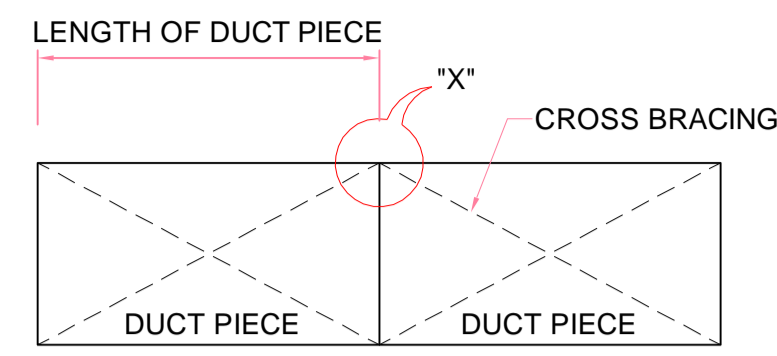


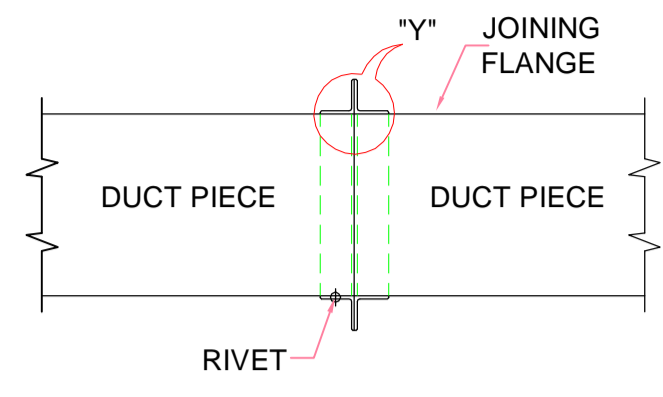
PROJECT NAME:-	3X200 MW + 3X500 MW RAMAGUNDAM STPP STAGE I & II (FGD SYSTEM)
SYSTEM NAME:-	HVAC FOR FGD SYSTEM
DOCUMENT NAME:-	STANDARD DRAWING FOR DUCT FABRICATION & SUPPORTING ARRANGEMENT AND ERECTION & APPLICATION DETAIL OF INSULATION
NTPC DOCUMENT No:-	3130-109-PVM-B-234
BHEL DOCUMENT NO:-	PE-V0-467-571-A306/A215

INDEX

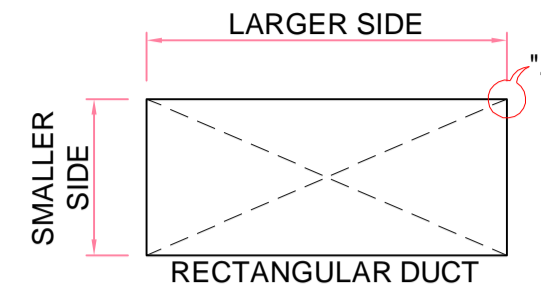
S.N o.	DESCRIPTION	BHEL DOCUMENT Nos	PAGE Nos.
1.0	STANDARD DRAWING FOR DUCT FABRICATION & SUPPORTING ARRANGEMENT AND ERECTION & APPLICATION DETAIL OF INSULATION	PE-V0-467-571-A306	3 - 5
2.0	TECHNICAL DATA SHEET OF GI SHEET FOR AC AND VENTILATION SYSTEM	PE-V0-467-571-A215	6 - 9



DUCT JOINT (TYPE-A)

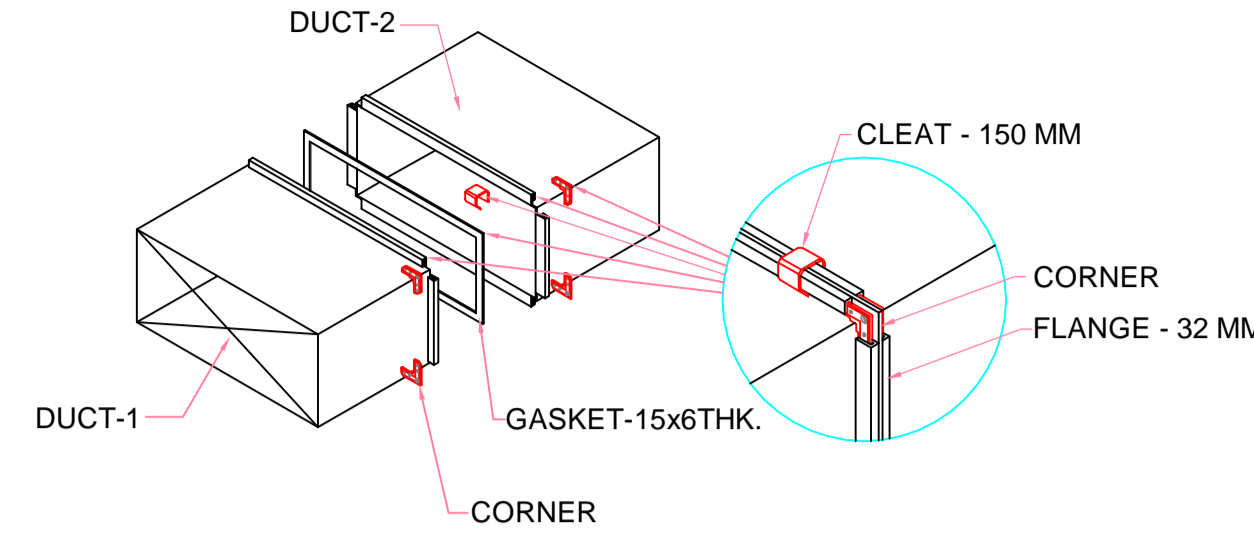


DUCT JOINT (TYPE-B)



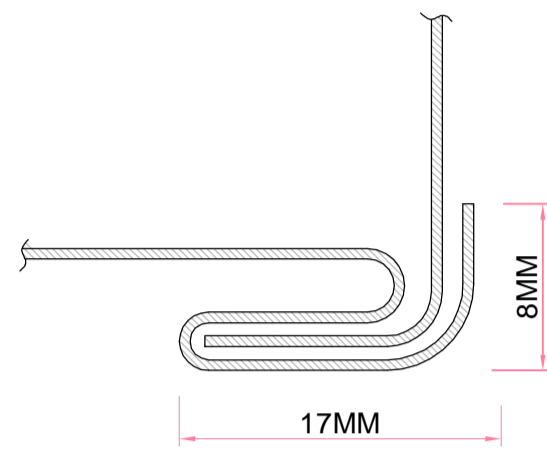
DUCT JOINT (CORNER DETAIL)
(FOR ALL DUCT)

NOTE:-
ALL RECTANGULAR DUCT SHALL BE FLAT ON FACE AND DOUBLE SEAM JOINT (DETAIL-2) ON CORNER OF DUCT

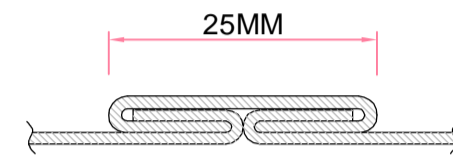


TYPICAL TDF JOINT DETAIL
FACTORY FABRICATED DUCTING

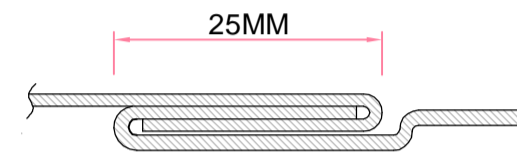
UP TO 300mm	NO CLEAT
UP TO 600mm	1 CLEAT
UP TO 1000mm	2 CLEAT
C/C DIS. BETWEEN 2 CLEAT 300mm	



1J DOUBLE SEAM
DETAIL-Z

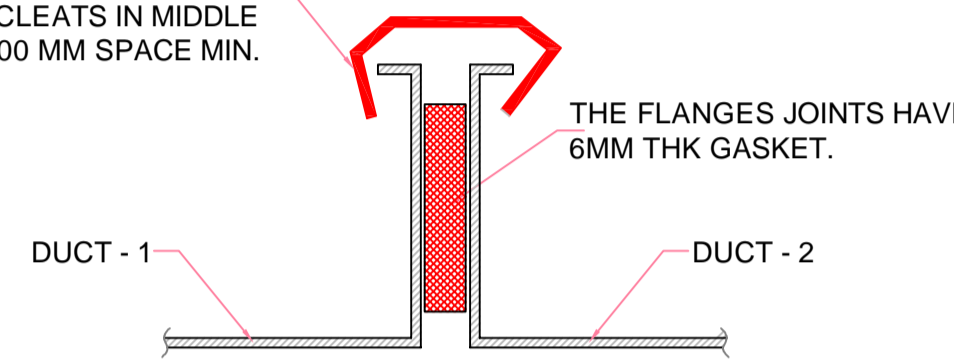


1D DRIVE SLIP
DETAIL-X

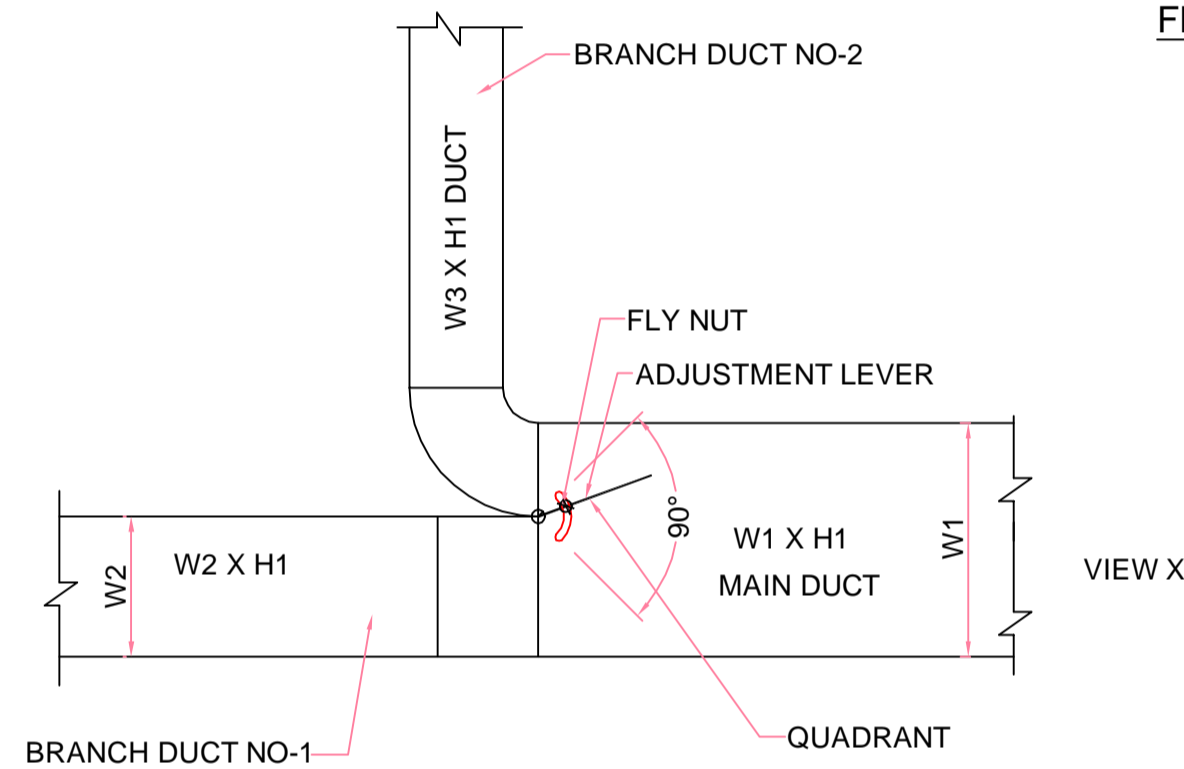


1A GROOVED SEAM
DETAIL-X

INTER CONNECTING FLANGES SHALL BE CONNECTED WITH EACH OTHER BY Ø10 GI NUTS AT CORNERS & BY CLEATS IN MIDDLE @ 300 MM SPACE MIN.



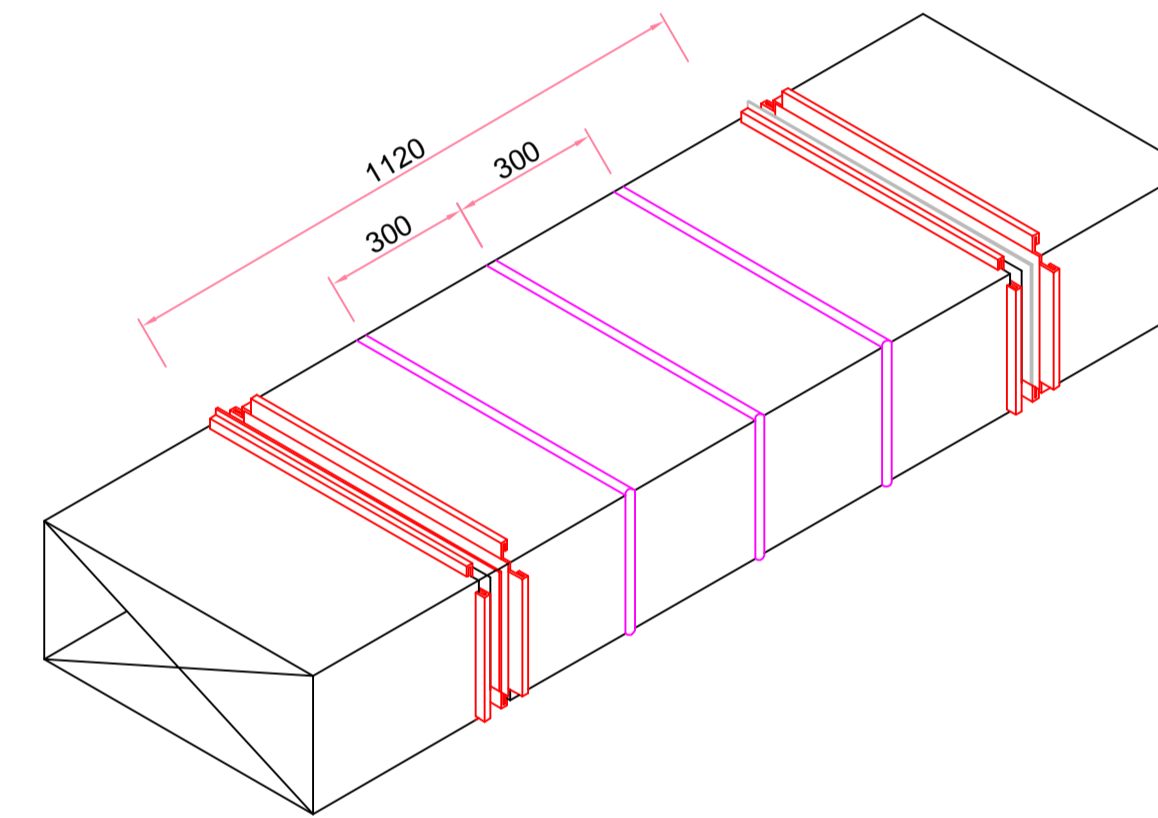
FLANGE JOINT
DETAIL-Y



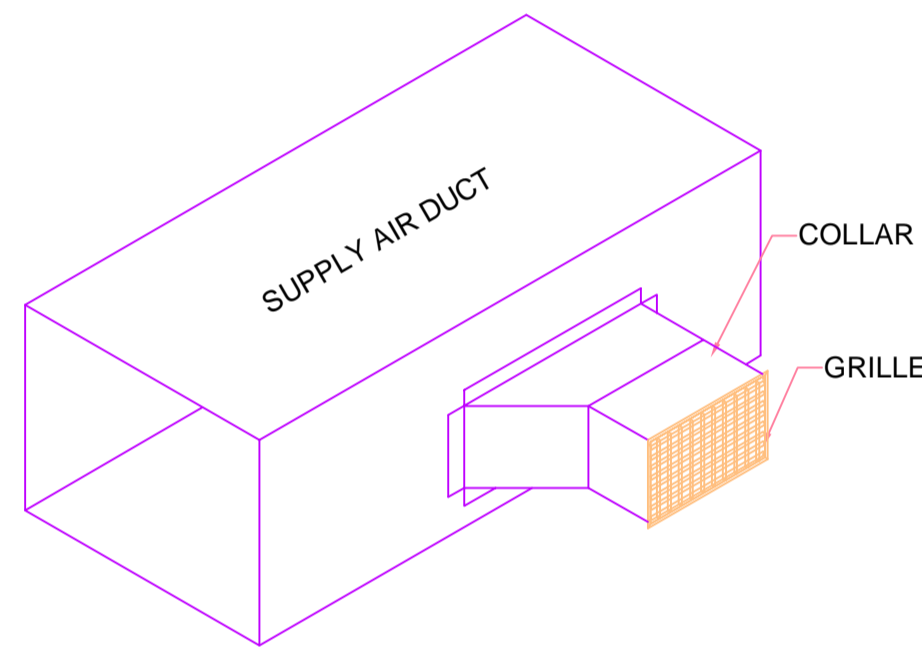
WHERE

- (1) W1 = WIDTH OF THE MAIN DUCT.
- (2) W2 = WIDTH OF BRANCH DUCT NO.-1
- (3) W3 = WIDTH OF BRANCH DUCT NO.-2
- (4) H1 = HEIGHT OF THE MAIN DUCT.
= HEIGHT OF BRANCH DUCT NO.-1
= HEIGHT OF BRANCH DUCT NO.-2
= 600
- (5) W1 = W2 + W3

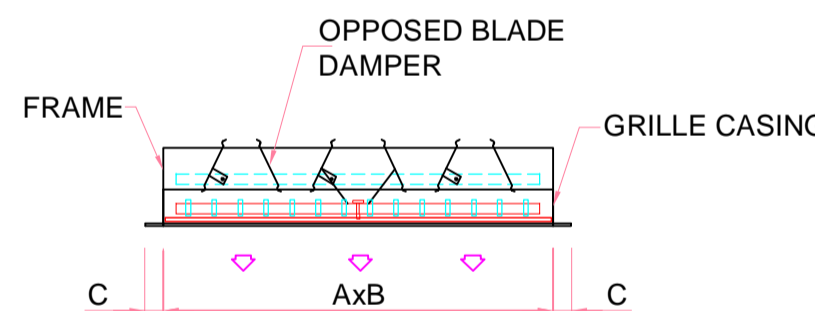
TYPICAL INSTALLATION ARRANGEMENT
OF SPLITTER DAMPER



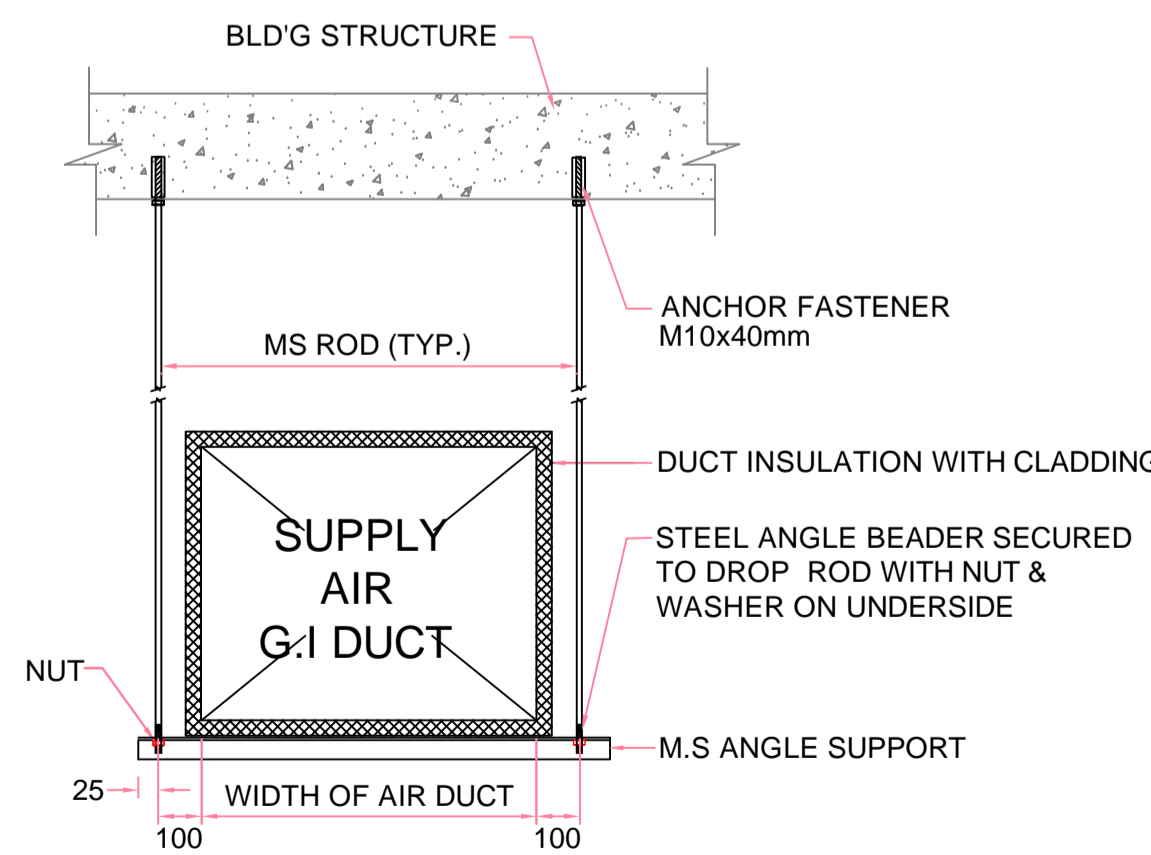
BRACING DETAIL BETWEEN TWO FLANGE



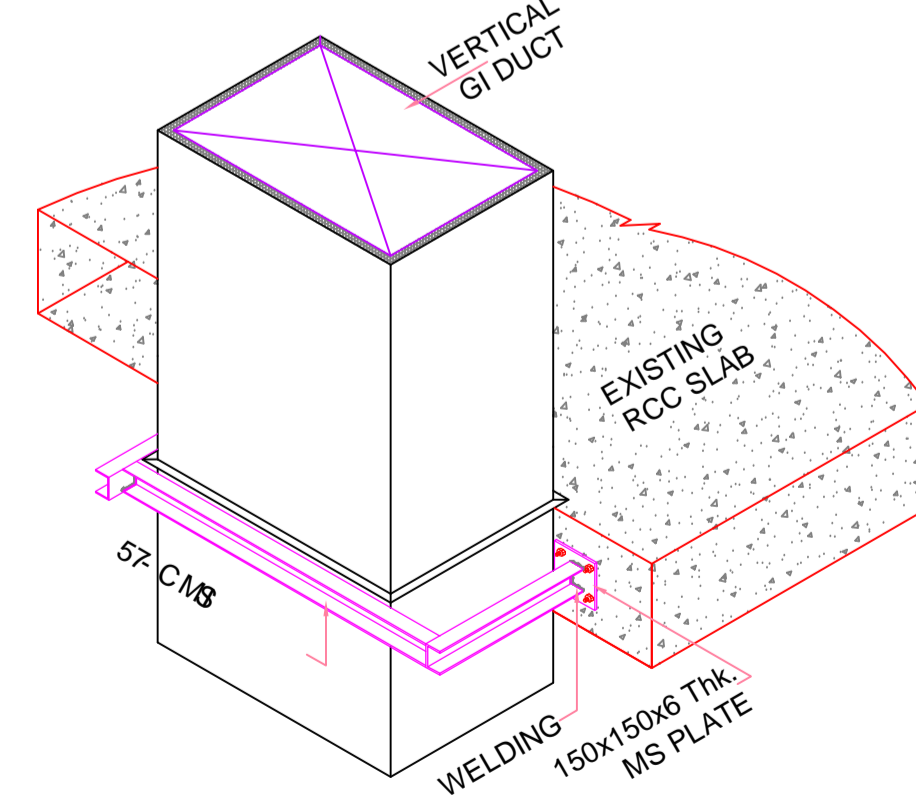
GRILLE FIXING DETAILS



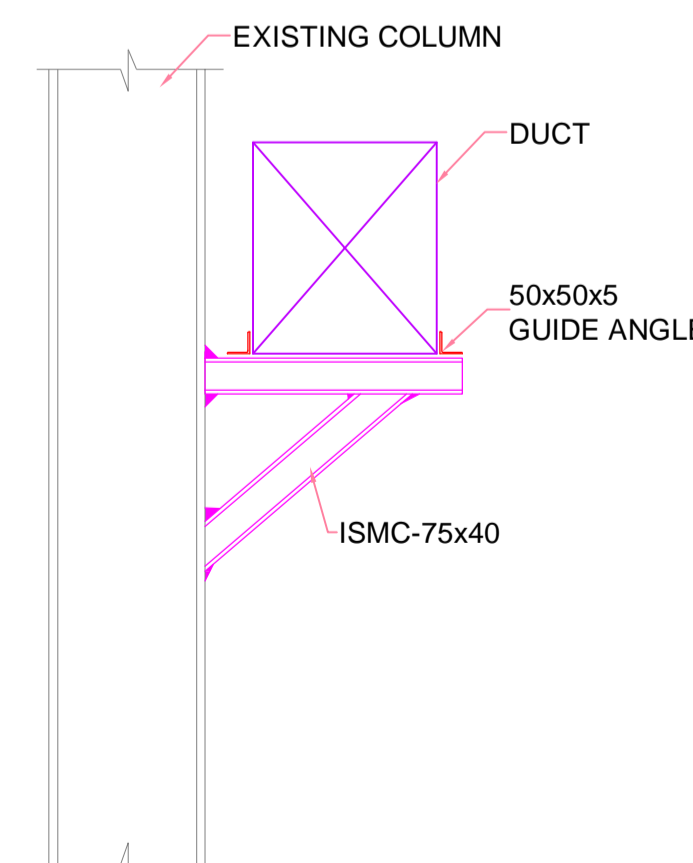
GRILLE WITH VCD
SIDE VIEW



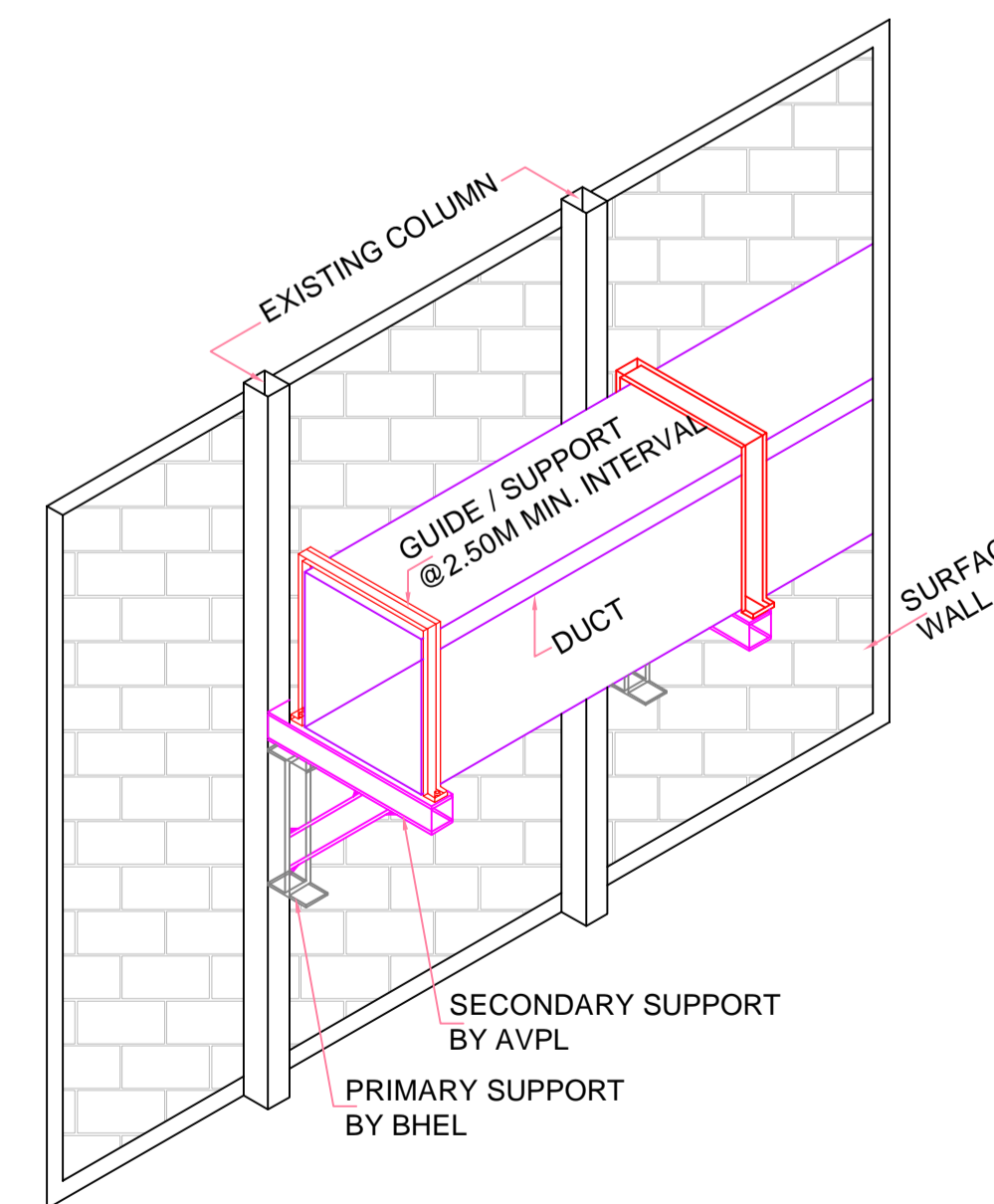
TYPICAL DUCT SUPPORT &
THERMAL INSULATION DETAILS



TYPICAL VERTICAL DUCT SUPPORT



DUCT SUPPORT FORM
BUILDING COLUMN



TYPICAL HORIZONTAL DUCTS SUPPORT

- NOTES:-
- ALL RECTANGULAR DUCTS OVER 450 mm IN EITHER DIMENSION SHALL BE CROSS BROKEN. IT IS NOT NECESSARY TO HAVE CROSS BREAKING THE AIR OUTLET CONNECTION OF DUCT (COLLAR & DIFFUSERS) DEPENDING UPON THE LENGTH OF COLLAR/DIFFUSER.
 - ALL FLANGED JOINTS SHALL HAVE 6 MM THICK PACKING STUCK TO THE FLANGES.
 - ALL ANGLES USED FOR BRACING SHALL BE RIVETED AT ABOUT 150 MM CENTERS.
 - ALL TYPE OF DUCT JOINTS AND DUCT MATERIAL WITH THICKNESS AS PER IS:655.
 - DUCT SUPPORT TO BE TAKEN PREFERABLY FROM EXISTING STEEL AND RCC SLAB.
 - THE MS RODS FOR DUCTS ROUTED INSIDE THE BUILDING SHALL BE HUNG FROM THE EXISTING FLOOR BEAMS/WALL BEAMS / ROOF BEAMS/COLUMNS AS PROVIDED BY THE OWNER WITH PROVISION OF NECESSARY AUXILIARY OR SPECIAL STEEL MEMBERS OR BY HOOKS OR CAN BE PROVIDED BY CONTRACTOR BY DASH FASTENERS FIXED TO THE CEILING SLAB.
 - ALL THE PLENUM CHAMBERS OR CONNECTIONS TO FANS, DAMPERS ETC, SHALL BE CONSTRUCTED IN 18 GAUGE GSS, SUPPORTED ON 40X40X6 MM MS ANGLE FRAMES.

THICKNESS OF DUCT (G.I)	
LARGER SIDE OF DUCT	THICKNESS
UPTO 750	24G (0.63mm)
751 TO 1000	22G (0.8mm)
1001 TO 1500	22G (0.8mm)
1501 TO 2250	20G (1.0mm)
2250 & LARGER	18G (1.25mm)

DETAIL OF DUCT SUPPORT		
LARGER SIDE OF DUCT	ANGLE	Ø D ROD (M.S)
UPTO 2250	L 40 X 40 X 5	10
ABOVE 2250	L 50 X 50 X 5	16

NTPC DRG. No. 3130-109-PVM-B-234

PROJECT:	3x200MW + 3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
CUSTOMER:	NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)
EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

JOB No.	467			
STATUS	CONTRACT			
TO				
NO OFF				
REV	DATE	ALTD	CHD	APPD

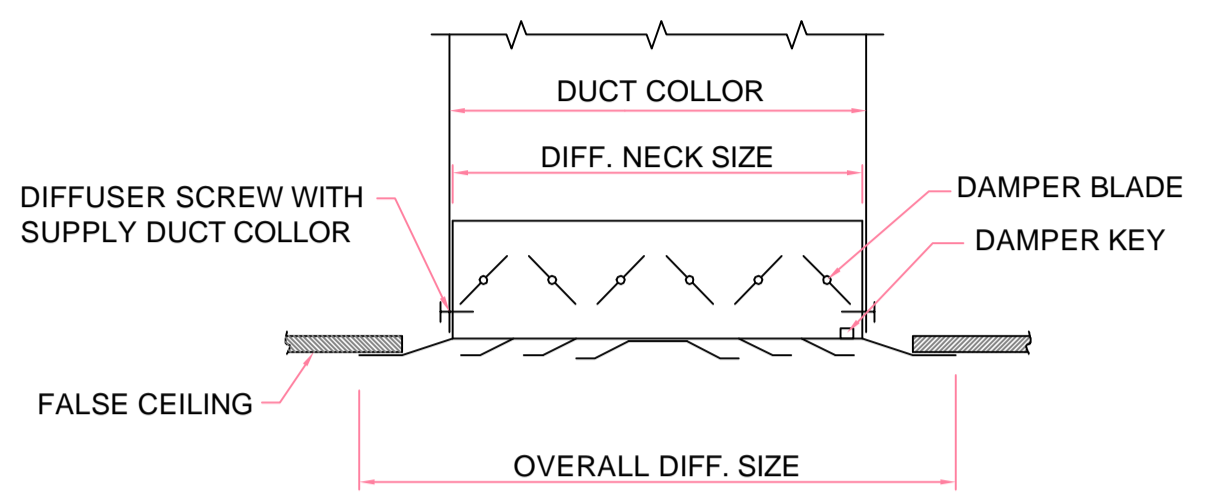
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A	KJ			01-02-2023
DESIN	KJ			01-02-2023
CHD	AD			01-02-2023
APPD	AD			01-02-2023

TITLE: STANDARD DRAWING FOR DUCT FABRICATION & SUPPORTING ARRANGEMENT AND ERECTION & APPLICATION DETAIL OF INSULATION

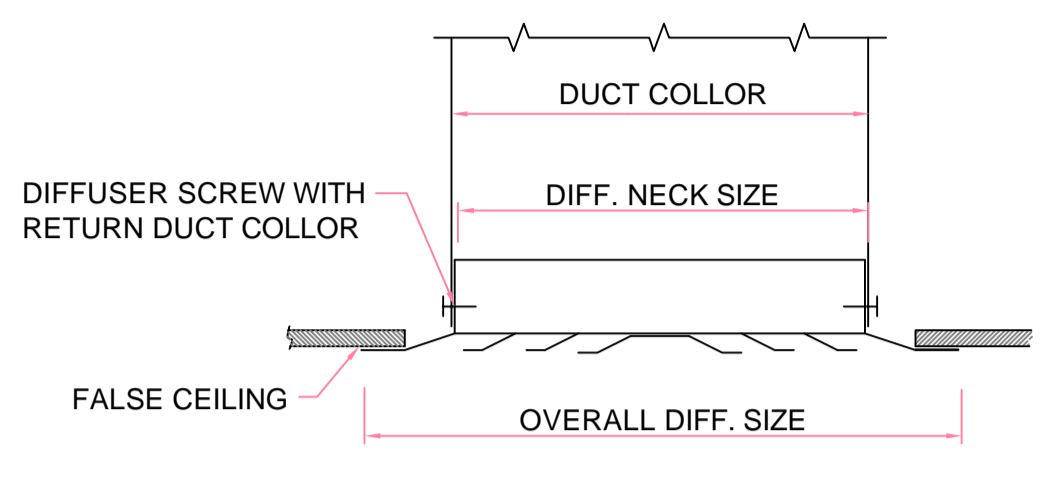
DEPT.	SCALE	1 : 150	MSHEL DOC. NO.	PE-10-467-071-A300
SIGN	EPE DOC. NO.	EPE-0-001-R300	SHEET	1 OF 2
DATE	REV	00		

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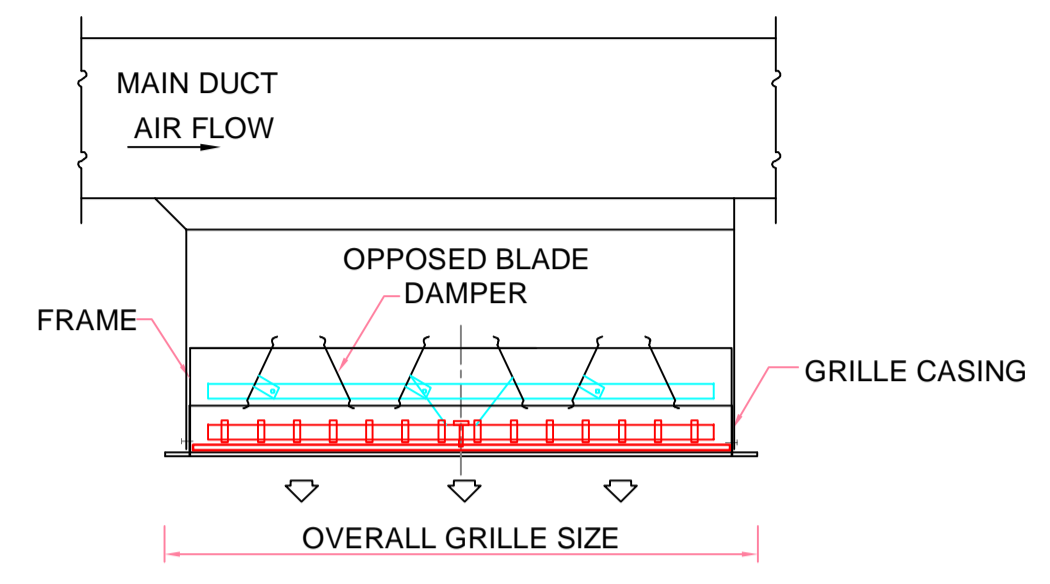
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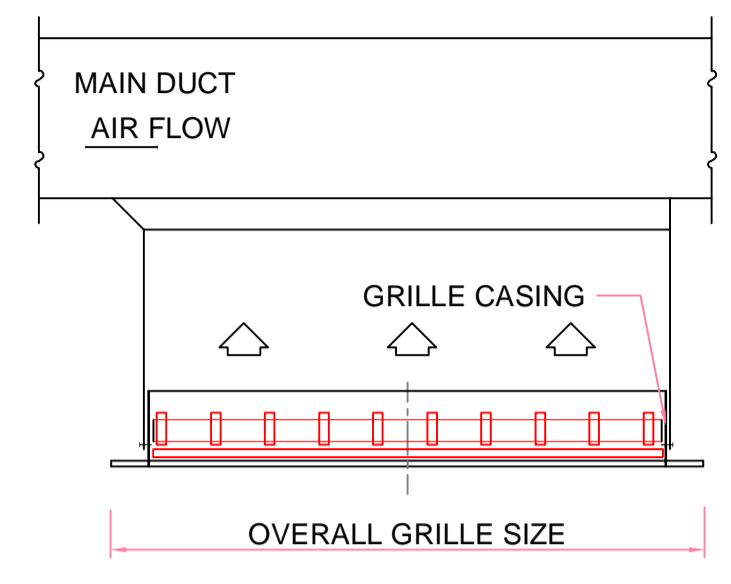
SUPPLY AIR DIFFUSER FIXING ARRANGEMENT(TYP)



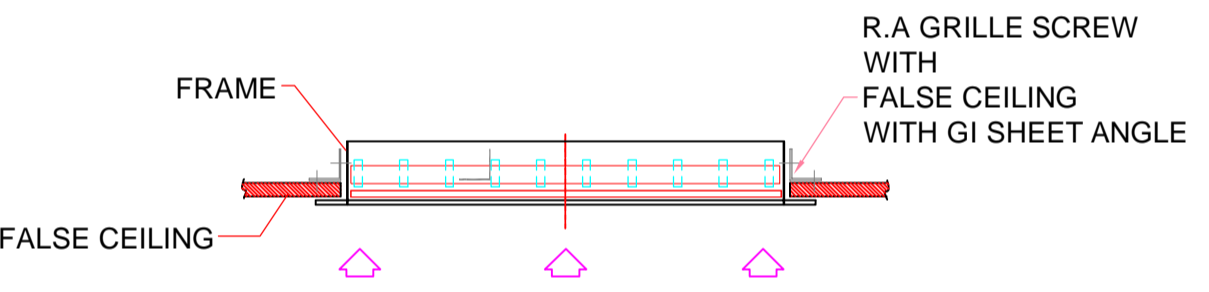
RETURN AIR DIFFUSER FIXING ARRANGEMENT(TYP)



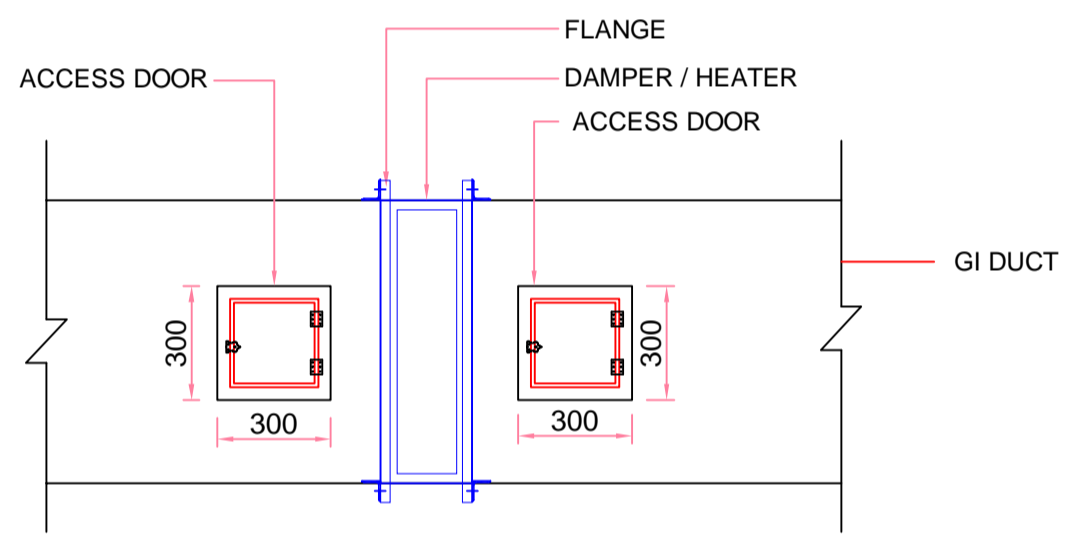
SUPPLY AIR GRILLE FIXING ARRANGEMENT(TYP)



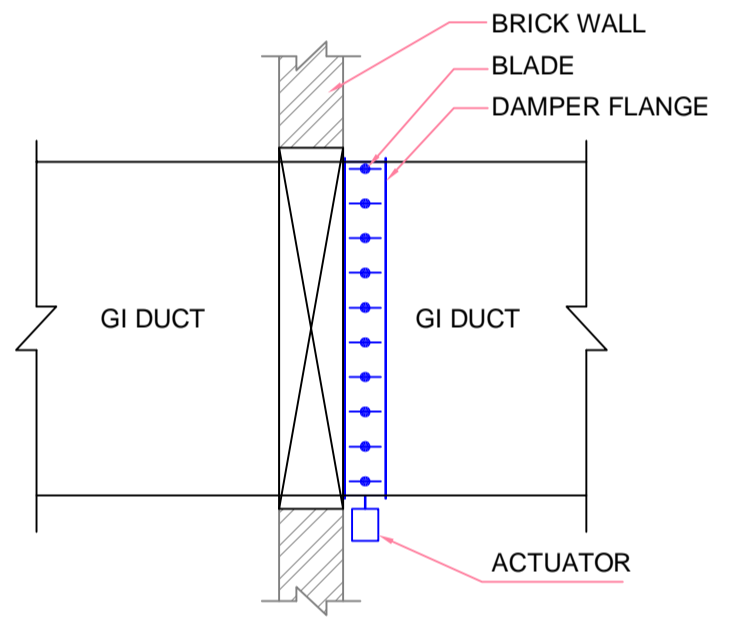
RETURN AIR GRILLE FIXING ARRANGEMENT WITH RA DUCT (TYP)



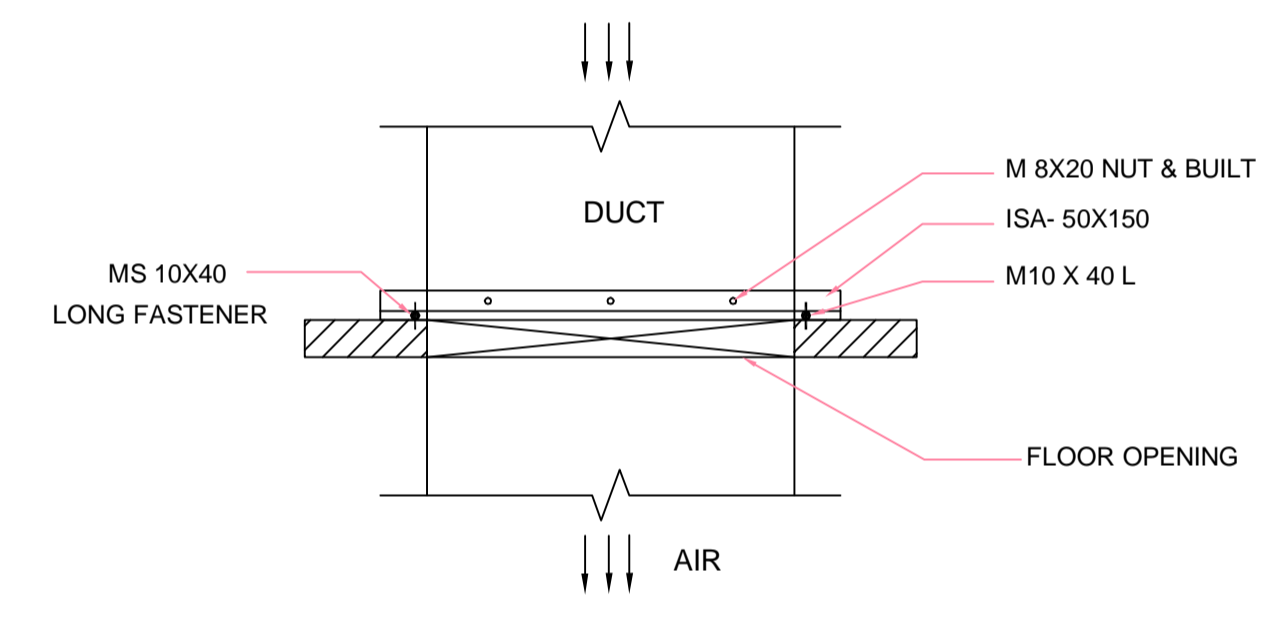
RETURN AIR GRILLE FIXING ARRANGEMENT WITHOUT RA DUCT (TYP)



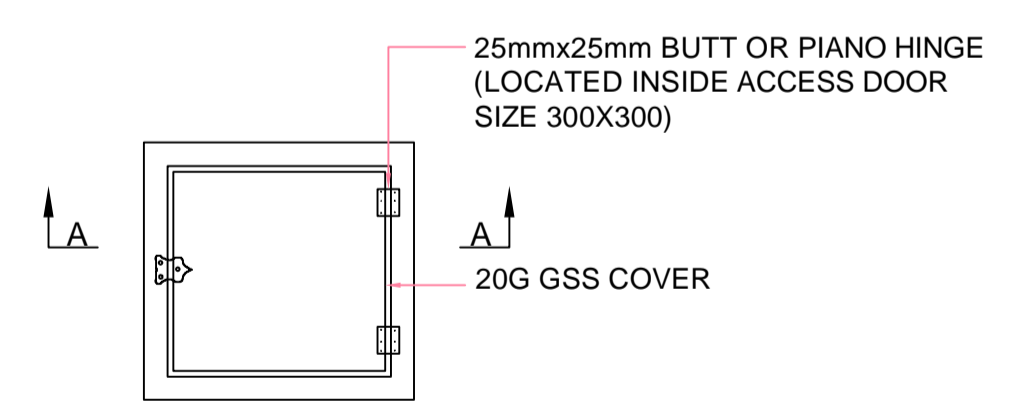
FIXING DETAIL VOLUME CONTROL DAMPER, HEATER OF DUCT (TYP)



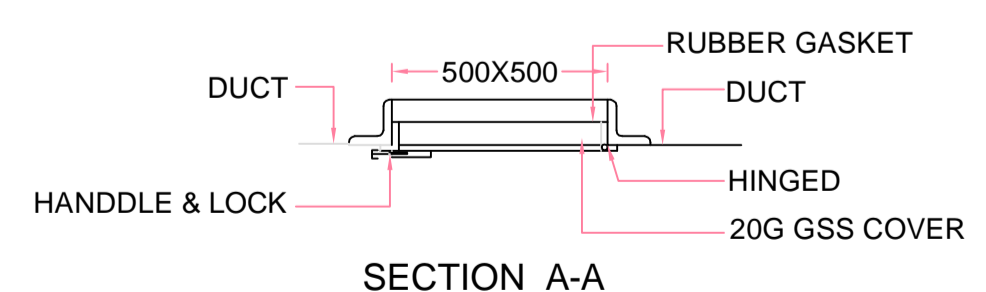
FIRE DAMPER FIXING DETAILS



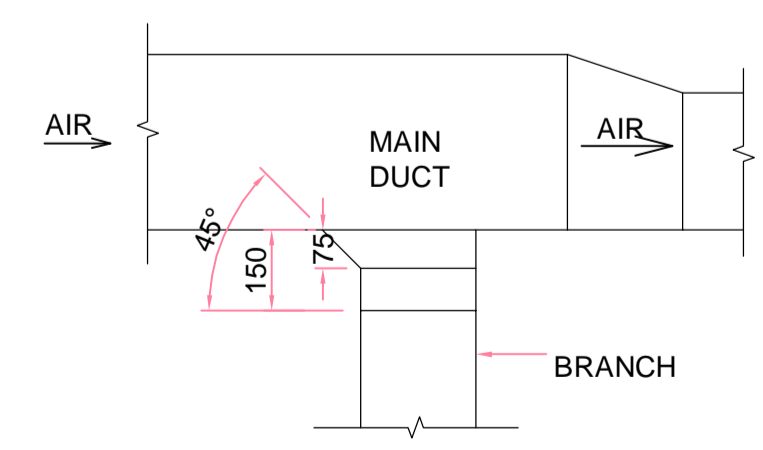
DUCT PASSING THROUGH SLAB



ACCESS DOOR



ACCESS DOOR DETAILS



90° BRANCH CONNECTION ALTERNATIVE - I

- NOTES:-
- ALL RECTANGULAR DUCTS OVER 450 mm IN EITHER DIMENSION SHALL BE CROSS BROKEN. IT IS NOT NECESSARY TO HAVE CROSS BREAKING THE AIR OUTLET CONNECTION OF DUCT (COLLAR & DIFFUSERS) DEPENDING UPON THE LENGTH OF COLLAR/DIFFUSER.
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THICKNESS OF DUCT (G.I)	
LARGER SIDE OF DUCT	THICKNESS
UPTO 750	24G (0.63mm)
751 TO 1000	22G (0.8mm)
1001 TO 1500	22G (0.8mm)
1501 TO 2250	20G (1.0mm)
2250 & LARGER	18G (1.25mm)

DETAIL OF DUCT SUPPORT		
LARGER SIDE OF DUCT	ANGLE	Ø D ROD (M.S)
UPTO 2250	L 40 X 40 X 5	10
ABOVE 2250	L 50 X 50 X 5	16

NTPC DRG. No. 3130-109-PVM-B-234

PROJECT:	3x200MW + 3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
CUSTOMER:	NTPC Limited
EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA (U.P.)

JOB No.				
STATUS	PROJECT CONTRACT			
TO				
No. OFF				
REV	DATE	ALTD	CHD	APPD

DEPT	NAME	SIGN	DATE
DRN	K.J.		01-02-2023
DESIN	K.J.		01-02-2023
CHD	AD		01-02-2023
APPD	AD		01-02-2023

TITLE STANDARD DRAWING FOR DUCT FABRICATION & SUPPORTING ARRANGEMENT AND ERECTION & APPLICATION DETAIL OF INSULATION

DEPT.	SCALE	1 : 150	MSHEL DOC. NO.	PE-10-047-071-A-300
SIGN			EPE DOC. NO.	EPE-B-001-R-300
DATE			SHEET	2 OF 2
			REV.	00

(SIZE: A1, 594x841)

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COMPUTER FILE NAME:

GI SHEET FOR AC AND VENTILATION SYSTEM

PE-V0-467-571-A215

<u>Technical Specification of G.I Sheet</u>		
<u>Sl.</u>	<u>Description</u>	<u>Specification</u>
1	Application	Low pressure air ducting
2	Make	Tata Steel / Sail/Tisco/Bhushan/ Jindal/ Jsw steel/ Indian Iron &Steel Co/Lloyds
3	Type	G.I sheet lock forming quality (LFQ)
4	Grade	conforming to class 275 of IS: 277
5	Form Factors	Conforming to class 655
6	Coating	275 GSM
7	Shape	Rectangular
8	Flange Type	TDF / TDC, As Applicable.
9	Design code	Smacna Duct construction standard:2005
10	Design Pressure class	500 PAC as per IS :655
11	Leakage testing standard	Light test
12	Leakage testing Pressure	NA
13	Sealing Requirement	Class -C
14	Quantity	As per approved dwg.

15	Thickness	0 to 750 mm - = 0.63 mm
		751 to 1500 mm - =0.80mm
		1501 to 2250 mm - = 1.00 mm
		2251 to above - = 1.25 mm

Material of air distribution system shall be through galvanized steel sheet (Conforming to Class 275 of IS :277)

GI Sheets should be galvanized and galvanizing shall be of 275 gms/sq.m. (total coating on both sides) both for site fabricated and factory fabricated ducts.

Thickness of rectangular ducts shall be as follows:

Larger Dimension of duct (mm)	Thickness of GI sheet(mm)	GI
up to 750 mm	0.63 (24 G)	
751 to 1500	0.80 (22 G)	
1501 to 2250	1.00 (20 G)	
2251 & above	1.25 (18 G)	

**TECHNICAL DATA SHEET & G.A. DRAWING OF AXIAL AIR FANS FOR A/C &
VENTILATION SYSTEM ALONG WITH FIXING DETAILS / PE-V0-467-571-A211**

ROOF EXTRACTOR

SUBURBAN INDUSTRIAL WORKS PVT. LTD.



OFFER NO. : SIWL/AKM/22-23/035A

CLIENT'S NAME :

PROJECT : 3X200 MW + 3X500MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

DATE: 29.08.22

TECHNICAL DATA SHEET OF ROOF EXTRACTOR

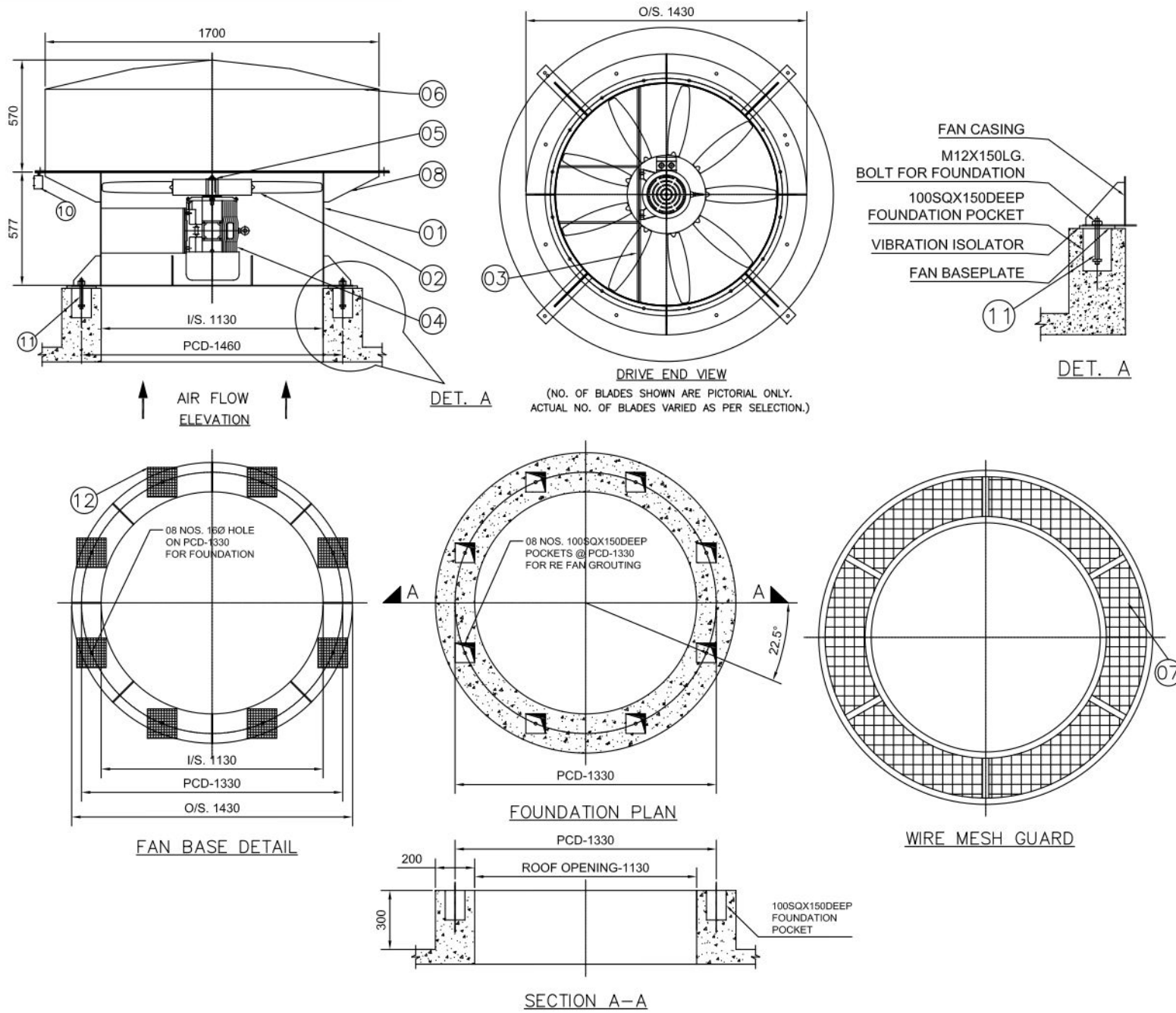
SL. NO.			1	2
1	FAN MAKE / BRAND		SUBURBAN INDUSTRIAL WORKS PVT. LTD. / SIWENT	
2	FAN MODEL		RE J-1120	RE J-900
3	FAN TYPE		AXIAL FLOW ROOF EXTRACTOR TYPE FAN	
4	QTY. OF A FAN	Nos	2	2
5	DESIGN DENSITY	kg/m ³	1.2 @ 20 DEG. C.,	
6	CAPACITY	CMH	40000	20000
7	STATIC PRESSURE	mm wg.	15	15
8	TOTAL PRESSURE	mm wg.	23.1	19.53
9	RATED SPEED	RPM	970	970
10	CRITICAL SPEED	RPM	1500	1500
11	FAN POWER AT RATED SPEED (SHAFT BKW)	bkw	3.73	1.74
12	TOTAL EFFICIENCY	%	67.5	59.0
13	IMPELLER DIAMETER	mm	1120	900
14	OUTLET VELOCITY	mps	11.5	8.6
15	FAN ARRANGEMENT		IV	IV
16	DRIVE ARRANGEMENT		DIRECT DRIVE	
17	IMPELLER DESIGN		AEROFOIL TYPE	
18	BALANCING		AS PER ISO:1940, G-6.3	
19	VIBRATION LEVEL RIGID BASE	MM/S	4.5 (AS PER VDI-2056 / AS PER ISO:14694)	
20	SOUND LEVEL @ 1.5 MTR. DISTANCE	dB(A)	85	85
21	PAINTING:		COMPLETE FAN SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER	

MOC

22	IMPELLER MATERIAL		CAST ALUMINIUM MATERIAL, GR-LM-6	
23	CASING MATERIAL		CASING BODY- 5.00 MM , (IS:1079/2062)	

RECOMMENDED MOTOR DETAILS

24	RATED VOLT OF MOTOR		415V, $\pm 10\%$, 3 PHASE, 50 HZ $\pm 5\%$	
25	RECOMMENDED MOTOR (15% MORE THAN FAN POWER)	KW/POLE	5.5/6	2.2/6
26	TYPE OF INSULATION		CLASS - F, TEMP. RISE UPTO CLASS-B	
27	TYPE OF PROTECTION		IP-55	IP-55
28	TYPE OF ENCLOSURE	Page 529 of 601	TEFC SQ. CAGE INDUCTION MOTOR	



- NOTES:-**
1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING:-FAN CASING & HOOD SHALL BE PAINTED WITH STD. ENAMEL PAINT.

SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE
12.	VIBRATION ISOLATOR	08NOS.		RUBBER PAD TYPE
11.	FOUNDATION BOLT(M12X150LG.)	08NOS.		NOT IN SIWPL SCOPE
10.	DISCONNECT SWITCH	1 NO.		
09.	FAN BASE PLATE	1 NO.	MS	IS: 1079/2062
08.	HOOD MOUNTING FRAME	1 NO.	MS	IS: 1079/2062
07.	WIRE MESH GUARD	1 NO.	MS	15 SQ. WIRE MESH
06.	RAIN PROTECTION HOOD	1 NO.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		EFE SCOPE
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY

CLIENT-
PROJECT: 3X200MW+3X500MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)



GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN ARR. IV

DRAWN	S.NASKAR	DRAWING NO.	JOB NO.
CHECKED	P.DAS		SCALE NTS
APPROVED		SIWL-656/01	REV 0
DATE	29/08/2022		

TECHNICAL DATA OF FAN

01	ROOF EXTRACTOR	REJ-1120	SIWENT	02	40000	15	970	3.73
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

5.5/6	415V, 3PH. 50 HZ. AC SUPPLY	132M	1000
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	SPEED RPM

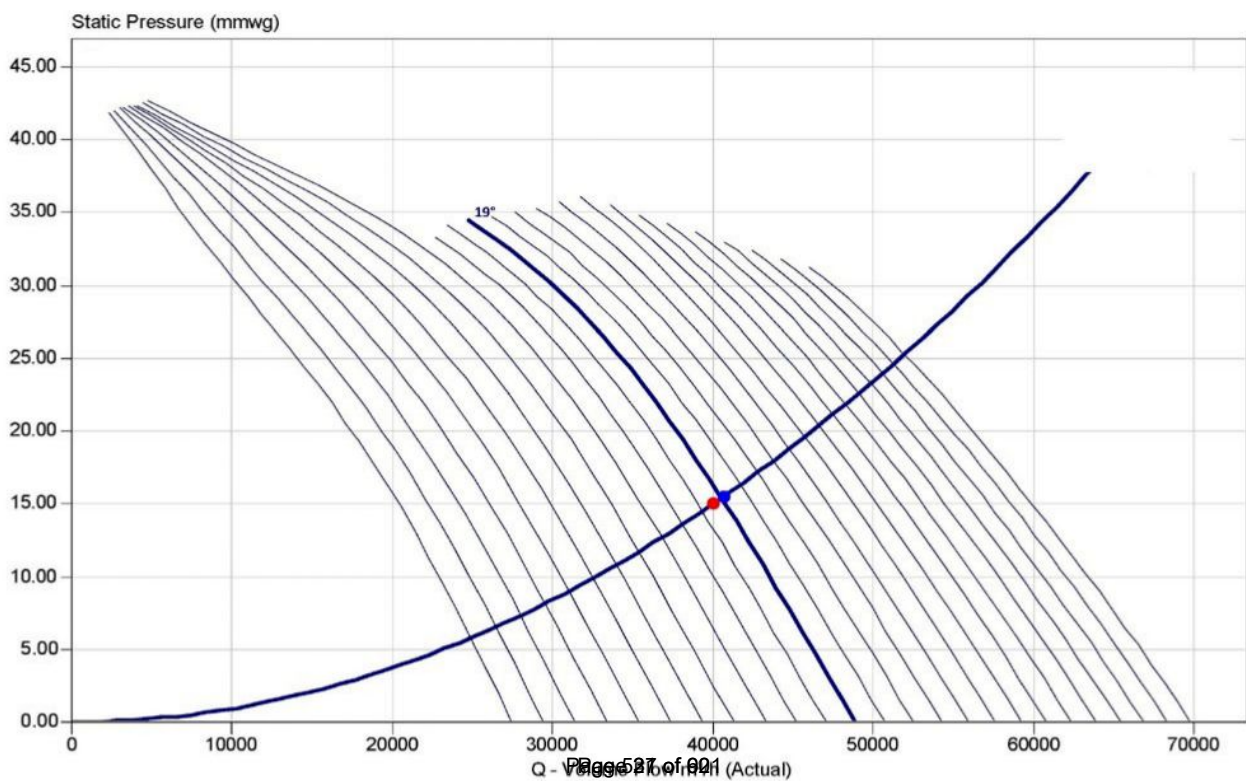
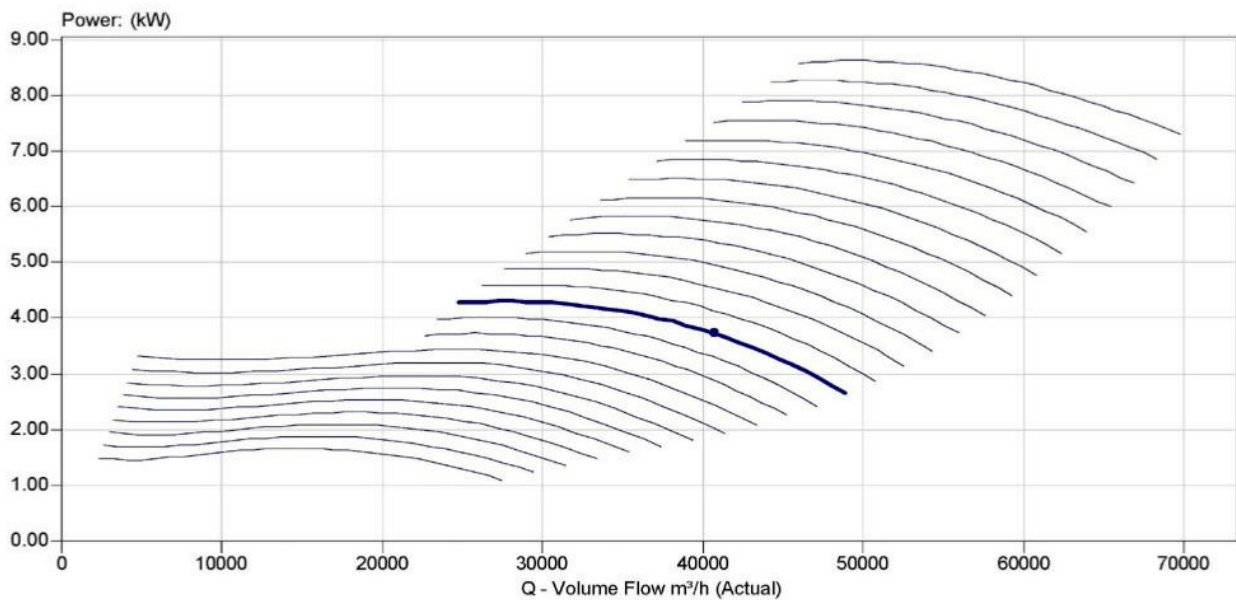


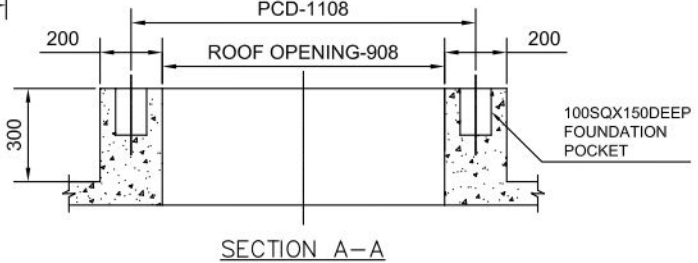
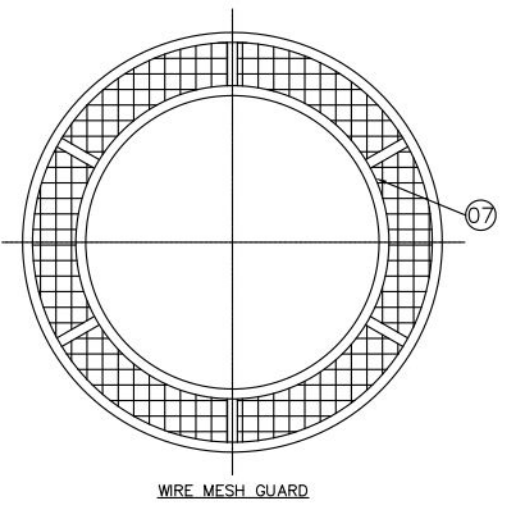
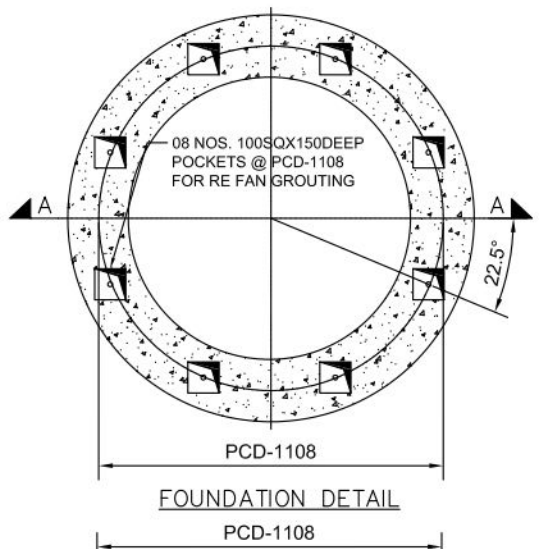
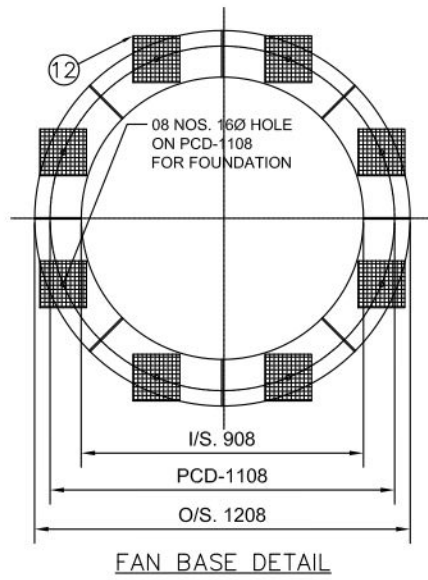
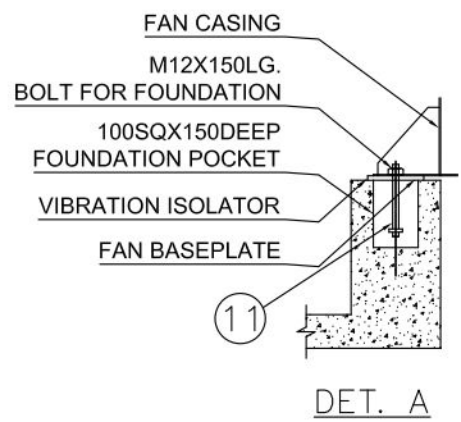
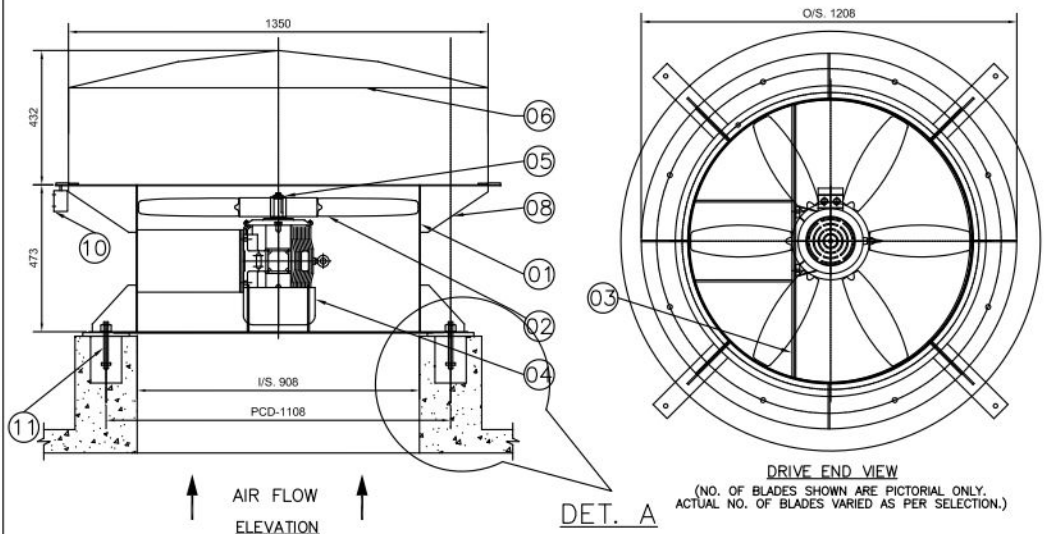
SUBURBAN INDUSTRIAL WORKS PVT. LTD.

57/2A, D. H. ROAD, KOLKATA- 700 023.

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL	REJ-1120	OFFER NO.	SIWL/AKM/22-23/035A
		DATE	29.08.2022
CLIENT			
PROJECT	3X200 MW + 3X500MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)		
SPECIFIED DUTY			
VOLUME OF AIR	40000 CMH	FAN SPEED	970 RPM
STATIC PRESSURE	15 MM. WG.	FAN POWER	3.73 KW





NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING & HOOD SHALL BE PAINTED WITH STD. ENAMEL PAINT.

12.	VIBRATION ISOLATOR	08NOS.		RUBBER PAD TYPE
11.	FOUNDATION BOLT(M12X150LG.)	08NOS.		NOT IN SIWPL SCOPE
10.	DISCONNECT SWITCH	1 NO.		
09.	FAN BASE PLATE	1 NO.	MS	IS: 1079/2062
08.	HOOD MOUNTING FRAME	1 NO.	MS	IS: 1079/2062
07.	WIRE MESH GUARD	1 NO.	MS	15 SQ. WIRE MESH
06.	RAIN PROTECTION HOOD	1 NO.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		EFE SCOPE
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL.	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
CLIENT-			
PROJECT-3X200MW+3X500MW RAMAGUNDAM STPP)			
(FGD SYSTEM PACKAGE)			



GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN ARR. IV

TECHNICAL DATA OF FAN

02	ROOF EXTRACTOR	REJ-900	SIWENT	02	20000	15	970	1.74
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

2.2/6	415V, 3PH. 50 HZ. AC SUPPLY	112M	1000
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	STATOR SPEED RPM

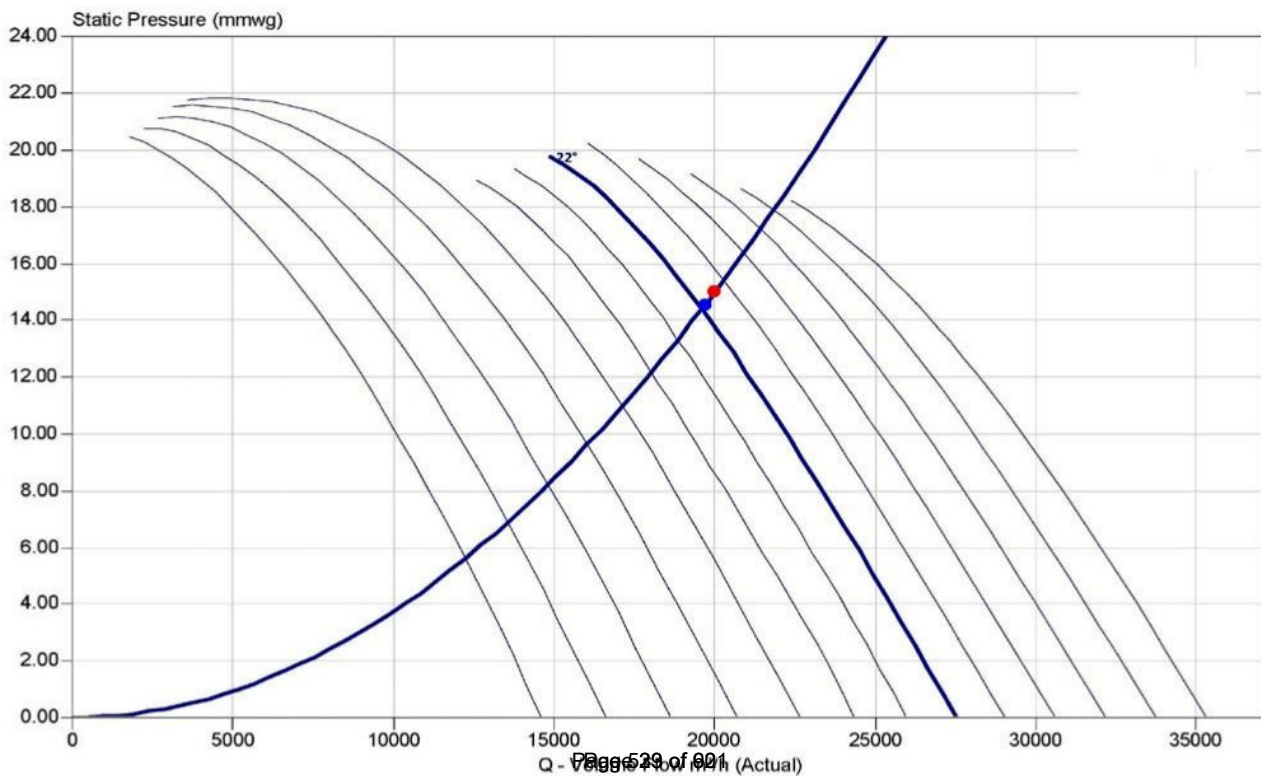
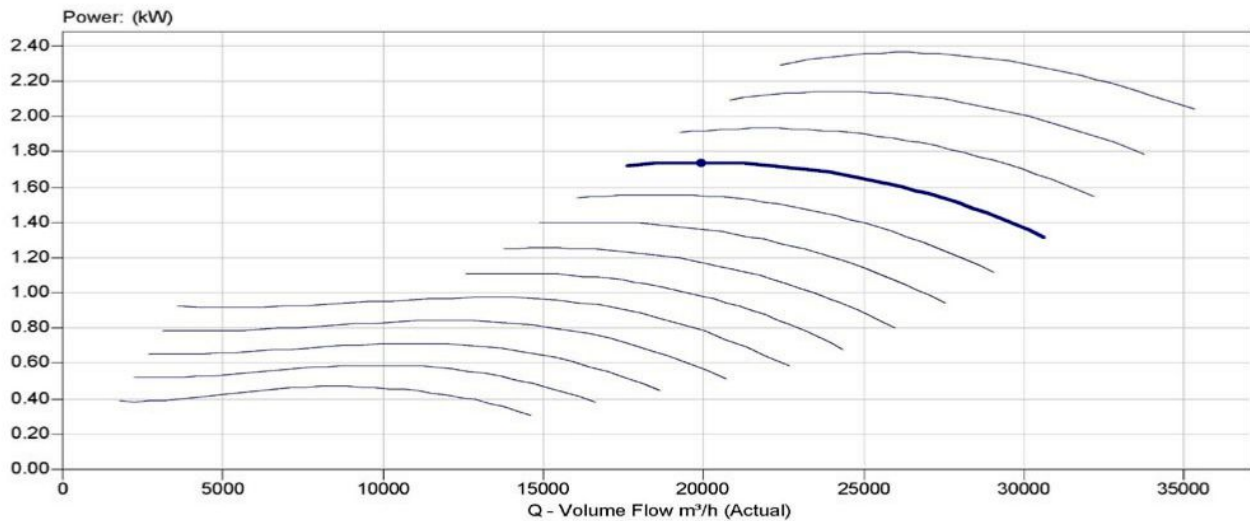


SUBURBAN INDUSTRIAL WORKS PVT. LTD.

57/2A, D. H. ROAD, KOLKATA- 700 023.

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL	REJ-900	OFFER NO.	SIWL/AKM/22-23/035A
		DATE	29.08.2022
CLIENT			
PROJECT	3X200 MW + 3X500MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)		
SPECIFIED DUTY			
VOLUME OF AIR	20000 CMH	FAN SPEED	970 RPM
STATIC PRESSURE	15 MM. WG.	FAN POWER	1.74 KW



TUBE AXIAL SUPPLY & EXHAUST FAN

SUBURBAN INDUSTRIAL WORKS PVT. LTD.

