

Ref: BHE/PW/PUR/NTPRT-INS/2966/Corg 02

Dt: 03/06/2024

Page 1 of 3

ALL BIDDERS

Sub: [Corrigendum-02: Clarification](#)

Job: [INSULATION WORKS INCLUDING FIXING OF IRON PARTS, APPLICATION OF MINERAL WOOL AND ALUMINIUM CLADDING OF ESP UNIT-1 AT 3X800 MW PVUNL PATRATU](#)

Tender Specification Number: BHE/PW/PUR/NTPRT-INS/2966

NIC Tender ID: [2024_BHEL_36213_1](#)

Bidders to kindly take note of the following:

AA) Bidders to take note of the following clarification:

SI No	Reference Clause of Tender Document	Existing Provision	Bidders Query	BHEL's clarification
01			What is the latest rate of Minimum Wages for workers?	Wages at Patratu Project is regulated as per the Jharkahand govt regulations. (pls refer attached document)
02			Is ESIC applicable or not?	Applicable
03			Are there any Local Issues like goondaism, union, etc.?	Pls visit and examine the site of works and its surroundings
04			Kindly provide a complete description of the material that will be used in the project like LRB Density, Maximum thickness for one layer, Aluminum Sheet Thickness & step wise application procedure. Insulation thickness detail is required for both ESP and Duct. LRB supplied will be with one side wire netting or both side wire netting or you will be providing slab without wire netting?	Pls refer the attached drawings
05			For Iron parts, we need a complete description, application procedure as well as drawing. Kindly provide the same.	Pls refer the attached drawings
06			What will be the mode of measurement?	Pls refer TCC .

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Dt: 03/06/2024

Page 2 of 3

SI No	Reference Clause of Tender Document	Existing Provision	Bidders Query	BHEL's clarification
07			Scaffolding material specified is 6000 pipes & 18000 clamps. Is this much quantity required or can it be managed with lesser quantity also?	Tender condition shall prevail.
08			Wastage factor considered is very less. Will it be revised later on based on the progress of work or is final.	Tender condition shall prevail
09			The job will be distributed between how many contractors?	No Splitting as per NIT conditions.
			The job is for only one unit of ESP duct or for all three?	As Per TCC.
			Kindly specify the total area of cladding and total area of insulation thickness wise . Also provide the total M3 Of Insulation.	Measurement is in tonnage wise.
			Touchup Painting like red oxide If necessary will be supplied by BHEL	Shall be in agency Scope.
			What consumable will be supplied by BHEL & what consumables to be arranged by contractor like: For Iron parts : Hooks, Internal & outer plate, wire for tying etc., For Insulation Material : Stitch Wire. For Welding : Electrodes. For Cladding Material : Bituminous Paint & Sealing Compound, screws, Rivets etc.,	All type of Consumables shall be in agency scope. For Iron parts : Hooks, Internal & outer plate, wire for tying etc.,- Supplied by BHEL For Insulation Material : Stitch Wire.- Supplied by BHEL For Welding : Electrodes.-arrange by bidders For Cladding Material : Bituminous Paint & Sealing Compound, screws, Rivets etc., - Arranged by the BHEL

All other Terms and conditions of the Tender Specification shall remain unaltered unless expressly amended by BHEL in writing.

Bidders are requested to submit as a part of Technical Bid, a copy of this corrigendum duly countersigned by the authorized signatory and stamped with the Official seal as a token of Bidder's unqualified acceptance of this corrigendum/ digitally signed.



Ref: BHE/PW/PUR/NTPRT-INS/2966/Corg 02

Dt: 03/06/2024

-----Page 3 of 3-----

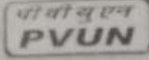
BIDDERS WHO HAVE ALREADY SUBMITTED THEIR OFFERS PRIOR TO ISSUANCE OF THIS CORRIGENDUM IN E-TENDER PORTAL ARE REQUIRED TO RE-SUBMIT THEIR OFFER AFTER TAKING COGNIZANCE OF THIS CORRIGENDUM.

Thanking you,
Yours Sincerely,

(Purchase)

Enclosure:

- Drawings and Minimum wage Circular.



Patratu Vidyut Utpadan Nigam Ltd.
पतरातु विद्युत् उत्पादन निगम लि.

पतरातु
PATRATU

Ref. No: HR:ER/2024

Date 03.04.2024

Sub.: Revised Rate of Minimum Wages applicable at PVUN Limited, Patratu w.e.f. 01.04.2024.

In terms of order Ref. No. : F.No. 1/7(3)/2023-LS-II Dated 01.04.2024 from the office of Chief Labour Commissioner(Central), New Delhi, Ministry of Labour and Employment, GOI, the monthly wages have been revised w.e.f. 01.04.2024.

Accordingly, the following revised rates will be paid by the contracting agencies engaged at PVUN Limited to their workers w.e.f. 01.04.2024:

Sl. No.	Category	Minimum Wages including VDA /day in C-Area (INR)	Monthly Wages (INR)
01	Unskilled	522	13572
02	Semi Skilled/ unskilled Supervisory	610	15860
03	Skilled/Clerical	734	19084
04	Highly Skilled	862	22412

To arrive at monthly rates, daily rates will have to be multiplied by 26. The minimum rates of wages include the wages for the weekly day of rest.

The above revised rates of minimum wages shall be effective from 01.04.2024 including arrears (if any), till further implementation orders.

03/04/24

(Vivek Shil Shrivastava)
Sr. Manager (HR)

Distribution :-

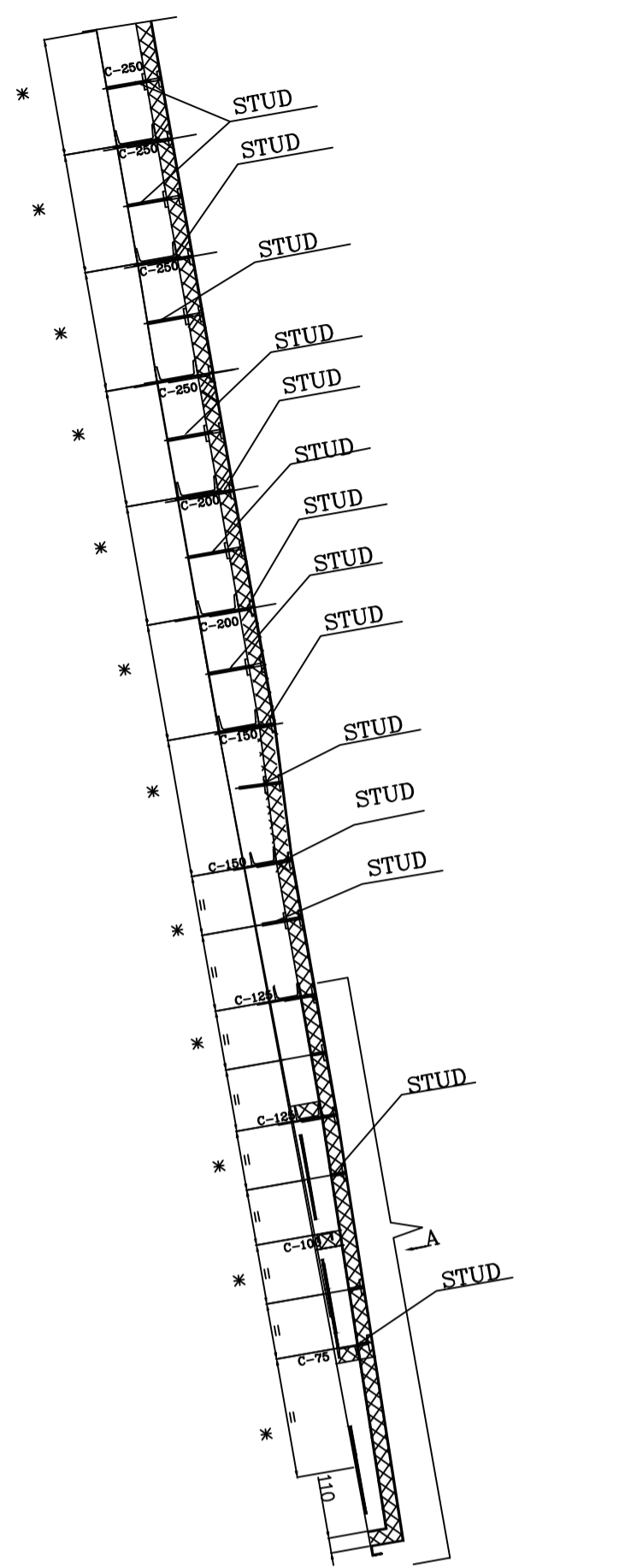
- 1) ES to CEO - For kind information please.
- 2) All GMs - For kind information please.
- 3) All HoDs
- 4) All EICs
- 5) Resident Manager, M/s UPL patratu
- 6) BHEL, Patratu - For information and necessary action please.
- 7) Intranet
- 8) Notice Board
- 9) Subject File

PATRATU VIDYUT UTPADAN NIGAM LIMITED, POST- PATRATU, DISTT. RAMGARH, JHARKHAND-829119
पतरातु विद्युत् उत्पादन निगम लिमिटेड, पोस्ट- पतरातु, जिला-रामगढ़, झारखण्ड-829119

