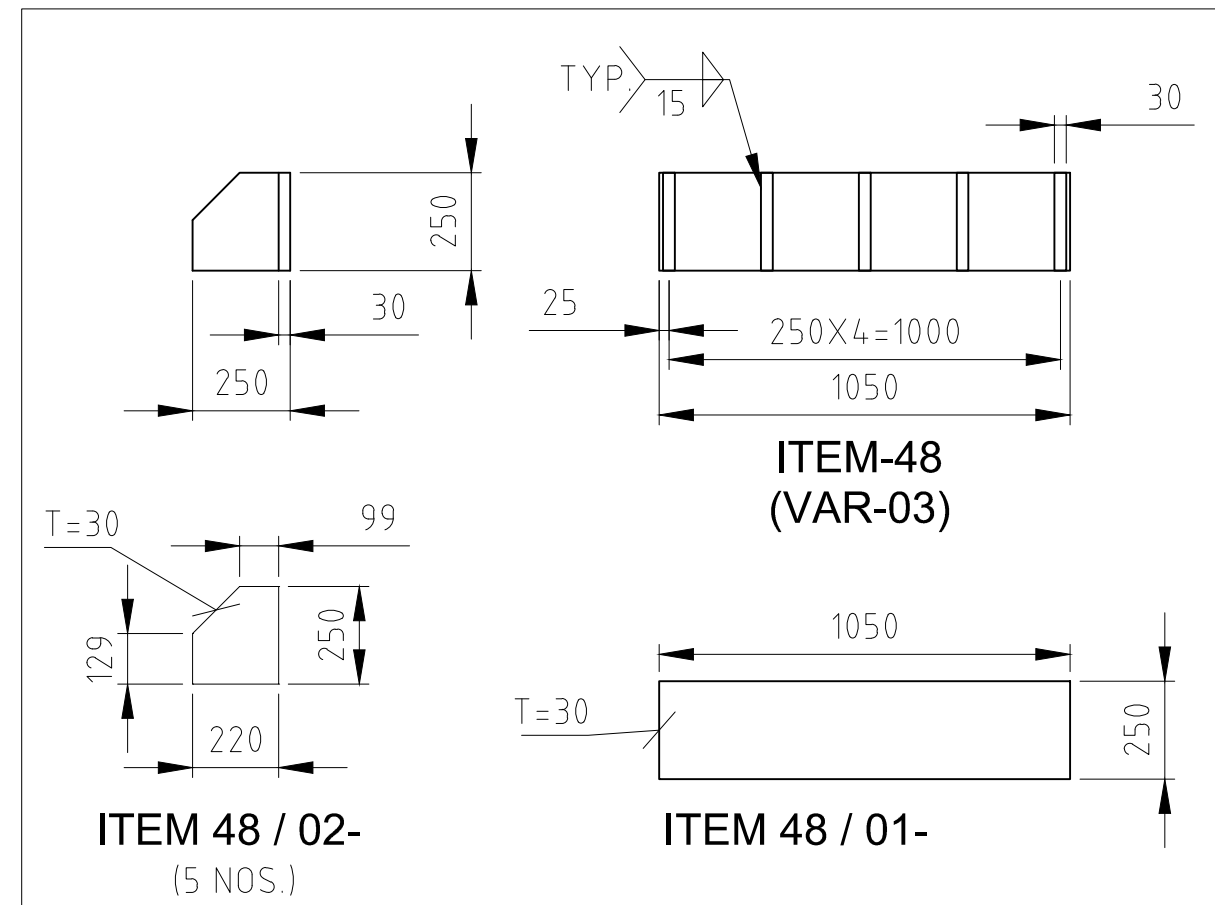
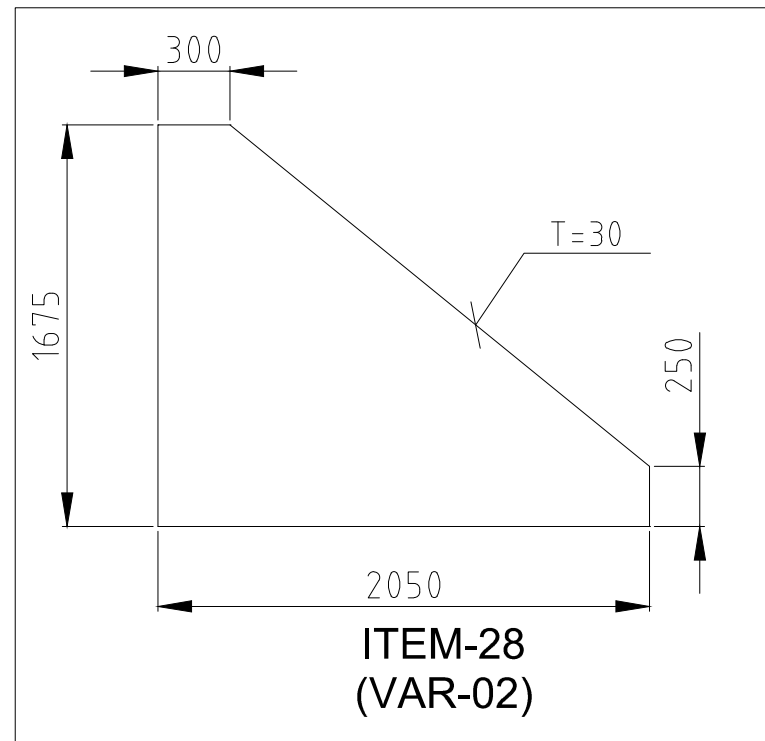
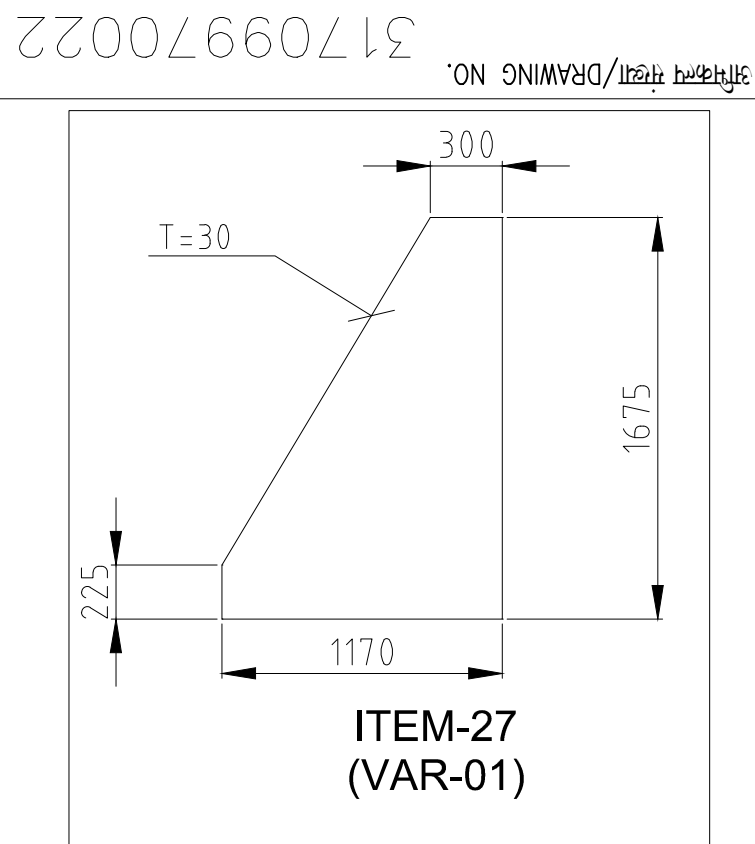
उत्पाद का प्रकार या ग्राहक/परियोजना का नाम
TYPE OF PRODUCT OR NAME OF
CUSTOMER/PROJECT