SHEET 1 OF 2



OFFER NO. : SIWL/AKM/22-23/035A

CLIENT'S NAME :

PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

DATE: 29.08.22

TECHNICAL DATA SHEET OF TUBE AXIAL FAN

SL. NO.			1	2	3	4	5	6	7
1	FAN MAKE / BRAND		SUBURBAN INDUSTRIAL WORKS PVT. LTD. / SIWENT						
2	FAN MODEL		TL J- 710	TL J-710	TL J-450	TL J-400	TL J-900	TL J-800	TL J-800
3	FAN TYPE		AXIAL FLOW FAN						
4	QTY. OF A FAN	Nos	14	8	10	6	28	24	16
5	DESIGN DENSITY		1.2 @ 20 DEG. C.,						
6	CAPACITY	CMH	10000	7500	6000	4000	10000	7500	6000
7	STATIC PRESSURE	mm wg.	30	30	30	30	20	20	20
8	TOTAL PRESSURE	mm wg.	33.17	31.72	36.76	34.64	21.18	21.03	20.66
9	RATED SPEED	RPM	1450	1450	2880	2880	970	970	970
10	CRITICAL SPEED	RPM	2400	2400	4000	4000	1500	1500	1500
11	FAN POWER AT RATED SPEED (SHAFT BKW)	bkw	1.41	1.04	0.87	0.53	0.94	0.74	0.632
12	TOTAL EFFICIENCY	%	67.5	62.5	70.1	67.4	61.9	55.5	53.7
13	IMPELLER DIAMETER	mm	710	710	450	400	900	800	800
14	OUTLET VELOCITY	mps	7.20	5.30	10.5	8.70	4.40	4.10	3.30
15	FAN ARRANGEMENT		IV	IV	IV	IV	IV	IV	IV
16	DRIVE ARRANGEMENT		DIRECT DRIVE						
17	IMPELLER DESIGN		AEROFOIL TYPE						
18	BALANCING		AS PER ISO:1940, G-6.3						
19	VIBRATION LEVEL RIGID BASE	MM/S	4.5 (AS PER VDI-2056)						
20	SOUND LEVEL @ 1.5 MTR. DISTANCE	dB(A)	80	80	82	82	84	81	82
21	PAINTING:		COMPLETE FAN SHALL BE PAINTED WITH STANDARD SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER						

MOC

22	IMPELLER MATERIAL		CAST ALUMINIUM MATERIAL, GR-LM-6						
23	CASING MATERIAL		AS PER FAN SPECIFICATION CASING BODY- 3.00 MM (MIN.), (IS:1079/2062)						

RECOMMENDED MOTOR DETAILS

24	RATED VOLT OF MOTOR		415V, ±10%, 3 PHASE, 50 HZ ± 5%						
25	RECOMMENDED MOTOR (15% MORE THAN FAN POWER)	KW/POLE	2.2/4	1.5/4	1.1/2	0.75/2	1.5/6	1.1/6	1.1/6
26	TYPE OF INSULATION		CLASS - F, TEMP. RISE UPTO CLASS-B						
27	TYPE OF PROTECTION		IP-55	IP-55	IP-55	IP-55	IP-55	IP-55	IP-55
28	TYPE OF ENCLOSURE		TEFC SQ. CAGE INDUCTION MOTOR						

SUBURBAN INDUSTRIAL WORKS PVT. LTD.

SHEET 2 OF 2



OFFER NO. : SIWL/AKM/22-23/035A

CLIENT'S NAME :

PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

DATE: 29.08.22

TECHNICAL DATA SHEET OF TUBE AXIAL FAN

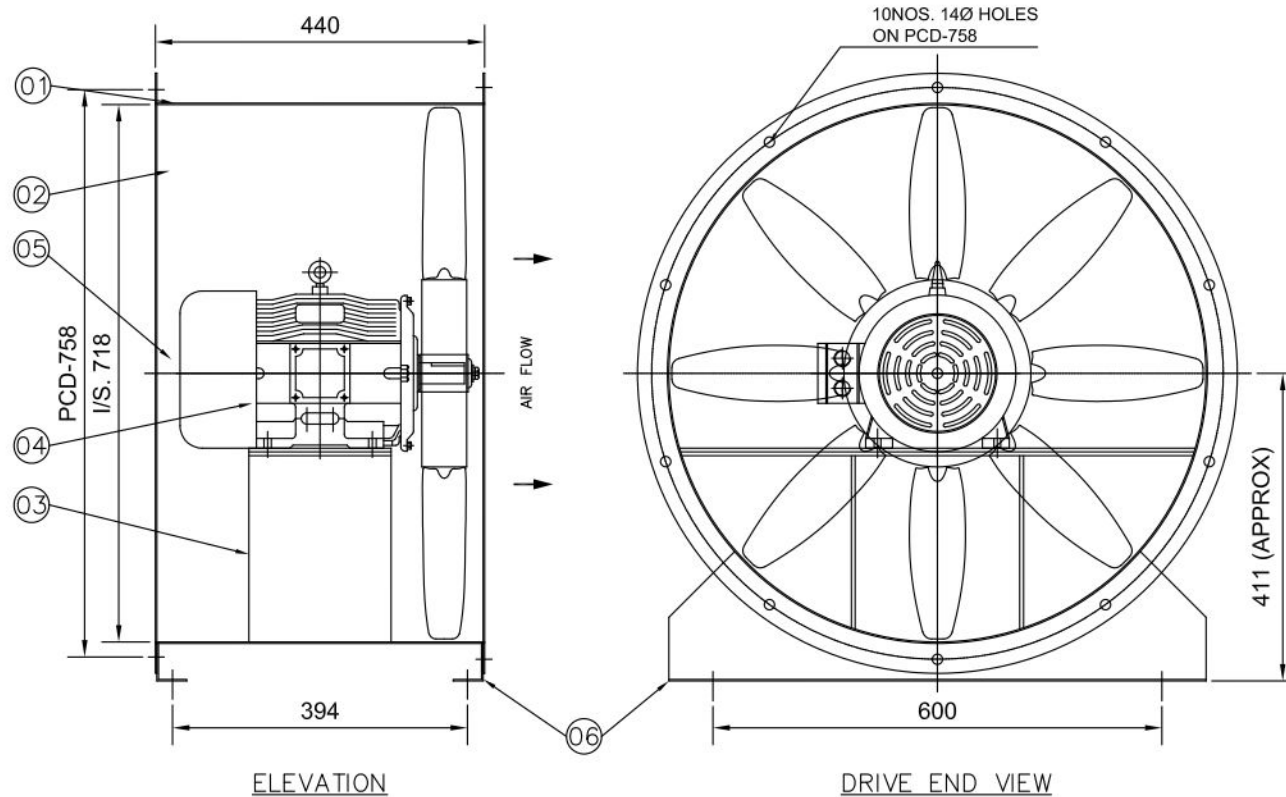
SL. NO.			8	9	10	11	12	13	14
1	FAN MAKE / BRAND		SUBURBAN INDUSTRIAL WORKS PVT. LTD. / SIWENT						
2	FAN MODEL		TL J- 560	TL J-800	TL J-710	TL J-630	TL J-630	TL J-450	TL J-400
3	FAN TYPE		AXIAL FLOW FAN						
4	QTY. OF A FAN	Nos	14	16	10	12	10	10	6
5	DESIGN DENSITY	kg/m ³	1.2 @ 20 DEG. C.,						
6	CAPACITY	CMH	4000	15000	10000	7500	6000	4000	2000
7	STATIC PRESSURE	mm wg.	20	10	10	10	10	10	10
8	TOTAL PRESSURE	mm wg.	21.24	14.22	13.09	12.75	11.72	13	11.24
9	RATED SPEED	RPM	1450	970	970	970	970	1450	1450
10	CRITICAL SPEED	RPM	2400	1500	1500	1500	1500	2400	2400
11	FAN POWER AT RATED SPEED (SHAFT BKW)	bkw	0.33	0.86	0.48	0.39	0.28	0.20	0.10
12	TOTAL EFFICIENCY	%	69.1	68	75	67.5	67.9	71.6	67.1
13	IMPELLER DIAMETER	mm	560	800	710	630	630	450	400
14	OUTLET VELOCITY	mps	4.50	8.30	7.10	6.70	5.30	7.0	4.50
15	FAN ARRANGEMENT		IV	IV	IV	IV	IV	IV	IV
16	DRIVE ARRANGEMENT		DIRECT DRIVE						
17	IMPELLER DESIGN		AEROFOIL TYPE						
18	BALANCING		AS PER ISO:1940, G-6.3						
19	VIBRATION LEVEL RIGID BASE	MM/S	4.5 (AS PER VDI-2056)						
20	SOUND LEVEL @ 1.5 MTR. DISTANCE	dB(A)	80	81	82	82	82	80	80
21	PAINTING:		COMPLETE FAN SHALL BE PAINTED WITH STANDARD SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER						

MOC

22	IMPELLER MATERIAL		CAST ALUMINIUM MATERIAL,GR-LM-6						
23	CASING MATERIAL		AS PER FAN SPECIFICATION CASING BODY- 3.00 MM (MIN.), (IS:1079/2062)						

RECOMMENDED MOTOR DETAILS

24	RATED VOLT OF MOTOR		415V, ±10%, 3 PHASE, 50 HZ ± 5%						
25	RECOMMENDED MOTOR (15% MORE THAN FAN POWER)	KW/POLE	0.55/4	1.1/6	0.75/6	0.55/6	0.55/6	0.37/4	0.37/4
26	TYPE OF INSULATION		CLASS - F, TEMP. RISE UPTO CLASS-B						
27	TYPE OF PROTECTION		IP-55	IP-55	IP-55	IP-55	IP-55	IP-55	IP-55
28	TYPE OF ENCLOSURE		TEFC SQ. CAGE INDUCTION MOTOR						



(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.	AS MENTION	
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY

CLIENT-

PROJECT-3X200MW+3X500MW RAMAGUNDAM STPP
(FGD SYSTEM PACKAGE)



SUBURBAN INDUSTRIAL WORKS PVT. LTD.
KOLKATA , INDIA

GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN
ARR. IV

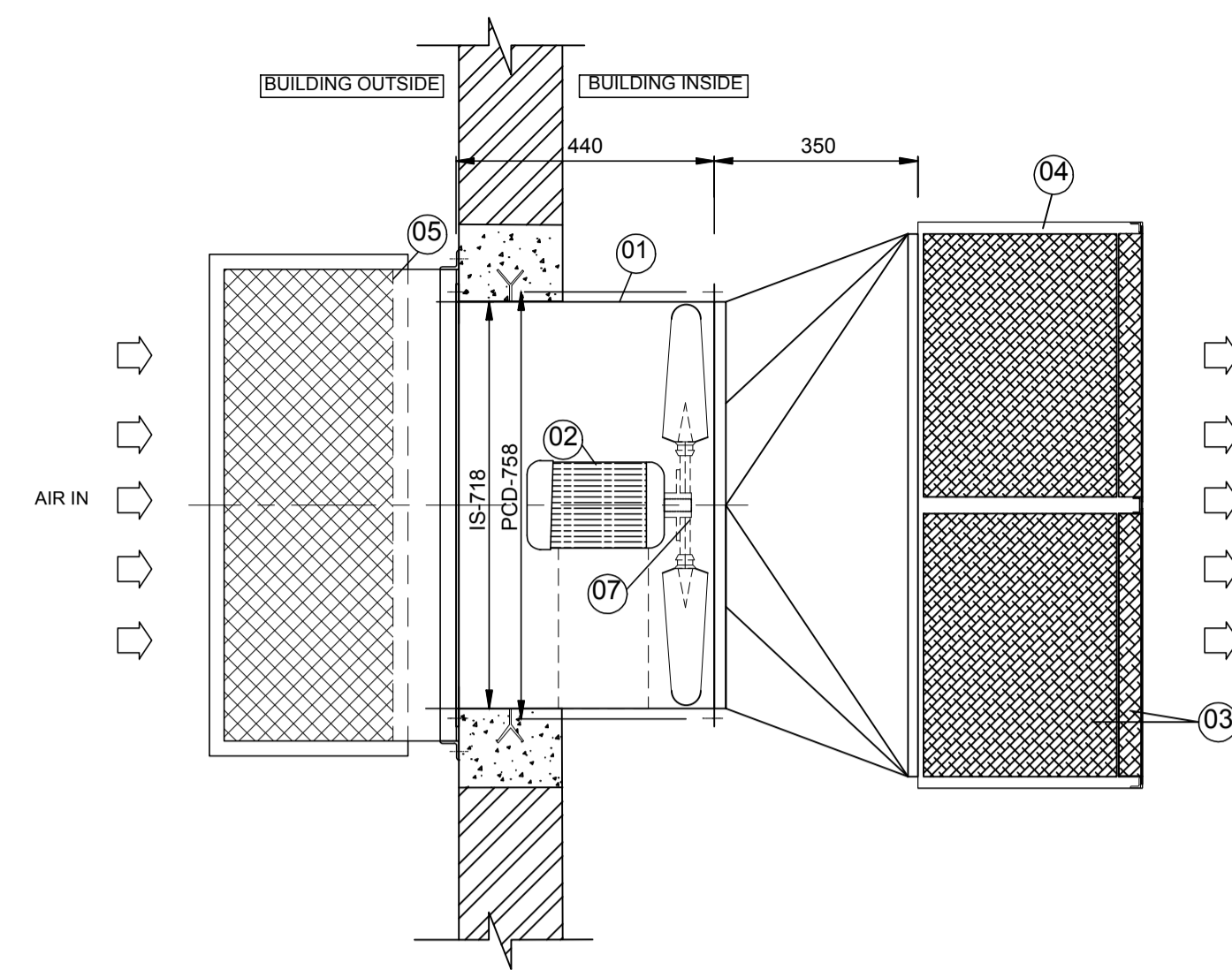
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CHECKED	P.DAS		SCALE	NTS
APPROVED			REV	0
DATE	29/08/2022	SIWL-656/03		

TECHNICAL DATA OF FAN

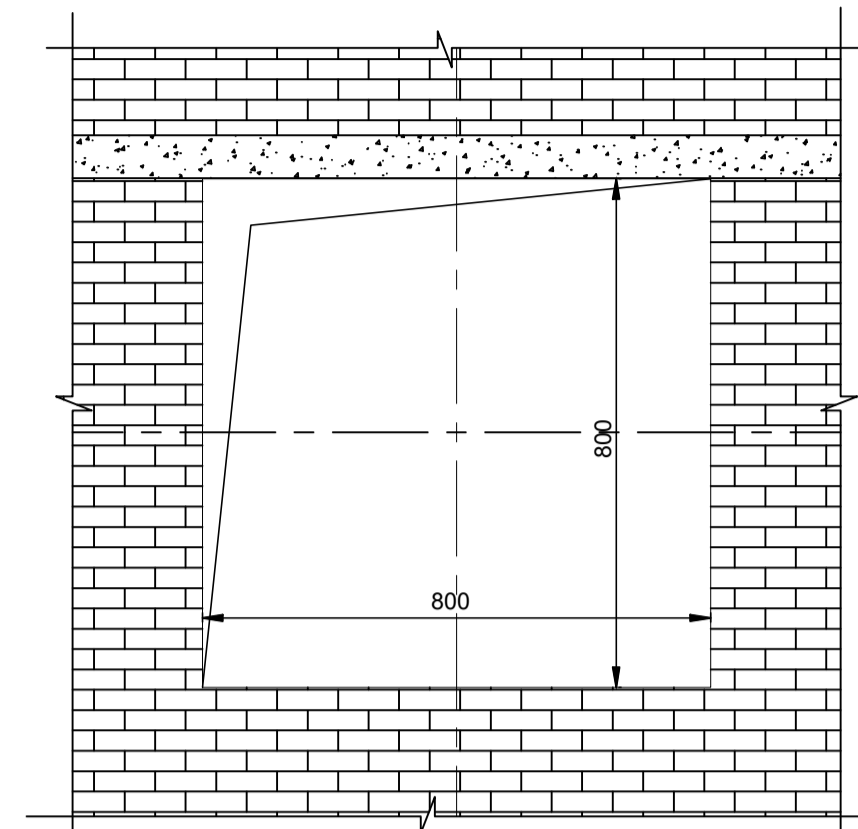
03	TUBE AXIAL FAN	TLJ-710	SIWENT	14	10000	30	1450	1.41
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

2.2/4	415V, 3PH. 50 HZ. AC SUPPLY	100L	1500
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	STANDARD SPEED RPM

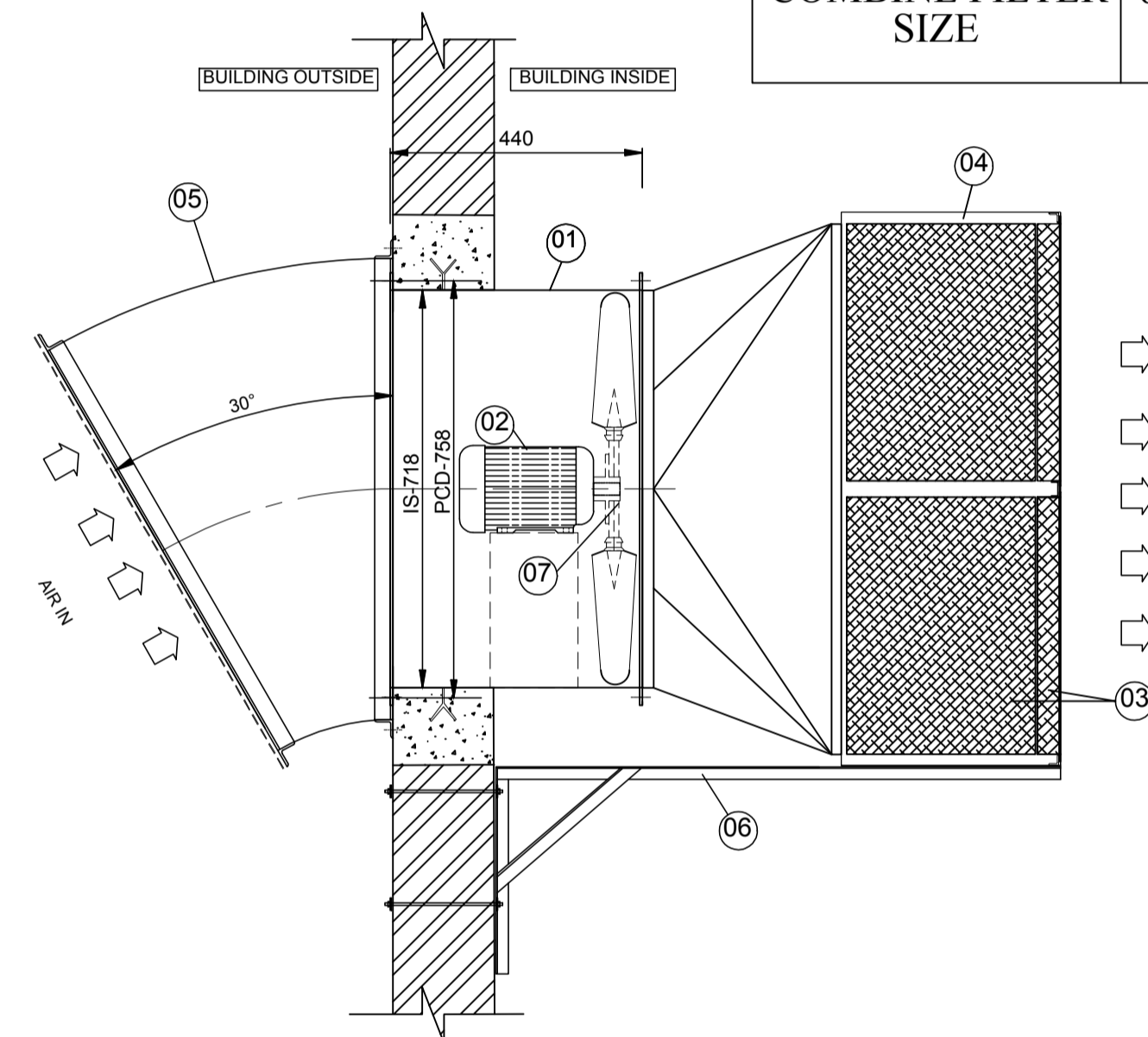


TOP VIEW

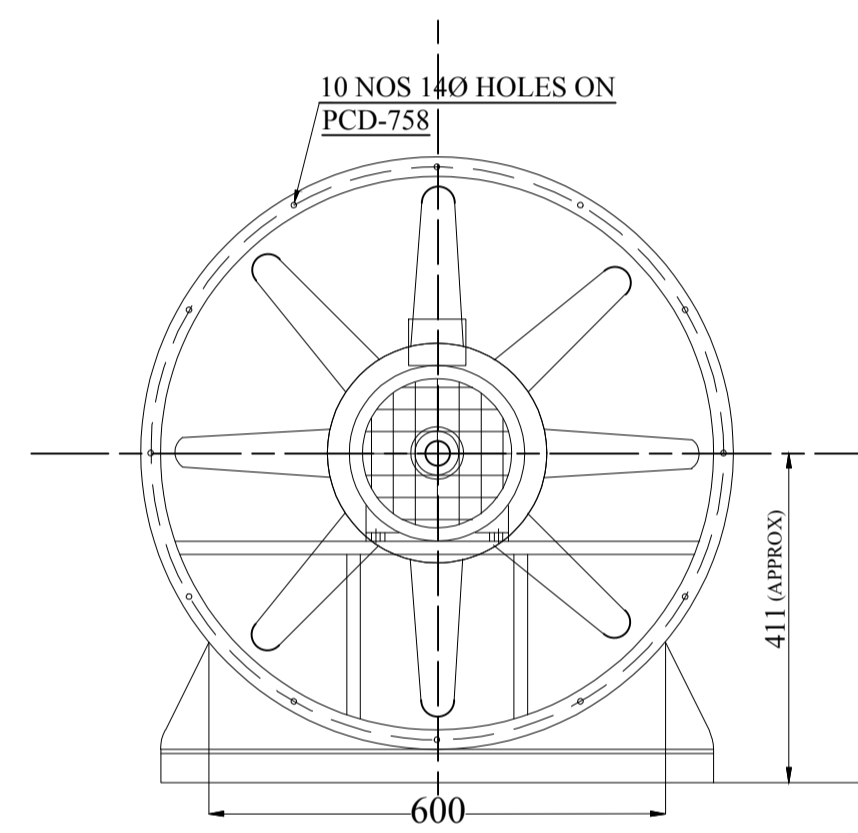


WALL OPENING DETAILS

COMBINE FILTER SIZE	610X610X350
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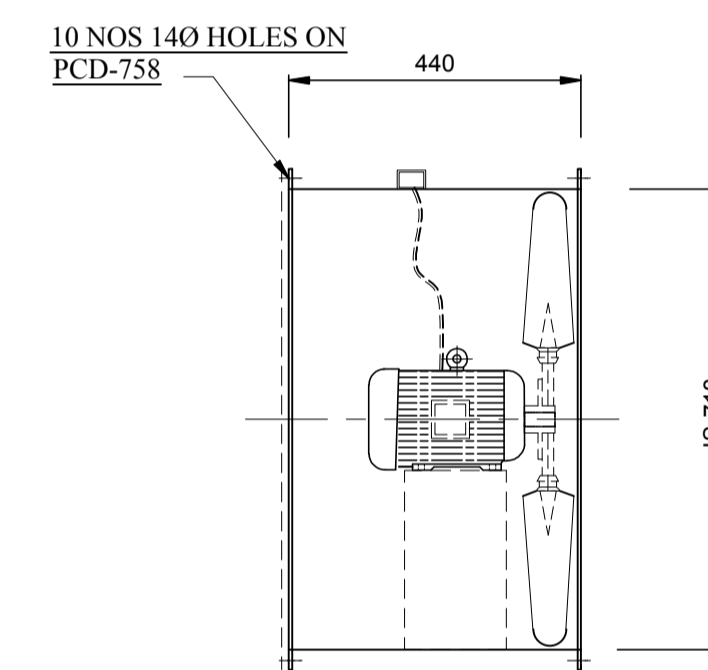


SIDE ELEVATION



DRIVE END VIEW

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)



FAN ASSEMBLY

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	COMBINE FILTER	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	TLJ-710	SARALA	14	10000	30	1450	1.41	2.2/4	415V,3PH,50HZ AC Supply	100L	1500

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, JGG NTPC LIMITED
EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	NAME	SIGN	DATE	
		DRN	KJ	KJ	01-02-2023
		DESN	KJ	KJ	01-02-2023
		CHD	AD	AD	01-02-2023
		APPD	AD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE:	NTS	DEPT. SIGN:	BHEL DRG. No. - PE-V0-467-571-A211
			SHEET 01 OF 01 REV. 00



SUBURBAN INDUSTRIAL WORKS PVT. LTD.

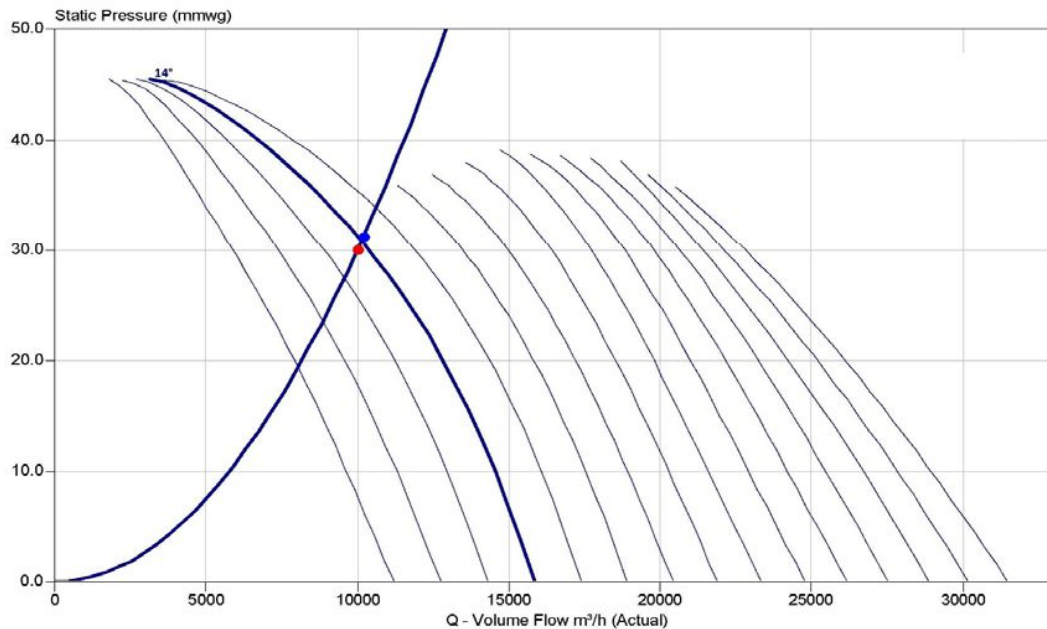
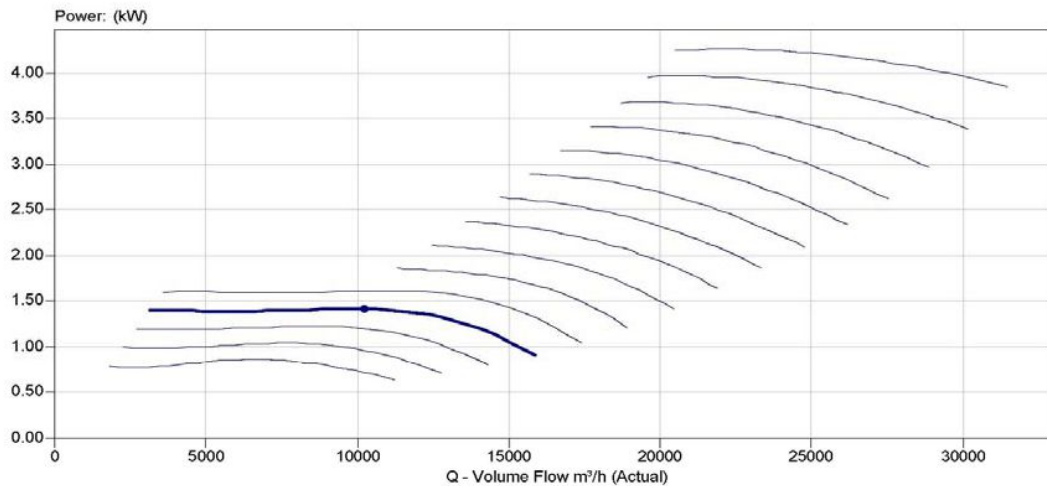
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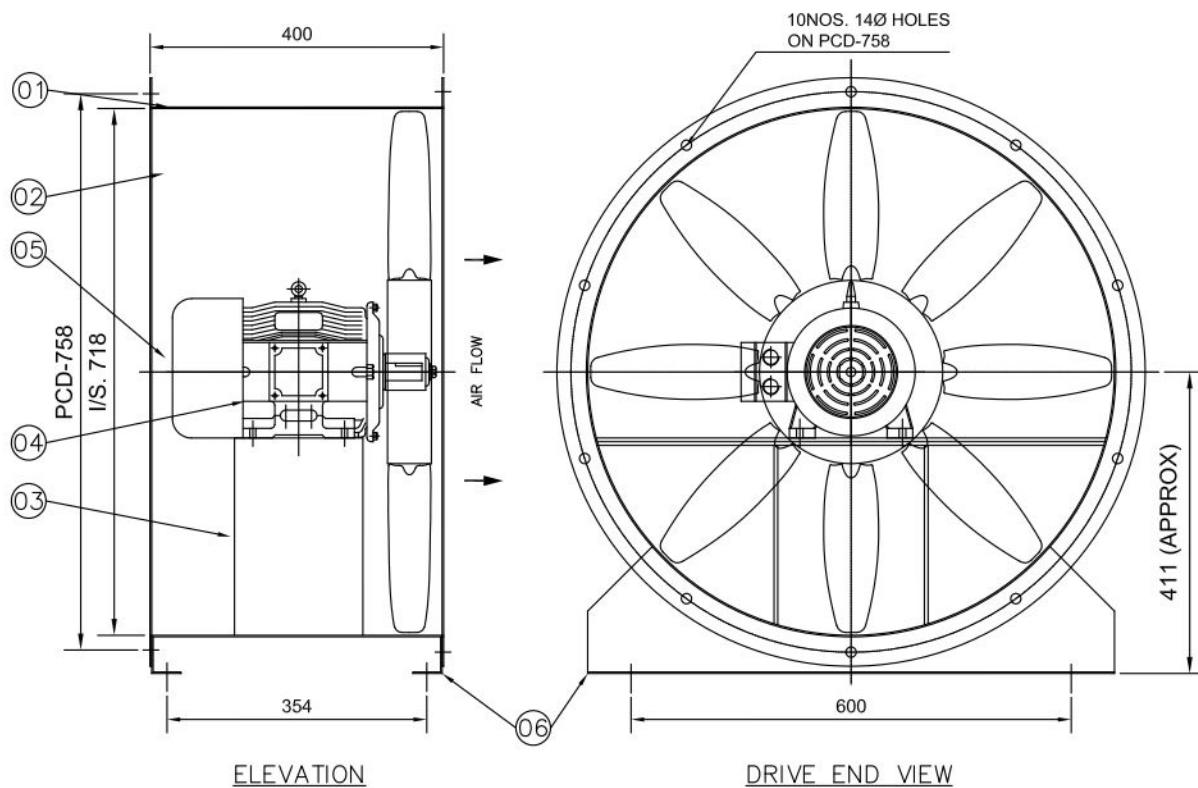
PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- TLJ-710

VOLUME OF AIR (CMH)	10000	FAN SPEED (RPM)	1450
STATIC PRESSURE (MM. WG.)	30	FAN POWER (KW)	1.41





ELEVATION

DRIVE END VIEW

(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER.

SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE
06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY

CLIENT-

PROJECT-3X200MW+3X500MW RAMAGUNDAM STPP
(FGD SYSTEM PACKAGE)



GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN ARR. IV

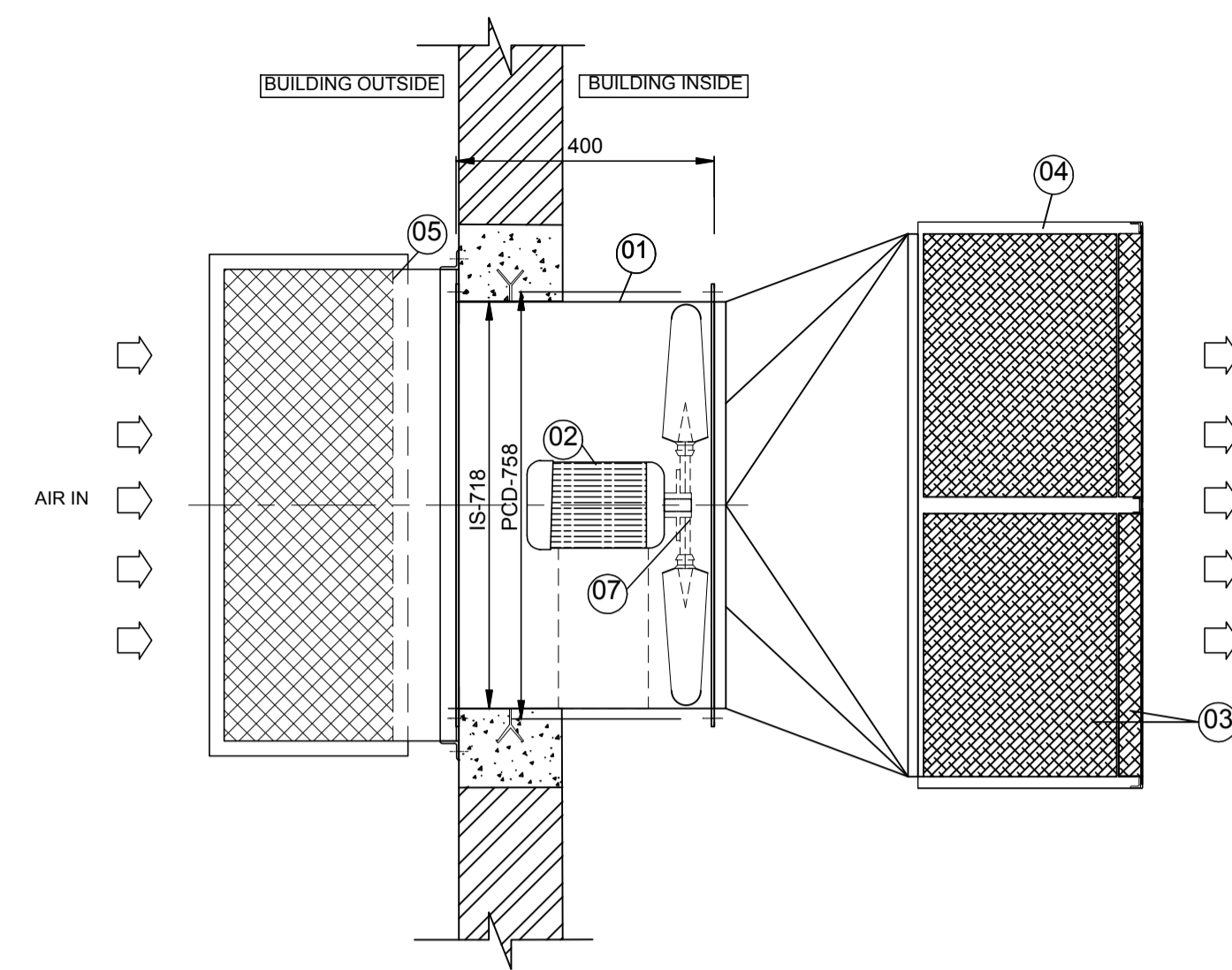
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CHECKED	P.DAS		SCALE NTS
APPROVED		SIWL-656/04	REV 0
DATE	29/08/2022		

TECHNICAL DATA OF FAN

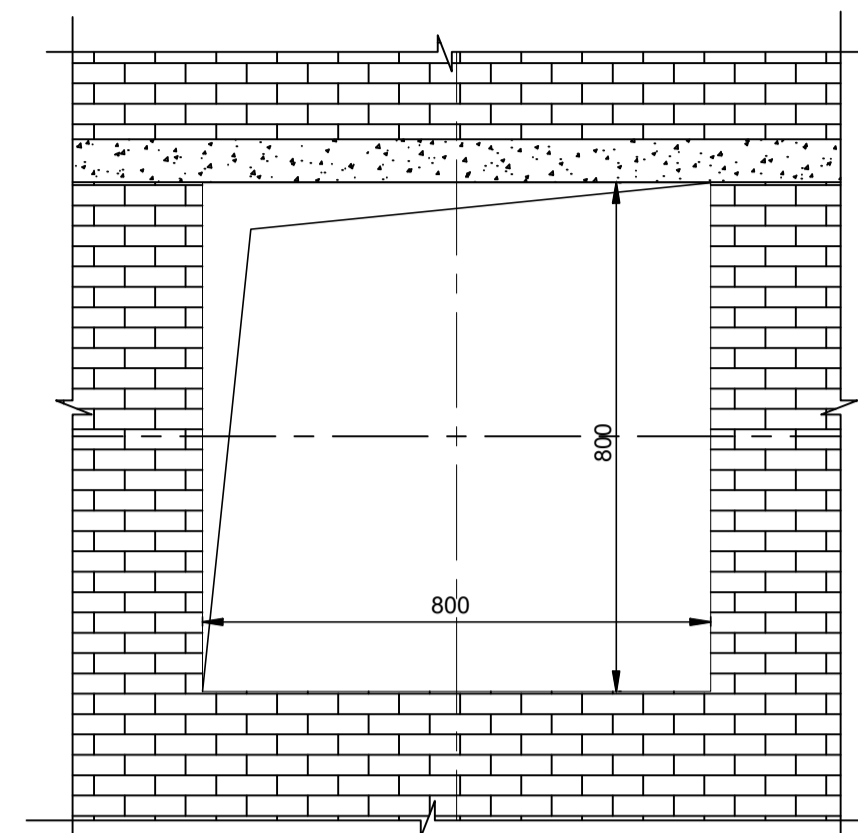
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.
04	TUBE AXIAL FAN	TLJ-710	SIWENT	08	7500	30	1450	1.04

TECHNICAL DATA OF MOTOR

RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	1500 SPEED RPM
1.5/4	415V, 3PH. 50 HZ. AC SUPPLY	90L	1500

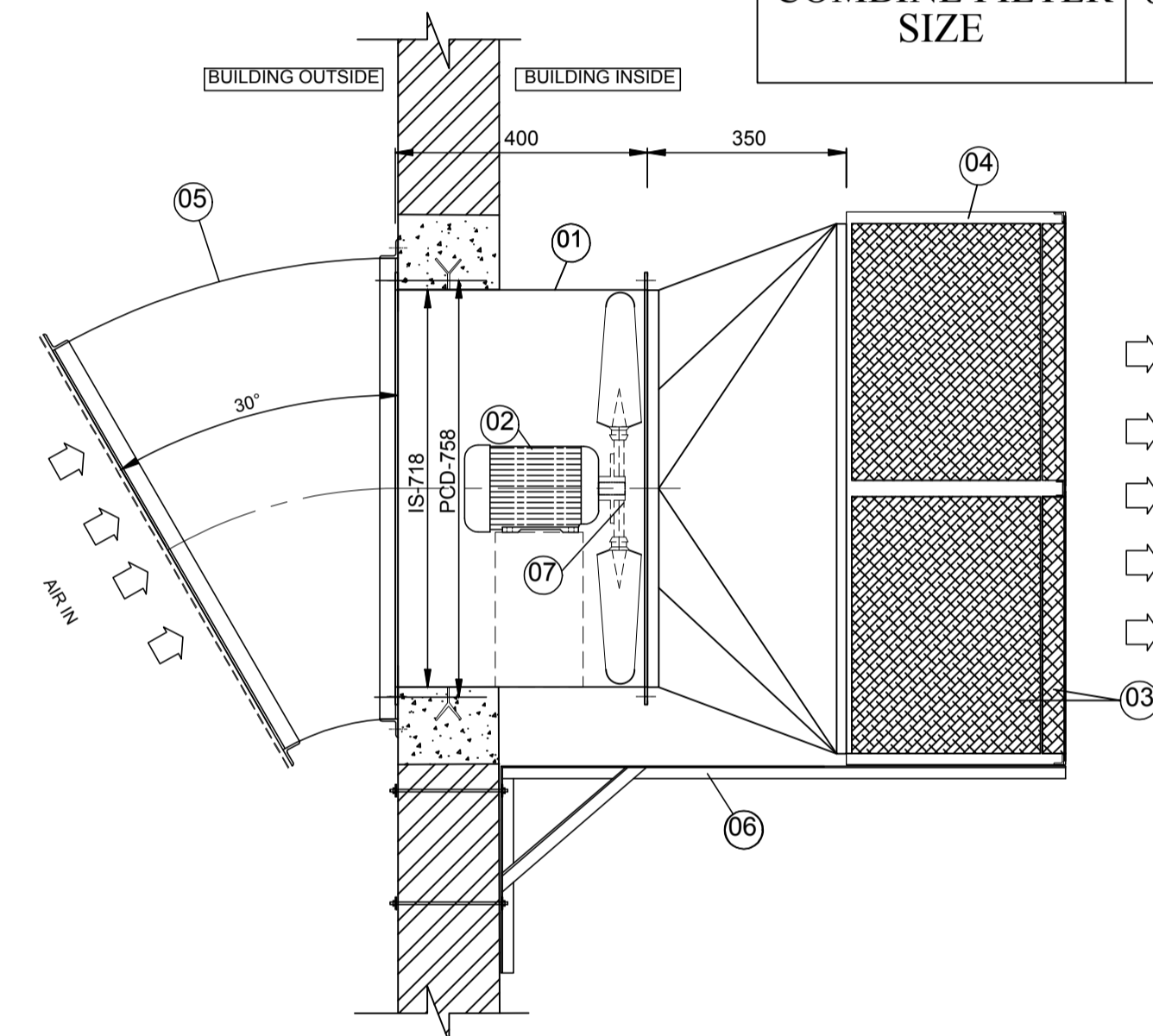


TOP VIEW

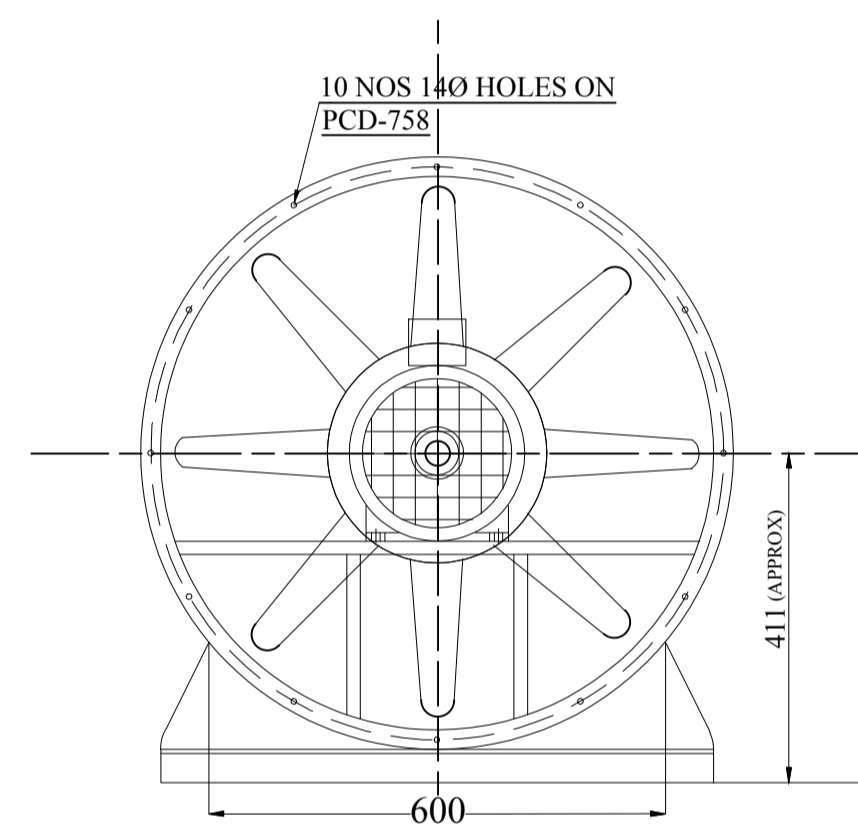


WALL OPENING DETAILS

COMBINE FILTER SIZE	610X610X350
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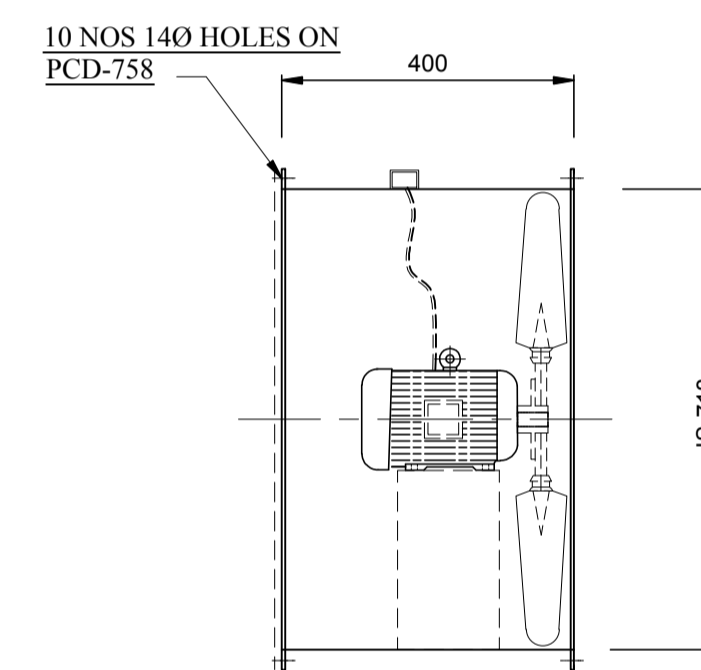


SIDE ELEVATION



DRIVE END VIEW

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)



FAN ASSEMBLY

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	COMBINE FILTER	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	TLJ-710	SARALA	08	7500	30	1450	1.04	1.5/4	415V,3PH,50HZ AC Supply	90L	1500

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, NTPC LIMITED
EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	NAME	SIGN	DATE	
		DRN	KJ	KJ	01-02-2023
		DESN	KJ	KJ	01-02-2023
		CHD	AD	AD	01-02-2023
		APPD	AD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE	NTS	DEPT.	SIGN
BHEL DRG. No. - PE-V0-467-571-A211		SHEET 01 OF 01 REV. 00	



SUBURBAN INDUSTRIAL WORKS PVT. LTD.

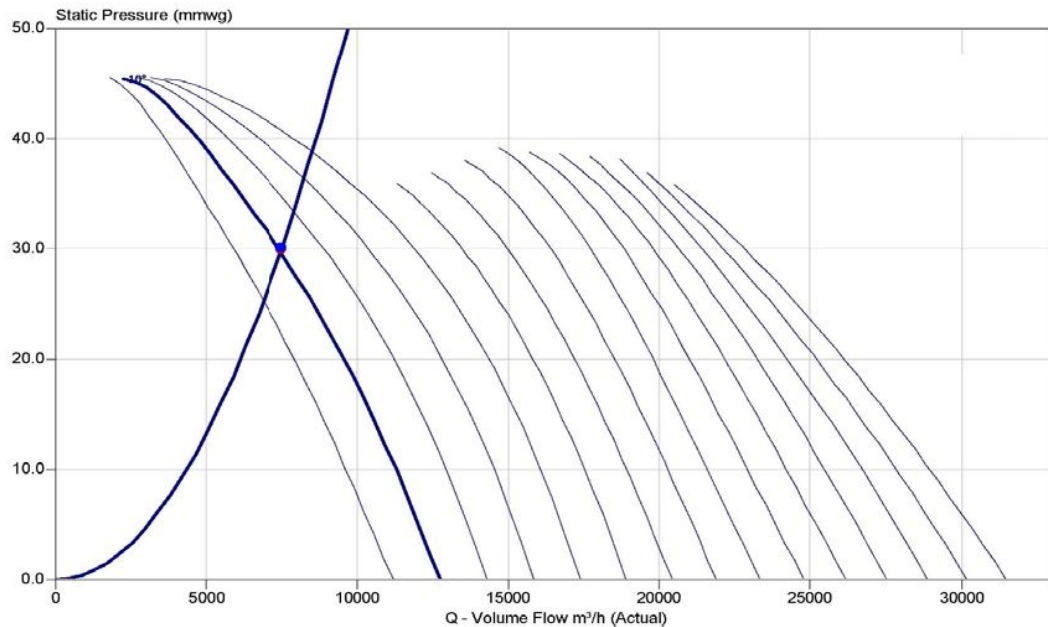
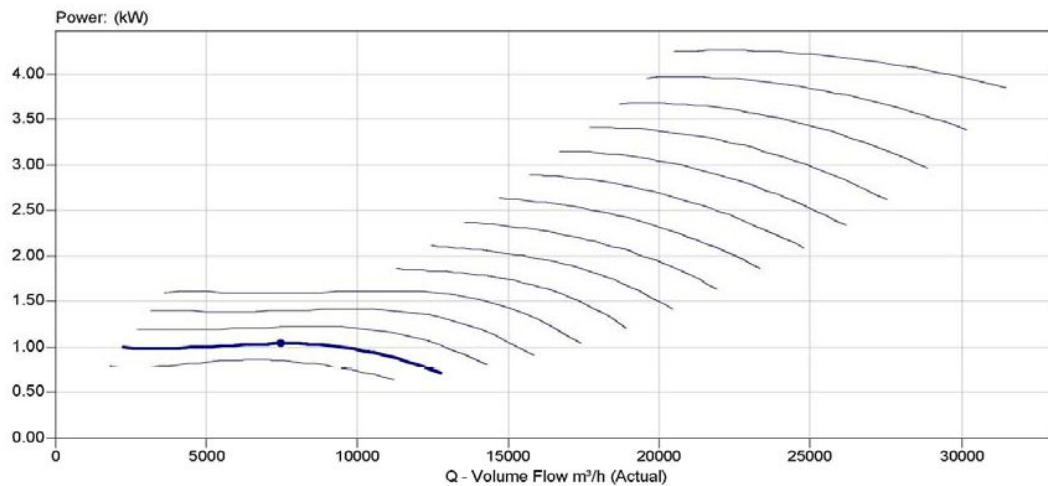
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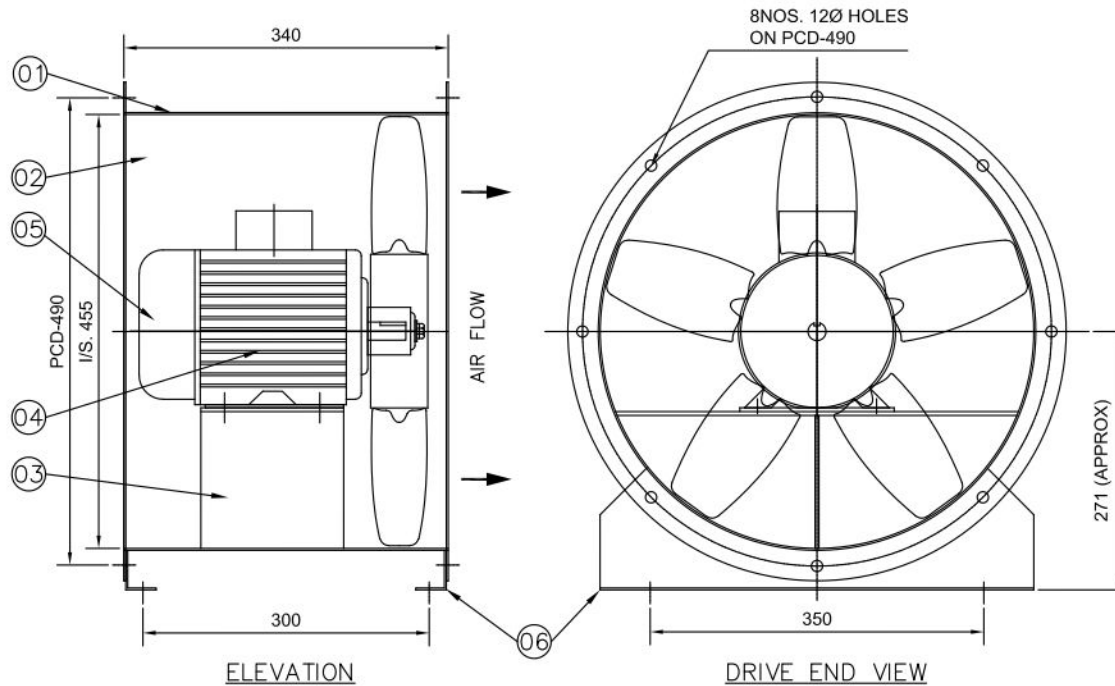
PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- TLJ-710

VOLUME OF AIR (CMH)	7500	FAN SPEED (RPM)	1450
STATIC PRESSURE (MM. WG.)	30	FAN POWER (KW)	1.04





(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
------	------	-------------------------	----

CLIENT-

PROJECT-3X200MW+3X500MW
RAMAGUNDAM STPP
(FGD SYSTEM PACKAGE)



SUBURBAN INDUSTRIAL WORKS PVT. LTD.
KOLKATA , INDIA

GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN
ARR. IV

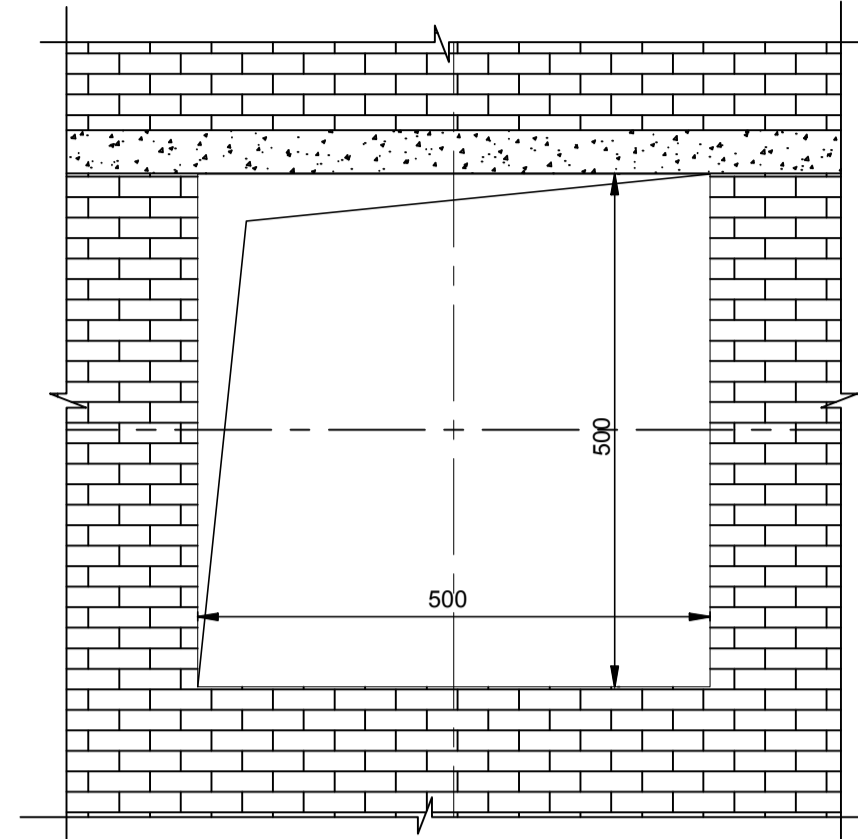
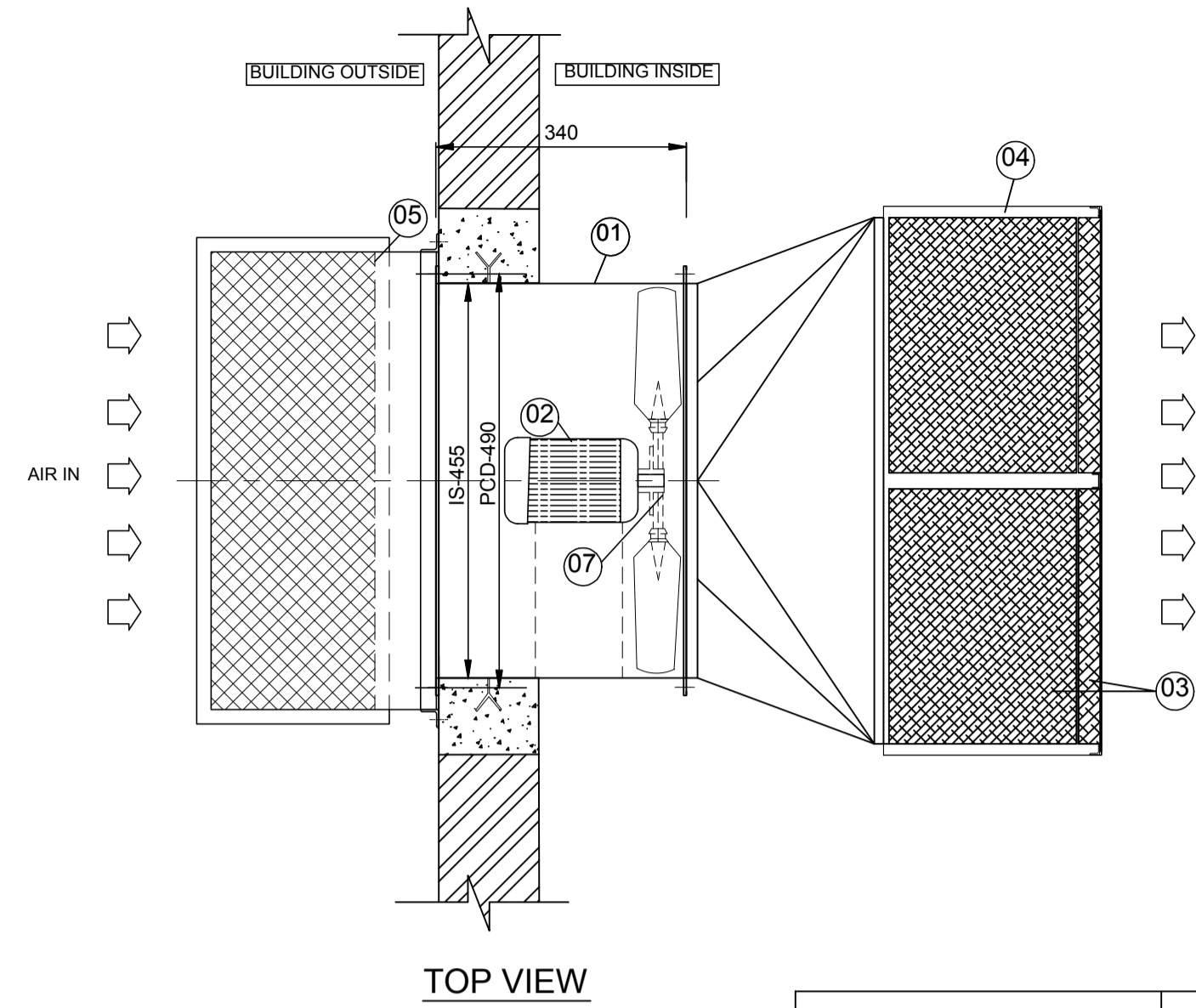
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CHECKED	P.DAS		SCALE NTS
APPROVED		SIWL-656/05	REV 0
DATE	29/08/2022		

TECHNICAL DATA OF FAN

05	TUBE AXIAL FAN	TLJ-450	SIWENT	10	6000	30	2880	0.87
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

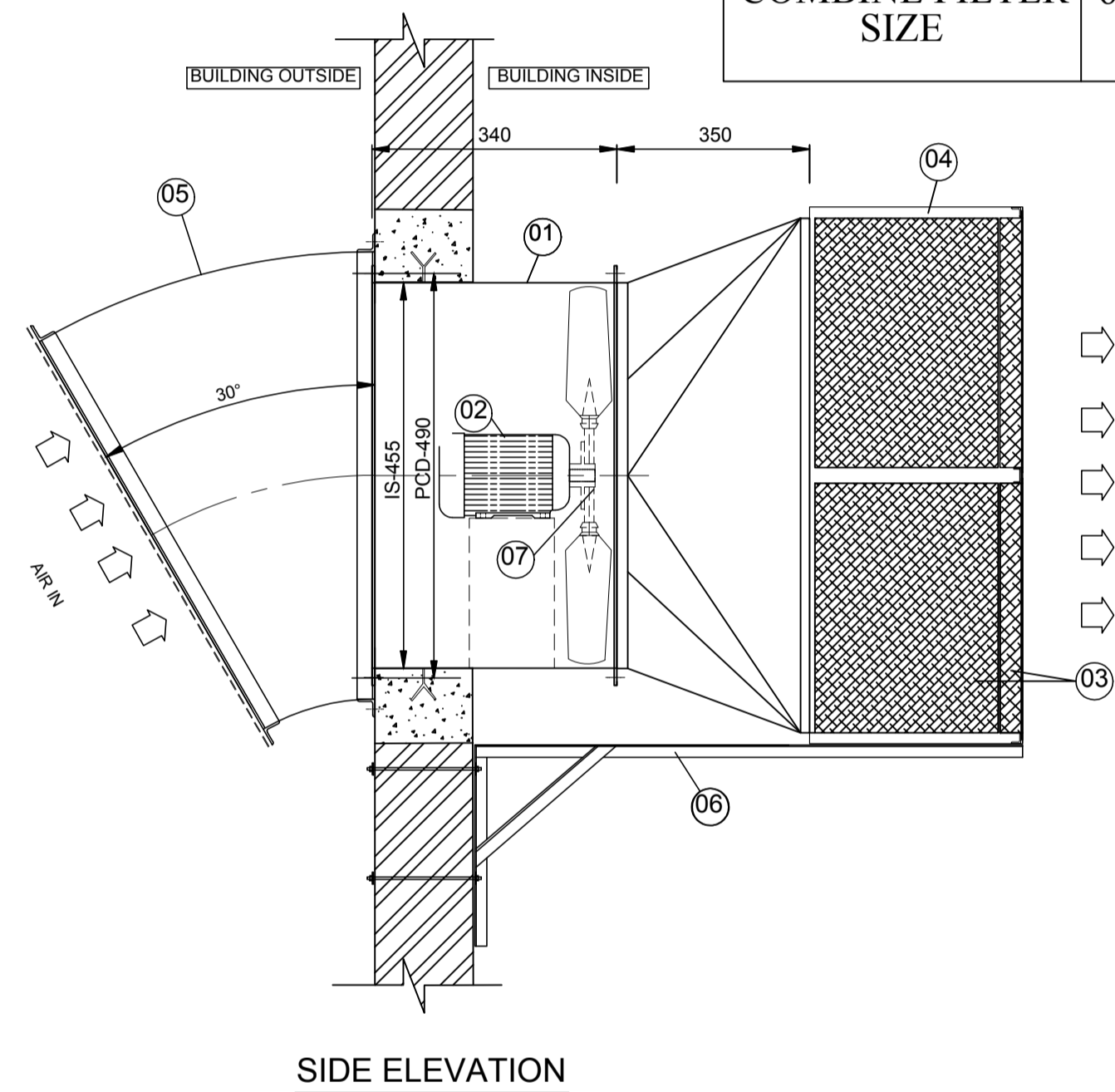
1.1/2	415V, 3PH. 50 HZ. AC SUPPLY	80	3000
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	SYN. SPEED RPM



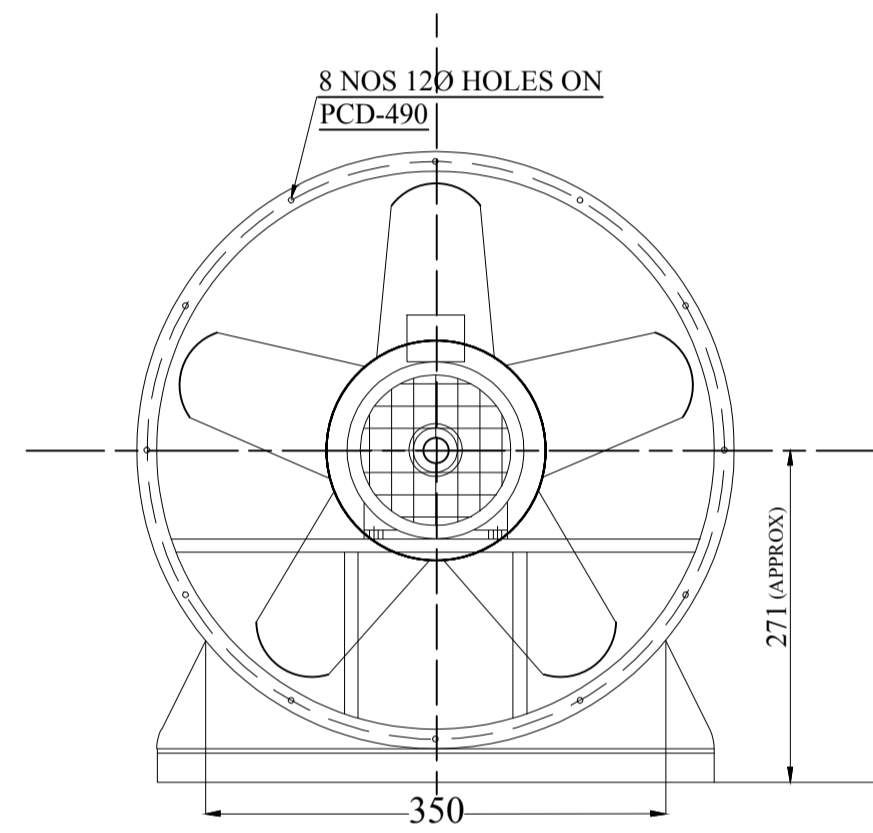
TOP VIEW

WALL OPENING DETAILS

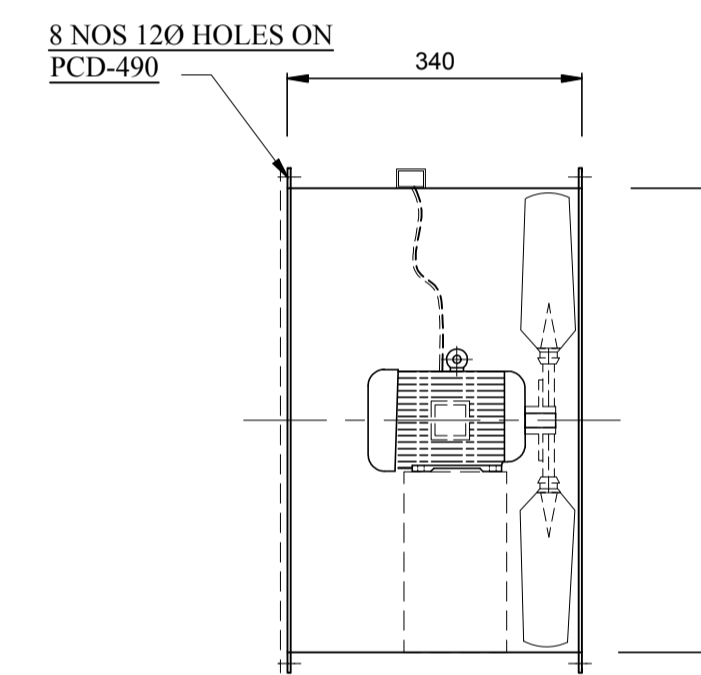
COMBINE FILTER SIZE	610X610X350
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SIDE ELEVATION



DRIVE END VIEW



FAN ASSEMBLY

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	COMBINE FILTER	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	TLJ-450	SARALA	10	6000	30	2880	0.87	1.1/2	415V,3PH,50HZ AC Supply	80	3000

NTPC DRAWING NO. 3130-109-PVM-B-260					
PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)				
OWNER:	NTPC.jpg	NTPC LIMITED			
EPC CONTRACTOR:	BHEL bhel.png	BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA			
CONTRACTOR:					
BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	NAME	SIGN	DATE	
		DRN	KJ	KJ	01-02-2023
		DESN	KJ	KJ	01-02-2023
		CHD	AD	AD	01-02-2023
		APPD	AD	01-02-2023	
TITLE TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS					
		SCALE: NTS	DEPT.	BHEL DRG. No. - PE-V0-467-571-A211	
		SIGN		SHEET 01 OF 01 REV. 00	



SUBURBAN INDUSTRIAL WORKS PVT. LTD.

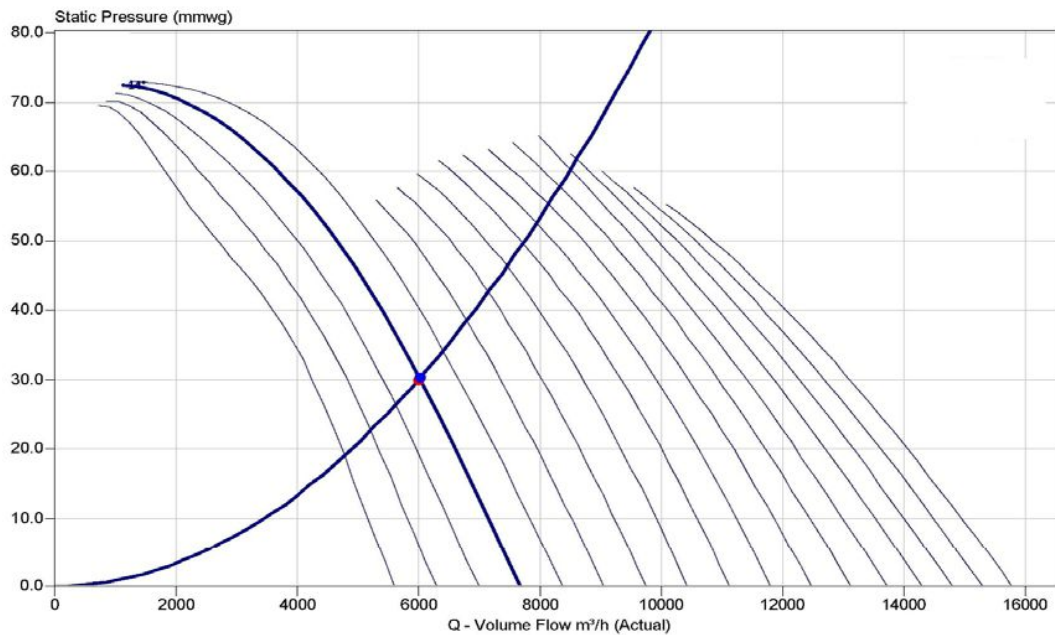
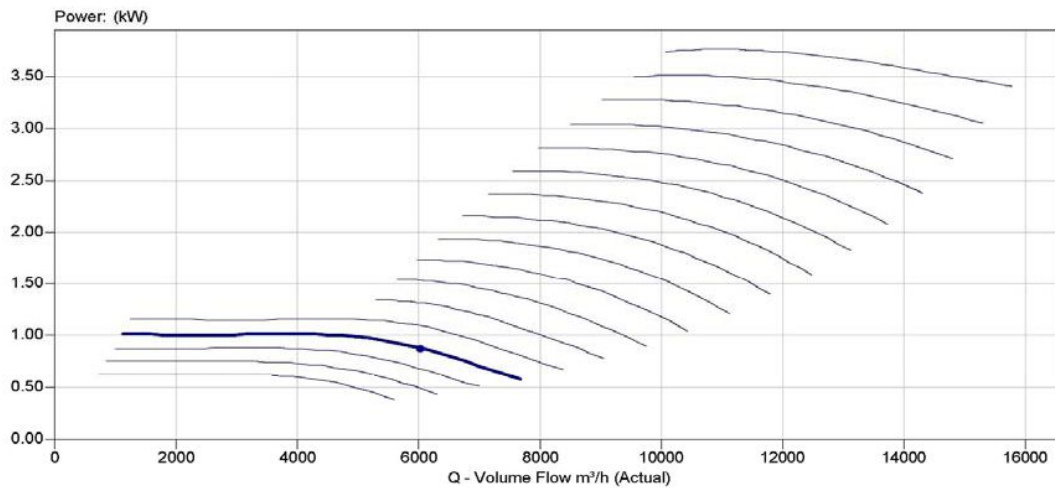
CLIENT'S NAME : _____

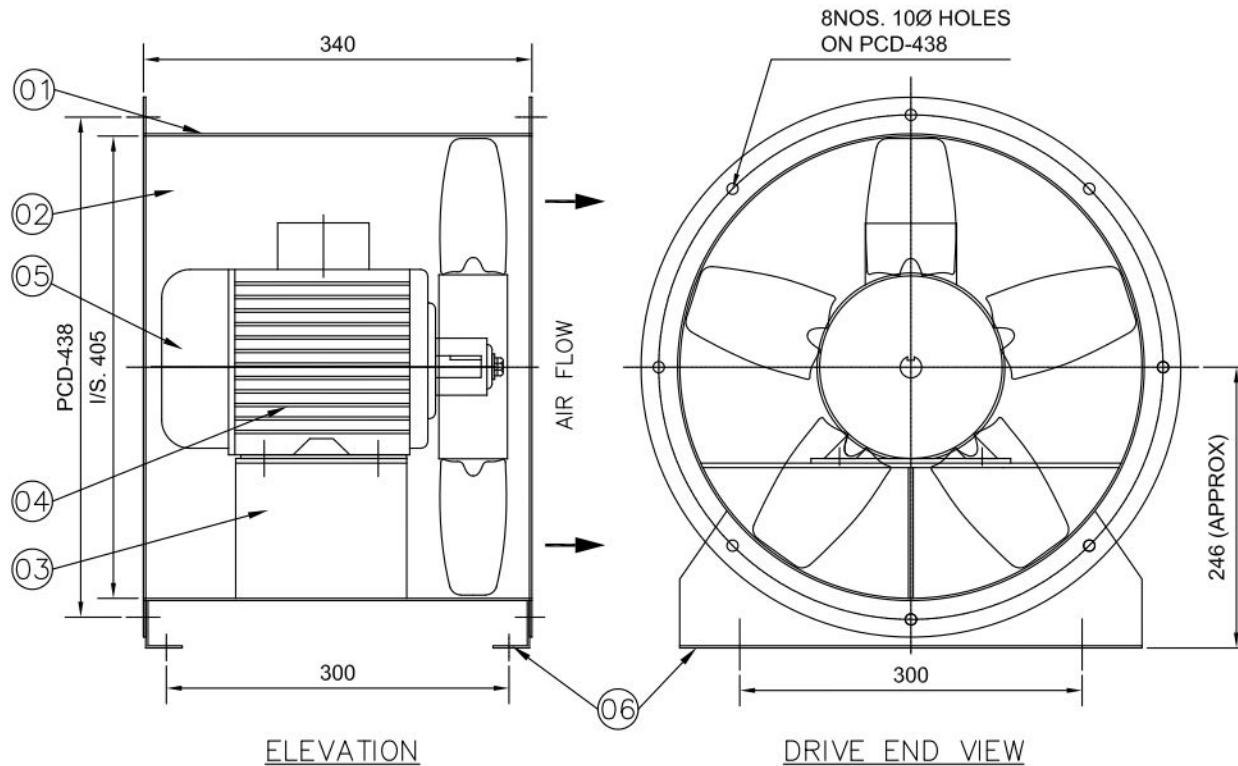
PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- TLJ-450

VOLUME OF AIR (CMH)	6000	FAN SPEED (RPM)	2880
STATIC PRESSURE (MM. WG.)	30	FAN POWER (KW)	0.87





(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
------	------	-------------------------	----

CLIENT
PROJECT-3X200MW+3X500MW RAMAGUNDAM STPP
(FGD SYSTEM PACKAGE)



GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN ARR. IV

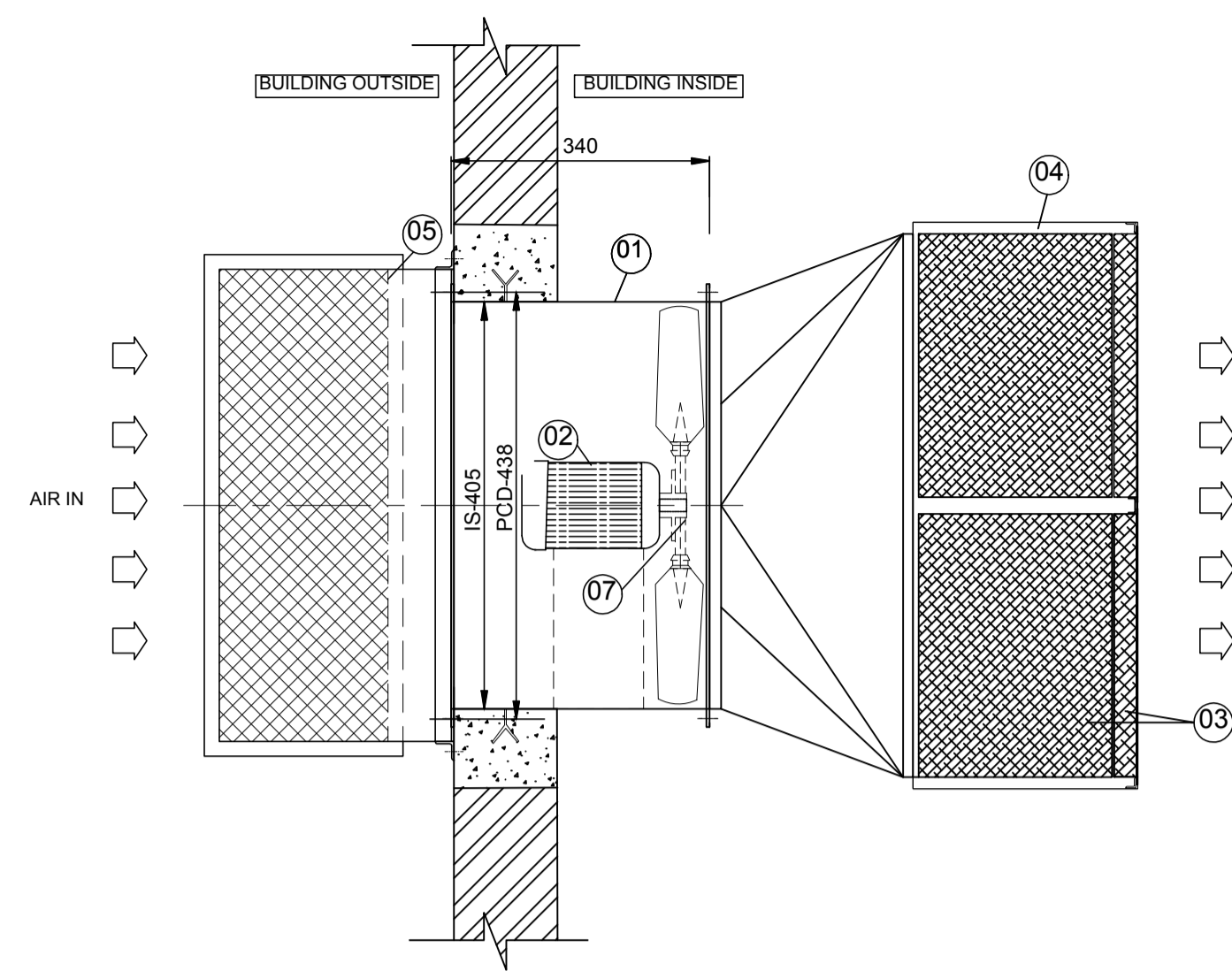
DRAWN	S.NASKAR	DRAWING NO.	JOB NO.
CHECKED	P.DAS	SCALE	NTS
APPROVED		SIWL-642/07	REV
DATE	29/08/2022		0

TECHNICAL DATA OF FAN

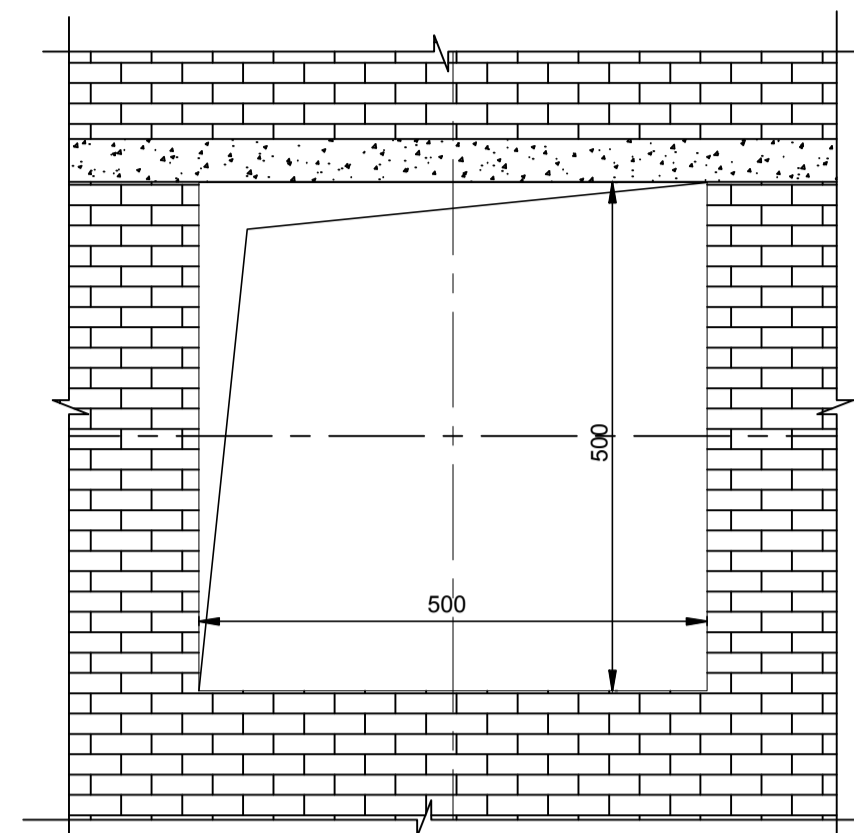
06	TUBE AXIAL FAN	TLJ-400	SIWENT	06	4000	30	2880	0.53
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

0.75/2	415V, 3PH. 50 HZ. AC SUPPLY	80	3000
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	STANDARD SPEED RPM