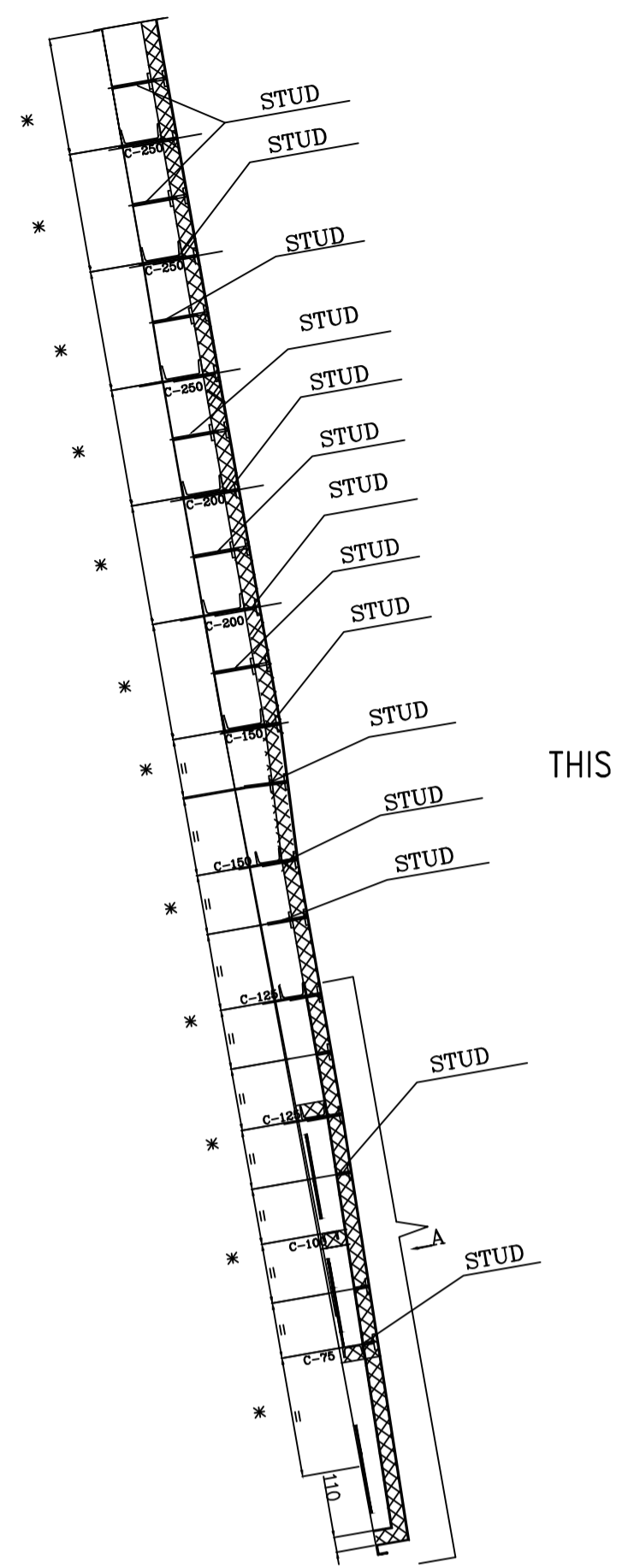
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#

TYP. STUD FIXING DETAILS FOR 'L' / 'B' NOMINAL SIDE



TYPICAL STUD FIXING ARRGT
L NOMINAL SIDE
HOPPER STIFFNESS LOCATION

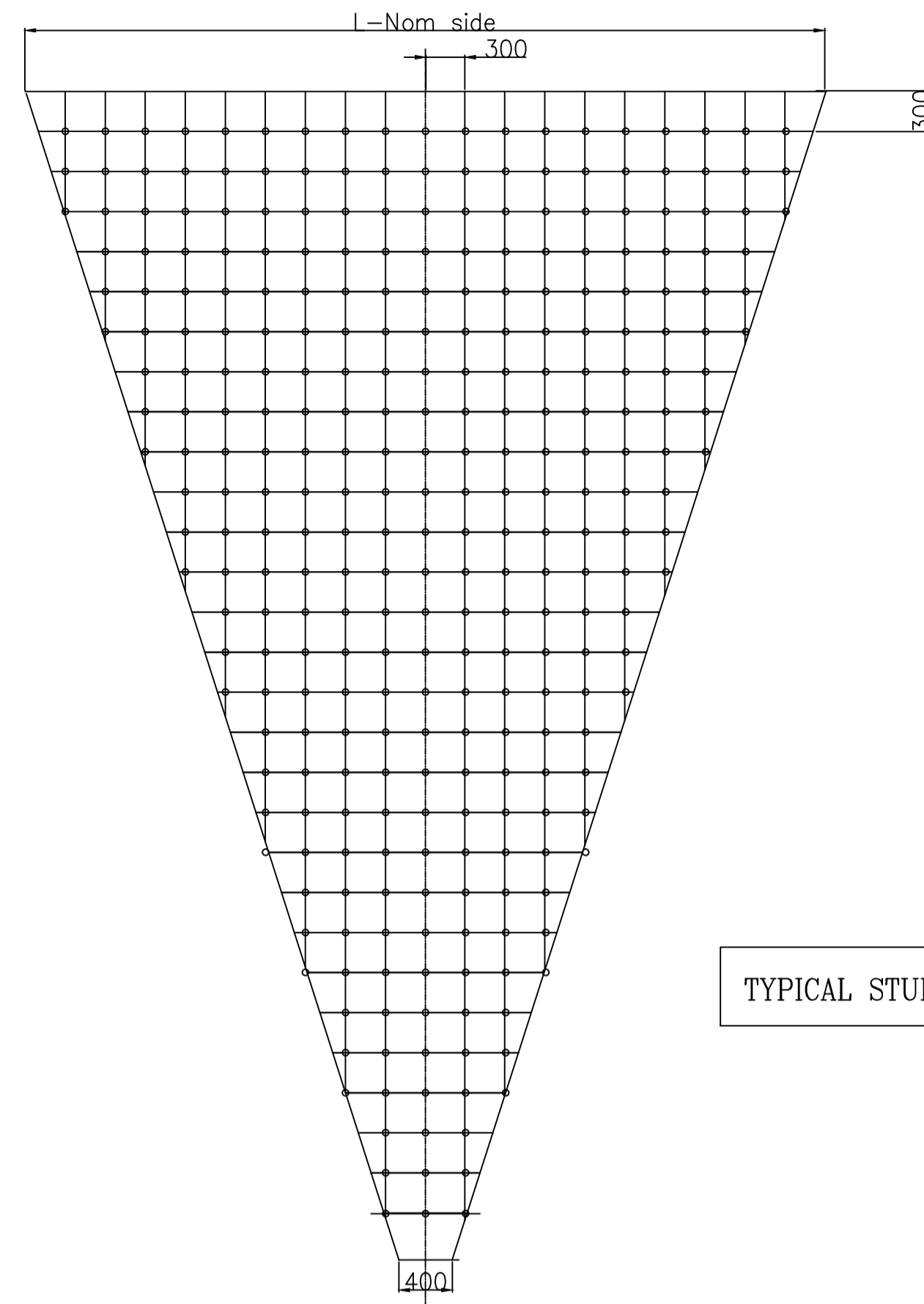


TYPICAL STUD FIXING ARRGT
B NOMINAL SIDE
HOPPER STIFFNESS LOCATION

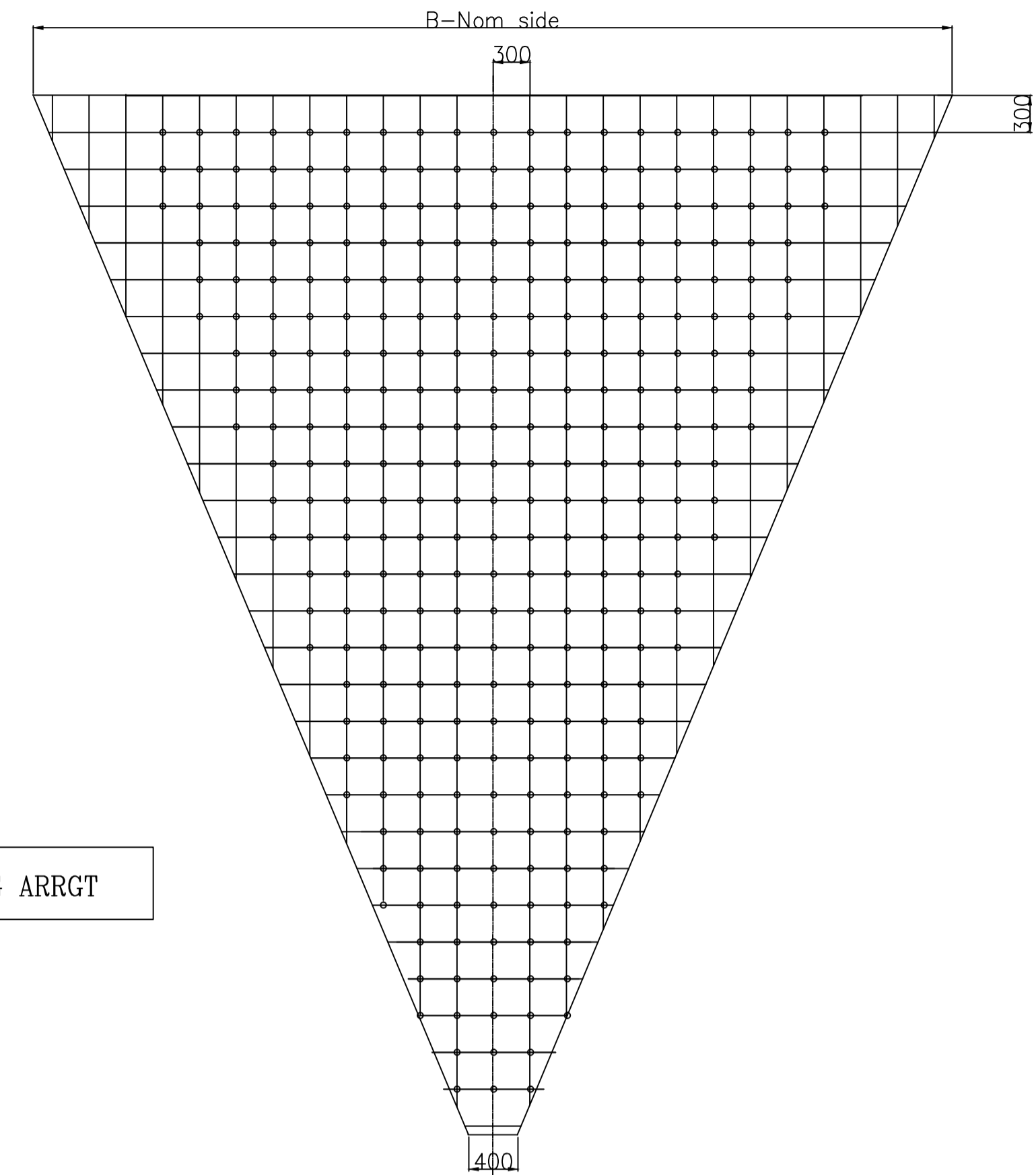
STUD LENGTH	LOCATION
80	X 46 INNER ROOF
105	X 44, X45 HOPPER
155	X 50 FUNNEL, X45 HOPPER (C75)
180	X 45 (C100)
205	X 45 HOPPER, X49 CASING SHELL
230	X 44 ON THE WALL
280	X45 (200)
330	CASING TOP PANNEL X45 (250)