ACC, PATRATU



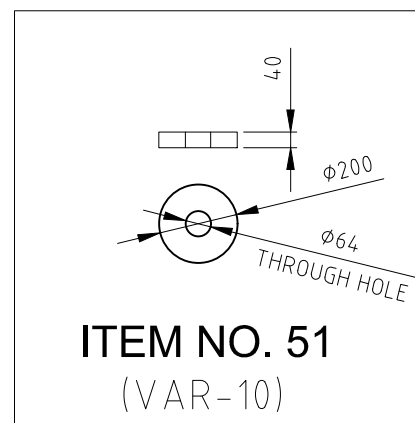
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार
BHARAT HEAVY ELECTRICALS LIMITED,
RANIPUR, HARDWAR

विभाग DEPTT.	HXE	अनुपात/SCALE	भार कि.गा. WEIGHT (KG)	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG.	नग क्रमांक	नगों की संख्या NO. OF ITEMS
कोड /CODE	4222	—	948.8	—	23	—
शीर्षक/TITLE			अभिकल्प संख्या/DRAWING NO.			00
SADDLE TOP RING			31709970020			22 23 24
पृष्ठ संख्या/Sheets No.			पृष्ठों की संख्या/No. of Sheets			01



TECHNICAL REQUIREMENTS:—

1. WELDING CLASSIFICATION GROUPS ACCORDING TO HW 0620099 CS/BK.
2. PAINTING ON OUTSIDE SURFACES:
 - (i) PRIMER PAINT: EPOXY BASED ZINC RICH PRIMER – 1 COAT – DFT 50 MICRON.
 - (ii) INTERMEDIATE PAINT: EPOXY TIO PIGMENTED POLYAMIDE CURED PAINT – 1 COAT – 50 MICRON.
3. BUTT WELDS SHALL BE SUBJECTED TO 100% DPT AND 10% UT/RT. FILLET WELDS SHALL BE SUBJECTED TO 10% DPT.
4. THE GENERAL TOLERANCE ON STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE-F.
5. UNLESS OTHERWISE STATED EDGE PREPARATION OF WELD JOINTS SHALL BE AS PER AA0620502.



15	1	SIZE & SYMBOL OF SEAM
1.3	2.4	WELD LENGTH (M)
1.7	11.6	WT. OF WELD METAL
E-7018		TYPE OF ELECTRODE

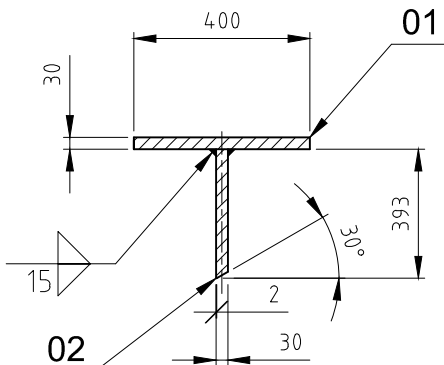
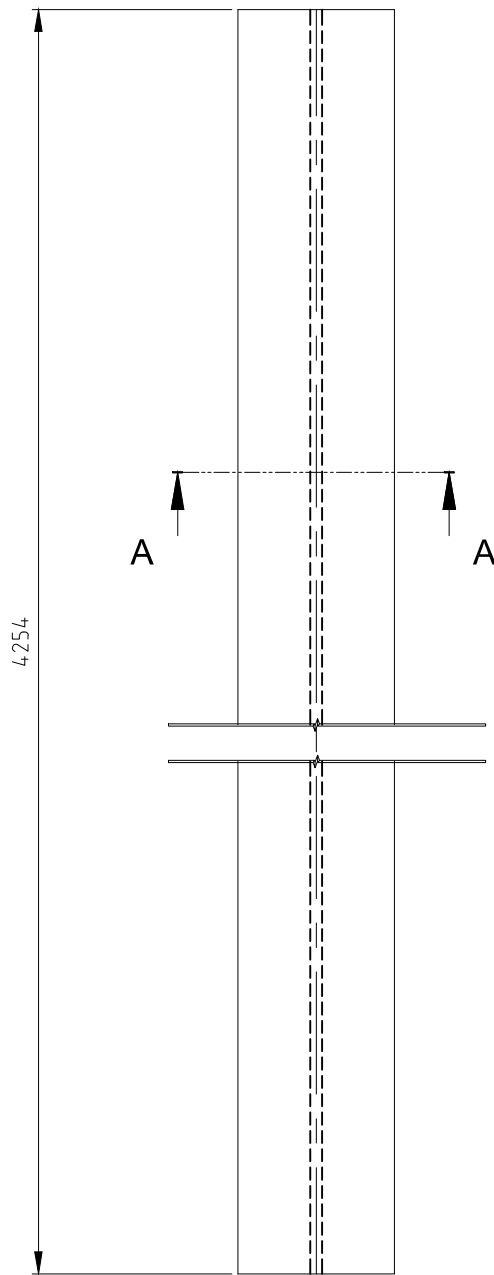
असत्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 01709970009/01		अभिकल्प का स्तर STATUS OF DRG.		उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT				ACC, PATRATU											
मशीनिंग - एए0230208 एम MACHINING – AA0230208 m			सहमत विभाग AGREED DEPTT.		नाम/NAME		हस्ताक्षर/ SIGN.		दिनांक/DATE													
वेल्डिंग - एए0621104 की श्रेणी बी WELDING–CLASS ‘B’ OF AA0621104			WT.		—		Sd.		—													
गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING–TABLE 3 OF AA0621101																						
संशोधन REV.			दिनांक DATE		संशोधनकर्ता ALTERED BY		—		विभाग DEPTT.		HXE		अनुपात/SCALE		भार कि.ग्रा. WEIGHT (KG)		असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG.		नग क्रमांक -		नगों की संख्या NO. OF ITEMS	
			—		—		—		कोड/		CODE 4222				N.T.S		01709970020		—		—	
			—						शीर्षक/TITLE		ELBOW TEE LOOSE ITEM						अभिकल्प संख्या/DRAWING NO.		00			
																	31709970022		22		23 24	
																	पृष्ठ संख्या/Sheets No.		01		पृष्ठों की संख्या/No. of Sheets 01	