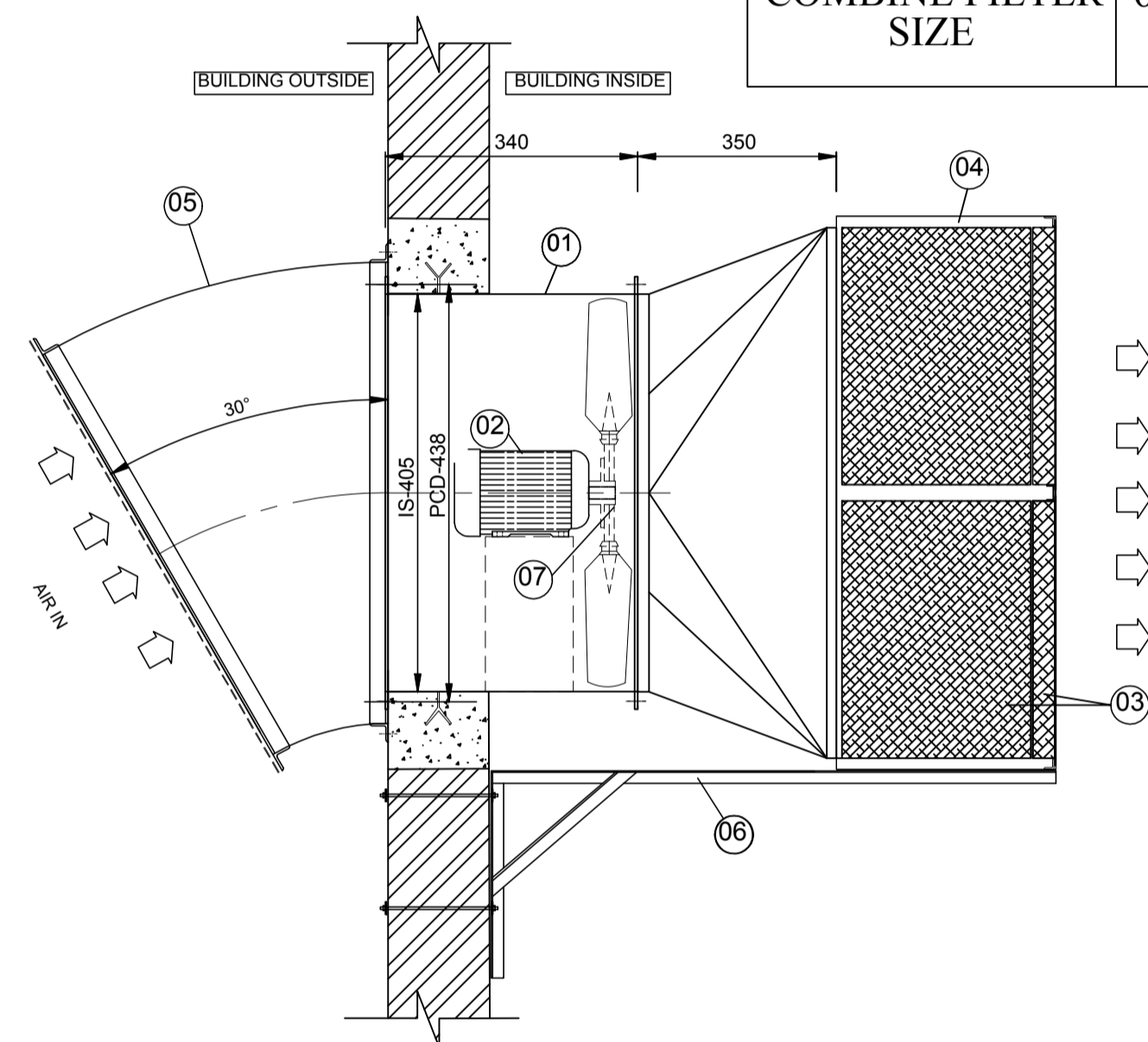


TOP VIEW

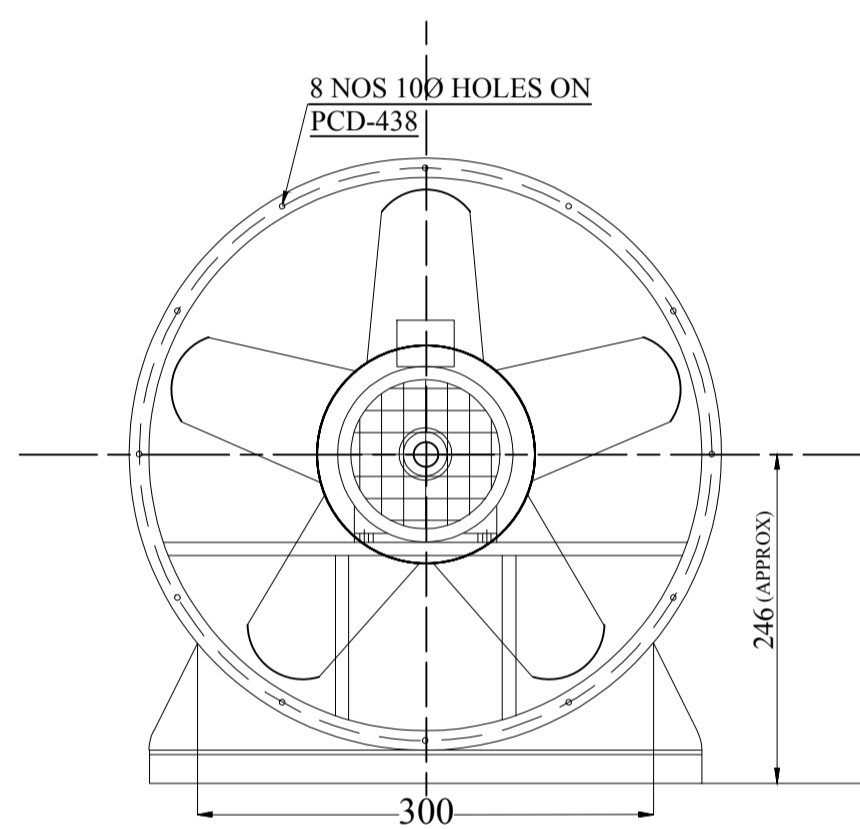


WALL OPENING DETAILS

COMBINE FILTER SIZE	610X610X350
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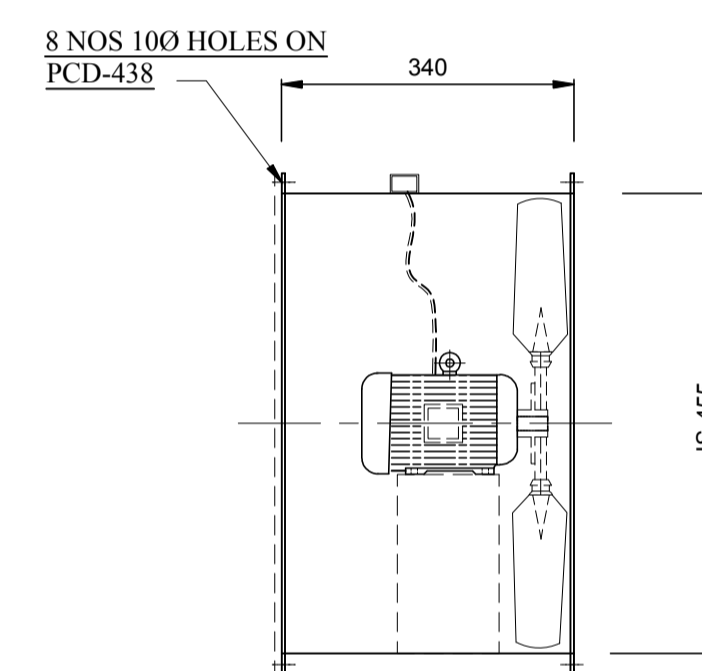


SIDE ELEVATION



DRIVE END VIEW

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)



FAN ASSEMBLY

- NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	COMBINE FILTER	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	TLJ-400	SARALA	06	4000	30	2880	0.53	0.75/2	415V,3PH,50HZ AC Supply	80	3000

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)		
OWNER:	NTPC.jpg	NTPC LIMITED	
EPC CONTRACTOR:	BHEL blue.png	BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA	
CONTRACTOR:			

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	NAME	SIGN	DATE	
		DRN	KJ	KJ	01-02-2023
		DESN	KJ	KJ	01-02-2023
		CHD	AD	AD	01-02-2023
		APPD	AD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE	NTS	DEPT.	SIGN
SHEET 01 OF 01		REV. 00	



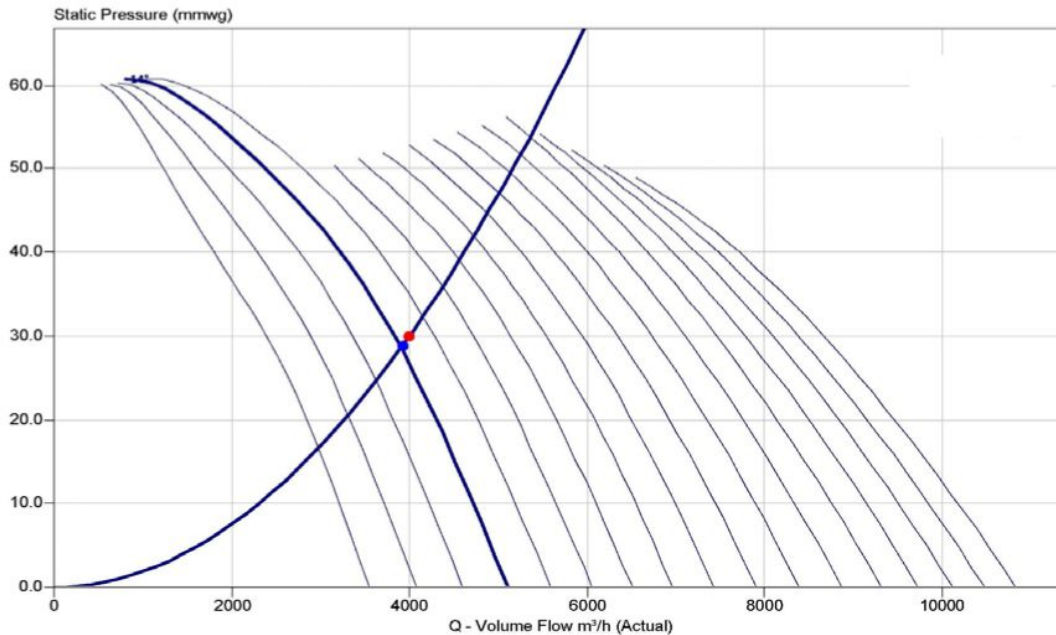
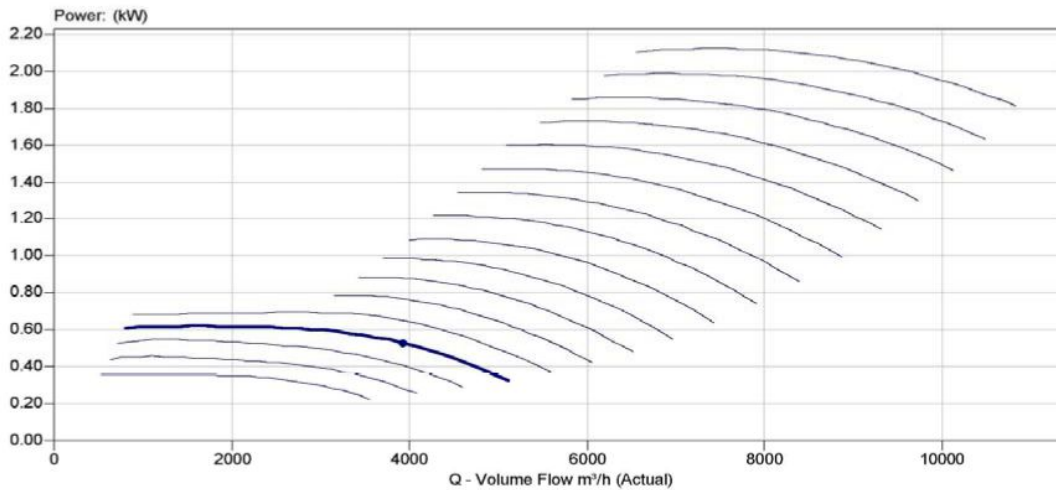
CLIENT'S NAME

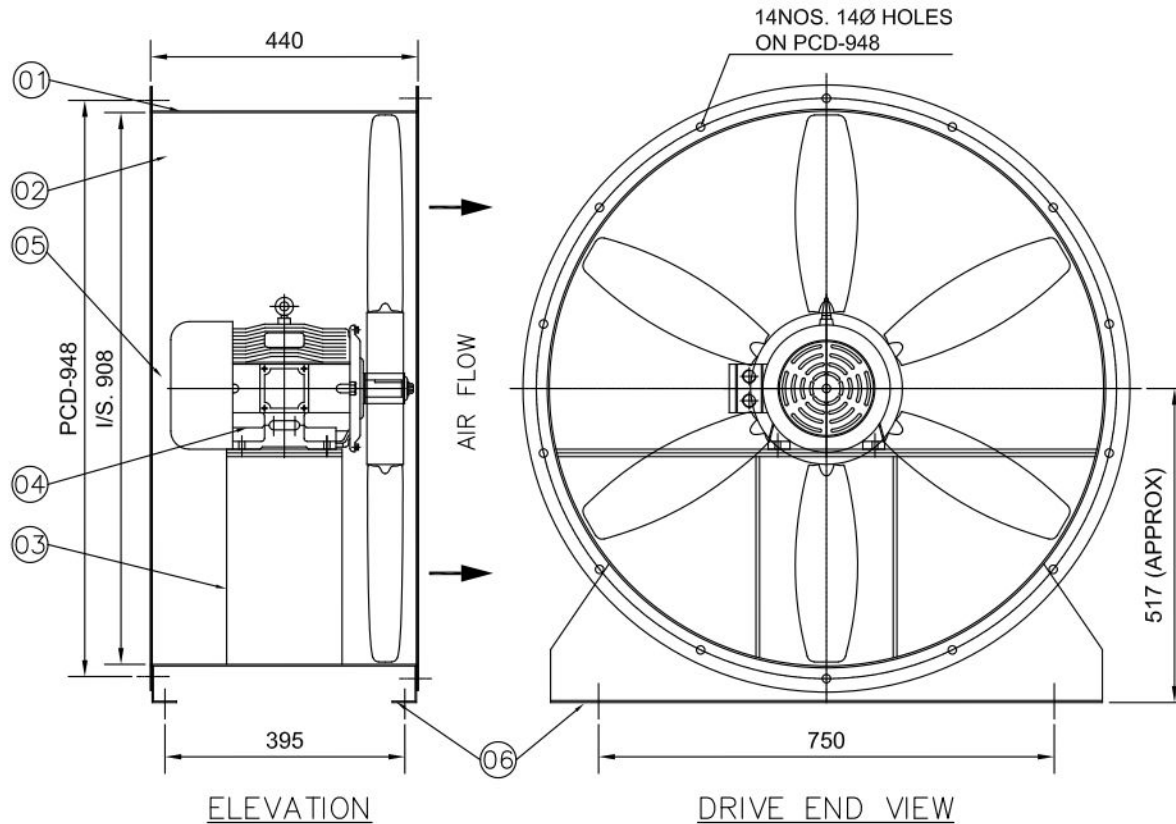
PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- TLJ-400

VOLUME OF AIR (CMH)	4000	FAN SPEED (RPM)	2880
STATIC PRESSURE (MM. WG.)	30	FAN POWER (KW)	0.53





(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
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CLIENT-

PROJECT-3X200MW+3X500MW RAMAGUNDAM
STPP(FGD SYSTEM PACKAGE)



SUBURBAN INDUSTRIAL WORKS PVT. LTD.
KOLKATA , INDIA

GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN ARR. IV

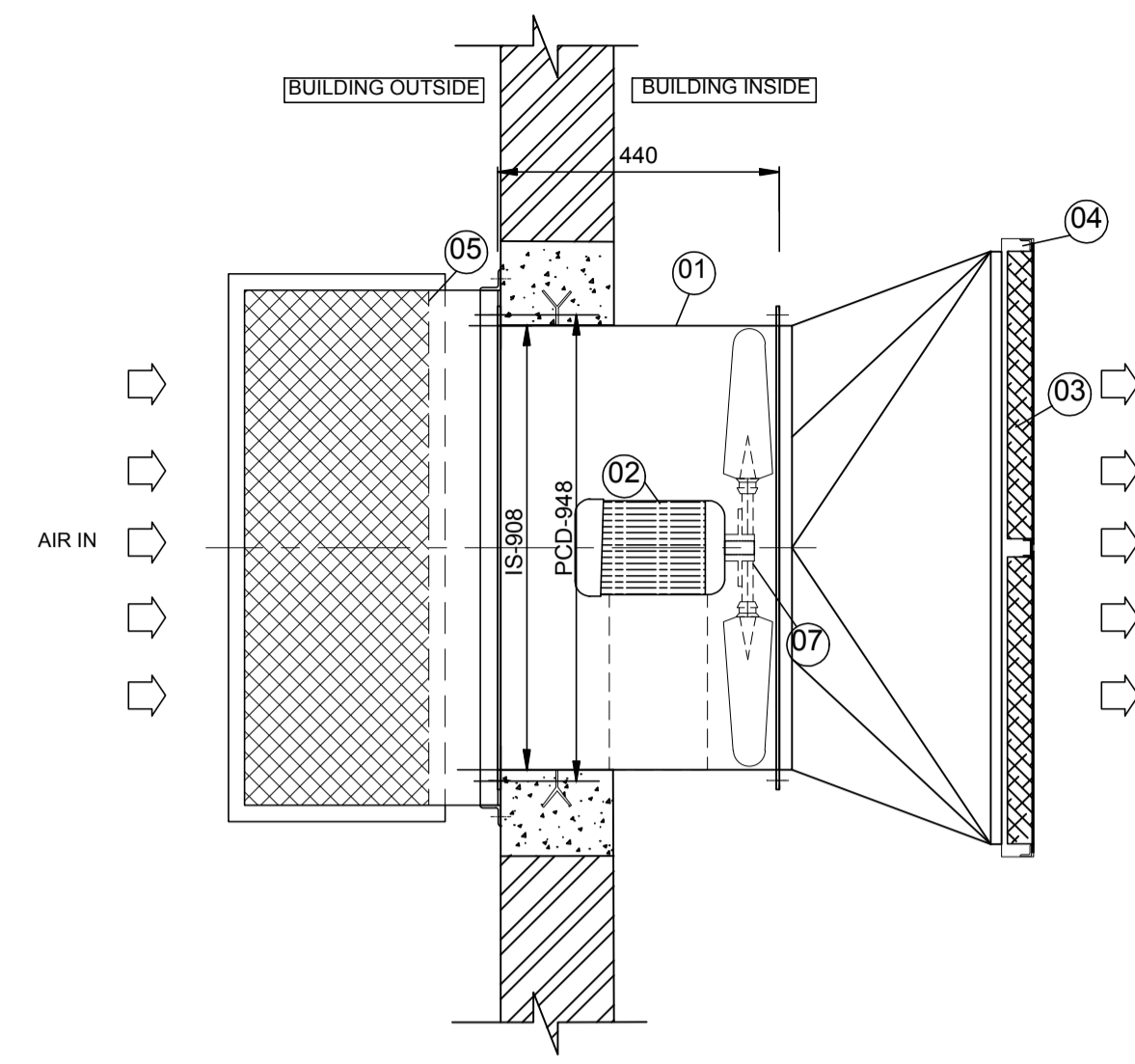
DRAWN	S.NASKAR	DRAWING NO.	JOB NO.	
CHECKED	P.DAS		SCALE	NTS
APPROVED		SIWL-656/07	REV	0
DATE	29/08/2022			

TECHNICAL DATA OF FAN

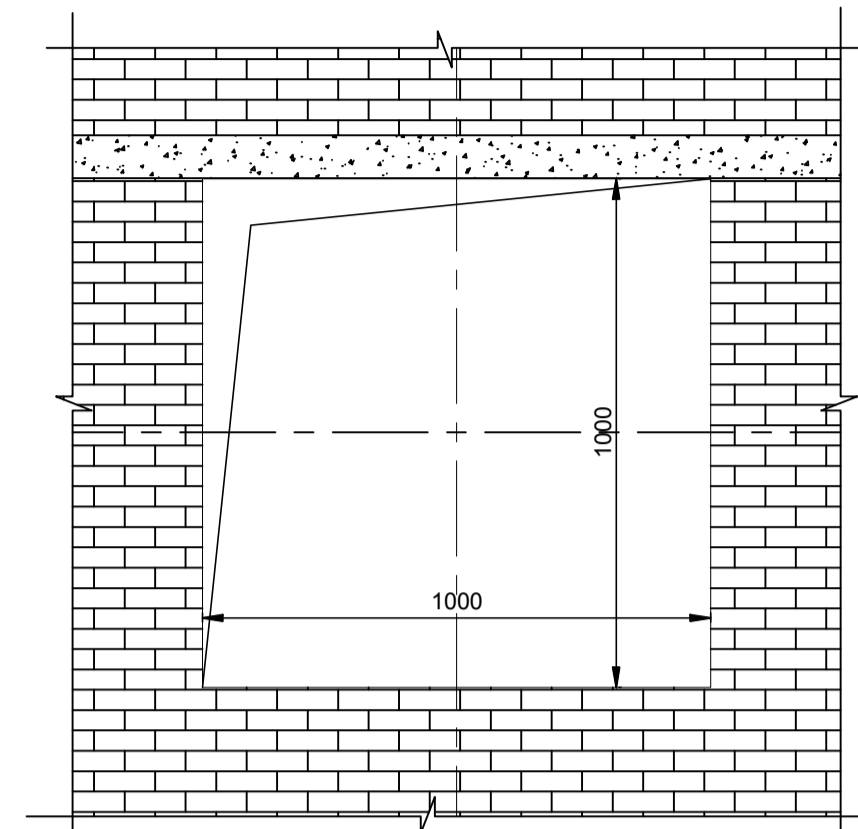
07	TUBE AXIAL FAN	TLJ-900	SIWENT	28	10000	20	970	0.94
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

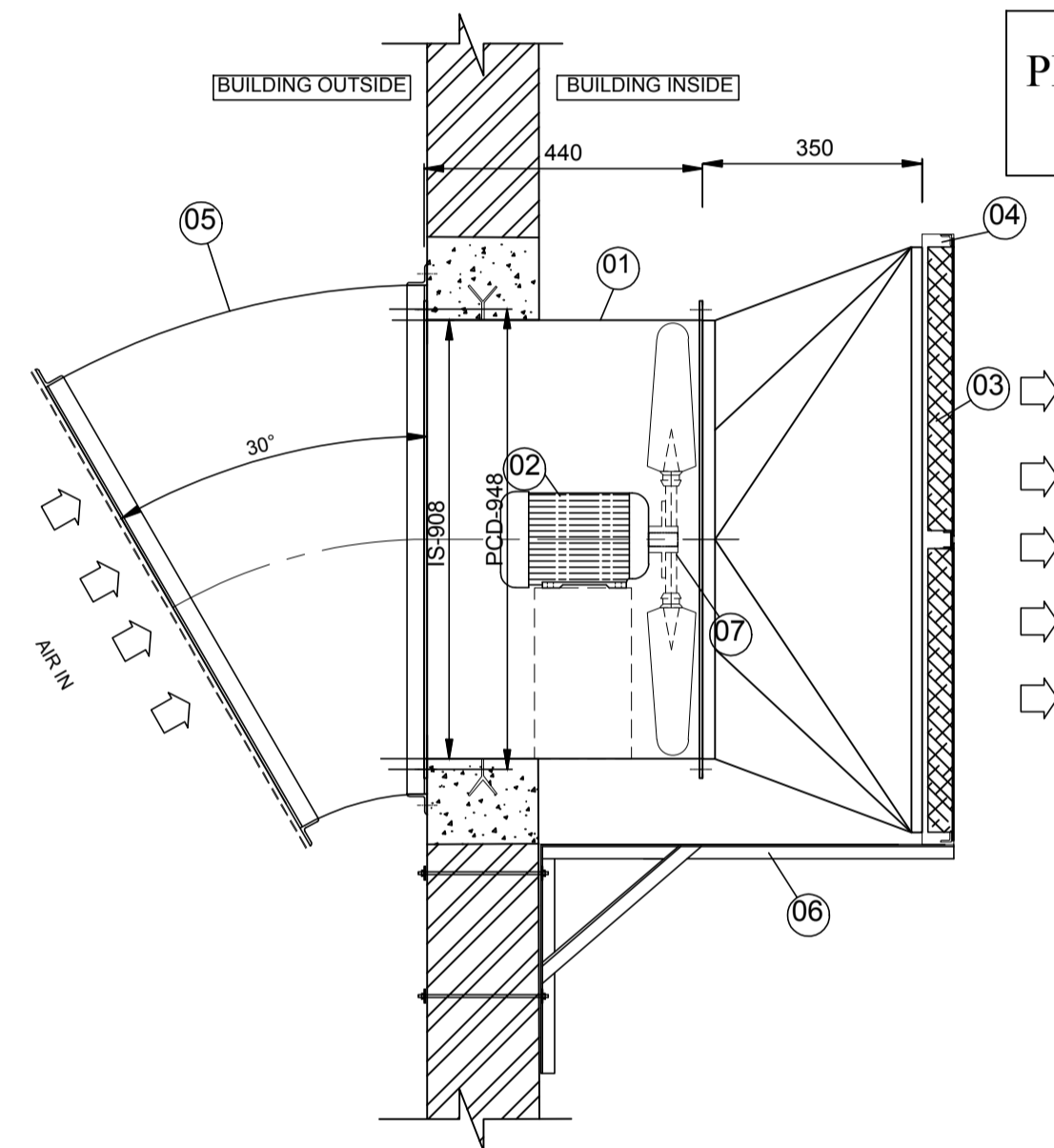
1.5/6	415V, 3PH. 50 HZ. AC SUPPLY	100L	1000
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	SPEED RPM



TOP VIEW

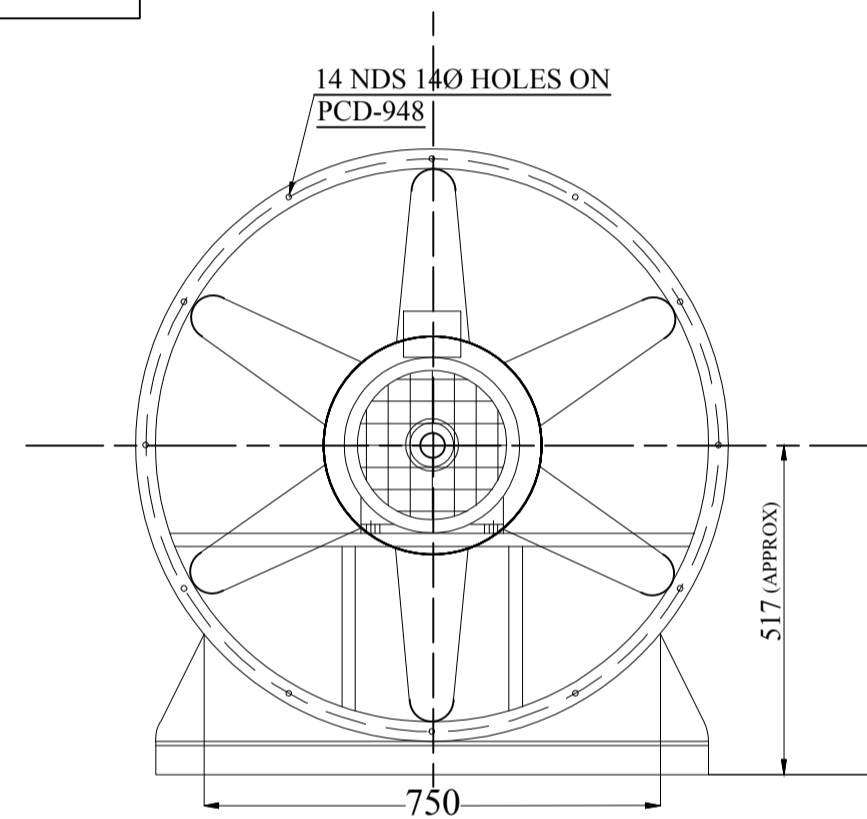


WALL OPENING DETAILS



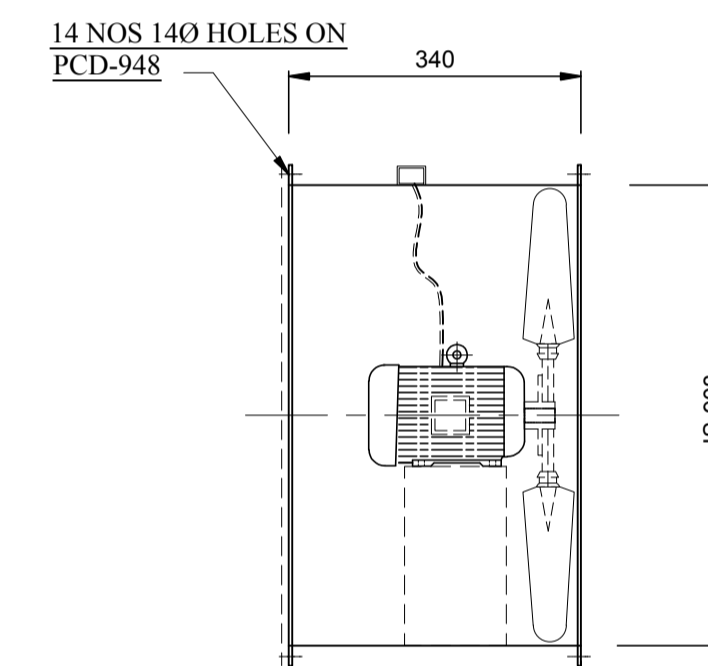
SIDE ELEVATION

PRE-FILTER SIZE	610X610X50
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DRIVE END VIEW

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)



FAN ASSEMBLY

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	PRE-FILTER FLANGE TYPE	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	TLJ-900	SARALA	28	10000	20	970	0.94	1.5/6	415V,3PH,50HZ AC Supply	100L	1500

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, Jpg NTPC LIMITED
EPC CONTRACTOR:	BHEL, Blue.png BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	DRN	SIGN	DATE
		KJ	KJ	01-02-2023
		KJ	KJ	01-02-2023
		AD	AD	01-02-2023
AD	AD	AD	AD	01-02-2023

TITLE
 TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS

SCALE	NTS	DEPT.	SIGN

BHEL DRG. No. - PE-V0-467-571-A211
 SHEET 01 OF 01 REV. 00



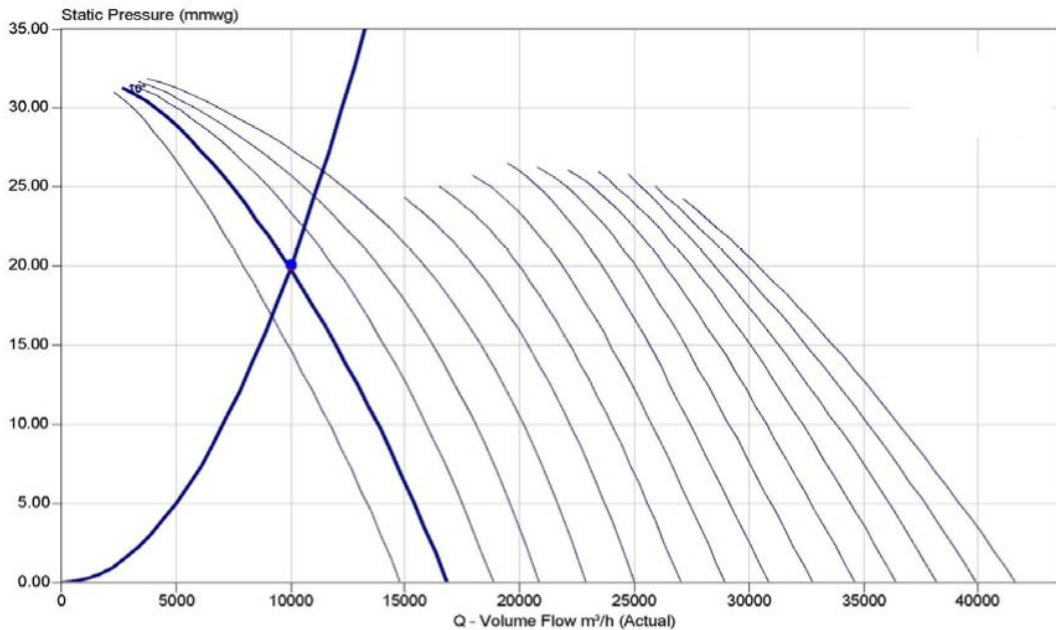
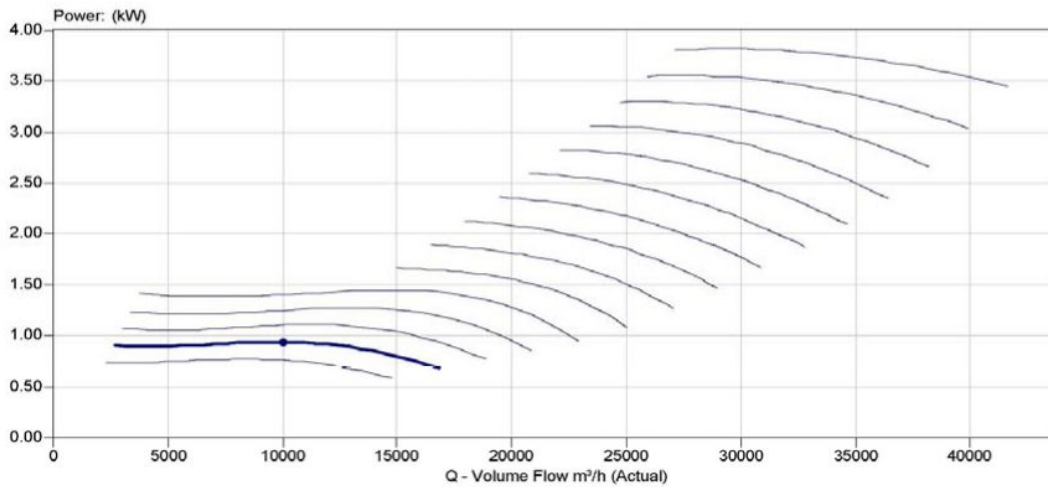
CLIENT'S NAME :

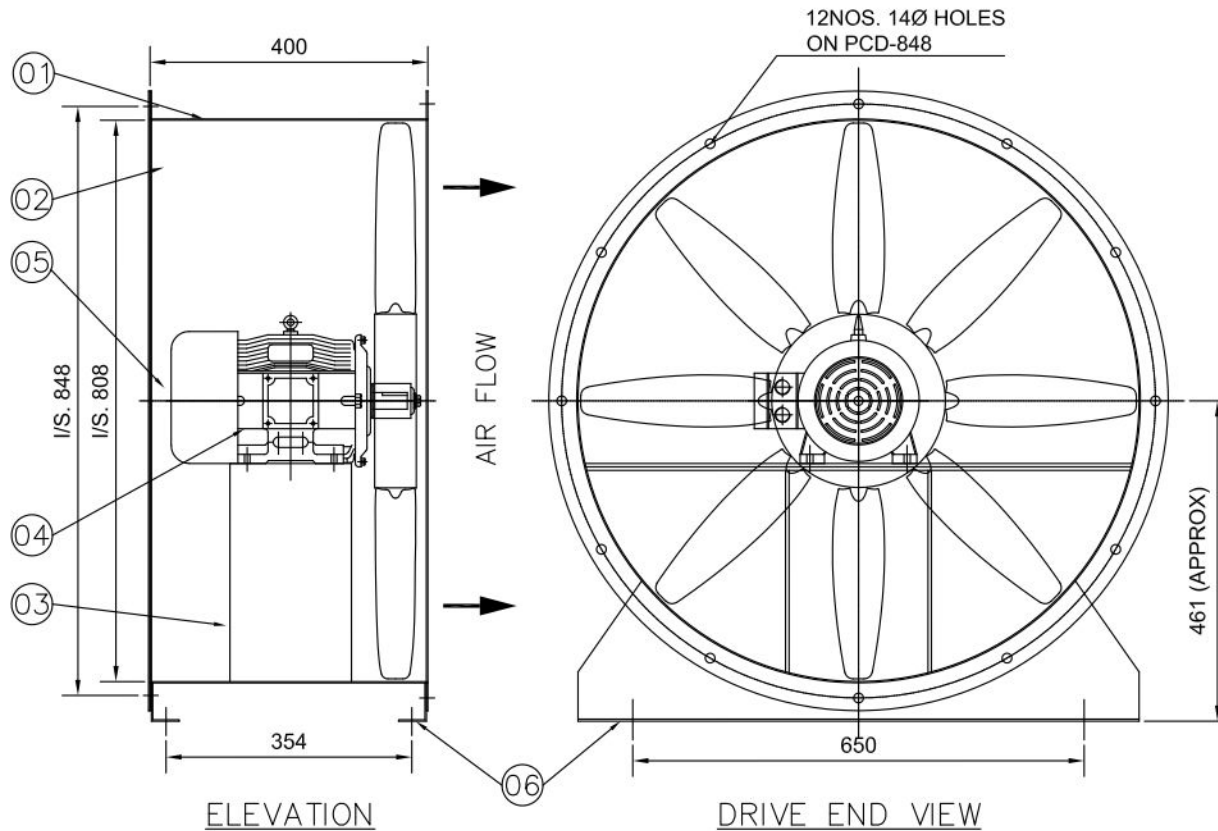
PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- TLJ-900

VOLUME OF AIR (CMH)	10000	FAN SPEED (RPM)	970
STATIC PRESSURE (MM. WG.)	20	FAN POWER (KW)	0.94





(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY

CLIENT-

PROJECT-3X200MW+3X500MW RAMAGUNDAM
STPP(FGD SYSTEM PACKAGE)



GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN ARR. IV

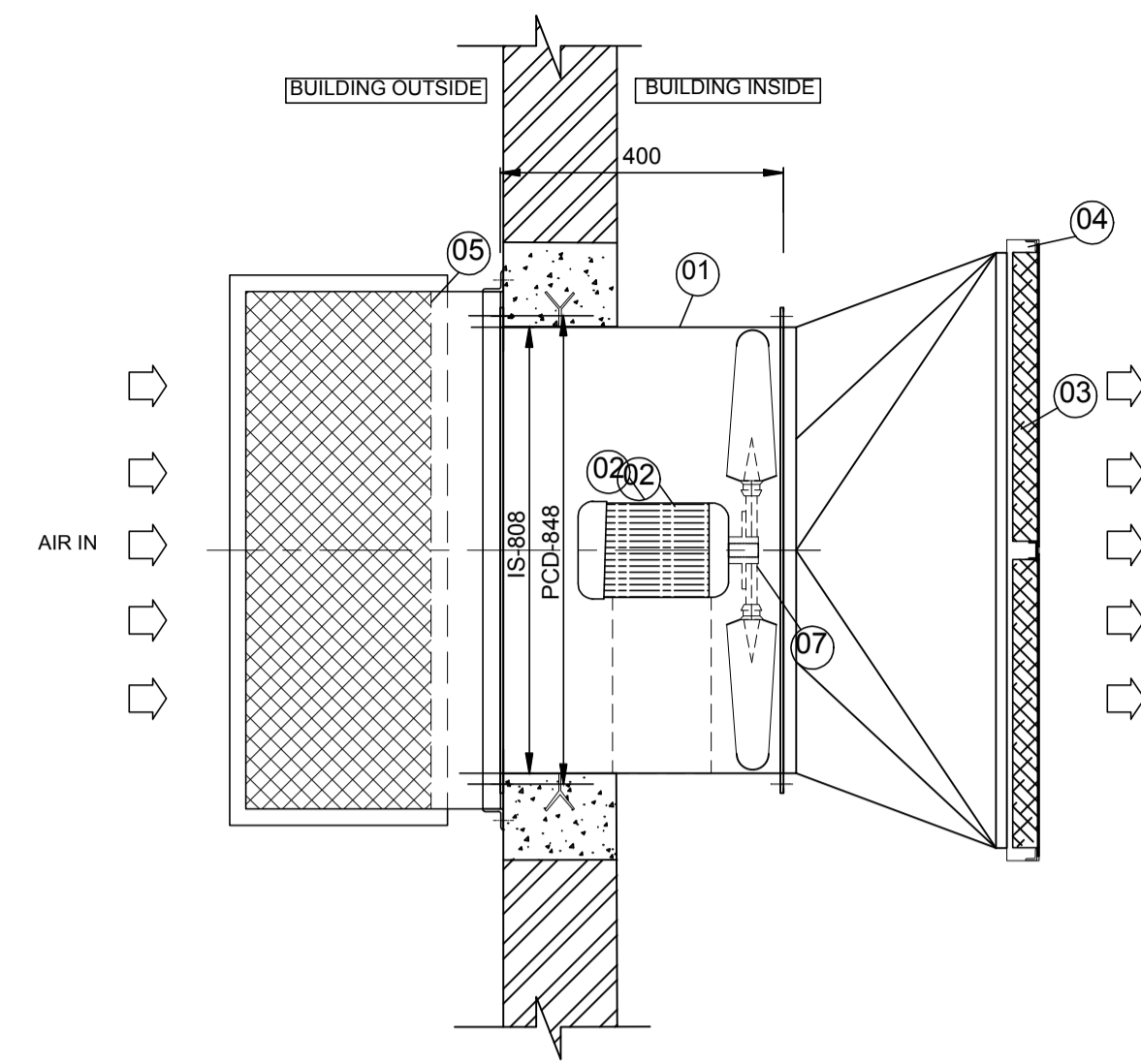
DRAWN	S.NASKAR	DRAWING NO.	JOB NO.
CHECKED	P.DAS	NO.	SCALE NTS
APPROVED		SIWL-656/08	REV 0
DATE	29/08/2022		

TECHNICAL DATA OF FAN

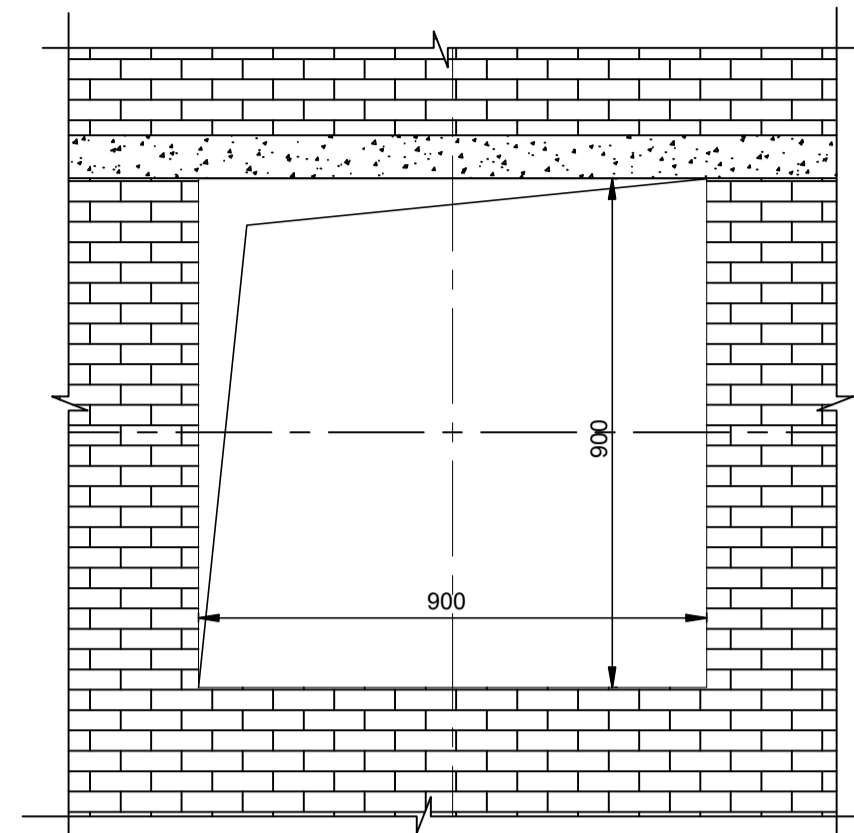
08	TUBE AXIAL FAN	TLJ-800	SIWENT	24	7500	20	970	0.74
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

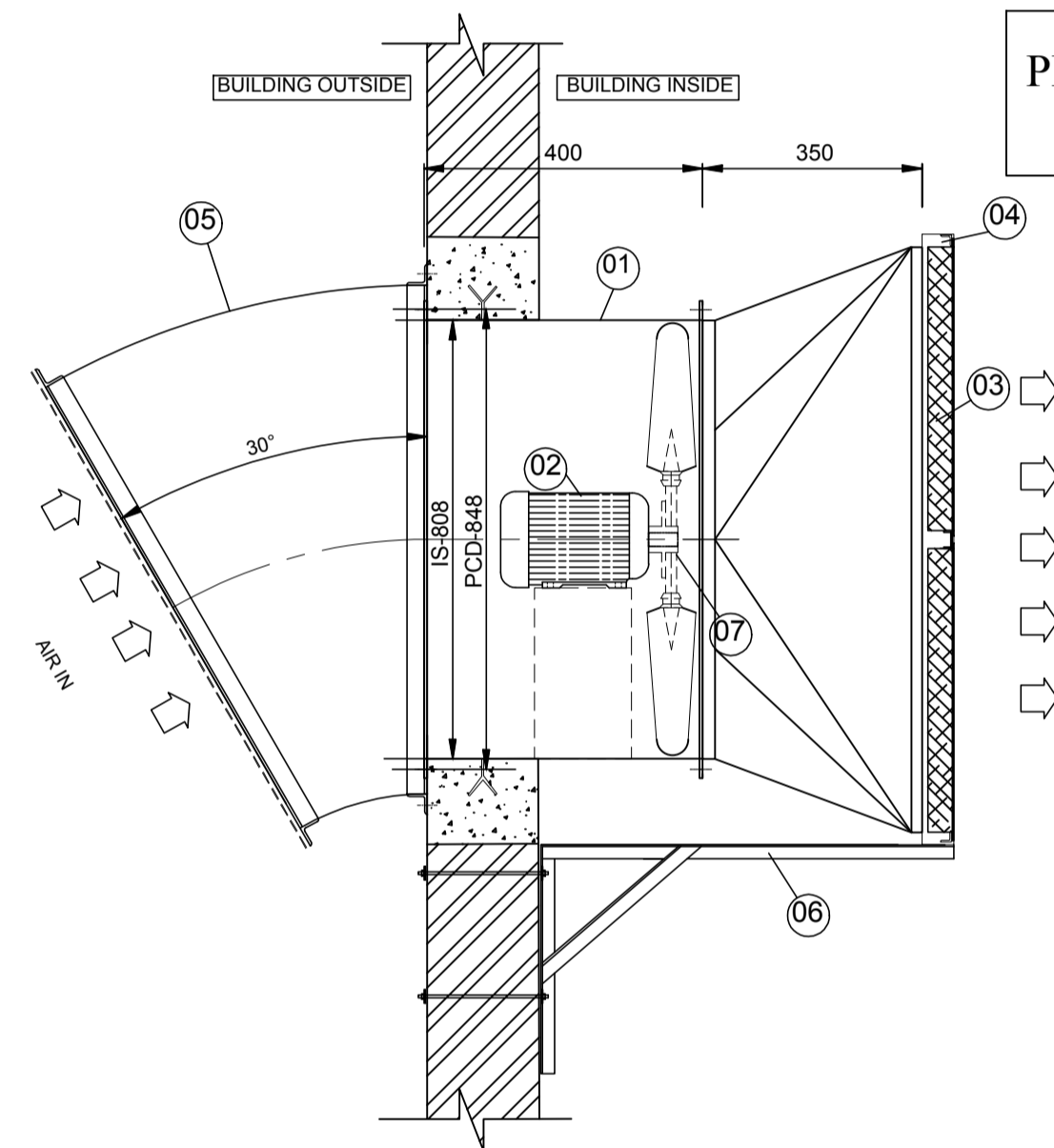
1.1/6	415V, 3PH. 50 HZ. AC SUPPLY	90L	1000
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	FLY SPEED RPM



TOP VIEW

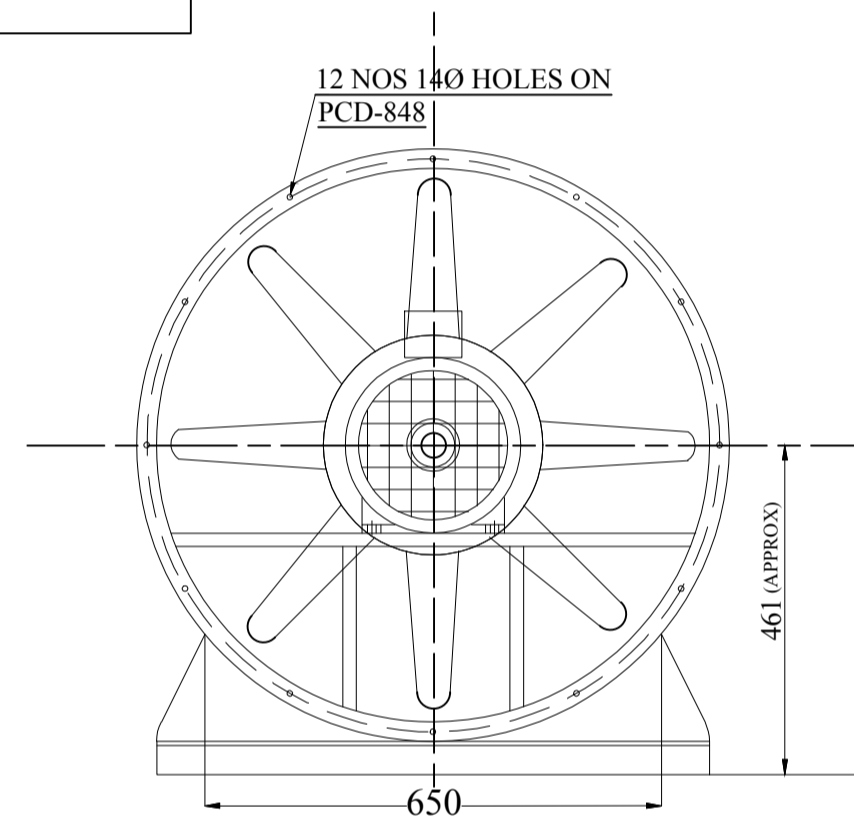


WALL OPENING DETAILS



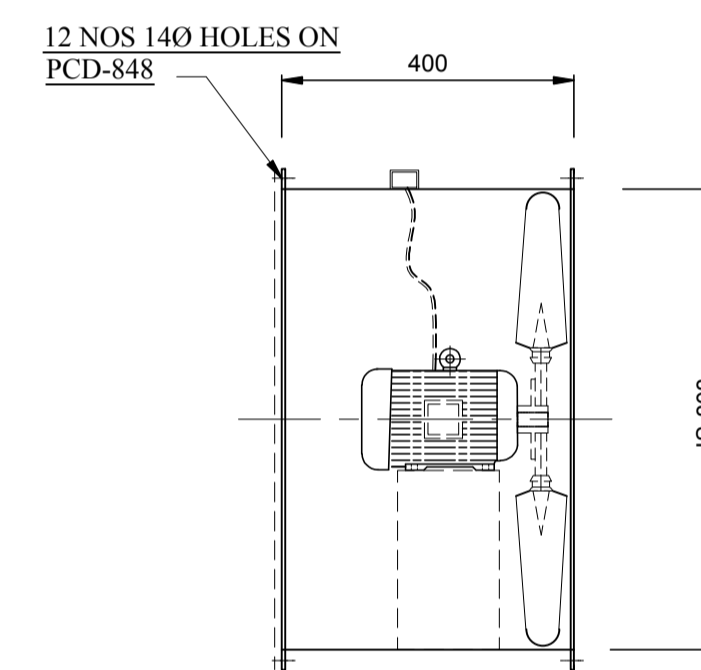
SIDE ELEVATION

PRE-FILTER SIZE	610X610X50
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DRIVE END VIEW

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)



FAN ASSEMBLY

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	PRE-FILTER FLANGE TYPE	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	TLJ-800	SARALA	24	7500	20	970	0.74	1.1/6	415V,3PH,50HZ AC Supply	90L	1000

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, Jpg NTPC LIMITED
EPC CONTRACTOR:	BHEL, Blue.png BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	DRN	SIGN	DATE
		KJ	KJ	01-02-2023
		CHD	AD	01-02-2023
		APPD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE	NTS	DEPT.	SIGN
BHEL DRG. No. - PE-V0-467-571-A211		SHEET 01 OF 01 REV. 00	



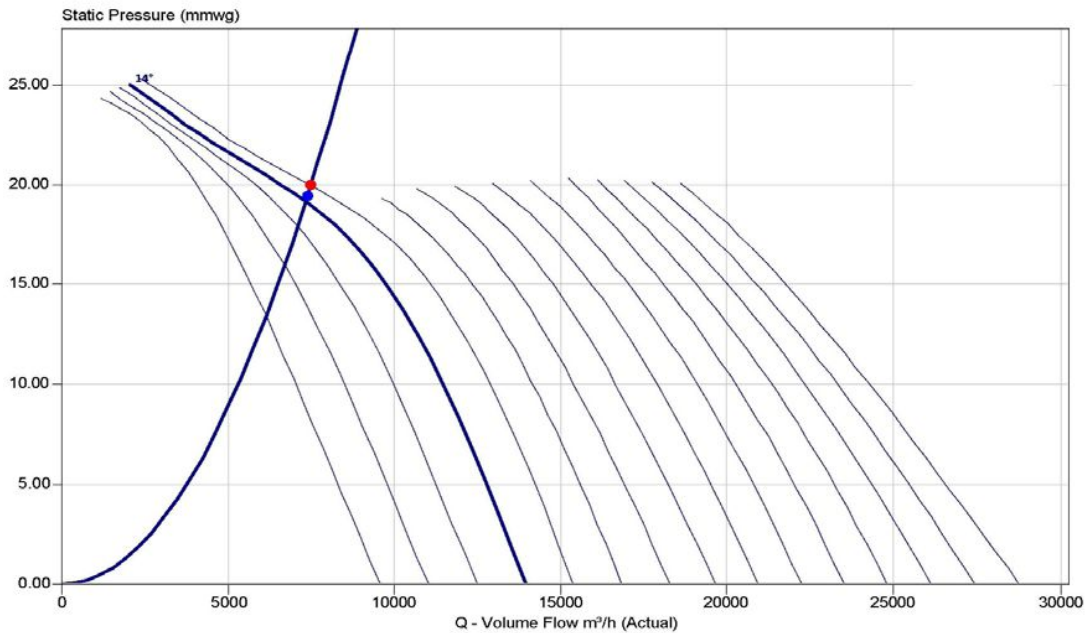
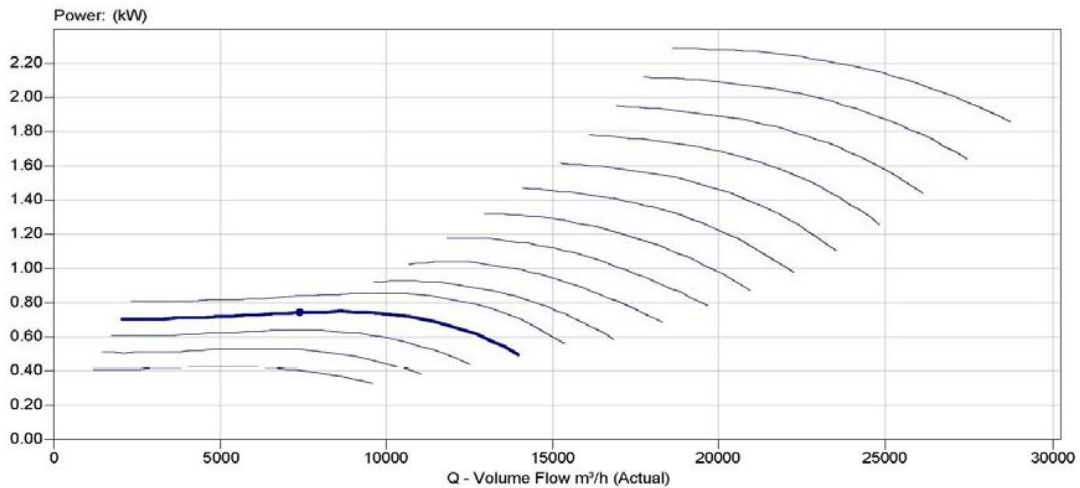
CLIENT'S NAME :

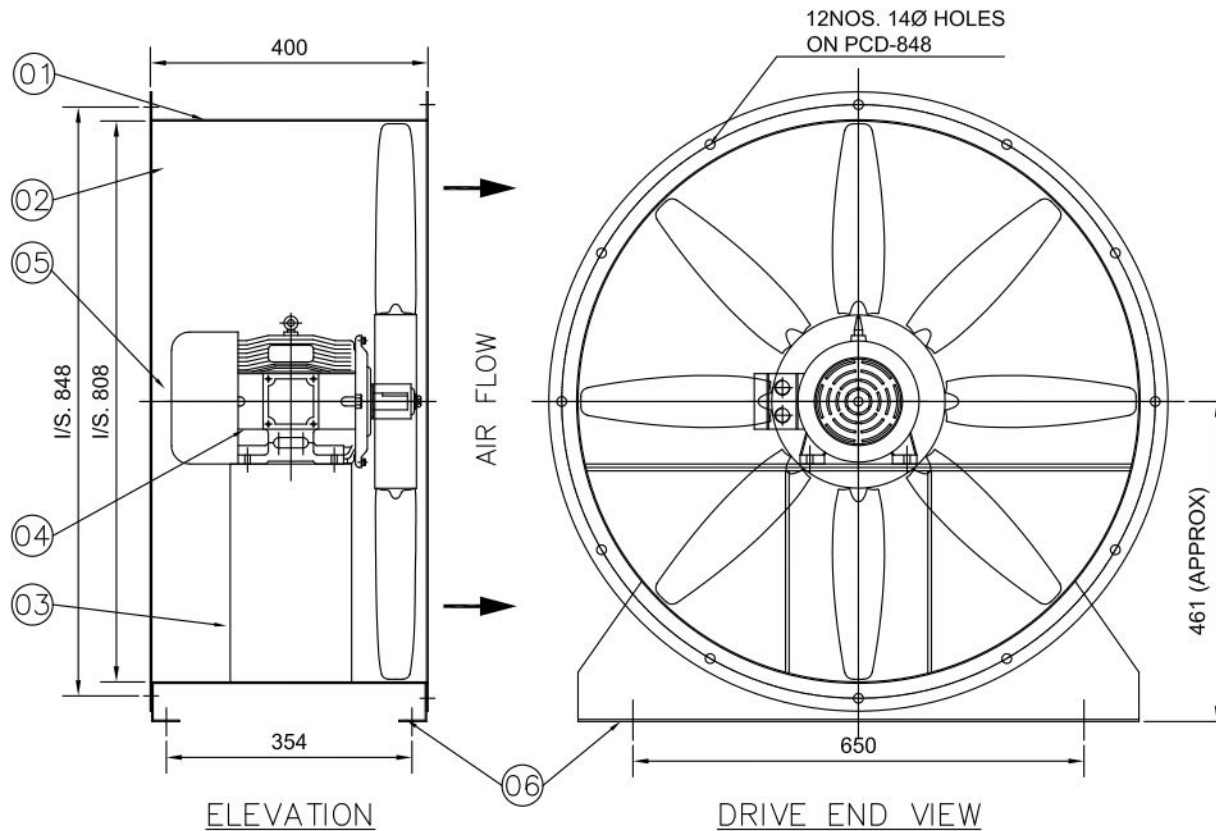
PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- TLJ-800

VOLUME OF AIR (CMH)	7500	FAN SPEED (RPM)	970
STATIC PRESSURE (MM. WG.)	20	FAN POWER (KW)	0.74





(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER.

06. MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05. IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04. MOTOR	1 NO.		AS MENTION
03. MOTOR BASE	1 NO.	MS	IS: 1079/2062
02. IMPELLER	1 NO.	CAST AL	LM-6
01. FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL. REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
------	------	-------------------------	----

CLIENT-

PROJECT-3X200MW+3X500MW RAMAGUNDAM
STPP(FGD SYSTEM PACKAGE)



SUBURBAN INDUSTRIAL WORKS PVT. LTD.
KOLKATA , INDIA

GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN
ARR. IV

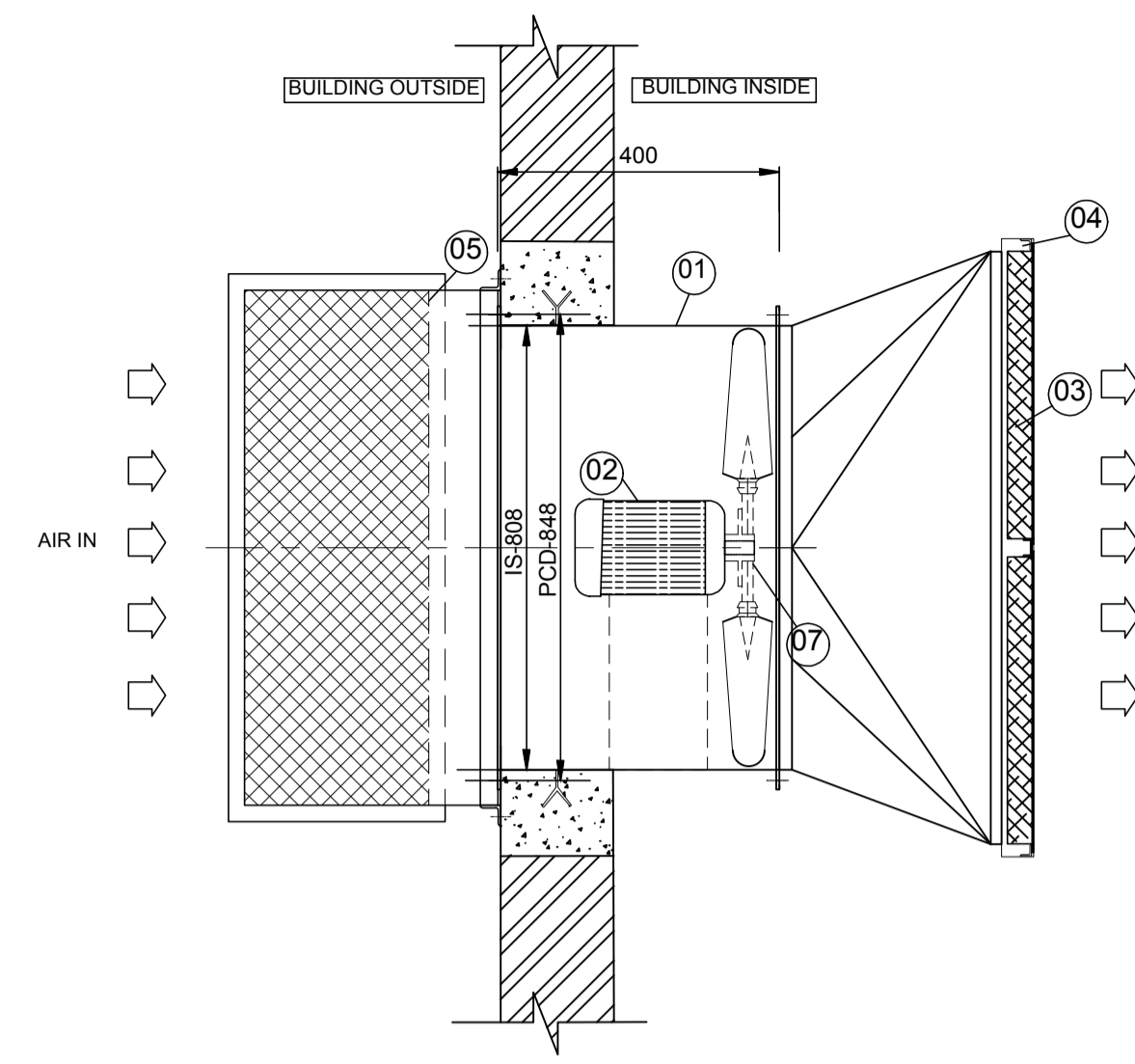
DRAWN	S.NASKAR	DRAWING NO.	JOB NO.
CHECKED	P.DAS	NO.	SCALE NTS
APPROVED		SIWL-656/09	REV 0
DATE	29/08/2022		

TECHNICAL DATA OF FAN

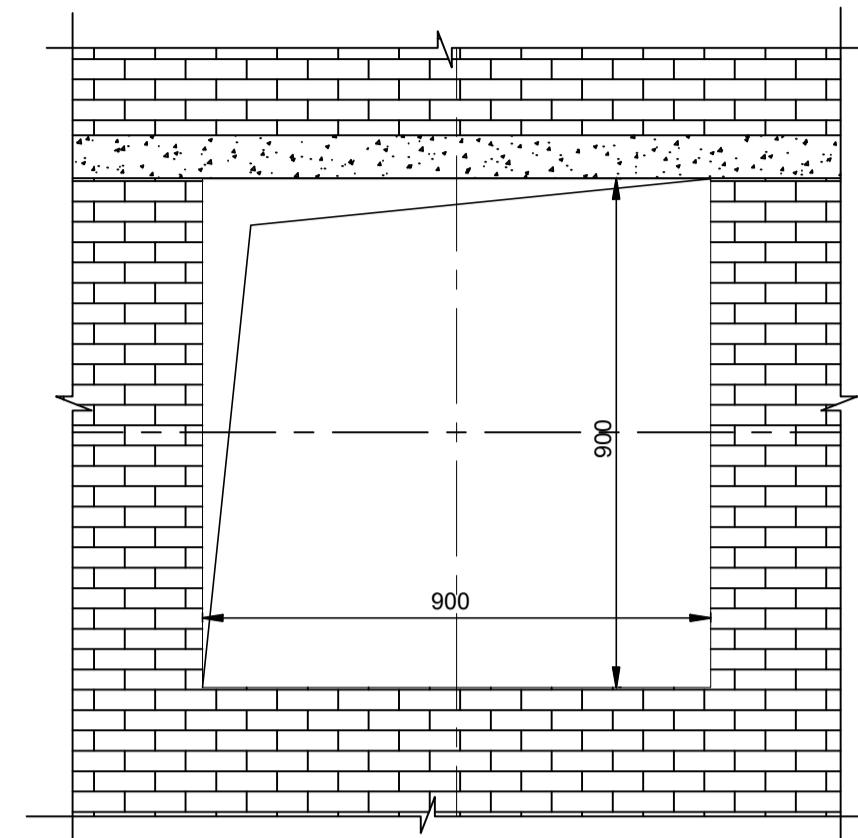
09	TUBE AXIAL FAN	TLJ-800	SIWENT	16	6000	20	970	0.63
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

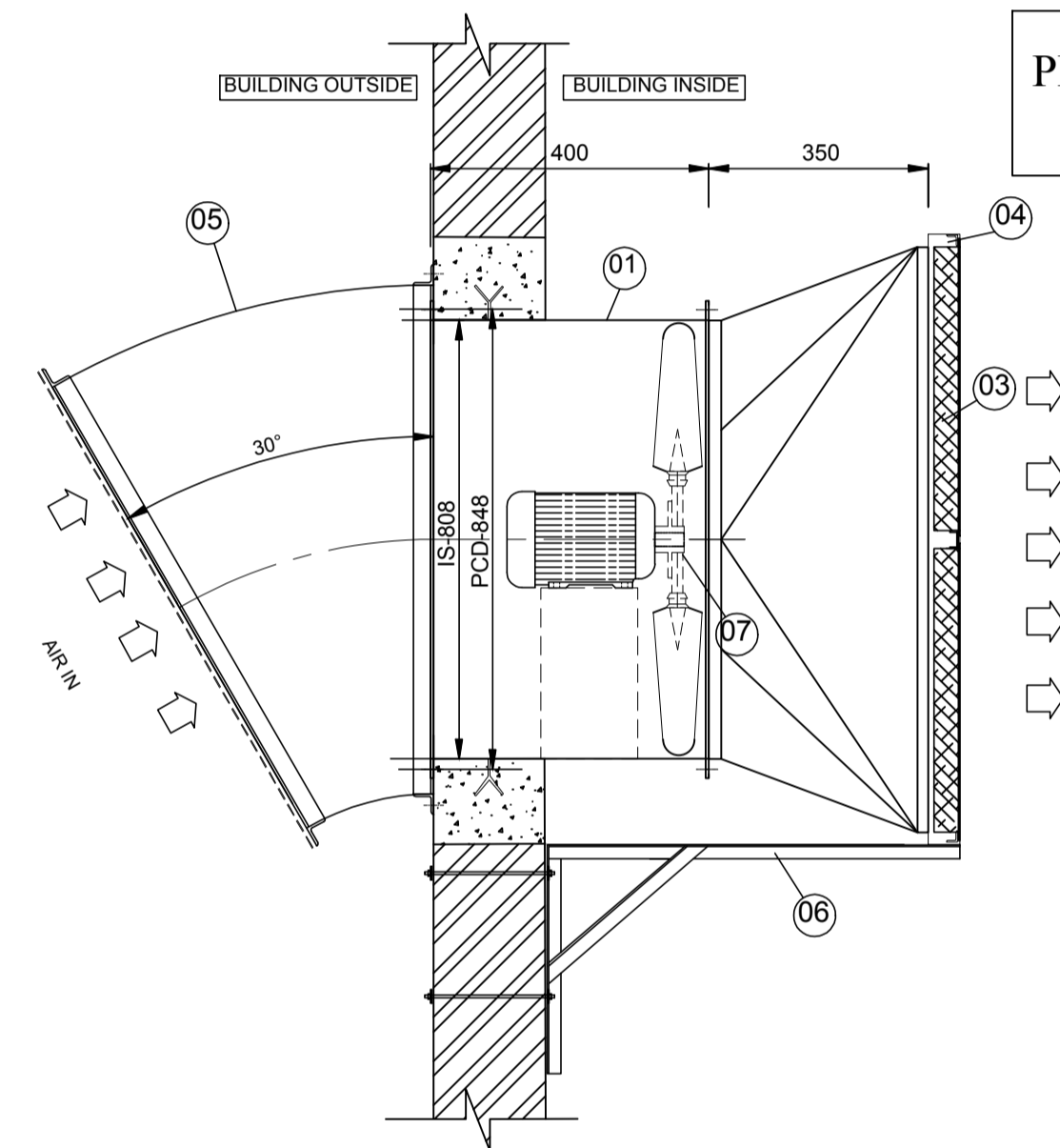
1.1/6	415V, 3PH. 50 HZ. AC SUPPLY	90L	1000
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	SPD SPEED RPM



TOP VIEW

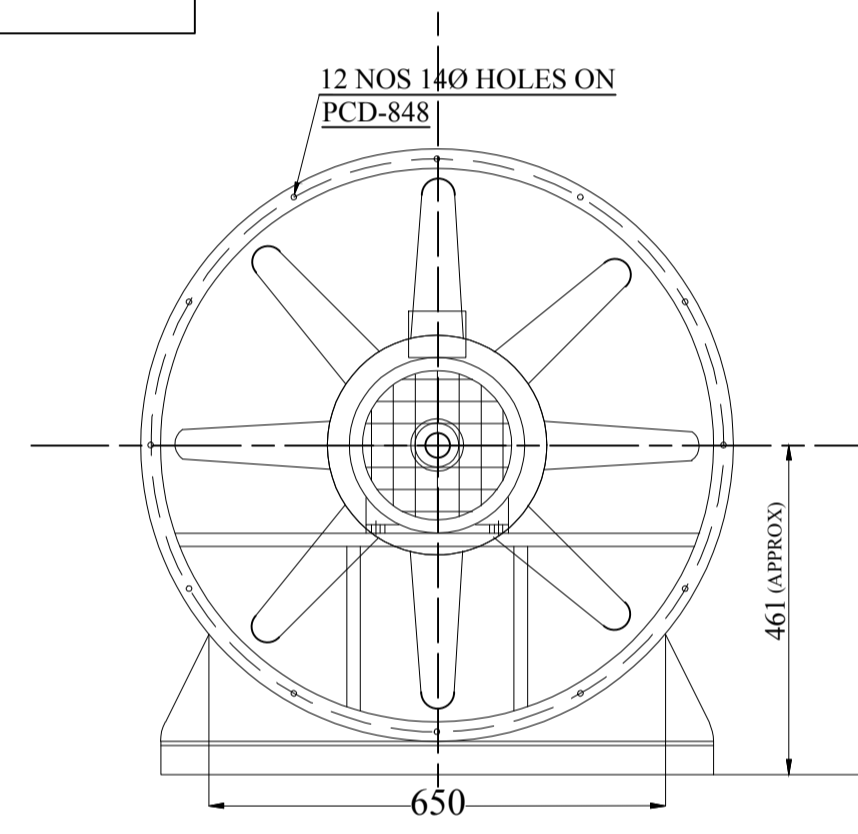


WALL OPENING DETAILS



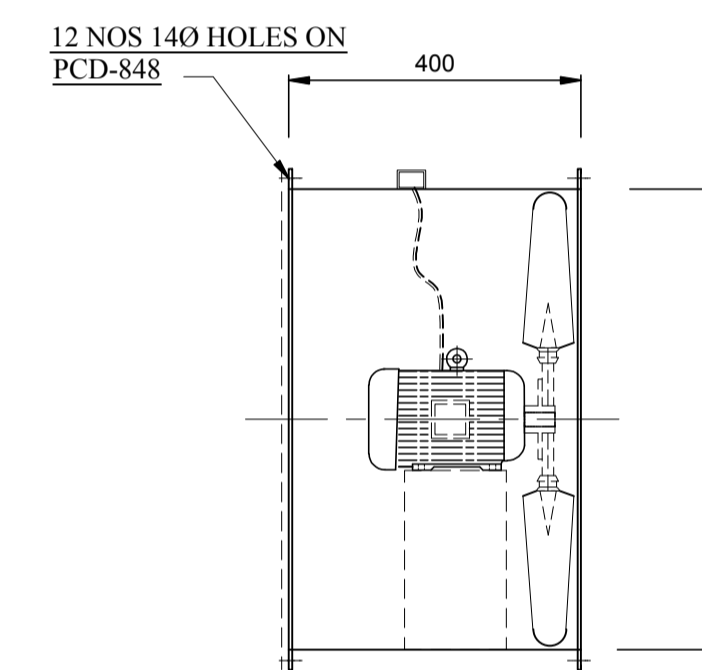
SIDE ELEVATION

PRE-FILTER SIZE	610X610X50
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DRIVE END VIEW

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)



FAN ASSEMBLY

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	PRE-FILTER FLANGE TYPE	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	TLJ-800	SARALA	24	6000	20	970	0.63	1.1/6	415V,3PH,50HZ AC Supply	90L	1000

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, Jpg NTPC LIMITED
EPC CONTRACTOR:	BHEL, Blue.png BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	DRN	SIGN	DATE
		KJ	KJ	01-02-2023
		CHD	AD	01-02-2023
		APPD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE	NTS	DEPT.	SIGN
BHEL DRG. No. - PE-V0-467-571-A211		SHEET 01 OF 01 REV. 00	



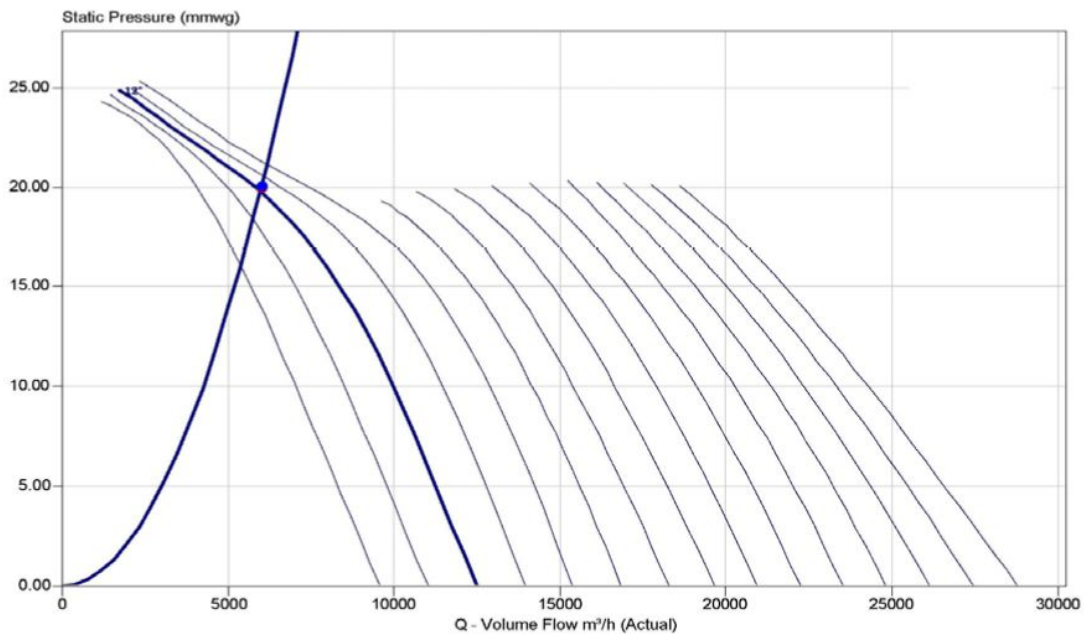
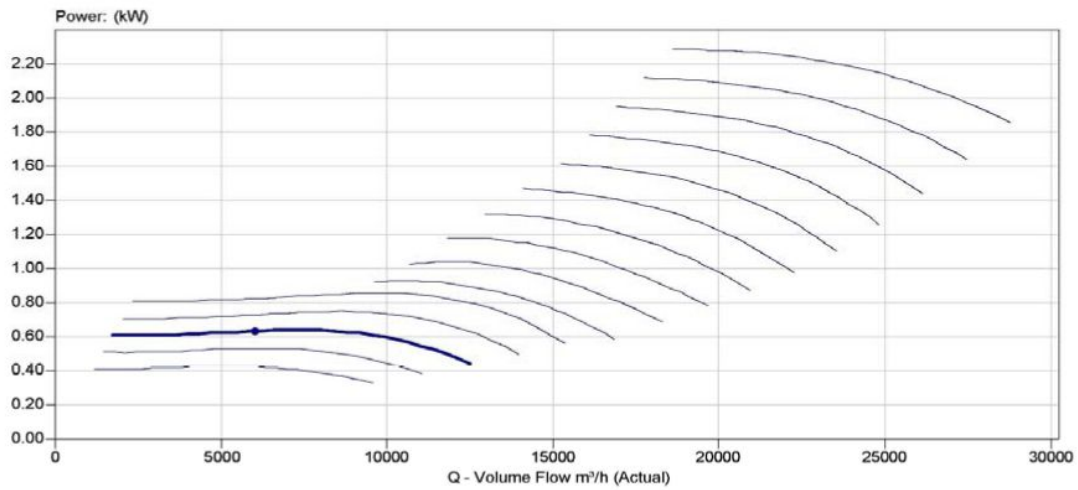
CLIENT'S NAME :

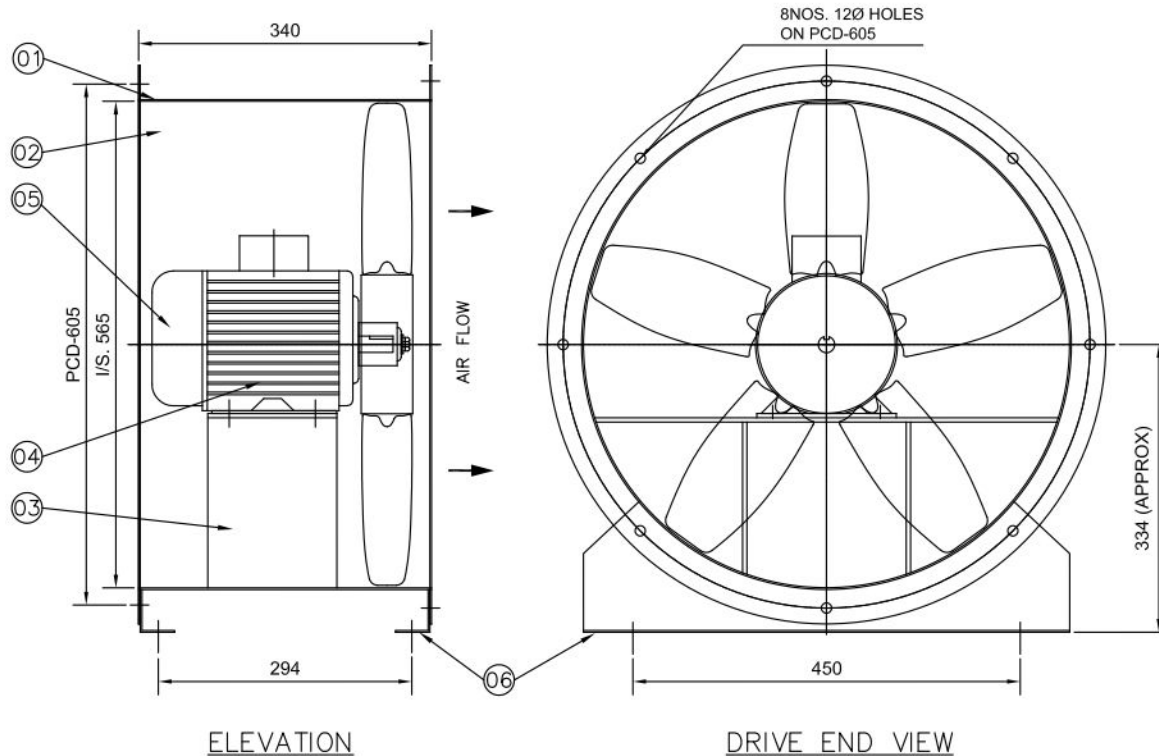
PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- TLJ-800

VOLUME OF AIR (CMH)	6000	FAN SPEED (RPM)	970
STATIC PRESSURE (MM. WG.)	20	FAN POWER (KW)	0.63





(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
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CLIENT-

PROJECT-3X200MW+3X500MW
RAMAGUNDAM STPP
(FGD SYSTEM PACKAGE)



SUBURBAN INDUSTRIAL WORKS PVT. LTD.
KOLKATA , INDIA

GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN ARR. IV

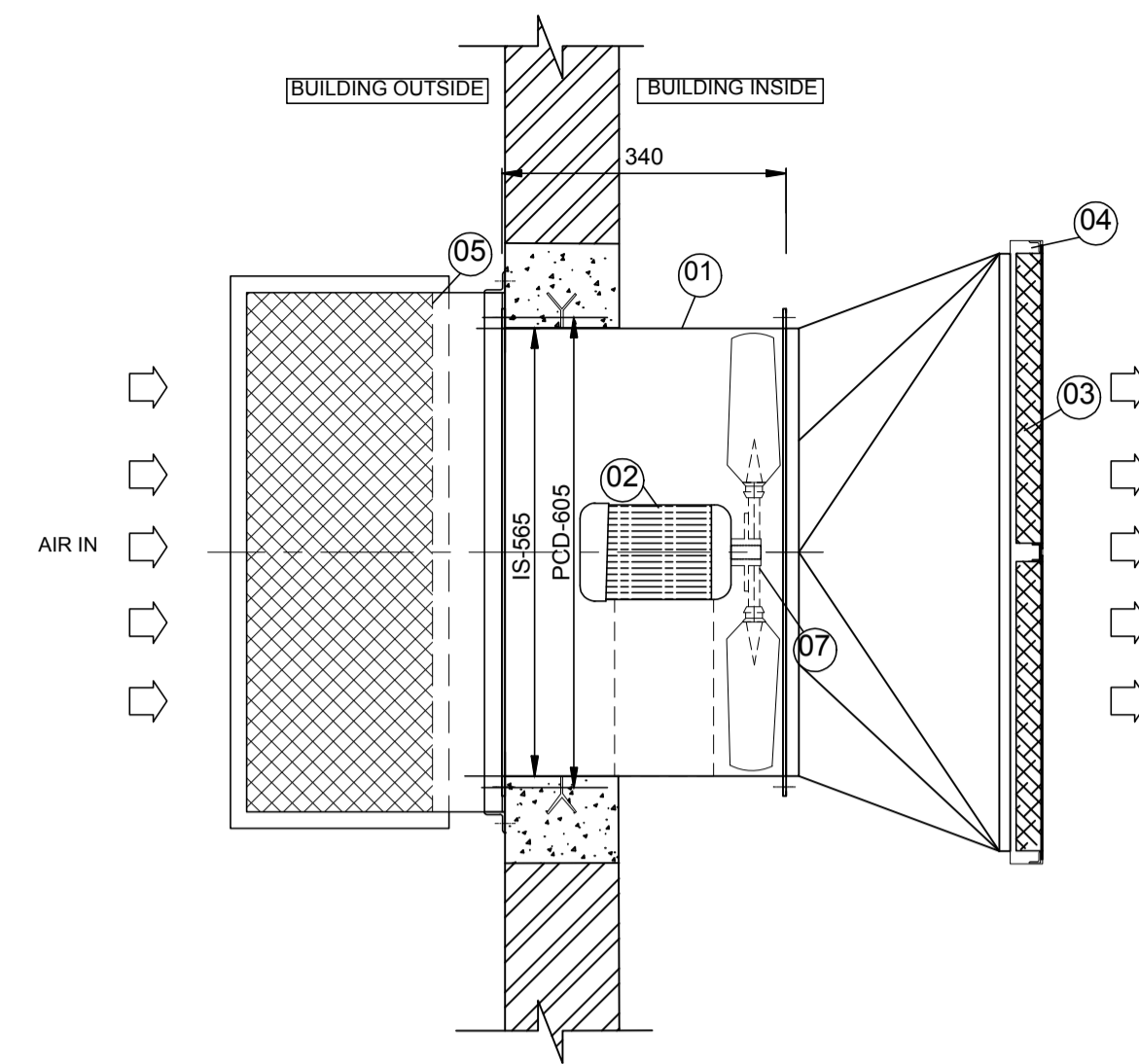
DRAWN	S.NASKAR	DRAWING NO.	JOB NO.
CHECKED	P.DAS		SCALE NTS
APPROVED			
DATE	29/08/2022	SIWL-656/10	REV 0