STUD PITCH:
VERTICAL = 300 MM
HORIZONTAL = 300 MM

THIS DRG. IS TO BE READ ALONG WITH 1-79-568-04627



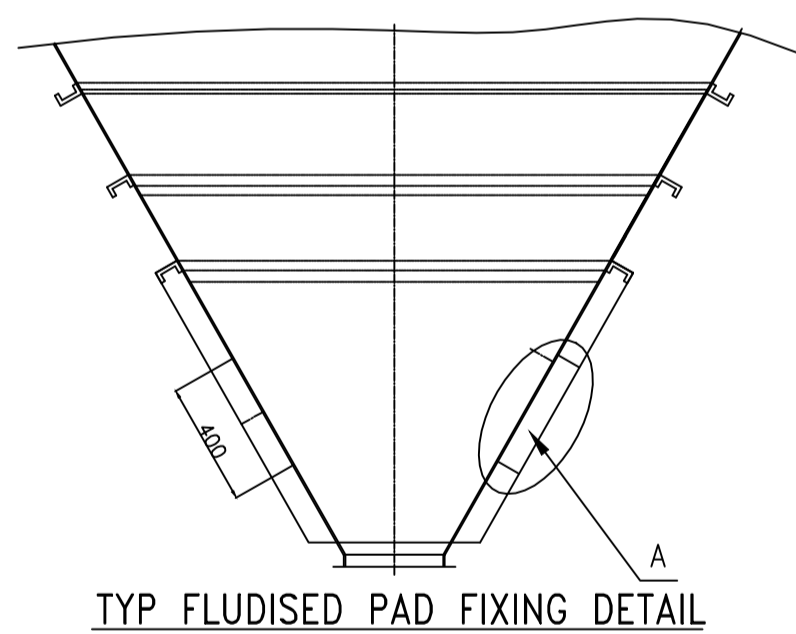
L NOMINAL SIDE



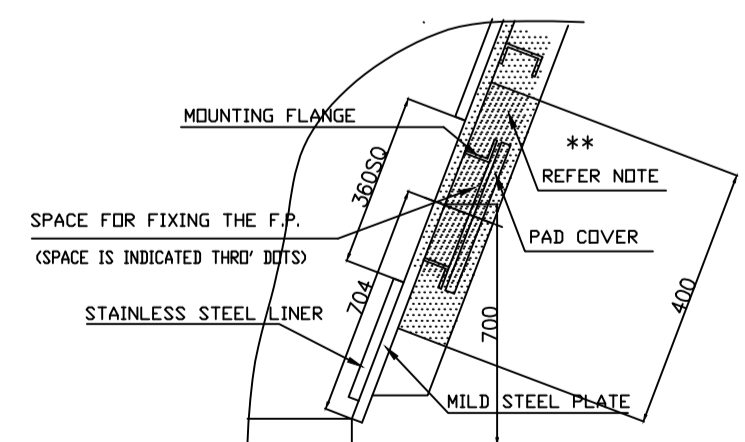
B NOMINAL SIDE

TYPICAL STUD FIXING ARRGT

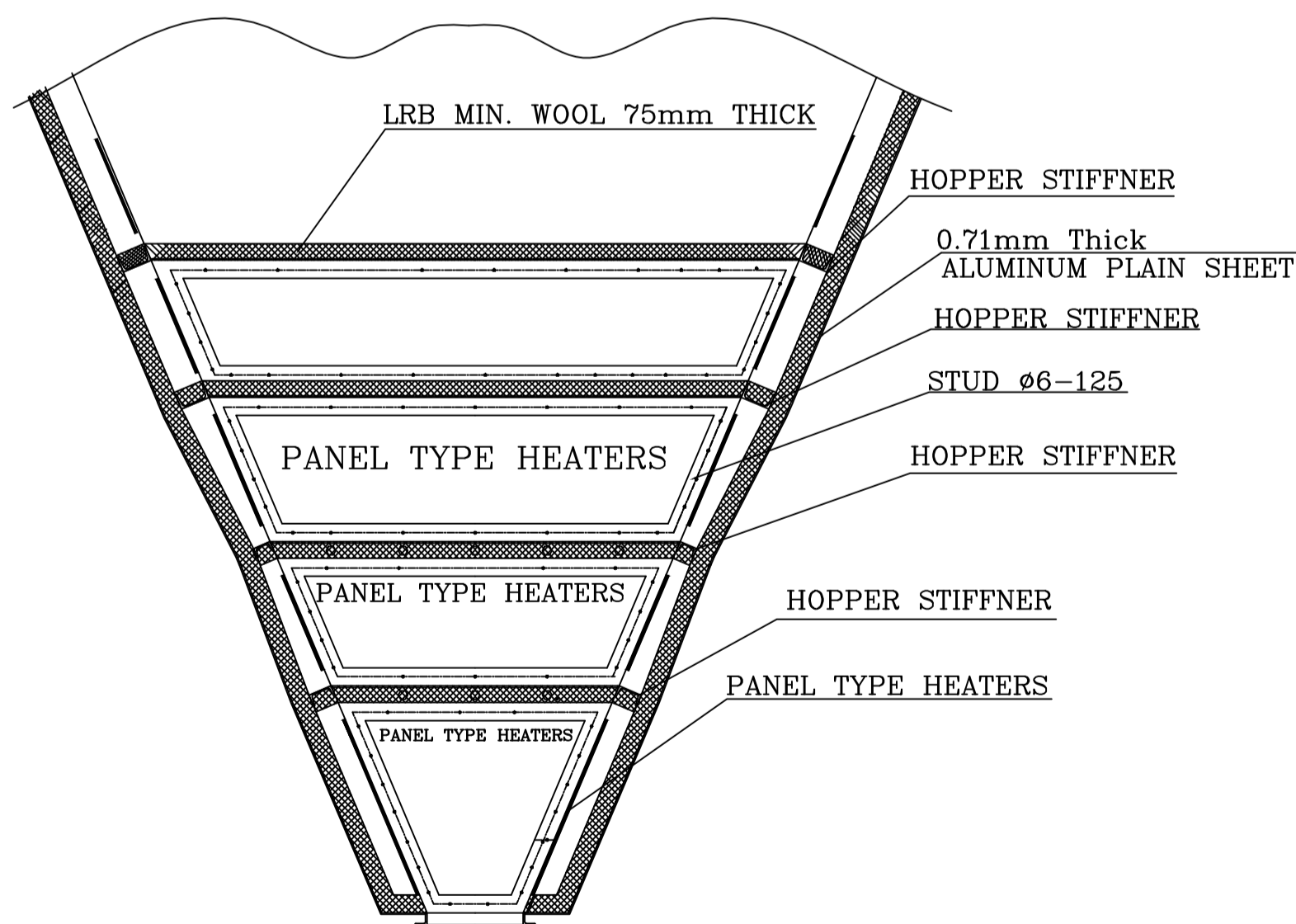
HOPPER LOWER PART INSULATION
(AT PANEL TYPE HEATERS AREA)



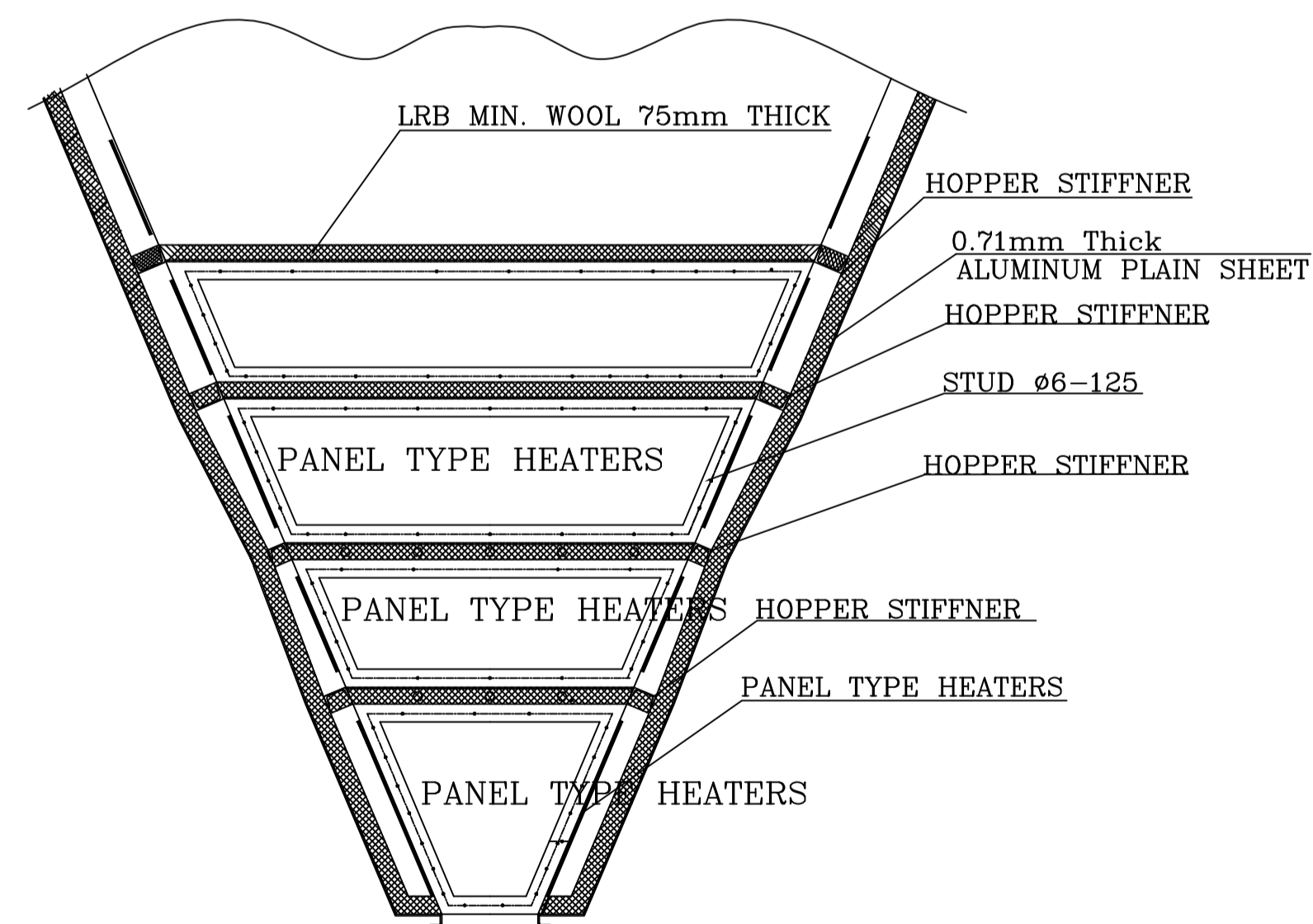
TYP FLUIDISED PAD FIXING DETAIL



DETAIL - A



VIEW-A
L NOMINAL SIDE
(ALONG GAS FLOW)



VIEW-B
B NOMINAL SIDE
(ACROSS GAS FLOW)

