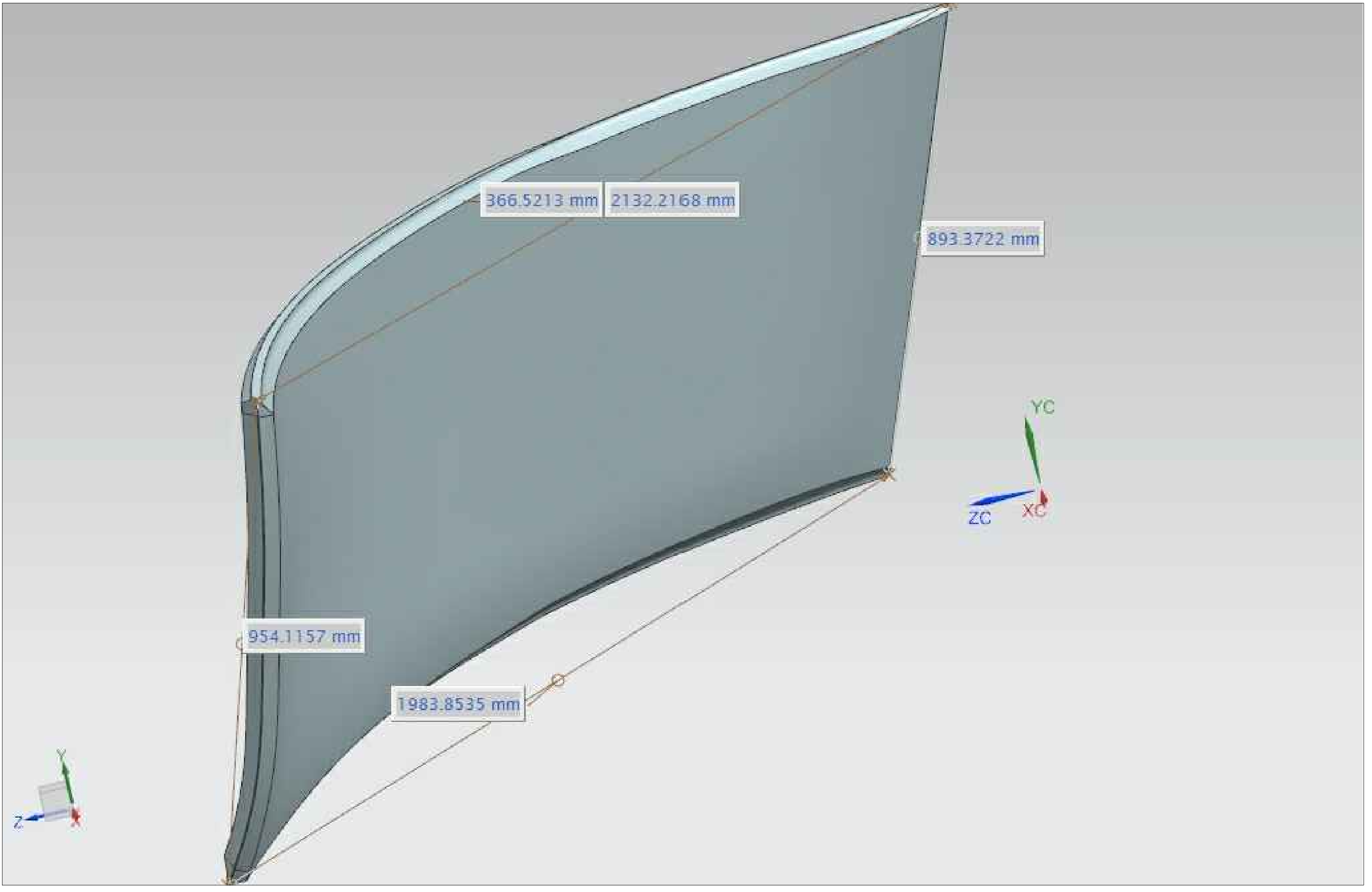
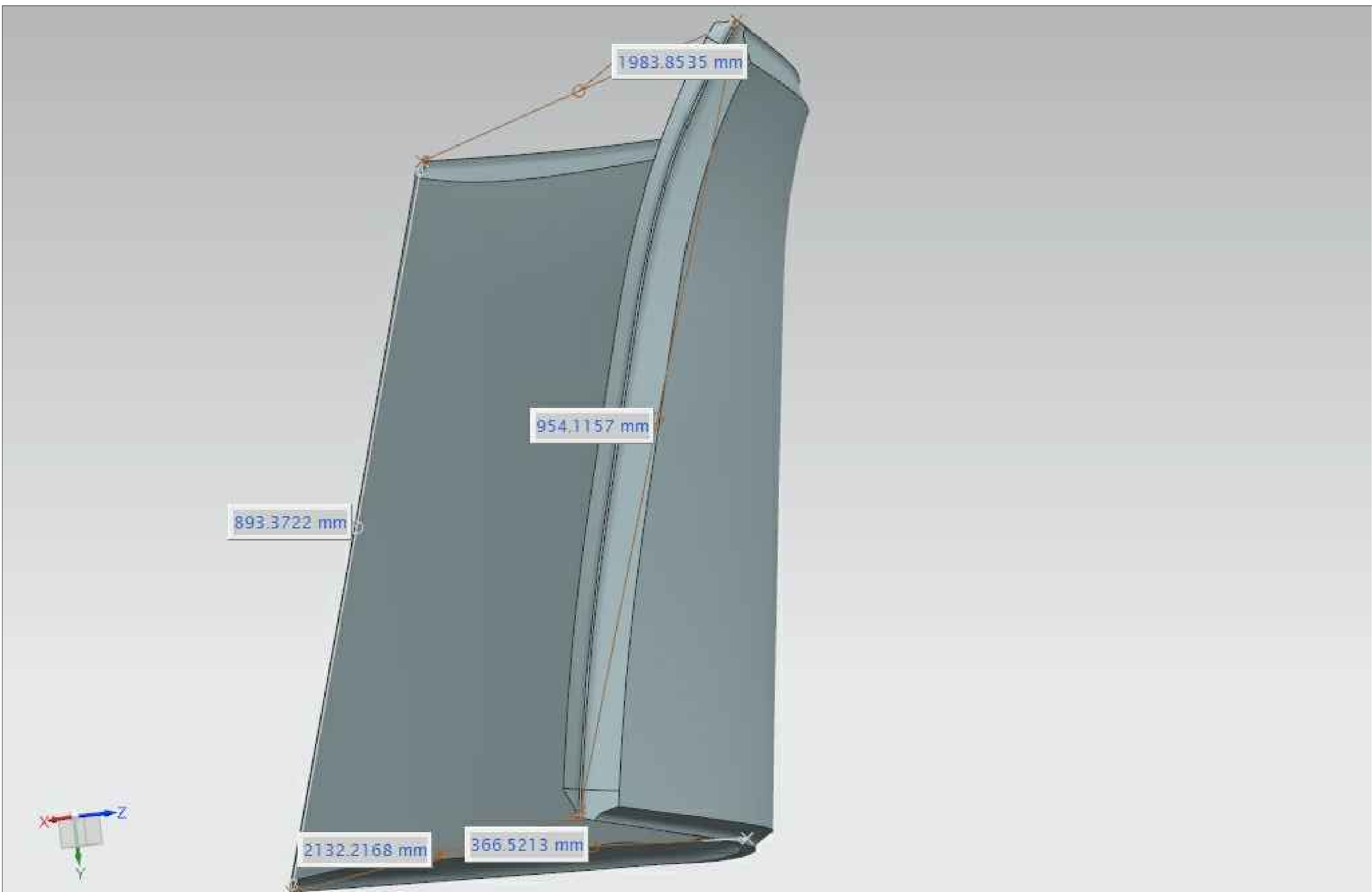
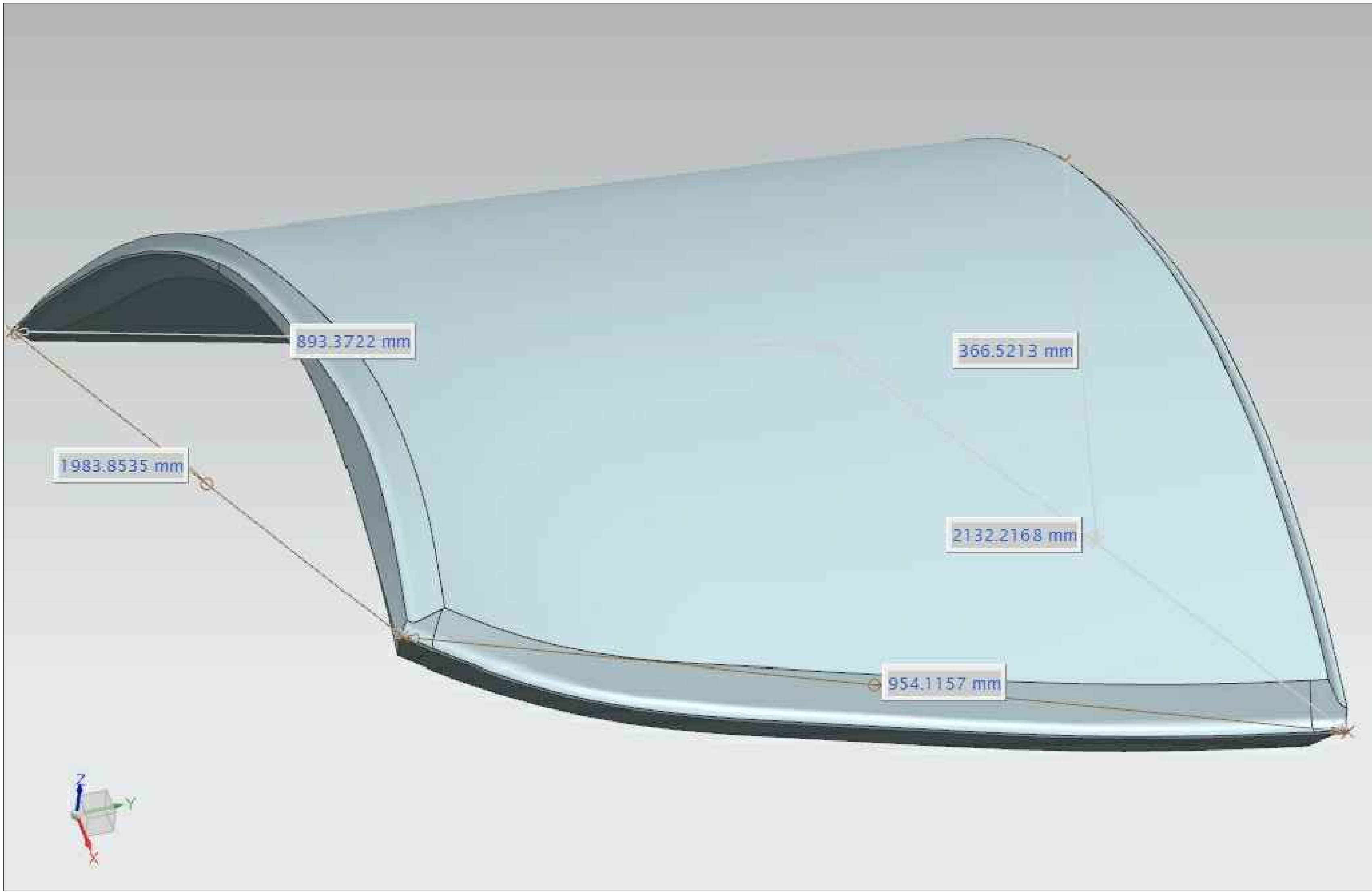
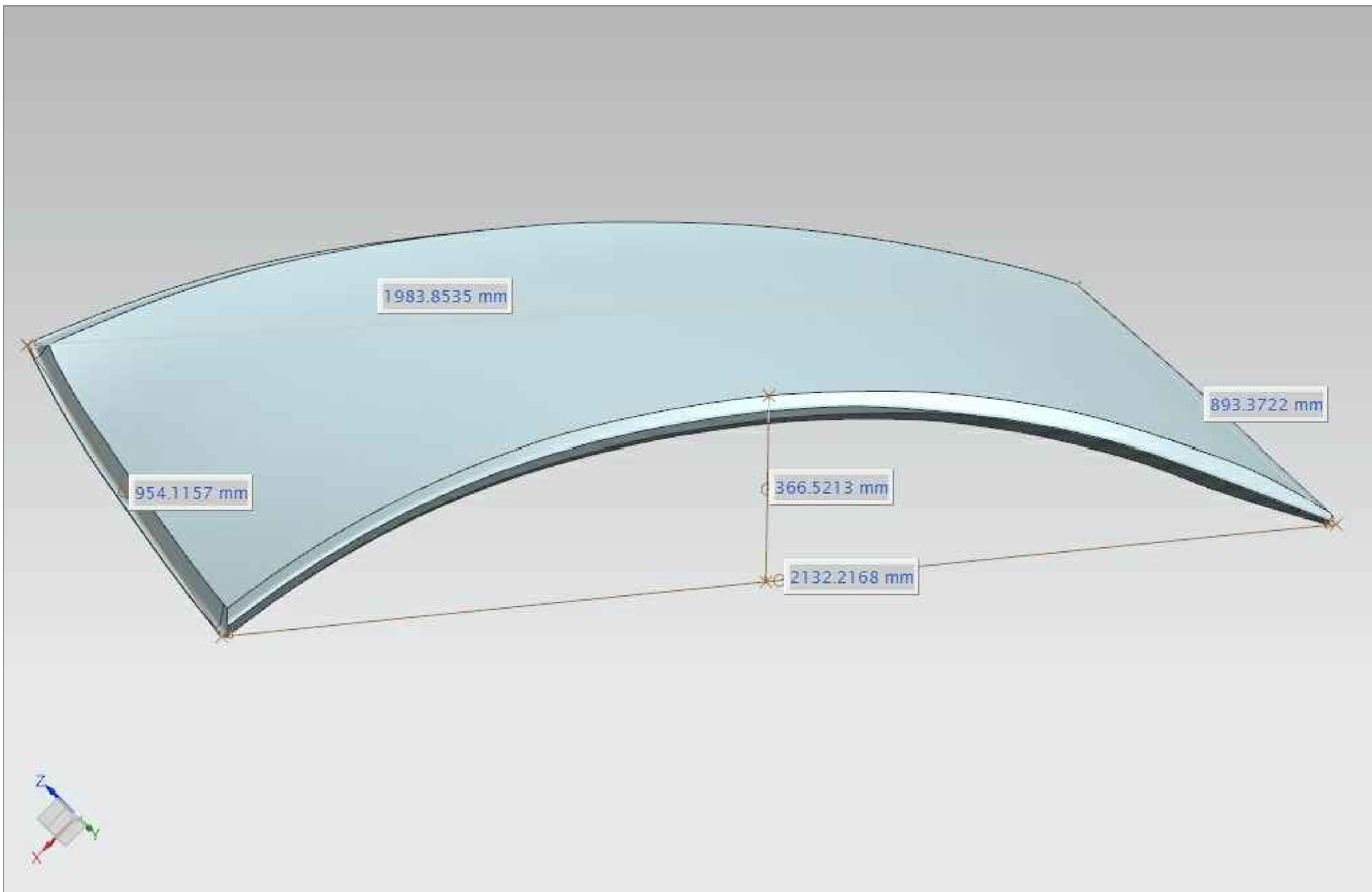


**TECHNICAL REQUIREMENT FOR FINISH MACHINING OF IMPELLER BLADE CASTING**

S.No.	BHEL Requirement	Vendor's Confirmation
1.	Blade castings to be machined all over as per the 3D model provided by BHEL. Tolerance on profile shall be 0.5 mm. Drawing of 02040718103/M3 R00 & 02040718103/M4 R00 is enclosed.	<i>Vendor to confirm</i>