TECHNICAL DATA OF FAN

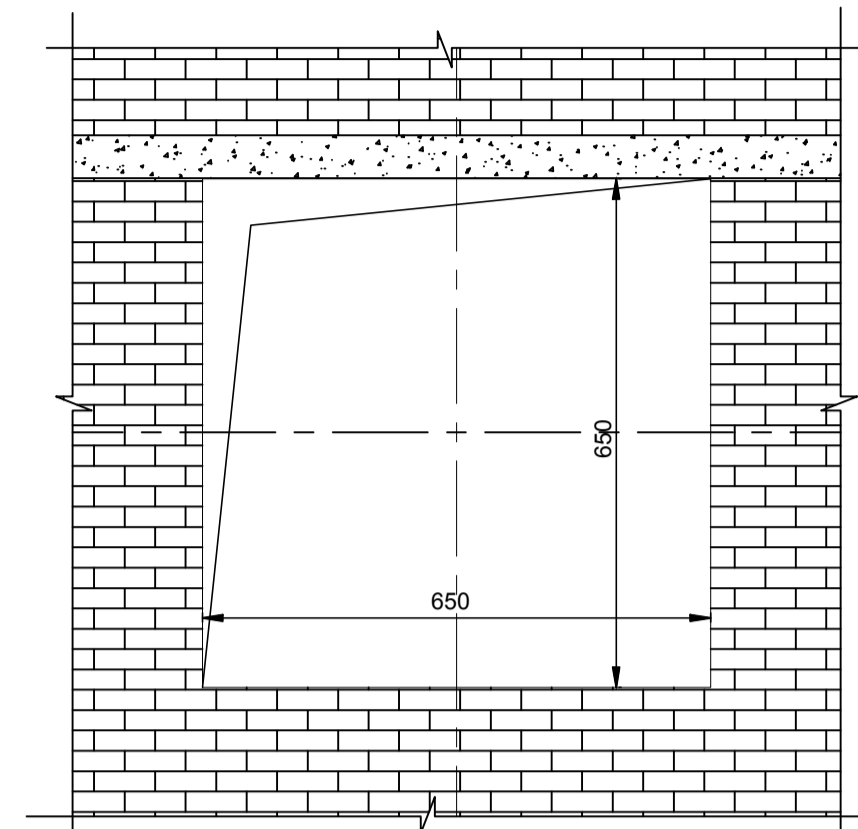
10	TUBE AXIAL FAN	TLJ-560	SIWENT	14	4000	20	1450	0.33
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

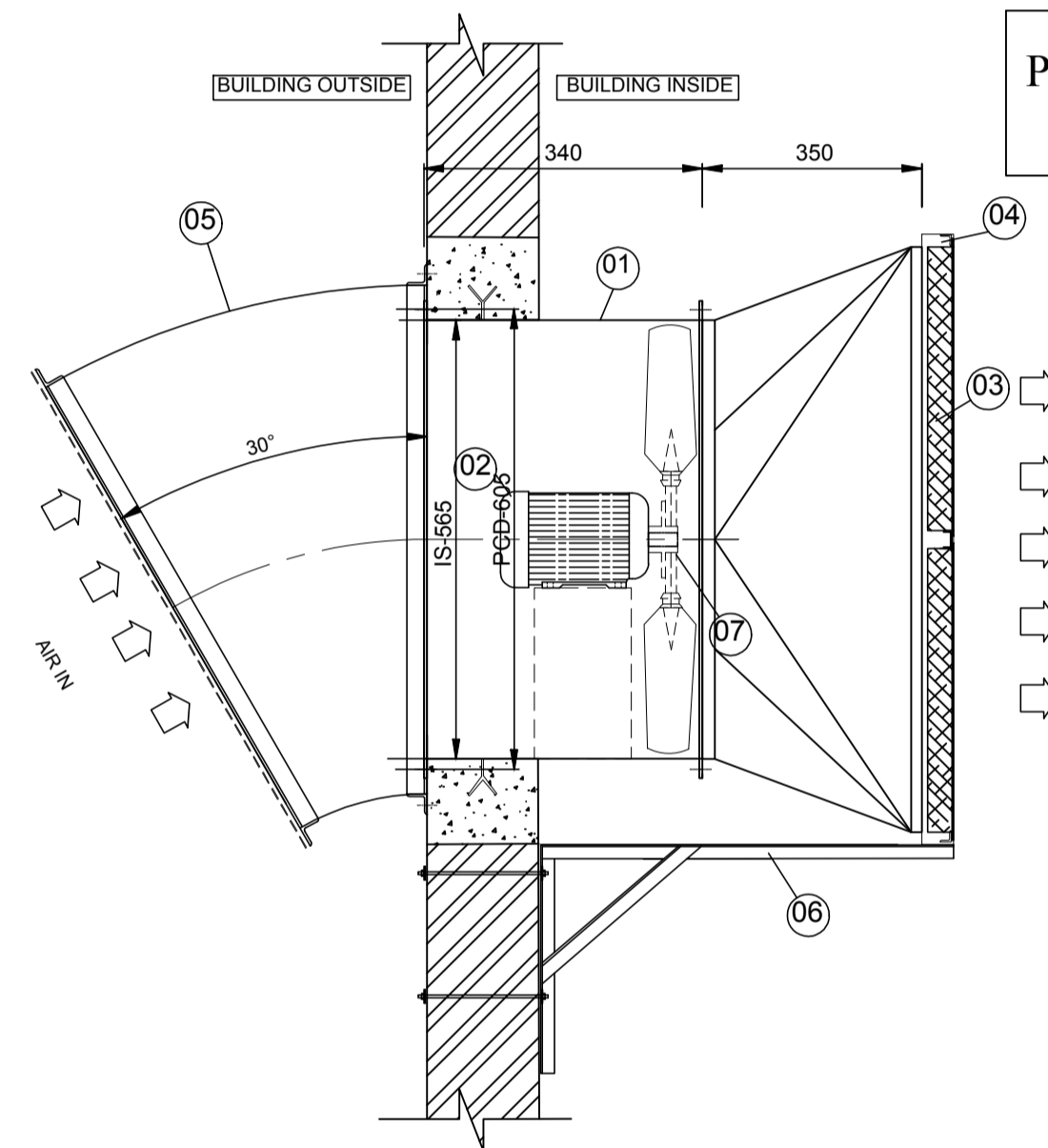
0.55/4	415V, 3PH. 50 HZ. AC SUPPLY	80	1500
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	SYN. SPEED RPM



TOP VIEW

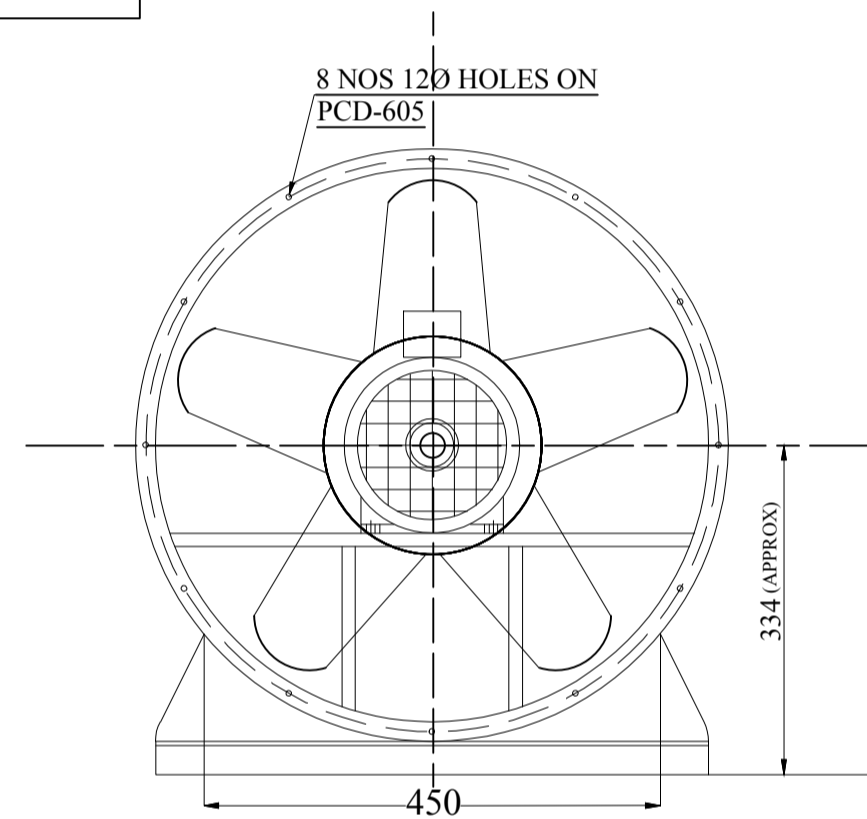


WALL OPENING DETAILS



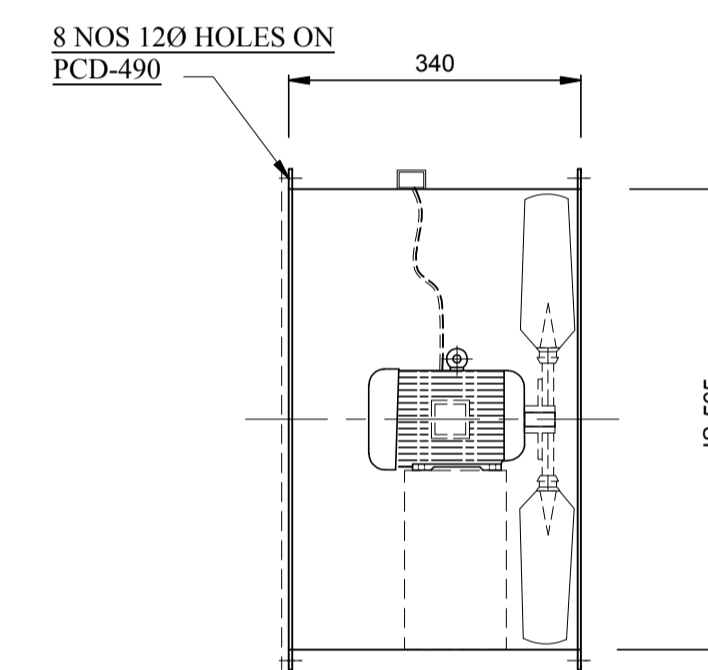
SIDE ELEVATION

PRE-FILTER SIZE	610X610X50
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DRIVE END VIEW

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)



FAN ASSEMBLY

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	PRE-FILTER FLANGE TYPE	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	TLJ-560	SARALA	16	4000	20	1450	0.33	0.55/4	415V,3PH,50HZ AC Supply	80	1000

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, Jpg NTPC LIMITED
EPC CONTRACTOR:	BHEL, Blue.png BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	DRN	SIGN	DATE
		KJ	KJ	01-02-2023
		KJ	KJ	01-02-2023
		AD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE	NTS	DEPT.	SIGN

BHEL DRG. No. - PE-V0-467-571-A211
 SHEET 01 OF 01 REV. 00



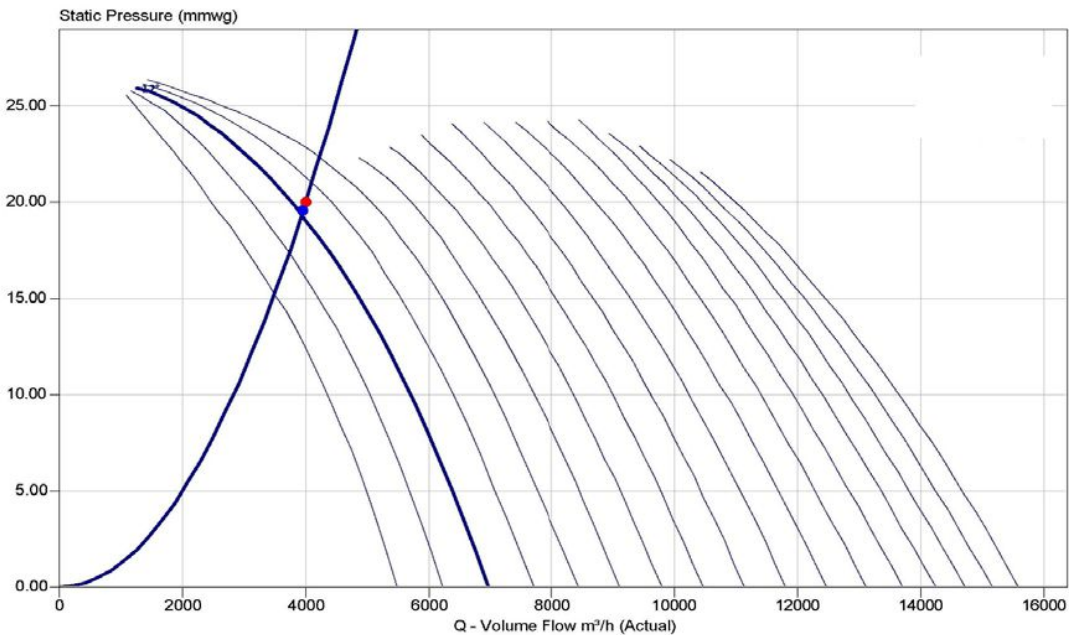
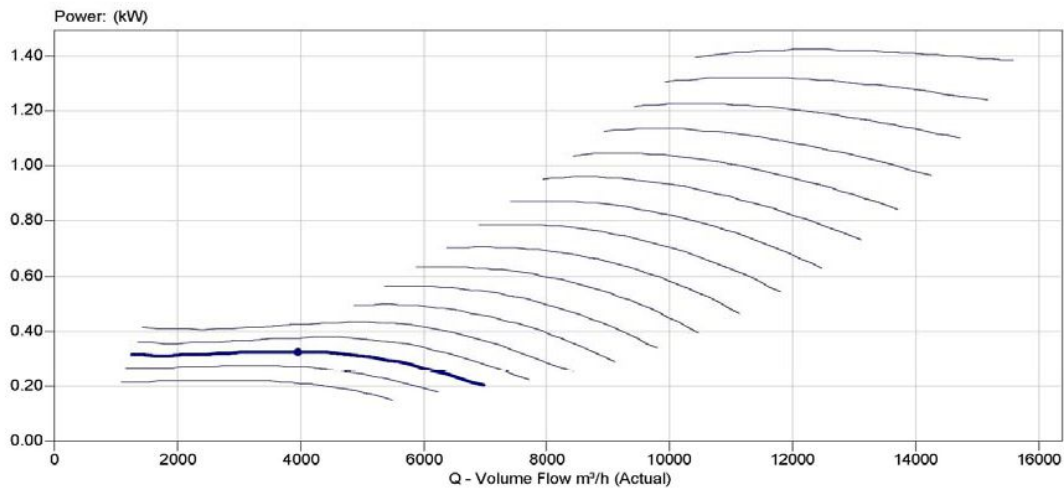
CLIENT'S NAME

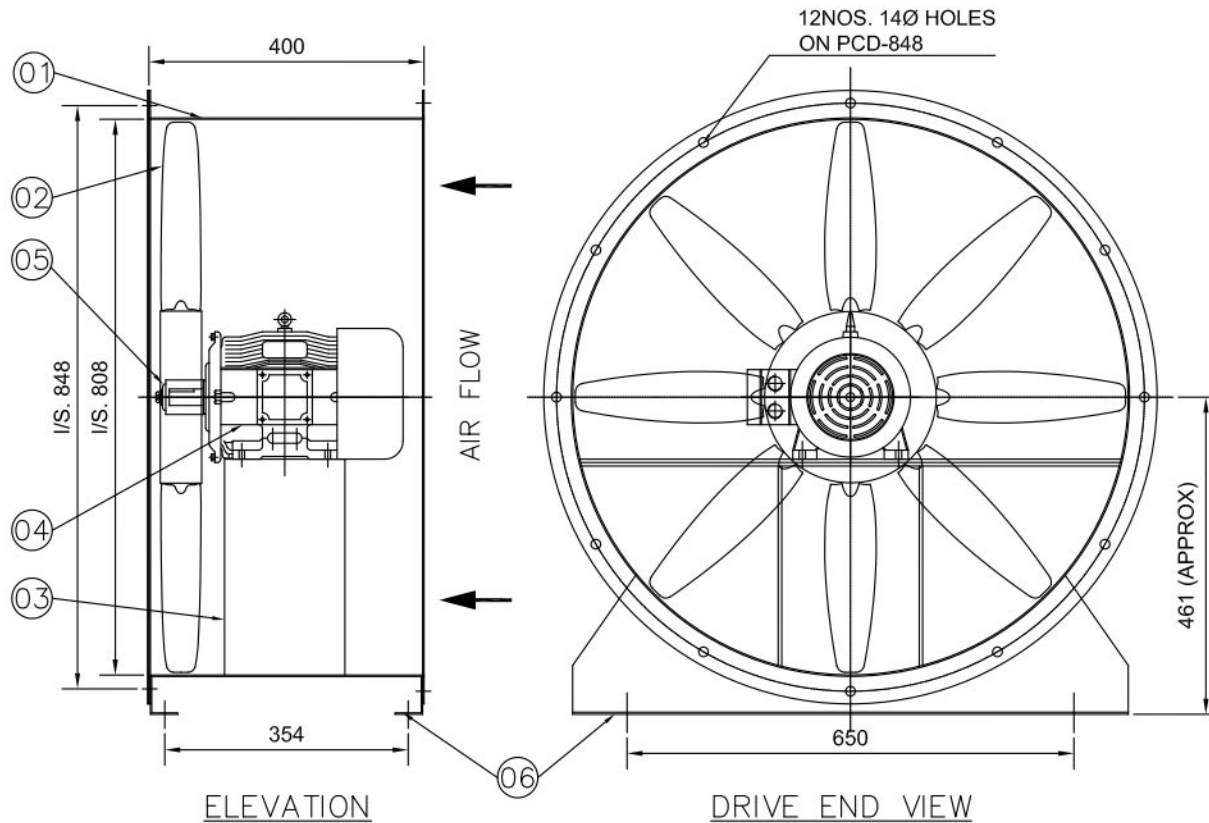
PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- TLJ-560

VOLUME OF AIR (CMH)	4000	FAN SPEED (RPM)	1450
STATIC PRESSURE (MM. WG.)	20	FAN POWER (KW)	0.33





(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
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CLIENT-

PROJECT-3X200MW+3X500MW RAMAGUNDAM
STPP(FGD SYSTEM PACKAGE)



SUBURBAN INDUSTRIAL WORKS PVT. LTD.
KOLKATA , INDIA

GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN ARR. IV

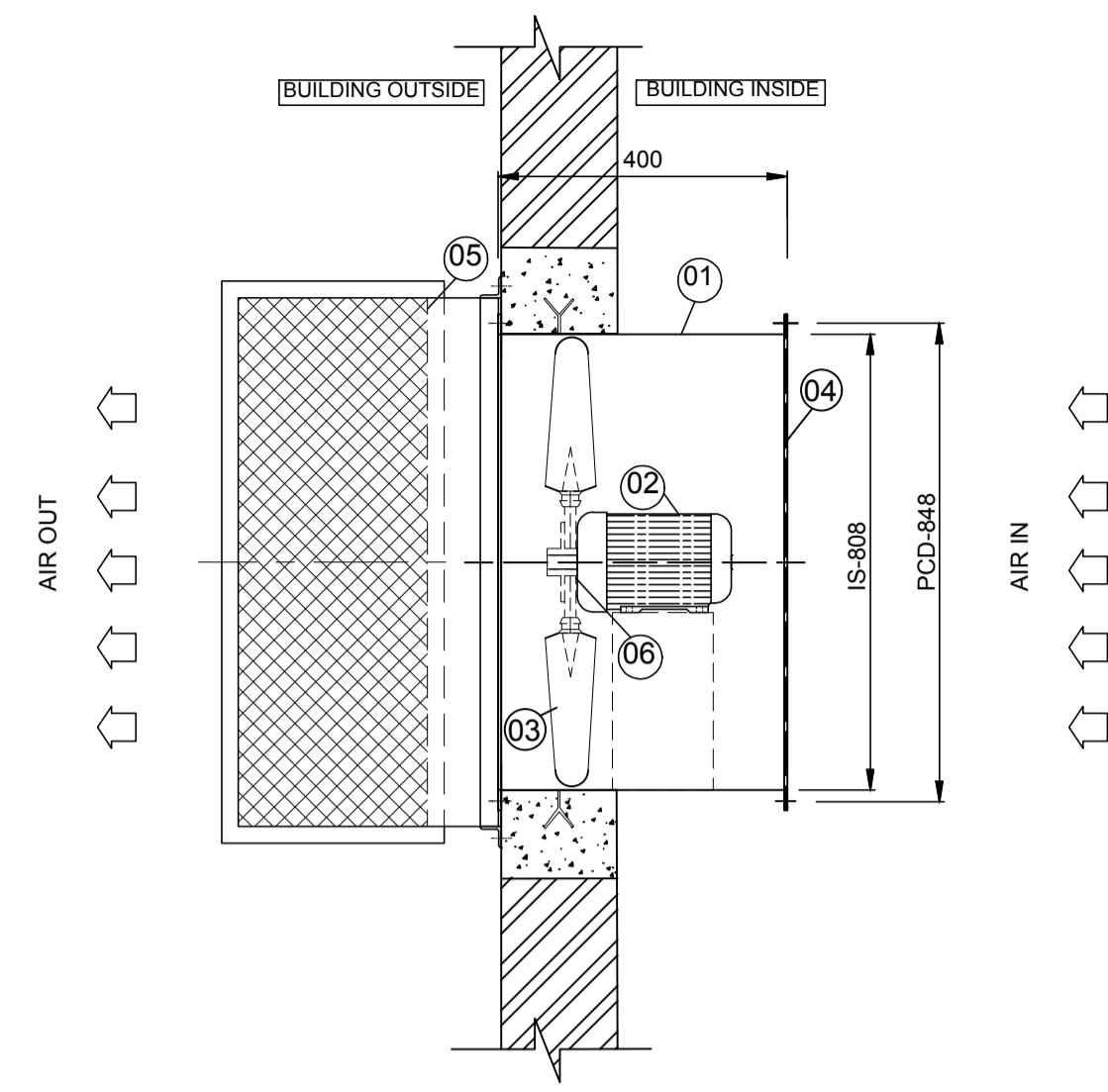
DRAWN	S.NASKAR	DRAWING NO.	JOB NO.	
CHECKED	P.DAS		SCALE	NTS
APPROVED		SIWL-656/15	REV	0
DATE	29/08/2022			

TECHNICAL DATA OF FAN

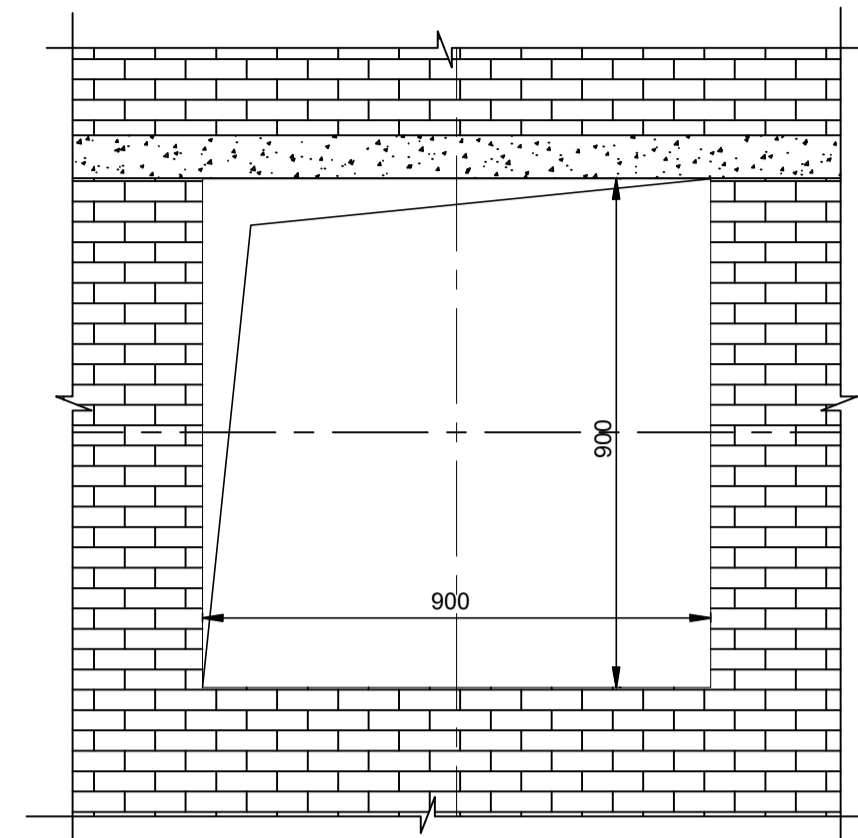
15	TUBE AXIAL FAN	TLJ-800	SIWENT	16	15000	10	970	0.86
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

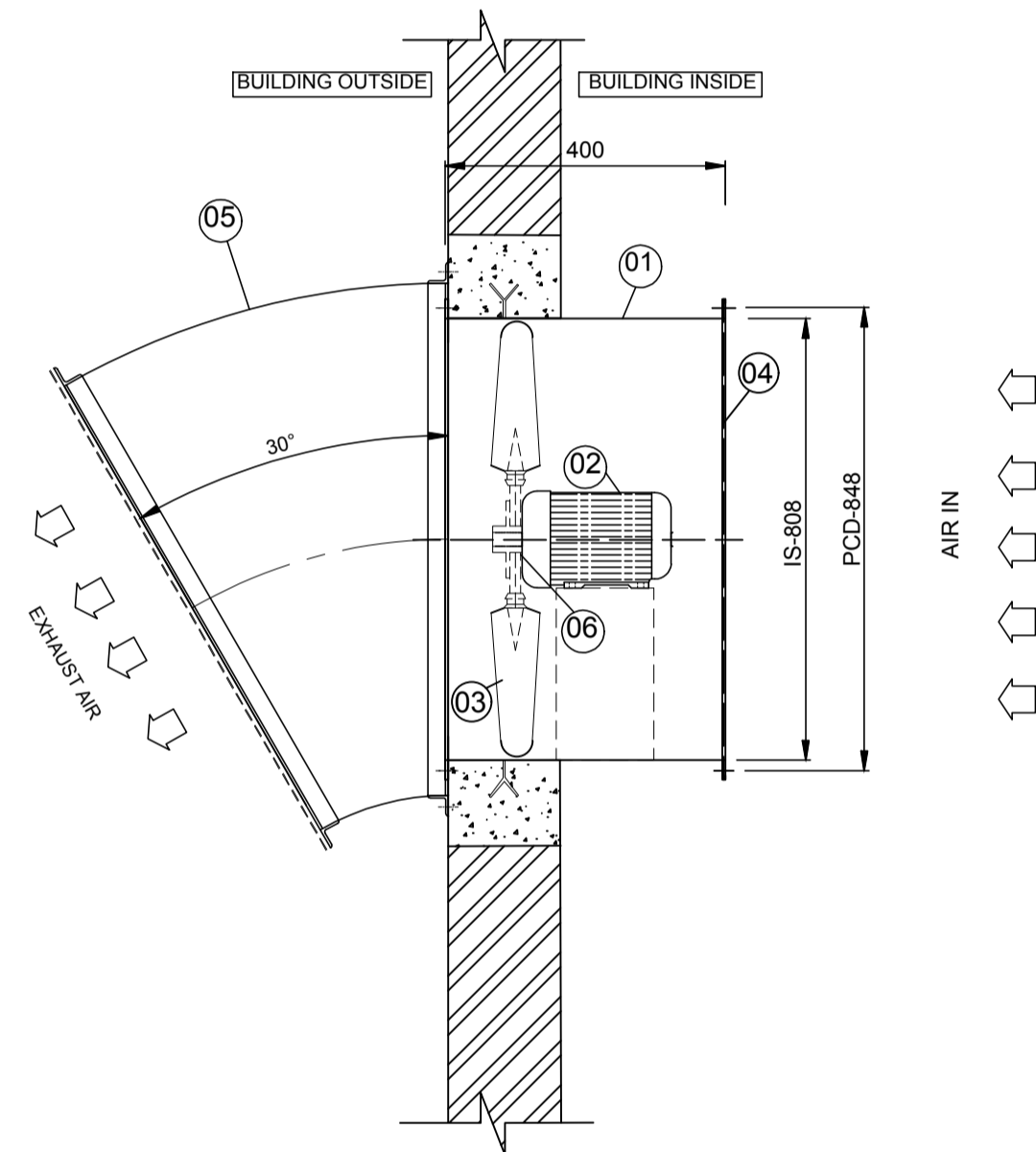
1.1/6	415V, 3PH. 50 HZ. AC SUPPLY	90L	1000
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	SPEED RPM



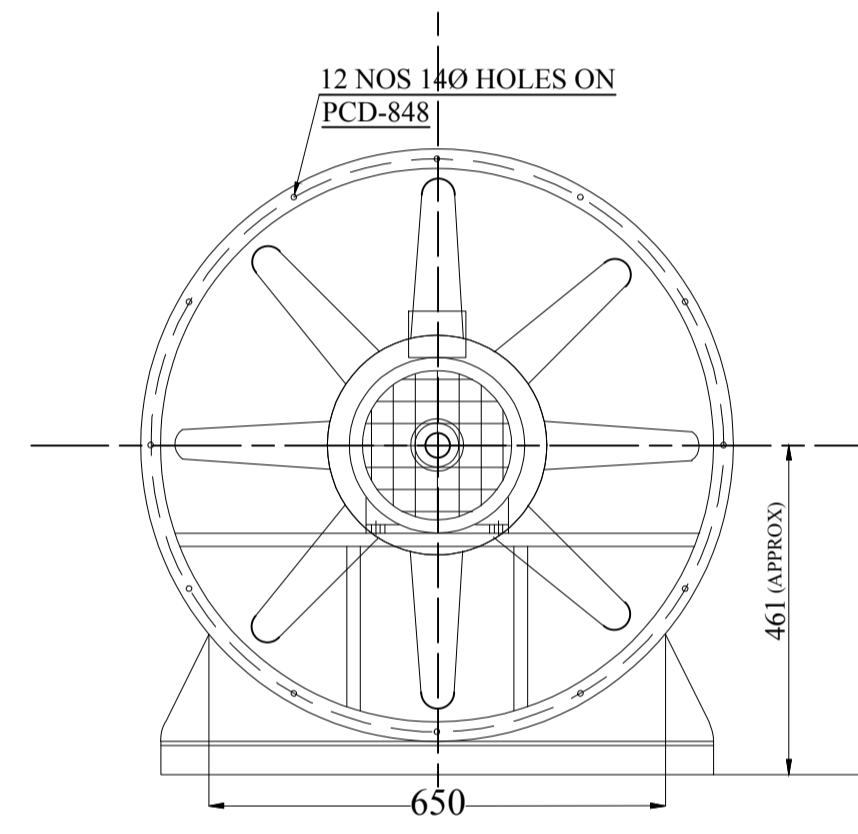
TOP VIEW



WALL OPENING DETAILS

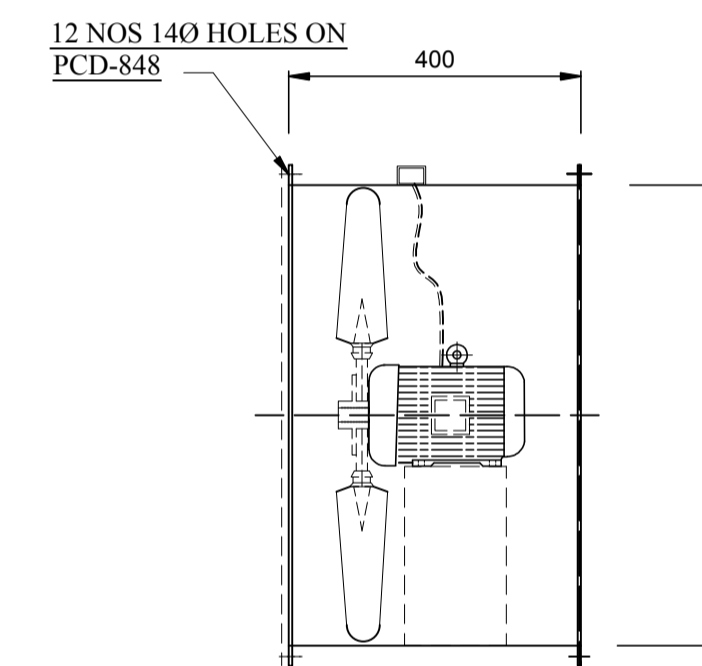


SIDE ELEVATION



DRIVE END VIEW

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)



FAN ASSEMBLY

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	EXHAUST AIR FAN	4	GI	--
4	FAN INLET BIRD MESH	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	IMPELLOR	1	CAST AL	LM-6

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	TLJ-800	SARALA	16	15000	10	970	0.86	1.1/6	415V,3PH,50HZ AC Supply	90L	1000

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, NTPC LIMITED
EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	NAME	SIGN	DATE	
		DRN	KJ	KJ	01-02-2023
		DESN	KJ	KJ	01-02-2023
		CHD	AD	AD	01-02-2023
		APPD	AD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE	NTS	DEPT.	SIGN
SHEET 01 OF 01		REV. 00	



SUBURBAN INDUSTRIAL WORKS PVT. LTD.

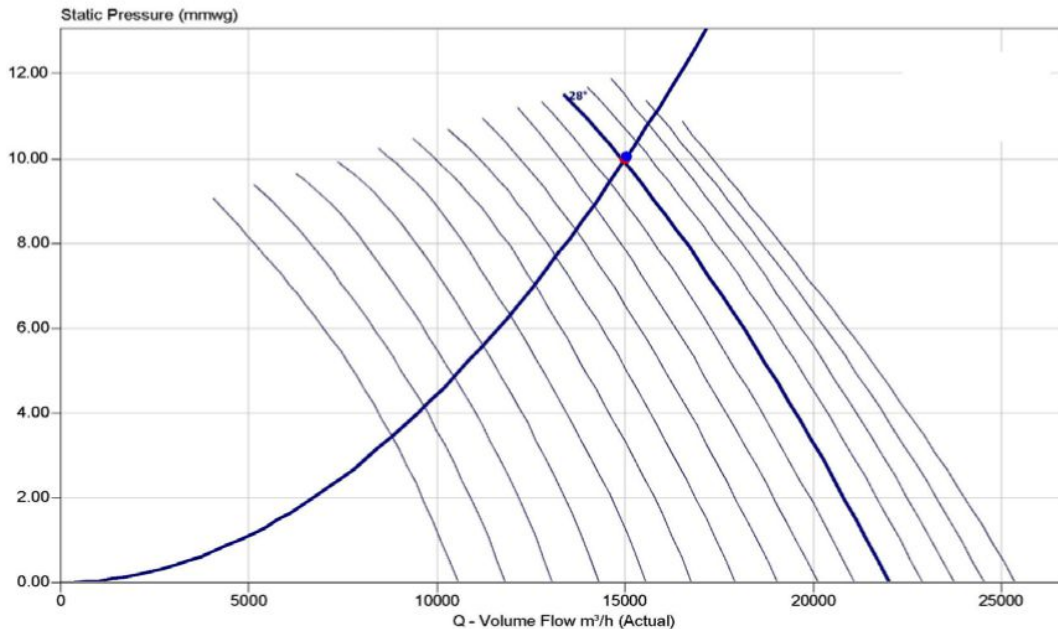
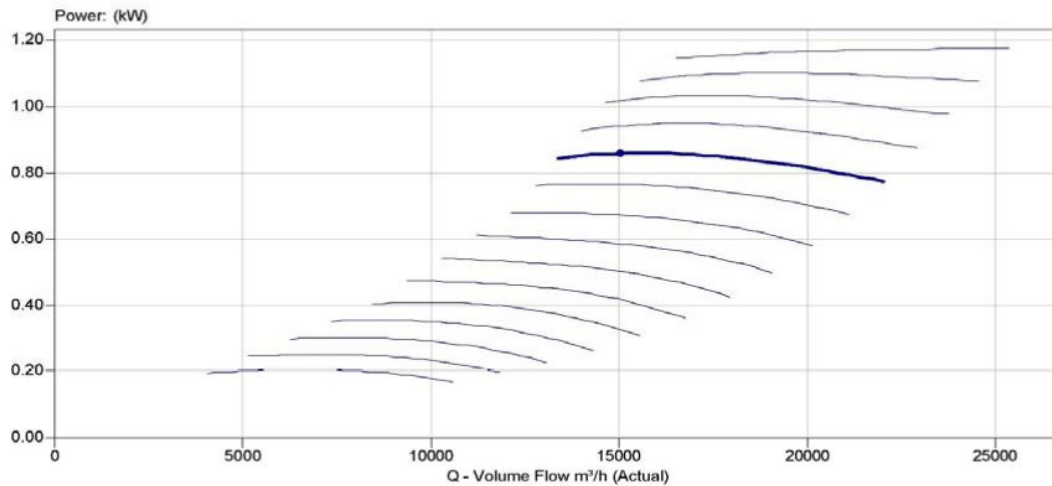
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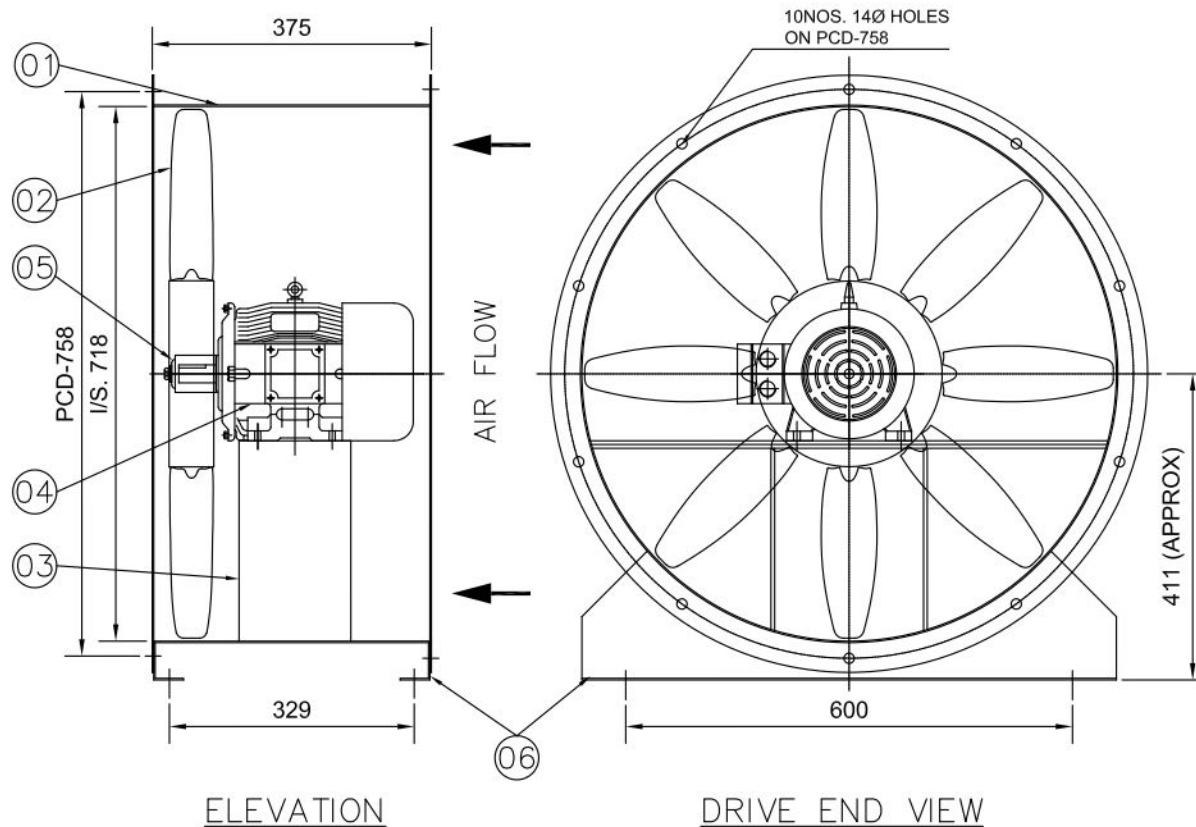
PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- TLJ-800

VOLUME OF AIR (CMH)	15000	FAN SPEED (RPM)	970
STATIC PRESSURE (MM. WG.)	10	FAN POWER (KW)	0.86





(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
------	------	-------------------------	----

CLIENT-

PROJECT-3X200MW+3X500MW RAMAGUNDAM
STPP(FGD SYSTEM PACKAGE)



GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN
ARR. IV

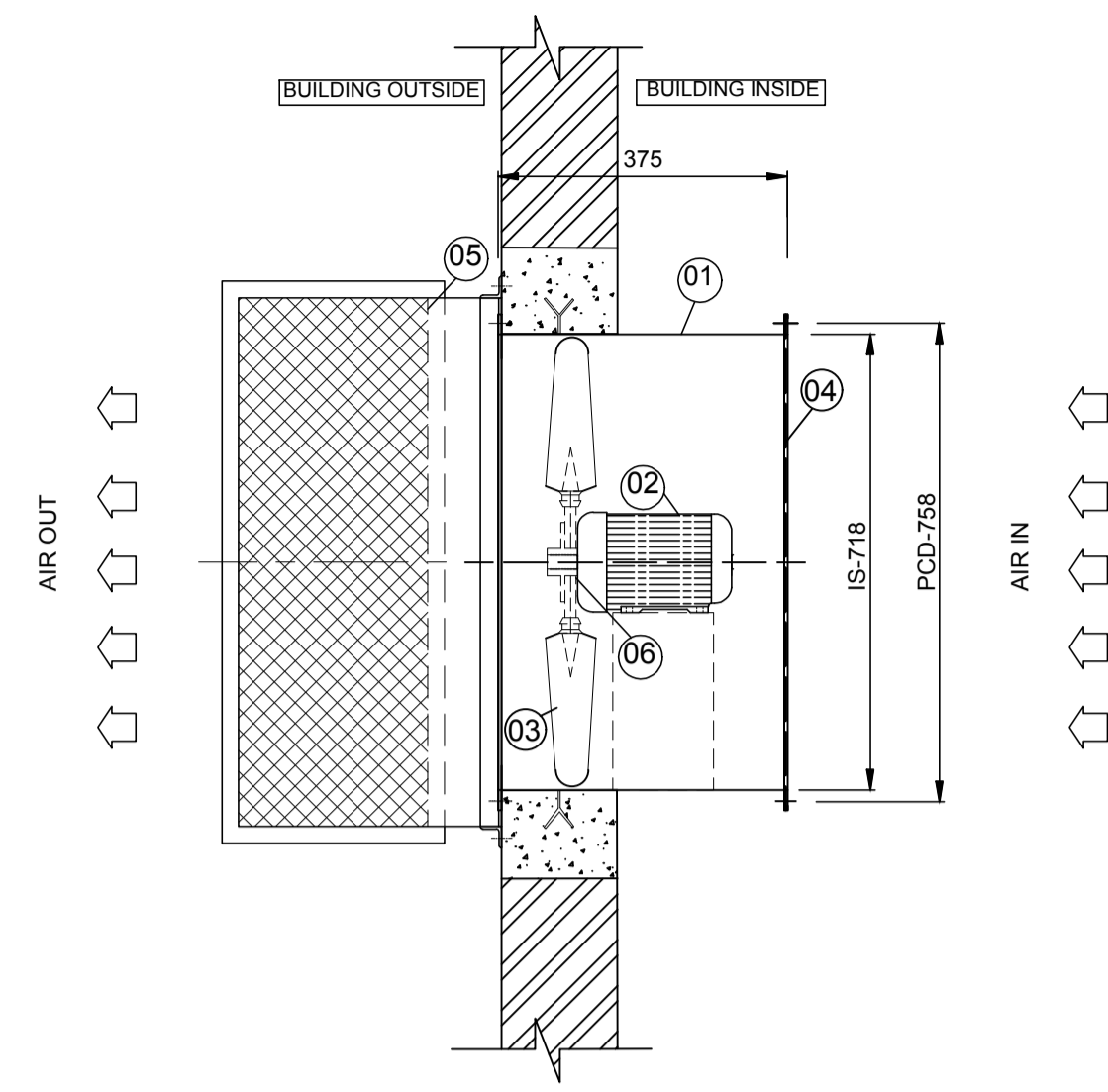
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CHECKED	P.DAS		SCALE NTS
APPROVED		SIWL-656/16	REV 0
DATE	29/08/2022		

TECHNICAL DATA OF FAN

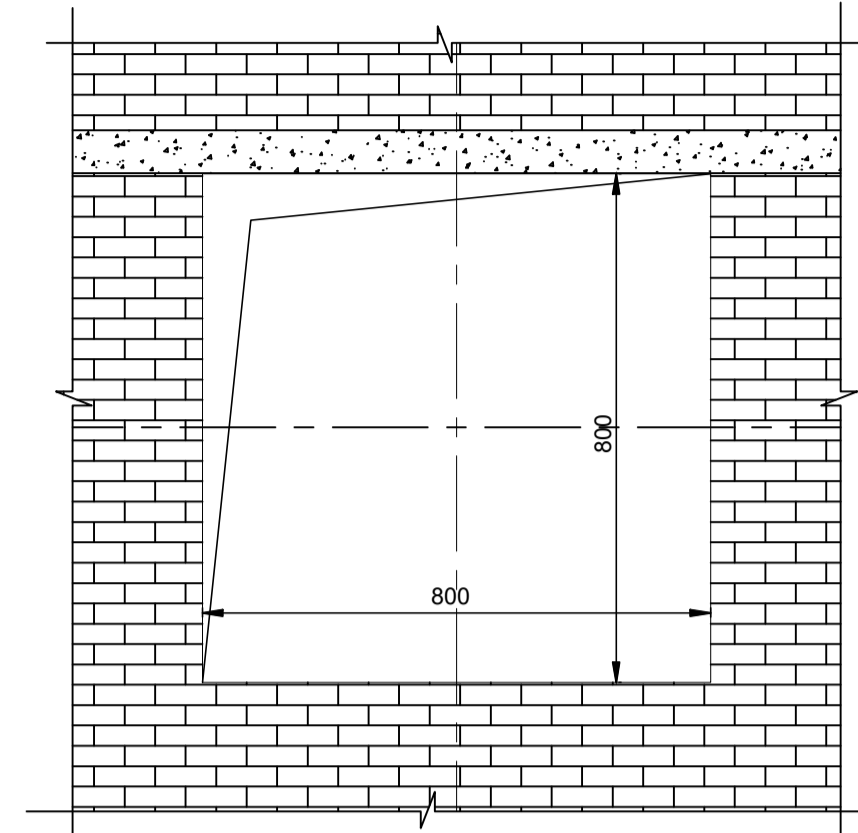
16	TUBE AXIAL FAN	TLJ-710	SIWENT	10	10000	10	970	0.48
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

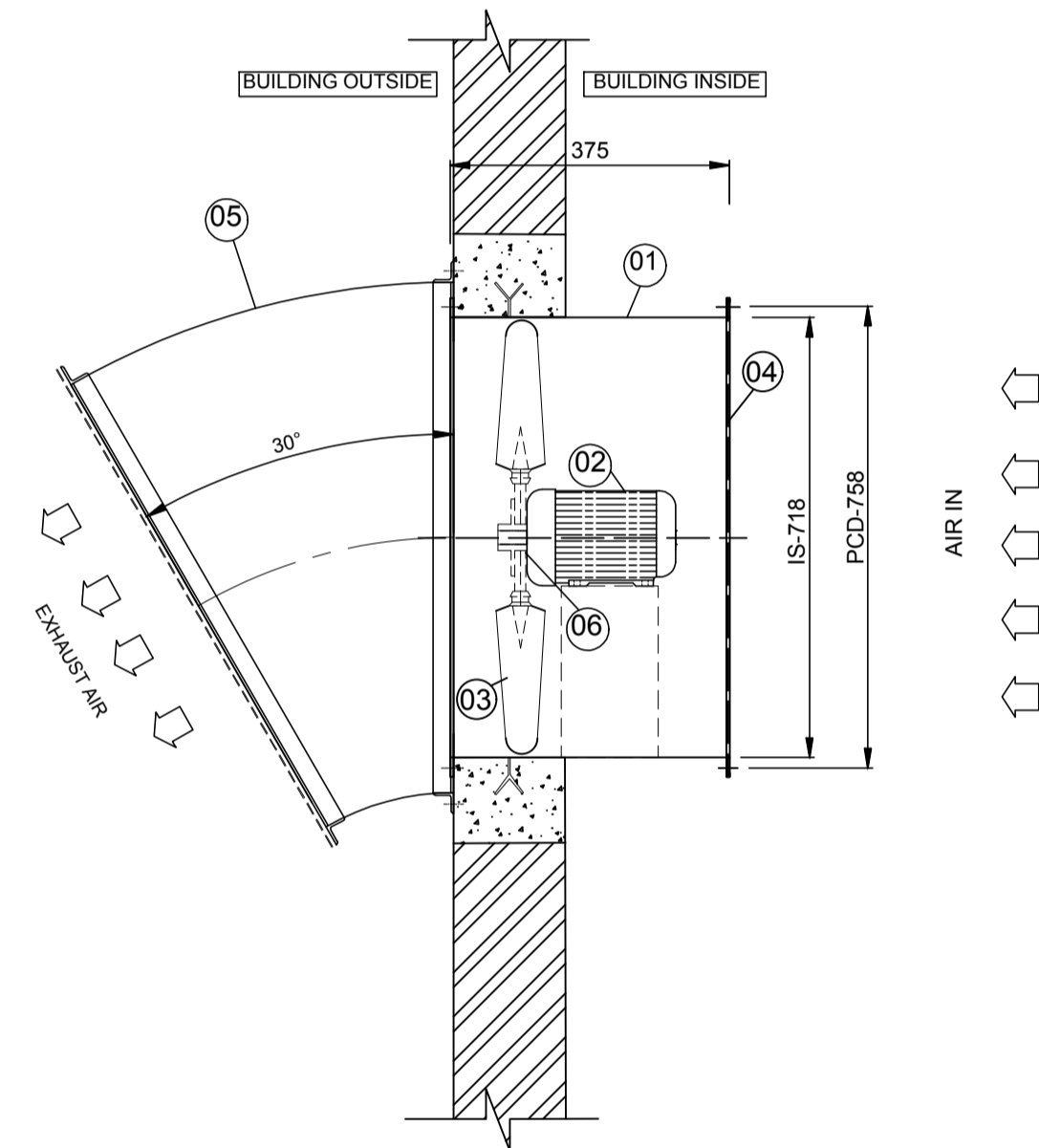
0.75/6	415V, 3PH. 50 HZ. AC SUPPLY	90S	1000
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	SPEED RPM



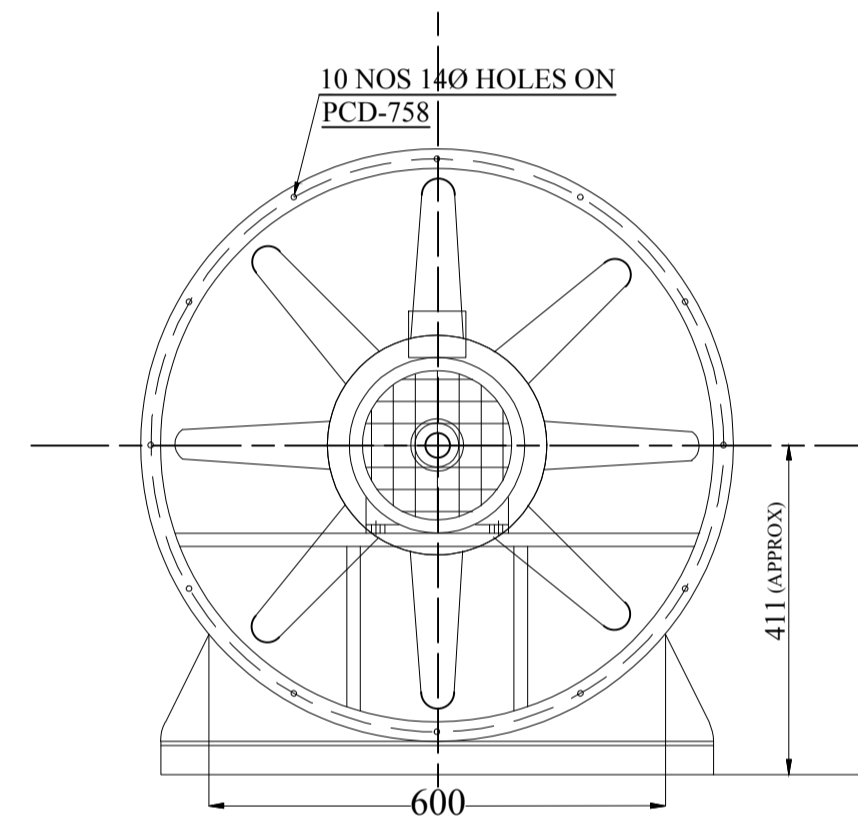
TOP VIEW



WALL OPENING DETAILS

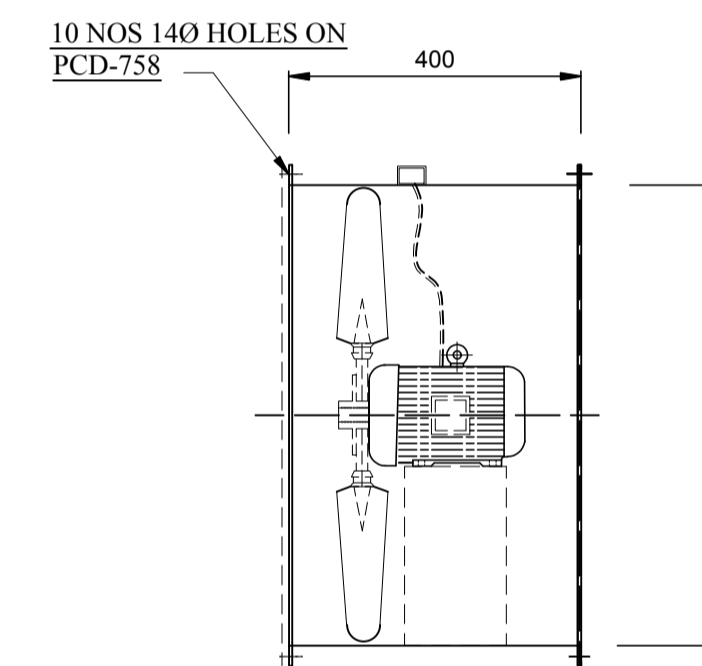


SIDE ELEVATION



DRIVE END VIEW

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)



FAN ASSEMBLY

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	PRE-FILTER FLANGE TYPE	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	TLJ-710	SARALA	10	10000	10	970	0.48	0.75/6	415V,3PH,50HZ AC Supply	90S	1000

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, NTPC LIMITED
EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	NAME	SIGN	DATE	
		DRN	KJ	KJ	01-02-2023
		DESN	KJ	KJ	01-02-2023
		CHD	AD	AD	01-02-2023
		APPD	AD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE	NTS	DEPT.	SIGN
SHEET 01 OF 01		REV. 00	



SUBURBAN INDUSTRIAL WORKS PVT. LTD.

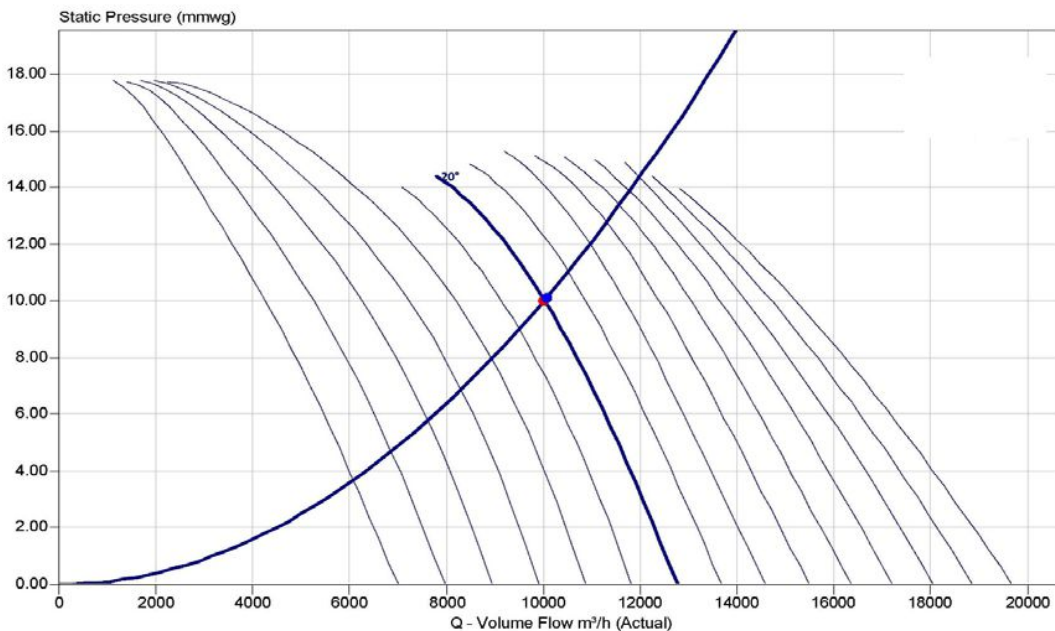
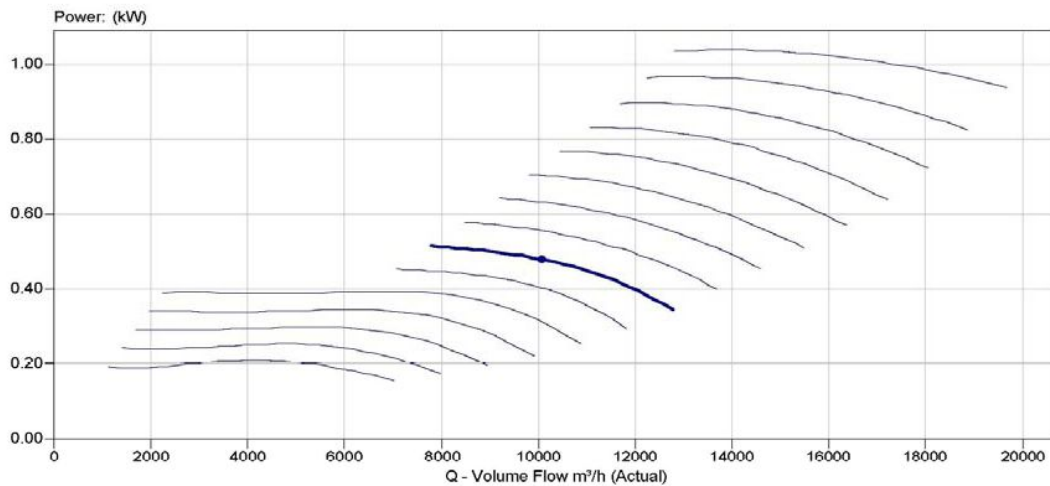
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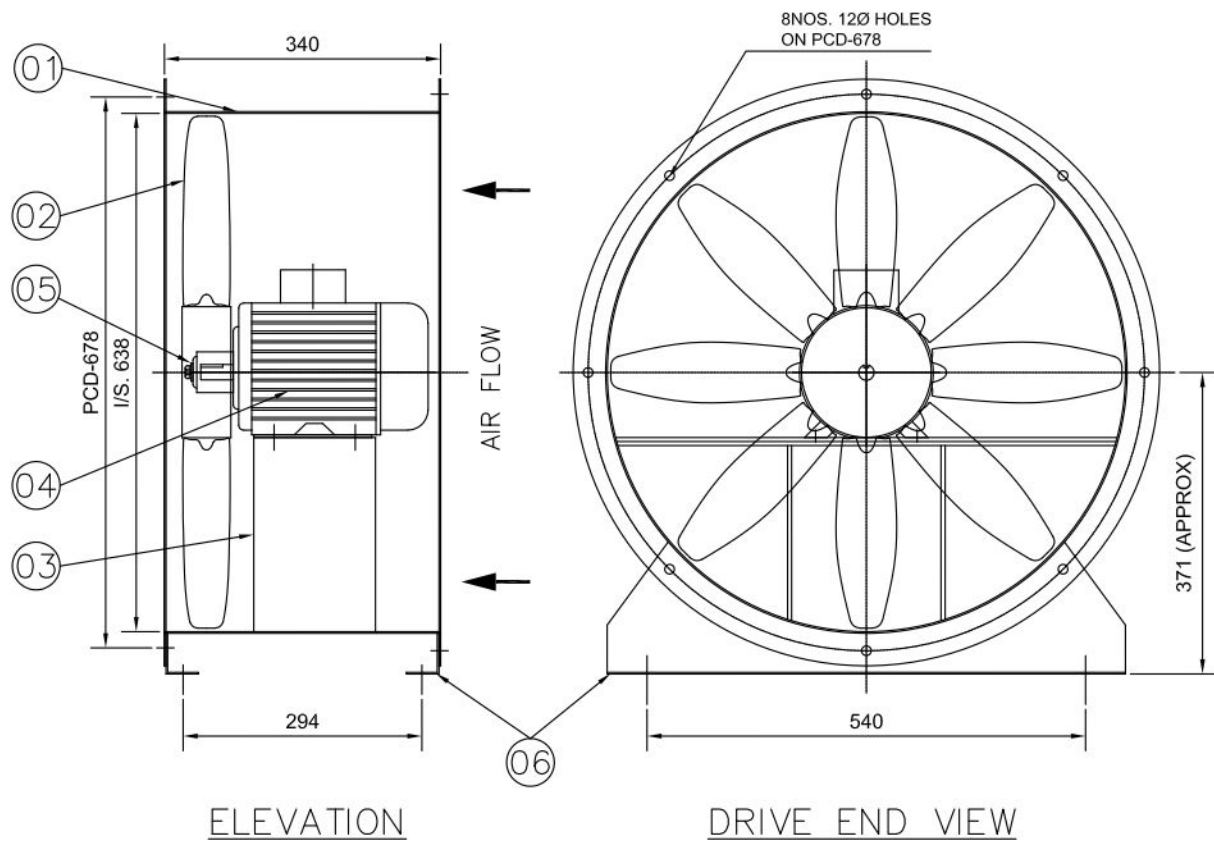
PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- TLJ-710

VOLUME OF AIR (CMH)	10000	FAN SPEED (RPM)	970
STATIC PRESSURE (MM. WG.)	10	FAN POWER (KW)	0.48





ELEVATION

DRIVE END VIEW

(NO. OF BLADES SHOWN ARE PICTORIAL ONLY. ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
------	------	-------------------------	----

CLIENT-

PROJECT-3X200MW+3X500MW RAMAGUNDAM
STPP(FGD SYSTEM PACKAGE)



GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN ARR. IV

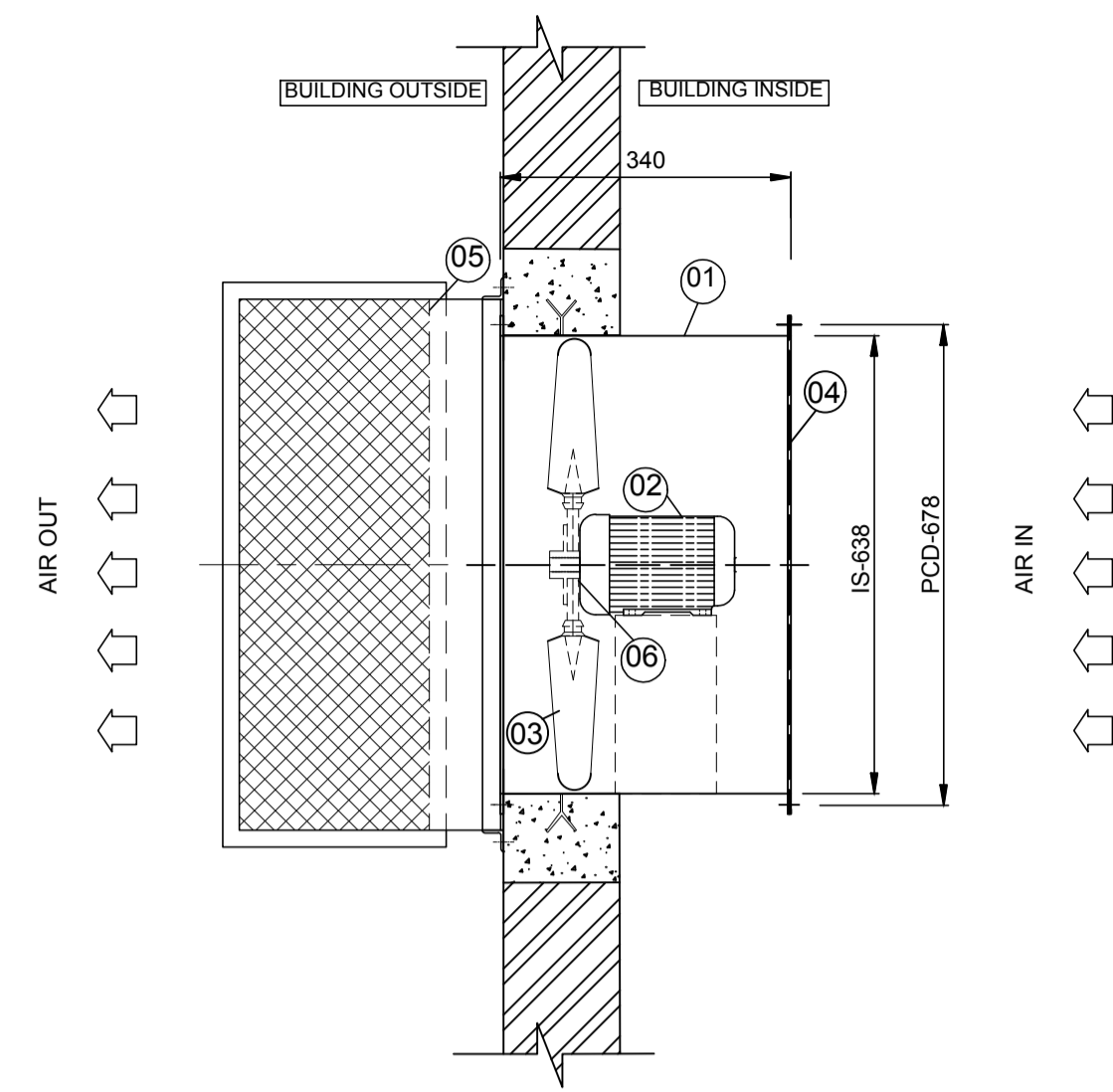
DRAWN	S.NASKAR	DRAWING NO.	JOB NO.
CHECKED	P.DAS		SCALE NTS
APPROVED		SIWL-656/17	REV 0
DATE	29/08/2022		

TECHNICAL DATA OF FAN

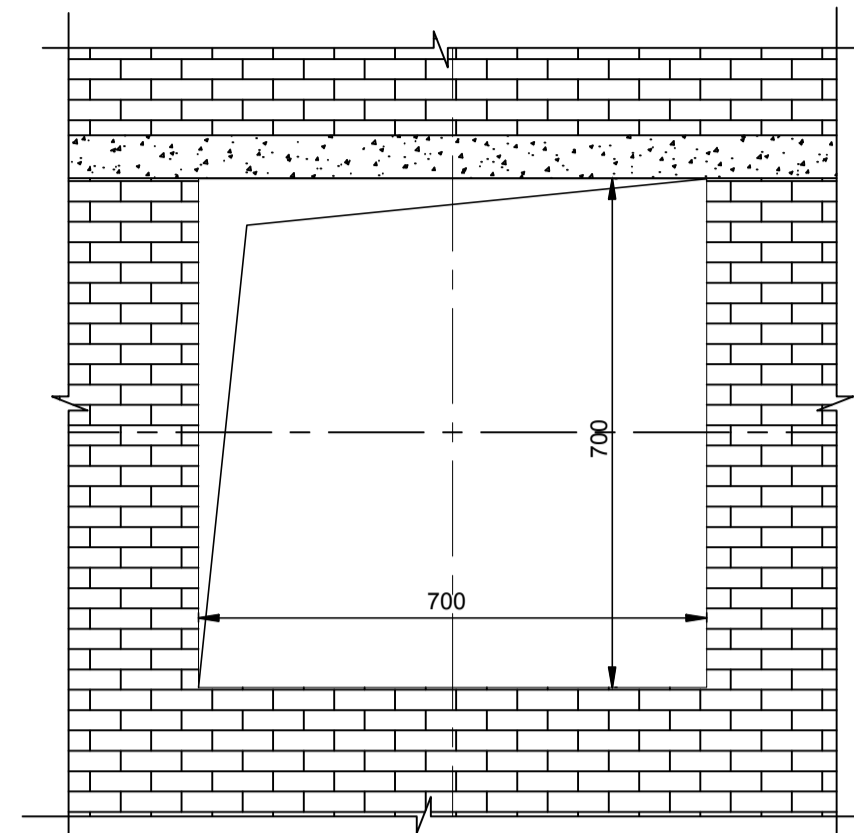
17	TUBE AXIAL FAN	TLJ-630	SIWENT	12	7500	10	970	0.39
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

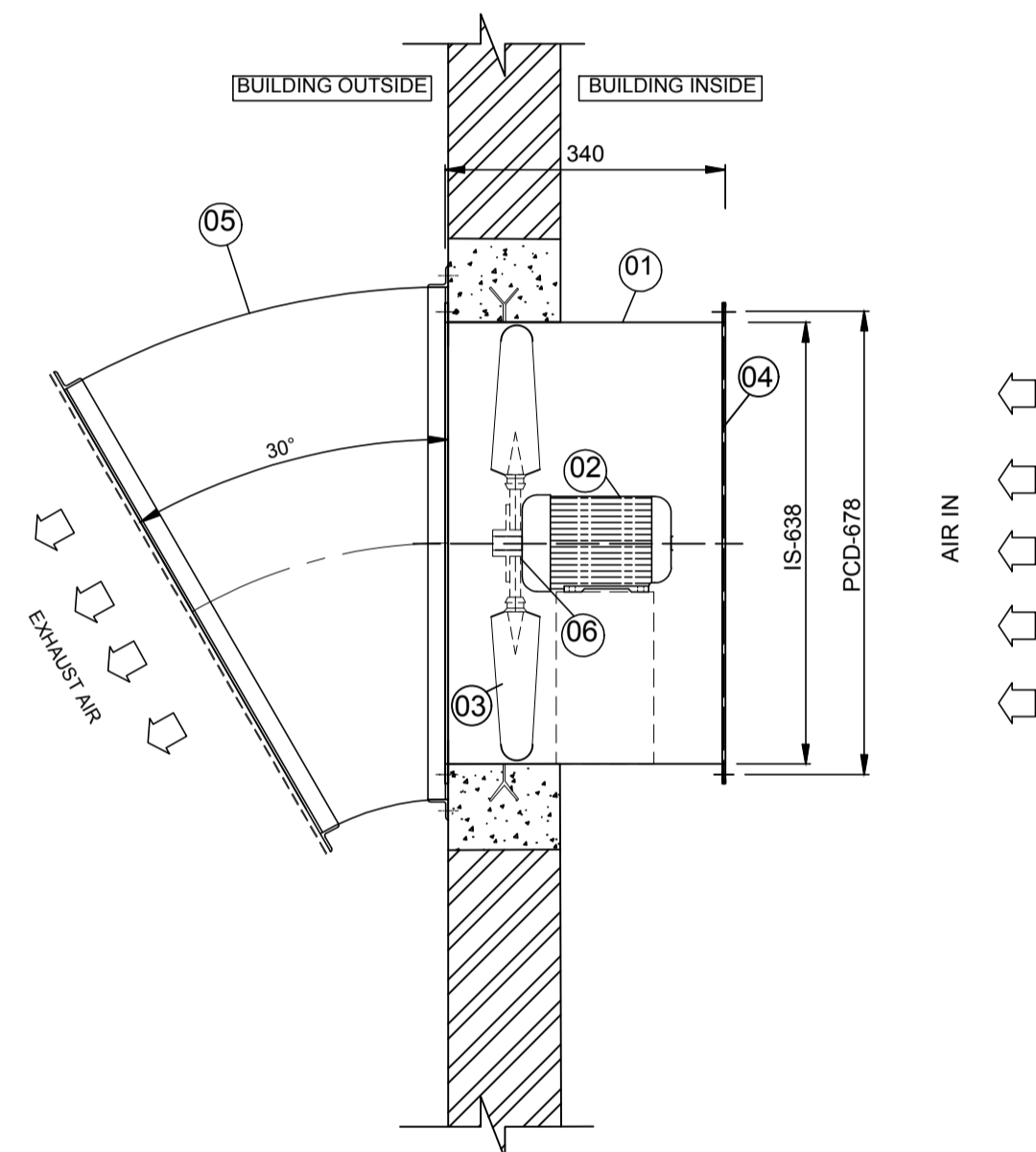
0.55/6	415V, 3PH. 50 HZ. AC SUPPLY	80	1000
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	SP. SPEED RPM



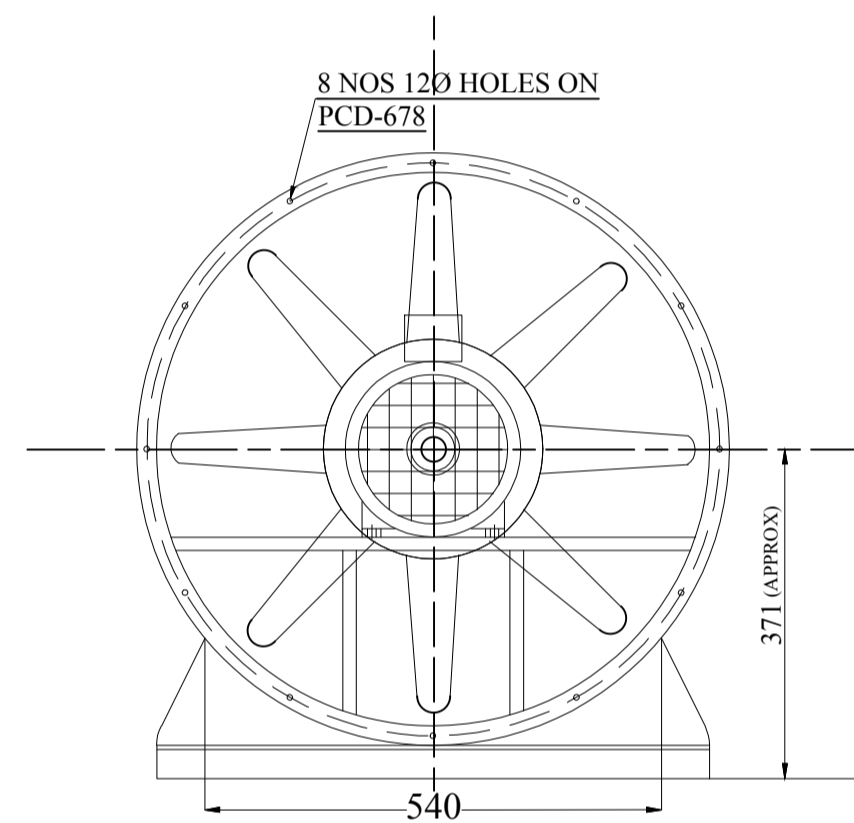
TOP VIEW



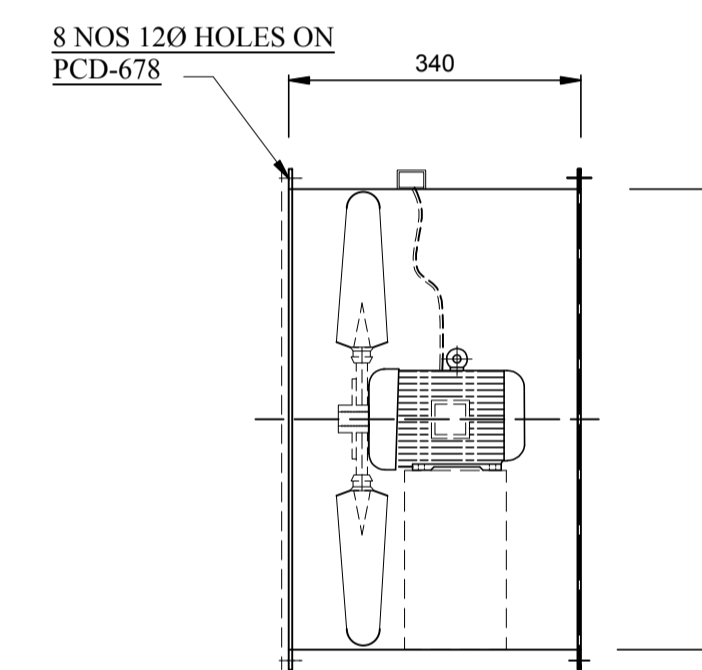
WALL OPENING DETAILS



SIDE ELEVATION



DRIVE END VIEW



FAN ASSEMBLY

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	PRE-FILTER FLANGE TYPE	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	TLJ-630	SARALA	12	7500	10	970	0.39	0.55/6	415V,3PH,50HZ AC Supply	80	1000

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, JGG NTPC LIMITED
EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	NAME	SIGN	DATE	
		DRN	KJ	KJ	01-02-2023
		DESN	KJ	KJ	01-02-2023
		CHD	AD	AD	01-02-2023
		APPD	AD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE	NTS	DEPT.	
		SIGN	
BHEL DRG. No. - PE-V0-467-571-A211		SHEET 01 OF 01 REV. 00	



SUBURBAN INDUSTRIAL WORKS PVT. LTD.