HOPPER WALL INSULATION - 75 MM THICK LRB WOOL MATTRESS
HOPPER LOWER PARTS ARE TO BE INSULATED AS PER VIEW A & B

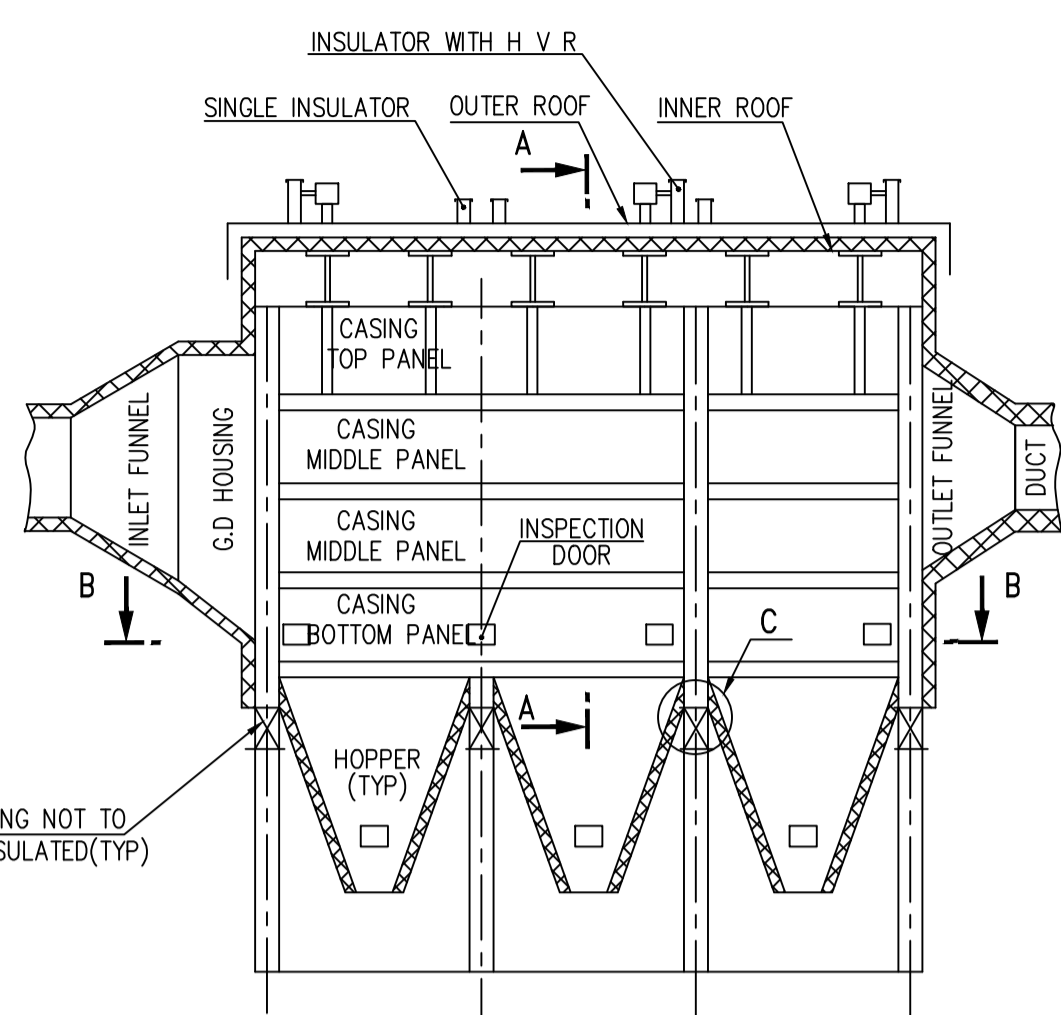
** TO EASE THE FLUIDISER PAD ERECTION PROVIDE REMOVABLE TYPE OF INSULATION AT THE ALL FLUIDISER PAD LOCATIONS. WHILE ERECTING THE PAD, INSULATION HAS TO BE REMOVED. AFTER THE ERECTION OF THE PAD THE REMAINING AREA AROUND THE PAD HAS TO BE COVERED WITH THE SAME INSULATING MATERIAL REMOVED FROM THIS AREA.