2.	Surface finish of machined blade shall be 3.2 micron or better.	<i>Vendor to confirm</i>
3.	Welding edges as shown in sketch and given in 3D model are also to be made on three edges.	<i>Vendor to confirm</i>
4.	After completion of machining, 0.3 mm deep line should be inscribed by machining tool at location of Section E and F, throughout the length of the blade on both suction and pressure surface. The planes corresponding to Section E and F shall be marked on 3D model and provided to machining vendor.	<i>Vendor to confirm</i>
5.	Machining allowance available for profile machining shall be 20-30 mm all around.	<i>Vendor to Note</i>
6.	Weight of casting in as-cast condition is estimated around:- 1550 kg (approx.) for drawing no. 0.204.07.18103/M3 R00 and 2130 Kg (approx.) for drawing no. 0.204.07.18103/M4 R00.	<i>Vendor to Note</i>
7.	Weight of casting after machining is estimated as: 781 kg (approx.) for drawing no. 0.204.07.18103/M3 R00 and 1082 Kg (approx.) for drawing no. 0.204.07.18103/M4 R00.	<i>Vendor to Note</i>
8.	Total surface area of blade in finish machined condition is 3.933 sqm for drawing no. 0.204.07.18103/M3 R00 and 5.346 sqm for drawing no. 0.204.07.18103/M4 R00.	<i>Vendor to Note</i>
9.	Material of blade: 13Cr-4Ni Stainless steel to ASTM A743 Gr CA6NM	<i>Vendor to Note</i>
10.	After machining, Blade to be inspected using 3D scanning equipment and a report of comparison of the same from theoretical 3D model to be submitted to BHEL.	<i>Vendor to confirm</i>