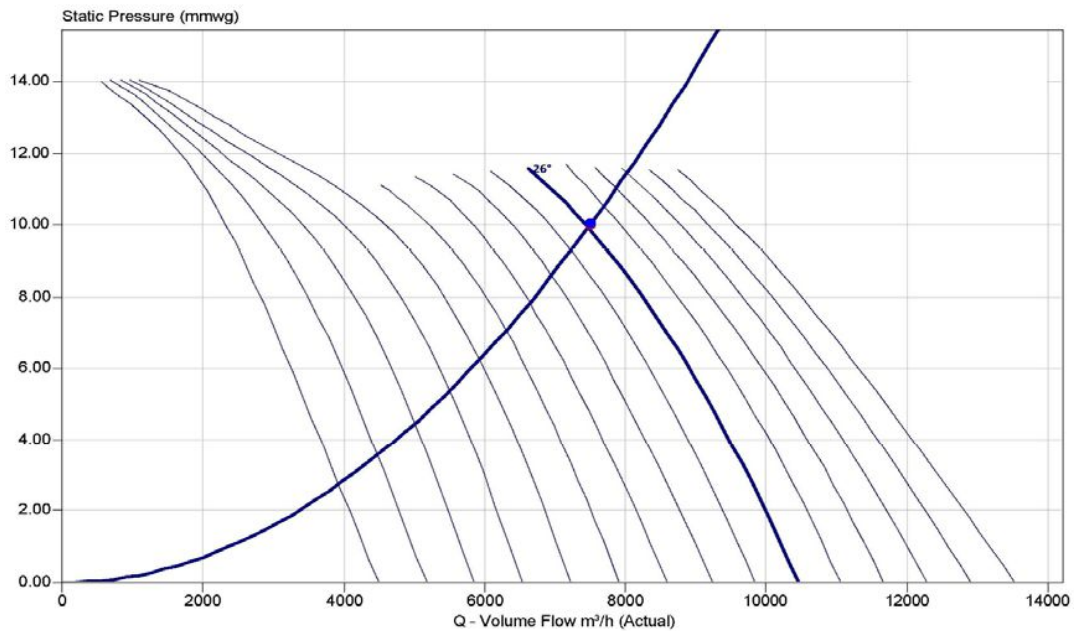
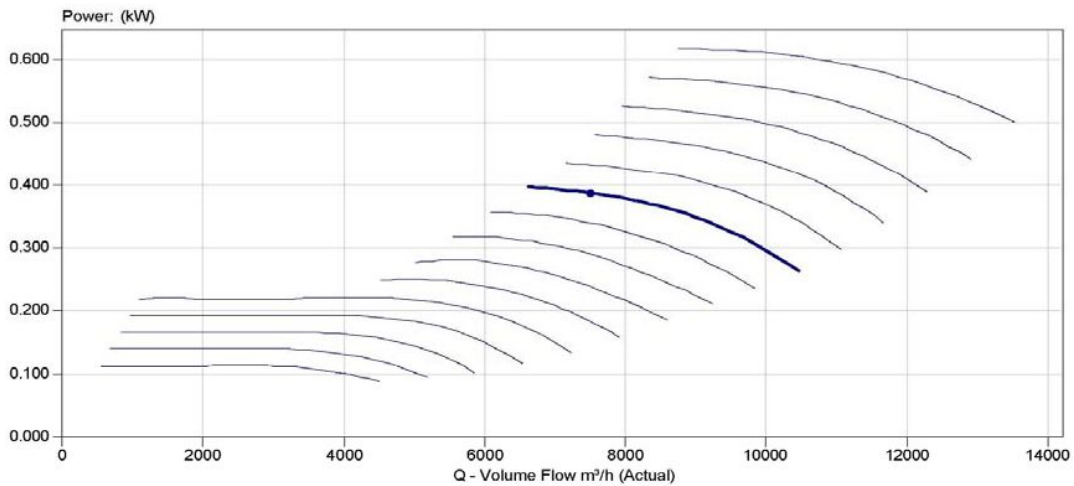
CLIENT'S NAME

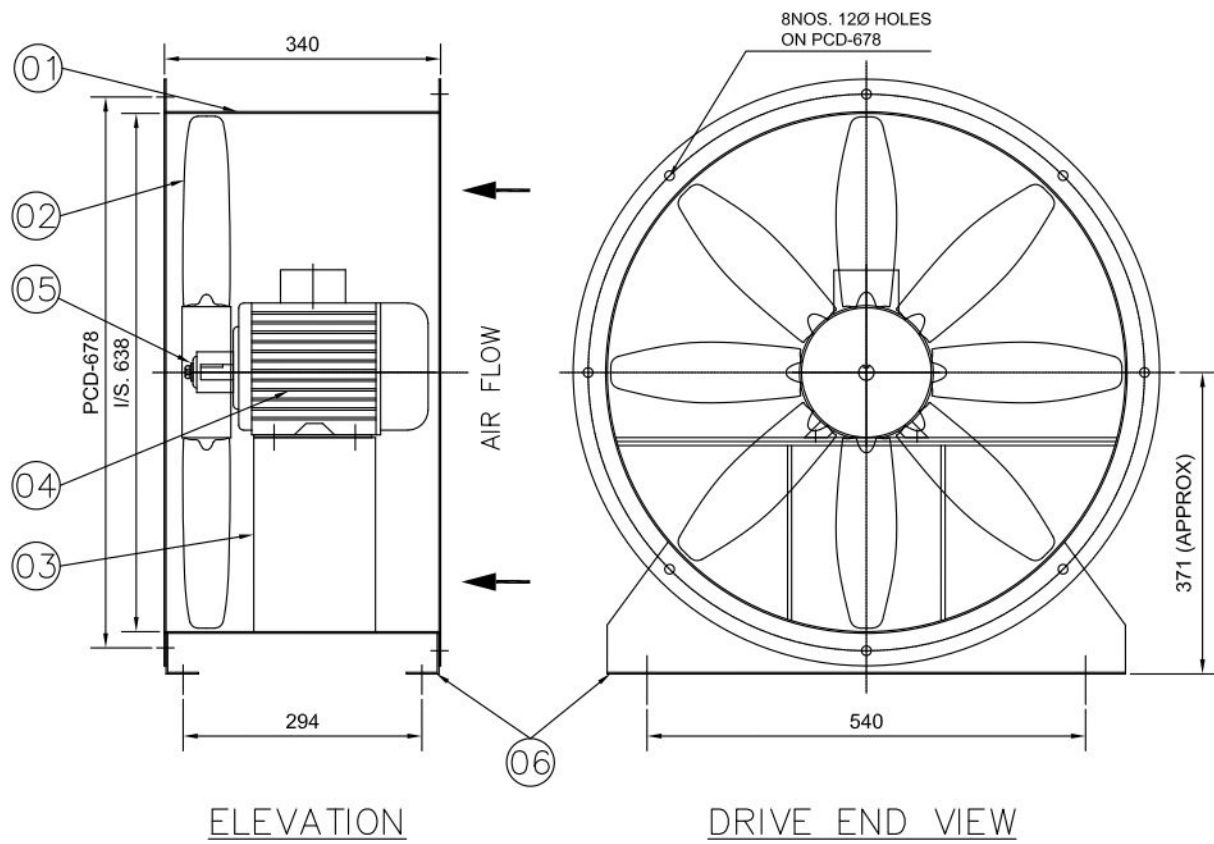
PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- TLJ-630

VOLUME OF AIR (CMH)	7500	FAN SPEED (RPM)	970
STATIC PRESSURE (MM. WG.)	10	FAN POWER (KW)	0.39





ELEVATION

DRIVE END VIEW

(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
------	------	-------------------------	----

CLIENT-

PROJECT-3X200MW+3X500MW RAMAGUNDAM
STPP(FGD SYSTEM PACKAGE)



GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN ARR. IV

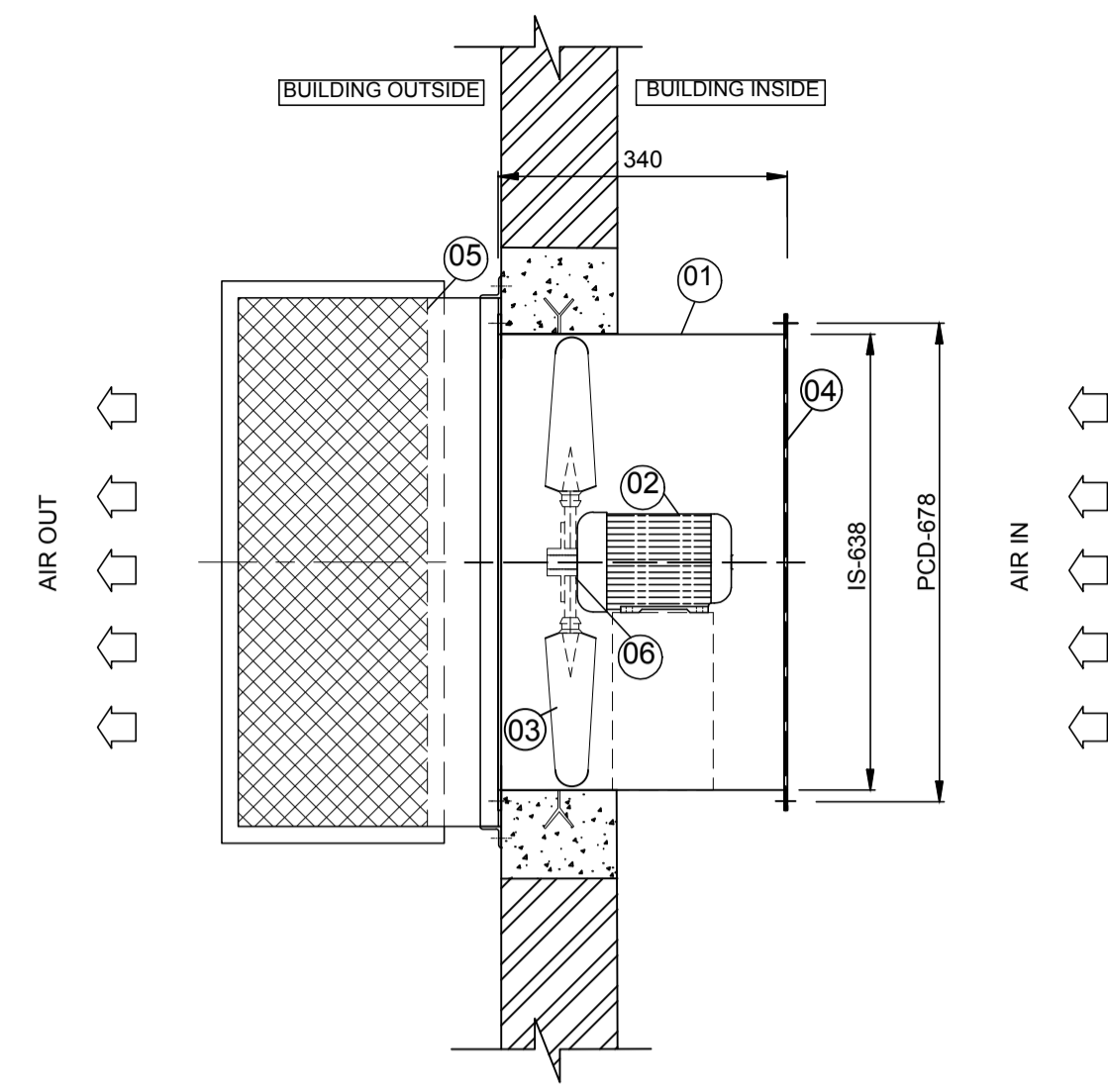
DRAWN	S.NASKAR	DRAWING NO.	JOB NO.
CHECKED	P.DAS		SCALE NTS
APPROVED		SIWL-656/18	REV 0
DATE	29/08/2022		

TECHNICAL DATA OF FAN

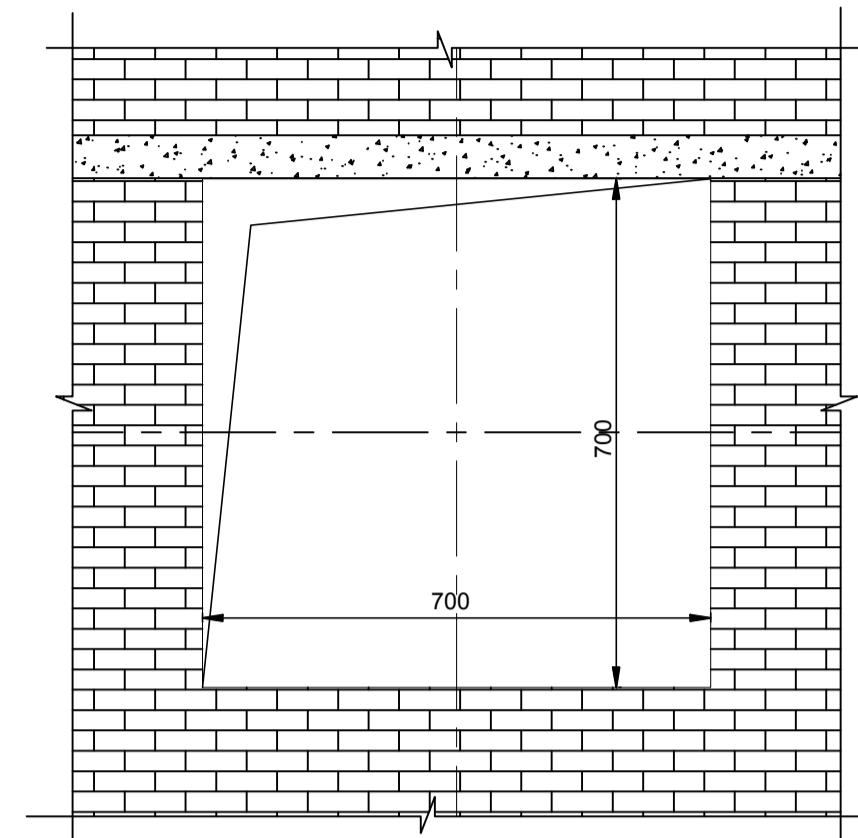
18	TUBE AXIAL FAN	TLJ-630	SIWENT	10	6000	10	970	0.28
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

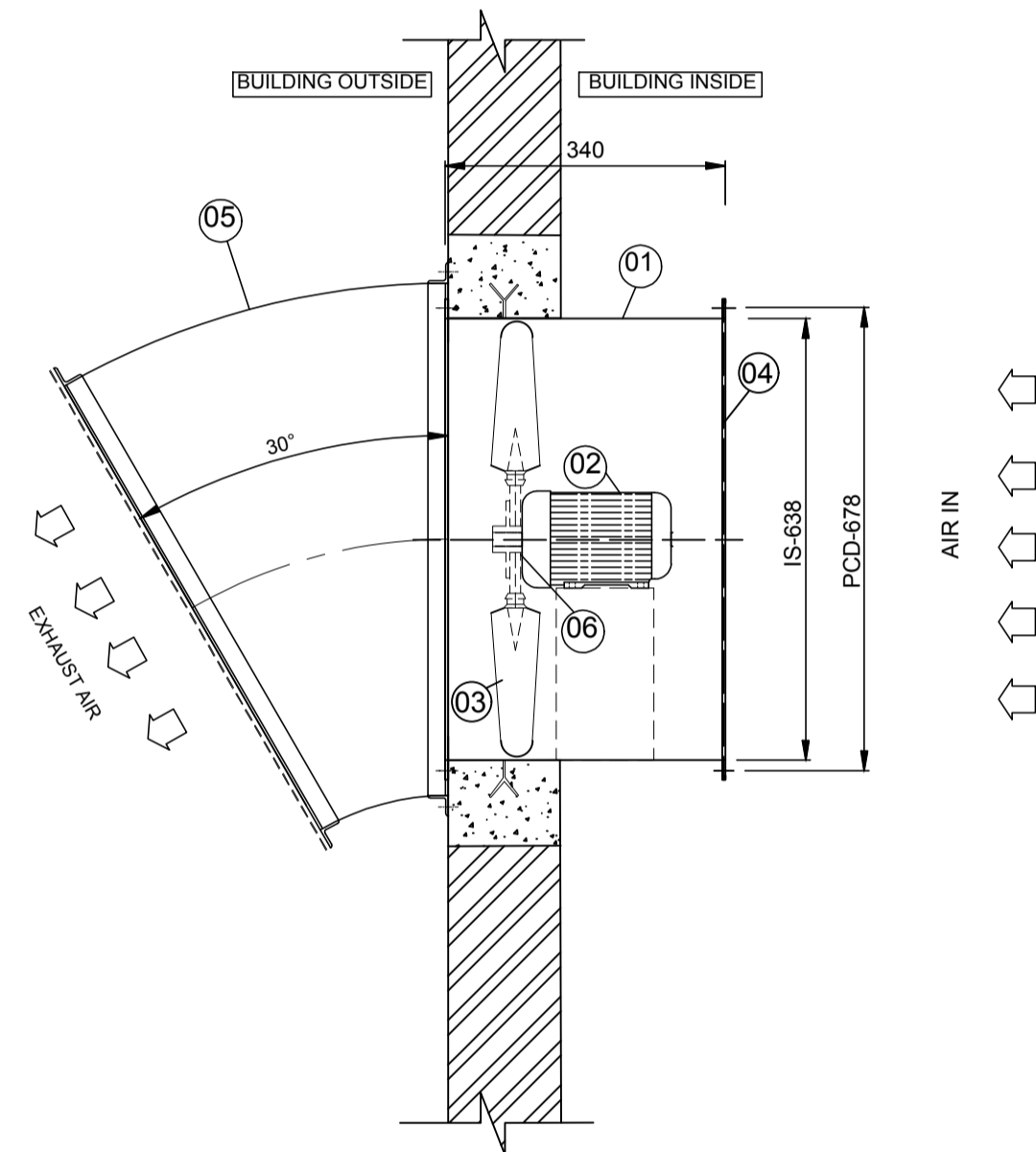
0.55/6	415V, 3PH. 50 HZ. AC SUPPLY	80	1000
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	FLY SPEED RPM



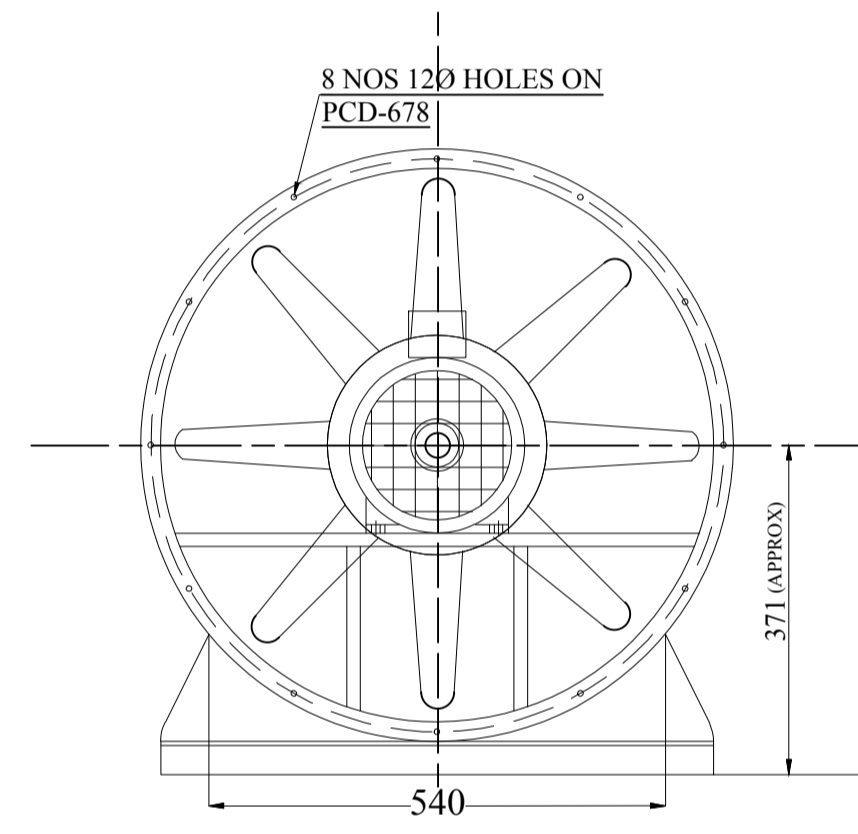
TOP VIEW



WALL OPENING DETAILS

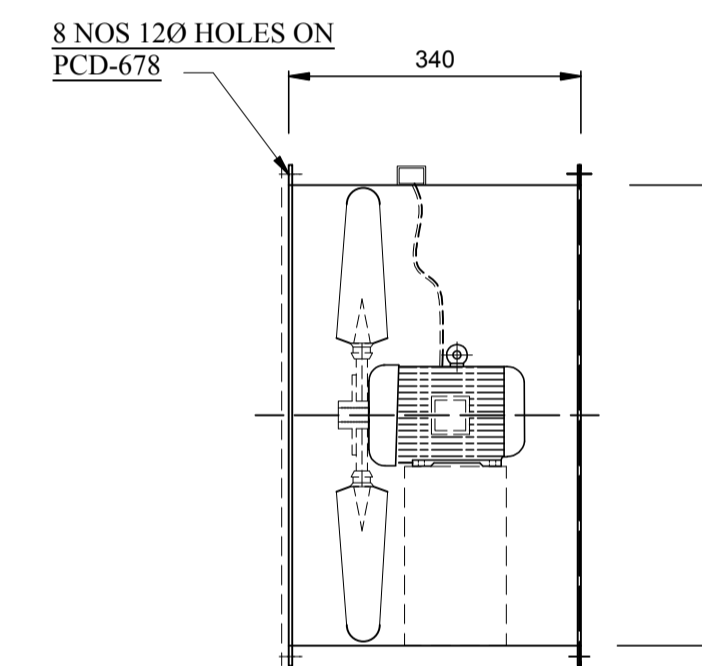


SIDE ELEVATION



DRIVE END VIEW

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)



FAN ASSEMBLY

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	PRE-FILTER FLANGE TYPE	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	TLJ-630	SARALA	10	6000	10	970	0.28	0.55/6	415V,3PH,50HZ AC Supply	80	1000

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, JGG NTPC LIMITED
EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	NAME	SIGN	DATE	
		DRN	KJ	KJ	01-02-2023
		DESN	KJ	KJ	01-02-2023
		CHD	AD	AD	01-02-2023
		APPD	AD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE	NTS	DEPT.	SIGN
SHEET 01 OF 01		REV. 00	



SUBURBAN INDUSTRIAL WORKS PVT. LTD.

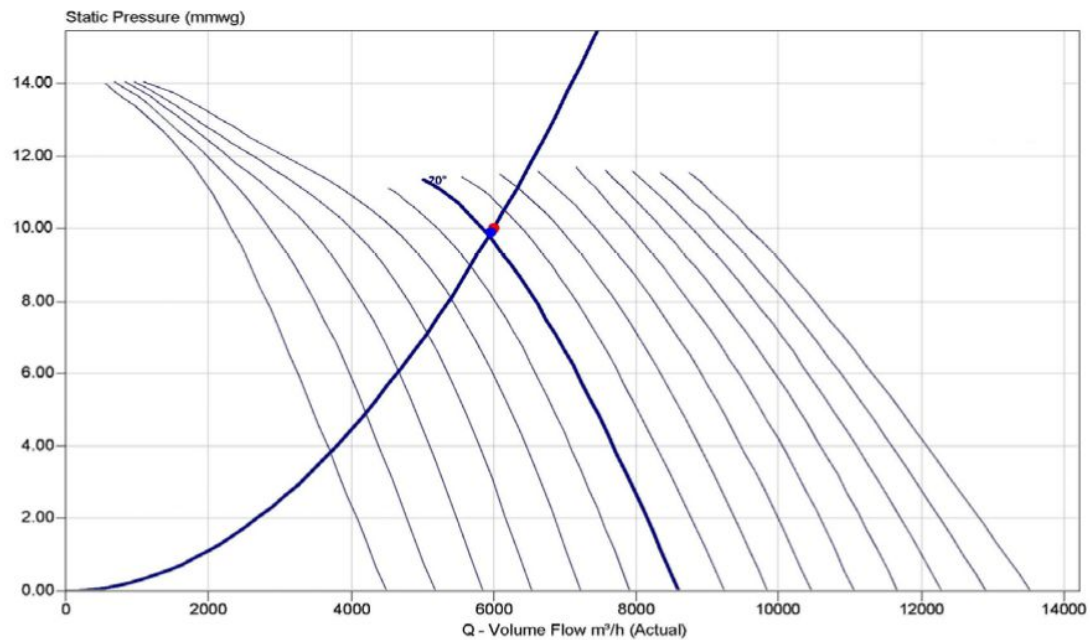
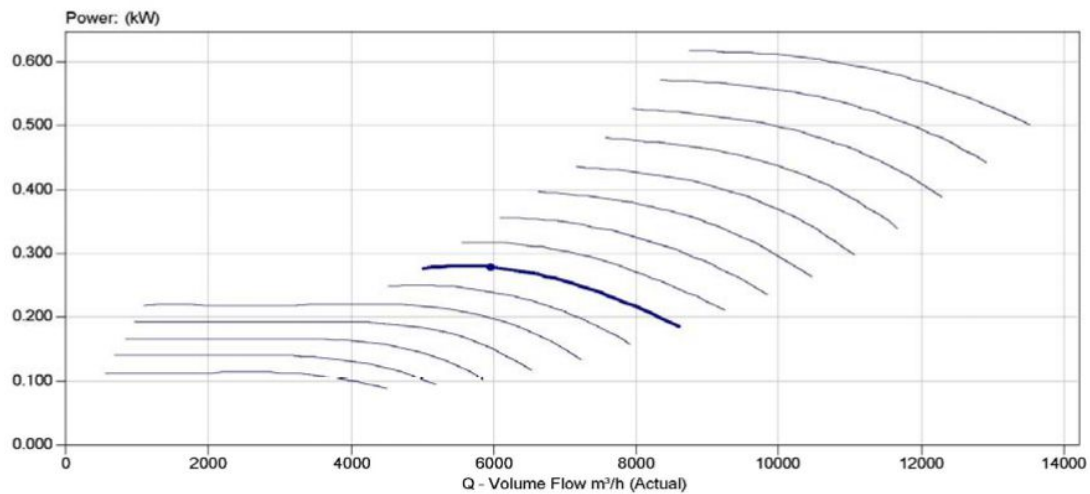
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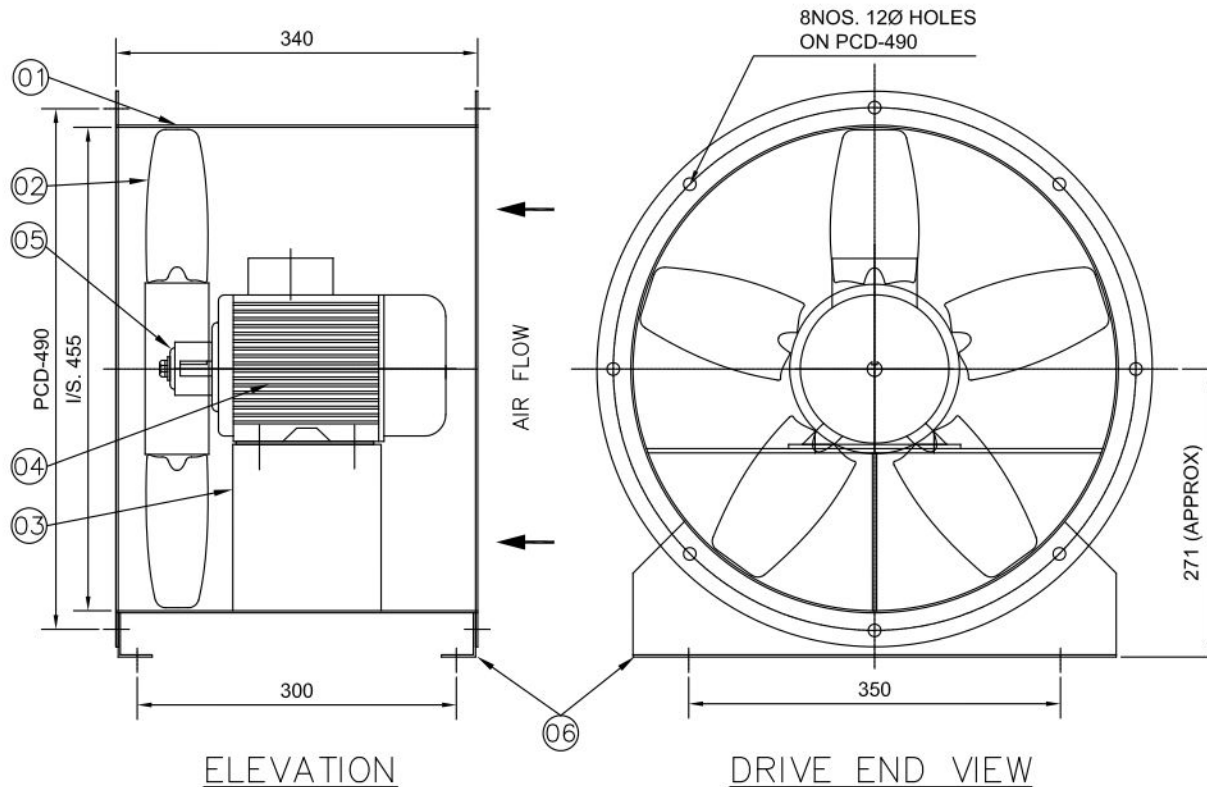
PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- TLJ-630

VOLUME OF AIR (CMH)	6000	FAN SPEED (RPM)	970
STATIC PRESSURE (MM. WG.)	10	FAN POWER (KW)	0.28





(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL.	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY

CLIENT-
PROJECT-3X200MW+3X500MW RAMAGUNDAM STPP(FGD PACKAGE)



GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN ARR. IV

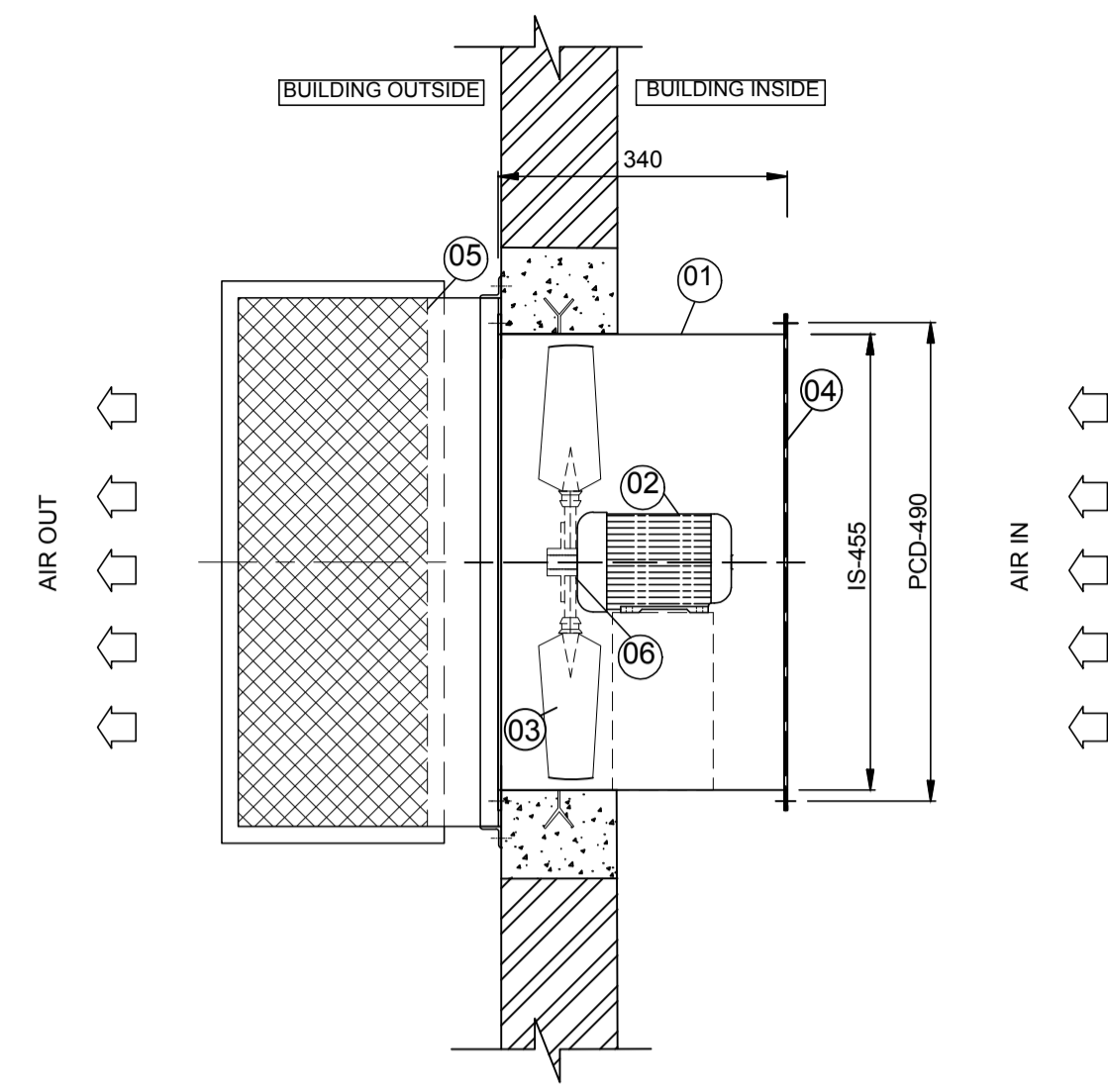
DRAWN	S.NASKAR	DRAWING NO.	JOB NO.	
CHECKED	P.DAS		SCALE	NTS
APPROVED		SIWL-656/19	REV	0
DATE	29/08/2022			

TECHNICAL DATA OF FAN

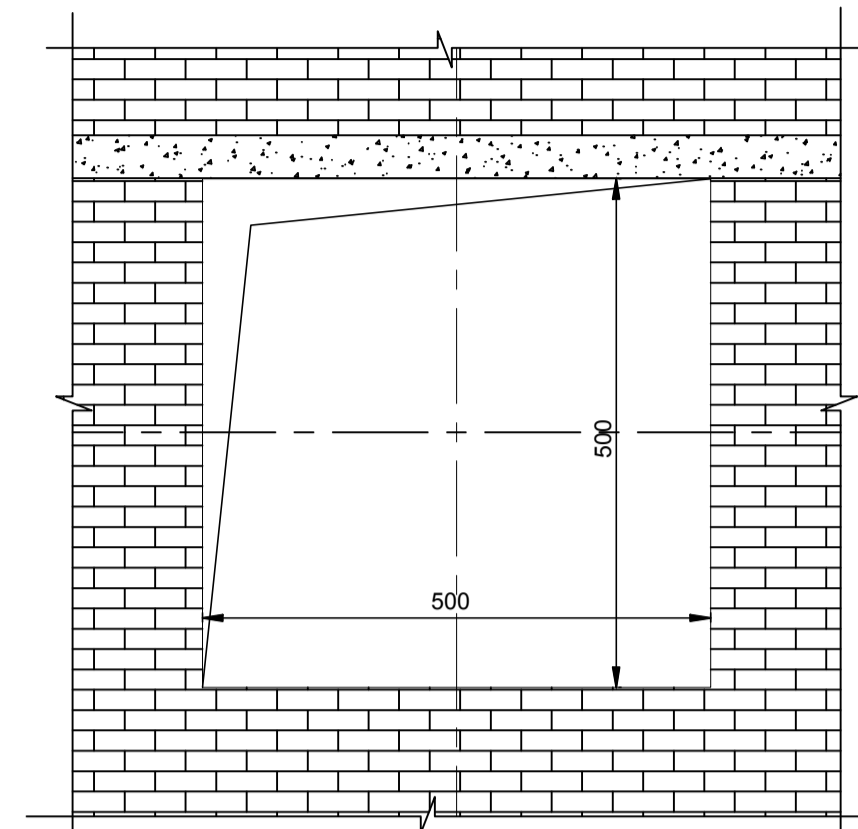
19	TUBE AXIAL FAN	TLJ-450	SIWENT	10	4000	10	1450	0.20
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

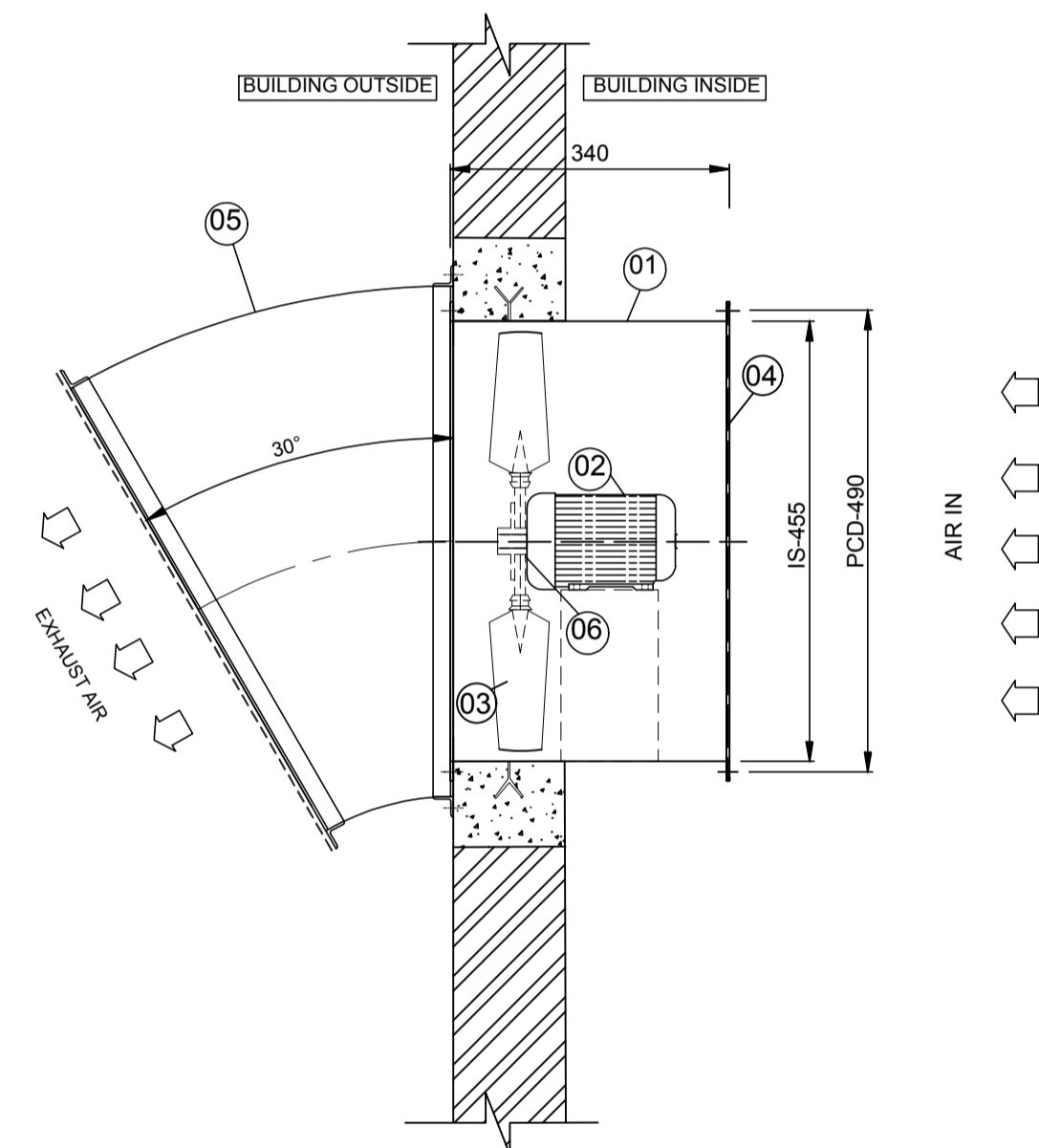
0.37/4	415V, 3PH. 50 HZ. AC SUPPLY	71	1500
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	SPEED RPM



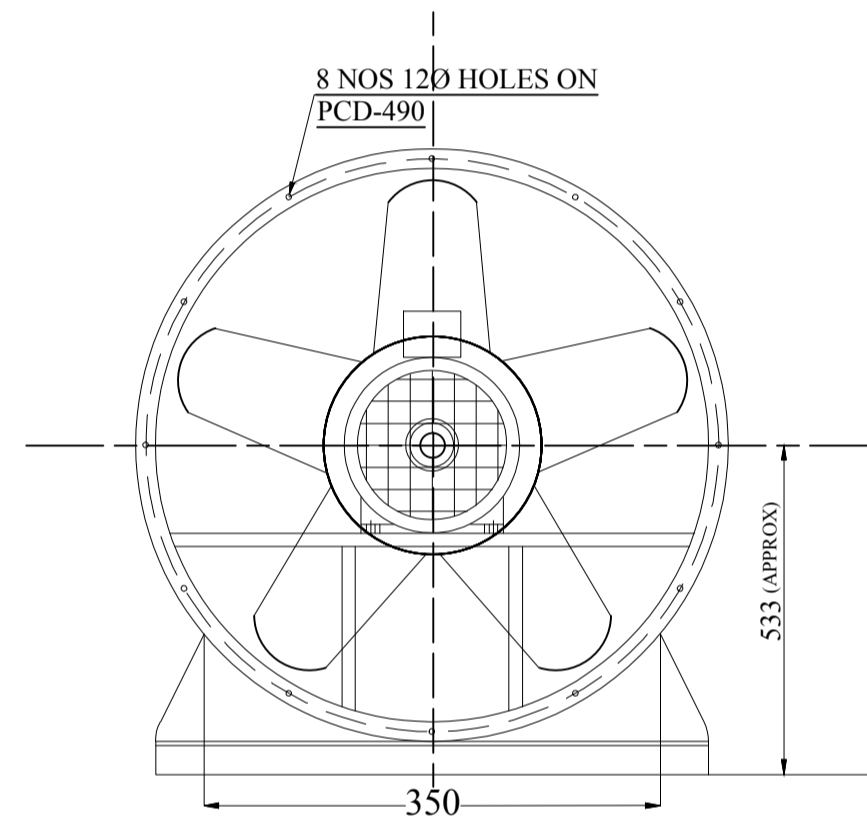
TOP VIEW



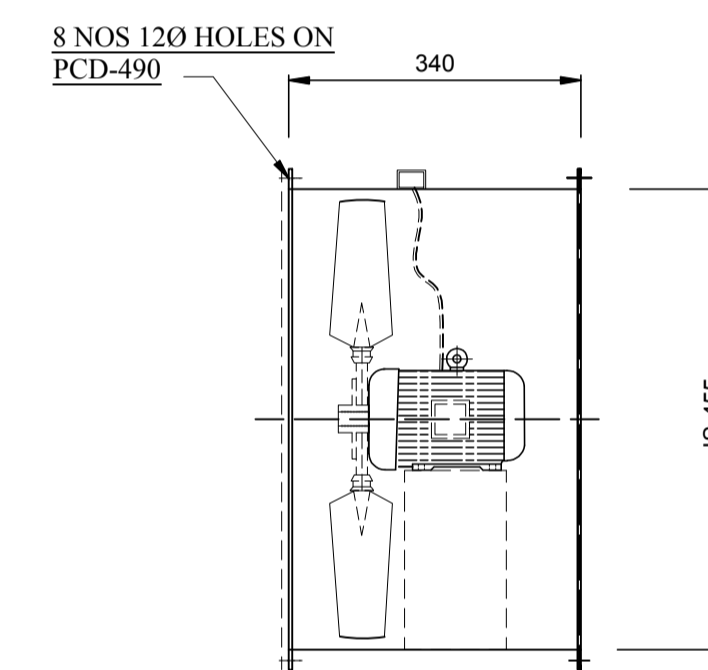
WALL OPENING DETAILS



SIDE ELEVATION



DRIVE END VIEW



FAN ASSEMBLY

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	PRE-FILTER FLANGE TYPE	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	TLJ-450	SARALA	10	4000	10	1450	0.20	0.37/4	415V,3PH,50HZ AC Supply	71	1500

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)		
OWNER:	NTPC, Jpg	NTPC LIMITED	
EPC CONTRACTOR:	BHEL, Blue.png	BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA	
CONTRACTOR:			

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	NAME	SIGN	DATE	
		DRN	KJ	KJ	01-02-2023
		DESN	KJ	KJ	01-02-2023
		CHD	AD	AD	01-02-2023
		APPD	AD	AD	01-02-2023

TITLE
 TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS

SCALE	NTS	DEPT.	SIGN

BHEL DRG. No. - PE-V0-467-571-A211
 SHEET 01 OF 01 REV. 00



SUBURBAN INDUSTRIAL WORKS PVT. LTD.

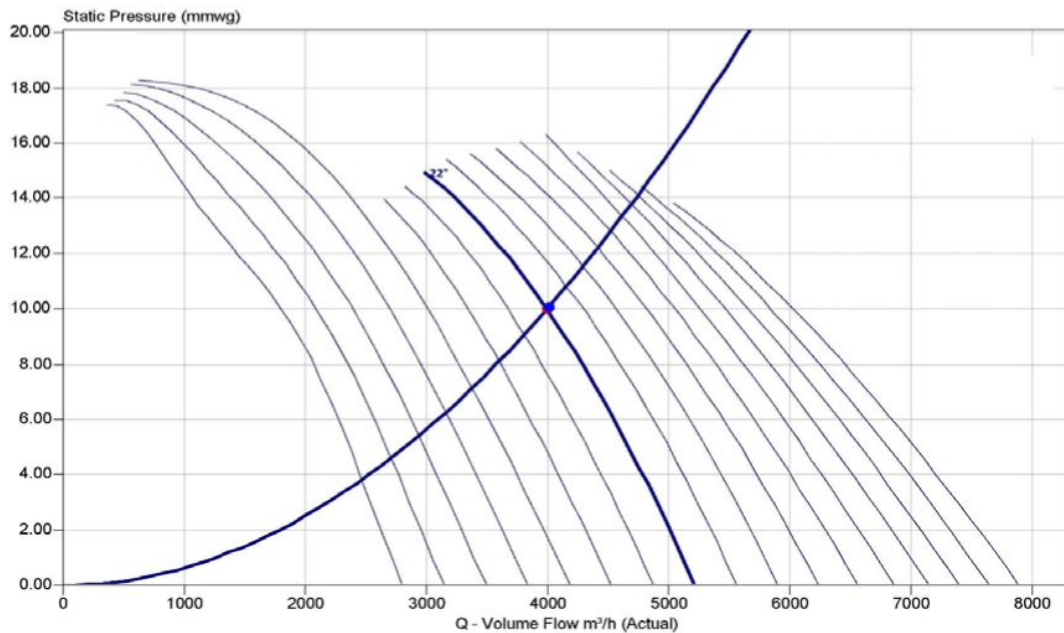
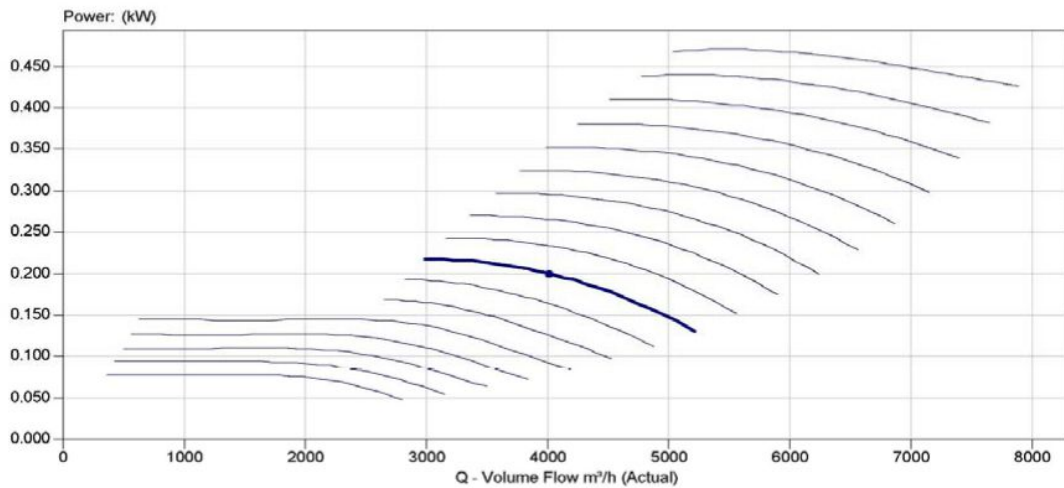
CLIENT'S NAME

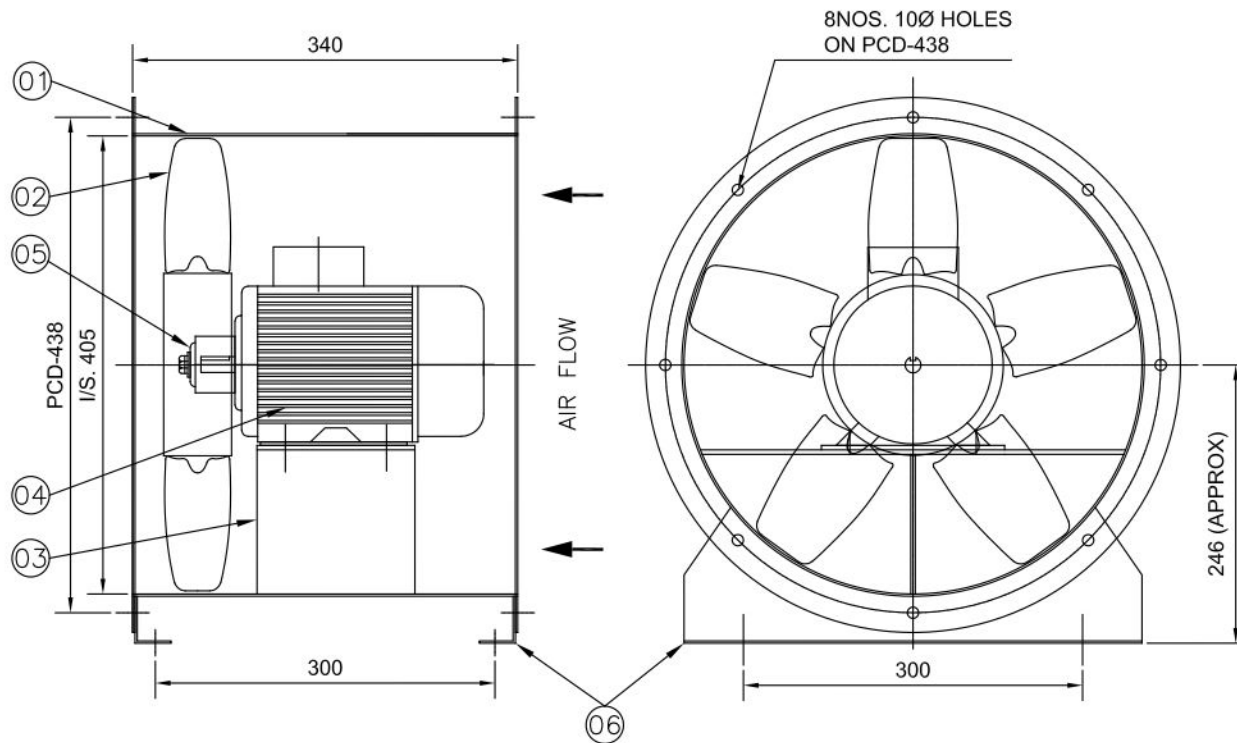
PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- TLJ-450

VOLUME OF AIR (CMH)	4000	FAN SPEED (RPM)	1450
STATIC PRESSURE (MM. WG.)	10	FAN POWER (KW)	0.20





ELEVATION

DRIVE END VIEW

(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH SYNTHETIC ENAMEL PAINT OVER TWO COATS OF RED OXIDE PRIMER.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.	AS MENTION	
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL.	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
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CLIENT-

PROJECT-3X200MW+3X500MW RAMAGUNDAM
STPP(FGD SYSTEM PACKAGE)



SUBURBAN INDUSTRIAL WORKS PVT. LTD.
KOLKATA , INDIA

GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN
ARR. IV

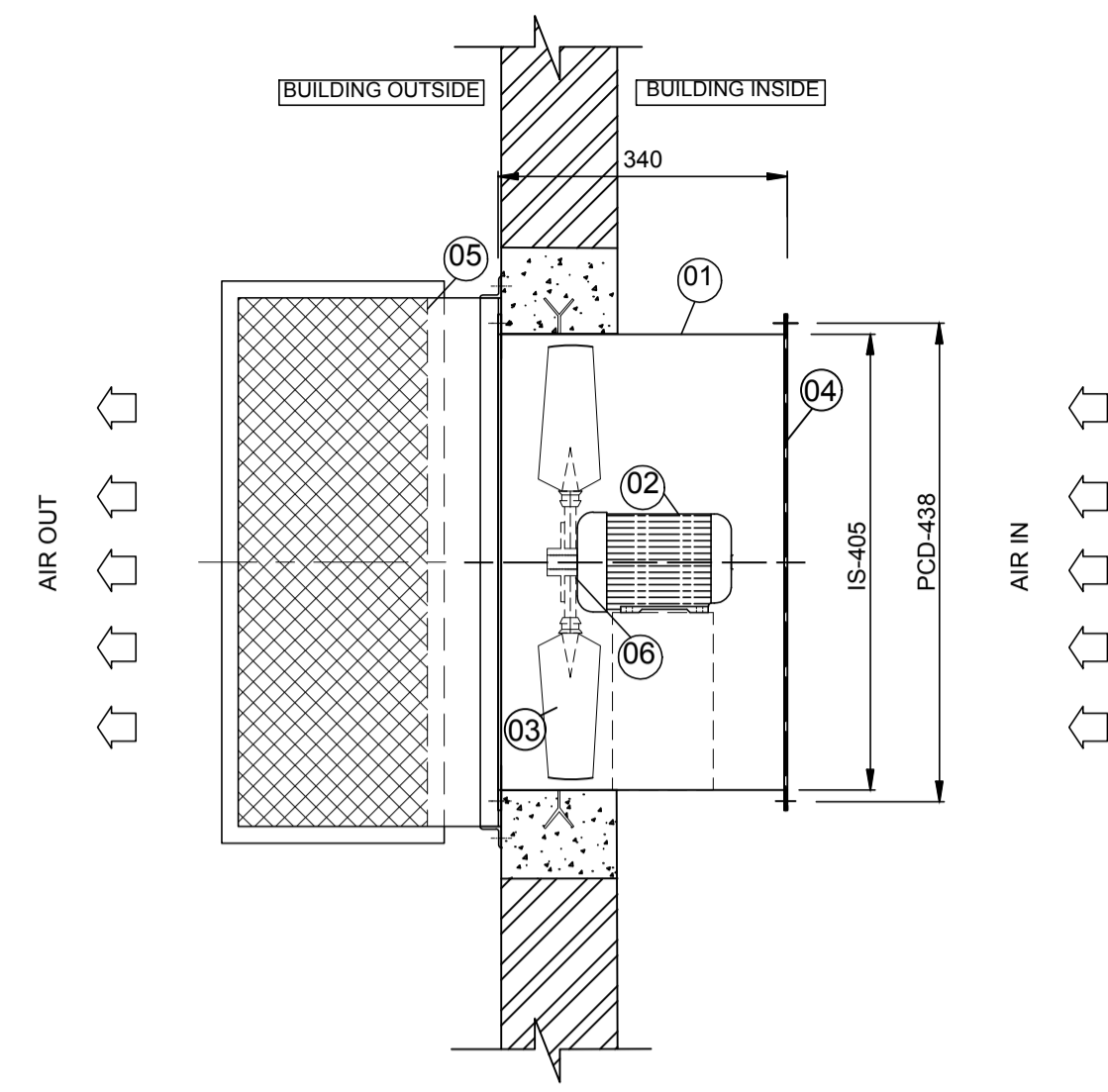
DRAWN	S.NASKAR	DRAWING NO.	JOB NO.	
CHECKED	P.DAS		SCALE	NTS
APPROVED		SIWL-656/20	REV	0
DATE	29/08/2022			

TECHNICAL DATA OF FAN

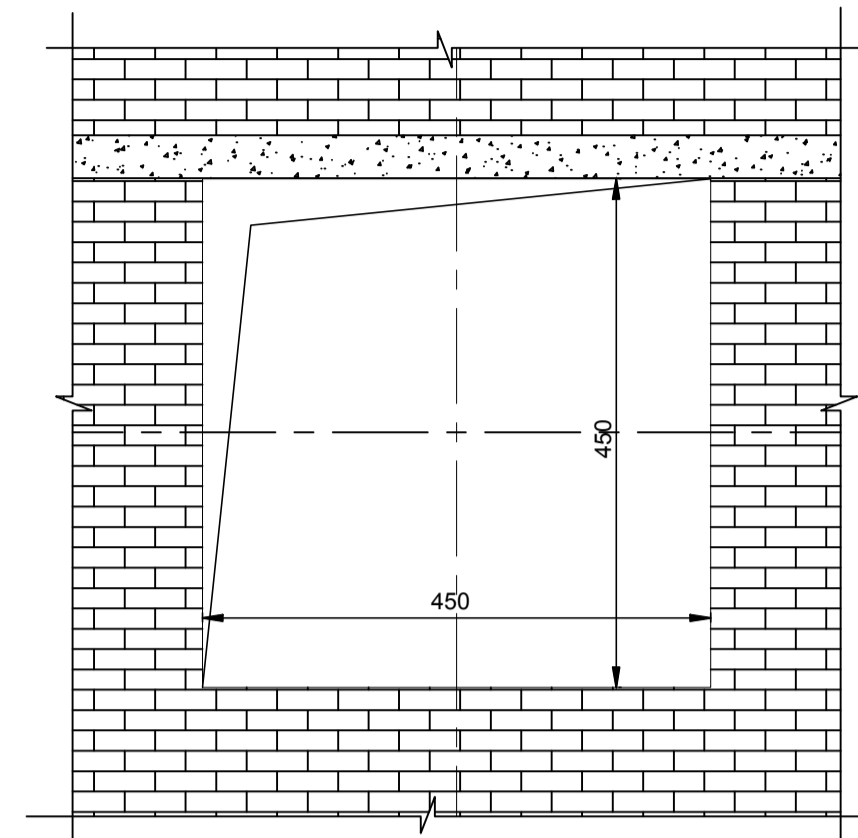
20	TUBE AXIAL FAN	TLJ-400	SIWENT	06	2000	10	1450	0.10
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

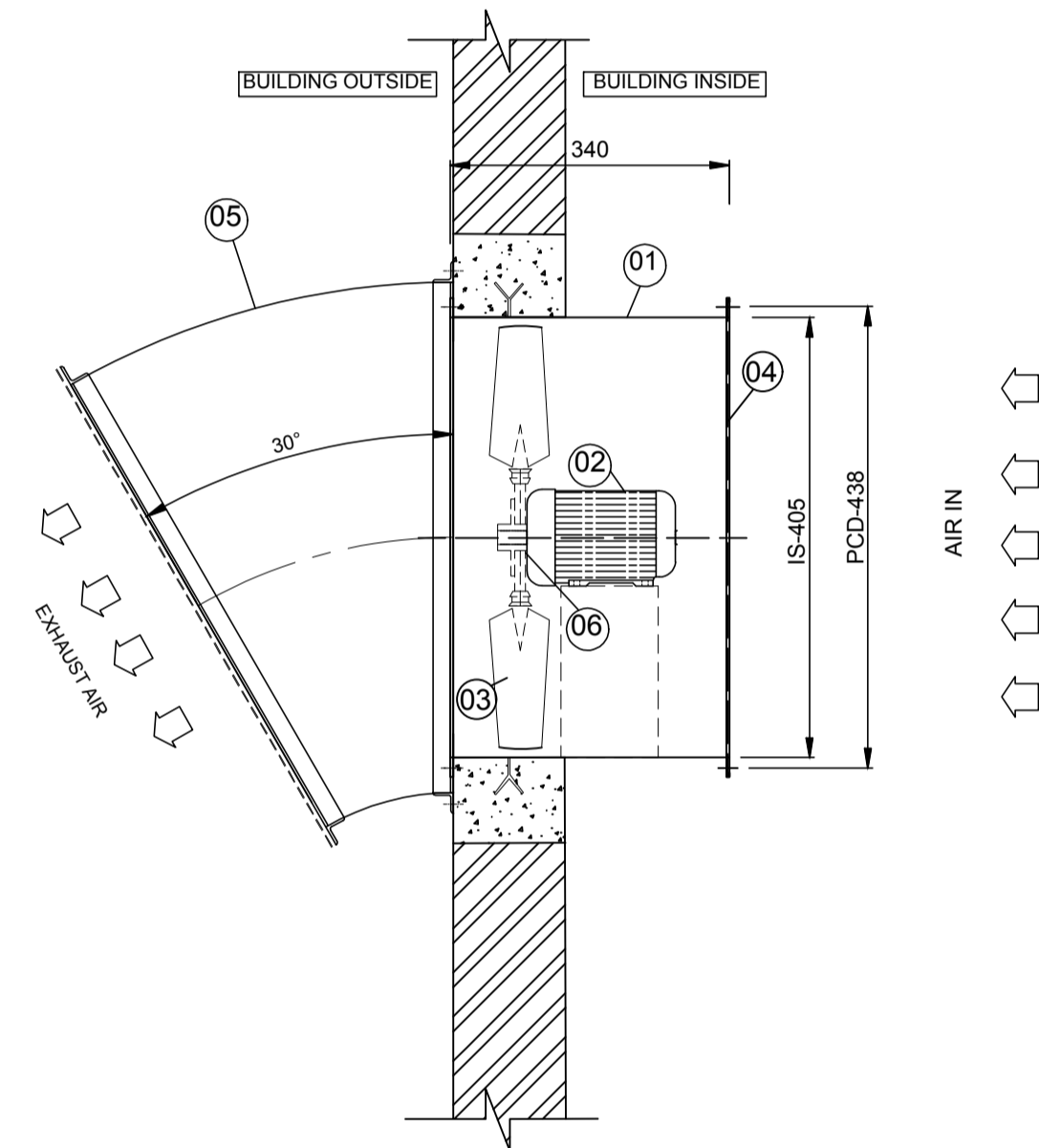
0.37/4	415V, 3PH. 50 HZ. AC SUPPLY	71	1500
RATED MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	SP. SPEED RPM



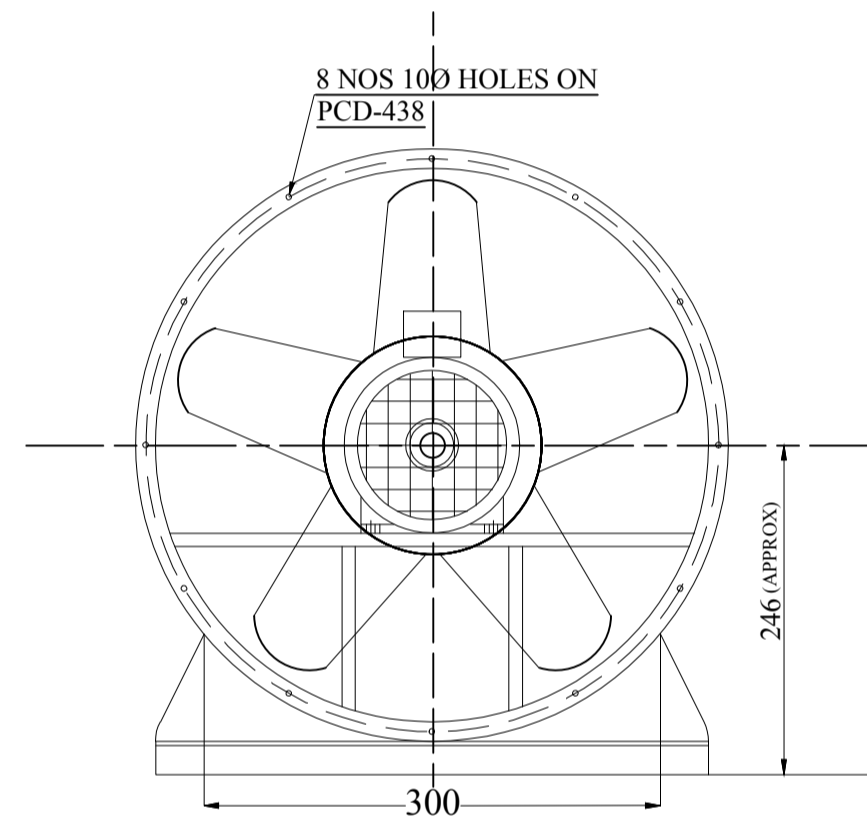
TOP VIEW



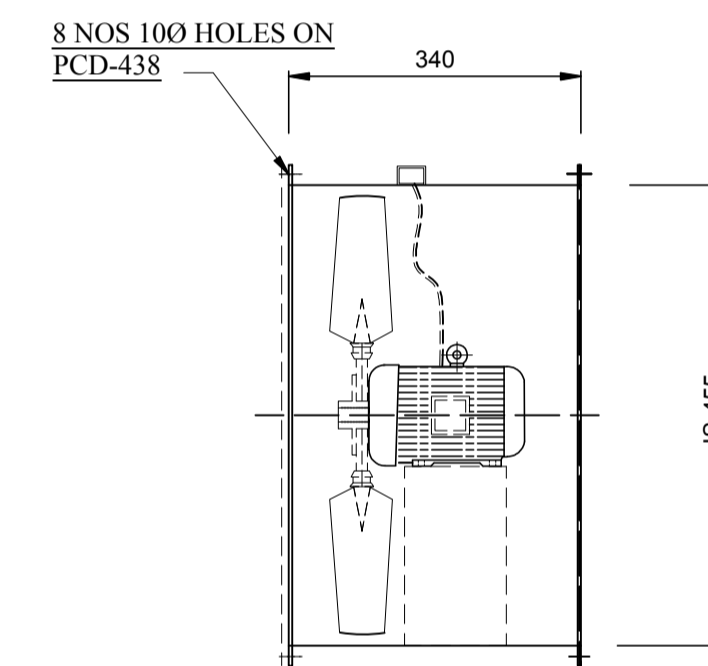
WALL OPENING DETAILS



SIDE ELEVATION



DRIVE END VIEW



FAN ASSEMBLY

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	PRE-FILTER FLANGE TYPE	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	TLJ-400	SARALA	06	2000	10	1450	0.10	0.37/4	415V,3PH,50HZ AC Supply	71	1500

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, NTPC LIMITED
EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	NAME	SIGN	DATE	
		DRN	KJ	KJ	01-02-2023
		DESN	KJ	KJ	01-02-2023
		CHD	AD	AD	01-02-2023
		APPD	AD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE	NTS	DEPT.	SIGN
SHEET 01 OF 01		REV. 00	



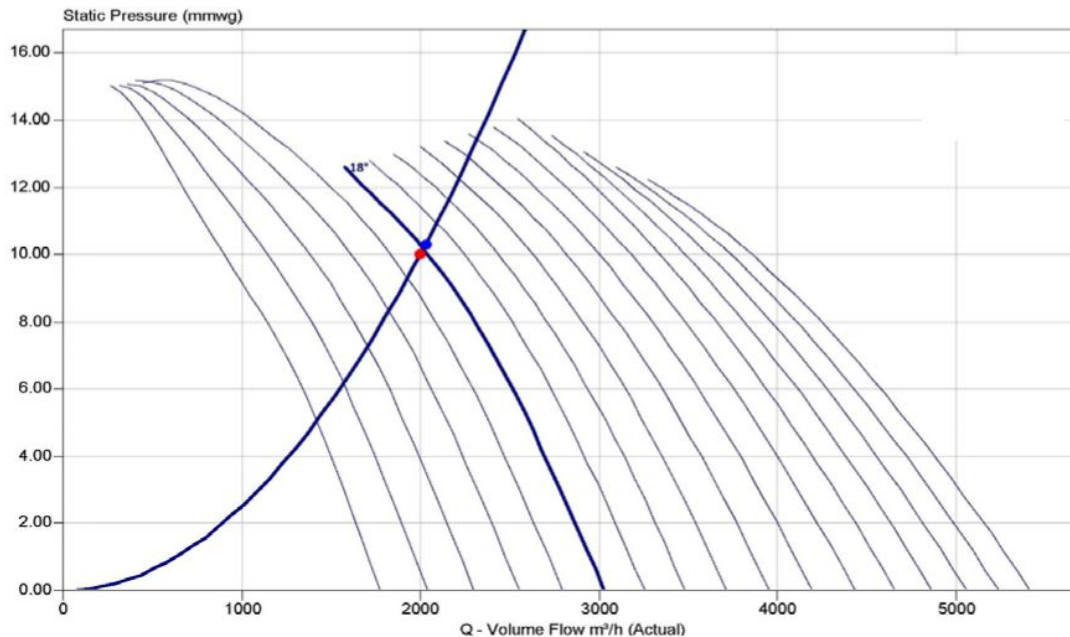
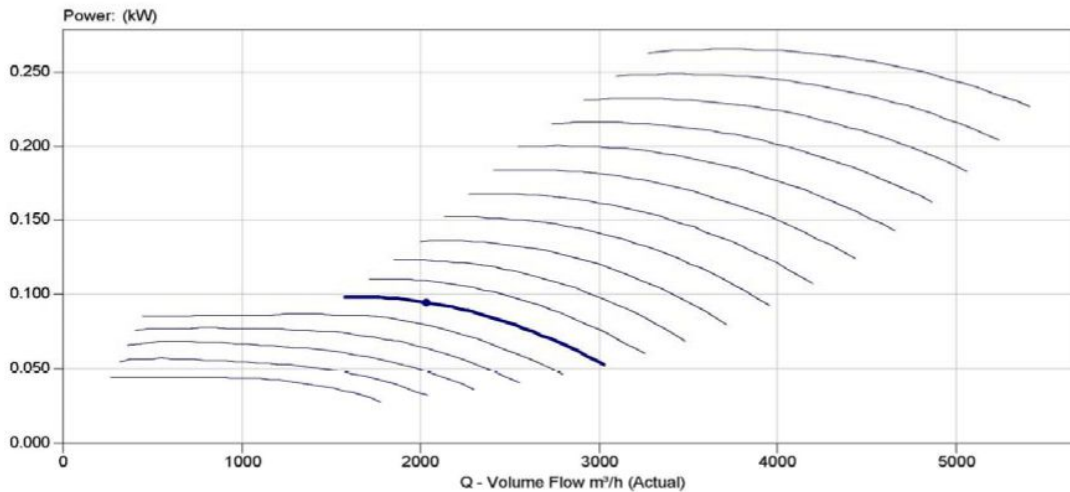
CLIENT'S NAME

PROJECT : 3X200 MW + 3X500 MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- TLJ-400

VOLUME OF AIR (CMH)	2000	FAN SPEED (RPM)	1450
STATIC PRESSURE (MM. WG.)	10	FAN POWER (KW)	0.10



SUBURBAN INDUSTRIAL WORKS PVT. LTD.



OFFER NO. : SIWL/AKM/22-23/035A

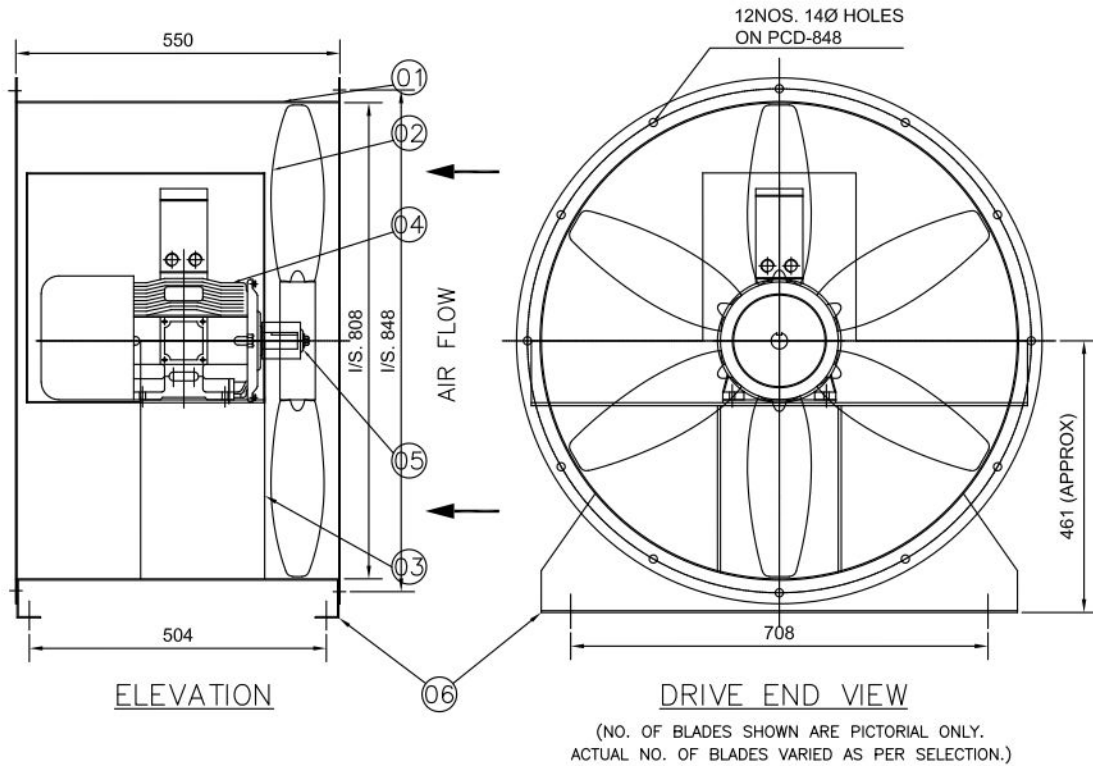
CLIENT'S NAME :

PROJECT : 3X200MW + 3X500MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

DATE: 29.08.22

TECHNICAL DATA SHEET OF TUBE AXIAL FAN

SL. NO.			1	2	3	4
1	FAN MAKE / BRAND		SUBURBAN INDUSTRIAL WORKS PVT. LTD. / SIWENT			
2	FAN MODEL		BFJ-800	BFJ-800	BFJ-450	BFJ-450
3	FAN TYPE		BI-FURCATOR FAN			
4	QTY. OF A FAN	Nos	4	4	2	2
5	DESIGN DENSITY	kg/m ³	1.2 @ 20 DEG. C.,			
6	CAPACITY	CMH	10000	7500	4000	2000
7	STATIC PRESSURE	mm wg.	15	15	15	15
8	TOTAL PRESSURE	mm wg.	16.85	16.03	18.0	15.75
9	RATED SPEED	RPM	970	970	1450	1450
10	CRITICAL SPEED	RPM	1500	1500	2400	2400
11	FAN POWER AT RATED SPEED (SHAFT BKW)	bkw	0.67	0.55	0.401	0.16
12	TOTAL EFFICIENCY	%	69	58.8	49.0	53.0
13	IMPELLER DIAMETER	mm	800	800	450	450
14	OUTLET VELOCITY	mps	5.5	4.10	7.0	3.50
15	FAN ARRANGEMENT		IV	IV	IV	IV
16	DRIVE ARRANGEMENT		DIRECT DRIVE			
17	IMPELLER DESIGN		AEROFOIL TYPE			
18	BALANCING		AS PER ISO:1940, G-6.3			
19	VIBRATION LEVEL RIGID BASE	MM/S	4.5 (AS PER VDI-2056 / AS PER ISO:14694)			
20	SOUND LEVEL @ 1.5 MTR. DISTANCE	dB(A)	82	82	80	80
21	PAINTING:		COMPLETE FAN SHALL BE PAINTED WITH EPOXY PAINT			
MOC						
22	IMPELLER MATERIAL		CAST ALUMINIUM IMPELLER, GR. LM-6			
23	CASING MATERIAL		AS PER SPECIFICATION CASING BODY- 3.00 MM (MIN.), (IS:1079/2062)			
RECOMMENDED MOTOR DETAILS						
24	RATED VOLT OF MOTOR		415V, $\pm 10\%$, 3 PHASE, 50 HZ $\pm 5\%$			
25	RECOMMENDED MOTOR (15% MORE THAN FAN POWER)	KW/POLE	1.5/6	1.1/6	0.55/4	0.37/4
26	TYPE OF INSULATION		CLASS - F, TEMP. RISE UPTO CLASS-B			
27	TYPE OF PROTECTION		IP-55	IP-55	IP-55	IP-55
28	TYPE OF ENCLOSURE		FLP MOTOR			



NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH EPOXY PAINT.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
CLIENT-			

PROJECT-3X200MW+3X500MW RAMAGUNDAM
STPP(FGD SYSTEM PACKAGE)



GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN
ARR. IV

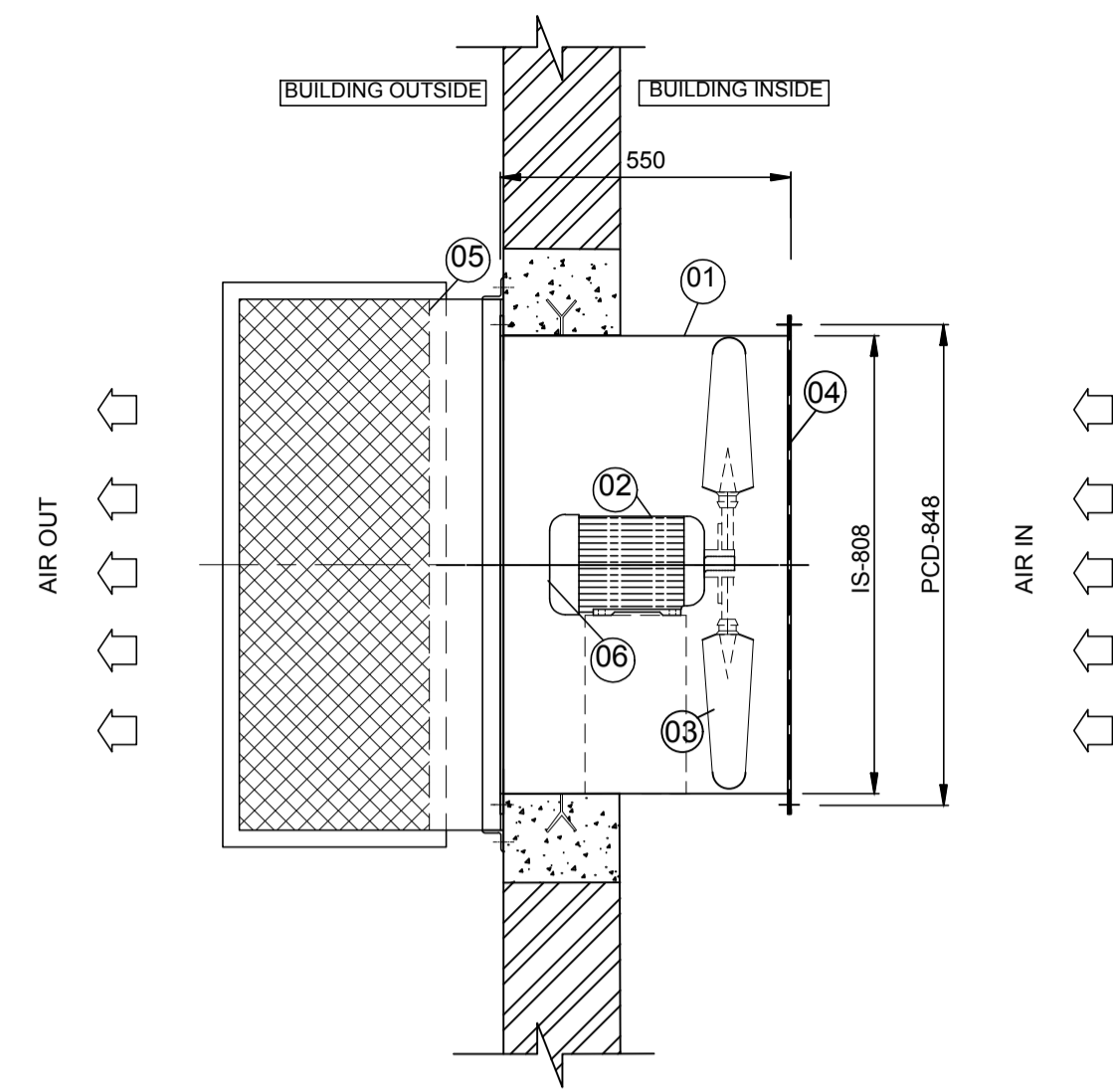
DRAWN	S.NASKAR	DRAWING NO.	JOB NO.
CHECKED	P.DAS		SCALE
APPROVED		SIWL-656/11	NTS
DATE	29/08/2022	REV	0

TECHNICAL DATA OF FAN

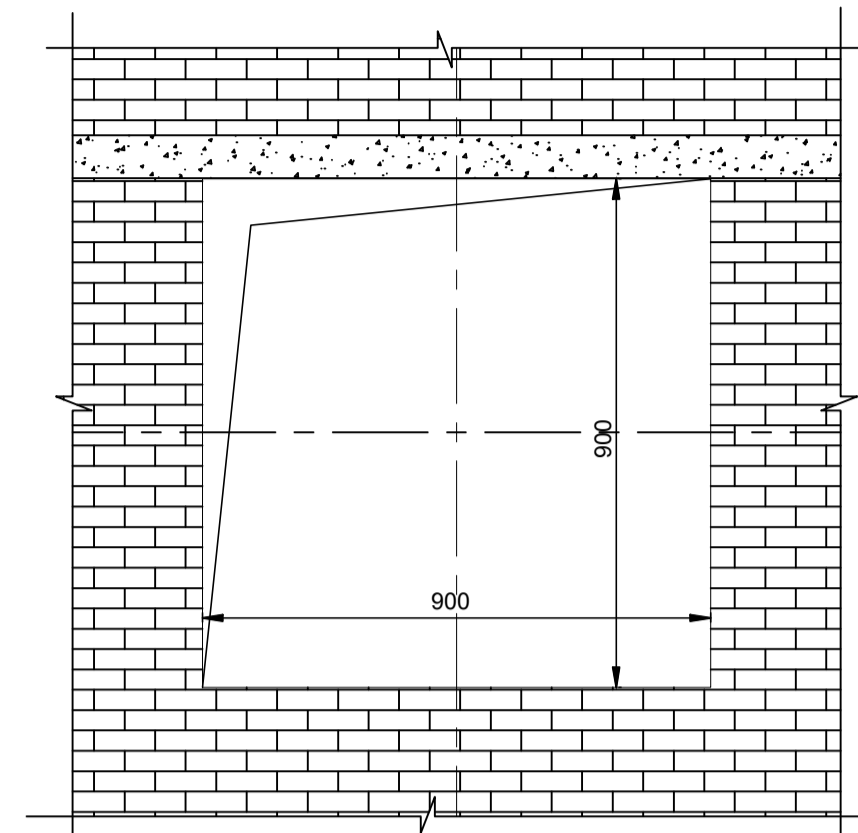
11	BIFURCATED AXIAL FAN	BFJ-800	SIWENT	04	10000	15	970	0.67
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

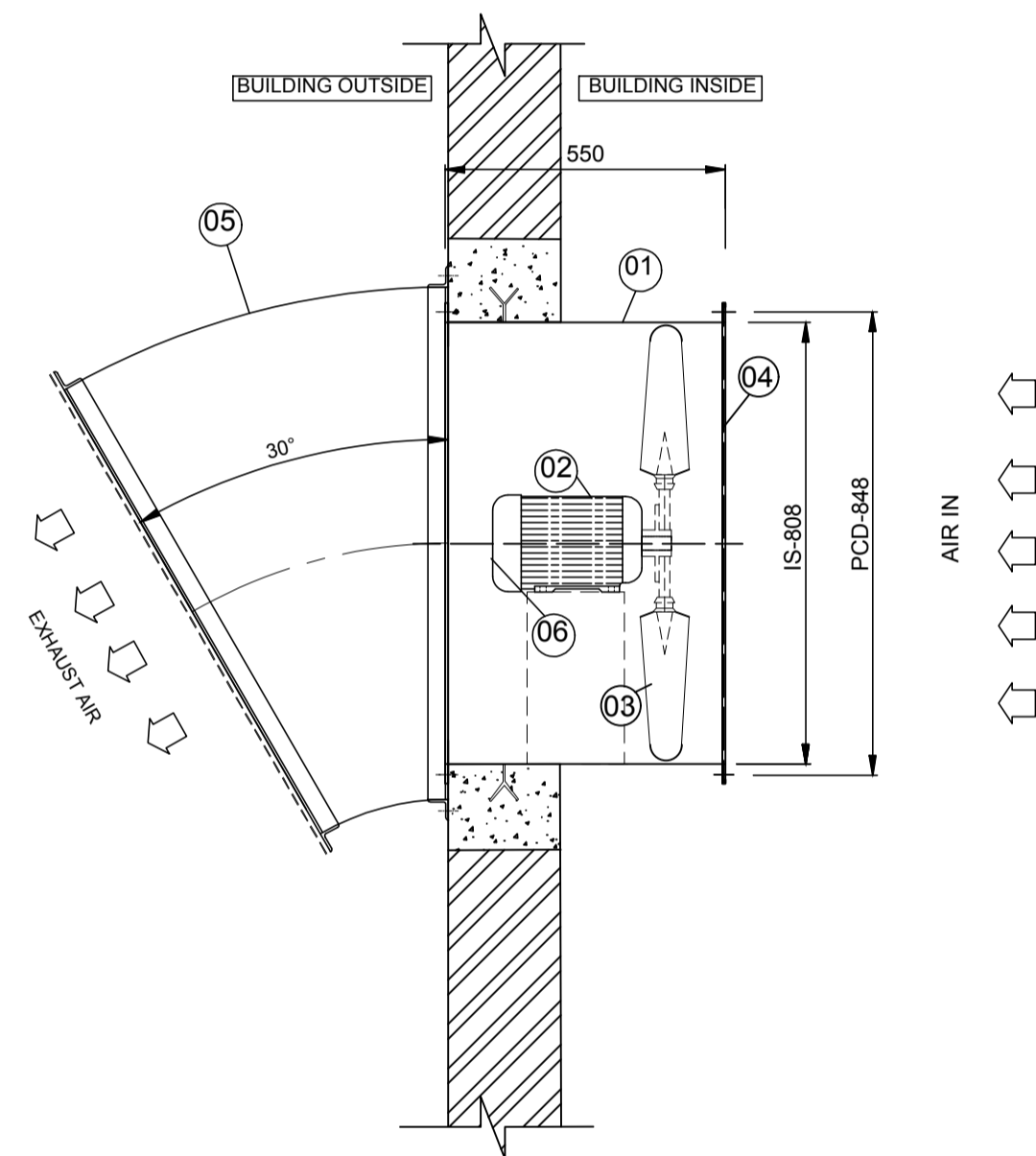
1.5/6	415V, 3PH, 50 HZ. AC SUPPLY	100L	1000
FLP MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	SPEED RPM



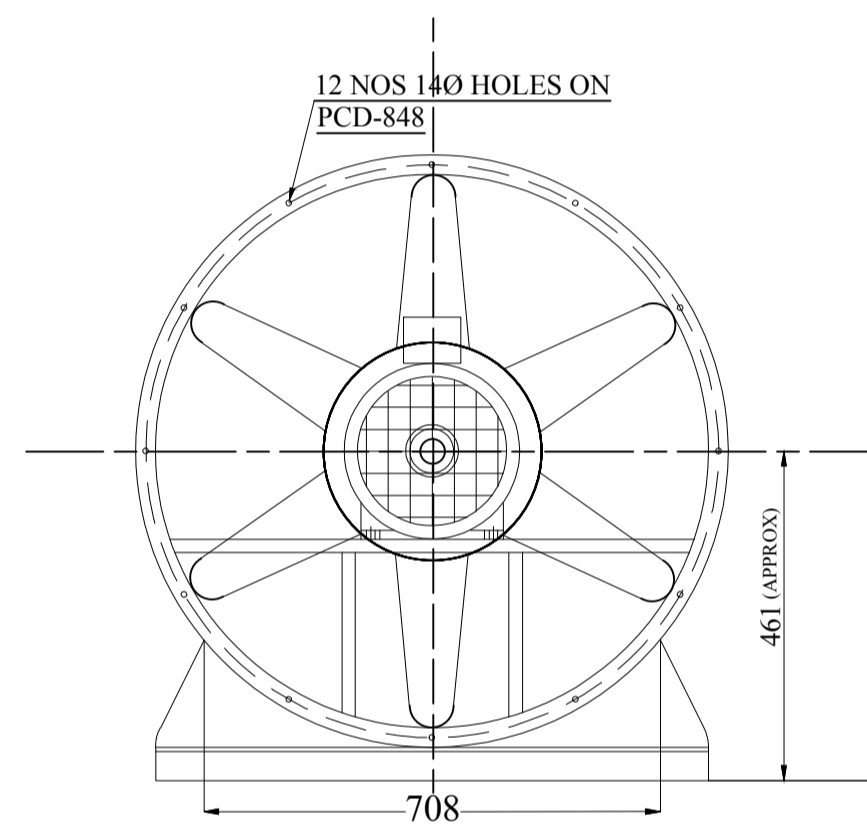
TOP VIEW



WALL OPENING DETAILS

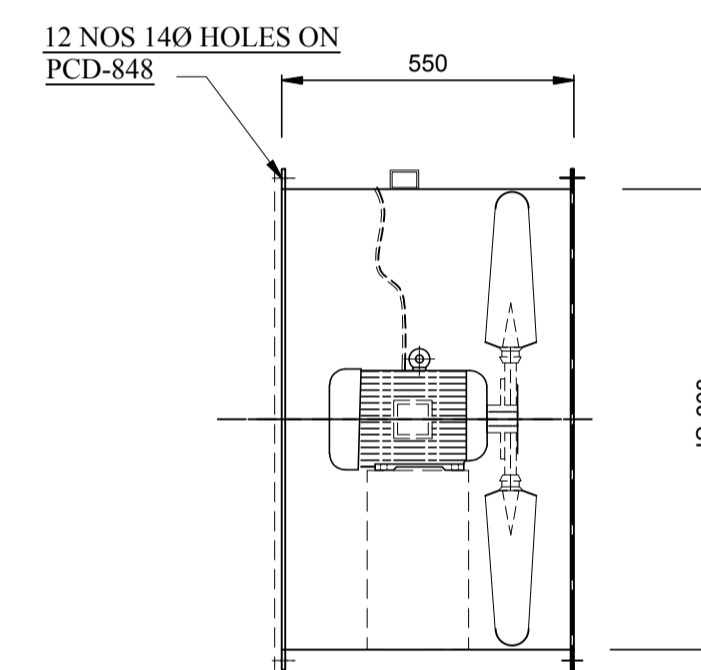


SIDE ELEVATION



DRIVE END VIEW

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)



FAN ASSEMBLY

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	PRE-FILTER FLANGE TYPE	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	BFJ-800	SARALA	04	10000	15	970	0.67	1.5/6	415V,3PH,50HZ AC Supply	100L	1000

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, NTPC LIMITED
EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	NAME	SIGN	DATE	
		DRN	KJ	KJ	01-02-2023
		DESN	KJ	KJ	01-02-2023
		CHD	AD	AD	01-02-2023
		APPD	AD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE	NTS	DEPT.	SIGN
SHEET 01 OF 01		REV. 00	



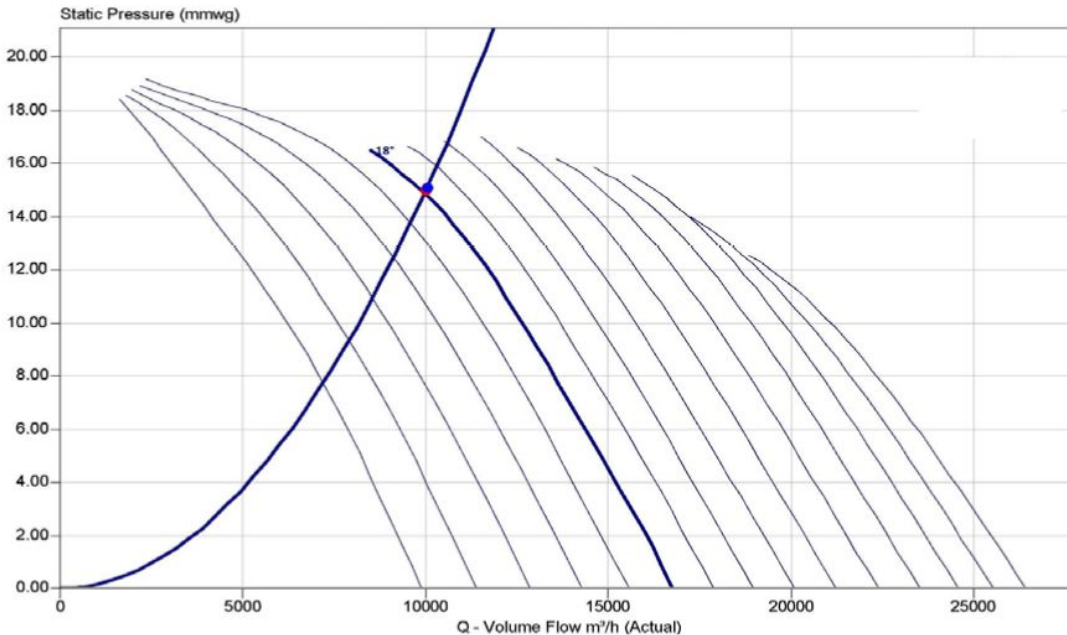
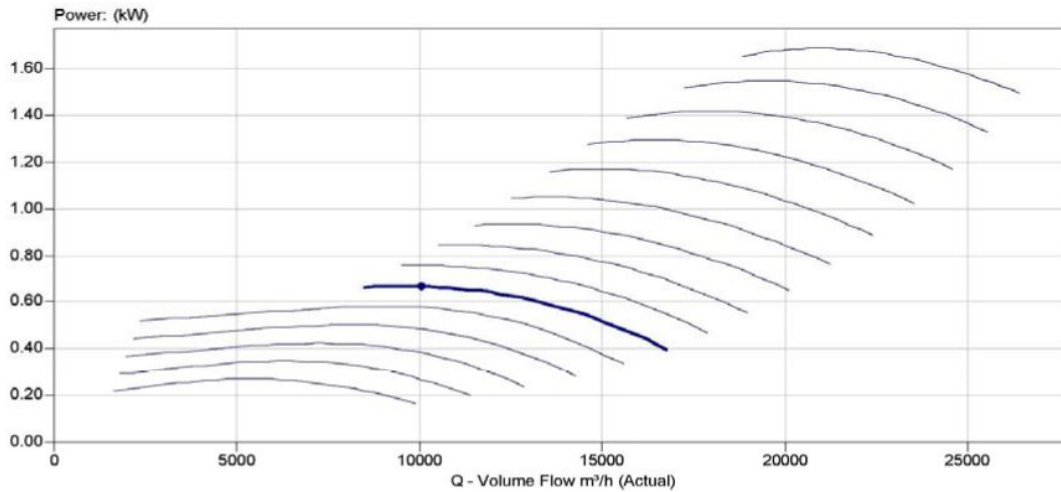
CLIENT'S NAME

PROJECT : 3X200MW + 3X500MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

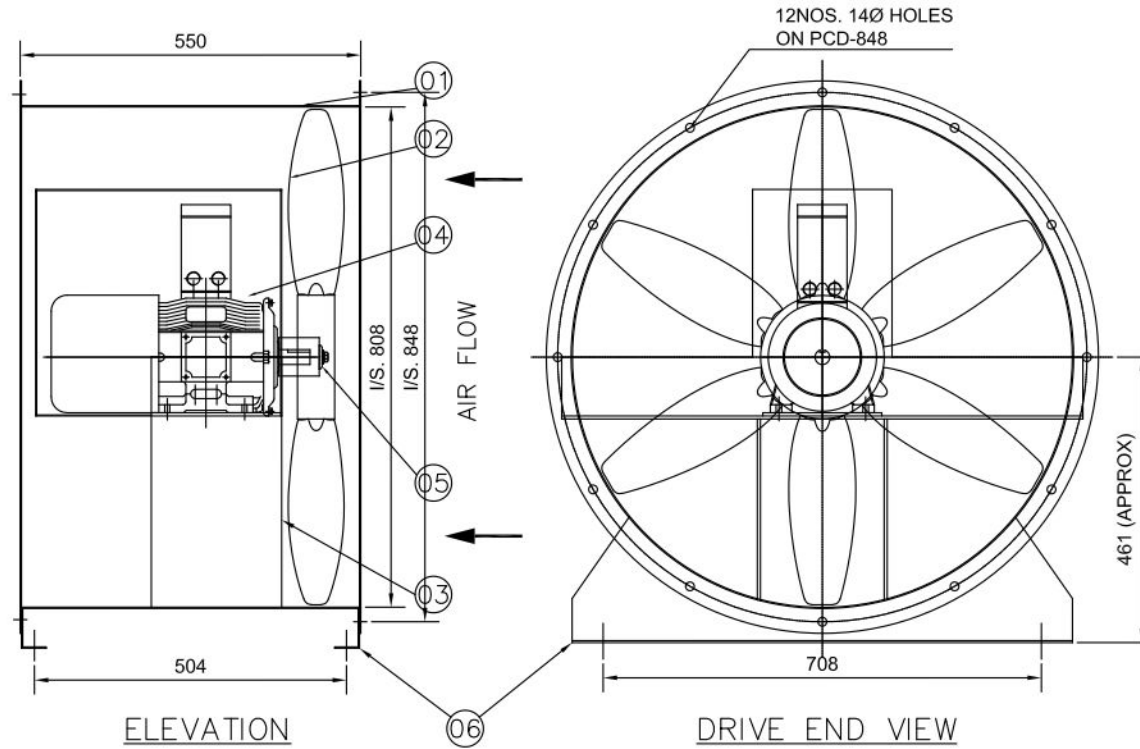
FAN MODEL- BFJ-800

VOLUME OF AIR (CMH)	10000	FAN SPEED (RPM)	970
STATIC PRESSURE (MM. WG.)	15	FAN POWER (KW)	0.67



NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH EPOXY PAINT.