REV	DATE	ALTERED	CHECKED

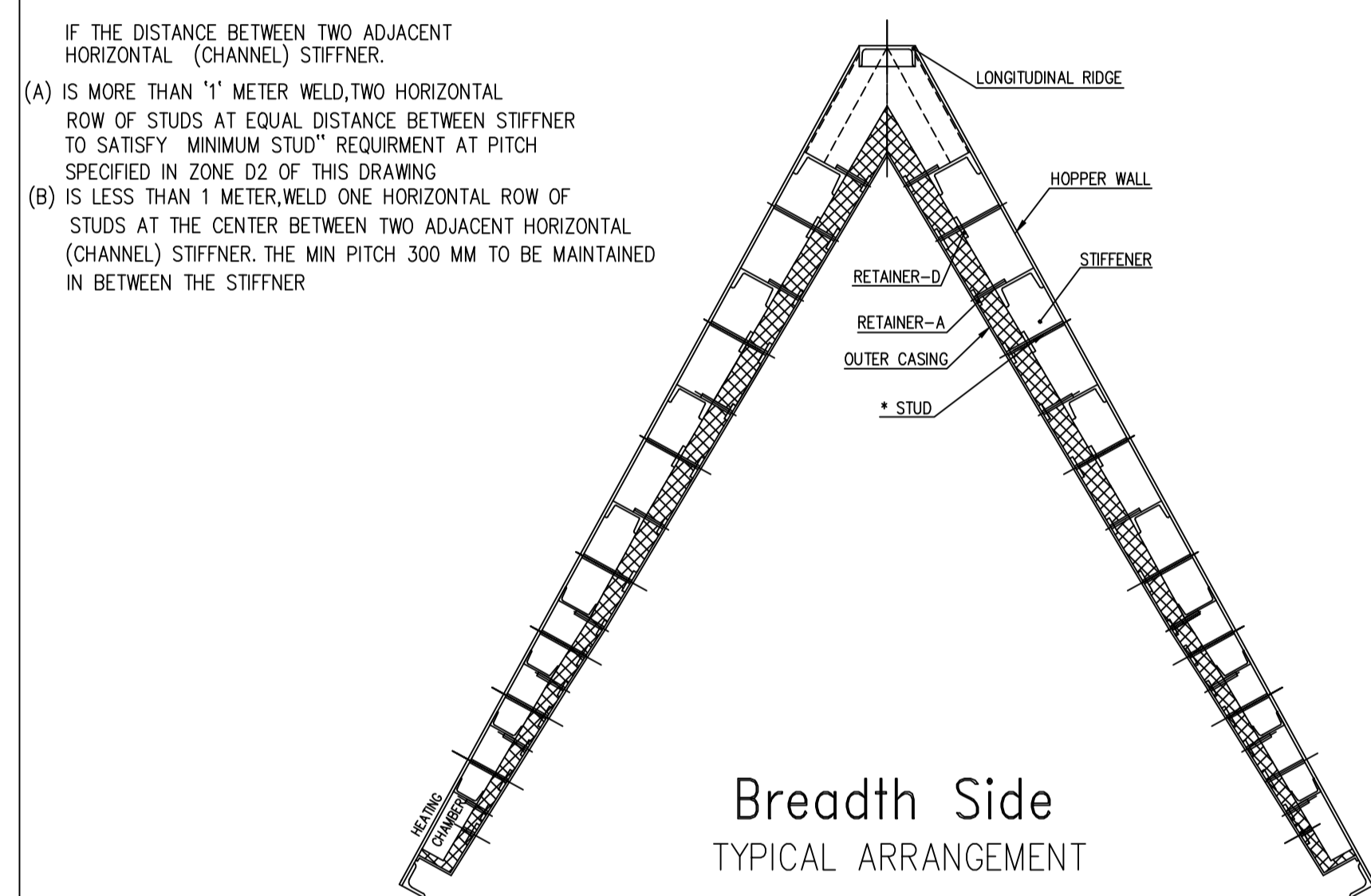
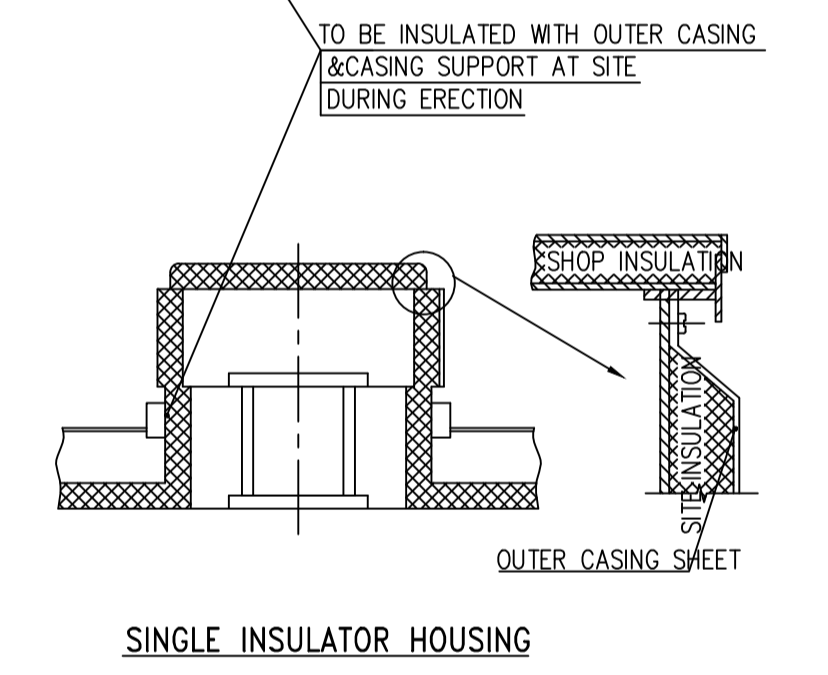
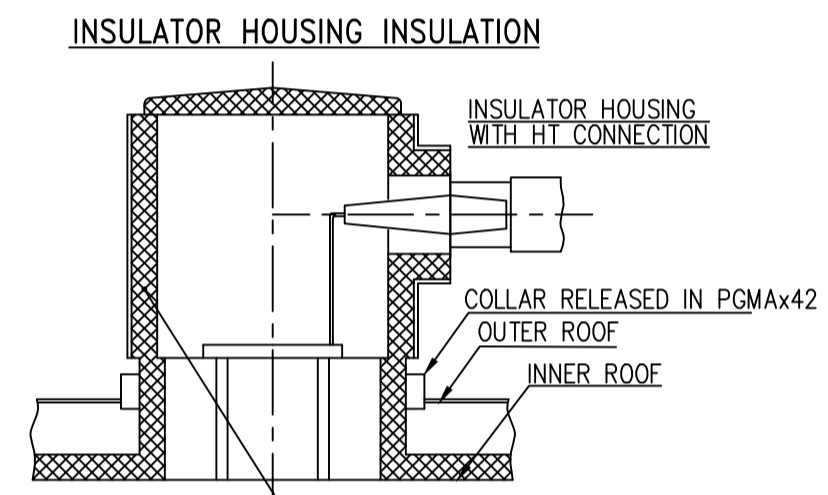
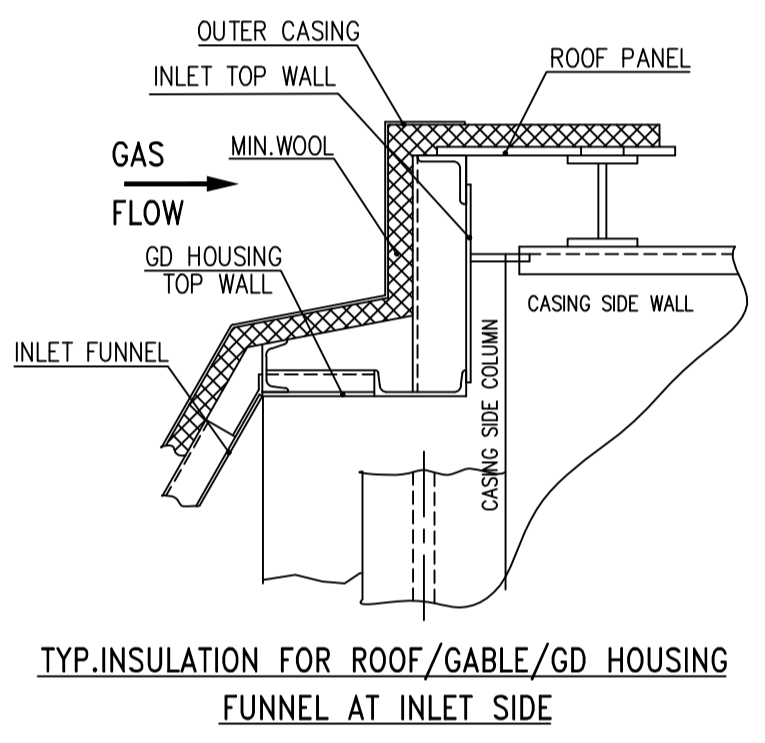
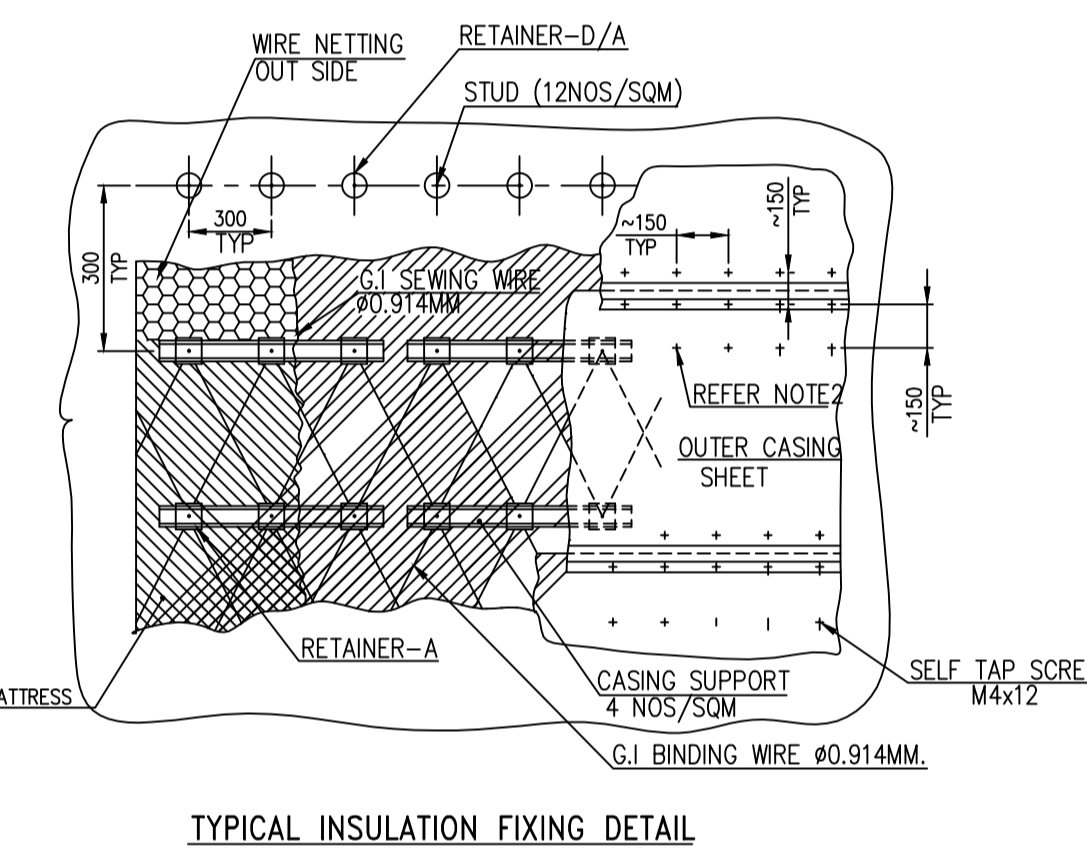
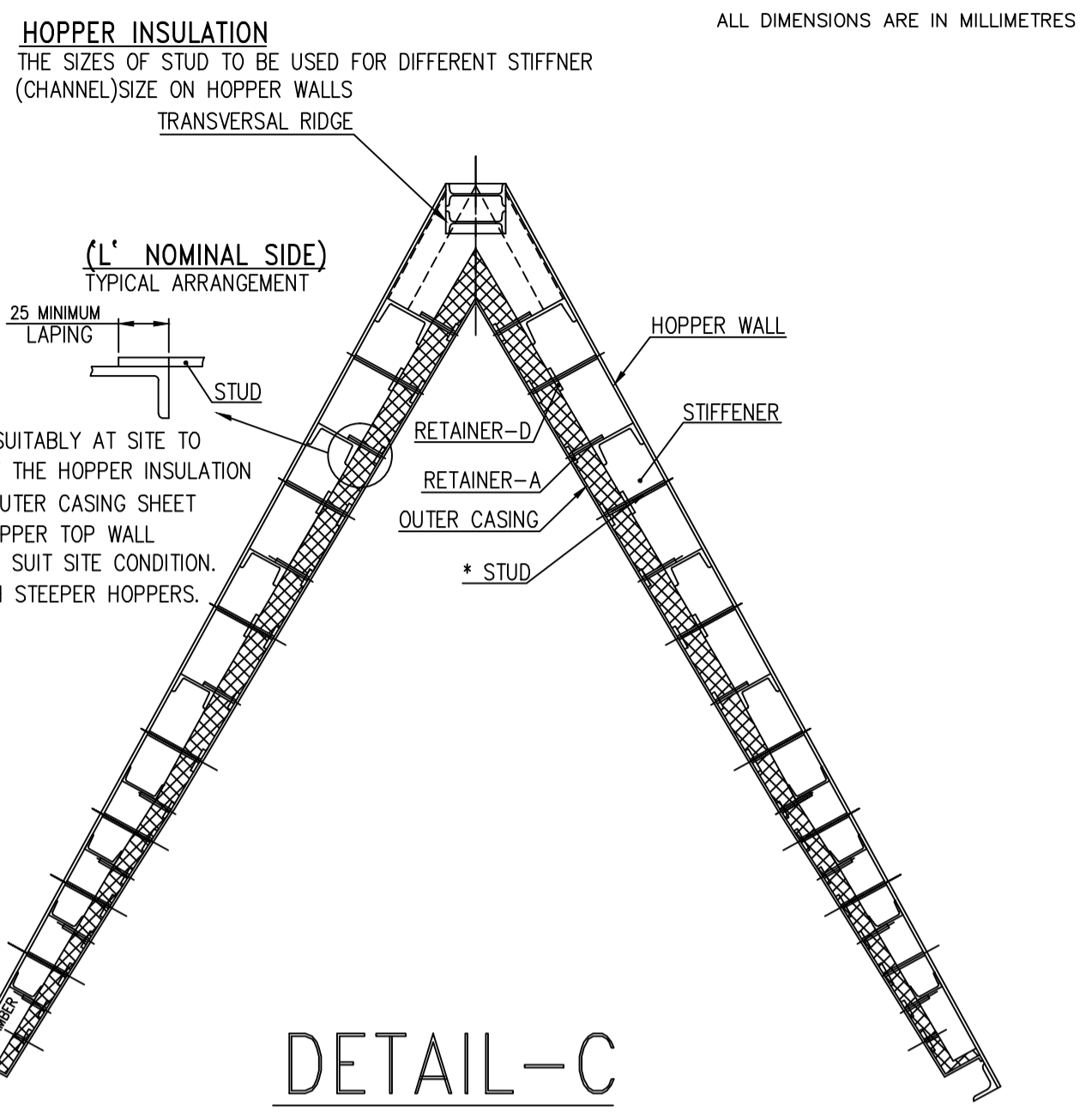
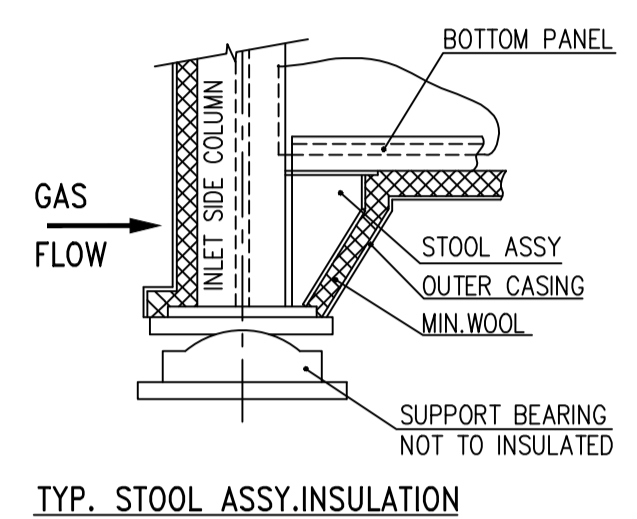
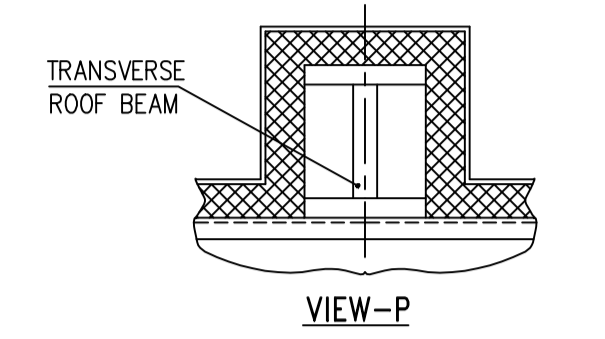
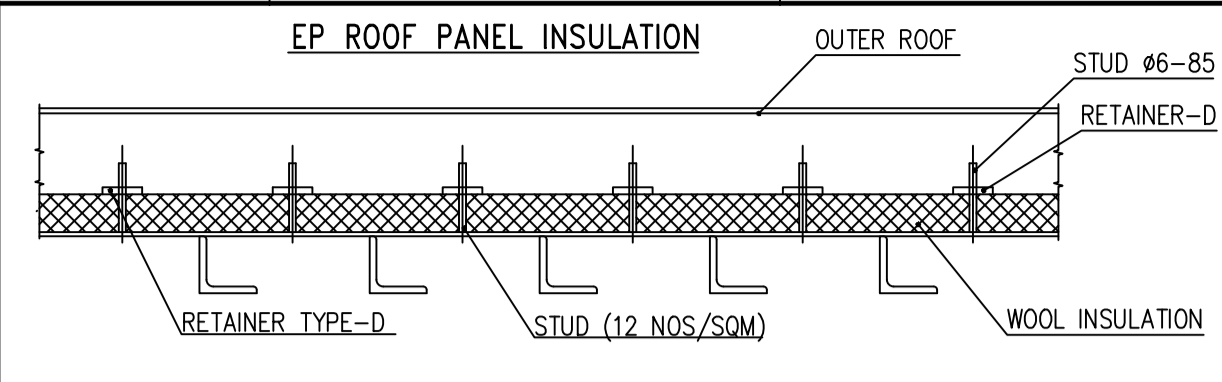
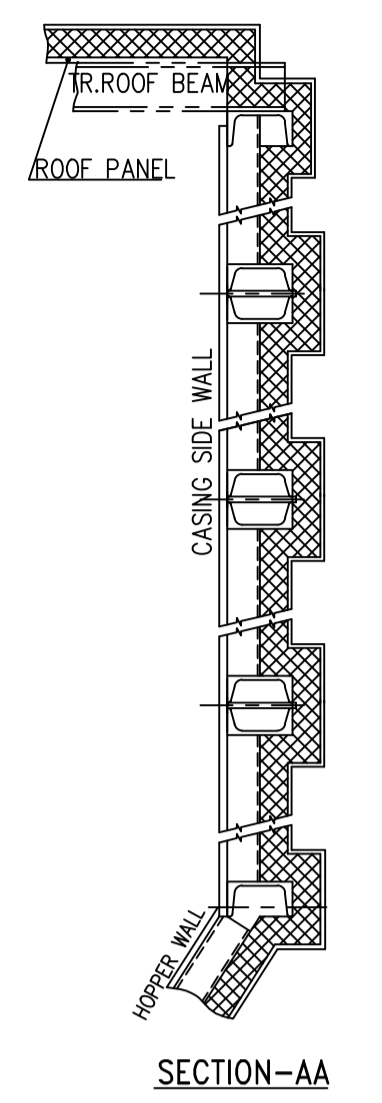
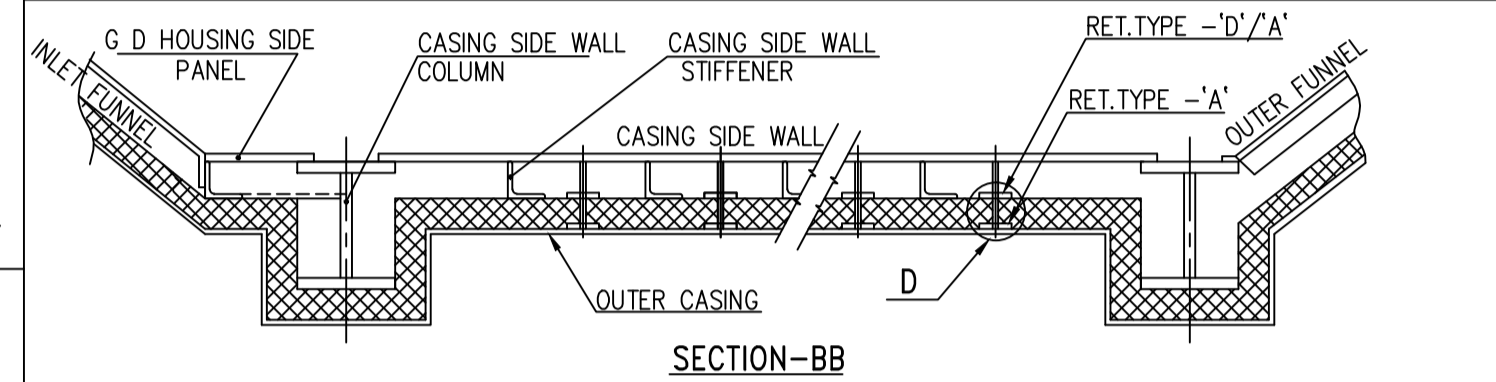