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INDIRECTLY IN ANY WAY DETERIMENTAL TO THE
INTEREST OF THE COMPANY.

स्वाधिकार एवं गोपनीय
इस प्रोपर्टी में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की
संपत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकार हो।

31709970024

अभिकल्प संख्या/DRAWING NO.

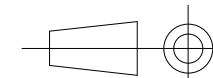


SECTION - AA

TECHNICAL REQUIREMENTS:—

- WELDING CLASSIFICATION GROUPS ACCORDING TO HW 0620099 CS/BK.
- PAINTING ON OUTSIDE SURFACES:
 - PRIMER PAINT: EPOXY BASED ZINC RICH PRIMER – I COAT – DFT 50 MICRON.
 - INTERMEDIATE PAINT: EPOXY TIQ2 PIGMENTED POLYAMIDE CURED PAINT – I COAT – 50 MICRON.
- BUTT WELDS SHALL BE SUBJECTED TO 100% DPT AND 10% UT/RT. FILLET WELDS SHALL BE SUBJECTED TO 10% DPT.
- THE GENERAL TOLERANCE ON STRAIGHTNESS, FLATNESS AND PARALLELISM SHALL BE MAINTAINED AS PER AA0621105 GRADE–F.
- UNLESS OTHERWISE STATED EDGE PREPARATION OF WELD JOINTS SHALL BE AS PER AA0620502.

15		SIZE & SYMBOL OF SEAM
8.5	—	WELD LENGTH (M)
11.1	—	WT. OF WELD METAL
E-7018		TYPE OF ELECTRODE

असह्य विमाओं का वर्ग GRADE OF UNTOLERANCED DIMENSION			सी.बी.ओ.एम./C.B.O.M. 01709970009/01		अभिकल्प का स्तर STATUS OF DRG.	उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT									
मशीनिंग - एए0230208 एम MACHINING – AA0230208 m वेल्डिंग - एए0621104 की श्रेणी बी WELDING—CLASS 'B' OF AA0621104 गैस कटिंग - एए0621101 की सारणी 3 GAS CUTTING—TABLE 3 OF AA0621101			सहमत विभाग AGREED DEPTT.	नाम/NAME	हस्ताक्षर/ SIGN.	दिनांक/DATE	बीएचईएल भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR								
			WT.	—	Sd.	—									
संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY	संशोधन REV.	दिनांक DATE	संशोधनकर्ता ALTERED BY	विभाग DEPTT.		अनुपात/SCALE	भार कि.ग्रा. WEIGHT (KG)	असेम्बली अभिकल्प का संदर्भ REFER TO ASSLY. DRG.	नग क्रमांक	नगों की संख्या NO. OF ITEMS			
		जांचकर्ता CHD	—	—	जांचकर्ता CHD	HXE		N.T.S	794.4	01709970020	41	—			
			—			शीर्षक/TITLE						अभिकल्प संख्या/DRAWING NO.		00	
						कोड /CODE 4222						31709970024		22	23 24
						SIDE SUPPORT						पृष्ठ संख्या/Sheets No. 01		पृष्ठों की संख्या/No. of Sheets 01	