(NO. OF BLADES SHOWN ARE PICTORIAL ONLY. ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
------	------	-------------------------	----

CLIENT

PROJECT-3X200MW+3X500MW RAMAGUNDAM STPP
(FGD SYSTEM PACKAGE)



GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN ARR. IV

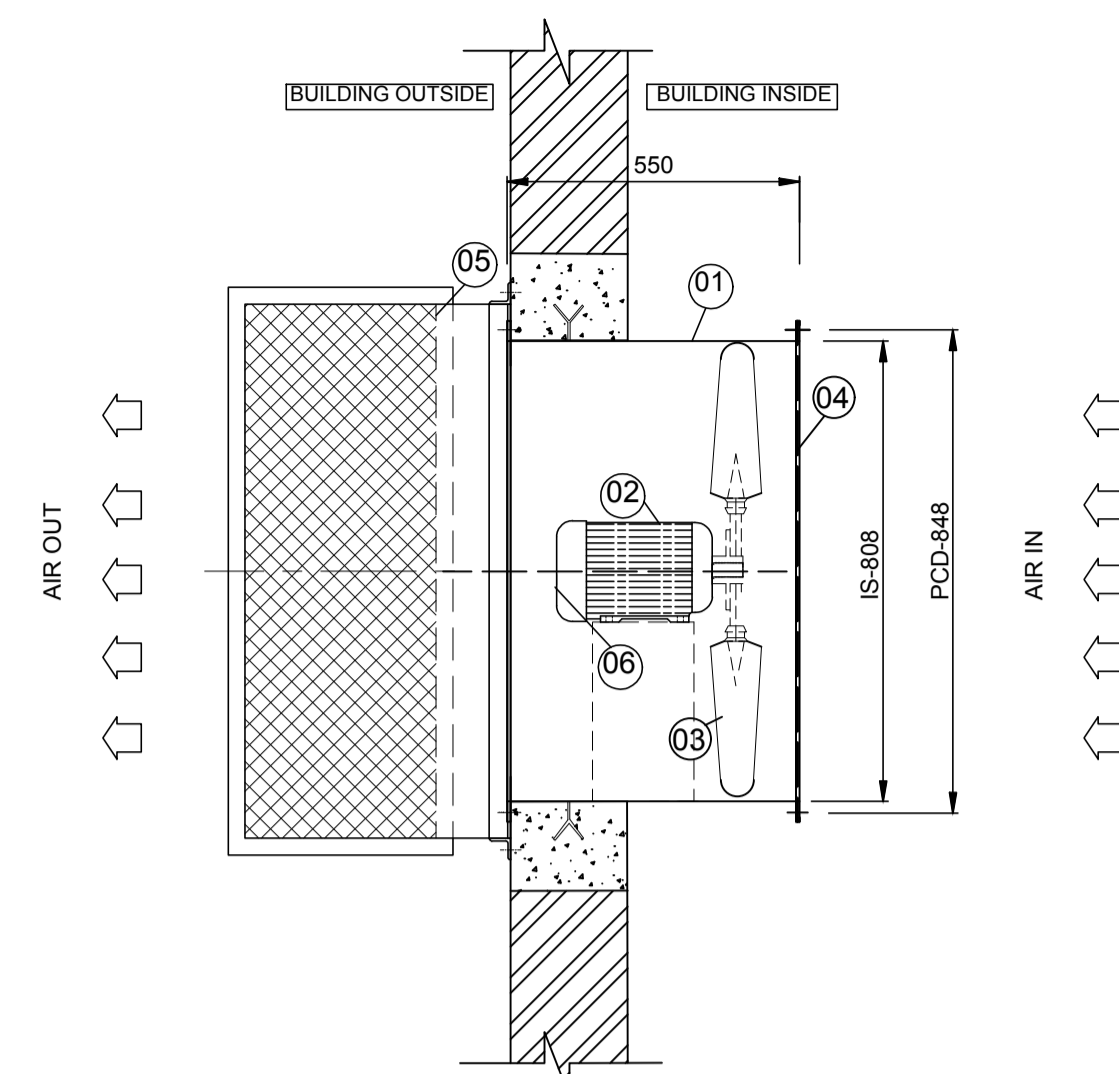
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CHECKED	P.DAS	NO.	SCALE NTS
APPROVED		SIWL-656/12	REV 0
DATE	29/08/2022		

TECHNICAL DATA OF FAN

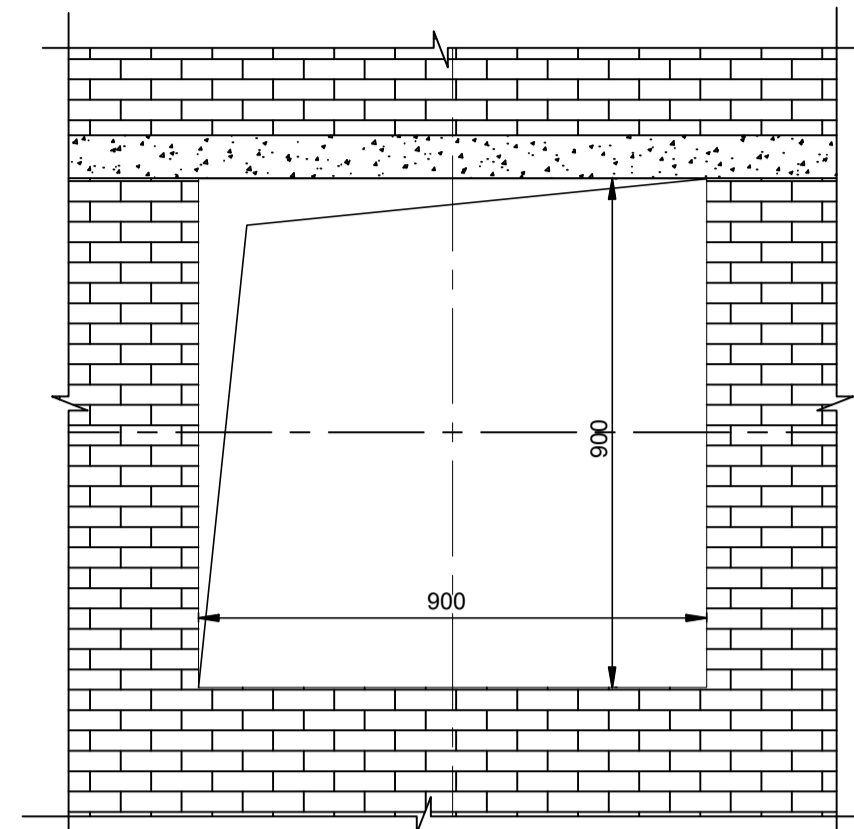
12	BIFURCATED AXIAL FAN	BFJ-800	SIWENT	4	7500	15	970	0.55
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

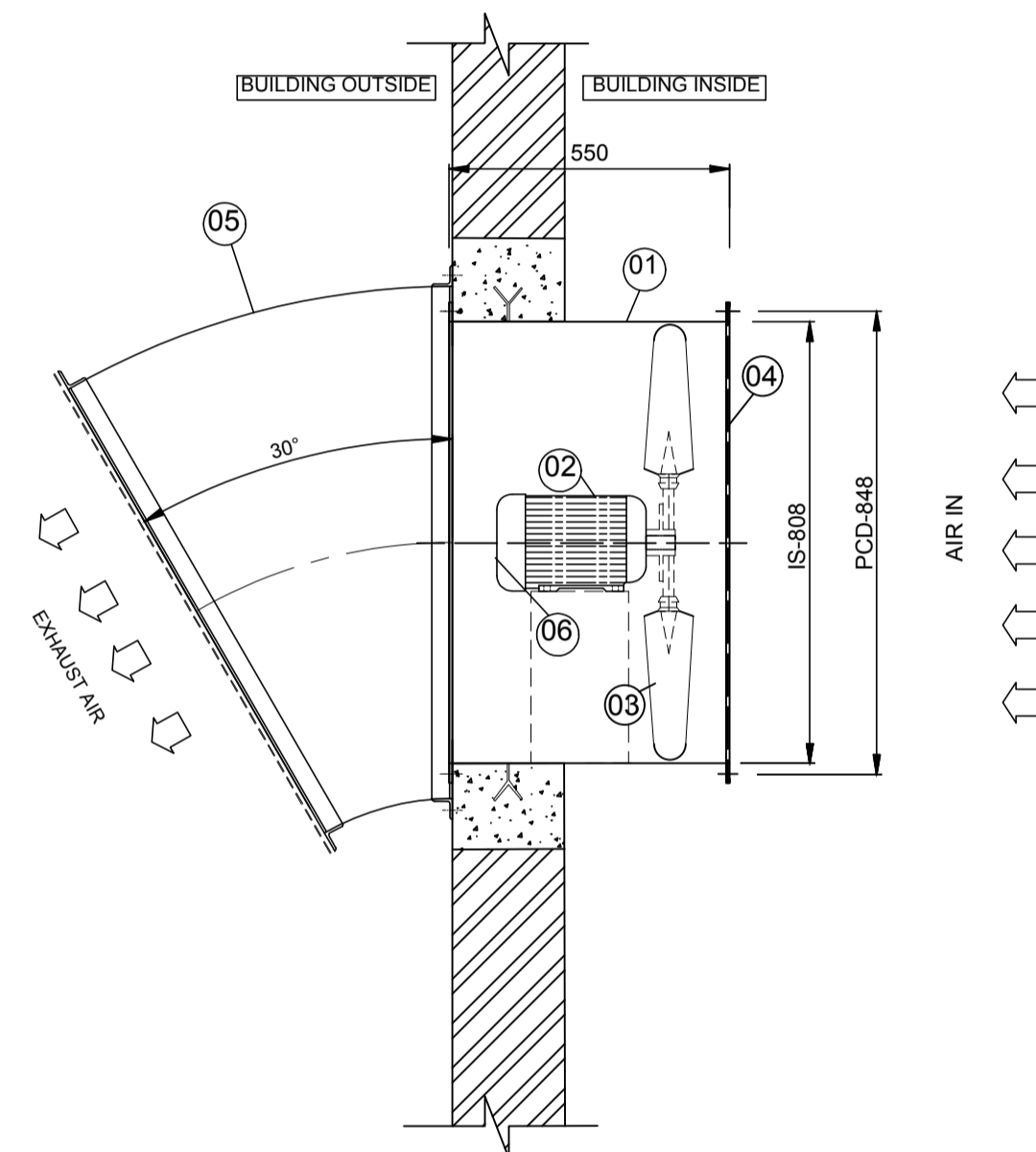
1.1/6	415V, 3PH. 50 HZ. AC SUPPLY	90L	1000
FLP MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	FLP SPEED RPM



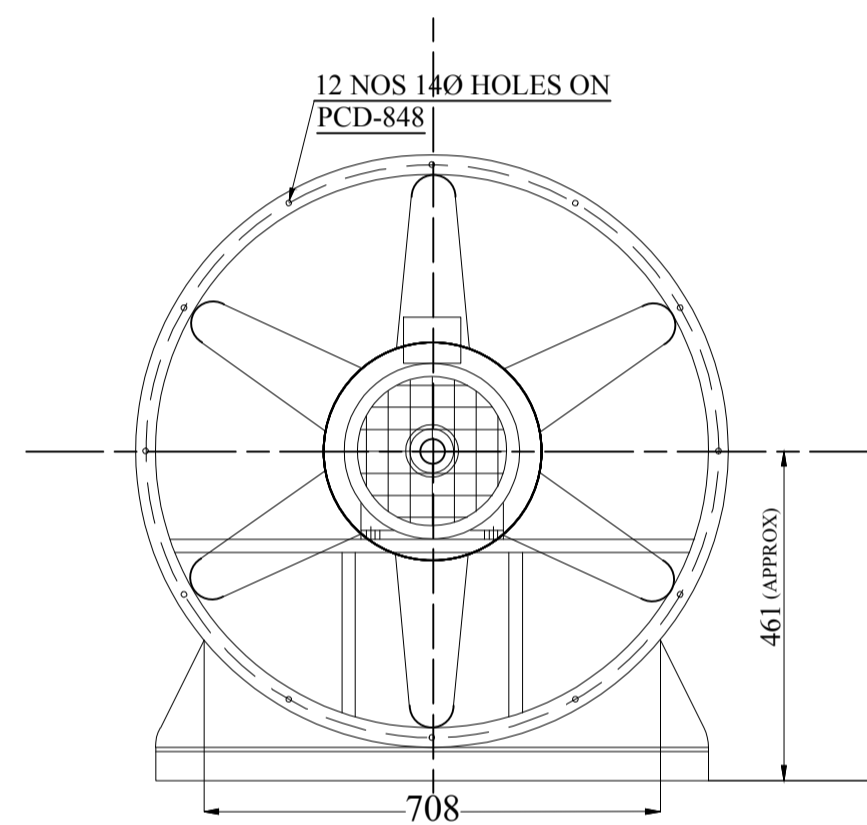
TOP VIEW



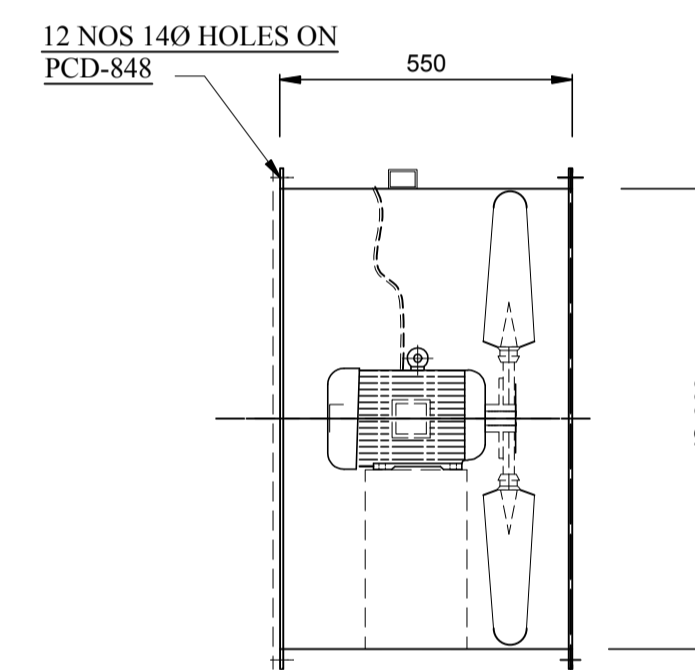
WALL OPENING DETAILS



SIDE ELEVATION



DRIVE END VIEW



FAN ASSEMBLY

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	PRE-FILTER FLANGE TYPE	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	BFJ-800	SARALA	04	7500	15	970	0.55	1.1/6	415V,3PH,50HZ AC Supply	90L	1000

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, NTPC LIMITED
EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	NAME	SIGN	DATE	
		DRN	KJ	KJ	01-02-2023
		DESN	KJ	KJ	01-02-2023
		CHD	AD	AD	01-02-2023
		APPD	AD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE	NTS	DEPT.	SIGN
SHEET 01 OF 01		REV. 00	



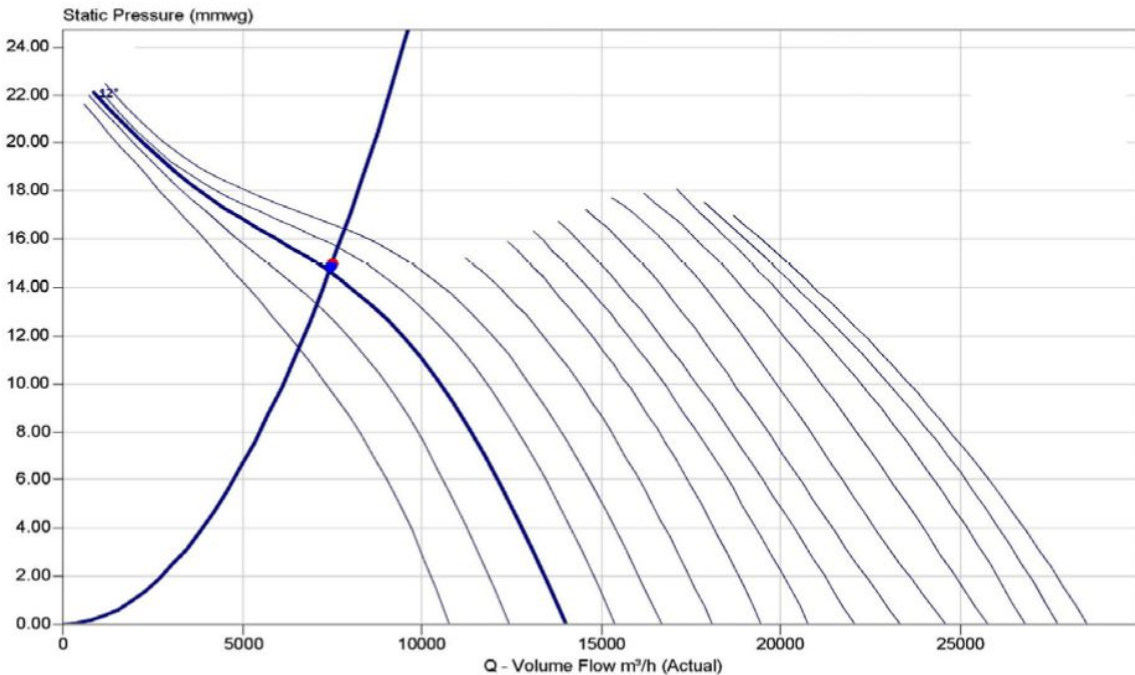
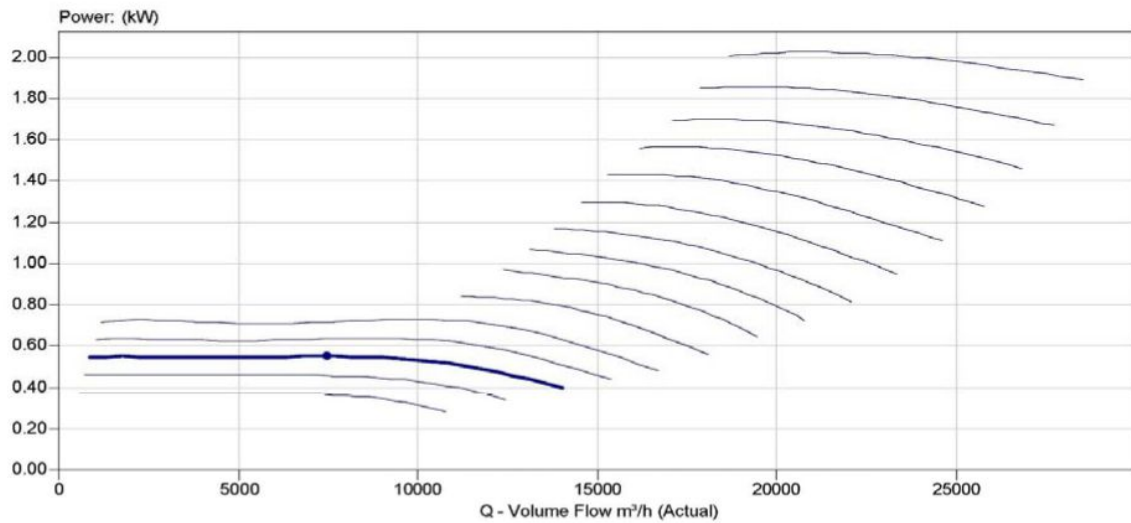
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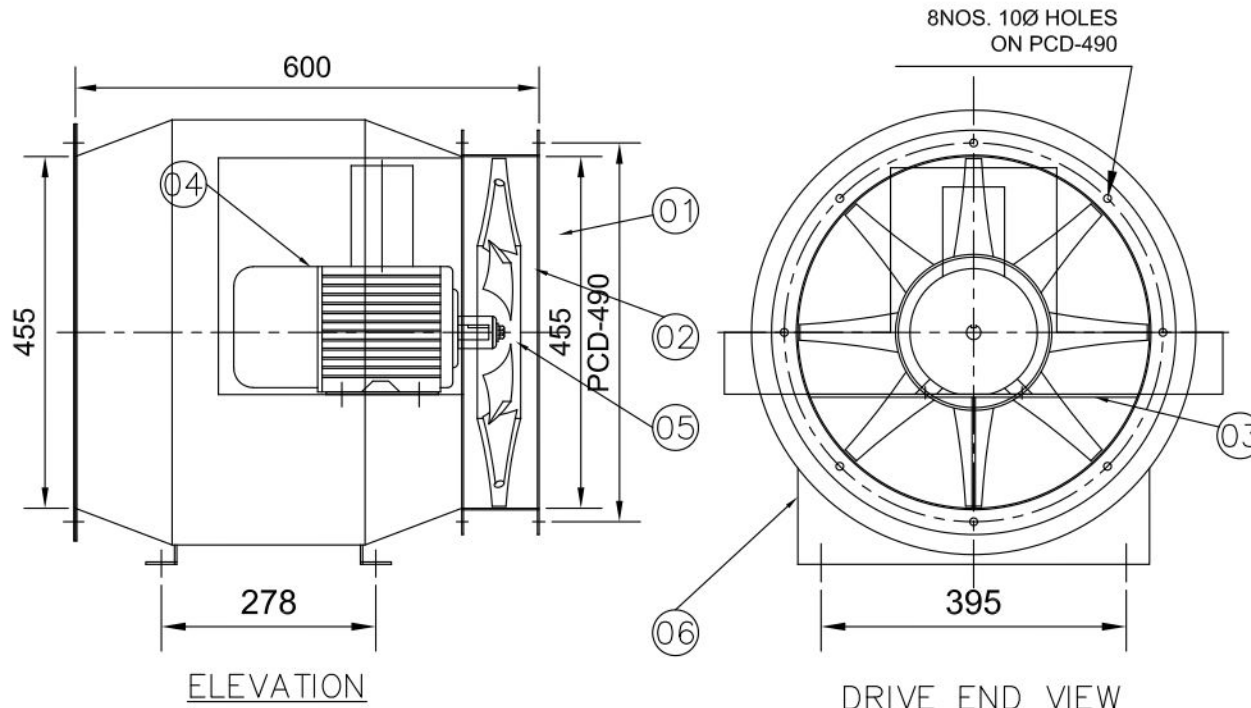
PROJECT : 3X200MW + 3X500MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- BFJ-800

VOLUME OF AIR (CMH)	7500	FAN SPEED (RPM)	970
STATIC PRESSURE (MM. WG.)	15	FAN POWER (KW)	0.55





(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH EPOXY PAINT.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
------	------	-------------------------	----

CLIENT-

PROJECT-3X200MW+3X500MW RAMAGUNDAM STPP
(FGD SYSTEM PACKAGE)



GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN ARR. IV

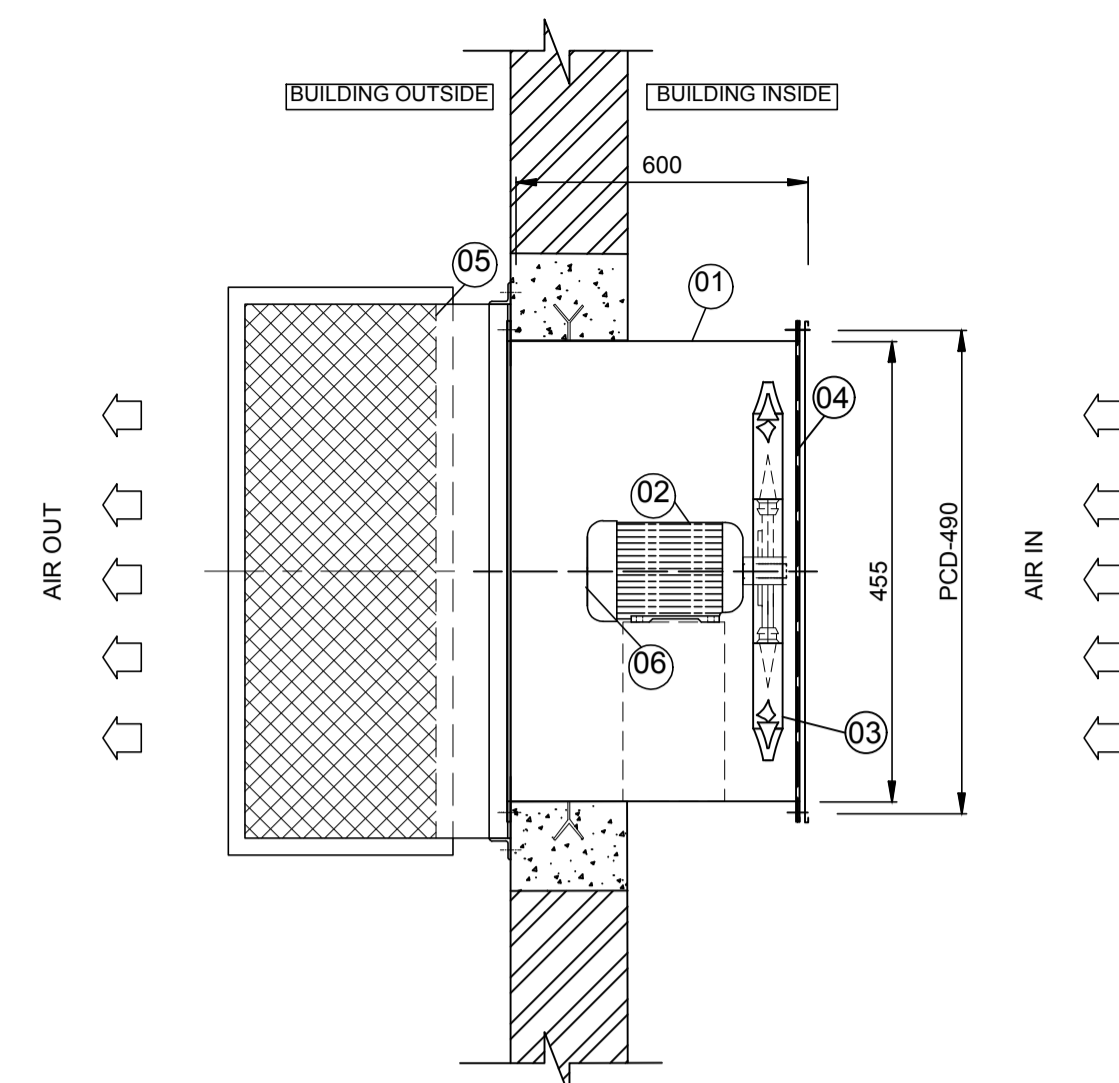
DRAWN	S.NASKAR	DRAWING NO.	JOB NO.
CHECKED	P.DAS	NO.	SCALE NTS
APPROVED		SIWL-656/13	REV 0
DATE	29/08/2022		

TECHNICAL DATA OF FAN

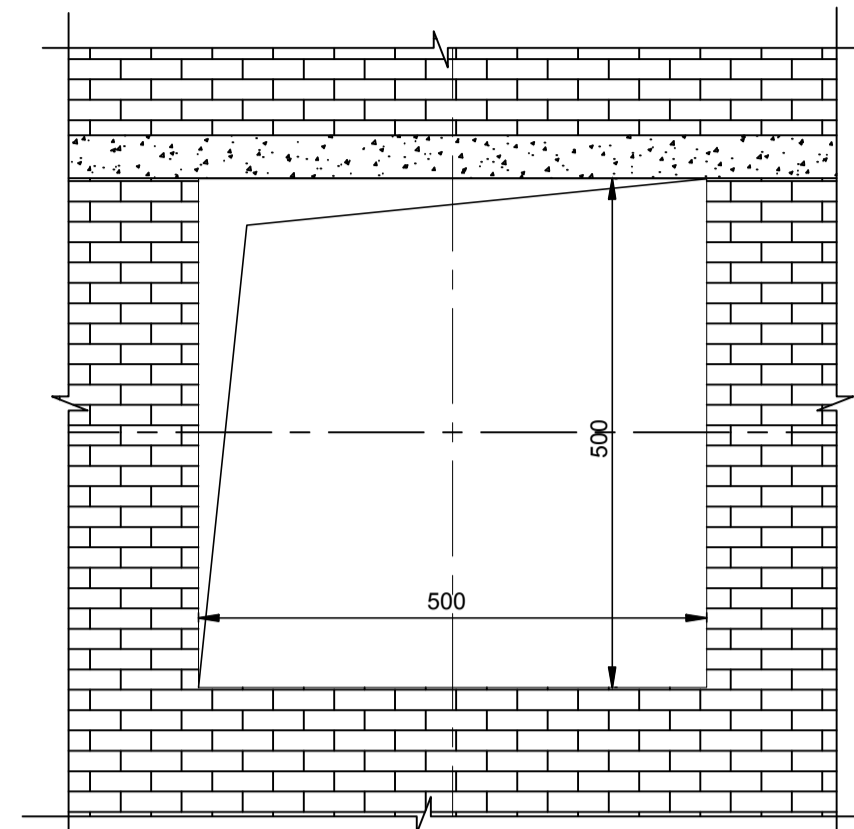
13	BIFURCATED AXIAL FAN	BFJ-450	SIWENT	2	4000	15	1450	0.401
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

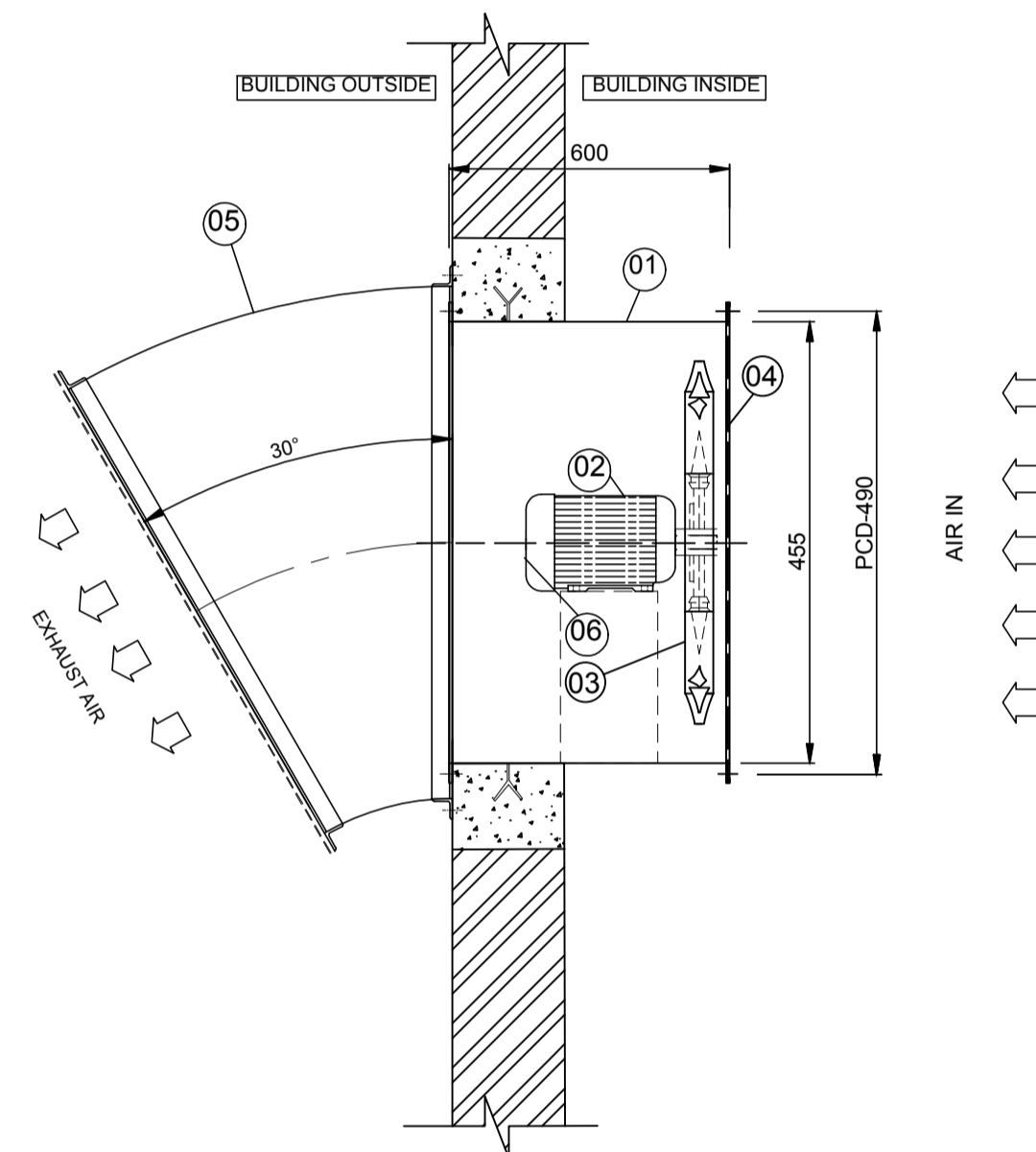
0.55/4	415V, 3PH. 50 HZ. AC SUPPLY	80	1500
FLP MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	FLP SPEED RPM



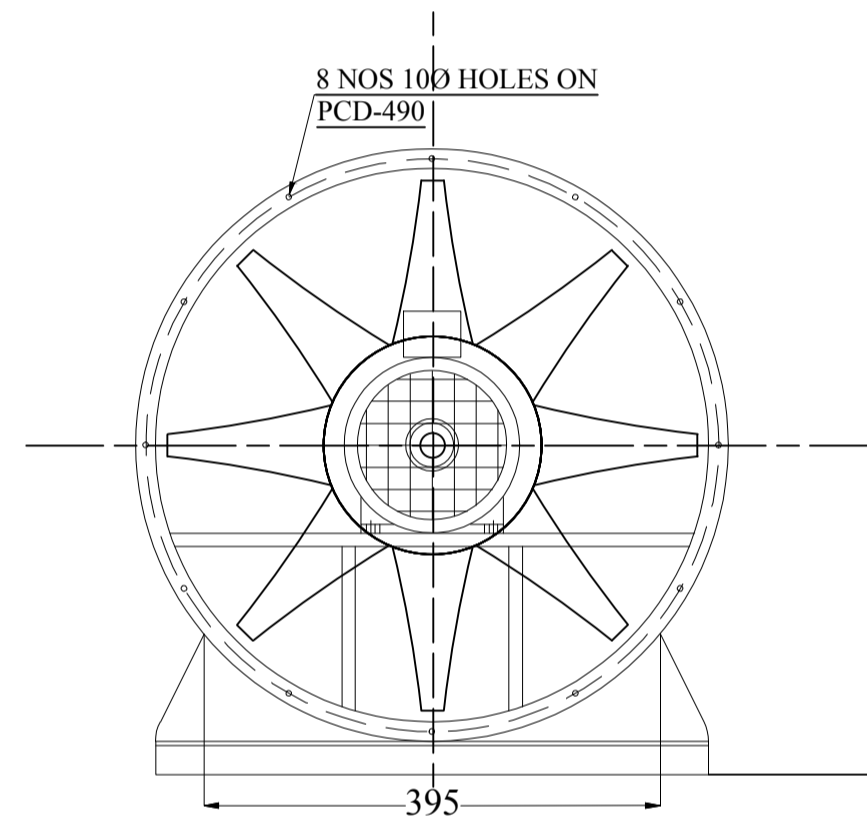
TOP VIEW



WALL OPENING DETAILS

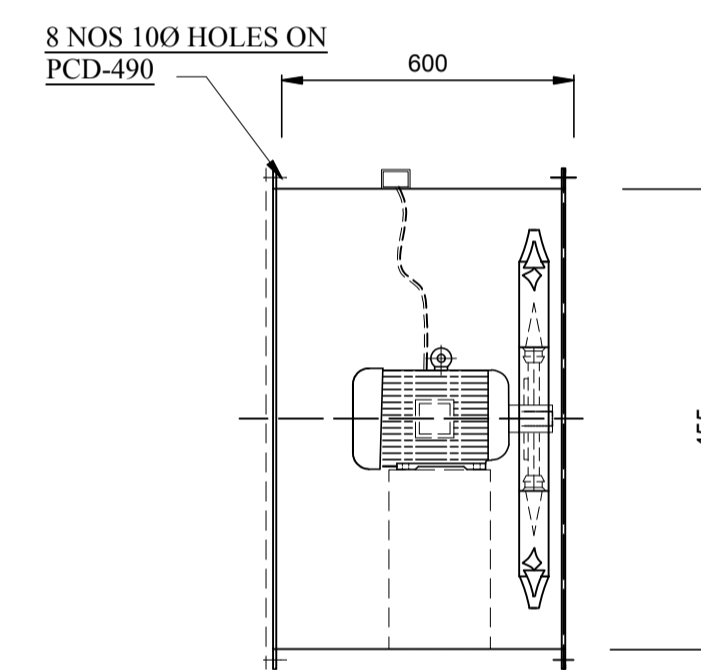


SIDE ELEVATION



DRIVE END VIEW

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)



FAN ASSEMBLY

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	PRE-FILTER FLANGE TYPE	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	BFJ-450	SARALA	02	4000	15	1450	0.40	0.55/4	415V,3PH,50HZ AC Supply	80	1500

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, NTPC LIMITED
EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	NAME	SIGN	DATE	
		DRN	KJ	KJ	01-02-2023
		DES	KJ	KJ	01-02-2023
		CHD	AD	AD	01-02-2023
		APPD	AD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE	NTS	DEPT.	SIGN
SHEET 01 OF 01		REV. 00	



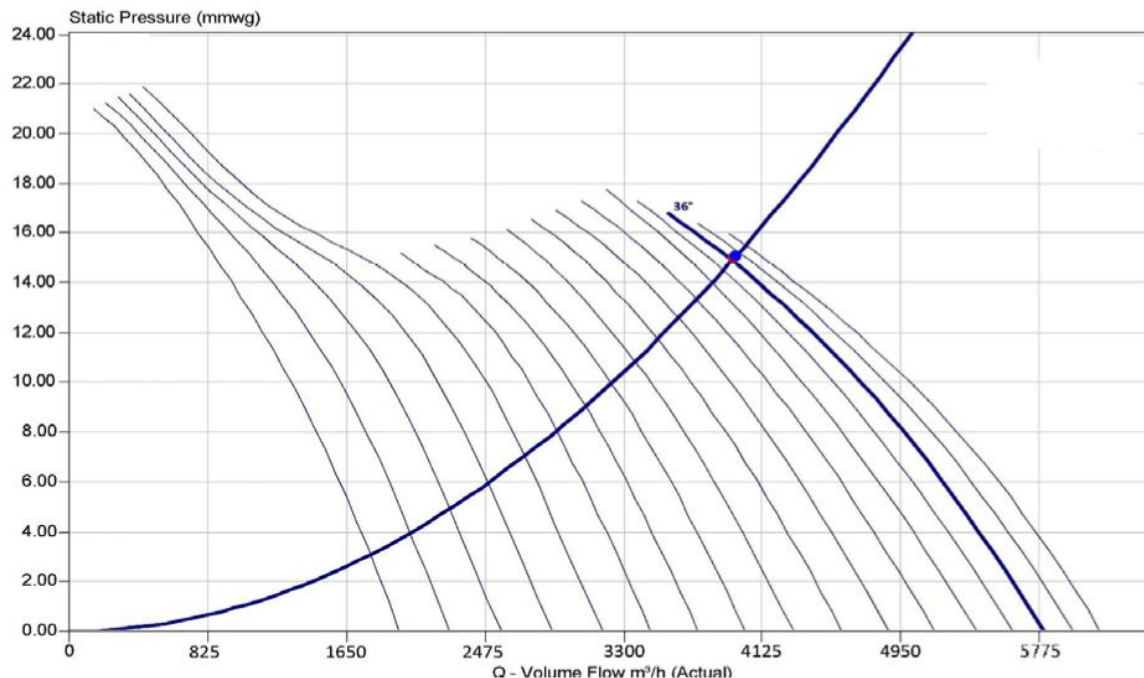
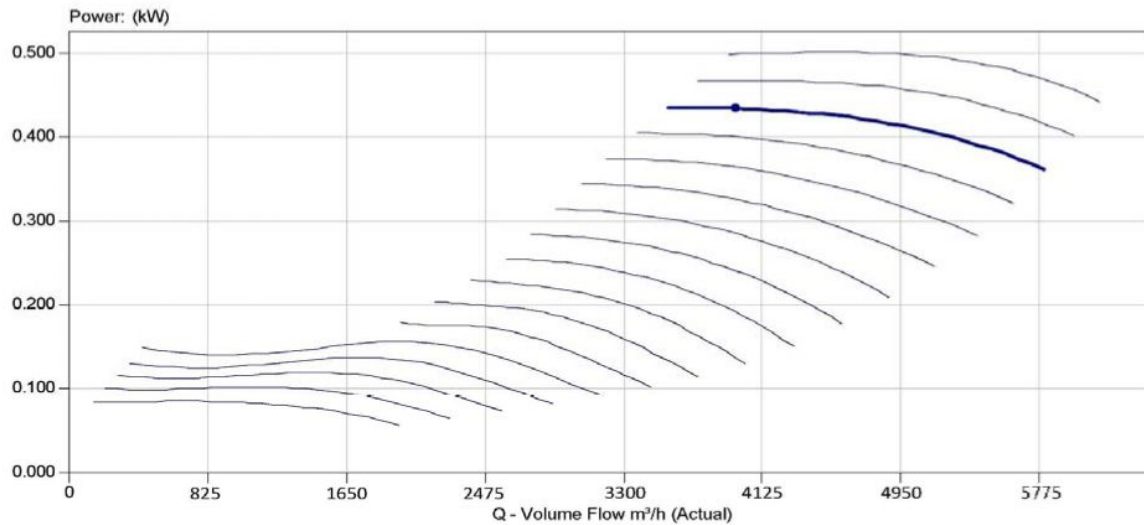
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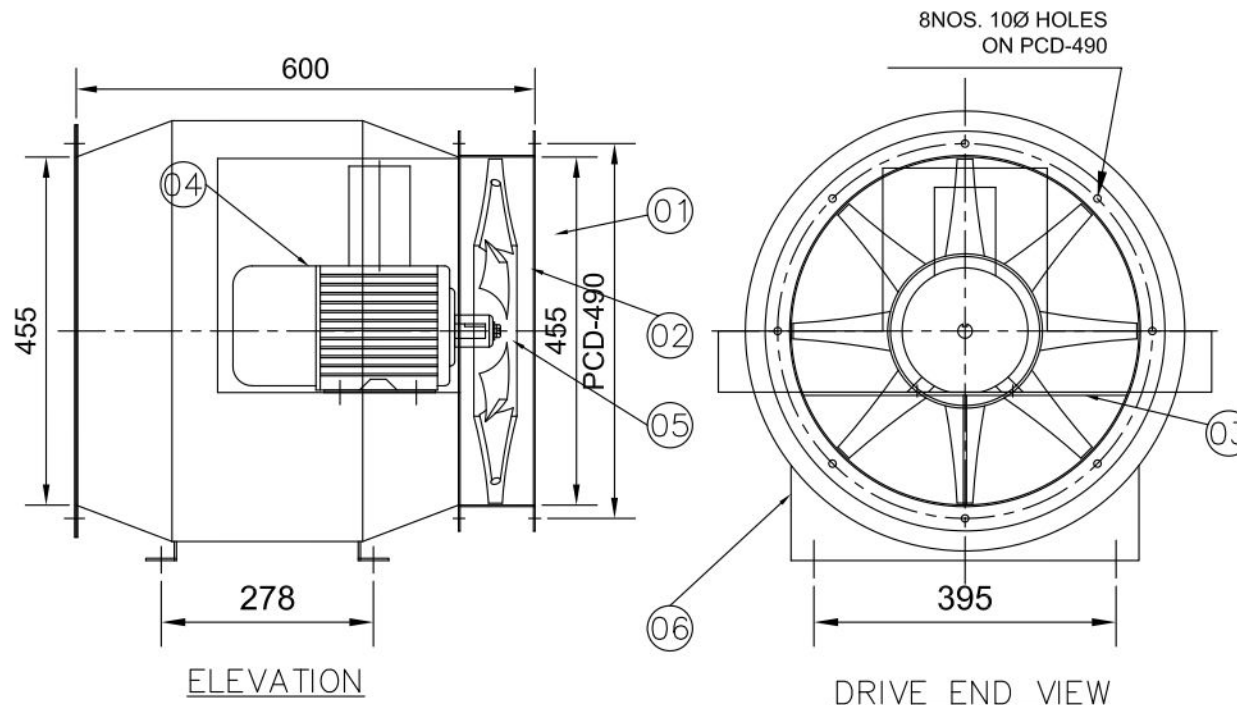
PROJECT : 3X200MW + 3X500MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- BFJ-450

VOLUME OF AIR (CMH)	4000	FAN SPEED (RPM)	1450
STATIC PRESSURE (MM. WG.)	15	FAN POWER (KW)	0.40





8NOS. 10Ø HOLES
ON PCD-490

ELEVATION

DRIVE END VIEW

(NO. OF BLADES SHOWN ARE PICTORIAL ONLY.
ACTUAL NO. OF BLADES VARIED AS PER SELECTION.)

NOTES:-

1. IMPELLER WOULD BE BALANCED AS PER ISO:1940,G:6.3.
2. PAINTING:-FAN CASING SHALL BE PAINTED WITH EPOXY PAINT.

06.	MOUNTING LEG	2NOS.	MS	IS: 1079/2062
05.	IMPELLER RETAINING WASHER	1 NO.	MS	IS: 1079/2062
04.	MOTOR	1 NO.		AS MENTION
03.	MOTOR BASE	1 NO.	MS	IS: 1079/2062
02.	IMPELLER	1 NO.	CAST AL	LM-6
01.	FAN CASING	1 NO.	MS	IS: 1079/2062
SL. NO.	DESCRIPTION	QTY.	MATL.	REFERENCE

BILL OF MATERIAL

DATE	MARK	DESCRIPTION OF REVISION	BY
------	------	-------------------------	----

CLIENT-

PROJECT-3X200MW+3X500MW RAMAGUNDAM
STPP(FGD SYSTEM PACKAGE)



SUBURBAN INDUSTRIAL WORKS PVT. LTD.
KOLKATA , INDIA

GENERAL ARRANGEMENT DRAWING FOR 'SIWENT' FAN
ARR. IV

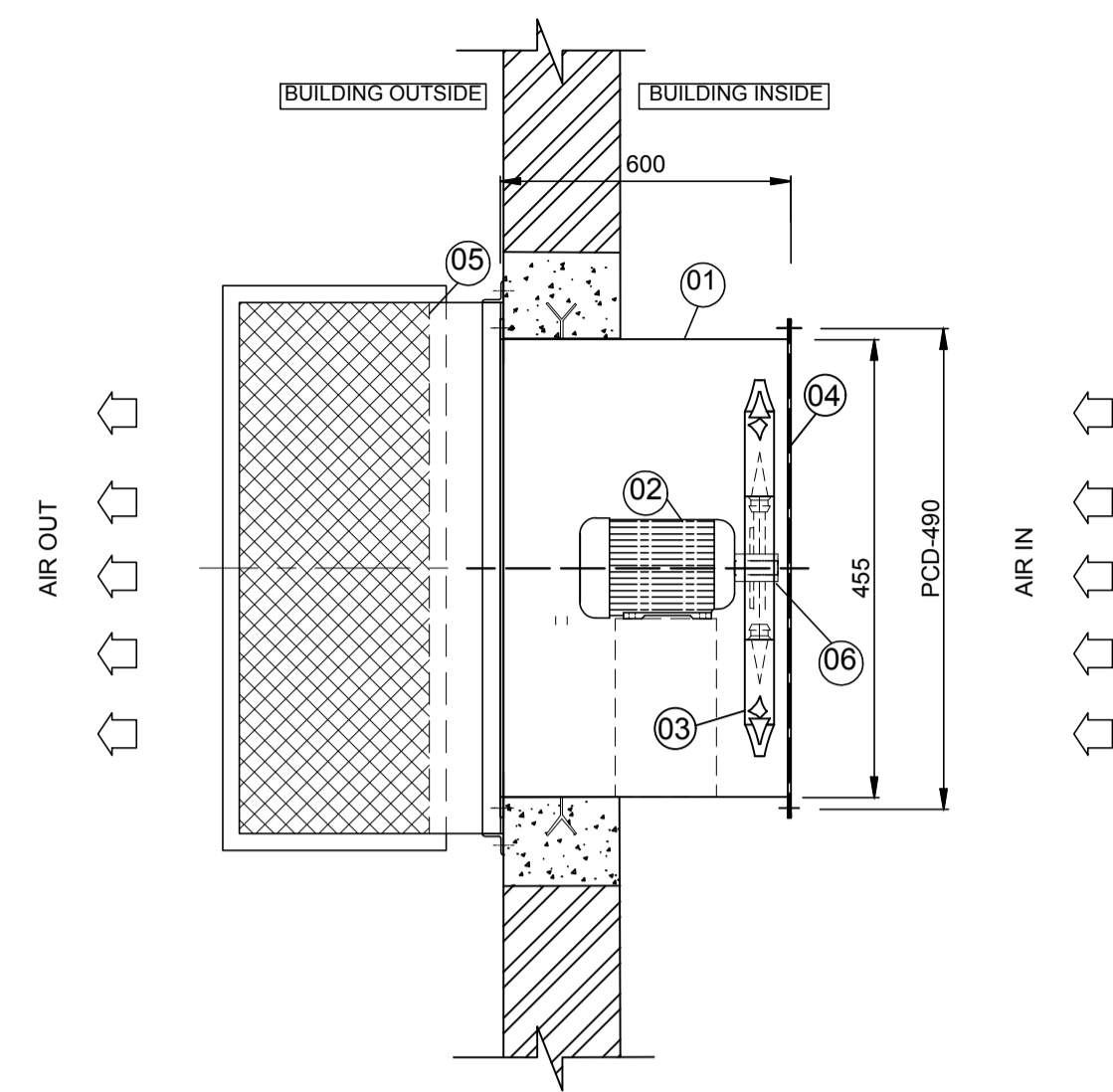
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CHECKED	P.DAS		SCALE	NTS
APPROVED		SIWL-656/14	REV	0
DATE	29/08/2022			

TECHNICAL DATA OF FAN

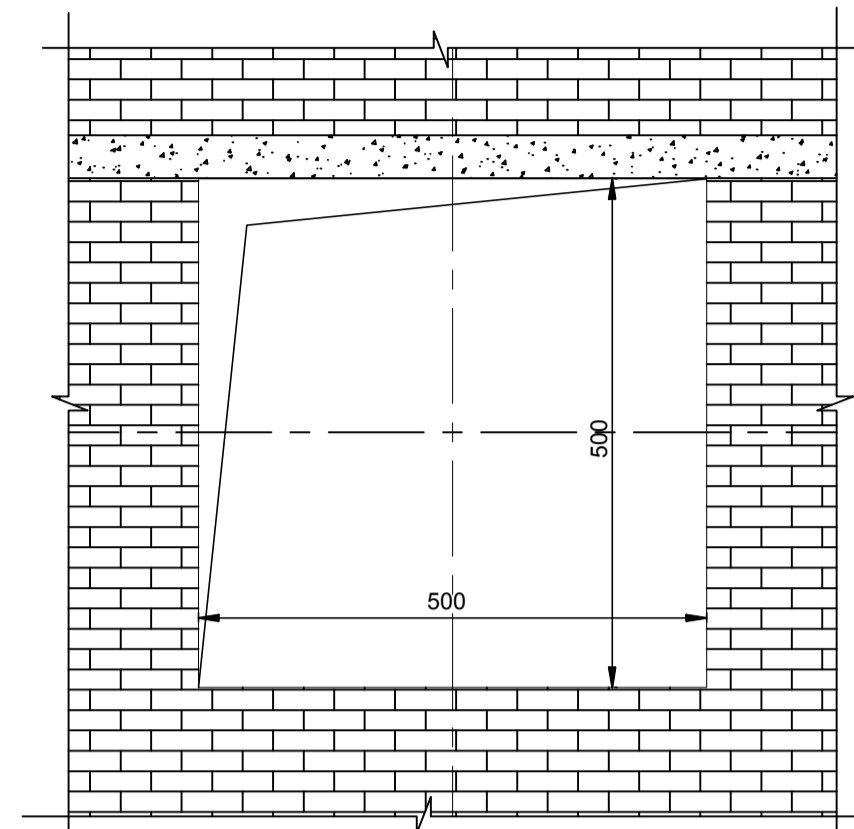
14	BIFURCATED AXIAL FAN	BFJ-450	SIWENT	2	2000	15	1450	0.16
SL. NO.	FAN TYPE	FAN MODEL	MAKE	QTY	CAPACITY CUM/HR	S.P. MM. WG.	FAN SPEED IN RPM	FAN BKW.

TECHNICAL DATA OF MOTOR

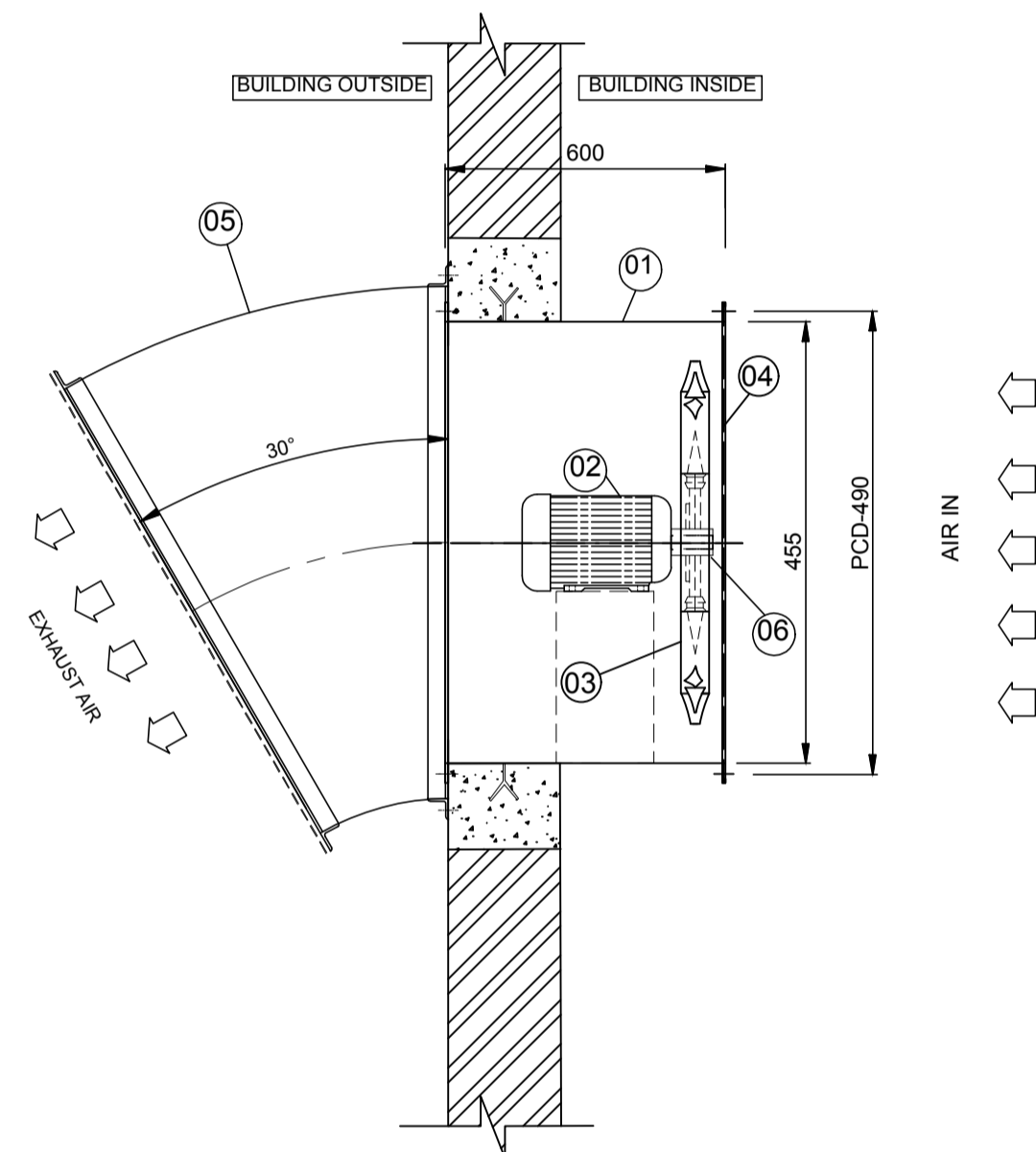
0.37/4	415V, 3PH. 50 HZ. AC SUPPLY	80	1500
FLP MOTOR KW/POLE	POWER SUPPLY	FRAME SIZE	FLP SPEED RPM



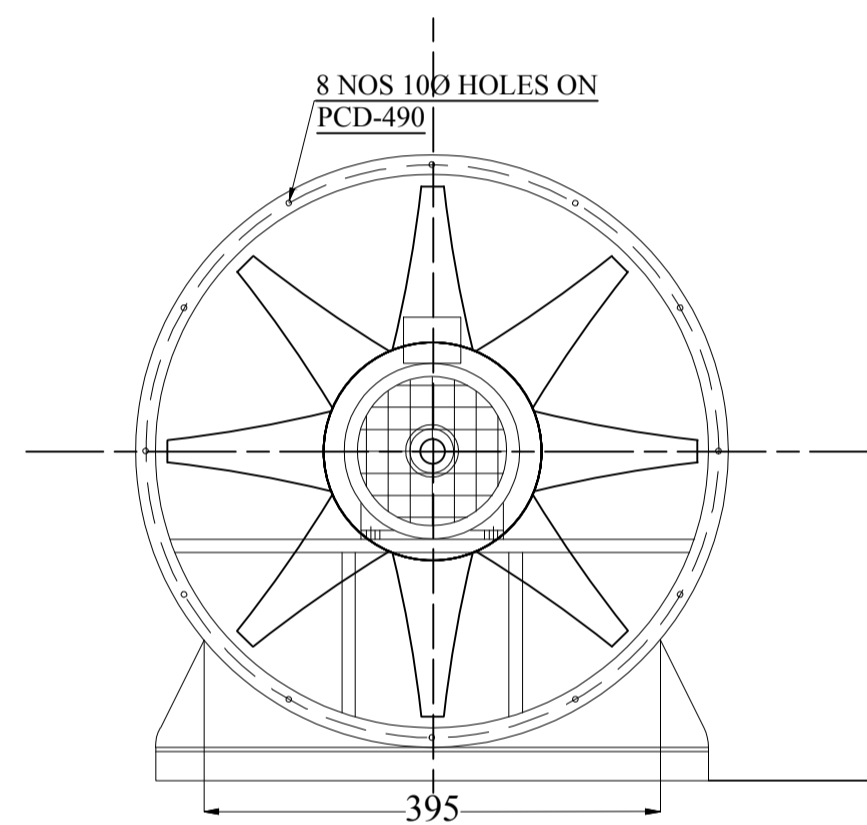
TOP VIEW



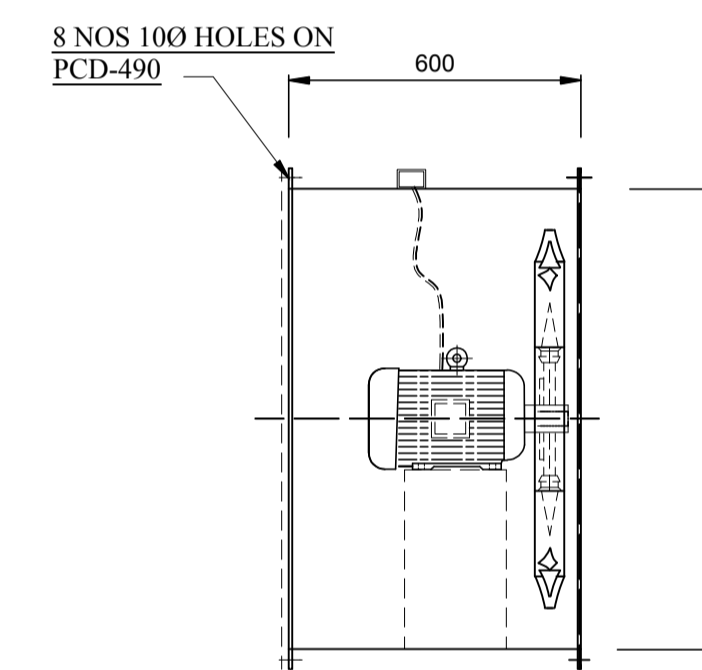
WALL OPENING DETAILS



SIDE ELEVATION



DRIVE END VIEW



FAN ASSEMBLY

(NO OF BLADES SHOWN ARE PICTORIAL ONLY ACTUAL NO OF BLADES VARIED AS PER SELECTION.)

BILL OF MATERIAL FOR EACH FAN

S.No	DESCRIPTION	QTY (No)	MATERIAL	REFERENCE
1	FAN CASING	1	MS	IS:1079/2062
2	MOTOR	1	--	As Mention
3	PRE-FILTER FLANGE TYPE	4	GI	--
4	FILTER BOX	1	GI	--
5	RAIN PROTECTION COWL WITH BIRD SCREEN	1	MS	25 SQ WIRE MESH
6	FRESH AIR UNIT SUPPORT	1	MS	--
7	IMPELLOR	1	CAST AL	LM-6

NOTES:
 1. IMPELLOR WOULD BE BALANCED AS PER ISO:1940,G:6.3.
 2. PAINTING: FAN CASIN & WOOD SHALL BE PAINTED WITH EPOXY PAINT.

TECHNICAL SPECIFICATION OF FAN

S.No	FAN TYPE	MODEL	MAKE	QTY	CAPACITY (CMH)	SP in MM/WG	FAN SPEED (RPM)	FAN BKW	Rated Motor (KW/Pole)	Power supply	Frame Size	SYN Speed (RPM)
01	TUBE AXIAL FAN	BFJ-450	SARALA	02	2000	15	1450	0.16	0.37/4	415V,3PH,50HZ AC Supply	80	1500

NTPC DRAWING NO. 3130-109-PVM-B-260

PROJECT:	3x200MW+3x500MW RAMAGUNDAM STPP (FGD SYSTEM)
OWNER:	NTPC, NTPC LIMITED
EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LIMITED POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA
CONTRACTOR:	

BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA	DEPT CODE	NAME	SIGN	DATE	
		DRN	KJ	KJ	01-02-2023
		DESN	KJ	KJ	01-02-2023
		CHD	AD	AD	01-02-2023
		APPD	AD	AD	01-02-2023

TITLE			
TECHNICAL DATA SHEET & GA DRAWING FOR AXIAL FANS ALONG WITH FIXING DETAILS			
SCALE	NTS	DEPT.	SIGN
SHEET 01 OF 01		REV. 00	



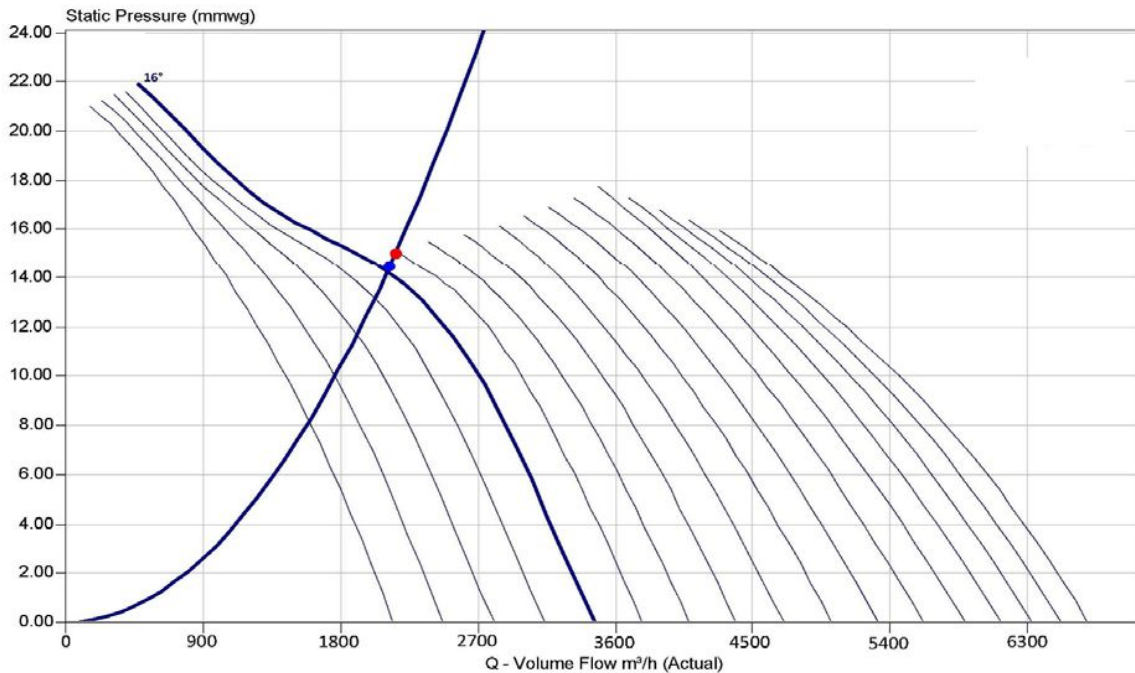
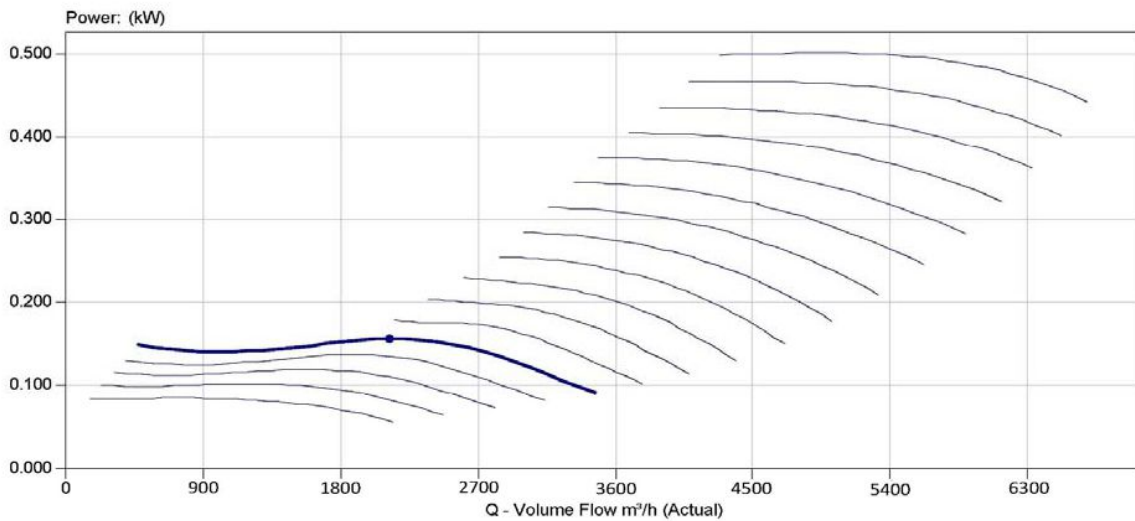
CLIENT'S NAME :

PROJECT : 3X200MW + 3X500MW RAMAGUNDAM STPP (FGD SYSTEM PACKAGE)

SIWENT FAN CHARACTERISTIC CURVE

FAN MODEL- BFJ-450

VOLUME OF AIR (CMH)	2000	FAN SPEED (RPM)	1450
STATIC PRESSURE (MM. WG.)	15	FAN POWER (KW)	0.16



PROPELLER FAN

PROJECT:	PROJECT : 3 X 200+ 3X500 MW RAMAGUNDAM STPP FGD SYSTEM	
MAIN CONTRACTOR	BHARAT HEAVY ELECTRICAL LIMITED POWER SECTOR	
CLIENT	NATIONAL THERMAL POWER CORPORATION LIMITED	
PURCHASER		BHARAT HEAVY ELECTRICALS LTD. TRANSMISSION BUSINESS GROUP, NOIDA
SUB - CONTRACTOR		
TITLE :	TECHNICAL DATA SHEET FOR PROPELLERS FANS	
SL. NO.	REQUIREMENTS	DETAILS
<u>Fans Details</u>		
1	Fan Make	MARATHON
2	Fan Model	300P
4	Fan Type	PROPELLERS
5	Quantity	20
6	Medium Handled	AIR
7	Capacity of Fan (Cu.M/Hr.)	1200 CMH
8	Static Presssure (mmwc)	5
9	Total Presssure (mmwc)	Free Air Delivery
10	Operating Speed (r.p.m.)	1440
11	Critical Speed (r.p.m.)	1750
12	Drivrs (type)	Dricet Drive
13	Noise Level at 1m away From Fan	85
14	KW (Rating)	80 Watts
15	Static Weight of Fan With Motor (kg)	17 kgs.
16	Dynamic Weight of Fan With Motor (kg)	21 kgs.
17	Impeller Wet.	5 Kgs.

TECHNICAL SPECIFICATION FOR PROPELLER FAN

DUTY	MAKE/MODEL	QUANTITY	TYPE	CAPACITY (CMH)	STATIC PRESSURE (mm.WG.)	MOTOR STATIC WET	MOTOR DYNAMIC WET	TOTAL PRESSURE (mm.WG.)	K.W RATING POLE	RATED SPEED (RPM)	CRITICAL SPEED	VOLTAGE/PHASE CYCLE/SPEED	INSULATION CLASS
EXHAUST	MARATHON 300P	20 nos.	PROPELLER	1200 cmh	5mmwg.	17k.g	21k.g	FREE AIR DELEVRY	80 WATTS	1440	1750	220V-50HZ A.C FOR SINGLE PHASE	B

BILL OF MATERIAL

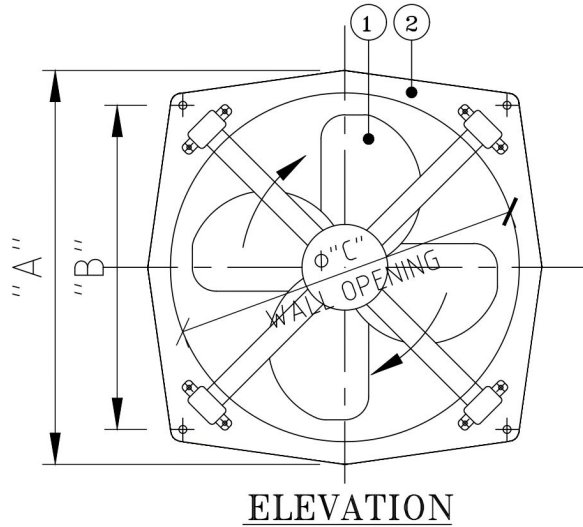
1	FAN BLADE 1.25MM THIK	CRCA	4NOS.
2	FAN MOUNTING RING	M.S.	1NO.
3	MOTOR SINGLE PHASE 220V	STD	1NO.
4	MOTOR BRACKET	M.S.	4NOS.