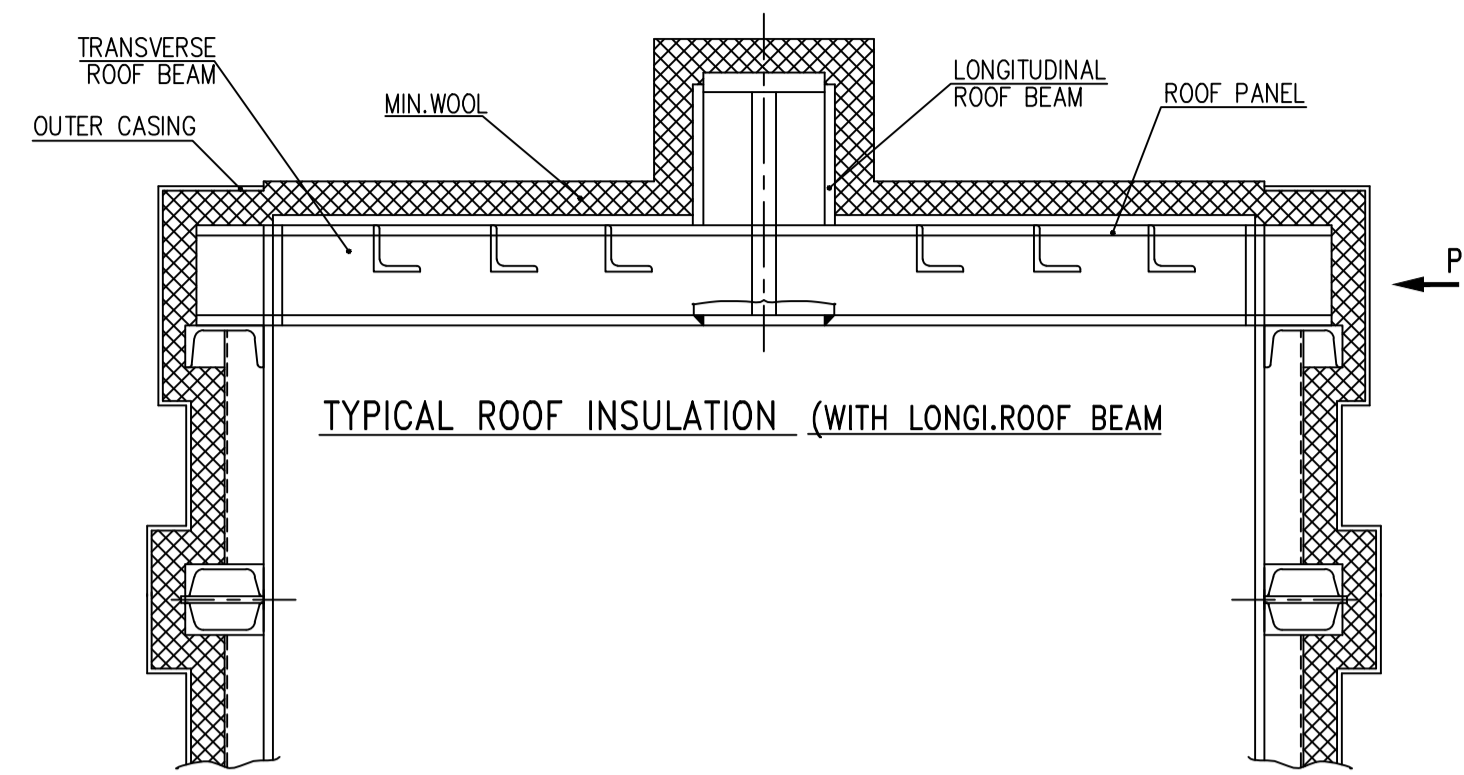
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		DRN NAME SANGEETHA.B		SIGN		DATE 03.04.13		NO. OF VAR.	
BHARAT HEAVY ELECTRICALS LTD., UNIT: BOILER AUXILIARIES PLANT, RANIPET - 632 406.		CHD PARASLIA		GANESH.C		03.04.13		-	
DEPT AQCS	GRADE OF UNTOL.DIM PR: QA: 500	SCALE N.T.S	WEIGHT (KG) ---	REF. TO ASSY/OLD DRG.		ITEM NO. OF ITEM		REV	
INSULATION DETAILS FOR HOPPER		DRAWING NO. 1-79-568-04628		U 01		00		H	