11.	Complete Dimensional, Profile, Surface finish inspection shall be carried out by BHEL representative at Vendors works.	<i>Vendor to Note</i>
12.	All required tools, instruments, jigs, fixtures, templates, gauges, scanning/ measuring facility etc. should be arranged by the vendor	<i>Vendor to confirm</i>
13.	After machining, blade should be given identification details by Hard punched	<i>Vendor to confirm</i>
14.	Job to be suitably packed after machining to avoid any damage to machined surfaces during loading/unloading/transportation	<i>Vendor to confirm</i>
15.	Vendor to submit following with the offer:- a) Details of the Organization b) Details of the machine tools and other facilities installed in the company	<i>Vendor to submit</i>
16.	Vendor to submit Filled Supplier Registration Form along with Requisite Documents to SDC Cell in MM Deptt. of CFFP, BHEL, Haridwar. If already registered at CFFP or any other unit of BHEL, then Vendor code may be furnished. Vendor may plan a visit to CFFP	<i>Vendor to submit</i>
17.	Vendor may plan a visit to CFFP for technical discussion.	<i>Vendor to Note</i>
18.	BHEL team may visit vendor's works for facility/capacity verification.	<i>Vendor to Note</i>

Tender No.:FF/SC/17024/201700991  
Opening Due Date: 27/06/2017

Name & Signature of Sub-contractor  
With date & Seal

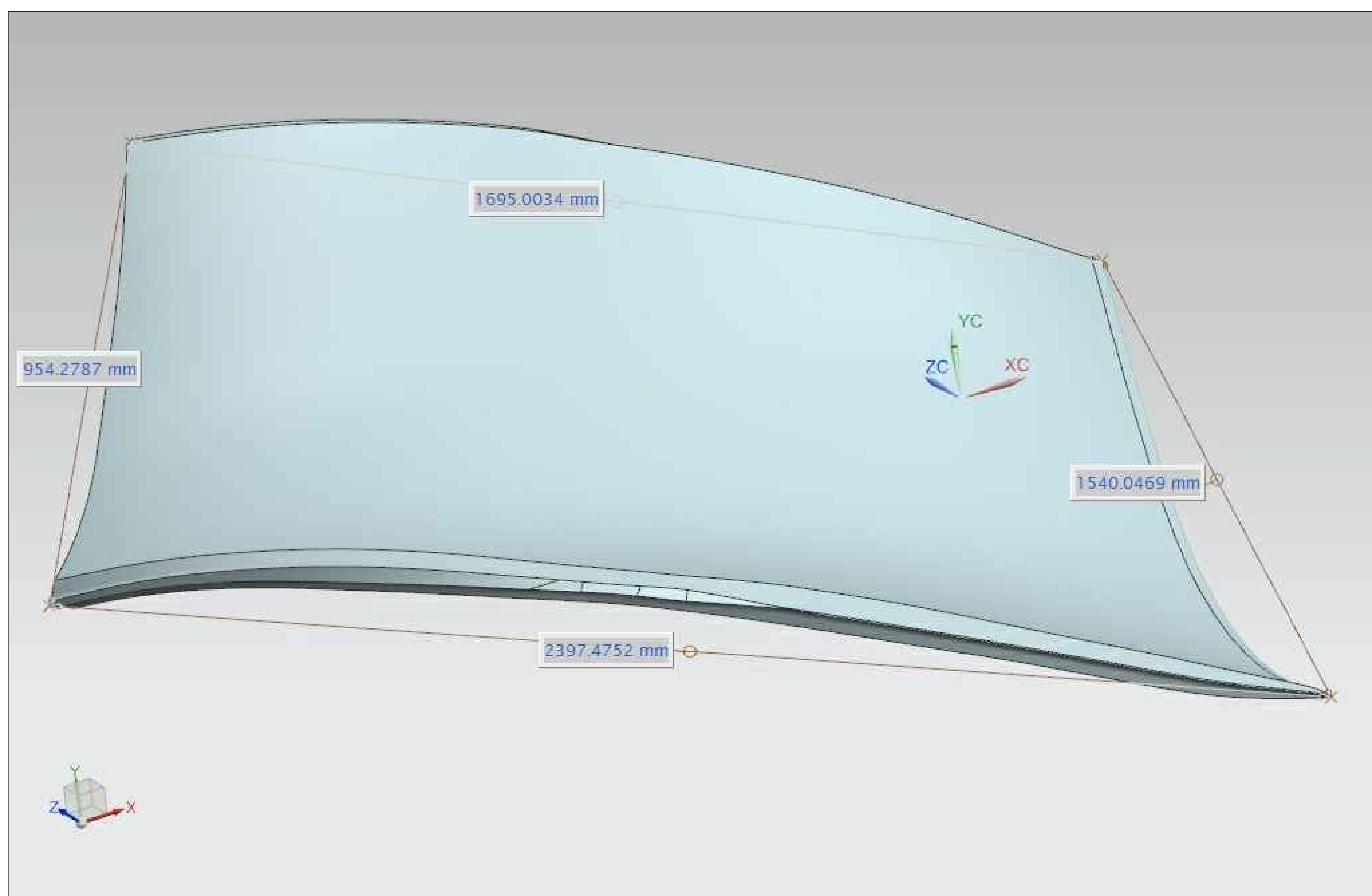
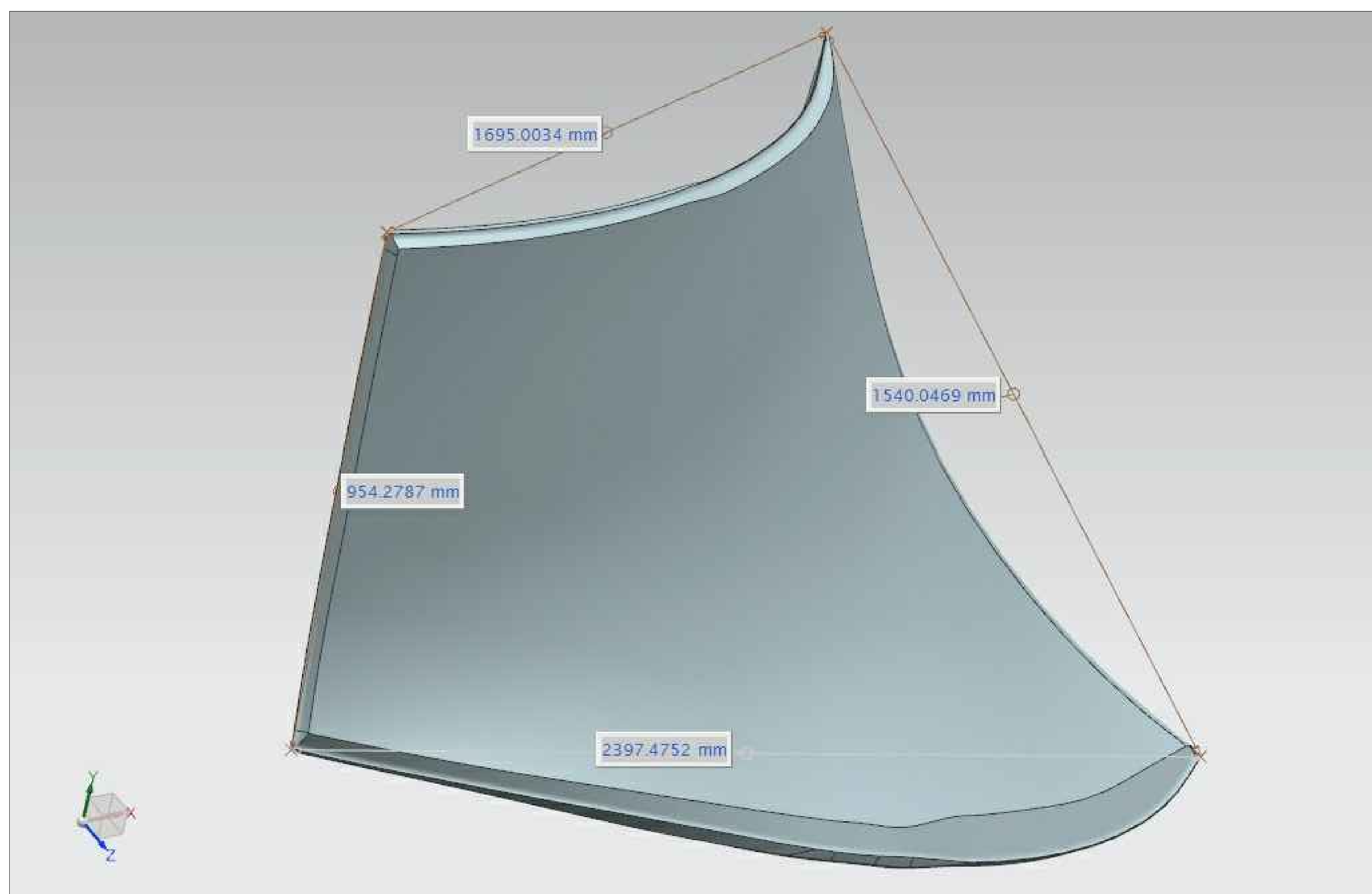
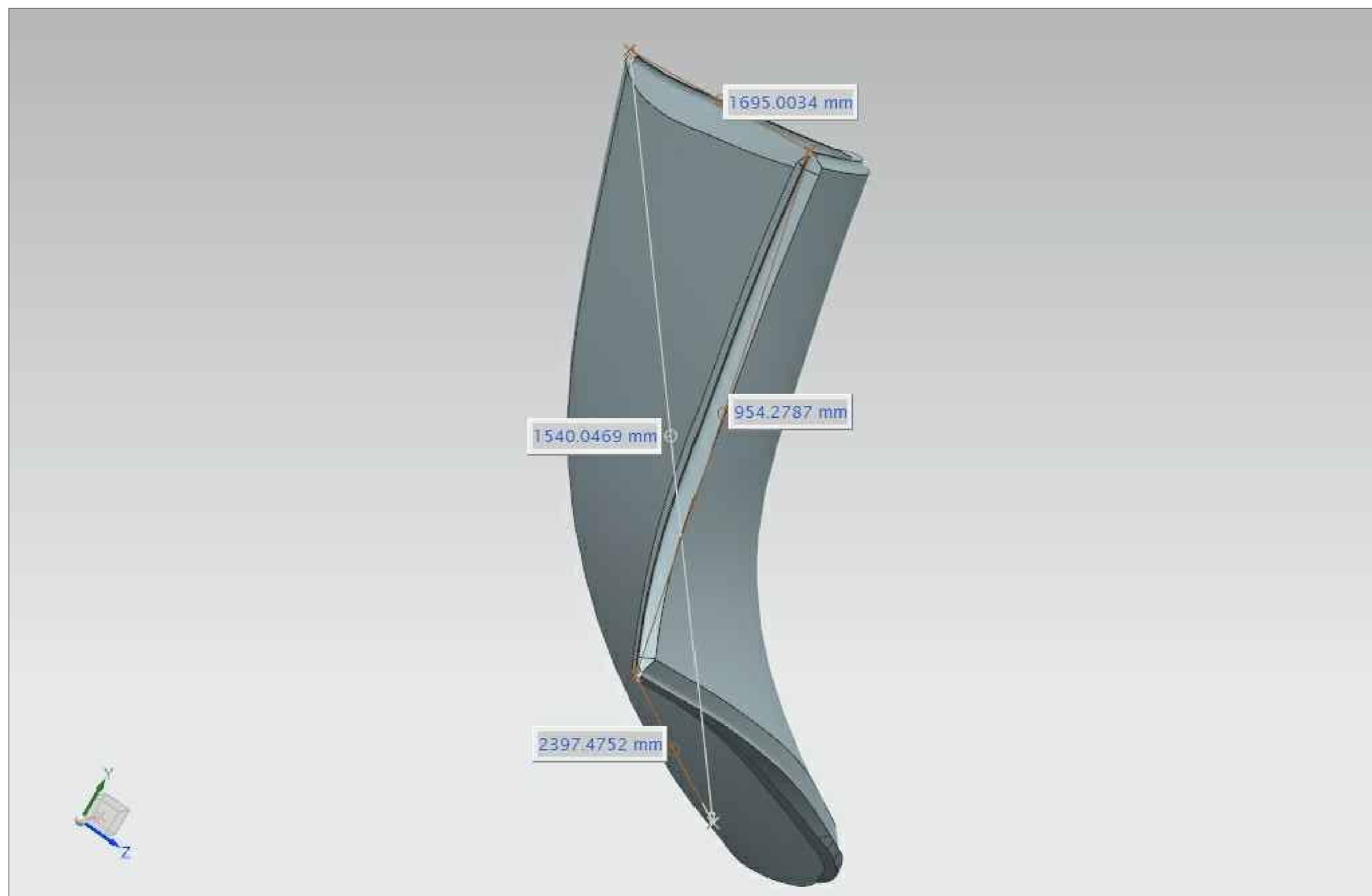
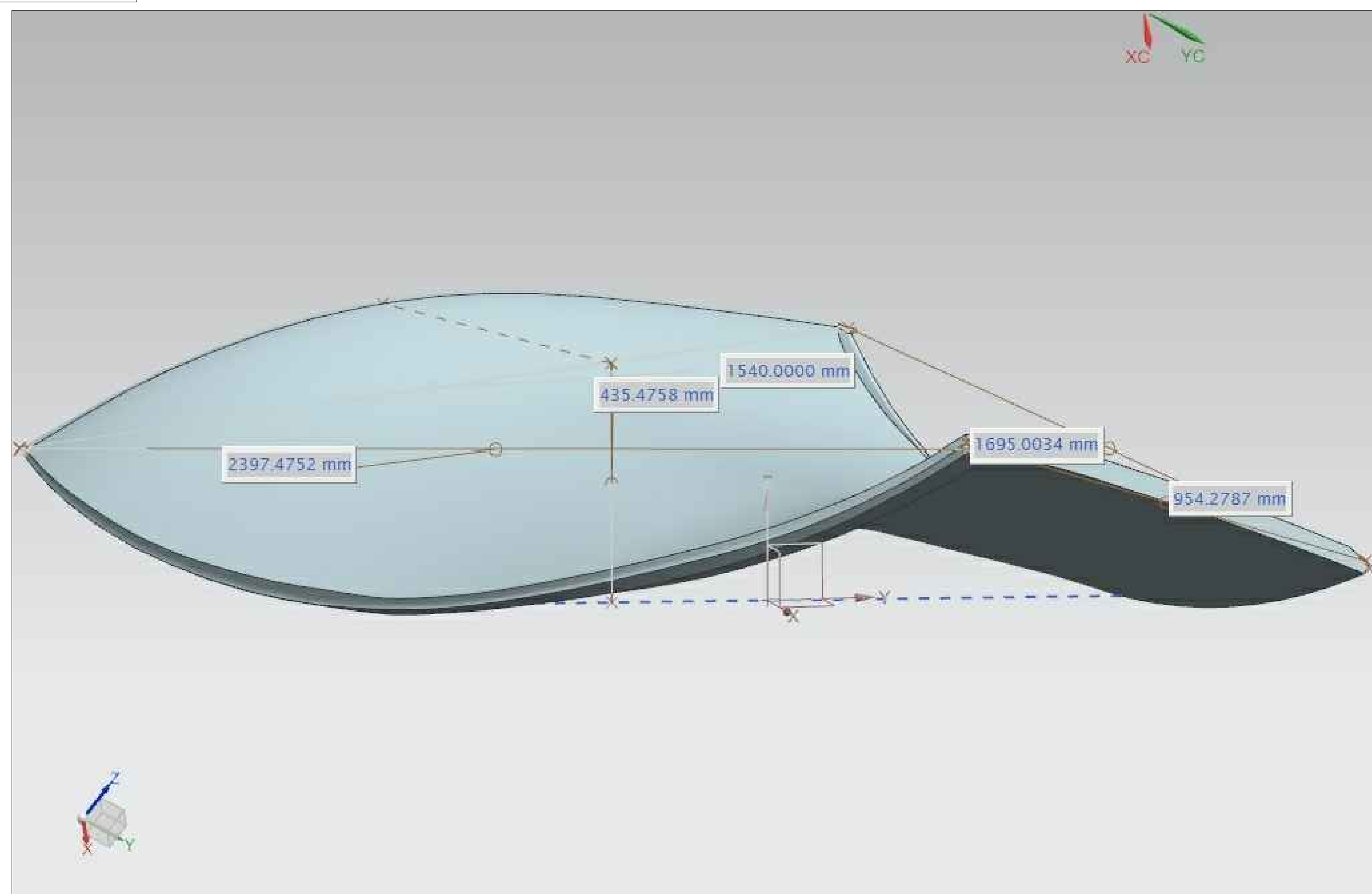


- NOTES:
1. Blade castings to be machined all over as per the 3D model provided by BHEL. Tolerance on profile shall be 0.5 mm.
  2. Surface finish of machined blade shall be 3.2 micron or better.
  3. Welding edges as shown in sketch and given in 3D model are also to be made on three edges.
  4. After completion of machining, 0.3 mm deep line should be inscribed by machining tool at location of Section E and F, throughout the length of the blade on both suction and pressure surface. The planes corresponding to Section E and F shall be marked on 3D model and provided to machining vendor.
  5. Machining allowance available for profile machining shall be 20-30 mm all around.
  6. Weight of casting in as-cast condition is estimated around 1550 kg for Part I.
  7. Weight of casting after machining is estimated as 781 kg for Part I.
  8. Total surface area of blade in finish machined condition 3.933 sqm for Part I.
  9. Material of blade: 13Cr-4Ni Stainless steel to ASTM A743 Gr CA6NM
  10. After machining, Blade to be inspected using 3D scanning equipment and a report of comparison of the same from theoretical 3D model to be submitted to BHEL.

Bharat Heavy Electricals, Ltd.				CENTRAL FOUNDRY FORGE PLANT			
RANIPUR HARDWAR							
DEPT.	FDY. TECH.	SCALE	N.T.S.	WEIGHT IN KG	NAME	SIGN	DATE
TITLE				DRN	/23/23499M3.DWG	Sd	9.5.17
MACHINING DRAWING FOR IMPELLER BLADE PART I				WED	T. DAVE.	Sd	9.5.17
				CHD	R. LAKRA	Sd	9.5.17
				APPO	T. DAVE.	Sd	9.5.17
PROJECT AND CUSTOMER NAME				TECHNOLOGY NO		DRAWING NO.	
PRANAHITA VIII, X, XI				23499A		0-204-07-18103/M3	
BHEL BHOPAL						SHEET NO. 1	
						NO. OFF SHEETS 1	

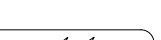



REV	DATE	ALTERED	CHECKED	REV	DATE	ALTERED	CHECKED	REV	DATE	ALTERED	CHECKED
ZONE				ZONE				ZONE			





1. Blade castings to be machined all over as per the 3D model provided by BHEL. Tolerance on profile shall be 0.5 mm.
2. Surface finish of machined blade shall be 3.2 micron or better.
3. Welding edges as shown in sketch and given in 3D model are also to be made on three edges.
4. After completion of machining, 0.3 mm deep line should be inscribed by machining tool at location of Section E & F, throughout the length of the blade on both suction & pressure surface. The planes corresponding to Section E & F shall be marked on 3D model & provided to machining vendor.
5. Machining allowance available for profile machining shall be 20-30 mm all around.
6. Weight of casting in as-cast condition is estimated around 2130 kg for Part II.
7. Weight of casting after machining is estimated as 1082 kg for Part II.
8. Total surface area of blade in finish machined condition 5.346 sqm for Part II.
9. Material of blade: 13Cr-4Ni Stainless steel to ASTM A743 Gr CA6NM
10. After machining, Blade to be inspected using 3D scanning equipment and a report of comparison of the same from theoretical 3D model to be submitted to BHEL.

REV	DATE	ALTERED CHECKED	REV	DATE	ALTERED CHECKED	REV	DATE	ALTERED CHECKED
ZONE			ZONE			ZONE		

		<b>BHARAT HEAVY ELECTRICALS. LTD.</b> <b>CENTRAL FOUNDRY FORGE PLANT</b> <b>RANIPUR HARDWAR</b>					
DPTT. 		SCALE		WEIGHT IN Kgs	NAME	SIGN	DATE
FDY. TECH. N.T.S.							
TITLE				DPM / 23/24399M/4 DWS WKO I DAVE Sd 9.5.17 CKR I RAKRA Sd 9.5.17 APPD I DAVE Sd 9.5.17			
<b>MACHINING DRAWING FOR IMPELLER BLADE PART II</b>							
PROJECT AND DESIGN NAME <b>PRATHA VIII, X, XI</b> <b>BHEL BHOPAL</b>				TECHNOLOGY NO <b>23499B</b>			
				DRAWING NO <b>04-07-18103/M4</b>			
				SHEET NO. _____ _____ OF _____ SHEETS			