DIMENSIONS

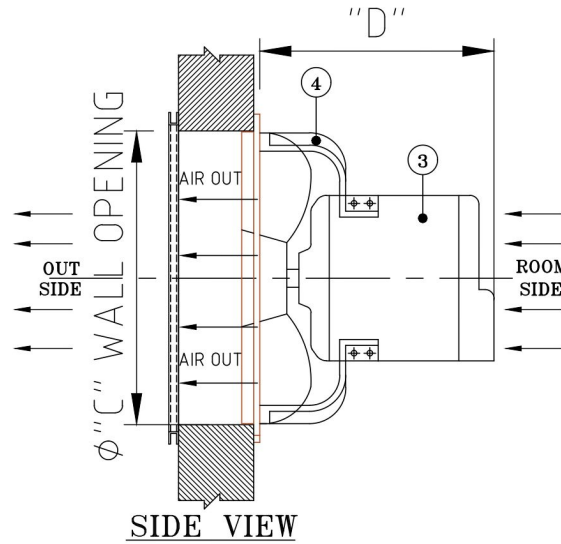
FAN MODEL NO	A mm	B mm	C mm	D mm
300P	384	315	327	270

NOTES: -

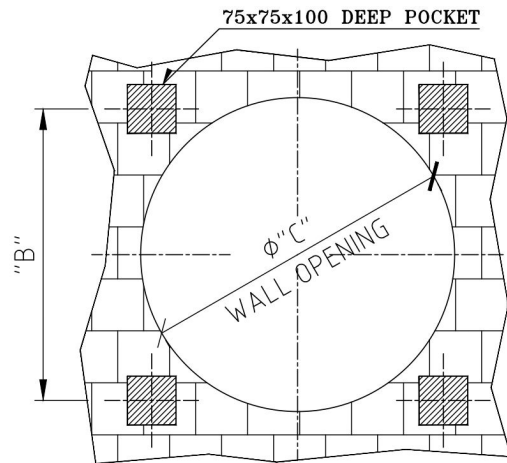
1. ALL DIMENSION ARE IN MM.
2. MATERIAL OF CONSTRUCTION AS PER IS:2062 GR-A, & IS:1079 GR-0 UNLESS OTHERWISE STATED
3. FAN WILL BE STATICALLY & DYNAMICALLY BALANCED TO GR:G6.3 AS PER ISO 1940.
4. FAN CONFIRMS TO IS:2312.-1967.
5. NOISE LEVEL OF FAN WITHIN 85 dB(A) AT 1 METER DISTANCE FROM FAN.
6. PAINTING SHALL BE DONE AS PER GTS.
7. PROPELLER FAN CONFIRM TO IS2312-1967 (REFERRED 1994).



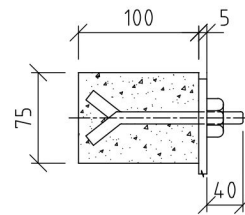
ELEVATION



SIDE VIEW



FOUNDATION DETAIL



FIXING DETAILS (TYP.)

ZONE	REV.	DESCRIPTION	REVISIONS	DRAWN	CHEK.	APPD.	DATE

PROJECT NAME:-	3X200 MW + 3X500 MW RAMAGUNDAM STPP STAGE I & II (FGD SYSTEM)
SYSTEM NAME:-	HVAC FOR FGD SYSTEM
DOCUMENT NAME:-	GA OF SUPPLY / RETURN AIR DIFFUSER / GRILL FOR A/C & VENTILATION SYSTEM AND TECHNICAL DATA SHEET OF PIPE FOR HVAC SYSTEM.
DOCUMENT No:-	3130-109-PVM-B-261

INDEX

S.N o.	DESCRIPTION	BHEL DOCUMENT Nos	PAGE Nos.
1.0	GA OF SUPPLY / RETURN AIR DIFFUSER / GRILL FOR A/C & VENTILATION SYSTEM	PE-V0-467-571-A212	
2.0	TECHNICAL DATA SHEET OF PIPE FOR HVAC SYSTEM.	PE-V0-467-571-A217	



TECHNICAL DATA SHEET

GRID DIFFUSER
(RETURN)

S.No.	DESCRIPTION	DETAILS
1	MAKE	SYSTEMAIR INDIA PVT LTD
2	SIZE	NECK- AS PER APPROVED DRAWING
3	MODEL	DF(G) GRID DIFFUSER (4 WAY/3 WAY/2 WAY)
4	MATERIAL OF DIFFUSER	EXTRUDED ALUMINUM FRAME & ALUMINUM SHEET CORE
5	THICKNESS OF MATERIAL	FRAME / BORDER 2 MM THICK EXTRUDED ALUMINUM LOUVER STAMPED ALUMINIUM SHEET CORE 2 MM THICK. WITH POWER COATING (JOINT LESS) CENTER REMOVABLE CORE TYPE
6	COLOURS	RAL9003(30% GLOSSY), OTHER COLOURS ARE AVAILBLE ON REQUEST AGAINST ADDITIONAL CHARGES
7	FINISH	POWDER COATED EXTRUDED ALUMINUM
8	MOUNTING	DUCT COLLAR
9	WIDE	NECK 150 X 150 MM / OUTER 595 X 595 MM NECK 225 X 225 MM / OUTER 595 X 595 MM NECK 300 X 300 MM / OUTER 595 X 595 MM NECK 375 X 375 MM / OUTER 595 X 595 MM NECK 450 X 450 MM / OUTER 595 X 595 MM NECK 525 X 525 MM / OUTER 595 X 595 MM

PREPARED BY-
DEBAJIT SARKAR



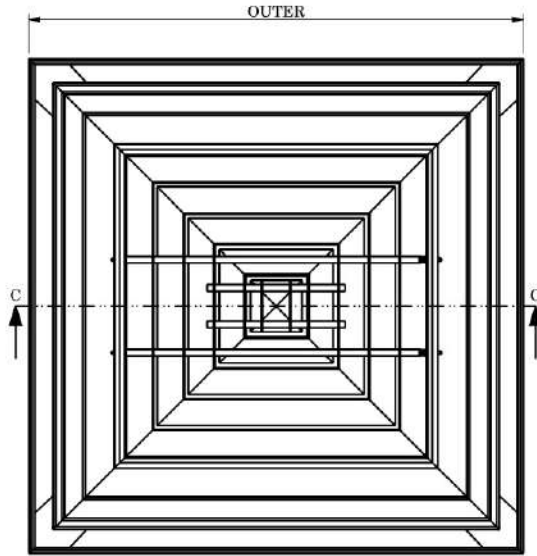
UNLESS OTHERWISE SPECIFIED ALL DIMENSION ARE IN m.m.

REV NO.

DATE

REVISION

REV BY



SECTION C-C

RETURN AIR DIFFUSER

S.NO	DIFFUSER SIZE	NECK SIZE	OUTER
1	150	150 x 150	595 x 595
2	225	225 x 225	595 x 595
3	300	300 x 300	595 x 595
4	375	375 x 375	595 x 595
5	450	450 x 450	595 x 595

Note: This is only General arrangement drawing, the actual product supplied may deviate from the drawing.

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TOLERANCE LIMIT UNLESS SPECIFIED		MASS PROPERTIES:	
LINEAR DIMENSIONS		WEIGHT (kg)	-
0.5 - 6 = ±2.0	> 120 - 400 = ±8.0	VOLUME (mm ³)	-
> 6 - 30 = ±4.0	> 400 - 1000 = ±12	SUR. AREA (mm ²)	-
> 30 - 120 = ±6.0	> 1000 - 2000 = ±16	No. of SC/CC	-
Over 2000 = ±20		SC	-
ANGULAR DIMENSIONS		CC	-
0 - 10 = ±8°	> 50 - 120 = ±4°		
> 10 - 50 = ±6°	> 120 - 400 = ±2°		
Over 400 = ±0° 40'			

PART DESCRIPTION:

DF-G

REMOVE SHARP EDGES

DRAWING No.:

REV No.:

DATE: 09-Oct-2020

SIPL/ADP/GA/3225

R0

MATERIAL:	M. STANDARD:	SCALE:	DRN. BY:	BEM	CHKD. BY:	DALIP	APPD. BY:
-	-	N.T.S.					ABHARWAJ
				SYSTEMAIR INDIA PVT.LTD.			

FILE PATH: Y:\Plants\Greater Noida\CAD Team\ID240BRM\DESIGN DAT\GAD\ADP\03_DIFFUSER\GRID TYPE.DIFF USER



TECHNICAL DATA SHEET

GRID DIFFUSER
(SUPPLY)

S.No.	DESCRIPTION	DETAILS
1	MAKE	SYSTEMAIR INDIA PVT LTD
2	SIZE	NECK- AS PER APPROVED DRAWINGS.
3	MODEL	DF(G) + AL OBSS GRID DIFFUSER (4 WAY/3 WAY/2 WAY)
4	MATERIAL OF DIFFUSER	EXTRUDED ALUMINUM FRAME & ALUMINUM SHEET CORE
5	THICKNESS OF MATERIAL	FRAME / BORDER 2MM THICK EXTRUDED ALUMINUM LOUVER STAMPED ALUMINIUM SHEET CORE 2MM THICK. WITH POWER COATING (JOINT LESS) CENTER REMOVABLE CORE TYPE
6	COLOURS	RAL9003(30% GLOSSY), OTHER COLOURS ARE AVAILABLE ON REQUEST AGAINST ADDITIONAL CHARGES
7	FINISH	POWDER COATED
8	MOUNTING	DUCT COLLAR
9	WIDE	NECK 150 X 150 MM / OUTER 595 X 595 MM NECK 225 X 225 MM / OUTER 595 X 595 MM NECK 300 X 300 MM / OUTER 595 X 595 MM NECK 375 X 375 MM / OUTER 595 X 595 MM NECK 450 X 450 MM / OUTER 595 X 595 MM NECK 525 X 525 MM / OUTER 595 X 595 MM
10	MATERIAL OF COLLAR DAMPER	EXTRUDED ALUMINUM SHEET
11	THICKNESS OF COLLAR DAMPER	FRAME / BORDER 16 SWG THICK EXTRUDED ALUMINUM BLADE 1 MM THICK ALUMINUM
12	FINISH OF DAMPER	BLACK POWDER COATED
13	TYPE OF OBSS	KEY OPERATED OPPOSED BLADE TYPE
14	MOUNTING	DUCT COLLAR
15	WIDE	MINIMUM SIZE 150 X 150 MM (NECK) MAXIMUM SIZE 525 X 525 MM (NECK) OR AS PER DIFFUSER NECK SIZE

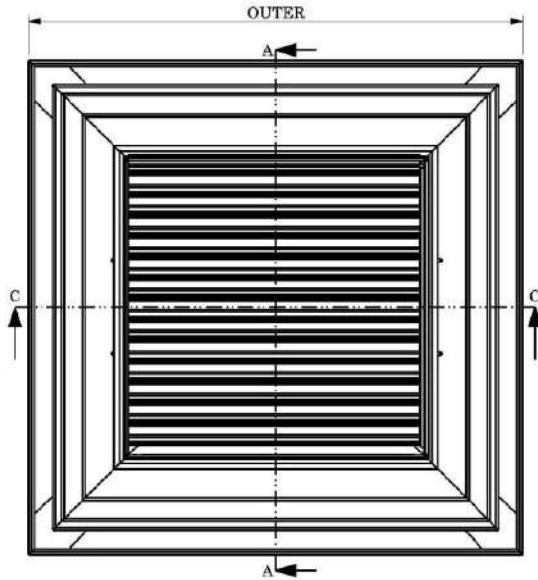
PREPARED BY-
DEBAJIT SARKAR



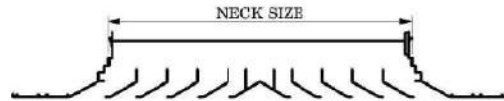
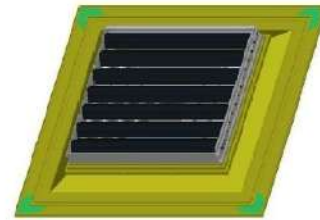
UNLESS OTHERWISE SPECIFIED ALL DIMENSION ARE IN m.m.

REV NO. DATE REVISION

REV. BY



SECTION A-A



SECTION C-C

SUPPLY AIR DIFFUSER

S.NO	DIFFUSER SIZE	NECK SIZE	OUTER
1	150	150 x 150	595 x 595
2	225	225 x 225	595 x 595
3	300	300 x 300	595 x 595
4	375	375 x 375	595 x 595
5	450	450 x 450	595 x 595

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TOLERANCE LIMIT UNLESS SPECIFIED		MASS PROPERTIES:	
LINEAR DIMENSIONS		WEIGHT (kg)	-
0.5 - 6 = ±2.0	> 120 - 490 = ±8.0	VOLUME (mm ³)	-
> 6 - 30 = ±4.0	> 400 - 1000 = ±12	SUR. AREA (mm ²)	-
> 30 - 120 = ±6.0	> 1000 - 2000 = ±16		
Over 2000 = ±20		No. of SC/CC	
ANGULAR DIMENSIONS		SC	-
0 - 10 = ±8°	> 50 - 120 = ±4°	CC	-
> 10 - 50 = ±6°	> 120 - 400 = ±2°		
Over 400 = ±0°40'			

PART DESCRIPTION:

DF (G) + AL OBSS

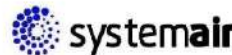
REMOVE SHARP EDGES

DRAWING No.: REV No.:

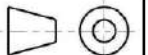
DATE: 06-Apr-2018

SIPL/ADP/GA/2427 00

MATERIAL:	M. STANDARD:	SCALE:	DRN. BY:	BBM	CHKD. BY:	DALIP	APPD. BY:	AJHARDWAR
-	-	N.T.S.	-	-	-	-	-	-



SYSTEMAIR INDIA PVT.LTD.



FILE PATH: Y:\Plants\Greater Noida\CAD Team\ID240BRM\DESIGN DATA\GAD\ADP\03. DIFFUSER\GRID TYPE DIFFUSER

S.NO.	DESCRIPTION	SPECIFICATION
A	PIPE	
1	Item	ERW Black, Mild Steel Pipe
2	Application	Condenser Water Circulation,
3	MAKE	JINDAL/SAIL, RSP/TATA/MSL
4	Product Image (Indicative)	
5	Class	Heavy Grade
6	Pipe Sizes Up to 150 MM Dia	Confirming to IS :1239 (Part-1), Heavy Class 'C'
7	Pipe Sizes above 150 MM Dia	Confirming to API 5L Gr. B, ERW
B	Pipe-FITTINGS	
1	MAKE	N.L. Hazra / Shyam Engg./ MS fittings / Tube bend / Vivial forge/ True forge/Teekay tube / Life style marketing
2	Material of pipe fittings	
2.1	Screwed fittings-50 MM dia & below	IS:1239(Part-1), heavy, black
2.2	B.W. fittings	
2.2.a	Bends-upto 50 MM dia & below	Fabricated from pipes by cold bending with radius 3 DN
2.2.b	Bends-65 MM dia to 150 MM dia	Seamless B.W.elbow to ASTM A-234 Gr.WPB Sch.40, dimension to ANSI B16.9
2.2.c	Tees/crosses-All sizes	Fabricated from pipes / plates
2.2.d	Reducers-80 MM dia & below	Seamless B.W / S.W. forged to ASTM A-234 Gr.WPB and Sch.40, dimension to ANSI B 16.9 / 16.11
2.2.e	Reducers-above 80 MM dia	Fabricated from pipes / plates
2.2.f	Nuts & Bolts-All sizes	IS:1367, property class-4.6 for pressure rating upto 10Kg./sq. cm, property class-8.8 for pressure rating above 10Kg./sq.cm.
2.2.h	Flanges-All sizes	SOF to IS:6392 Table-11 / Table 17 (as applicable) made from CS plates to IS:2062 Gr.B
2.3	Gaskets-All sizes	CAF to IS:2712 Gr.-W/3, 1.5MM Thk.
2.3.a	Gaskets-Make	Champion / IGP / Premer Gasket / Talbros / Reinz/ Zaverchand
C.	Miscellaneous	
1	Working Water temperature	Chilled water will be made available at battery limit at a temp. of 8 deg.C. (Max.) Return water temp. at the battery limit will be limited to 16 deg.C.
2	Working Pressure	03-05 Kg/cm2
3	Testing Pressure	10 Kg/cm2

4	Pipe Sizes & Quantity	As per approved drawings.
5	Painting (For Chilled Water Pipe from Tapping point to each AHU room)	Not Applicable (All Pipes are Insulated).
6	Painting (For Condenser Water Pipe)	As per Painting Specification at site.



DATA SHEET : TWIGA INSUL TI-1500(24 Kg./m3)

Parameter	Technical Specification (Duct Thermal insulation)
Make	U.P Twiga Fiberglass Ltd.
Material	Resin bonded fiberglass wool Roll
Standard/Codes to follow	IS 8183: 93/IS 3144: 90
Product Code	1500/50 Plain Roll Form
Physical form	Standard Roll size, width x length: 1.2m x 15m x 50 mm (TI 1500/50 Plain) = 18 M2
Nominal bulk density	24 Kg/m ³
Thickness	50mm
Thermal conductivity	0.0393 W/MK at 50° C mean temp. (As per GTL Report Feb 2021)

General Glass wool Properties:

Parameter	Conformance
Fire Properties	
Non combustibility	Non combustible as per BS 476 part 4
Ignitibility	Class P(Not easily ignitable material) as per BS 476 part 5
Surface Spread of flame	NIL. Class 1 as per BS 476 part 7
Fire propagation	Class 'O', [index I<12, sub-index i1<6].Conforms to BS 476 part 6 and 7.
Toxicity	Non toxic as per BS 6853
Moisture content	<2% .conforms to IS 3144/IS 8183
Shot content	Nil.(<2%). conforms to IS 3144/IS8183
Sulphar /Chloride content	Nil. Conforms to IS 3144/IS 8183
Mould growth	Conforms to IS 3144/IS 8183. Inorganic glass fiber does not support mould growth.
Chemical	Neither acidic no basic, chemically almost neutral. pH value very close to 7.

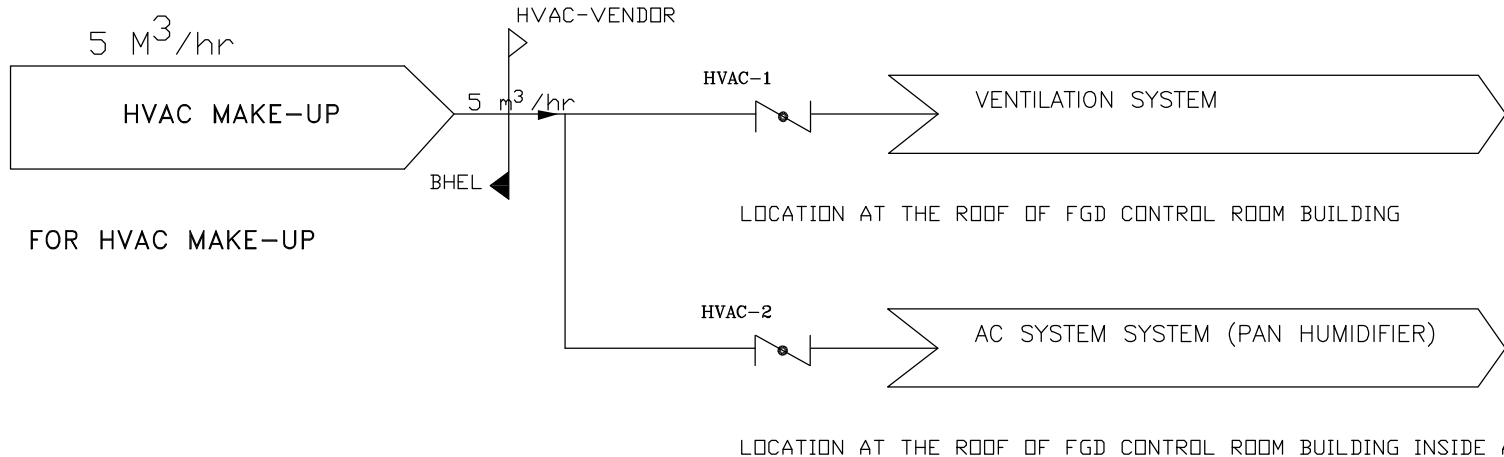


DATA SHEET : TWIGA INSUL TI-3000 (48 Kg/m³)

Parameter	Technical Specification (Duct Acoustic insulation)
Make	U.P Twiga Fiberglass Ltd.
Material	Resin bonded fiberglass wool Rigidboard
Standard/Codes to follow	IS 8183: 93 /IS 3144: 90
Product Code	TI-3000/25
Physical form	Rigid Board in LDPE Packing Standard size, width x length x thickness: 1.2 m x 0.6m x 25 mm = 18.72 M2/ Packet (26 Boards in one packet)
Nominal bulk density	TI-3000 (48 Kg/m ³)
Thickness	25 MM
Thermal conductivity	0.0336 W/m.k at 50 degree C mean temperature as per GTL report dated Feb-2021)

General Glass wool Properties:

Parameter	Conformance
Fire Properties	
Non combustibility	Non combustible as per BS 476 part 4
Ignitibility	Class P(Not easily ignitable material) as per BS 476 part 5
Surface Spread of flame	NIL. Class 1 as per BS 476 part 7
Fire propagation	Class 'O', [index I<12, sub-index i1<6].Conforms to BS 476 part 6 and 7.
Toxicity	Non toxic as per BS 6853
Moisture content	<2% .conforms to IS 3144/IS 8183
Shot content	Nil.<2%). conforms to IS 3144/IS8183
Sulphar /Chloride content	Nil. Conforms to IS 3144/IS 8183
Mould growth	Conforms to IS 3144/IS 8183. Inorganic glass fiber does not support mould growth.
Chemical	Neither acidic no basic, chemically almost neutral. pH value very close to 7.



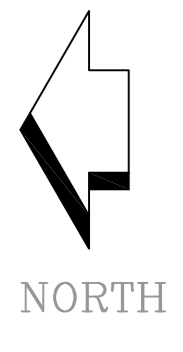
FOR HVAC MAKE-UP

NOTE:-

1. HVAC MAKE-UP WATER PIPING INCLUDING FITTINGS SHALL BE TERMINATED WITHIN THE RANGE OF 5 METER DISTANCE OF FGD CONTROL ROOM BLDG. BY BHEL, FURTHER PIPING INCLUDING FITTINGS SHALL BE DONE BY VENDOR AS MARKED IN THIS DRG.
2. THE HVAC MAKE-UP WATER ISOLATING VALVES SHALL BE VENDOR SCOPE.

TENDER DRAWING ONLY

STATUS		REVISION	
PROJECT SCALE			
Bhabat HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT PRET BLDG. SECTOR-16 A, NOIDA		DEPT	DATE
REV.	DATE	BY	CHK
SUBDIVISION + SUBDIVISION TYPE BAHARUCHANDAN STAFF UTARID-146(PCD PACKAGE) TITLE SCHEMATIC DIAGRAM FOR HVAC MAKE UP			
DEPT. SCALE		DATE	
SHEET 1 OF 1		REV. 0	



PANELS DETAILS

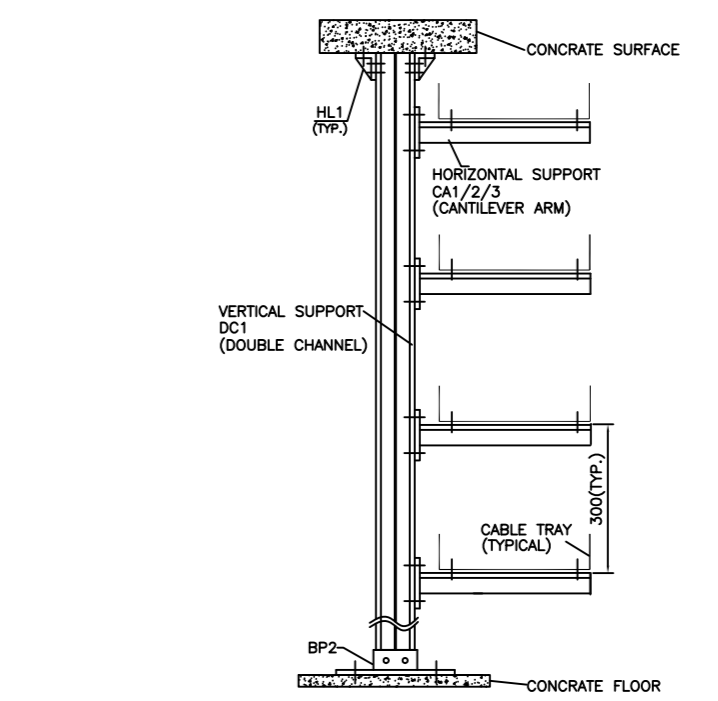
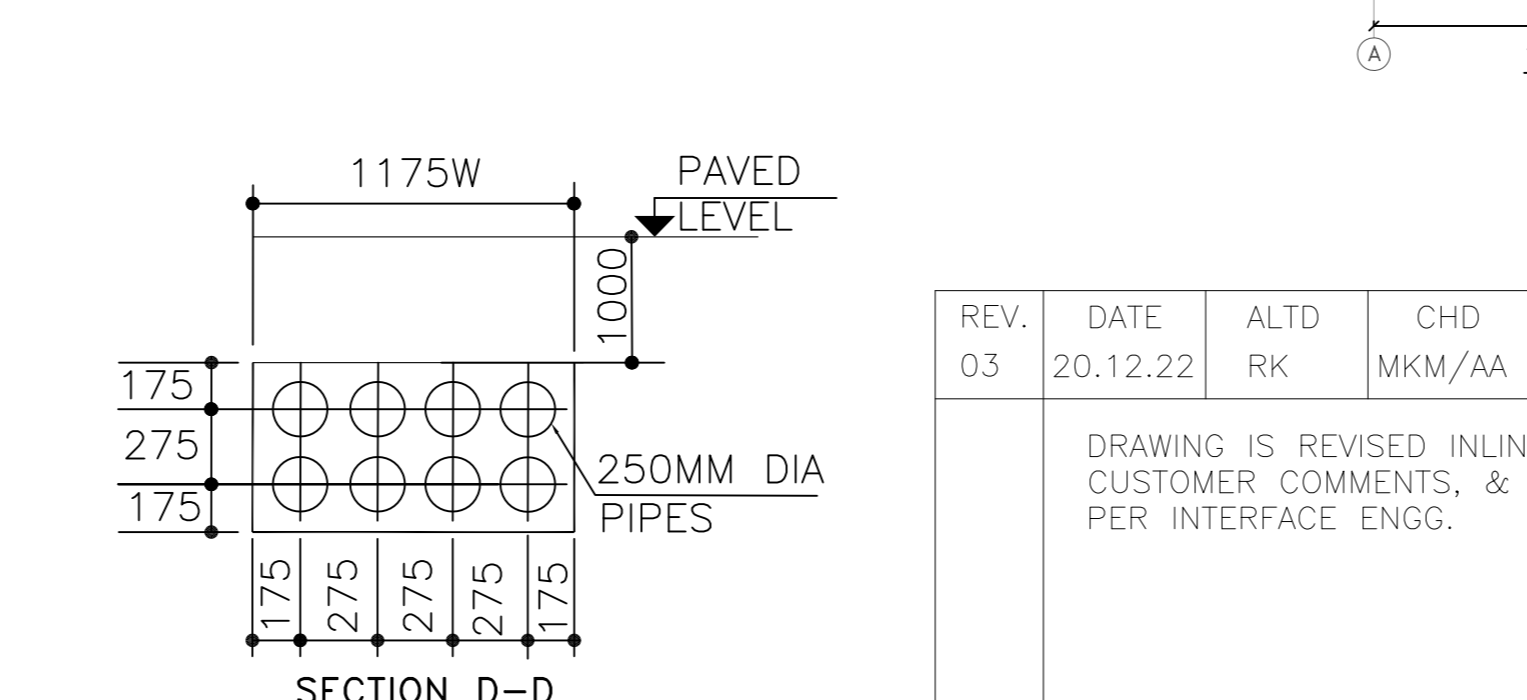
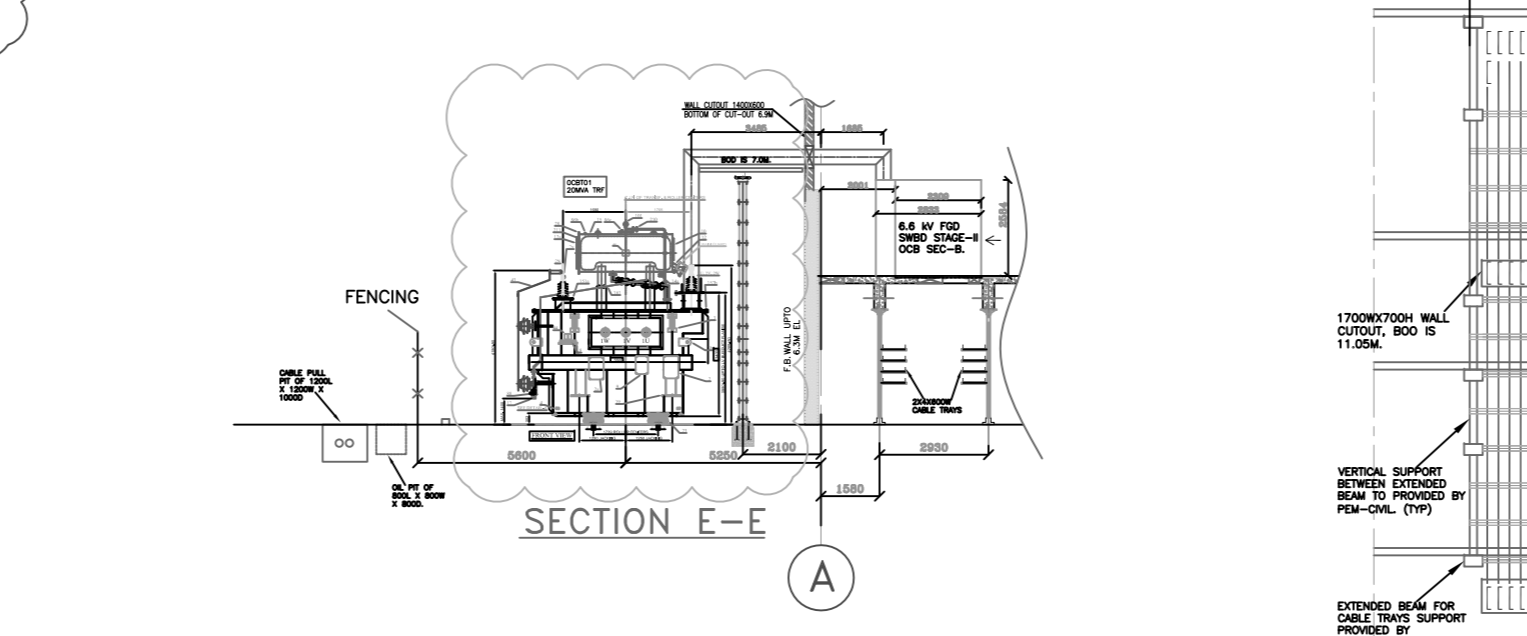
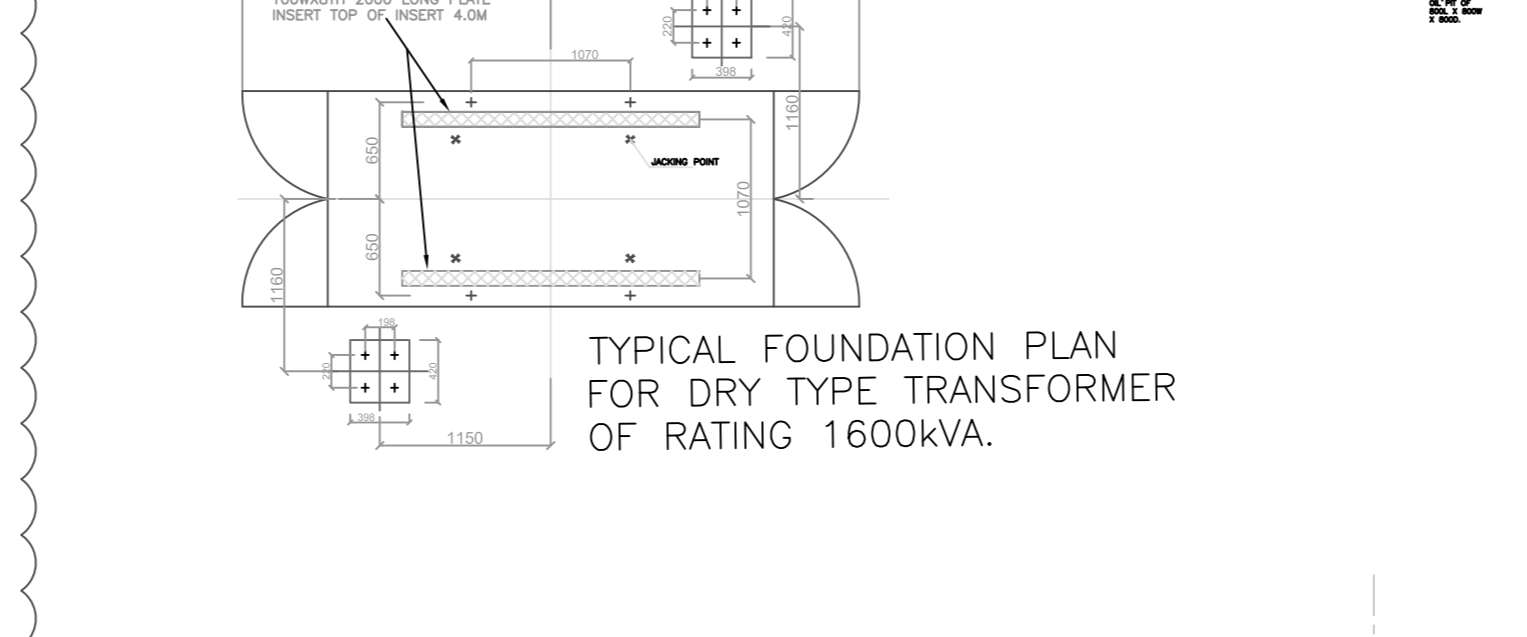
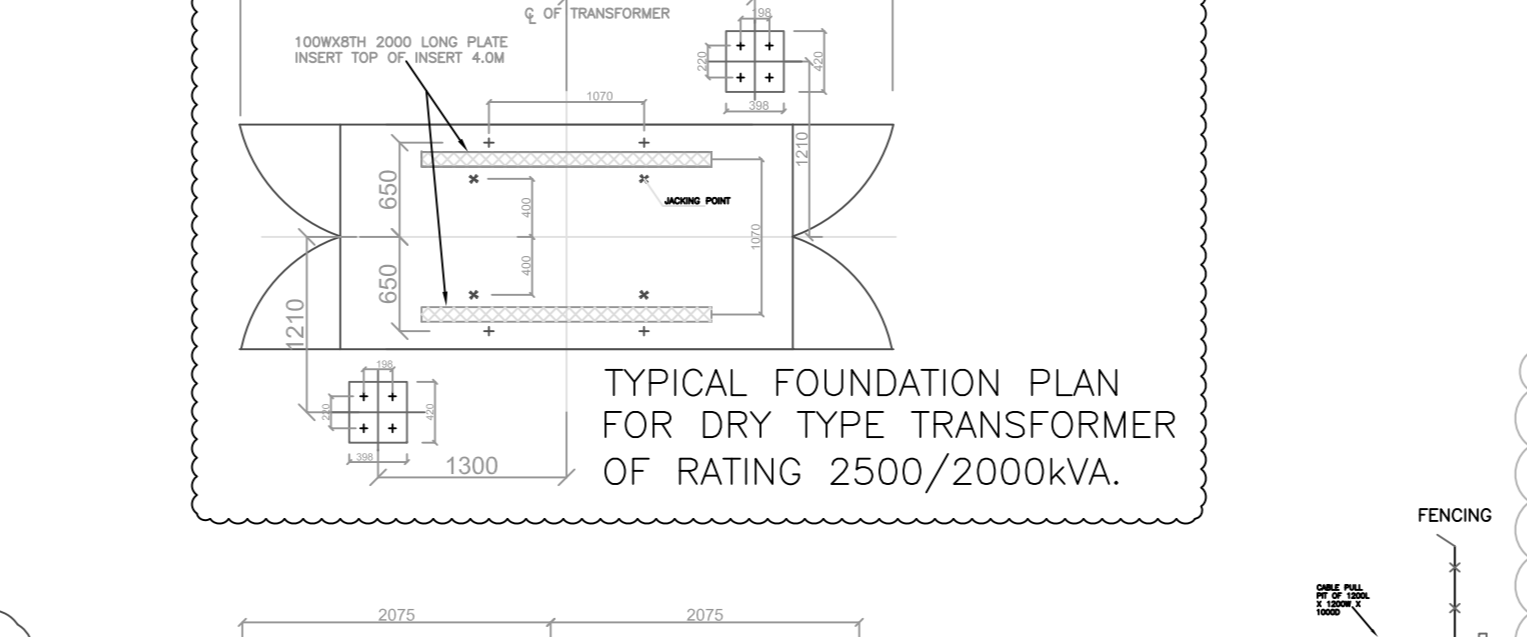
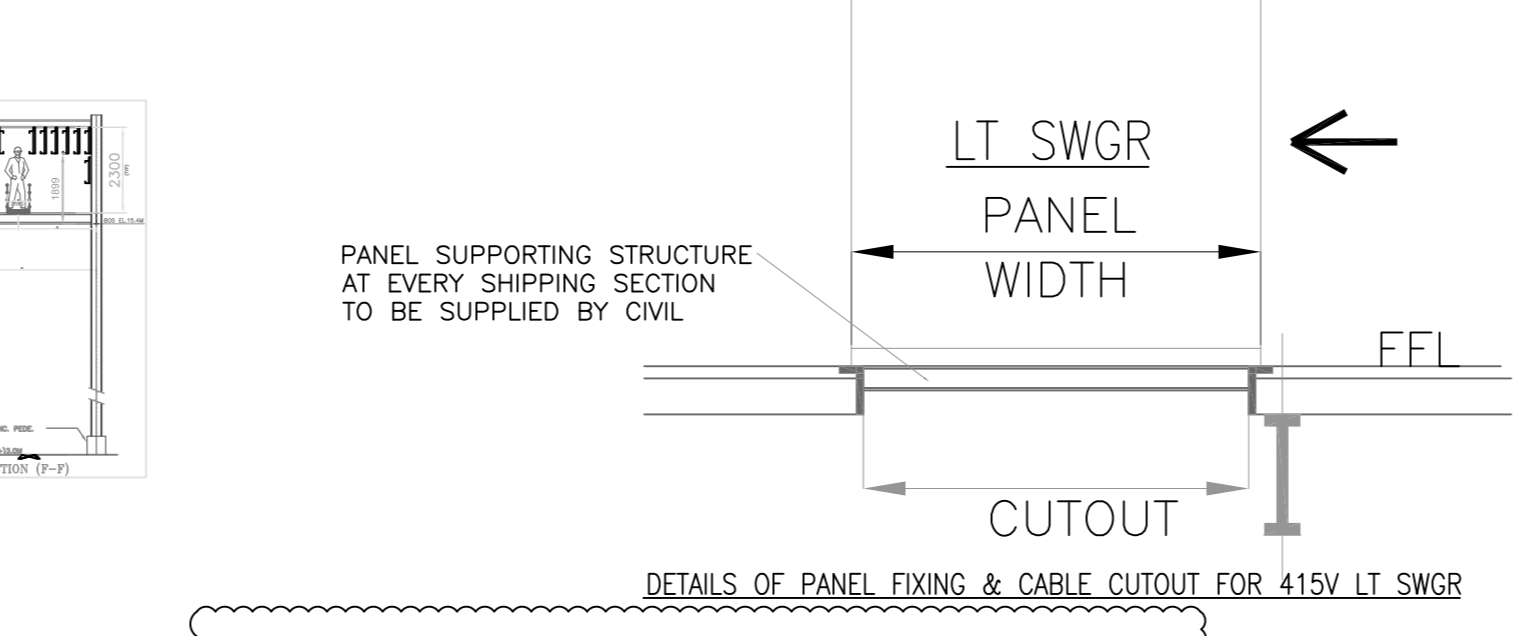
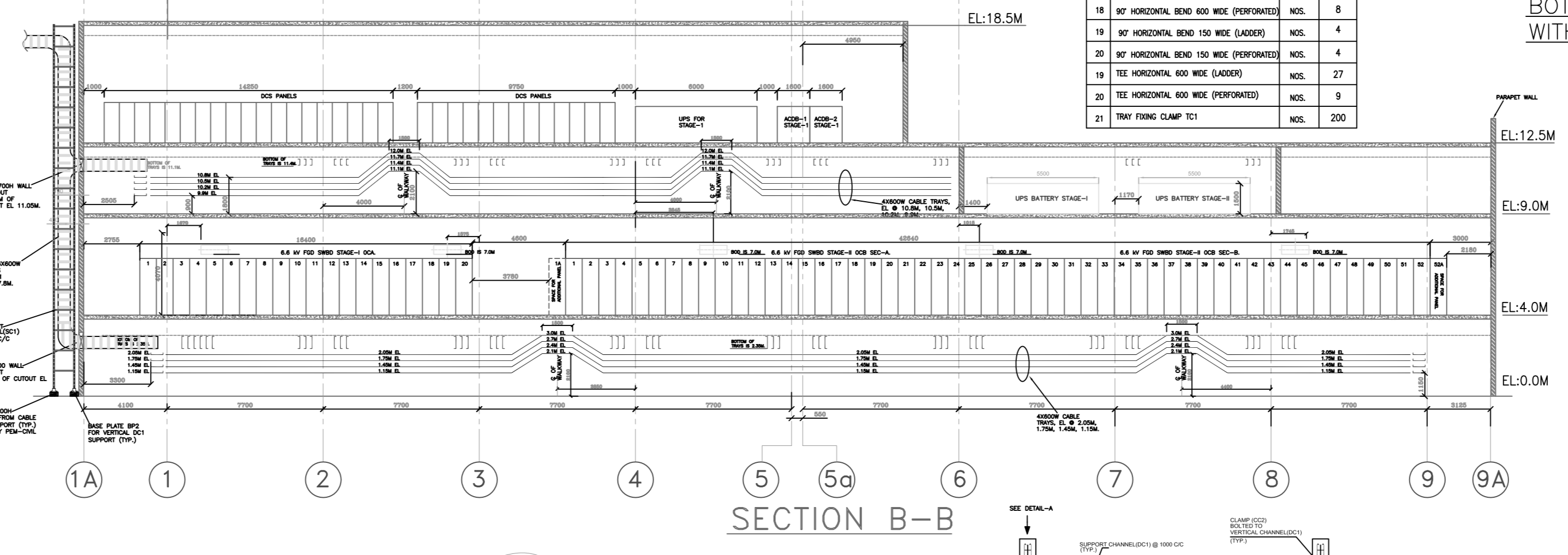
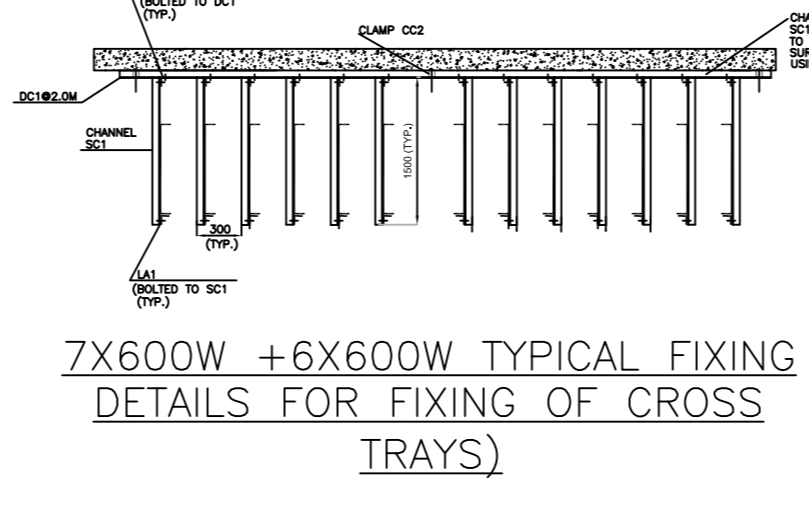
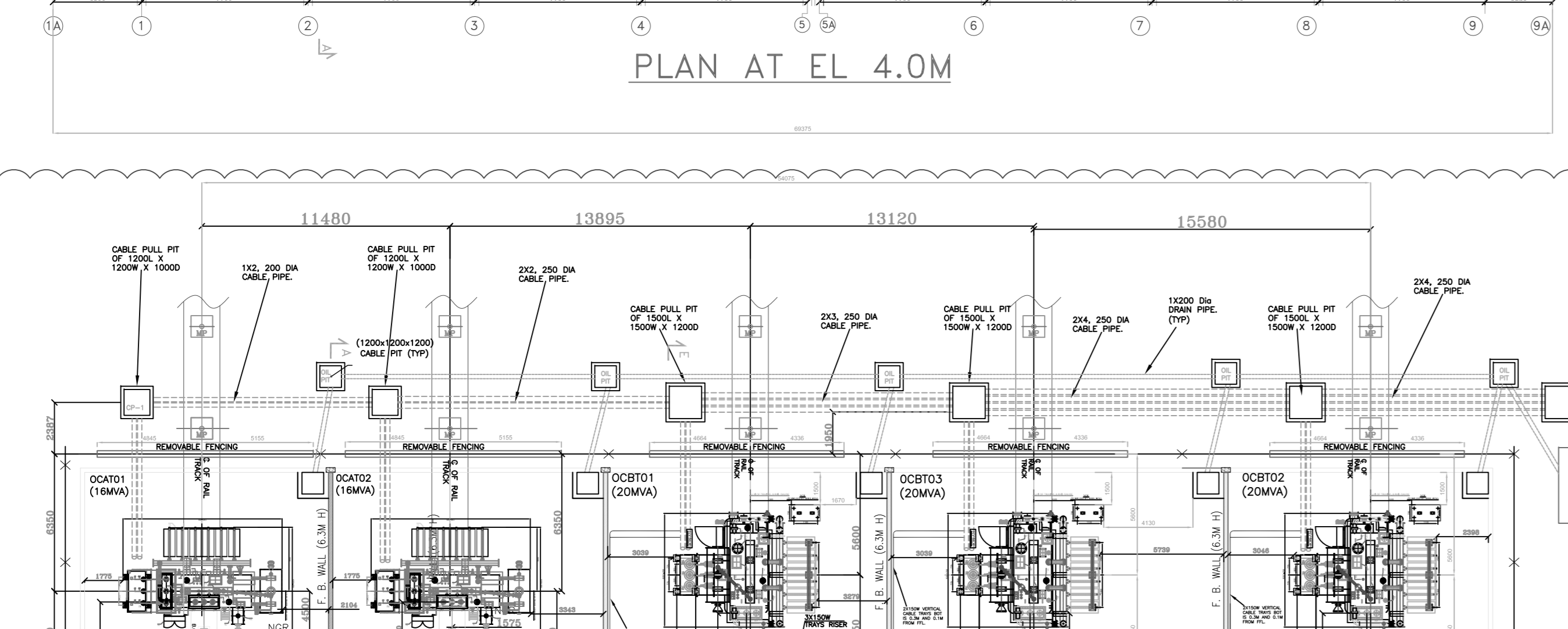
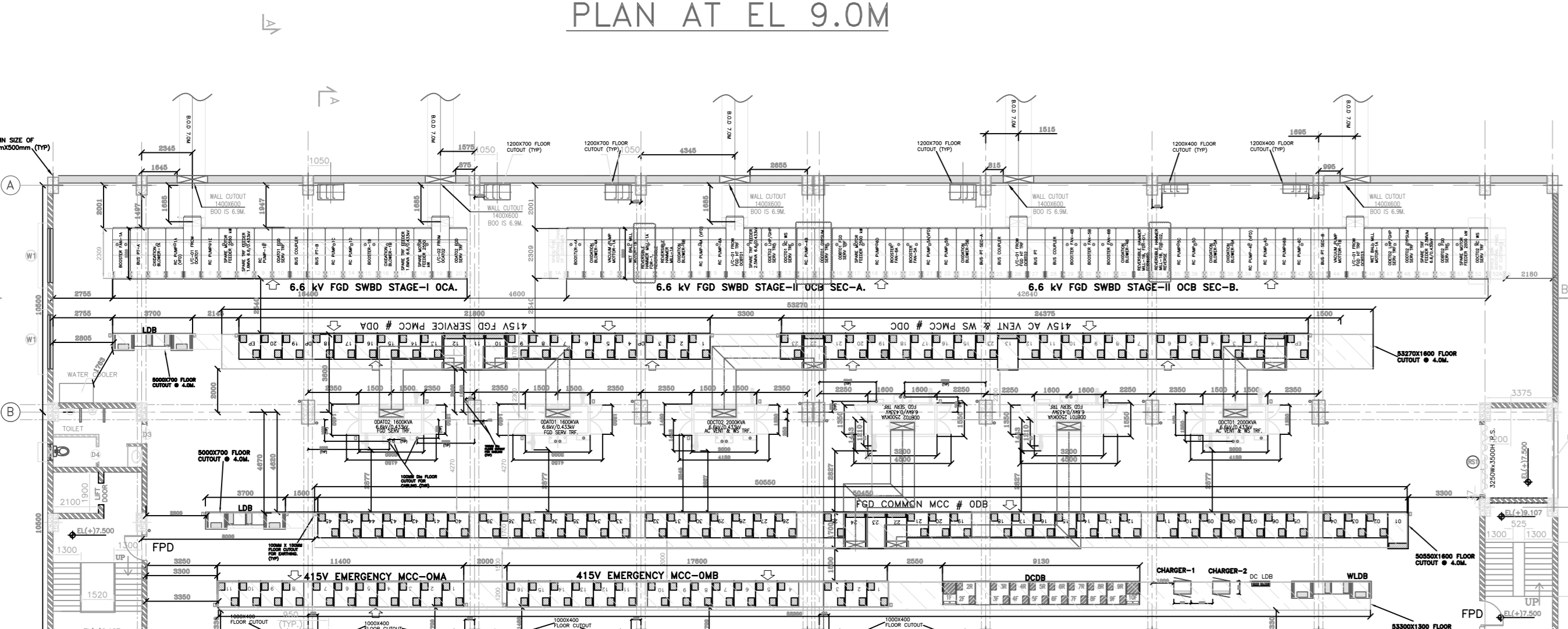
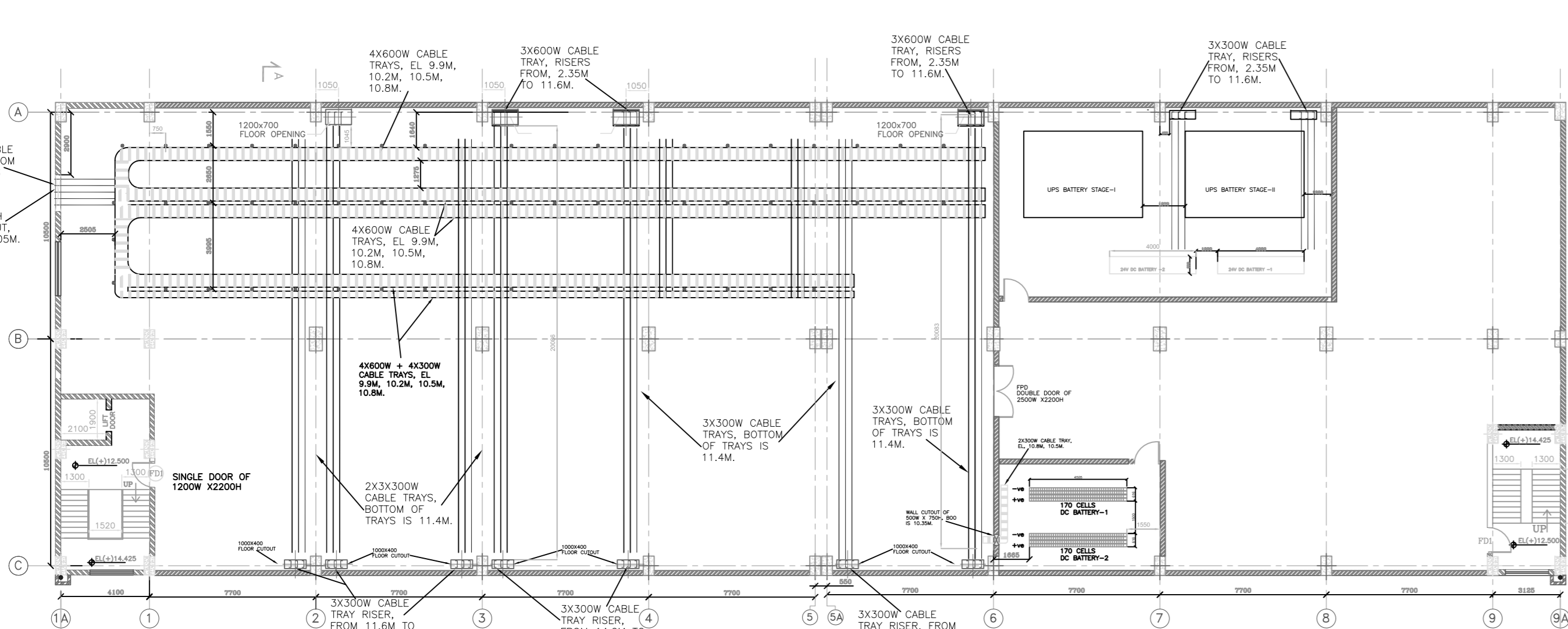
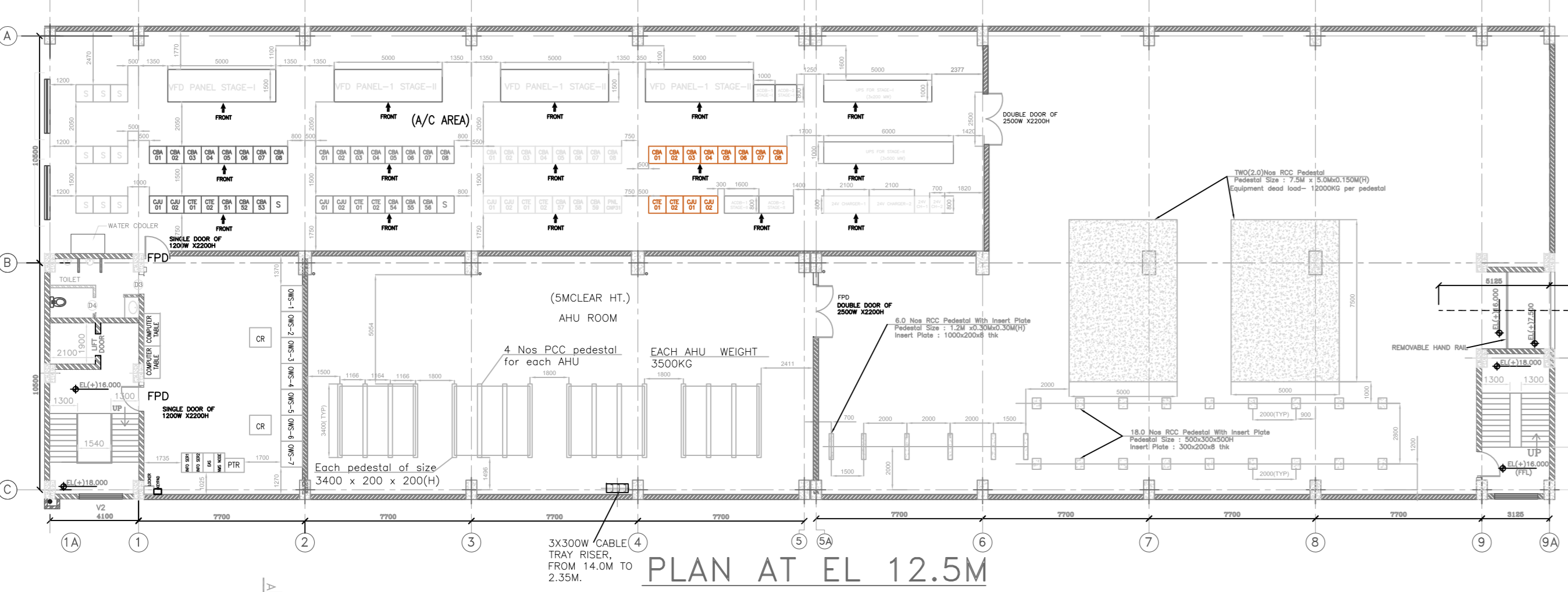
SL NO.	DESCRIPTION	QTY.	DIMENSIONS (WxDxH)	SCOPE
1.	DCS PNL	01	750x750x2067	EDN
2.	UPS PNL STAGE-I	01	6000x1000x2000	EDN
3.	ACDBs STAGE-I	02	1000x800x2000	EDN
4.	UPS PNL STAGE-II	01	6000x1000x2000	EDN
5.	ACDBs STAGE-II	02	1600x800x2000	EDN
6.	VMS PNL	09	750x750x2067	EDN
7.	VFD PNL	04	5000x1500x2067	EDN
8.	NET WORK PNL	01	750x750x2067	EDN
9.	24V CHARGER-1,2	02	2100x800	EDN
10.	UPS BATTERY STAGE-I	01	4000x5500x1500	EDN
11.	UPS BATTERY STAGE-II	01	4000x5500x1500	EDN
12.	24V DC BATTERY -1,2	02	4000x800	EDN

COMPUTER ROOM DETAILS

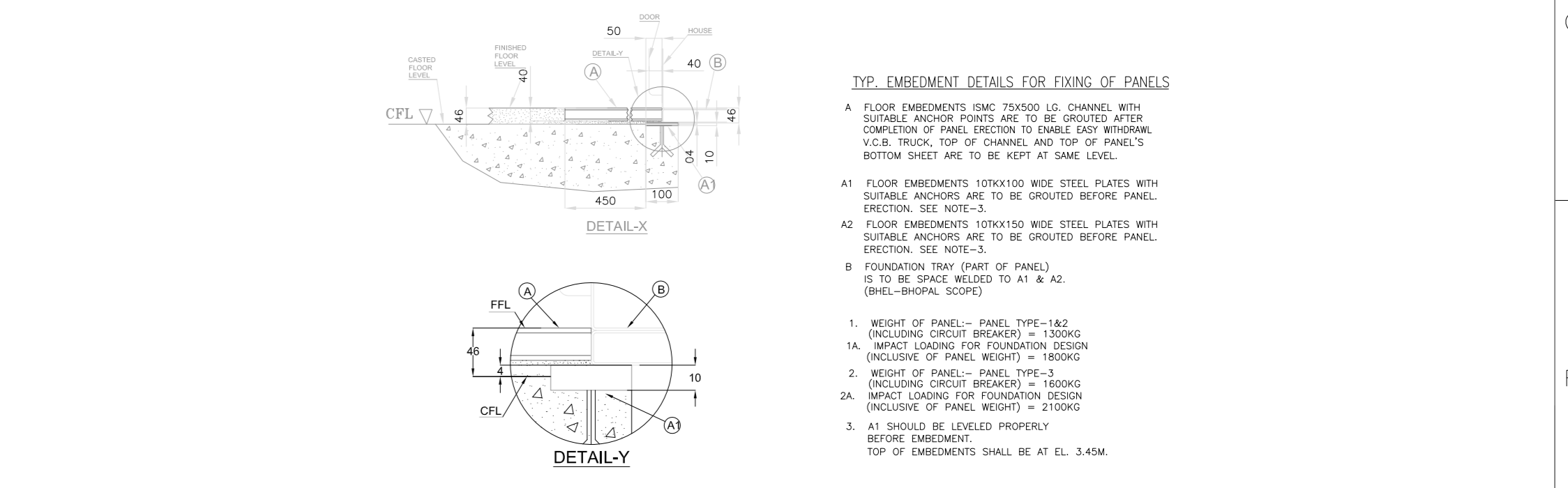
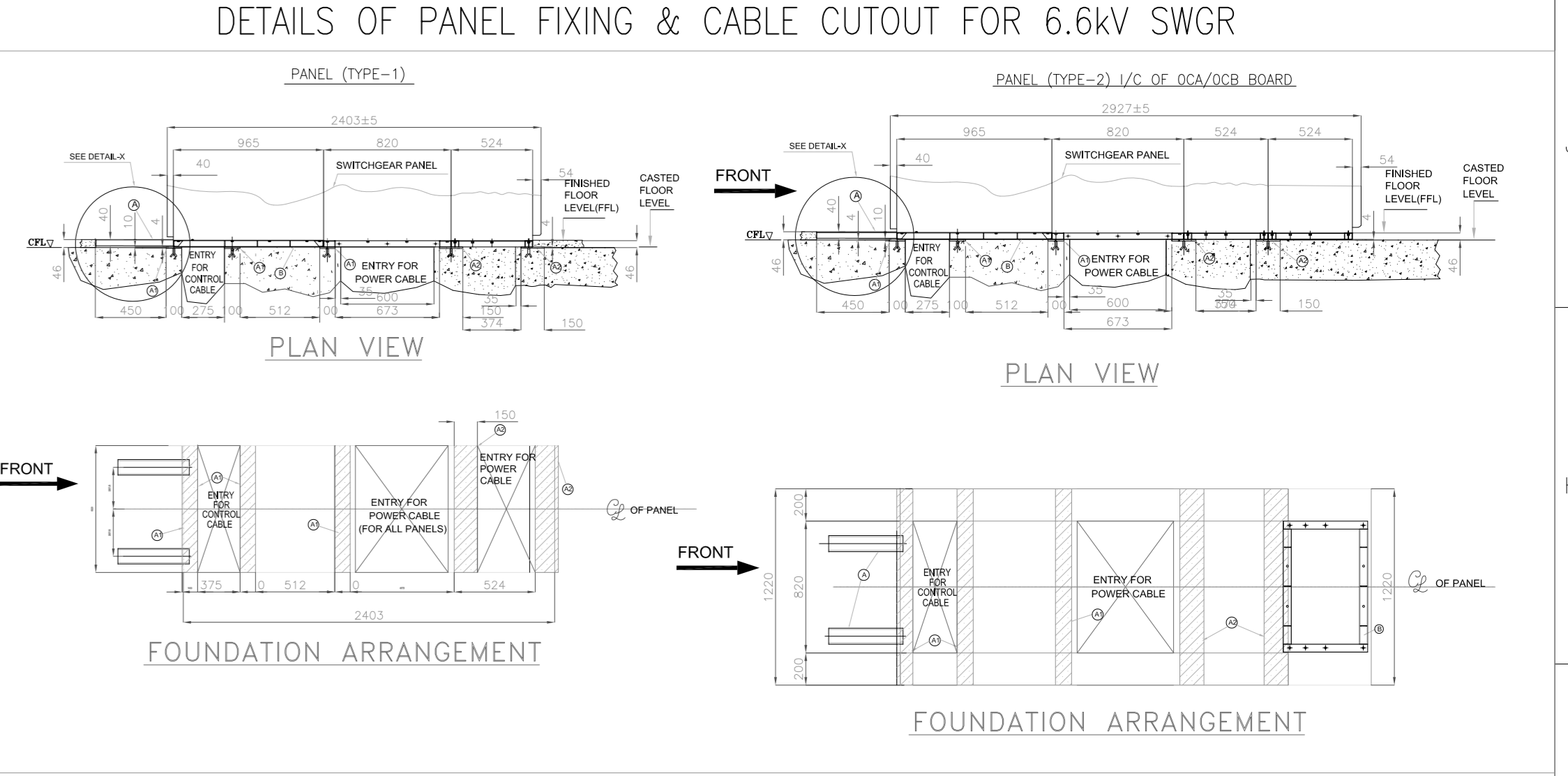
SL NO.	DESCRIPTION	QTY.	DIMENSIONS (WxDxH)	SCOPE
1.	OWS	07	1000x1200x705	EDN
2.	SERVER RACK CONSISTING OF EAS, INFO SERVER, NMS NODE	02	1000x900x1750	EDN
3.	PRINTER	01	800x650x740	EDN
4.	COMPUTER TABLE	02	1500x750x750	EDN
5.	LOCKER	01	380x457x1830	EDN
6.	KEYPAD	01	350x250x250	EDN

BILL OF QUANTITY

SL NO.	MATERIAL DESCRIPTION	UNIT	QUANTITY
01	CABLE TRAY 30MM WIDE (LARGER TYPE)	METRES	2900
02	CABLE TRAY 30MM WIDE (PERFORMED TYPE)	METRES	1100
03	CABLE TRAY 30MM WIDE (LARGER TYPE)	METRES	710
04	CABLE TRAY 30MM WIDE (PERFORMED TYPE)	METRES	310
05	CABLE TRAY 30MM WIDE (LARGER TYPE)	METRES	130
06	CABLE TRAY 30MM WIDE (PERFORMED TYPE)	METRES	130
07	SINGLE CHANNEL C/I	METRES	480
08	DOUBLE CHANNEL C/I	METRES	585
09	BASE PLATE S/P FOR DOUBLE CHANNEL	NOS.	190
10	BASE PLATE S/P FOR SINGLE CHANNEL	NOS.	305
11	CHANNELER END FRAM (LATCH)	METRES	1900
12	CHANNELER END FRAM (LATCH)	METRES	545
13	CHANNELER END FRAM (LATCH)	METRES	100
14	CHANNEL CLAMP C/I FOR DOUBLE CHANNEL	NOS.	885
15	CHANNEL CLAMP C/I FOR SINGLE CHANNEL	NOS.	20
16	W/ FITTING ALI	NOS.	885
17	W/ FITTING END W/ WIRE LATCHES	NOS.	67
18	W/ HORIZONTAL END W/ WIRE LATCHES	NOS.	23
19	W/ HORIZONTAL END W/ WIRE (PERFORMED)	NOS.	6
20	W/ HORIZONTAL END W/ WIRE (LARGER)	NOS.	4
21	W/ HORIZONTAL END W/ WIRE (LARGER)	NOS.	27
22	W/ HORIZONTAL END W/ WIRE (PERFORMED)	NOS.	8
23	W/ WIRE CLAMP 101	NOS.	200



INSTALLATION DETAIL FOR DOUBLE CHANNEL SUPPORT INSTALLATION BOTH ENDS FIXED, TRAYS ON SINGLE SIDE WITH HL1 AT TOP & BP2 AT BOTTOM



LEGEND

- Operating front of the panel
- Brick wall
- Fire barrier wall
- Cable trays
- Cable trys
- Double leaf door
- Single leaf fire proof door
- Removable fencing
- Moorring post
- Cable slit
- Rolling shutter
- Cable duct
- Cable trestle
- Duct support pedestal

REFERENCE DRAWINGS :

S. NO.	TITLE	DRAWING NO.	SOURCE AGENCY
1.	PLANT LAYOUT OF FGD SYSTEM	3130-109-PVE-F-044	BHEL/ RANIPET
2.	ELECTRICAL SINGLE LINE DIAGRAM	3130-109-PVE-W-302	FEM/ ELECT
3.	O.G.A OF 2500KVA TRANSFORMER	34730052893	BHEL/ JHANSI
4.	FOUNDATION PLAN OF 2500KVA TRANSFORMER	34730052895	BHEL/ JHANSI
5.	O.G.A OF 2000KVA TRANSFORMER	34730052897	BHEL/ JHANSI
6.	FOUNDATION PLAN OF 2000KVA TRANSFORMER	34730052899	BHEL/ JHANSI
7.	O.G.A OF 1600KVA TRANSFORMER	34730052900	BHEL/ JHANSI
8.	FOUNDATION PLAN OF 1600KVA TRANSFORMER	34730052902	BHEL/ JHANSI
9.	LAYOUT & KEY DIAGRAM FOR 6.6KV BOARD # OCA	3130-109-PVE-B-060	BHEL/ BHUPAL
10.	LAYOUT & KEY DIAGRAM FOR 6.6KV BOARD # DCB	3130-109-PVE-B-060	BHEL/ BHUPAL
11.	LAYOUT & KEY DIAGRAM FOR FGD PMCC ODA/OB	XXXXXXXXXX	BHEL/ EPD
12.	LAYOUT & KEY DIAGRAM FOR EMERGENCY MCC OMA /OMB	XXXXXXXXXX	BHEL/ EPD
13.	LAYOUT & KEY DIAGRAM FOR LV SWGR	XXXXXXXXXX	BHEL/ EPD
14.	GA OF DC LDB	XXXXXXXXXX	XXXXXX
15.	GA OF 500KVA AC LDB	XXXXXXXXXX	XXXXXX
16.	GA OF 1000KVA AC LDB	XXXXXXXXXX	XXXXXX
17.	GA OF 220V CHARGER	XXXXXXXXXX	XXXXXX
18.	GA OF 24V BATTERY	XXXXXXXXXX	XXXXXX
19.	GA OF 24V BATTERY	XXXXXXXXXX	XXXXXX

- NOTES :**
- ALL ELEVATIONS ARE WITH RESPECT TO MAIN POWER HOUSE BUILDING GROUND FLOOR LEVEL AS EL+130.00 M. WHICH CORRESPONDS TO R.L.(+152.00).
 - ALL DIMENSIONS ARE IN MM AND ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
 - THE LT PANEL DIMENSIONS INDICATED IN DRAWING ARE TENTATIVE AND ARE SHOWN FOR DEVELOPING CONCEPTUAL LAYOUT.
 - THIS DRAWING IS TO BE REFERRED FOR DETAILS OF ELECTRICAL EQUIPMENT AND CABLEING LAYOUT ONLY. LAYOUT SHOWN FOR FACILITIES SUCH AS AC & VENTILATION SYSTEM IS INDICATIVE & FOR INTERFACE PURPOSE. FOR EXACT LAYOUT OF OTHER SYSTEMS, RELEVANT DISCIPLINE DRAWINGS SHALL BE REFERRED.
 - ALL AREAS SHOWN IN THIS DRAWING ARE NOW A/S UNLESS STATED OTHERWISE.
 - BOTTOM MOST/OUTERMOST TRAY SHALL BE PERFORMED TYPE.
 - BOTTOM SWITCHGEAR ROOM & CABLE VAULT ROOM SHALL BE VENTILATED.
 - DOORS IN CABLE VAULT SHALL BE FIRE PROOF.
 - FIRE BARRIER WALLS WILL BE 350 MM THICK BRICKWORK OR 200 MM THICK CONCRETE, AS PER CIVIL DETAILING AND WILL PROJECT MINIMUM 600 MM BEYOND THE OIL CONTAINING PART OF THE TRANSFORMER.
 - SUITABLE GRADE FLOOR MATTING FOR PREVENTION OF SHOCKS SHALL BE PROVIDED IN THE SWITCHGEAR ROOM.
 - ALL TRAYS SHOWN ARE ON THE BASIS OF TENTATIVE LOAD DATA RECEIVED FROM VARIOUS AGENCIES. IF REQUIRED TRAYS CAN BE INCREASED DURING FINAL CABLE ROUTING STAGE.
 - PROVISION FOR LIFT SHAFT HAS BEEN INDICATED IN THE DRAWING. HOWEVER SUPPLY OF ELEVATOR IS NOT IN BHEL SCOPE.

NTPC DRAWING No. 3130-109-PVE-B-030

JOB NO. 467
STATUS CONTRACT
DISTRIBUTION

NATIONAL THERMAL POWER CORPORATION LTD.
RAMAGUNDAM (FGD) STPP, STAGE-I & II (3X200MW + 3X5500 MW)

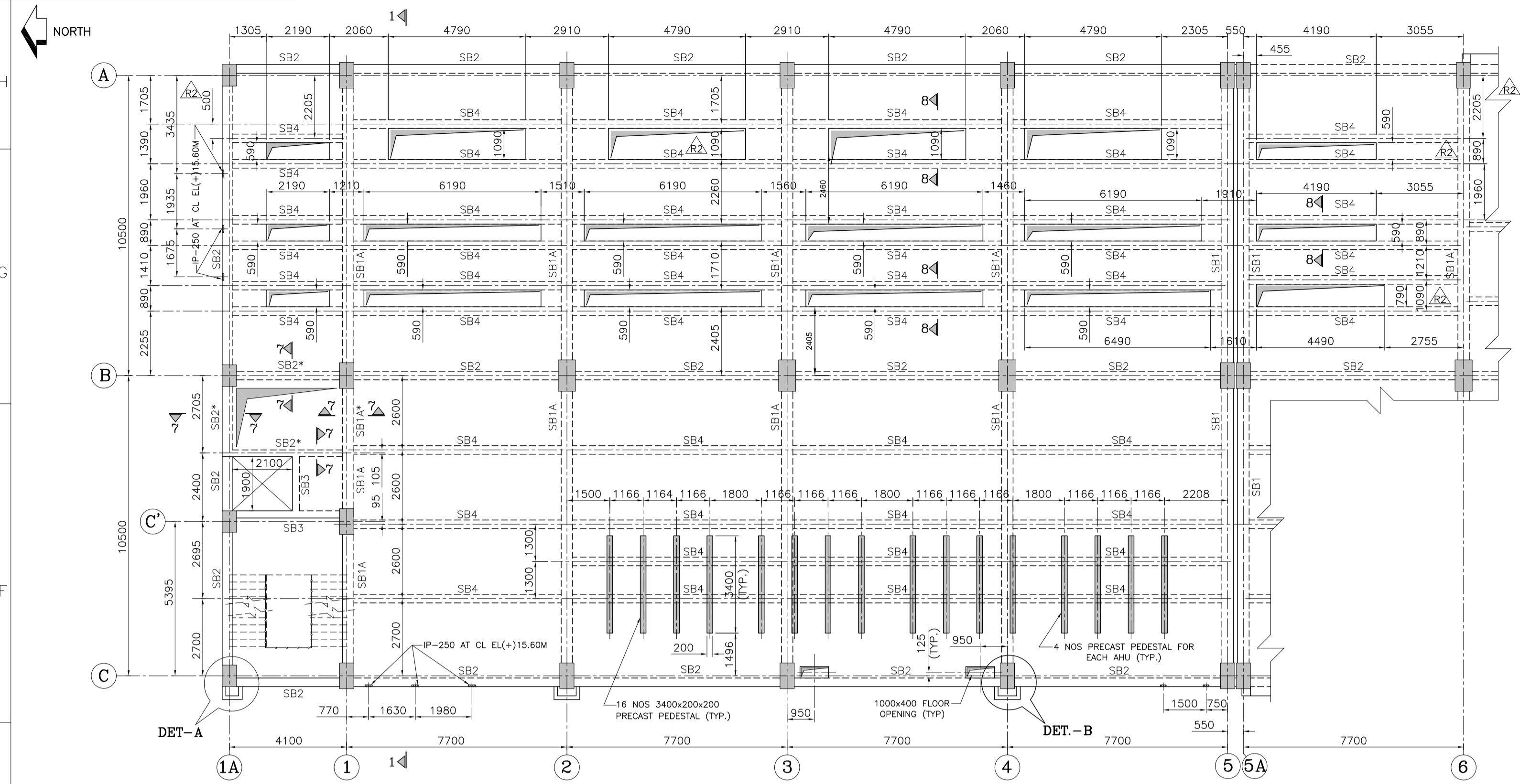
BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD
03	20.12.22	RK	MKM/AA	SL	02	28.02.22	RK	MKM/ABA	SL
01	13.11.20	RK	MKM/ABA	SL					

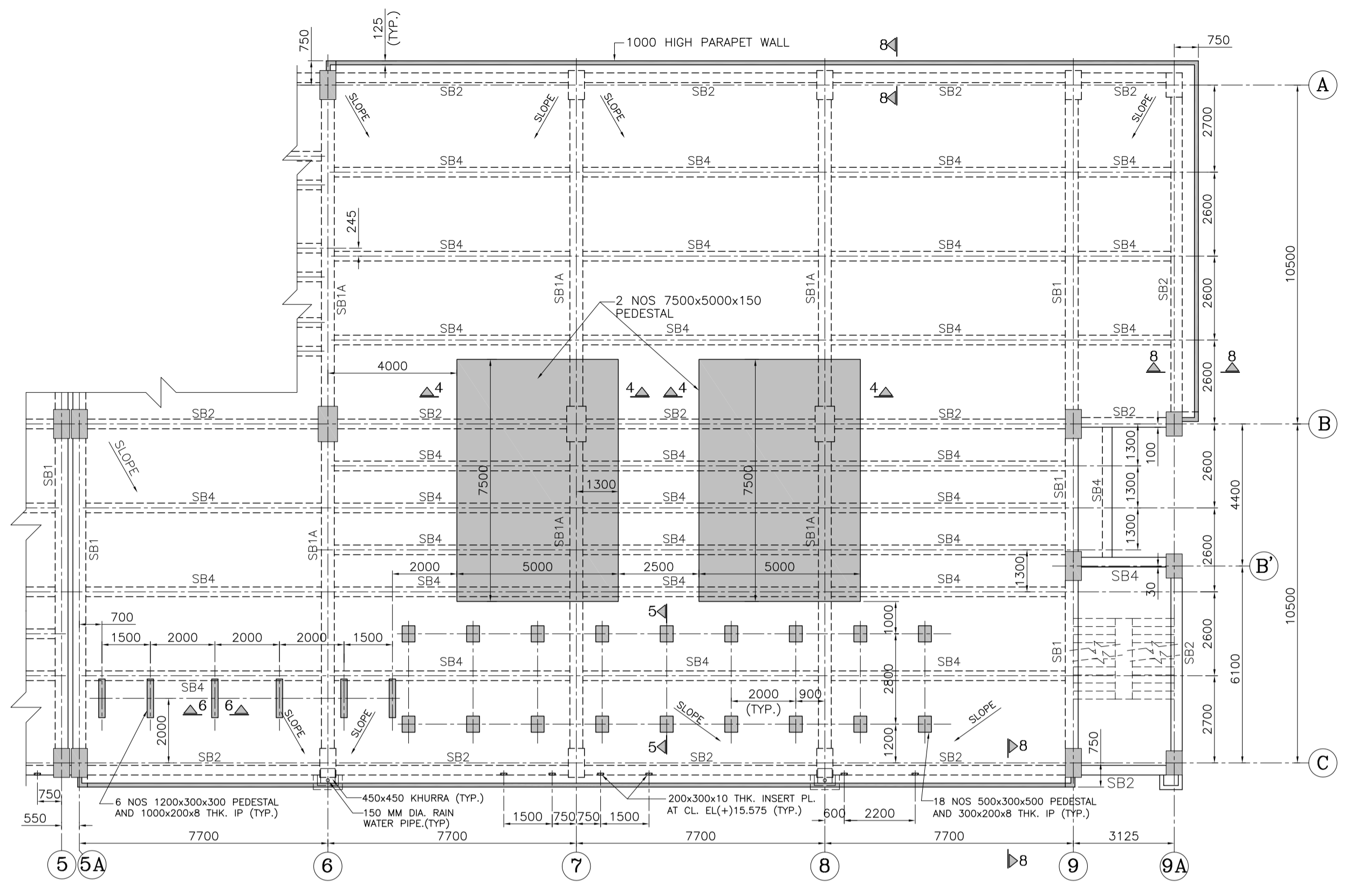
DRAWING IS REVISED INLINE WITH CUSTOMER COMMENTS, AND AS PER INTERFACE ENGG.

DRAWING IS REVISED INLINE WITH CUSTOMER COMMENTS AND INTERNAL INTERFACE.