L7970-89S-6L-1 ON ONWARD

ALL DIMENSIONS ARE IN MILLIMETRES

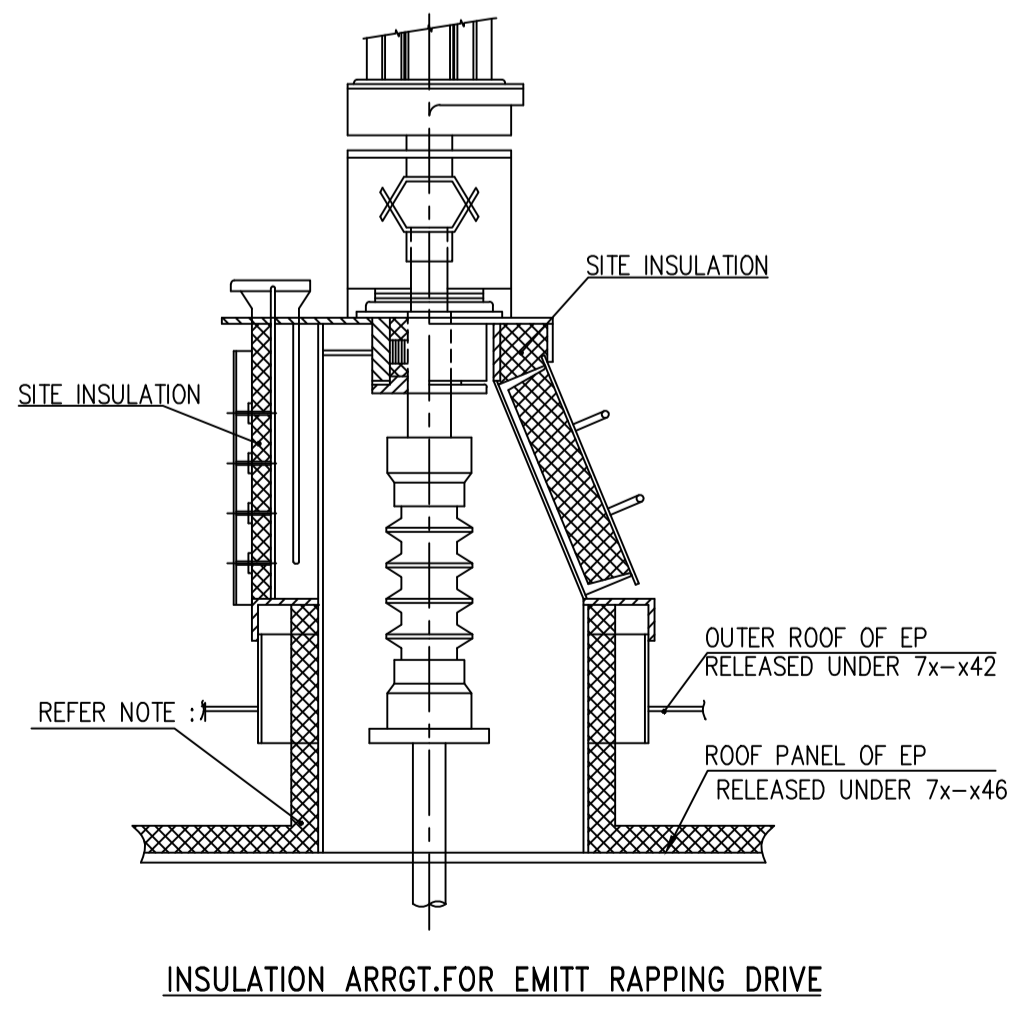
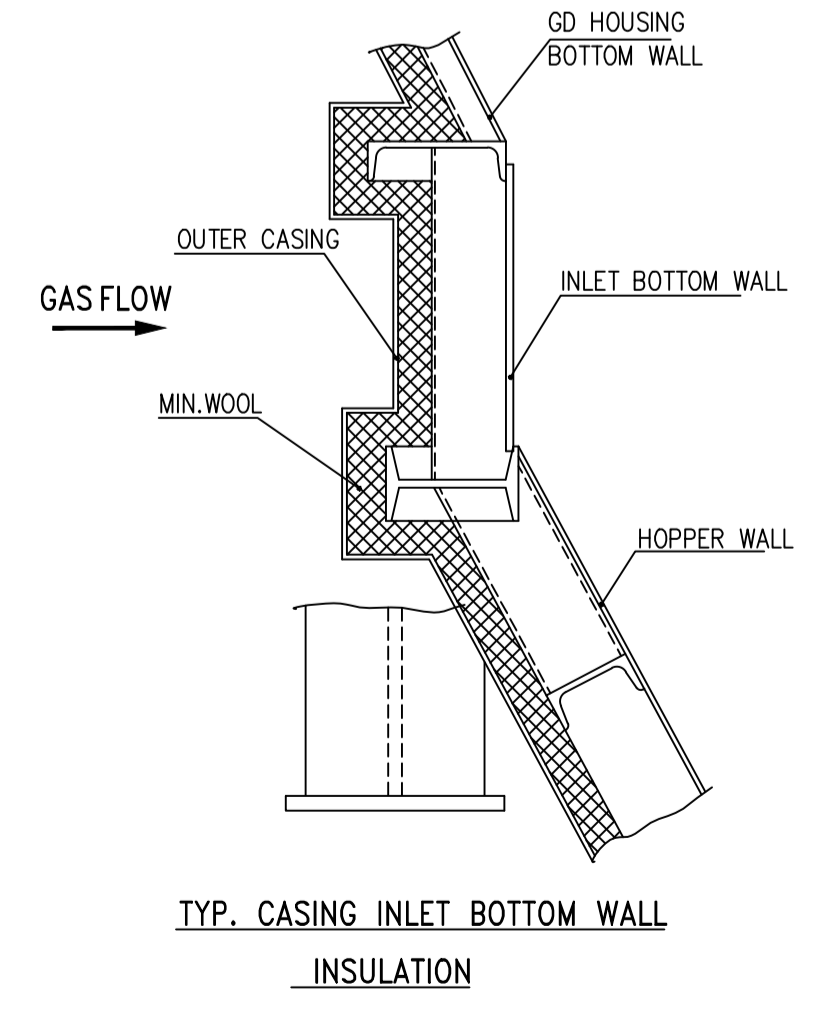
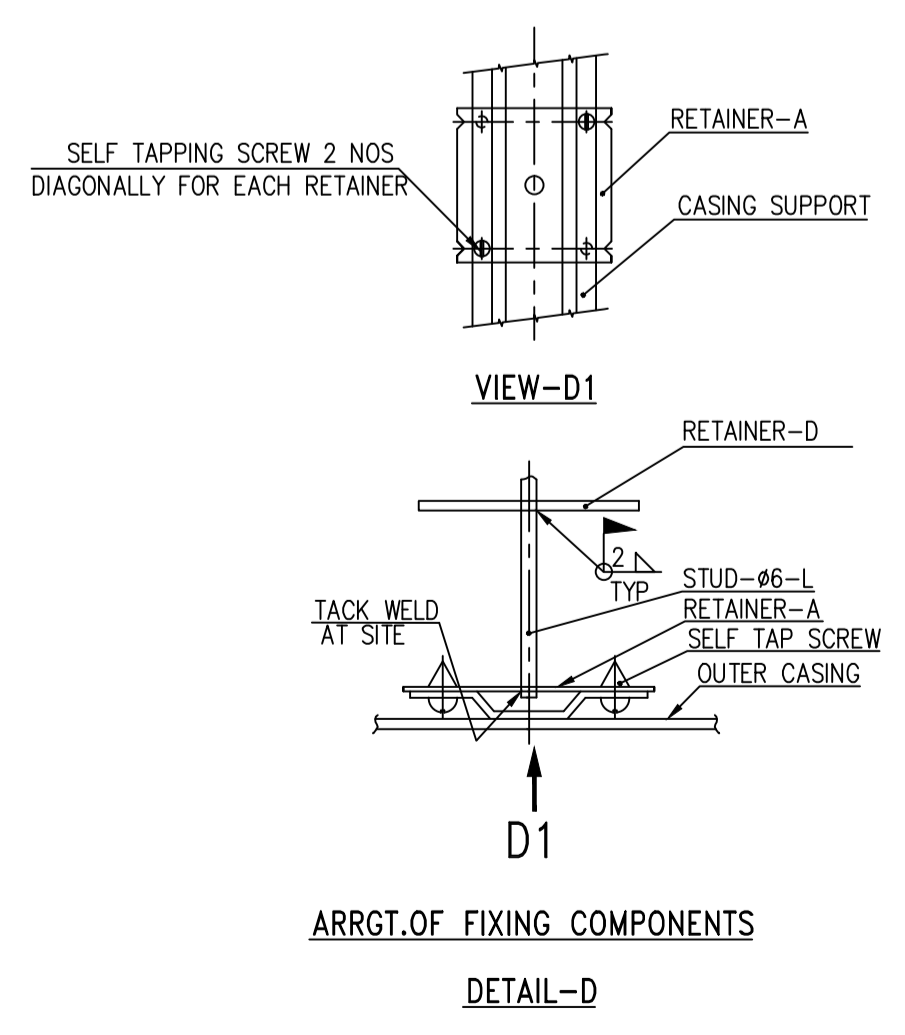
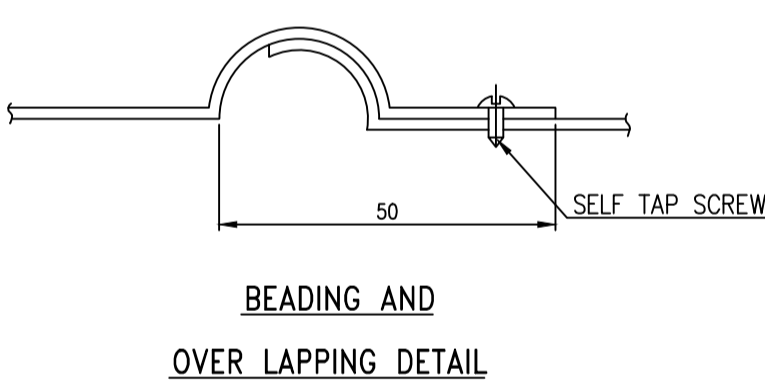
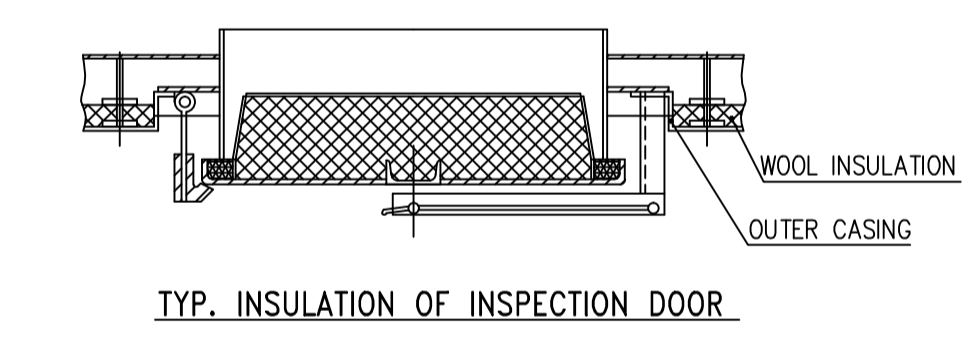


NOTE:
01. TYPICAL 3 FIELD ARRANGEMENT IS SHOWN IN THIS DRG THE SAME IS APPLICABLE FOR ALL THE ESPS.



FOR FURTHER HOPPER INSULATION DETAILS REFER DRG NO. 1-79-568-04628

USE 75 MM WOOL THK FOR CASING, ROOF, INSULATOR, FUNNEL HOPPER INSULATION



NOTE:
01. INSULATION FOR CONNECTION PIECE IS TO BE GROUND ASSEMBLED AND THEN ERECTED.
02. FOR INSULATION FIXING ARRANGEMENTS REFER "ERECTION NOTES ON INSULATION"

NOTE:
01. ALL THE OVER LAPPINGS ARE TO BE PROVIDED IN SUCH A WAY THAT NO RAIN WATER ENTERS THROUGH THE JOINTS TO THE INSULATING MATERIAL.
02. THE SELF TAPPING SCREWS SHOULD BE FIXED CLEARING THE RETAINERS COMING BELOW THE RETAINER POSITIONS CAN BE FOUND FROM THE SUCCEEDING ROWS.
03. ALL JOINTS OF MATTRESSES SHOULD BE SEWEN TOGETHER BY #0.914MM G.I WIRE CONTINUOUSLY.
04. FOR FURTHER DETAILS REFER ERECTION NOTES ON INSULATION.
05. THIS DRG NO. TO BE READ ALONG WITH DRAWING NO: 3-79-068-00660 & 1-79-368-02121(HOP INSLN).

REV	DATE	ALTERED	CHECKED

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		DRN	NAME	SIGN	DATE	NO. OF VAR.
BHARAT HEAVY ELECTRICALS LTD., UNIT: BOILER AUXILIARIES PLANT. RANIPET - 632 406.		CHD	PARASULIA		03.04.13	-
DEPT AQCS GRADE OF UNTOLO.DIM CODE 862 PR:QA:500		APPD	GANESH.C		03.04.13	-
TITLE INSULATION DETAILS FOR ESP		SCALE	WEIGHT (KG)	REF. TO ASSY/OLD DRG.	ITEM NO.	NO. OF ITEMS
		N.T.S	----			
		CARD CODE	DRAWING NO.	REV		
		U 01	1-79-568-04627	00		

09900-890-67-3

DRAWING NO.

ERECTION NOTES ON INSULATION OF ELECTROSTATIC PRECIPITATOR

MATERIALS: -

1. HOOK / STUD ϕ 6mm (INSULATION FIXING PIN)
2. RETAINER-TYPE-A (2X70X70)
3. RETAINER-TYPE-B (2X65X65)
4. CASING SUPPORT (650 MM. LONG)
5. GI BINDING WIRE ϕ 1.219mm
6. GI SEWING WIRE ϕ 0.711mm
7. OUTER CASING
8. SELF TAPPING SCREW - M4X12
9. MINERAL WOOL MATTRESS

STORAGE: MINERAL WOOL TO BE STORED UNDER CLOSED STORAGE

APPLICATION

ALL OIL, GREASE, LOOSE SCALES AND DIRT ARE TO BE REMOVED FROM THE SURFACE TO BE INSULATED. ENSURE THAT THE SURFACE TO BE INSULATED, IS CLEAN AND DRY BEFORE INSTALLING THE INSULATION. THE CORRECT SIZE OF INSULATION FIXING PIN (STIFFENER SIZE + INSULATION THICKNESS + 5 mm. = LENGTH OF FIXING PIN) ARE TO BE WELDED OVER THE DUCT/WALL SURFACE AT THE PITCHES SHOWN IN THE DRG.

RETAINERS (TYPE B) ARE TO BE INSERTED IN TO THE FIXING PIN UPTO STIFFENER HEIGHT AND TACK WELDED. FIX THE MINERAL WOOL MATTRESS OVER THE SURFACE BY PRESSING THEM OVER THE FIXING PIN. THE WIRE NETTING OF THE MATTRESS AT THE JOINTS ARE TO BE SEWN TOGETHER WITH ϕ 0.711 mm. G.I SEWING WIRE. THE EDGES /ENDS OF INSULATION SECTIONS SHALL BUTT UP CLOSE OR EDGES/ENDS SHALL WHERE NECESSARY, BE CUT OR SHAPED AT SITE. ALL JOINTS SHALL BE STAGGERED.

RETAINERS (TYPE A) ARE TO BE POSITIONED OVER THE PINS AND TACK WELDED. BINDING WIRE ϕ 1.219 IS TO BE TIED ACROSS THE FIXING PIN BELOW THE RETAINERS.

FIX THE CASING SUPPORT (650 mm. LONG) TO THE RETAINERS BY USING SELF-TAPPING SCREWS (TWO SCREWS DIAGONALLY FOR EACH RETAINER)

THE OUTER CASING IS TO BE FIXED OVER THE CASING SUPPORTS BY SELF TAPPING SCREWS AT THE PITCHES SHOWN IN THE DRG.

JOINTS OF THE CASING ARE TO BE PROVIDED WITH BEADING. ALL THESE THINGS ARE TO BE DONE IN SUCH A WAY THAT NO RAIN WATER ENTERS INTO THE INSULATION.


FOR APPLICATION OF INSULATION OF THE EQUIPMENT WITHOUT AIR GAP, RETAINER TYPE 'B' IS NOT REQUIRED. REMAINING PROCEDURES ARE AS SAME AS STATED ABOVE.

APPLICATION

1. IT IS VERY IMPORTANT THAT THE SHEET METAL COVERING SHOULD BE DONE BY A WELL EXPERIENCED AND COMPETENT TINSMITH.
2. PERSON WHO IS DOING THE ACTUAL JOB, CAN ALTER THE FOLLOWING SAID METHODS OF FIXING THE SHEET METAL AS AND WHEN NECESSARY ONLY AFTER CONSULTING THE BHEL ERECTION ENGINEER.

REV	DATE	ALTERED	PAVITHRAN
01	03.11.14	CHECKED	ADARSH VERMA
ZONE	1) DRAWING RETRACED.		
\triangle	2) NOTE NO-07 MODIFIED.		

3. INSULATION FIXING PIN OF CORRESPONDING LENGTH & THICKNESS WITH REFERENCE TO THE THICKNESS OF INSULATION (WOOL) SHALL BE WELDED AS INDICATED IN THE RESPECTIVE DRAWING.
4. CIRCUMFERENTIAL AND AXIAL OVERLAPPING OF OUTER CASING SHEET SHOULD BE 50 mm.
5. THE OVERLAPPING OF OUTER CASING SHOULD ALWAYS BE AT THE BOTTOM FOR INCLINED AND VERTICAL PORTION, SUCH THAT NO RAIN WATER CAN ENTER INTO THE INSULATION THROUGH THE JOINTS.
6. THE JOINTS OF WOOL MATTRESSES SHOULD BE STAGGERED. THE WIRE NETTING OF THE MATTRESSES AT THE JOINT ARE TO BE SEWN TOGETHER BY G.I WIRE DIA. 0.711 mm.
- \triangle 7. "FOR ALUMINIUM SHEET OUTER CASING" INNER SIDE ONLY SHOULD BE PAINTED WITH ANTI-CORROSIVE PAINT (IS:158). (PAINT SUPPLY IS UNDER THE SCOPE OF ERECTION
8. SELF TAPPING SCREWS SHOULD BE FIXED OVER THE CIRCUMFERENTIAL OVERLAPPING WITH NECESSARY BEADING. THE AXIAL JOINTS SHOULD BE ON THE CASTING SUPPORTS WITH SELF TAPPING SCREWS AT A PITCH OF APPROXIMATELY 150mm.
9. LOOSE WOOL CAN BE TAKEN FROM THE WOOL MATTRESSES WHEREVER REQUIRED.
10. CLEAN THE SURFACE TO BE INSULATED OF RUST, DUST, GREASE, LOOSE SCALE OR MOISTURE. A PITCH OF APPROXIMATELY 150 mm.
11. CARE SHALL BE TAKEN THAT FLEXIBLE INSULATION IS NOT UNDULY COMPRESSED.
12. AFTER INSULATING THE EQUIPMENT WITH WOOL MATTS. ALL JOINTS SHALL BE FILLED WITH LOOSE MINERAL WOOL.
13. ON COMPLETION OF EACH DAY'S WORK OF APPLYING INSULATION, THE WOOL TO BE WEATHER-PROOFED OVERNIGHT BY EITHER WITH THE FINAL PROTECTIVE CASING OR WITH SOME TEMPORARY WEATHERPROOF COVERING SO THAT IT DOES NOT GET DRENCHED IN RAIN.
14. FOR THICKNESS OF INSULATION WOOL REFER SHIPPING LIST OF PGMA 7X-X67 & 7X-X69 & ANY ALTERNATIVE IN THE THICKNESS OF INSULATION SHOULD BE DONE ONLY AFTER GETTING THE PRIOR APPROVAL FROM DESIGN ENGINEER.
15. THE REQUIRED FIXING COMPONENTS AND OUTER CASING SHEETS HAVE BEEN RELEASED UNDER 7X-X68, 7X-X70 & 89615. THE INSULATION MATERIAL (WOOL) HAS BEEN RELEASED UNDER 7X-X67 & 7X-X69.
16. SEALING COMPOUND IS TO BE APPLIED AT THE OUTER CASTING JOINTS WHEREVER NECESSARY TO PREVENT THE RAIN WATER (SUPPLY OF SEALING COMPOUND IS IN THE SCOPE OF ERECTION AGENCY)
17. WHEREVER NECESSARY THE INSULATION FIXING PINS ARE TO BE CUT SUITABLY AT SITE. (i.e. UPTO THE HEIGHT OF THE STIFFENER)
18. "FOR G.I. SHEET OUTER CASING", INNER SIDE OF OUTER CASING SHOULD BE PAINTED WITH ANTI-CORROSIVE PAINT CONFIRMING TO IS:158 AND THE OUTSIDE OF CASING IS TO BE PAINTED WITH TWO COATS OF ALUMINIUM PAINT CONFIRMING TO IS:2339. (PAINT SUPPLY IS UNDER THE SCOPE OF ERECTION AGENCY)

CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.	TYPE OF PRODUCT		OR NAME OF		CUSTOMER/PROJECT		
	 BHARAT HEAVY ELECTRICALS LTD., UNIT: BOILER AUXILIARIES PLANT. RANIPET - 632 406.		DRN	NAME	SIGN	DATE	
	DEPT AQCS		CHD	S.P.NIRMALA		26.10.99	NO.OF VAR.
	CODE 862		APPD	S.SOMU		26.10.99	-
GRADE OF UNTOL.DIM		SCALE	WEIGHT (KG).	REF. TO ASSY/OLD DRG.		ITEM NO.	
PR: QA: 500		N.T.S	WT	"RETRACED"		NO. OF ITEMS	
TITLE			CARD CODE	DRAWING NO.		REV	
ERECTION NOTES ON INSULATION OF ELECTROSTATIC PRECIPITATOR			U 01	3-79-068-00660		01	