DEPT. SCALE: DRAWING NO. PE-DG-467-100-E001
SHEET 1 OF 1 REV. 03

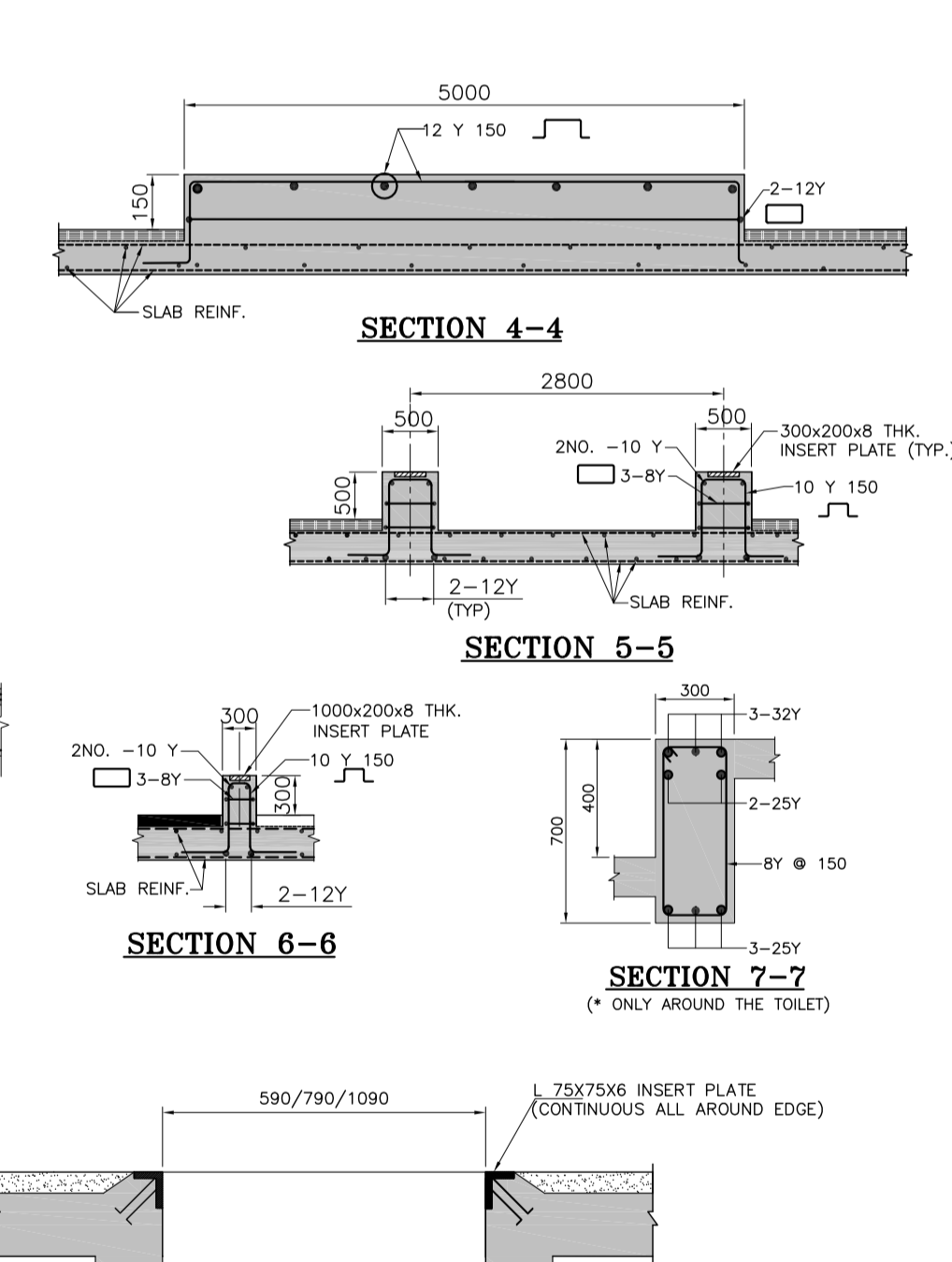
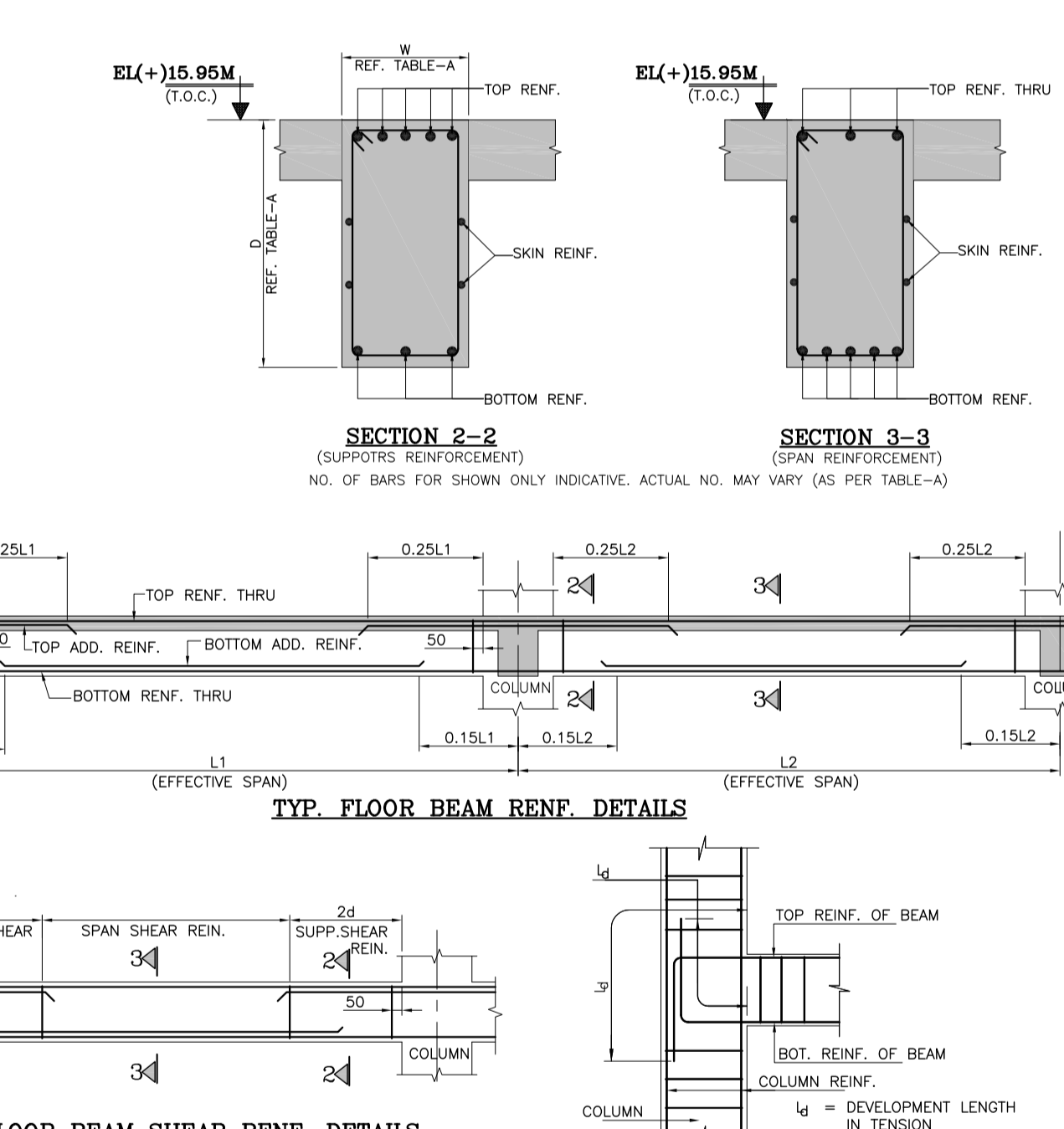
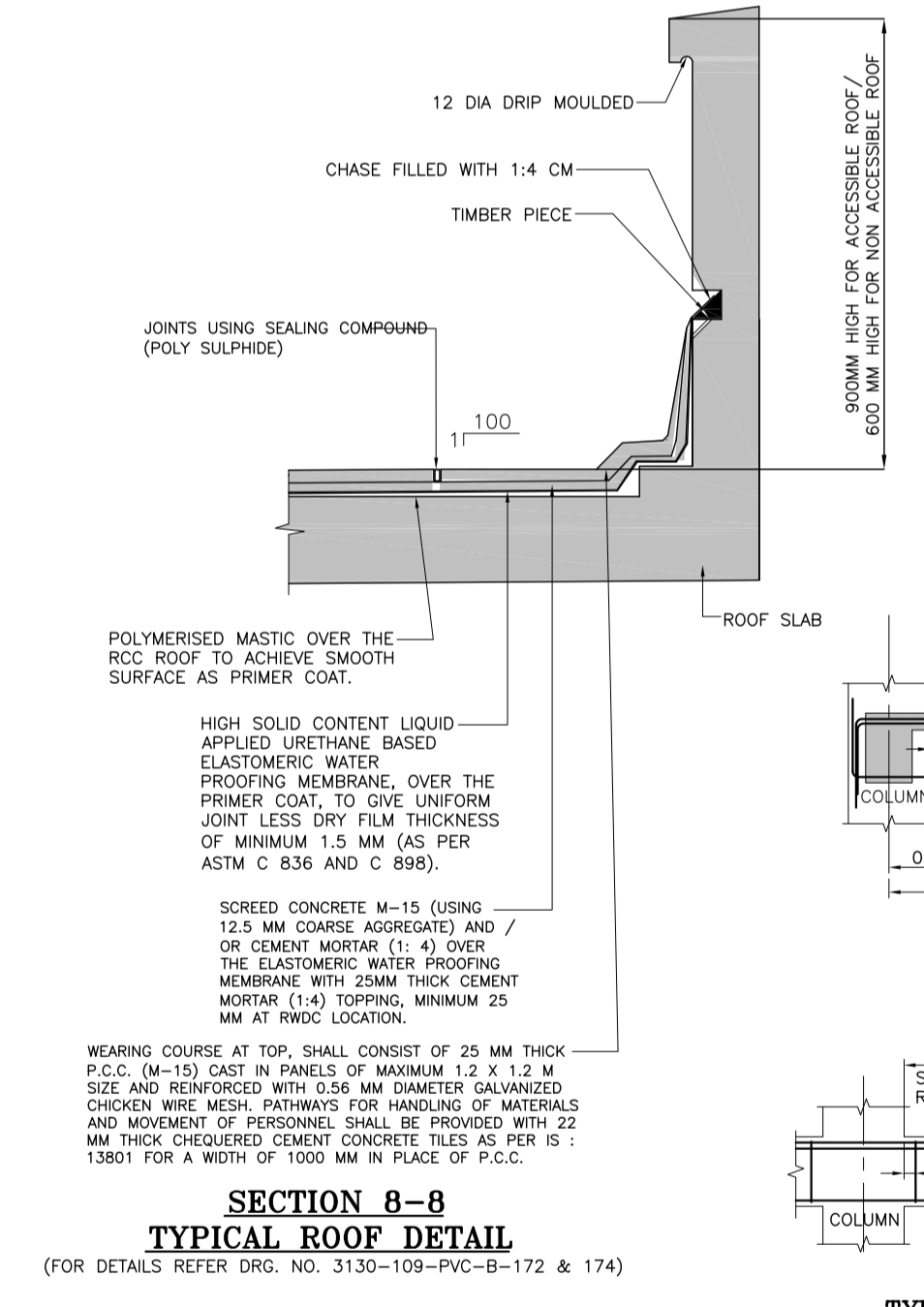


THIRD FLOOR BEAM LAYOUT PLAN AT EL (+) 15.950M (T.O.C)



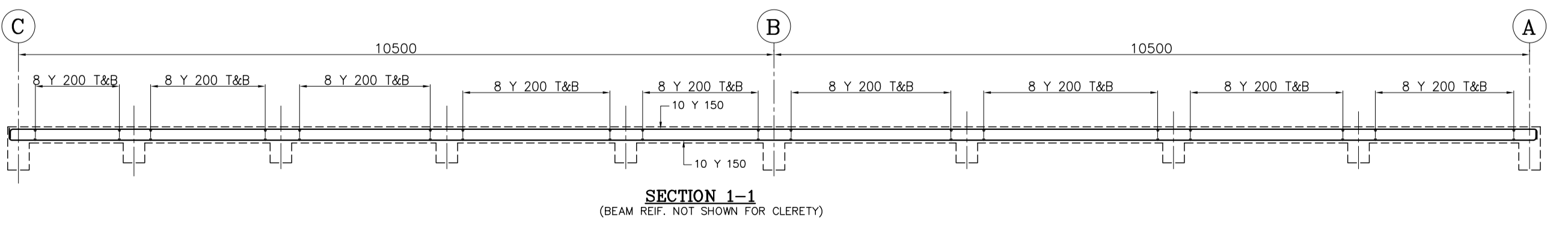
ROOF BEAM LAYOUT PLAN AT EL (+) 15.950M (T.O.C)

FLOOR BEAM SECTION DETAILS T.O.C. (+)15.950M		
BEAM NAME	END SECTION (2-2)	MIDDLE SECTION (3-3)
SB1		
SB1A		
SB2		
SB3		
SB4		



SCHEDULE OF SLAB REINFORCEMENT

SLAB MKD. AS	REINFORCEMENT		THICKNESS (IN MM)
	SHORTER SPAN	LONGER SPAN	
S1	10-150Y (T&B)	8-150Y (T&B)	150



- NOTES:**
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS & CONDITIONS, SPECIFICATIONS AND SCHEDULE OF ITEMS.
 - ALL ELEVATIONS ARE W.R.T. MAIN POWER HOUSE BUILDING GROUND FLOOR LEVEL AS EL.(±)0.00M, WHICH CORRESPONDS TO RL(+152.00).
 - ALL DIMENSIONS ARE IN MILLIMETER & ALL LEVELS/ELEVATIONS ARE IN METER UNLESS NOTED OTHERWISE.
 - ALL STRUCTURAL CONCRETE SHALL BE DESIGN MIX CONC. OF GRADE M-25 UNO.
 - REINFORCEMENT USED SHALL BE OF GRADE FE-500, TMT WITH MINIMUM ELONGATION OF 14.5%.
 - MINIMUM CLEAR COVER TO MAIN REINFORCEMENT SHALL BE AS PER GENERAL NOTES ON CONCRETE WORKS DWG. NO. PE-DG-467-600-C001/3130-109-FBC-PVC-B-172.
 - FOR GENERAL NOTES ON CONCRETE WORKS REF. BHEL DWG. NO. PE-DG-467-600-C001/NTPC DWG. NO. 3130-109-FBC-PVC-B-172.
 - ALL WORK SHALL BE CARRIED OUT AS PER TECHNICAL SPECIFICATION, SCHEDULE OF ITEMS CONFORMING TO THE QUALITY CHECKS, SPECIFIED THEREIN AND IN FIELD QUALITY PLAN.
 - LAPS SHALL BE STAGGERED AS FAR AS POSSIBLE. LENGTH OF LAP SHALL BE FIFTY (50) TIMES DIAMETER OF BARS UNLESS NOTED OTHERWISE.
 - ALL HOOKS, BENDS AND LAPS OF REINFORCEMENT BARS SHALL CONFORM TO IS 2502 UNO.

- REFERENCE DRGS. :-**
1. PLANT LAYOUT OF FGD SYSTEM ----- 3130-109-PVM-F-044
 2. LAYOUT OF ELECTRICAL & CONTROL BUILDING ----- 3130-109-PVE-B-030
 3. GENERAL NOTES & STANDARD DETAILS FOR ARCHITECTURAL WORKS ----- 3130-109-PVC-B-174
 4. GENERAL NOTES & STANDARD DETAILS FOR CIVIL WORKS ----- 3130-109-PVC-B-172

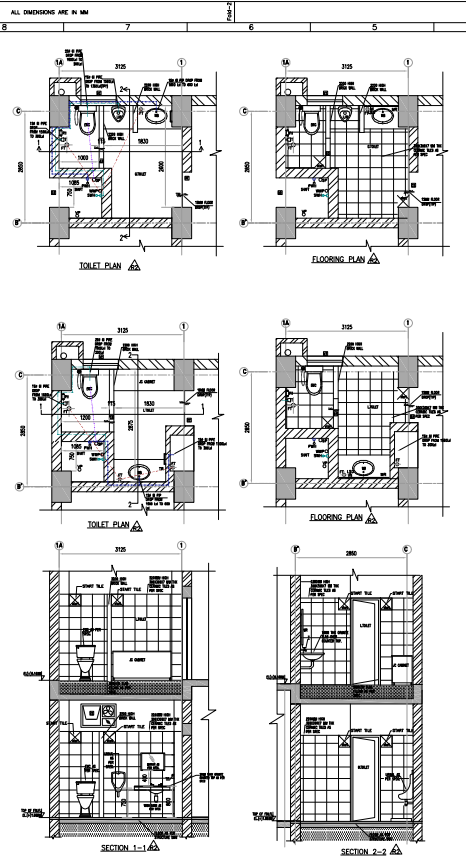
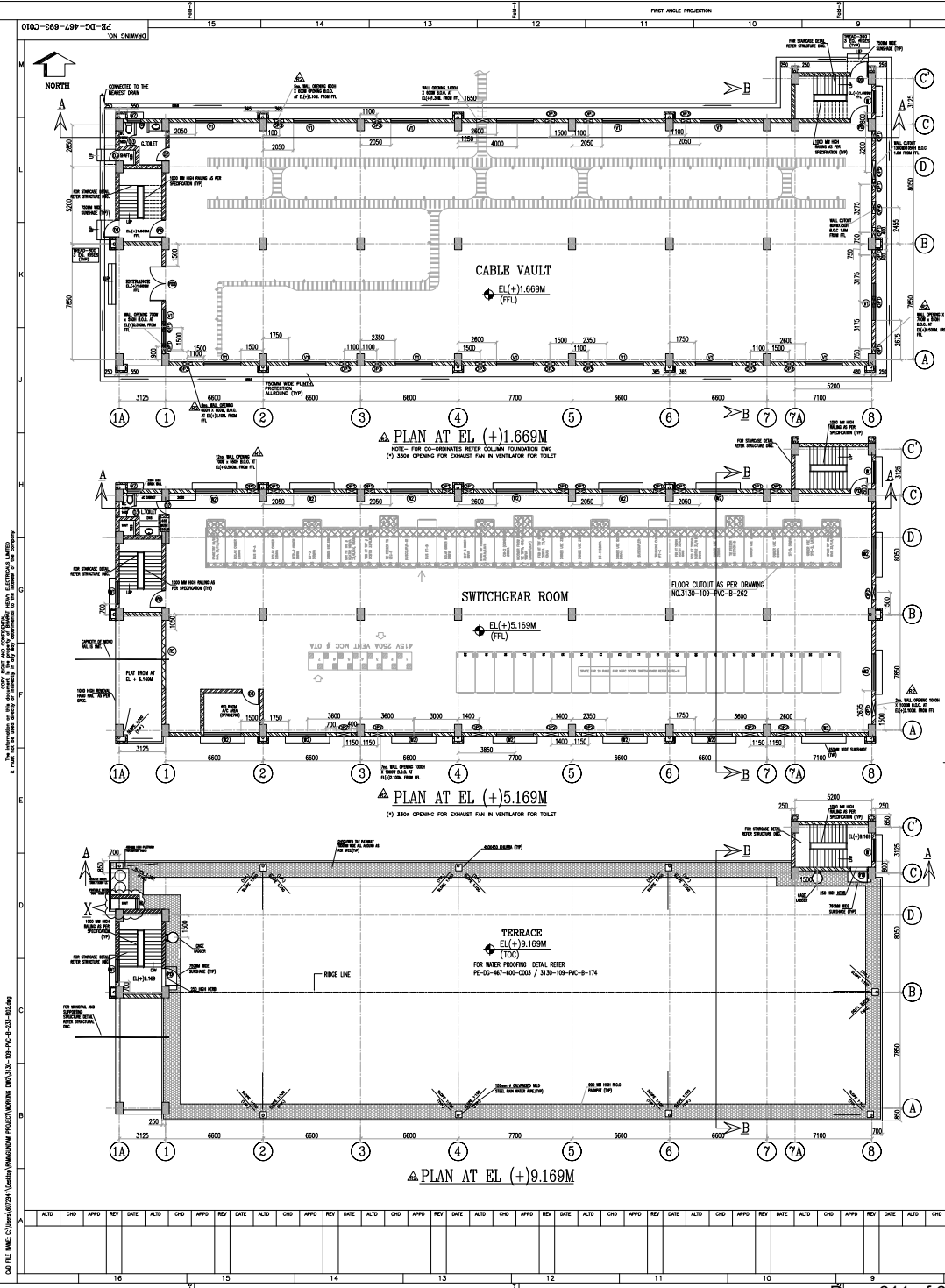
- LEGEND :-**
- TOC : TOP OF CONCRETE
 - EL : ELEVATION
 - TYP : TYPICAL
 - LVL : LEVEL
 - BOF : BOTTOM OF FOOTING

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRG. NO. 3130-109-PVC-B-252

NTPC DRAWING NO.	3130-109-PVC-B-162
OWNER :	NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE) ENGINEERING DIVISION
JOB NO.	467
STATUS	CONTRACT
PROJECT :	3x200 MW+3x500 MW RAMAGUNDAM (FGD PACKAGE)
DEPT	BHARAT HEAVY ELECTRICALS LTD
NAME	POWER SECTOR
SIGN	PROJECT ENGINEERING MANAGEMENT
DATE	NEW DELHI

TITLE			
ELECTRICAL EQUIPMENT & CONTROL BUILDING-1			
GA & RC DETAILS OF THIRD FLOOR BEAM AND SLAB AT EL(+16.000M			
DEPT.	SCALE: 1:75	DRAWING NO.	
SIGN		PE-DG-467-693-C006C	
DATE		SHEET	1 OF 1
		REV.	2

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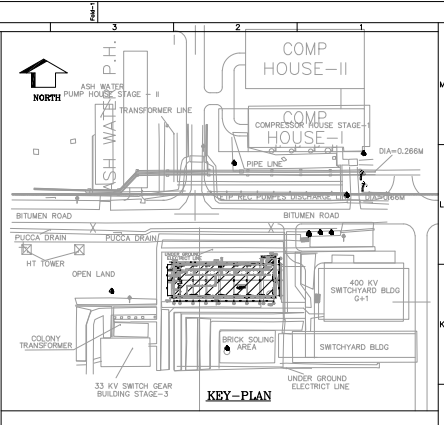
SCHEDULE OF SANITARY FIXTURES

ITEM	DESCRIPTION
EWC	WALL MOUNTED COLOURED GLAZED VITREOUS CHINA EUROPEAN WATER CLOSET WITH FLUSH VALVE INCLUDING ALL REQUISITE FITTINGS AND FIXTURES
WB	GLAZED VITREOUS CHINA WASH BASIN OF (OVAL SHAPE) WITH PHOTO VOLTIC CONTROL CONCERNING TO IS-2056 PART 4 WITH SYSTEM AND ALL REQUISITE FITTINGS AND FIXTURES TO BE FIXED ON CONCRETE PLATFORM FINISHED WITH 18MM THICK POLISHED GRANITE STONE.
UR	WHITE FLAT BACK GLAZED VITREOUS CHINA LIPPED URINALS WITH PHOTO VOLTIC CONTROL FLUSHING SYSTEM AS PER IS-2056 (PART 4, SECTION 1) INCLUDING ALL REQUISITE FITTINGS AND FIXTURES
MR	WALL TO WALL MIRROR MINIMUM 900 MM HIGH (8MM THICK FLOAT GLASS) INCLUDING ALL FITTINGS
LSD	STAINLESS STEEL LIQUID SOAP HOLDER CUM DISPENSER WITH REQUISITE FITTINGS
TR	STAINLESS STEEL TOWEL RAILS 600MM LONG X20MM DIA WITH REQUISITE FITTINGS
PH	GLAZED VITREOUS WALL MOUNTED PAPER HOLDER WITH REQUISITE FITTINGS

LEGEND

(SP)	110 Ø SOIL PIPE	(O)	OPENING
(WWP)	75 Ø WASTE WATER PIPE	(FD)	15MM FLOOR DROP
(G.LI.PE)	POTABLE WATER LINE	(HF)	HEALTH FAUCET
(G.SI.PE)	SERVICE WATER LINE	(B)	115 MM THICK BRICK WALL
(VP)	75 Ø VENT PIPE		

NOTE: ALL TILES, SANITARY AND PLUMBING FIXTURES SHALL BE AS PER APPROVED SAMPLE.



- NOTES:**
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
 - ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
 - ALL ELEVATIONS ARE WITH RESPECT TO MAIN POWER HOUSE BUILDING GROUND FLOOR LEVEL AS EL(+30.000 M. WHICH CORRESPONDS TO R.L. (+)52.000M ABOVE M.S.L.
 - UNLESS NOTED OTHERWISE WINDOW/DOOR/ROLLING SHUTTER LOCATION SHALL BE AT CENTER BETWEEN GRIDS.

- REFERENCE DRGS.:**
- 3130-109-PVC-B-031-----LAYOUT OF ELECTRICAL & CONTROL BUILDING
 - 0-FW-000-01375-----PLANT LAYOUT OF FGD SYSTEM
 - PE-DG-467-693-0011-----GA & RC DETAIL OF FOUNDATION & COLUMNS
 - PE-DG-467-693-0012-----GA & RC DETAIL OF PLINTH BEAM
 - PE-DG-467-693-0014-----GA & RC DETAIL OF FLOOR BEAM & SLAB
 - PE-DG-467-693-0015-----GA & RC DETAIL OF ROOF BEAM & SLAB
 - PE-DG-467-693-0016-----GA & RC DETAIL OF STAIRCASE

LEGENDS

S.NO	LEGEND	DESCRIPTION
1.	TYP.	TYPICAL
2.	THK.	THICK
3.	F.FL	FINISH FLOOR LEVEL
4.	BOL	BOTTOM OF LINTEL
5.	RWP	150mm Ø GALVANISED MILD STEEL RAIN WATER PIPE
6.	TOC	TOP OF CONCRETE
7.	LVL	LEVEL
8.	FGL	FINISHED GROUND LEVEL
9.	BOO	BOTTOM OF OPENING
10.	(Hatched)	230 THICK BRICK WALL
11.	(Wavy)	ROLLING SHUTTER

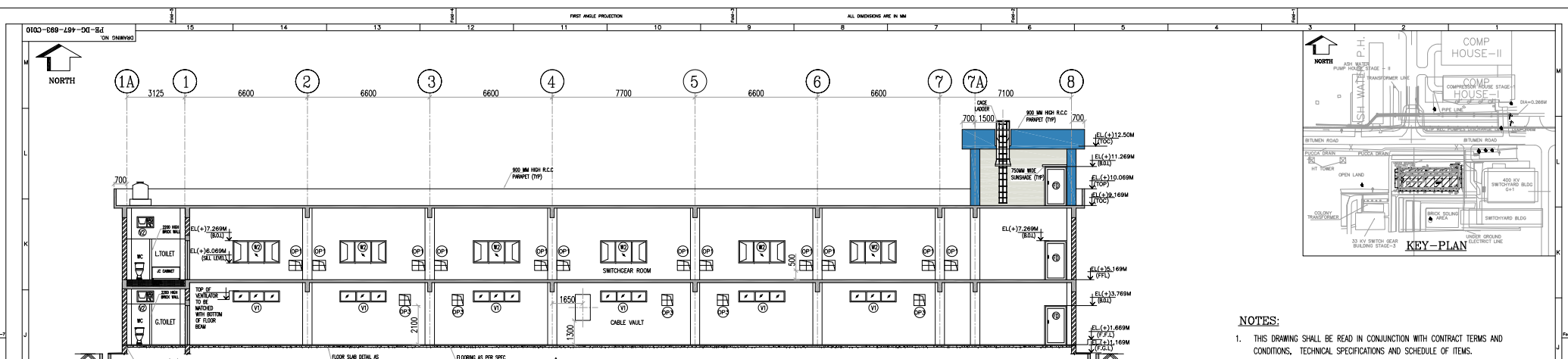
(SHEL-PROJECT ENGINEERING MANAGEMENT(OVL))
 THIS DRAWING MARKED (R) IS RELEASED FOR COMMENTS/APPROVAL
 PLANNING/INFORMATION
 CONSTRUCTION
 STAMP ALL PREVIOUS REVISION AS SUPERSEDED

ISSUED BY: NAME SMC/JAN
 SIGNATURE: [Signature]
 DATE: 22 FEBRUARY 2023

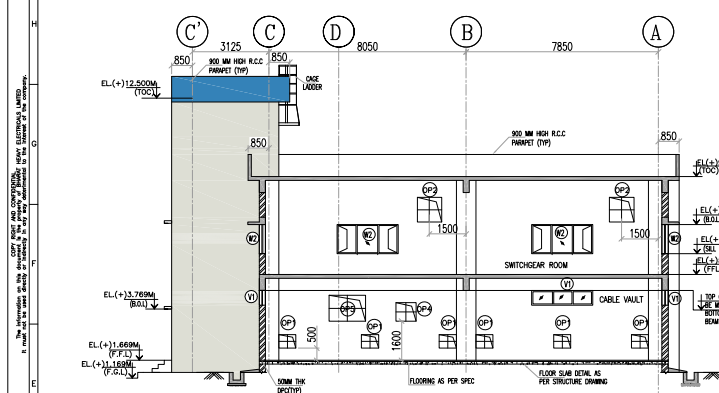
PROJECT: 3130-109-PVC-B-233
ORDER: NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE) ENGINEERING DIVISION
PROJECT: RAMAGUNDAM STPP FGD PACKAGE STAGE I & STAGE 2 (3X200MW + 3X300MW)
PRODUCT: BHARAT HEAVY ELECTRICALS LTD DEPT CODE NAME SSCR DATE
 POWER SECTOR 0001 -54- 05.03.2021
 PROJECT ENGINEERING MANAGEMENT 0002 -54- 01.03.2021
 NEW DELHI C CHD SMC -54- 06.03.2021
 (SHEL) M/J/VAN -54- 13.04.2021

TITLE: 33KV SWITCHGEAR BUILDING (Architectural Plan and Elevation)

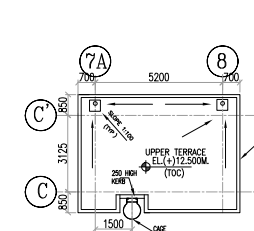
DRAWING NO: PE-DC-467-693-C010
DATE: 22 FEB 2023
SCALE: 1/8" = 1'-0"
SHEET: 1 OF 3



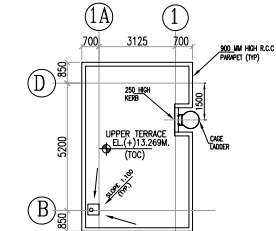
SECTION A-A



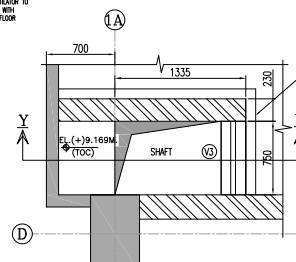
SECTION B-B



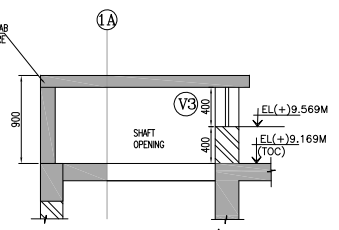
PLAN AT EL(+12.500M) (T.O.C.)



PLAN AT EL(+13.269M) (T.O.C.)



DETAIL-X



SEC Y-Y

DOOR/WINDOW OPENINGS SCHEDULE

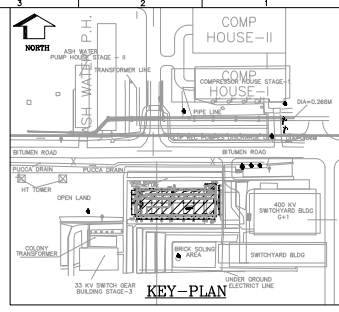
SYMBOL	WIDTH	HEIGHT	SILL AT RL FROM FFL	LINTEL AT RL FROM FFL	REMARKS
①	2433	2100	---	2100	FIRE DOOR AL/PROTECTION (DOUBLE SHUTTER)
②	1200	2100	---	2100	FIRE DOOR AL/PROTECTION (DOUBLE SHUTTER)
③	4000	3500	---	3500	ROLLING SHUTTER AS PER SPEC.
④	1200	2100	---	2100	HOLLOW METAL FLUSH DOOR (DOUBLE SHUTTER)
⑤	800	2100	---	2100	30MM THICK SWP TOP FACTORY MADE PRE-LAMINATED SOLID CORE FLUSH DOOR
⑥	750	2100	---	2100	SHUTTER WITH PRESSED STEEL DOOR FRAME.
⑦	1200	2100	---	2100	ANODIZED ALUMINUM GLAZED DOOR WITH 6 MM THICK TOUCHED GLASS
⑧	1500	1200	800	2100	ANODIZED ALUMINUM GLAZED WINDOW PARTLY OPERABLE AND PARTLY FIXED WITH 6 MM THICK TOUCHED GLASS
⑨	800	400	1800	2500	ANODIZED ALUMINUM GLAZED WINDOW PARTLY OPERABLE AND PARTLY FIXED WITH 6 MM THICK TOUCHED GLASS
⑩	800	400	1800	2500	ANODIZED ALUMINUM GLAZED WINDOW PARTLY OPERABLE AND PARTLY FIXED WITH 6 MM THICK TOUCHED GLASS
⑪	750	400	400	800	ANODIZED ALUMINUM GLAZED WINDOW PARTLY OPERABLE AND PARTLY FIXED WITH 6 MM THICK TOUCHED GLASS

FINISHING SCHEDULE

NAME	FLOOR FINISH	DAPO / SKIRTING	INTERNAL WALL FINISH	CERAMIC FINISH
CEILING WALL ROOM / SWITCHGEAR ROOM	HEAVY DUTY GANGET CONCRETE WITH 12 MM THICK METALLIC INHIBITION TOPING	150MM HIGH SKIRTING	ACRYLIC DISTEMPER PAINT FOR MOISTURE RESIST	ACRYLIC DISTEMPER PAINT
TOILET	HEAVY DUTY TOP PRESSED CERAMIC TILES 300X300X10MM	220MM HIGH SKIRTING	ACRYLIC DISTEMPER PAINT FOR MOISTURE RESIST	ACRYLIC DISTEMPER PAINT
FIX ROOM / A/C AREA	15MM THICK POLISHED CONCRETE FINISH WITH 3 MM GRIND, SAND AND SMOKE GRAY FINE GRIT	150MM HIGH SKIRTING	ACRYLIC DISTEMPER PAINT WITH 5% POWDER BRUSH WITH RESISTANT FINISH	ACRYLIC DISTEMPER PAINT
SWITCHGEAR	15MM THICK POLISHED CERAMIC STONE	150MM HIGH SKIRTING	ACRYLIC DISTEMPER PAINT	ACRYLIC DISTEMPER PAINT

SCHEDULE OF EXTERNAL FINISHES

TYPE	FINISH
ROOF	150MM x 6 GAUWHEDED M.C. STEEL RAIN WATER PIPE (TYP)
EXTERIOR PLASTERING	15MM THICK PLASTER IN 2 LAYERS (1:3 & 1:4)
INTERIOR PLASTERING	12 MM THICK PLASTER (1:3)
CEILING PLASTERING	8 MM THICK PLASTER (1:3) EXCEPT A/C AREA WITH FACE CEILING AND GYPSUM BOARD
EXTERIOR FINISH	ACRYLIC SMOOTH EXTERIOR PAINT WITH SLOANE ADHESIVE



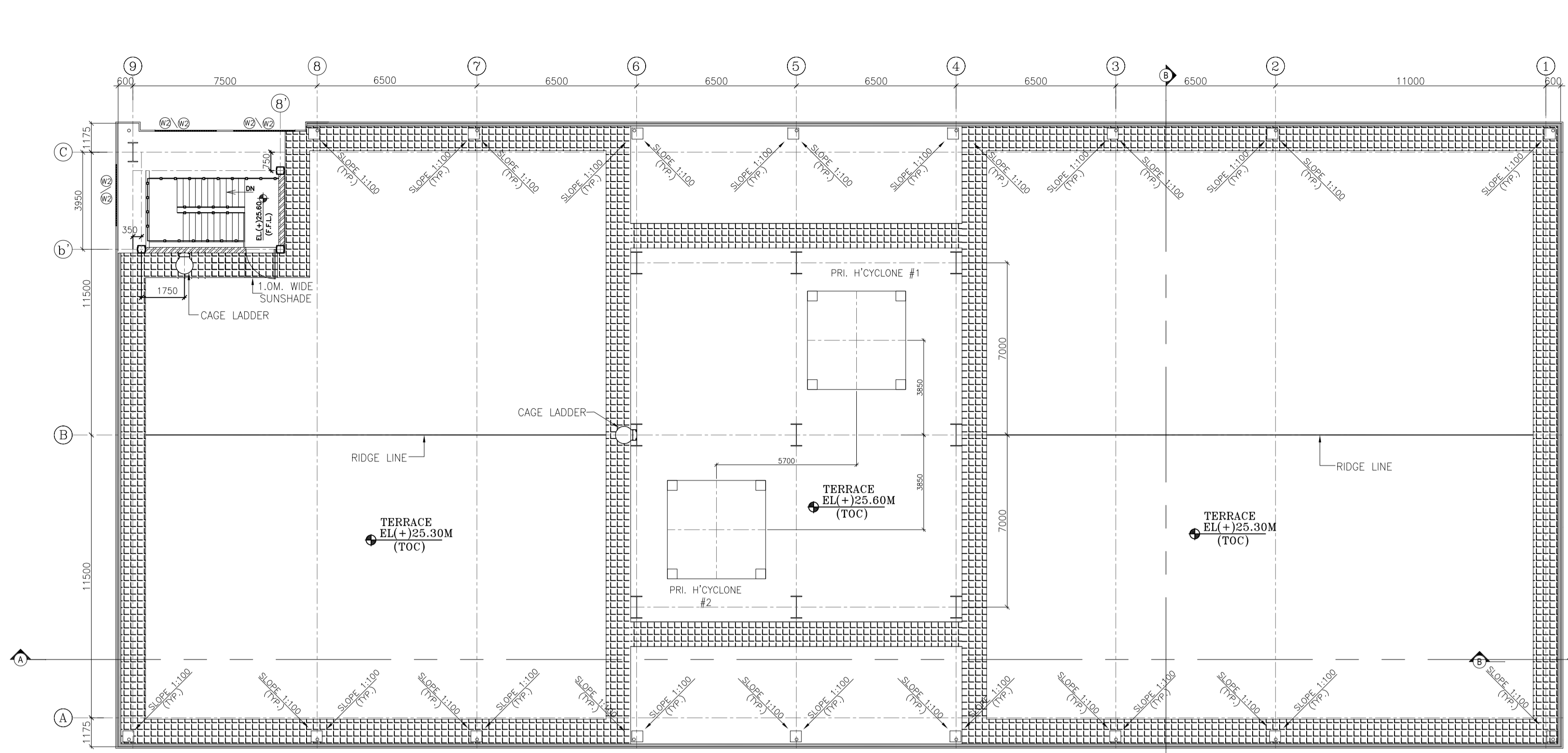
- NOTES:**
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
 - ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
 - ALL ELEVATIONS ARE WITH RESPECT TO MAIN POWER HOUSE BUILDING GROUND FLOOR LEVEL AS EL(+10.000 M. WHICH CORRESPONDS TO R.L. (+152.000M ABOVE M.S.L.
 - UNLESS NOTED OTHERWISE WINDOW/DOOR/ROLLING SHUTTER LOCATION SHALL BE AT CENTER BETWEEN GRID.

- REFERENCE DRGS.:**
- 3130-109-PVE-B-031-----LAYOUT OF ELECTRICAL & CONTROL BUILDING
 - 0-FW-000-01375-----PLANT LAYOUT OF FGD SYSTEM
 - PE-DG-467-693-C011-----GA & RC DETAIL OF FOUNDATION & COLUMNS
 - PE-DG-467-693-C012-----GA & RC DETAIL OF PLINTH BEAM
 - PE-DG-467-693-C014-----GA & RC DETAIL OF FLOOR BEAM & SLAB
 - PE-DG-467-693-C015-----GA & RC DETAIL OF ROOF BEAM & SLAB
 - PE-DG-467-693-C016-----GA & RC DETAIL OF STAIRCASE

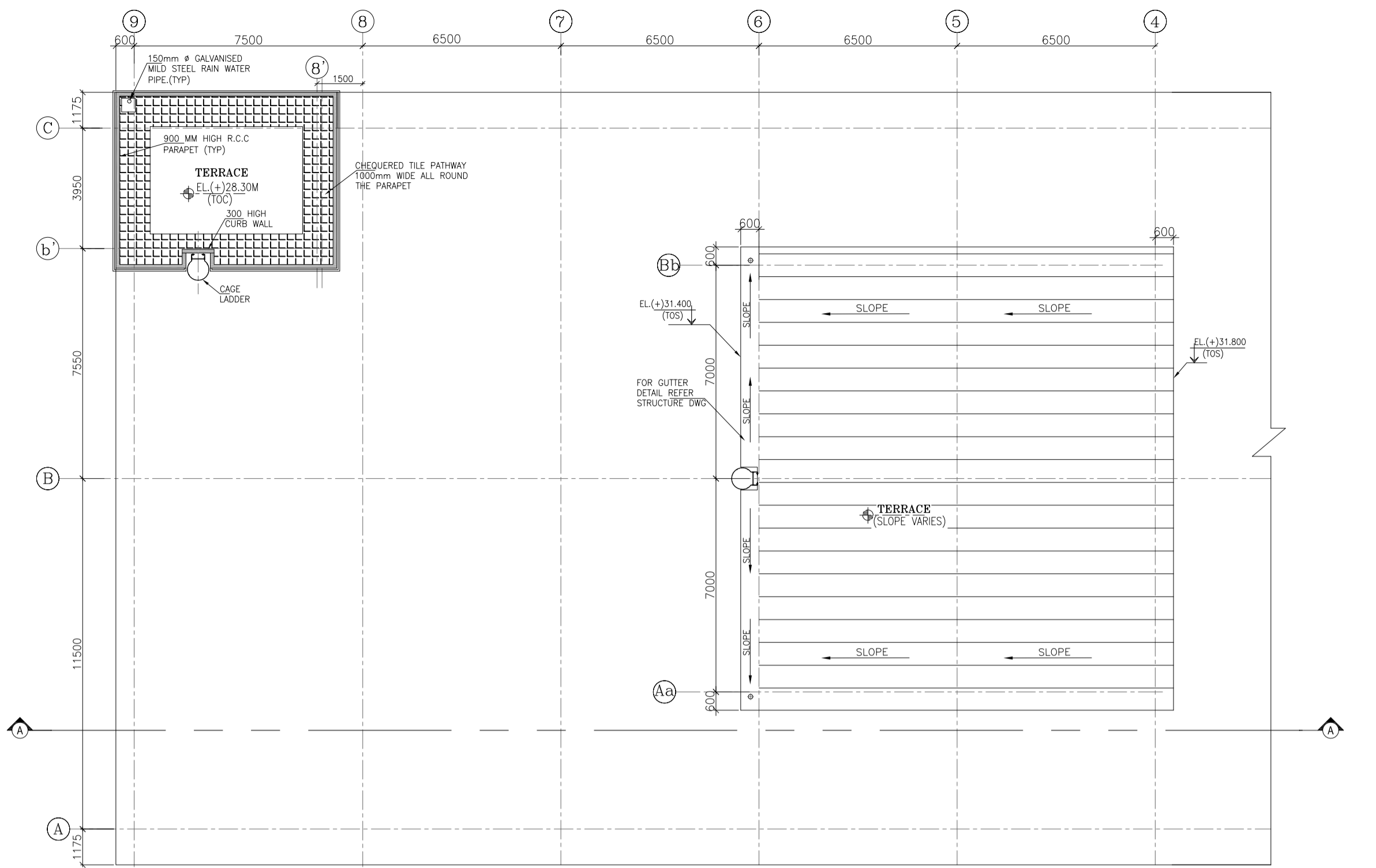
BHEL-PROJECT ENGINEERING MANAGEMENT(CIVIL)
 THIS DRAWING MARKED (✓) IS RELEASED FOR COMMENTS/APPROVAL
 PLANNING/INFORMATION
 CONSTRUCTION
 STAMP ALL PREVIOUS REVISION AS SUPERSEDED
 ISSUED BY
 NAME SMC/AN
 SIGNATURE
 DATE 22 FEBRUARY 2023

HTPC DRAWING NO. 3130-109-PVC-B-233
 ORDER: NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)
 PROJECT: RAMAGUNDAM STPP FGD PACKAGE STAGE 1 & STAGE 2 (3X200MW + 3X300MW)
 DEPT. NAME SMC/AN
 DESIGNER NAME SMC/AN
 CHECKER NAME SMC/AN
 DATE 22 FEBRUARY 2023
 TITLE: 33KV SWITCHGEAR BUILDING (Architectural Plan and Elevation)
 DRAFTER NAME SMC/AN
 DATE 22 FEBRUARY 2023
 SHEET 3 OF 3

C:\Users\B07294\OneDrive\Documents\RAMAGUNDAM STPP FGD PACKAGE STAGE 1 & STAGE 2\33KV SWG\33KV SWG ARCH\33KV SWG ARCH.DWG
 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1



PLAN AT EL(+25.30M (T.O.C.))



PLAN AT EL(+28.30M (T.O.C.))

FINISHING SCHEDULE		DADO / SKIRTING (150MM HIGH)	INTERNAL WALL FINISH	CEILING FINISH
MAINTENANCE BAY GYPSUM DEWATERING SYSTEM BUILDING	IPS FLOORING (CEMENT CONCRETE FLOORING) WITH 12 MM THICK METALLIC HARDENER TOPING	150MM HIGH SKIRTING	ACRYLIC DISTEMPER PAINT	ACRYLIC DISTEMPER PAINT
STAIRCASE	OPEN STEEL STAIRCASE	-	-	-
STAIRCASE MUMPTY	OPEN STEEL STAIRCASE	-	ACRYLIC DISTEMPER PAINT	ACRYLIC DISTEMPER PAINT

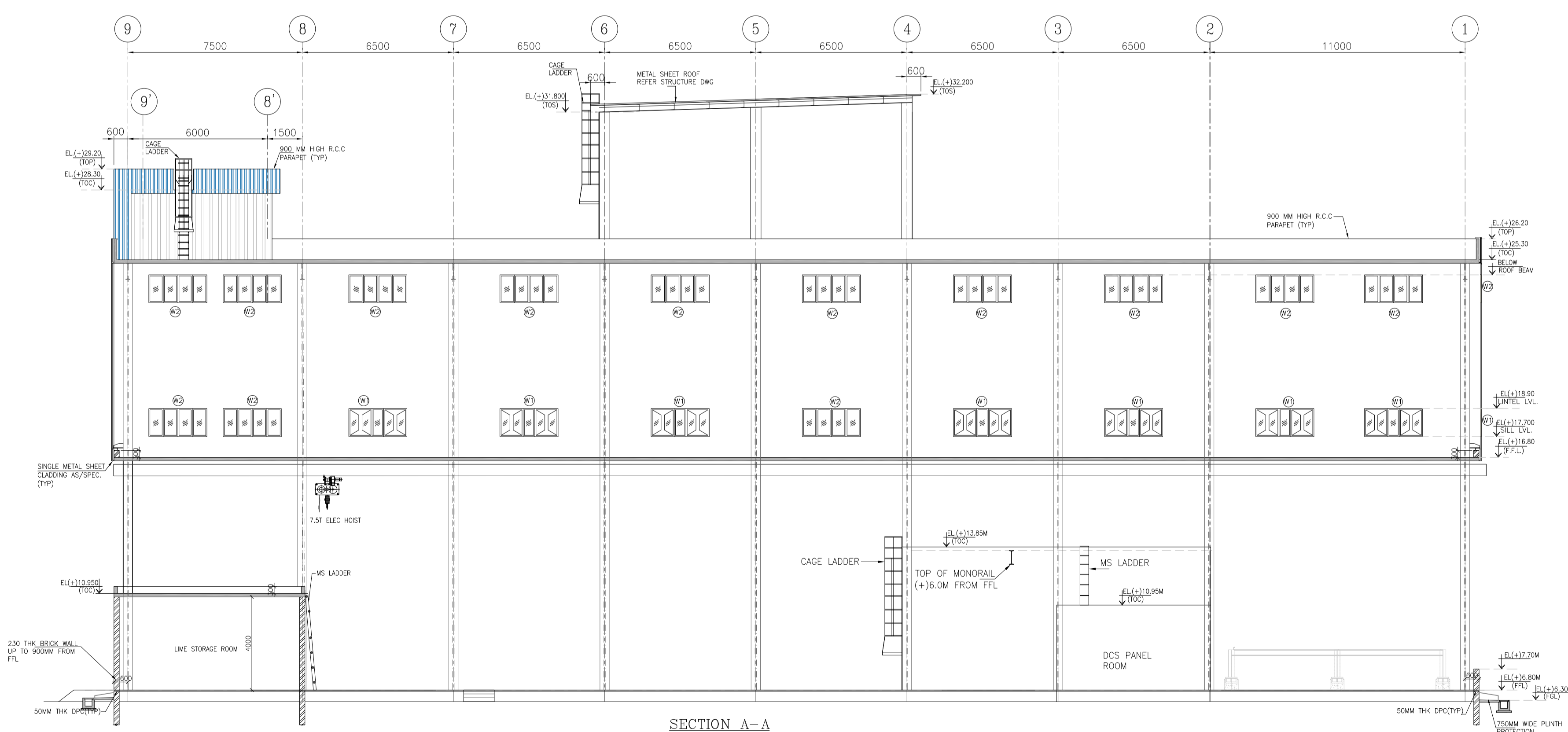
NOTES: -

- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
- ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS NOTED OTHERWISE.
- ALL ELEVATIONS ARE WITH RESPECT TO MAIN POWER HOUSE BUILDING GROUND FLOOR LEVEL AS EL.(±)0.00 M. WHICH CORRESPONDS TO RL(+152.000. ABOVE M.S.L..
- FOR ANY DETAIL & NOTES, REFER GENERAL NOTES DRG. (STANDARD DETAILS FOR ARCHITECTURAL WORKS)PE-DG-467-600-C003




REFERENCE DRGS: -

- STANDARD DETAILS FOR ARCHITECTURAL WORKS-----PE-DG-467-600-C003/
3130-109-PVC-B-174
- GYPSUM DEWATERING BUILDING_GA & RC DETAILS OF FOUNDATION-----PE-DG-467-694-C003/
3130-109-PVC-B-021
- GYPSUM DEWATERING BUILDING_COLUMN WITH BASE PLATE DETAILS (STRUCTURAL FRAMING---
PE-DG-467-694-C005/
3130-109-PVC-B-241
- GYPSUM DEWATERING BUILDING_FLOOR FRAMING AT EL. 16.8 M-----PE-DG-467-694-C011/
3130-109-PVC-B-242
- GYPSUM DEWATERING BUILDING_FLOOR FRAMING AT EL. 25.3 M-----PE-DG-467-694-C012
3130-109-PVC-B-243
- GYPSUM DEWATERING BUILDING_FLOOR FRAMING AT EL. 10.8 M (TOS) + EL. 12.8 M(BOS)L---
PE-DG-467-694-C010/
3130-109-PVC-B-244
- GYPSUM DEWATERING BUILDING_CLADDING WITH WALL BEAM DETAIL-----PE-DG-467-694-C013/
3130-109-PVC-B-246
- GYPSUM DEWATERING BUILDING_GA & RC DETAILS OF STAIRS-----PE-DG-467-694-C008/
3130-109-PVC-B-245
- GYPSUM DEWATERING BUILDING_PLANS & SECTION (SH 1 OF 3)-----PE-DG-467-694-C001/
3130-109-PVC-B-023
- GYPSUM DEWATERING BUILDING_ARCH. ELEVATION (SH 3 OF 3)-----PE-DG-467-694-C001/
3130-109-PVC-B-023

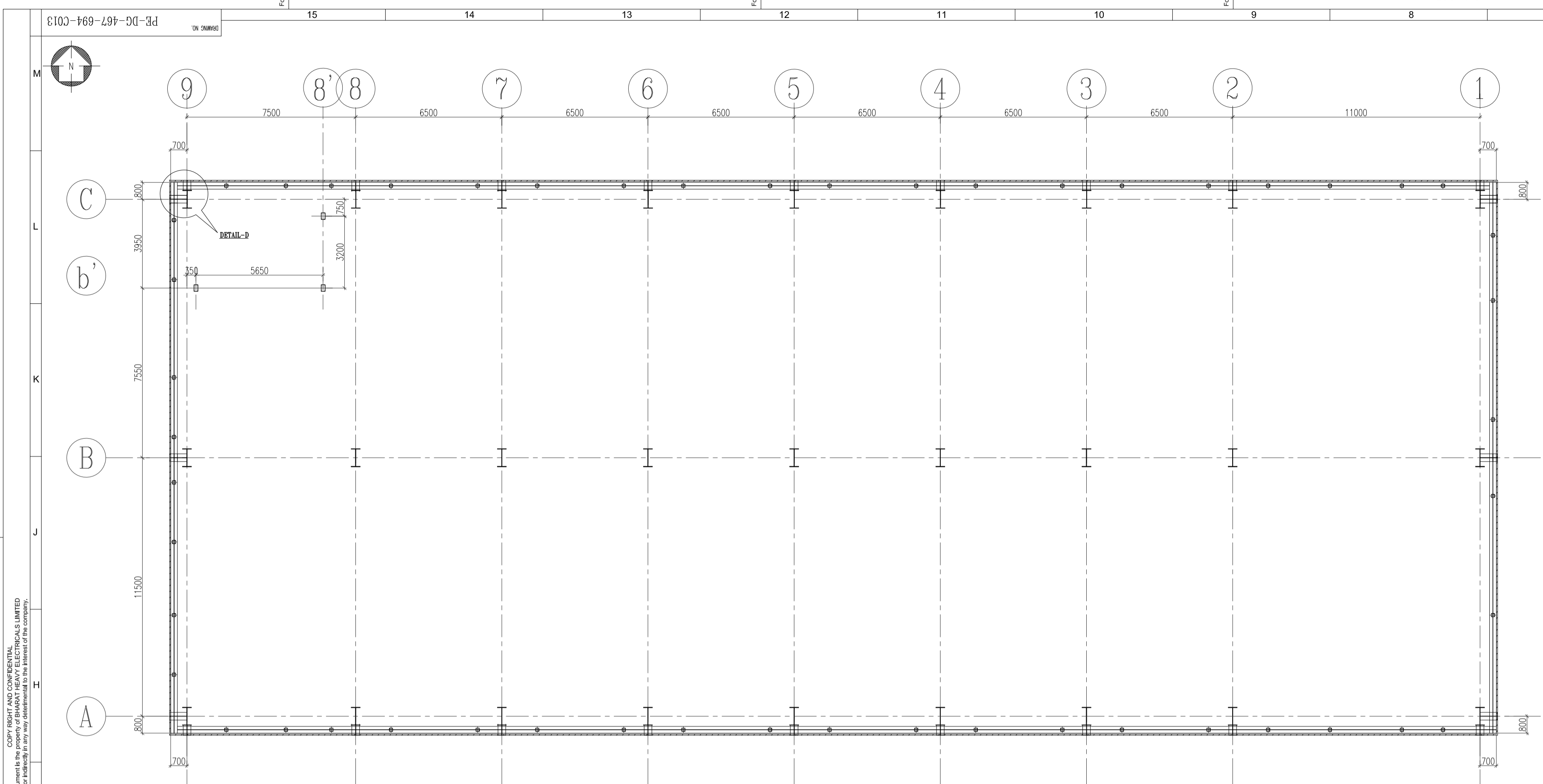
BHEL-PROJECT ENGINEERING MANAGEMENT(CIVIL)			
THIS DRAWING MARKED ✓ IS RELEASED FOR			
COMMENTS/ APPROVAL			
□ PLANNING/INFORMATION			
□ CONSTRUCTION			
STAMP ALL PREVIOUS REVISION AS SUPERSEDED			
ISSUED BY			
NAME	MANIHI PRAKASH		
SIGNATURE	-sd-		
DATE	23 DECEMBER 2022		



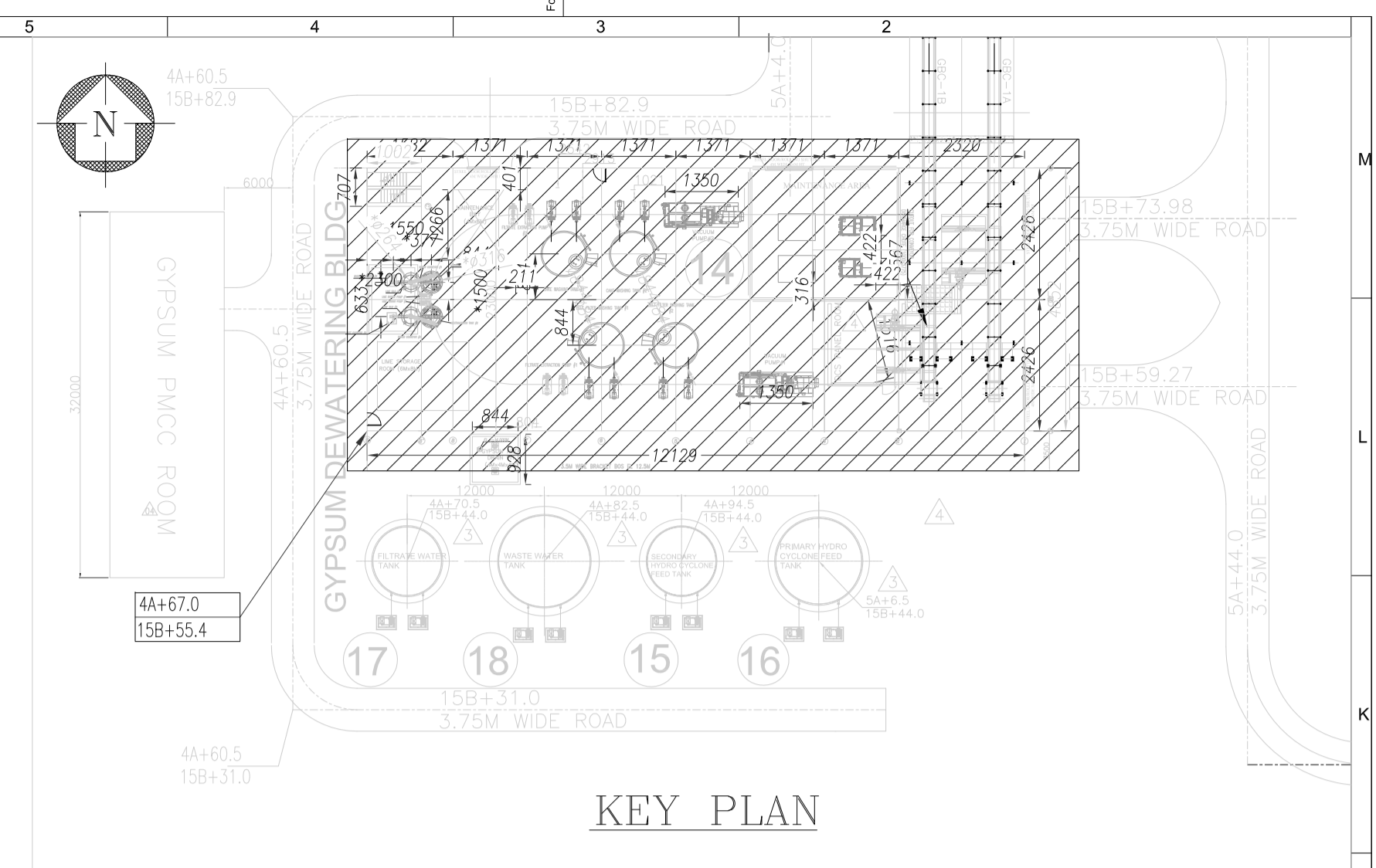
SECTION A-A

 <p>NOTE: BEFORE PROCEEDING WITH CONSTRUCTION, PLEASE MAKE SURE IT IS THE LATEST REVISION BY SCANNING THE QR CODE.</p>		NTPC DRAWING NO. 3130-109-PVC-B-023 OWNER:  NTPC PROJECT: NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE) ENGINEERING DIVISION PROJECT: RAMAGUNDAM FGD PACKAGE (3x200MW STAGE-I) + (3x500MW STAGE-II)																				
JOB NO. 467 STATUS: CONTRACT DISTRIBUTION:  TO: _____ No. of: _____	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI	<table border="1"> <tr> <th>DEPT CODE</th> <th>NAME</th> <th>SIGN</th> <th>DATE</th> </tr> <tr> <td>DRN</td> <td>SN</td> <td>-Sd-</td> <td>22.12.2022</td> </tr> <tr> <td>DESN</td> <td>LKG</td> <td>-Sd-</td> <td>17.12.2022</td> </tr> <tr> <td>CHD</td> <td>SB</td> <td>-Sd-</td> <td>23.12.2022</td> </tr> <tr> <td>APPD</td> <td>MP/AN</td> <td>-Sd-</td> <td>23.12.2022</td> </tr> </table>	DEPT CODE	NAME	SIGN	DATE	DRN	SN	-Sd-	22.12.2022	DESN	LKG	-Sd-	17.12.2022	CHD	SB	-Sd-	23.12.2022	APPD	MP/AN	-Sd-	23.12.2022
DEPT CODE	NAME	SIGN	DATE																			
DRN	SN	-Sd-	22.12.2022																			
DESN	LKG	-Sd-	17.12.2022																			
CHD	SB	-Sd-	23.12.2022																			
APPD	MP/AN	-Sd-	23.12.2022																			
TITLE: GYPSUM-DEWATERING BUILDING ARCHITECTURAL PLANS & SECTION																						
SCALE: 2:1 SHEET 2 OF 3		DRAWING NO. PE-DG-467-694-C001 REV. 0																				

The information on this drawing is confidential and its disclosure to any third party without the prior written consent of the company is strictly prohibited.



CLADDING LOCATION



KEY PLAN

NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH CONTRACT TERMS AND CONDITIONS, TECHNICAL SPECIFICATIONS AND SCHEDULE OF ITEMS.
2. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
3. ALL ELEVATIONS ARE REFERRED WITH RESPECT TO THE FINISHED FLOOR LEVEL OF POWER HOUSE BUILDING AS EL. 0.000 M WHICH CORRESPONDS TO RL(+152.000M). FINISHED FLOOR LEVEL OF GYPSUM DEWATERING BUILDING IS AT EL (+)6.800M/RL(+158.800M). FINISHED GROUND LEVEL(FGL) OUTSIDE GYPSUM DEWATERING BUILDING IS EL (+)6.300M/RL(+158.300M)
4. FOR GENERAL NOTES FOR STRUCTURAL STEEL WORKS REF. BHFL DWG. NO. PE-DG-467-600-0002.
5. ALL WORK SHALL BE CARRIED OUT AS PER TECHNICAL SPECIFICATION, SCHEDULE OF ITEMS CONFORMING TO THE QUALITY CHECKS, SPECIFIED THEREIN AND IN FIELD QUALITY PLAN.
6. ALL WELDS SHALL BE 8mm FILLET CONTINUOUS UNLESS NOTED.
7. QUANTITIES INDICATED IN BILL OF MATERIALS ARE APPROXIMATE & DO NOT INCLUDE FOR STIFFENERS, SPlicing, CONNECTION & WASTAGES.
8. CONNECTION DETAILS SHOWN ARE INDICATIVE ONLY. SIZE & THICKNESS OF GUSSETS, NO. & DIA. OF CONNECTION BOLTS ETC. SHALL BE SHOWN IN CORRESPONDING FABRICATION DRG.
9. SPlicing IN FLANGES AND WEB SHALL BE STAGGERED. SPlicing SHALL BE OF FULL STRENGTH.
10. ALL STRUCTURAL CONNECTIONS SHALL COMPLY TO SECTION-12 OF IS:800-2007.
11. ALL SHOP CONNECTIONS SHALL BE WELDED AND ALL FIELD CONNECTIONS SHALL BE BOLTED (U.N.O)
12. PAINTING ON STEEL STRUCTURE SHALL BE AS PER TECHNICAL SPECIFICATION.

REFERENCE DRGS.:

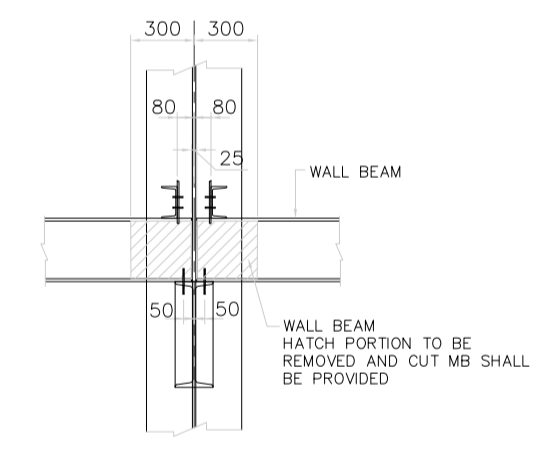
1. PLANT LAYOUT OF FGD SYSTEM-----3130-109-PVM-F-044-03
2. GA OF GYPSUM DEWATERING BUILDING LAYOUT-----3130-109-PVM-B-299-01
3. GENERAL NOTES FOR STRUCTURAL STEEL WORKS-----PE-DG-467-600-C002/3130-109-PVC-B-173
4. GYPSUM DEWATERING BLDG.- ARCHITECTURAL PLAN & FINISHING SCHEDULE -PE-DG-467-694-C001/3130-109-PVC-B-023
5. GYPSUM DEWATERING BLDG.- ARCHITECTURAL ELEVATION & SECTIONS DETAILS-PE-DG-467-694-C001/3130-109-PVC-B-023
6. GYPSUM DEWATERING BLDG.-COLUMN WITH BASE PLATE DETAIL-----PE-DG-467-694-C004/3130-109-PVC-B-022-01
7. GYPSUM DEWATERING BLDG.-FRAMING DETAIL AT EL(+) 16.8 M(MAIN FLOOR LEVEL)-PE-DG-467-694-C011/3130-109-PVC-B-242
8. GYPSUM DEWATERING BLDG.-FRAMING DETAIL AT MISCELLANEOUS FLOORS-----PE-DG-467-694-C010/3130-109-PVC-B-241
9. GYPSUM DEWATERING BLDG.-FRAMING DETAIL AT EL(+) 25.3 M (ROOF LEVEL) ---PE-DG-467-694-C012/3130-109-PVC-B-243
10. GYPSUM DEWATERING BLDG.- GA & RCC DETAILS OF STAIRS-----PE-DG-467-694-C008/3130-109-PVC-B-245

LEGEND:

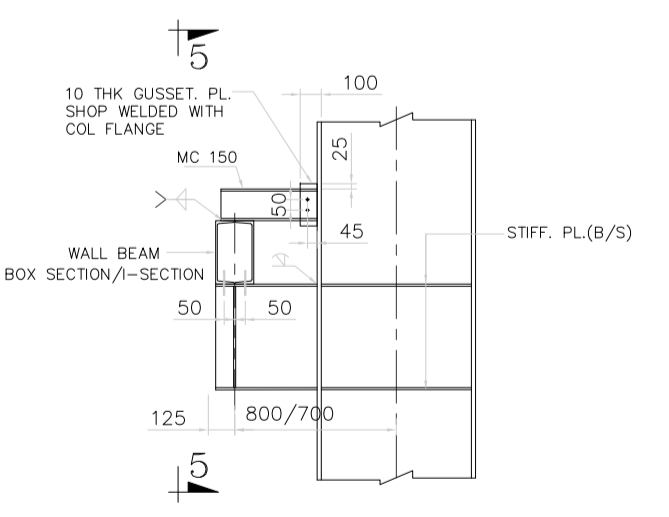
- FFL : FLOOR FINISHED LEVEL
T.O.S : TOP OF STEEL
B.O.B.P: BOTTOM OF BASE PLATE
B.O.S : BOTTOM OF STEEL
- TYP : TYPICAL
EL : ELEVATION
THK. : THICKNESS
BKT. : BRACKET

SCHEDULE OF BEAMS

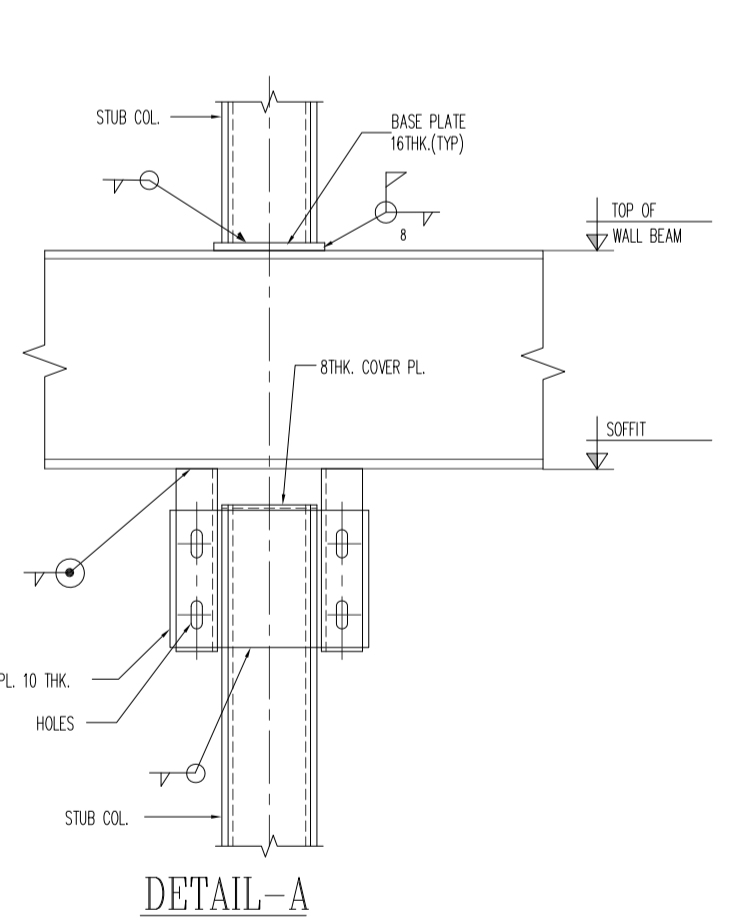
BEAM MKD.	BEAM SECTION	
HR1, VR1 (RUNNER)	MC-100	
HR2 (RUNNER)	MC-150	
CB1 (POST)	MC BOX-150	
CB2 (POST)	MC BOX-200	
CB3 (POST)	MC BOX-300	
W1 (WALL BEAM)	2 WEB 368 X16+ 2 FL 250X16	
W2 (WALL BEAM)	2 WEB 368 X16+ 2 FL 300X16	
W3 (WALL BEAM)	2 WEB 368 X16+ 2 FL 350X16	
W4 (WALL BEAM)	MC BOX-400	
W5 (WALL BEAM)	2 WEB 468 X16+ 2 FL 300X16	
W6 (WALL BEAM)	2 WEB 468 X16+ 2 FL 300X16	
BKT-1 (BRACKET)	ISMB-600	
BKT-2 (BRACKET)	ISMB-500	
BKT-3 (BRACKET)	ISMB-300	
BKT-4 (BRACKET)	1 WEB 660 X16+ 2 FL 300X20	



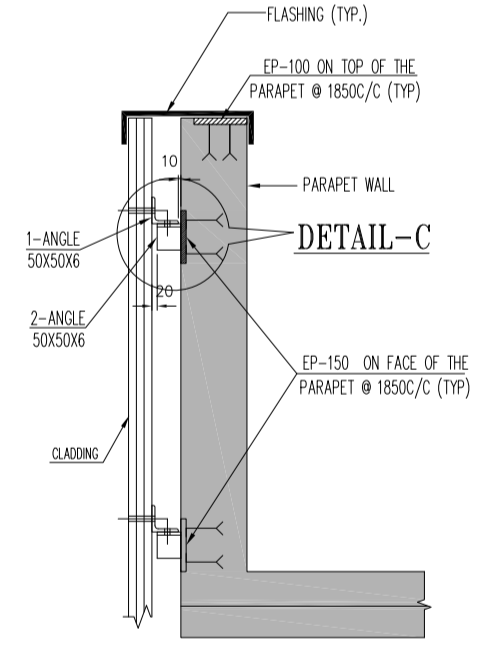
VIEW 5-5



CONNECTION DETAIL OF WALL BEAM

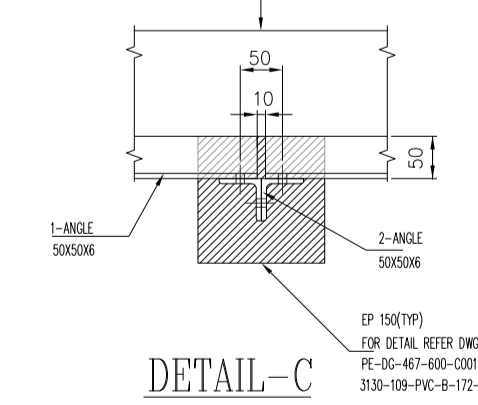


DETAIL-A

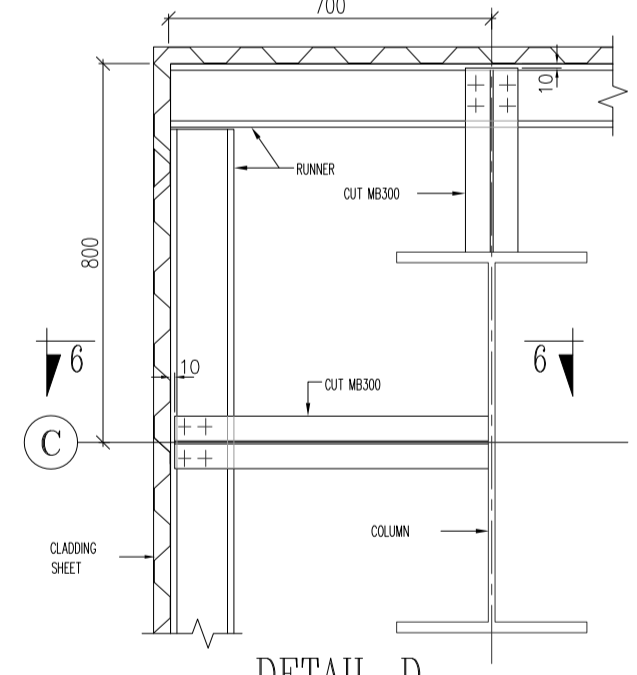


DETAIL-B

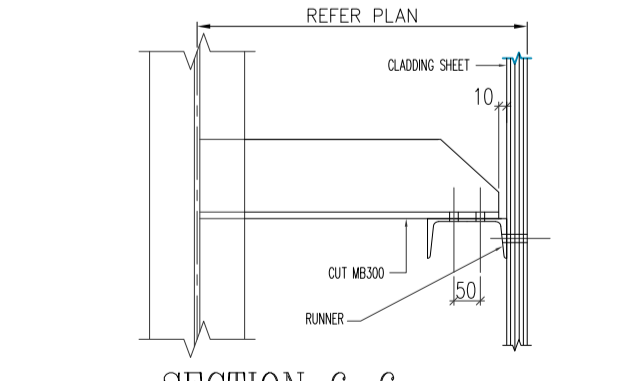
(TYP. FIXING DET. OF CLADDING ON 1.0M HIGH PARAPET WALL)



DETAIL-C



DETAIL-D



SECTION 6-6

QTY OF STRUCTURAL STEEL : 55MT (APPROX.)

BHEL-PROJECT ENGINEERING MANAGEMENT(OH)
THIS DRAWING MARKED(✓) IS RELEASED FOR
 COMMENTS/APPROVAL
 PLANNING/INFORMATION
 CONSTRUCTION
STAMP ALL PREVIOUS REVISION AS SUPERSEDED
ISSUED BY
NAME : SHILPA MITTAL CHATURVEDI
SIGNATURE :
DATE : 27.02.2023

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRG NO. PE-DG-467-694-C013 (SHEET 2 OF 2).

IN ABSENCE OF ORDERING/BO'S, THE DESIGN AND ANALYSIS OF GYPSUM DE-WATERING BUILDING IS BASED ON NOT-TO-EXCEED/MAX. LOADS AND INPUT AVAILABILITY AS ON DATE: 18.04.2022.

PROJECT NO. 3130-109-PVC-B-246

CLIENT: NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE) ENGINEERING DIVISION

PROJECT: 3x200MW STAGE-I + 3x500MW STAGE-II RAMACUNDAM (FGD PACKAGE)

CLIENT: BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NEW DELHI

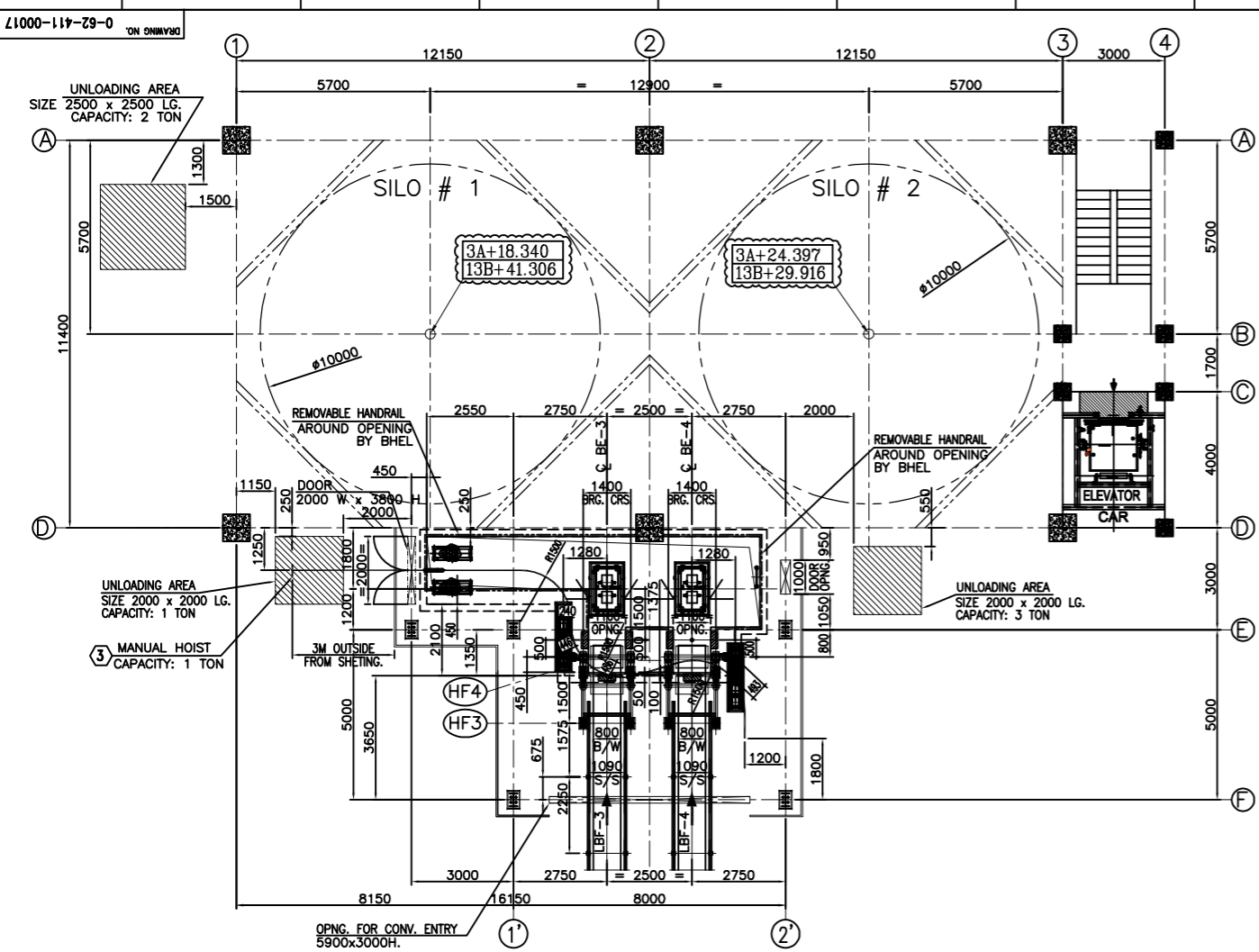
DEPT CODE: C

DRN: 15.8.2023
BSN: 15.8.2023
CSD: 15.8.2023
APPD: 15.8.2023

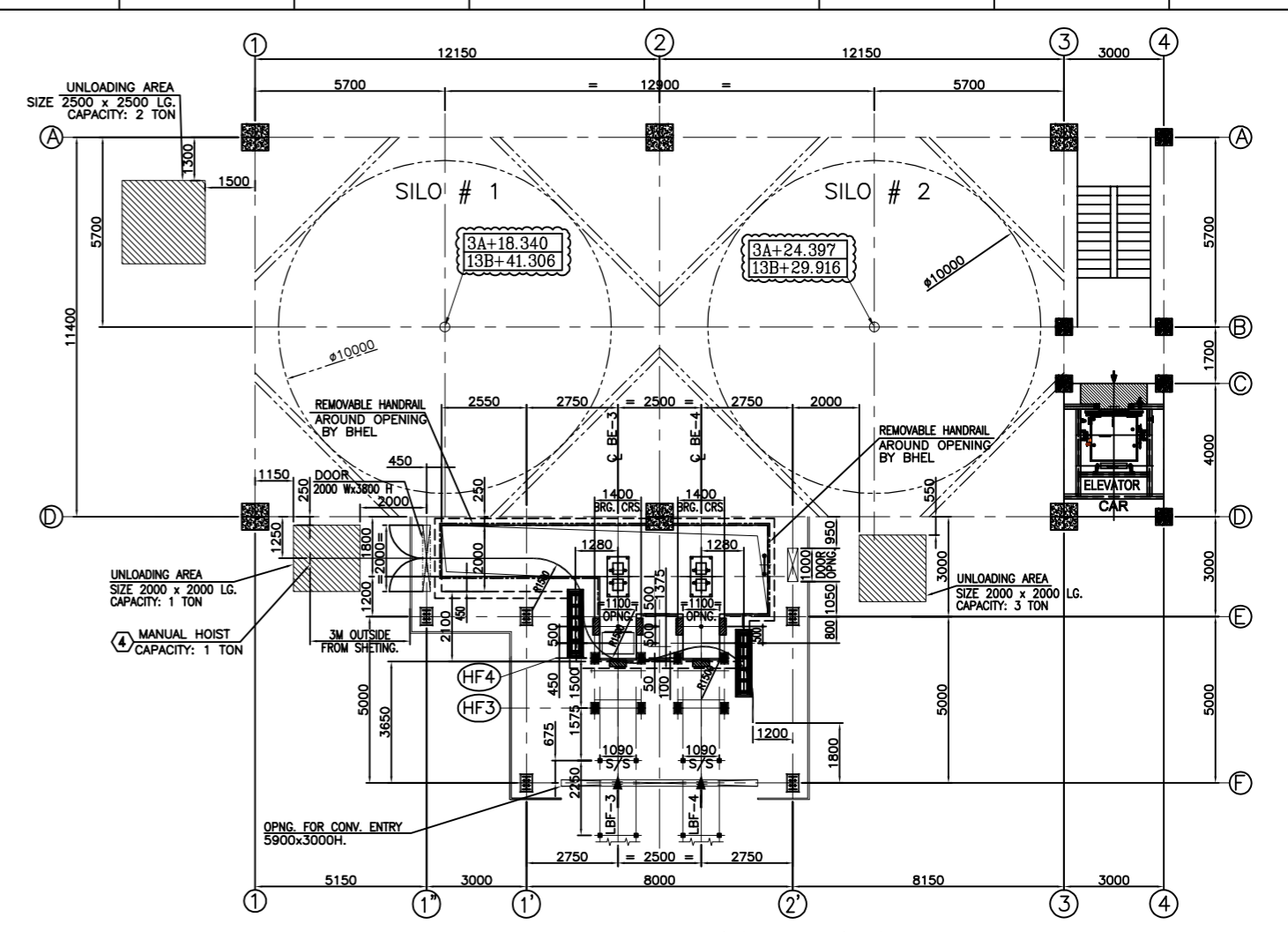
PROJECT TITLE: GYPSUM DEWATERING BUILDING CLADDING WITH WALL BEAM DETAILS

DRAWING NO. PE-DG-467-694-C013

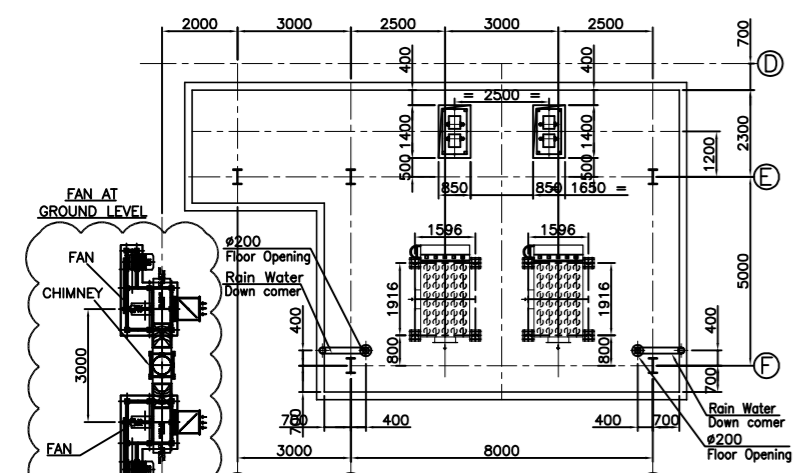
SHEET 1 OF 2



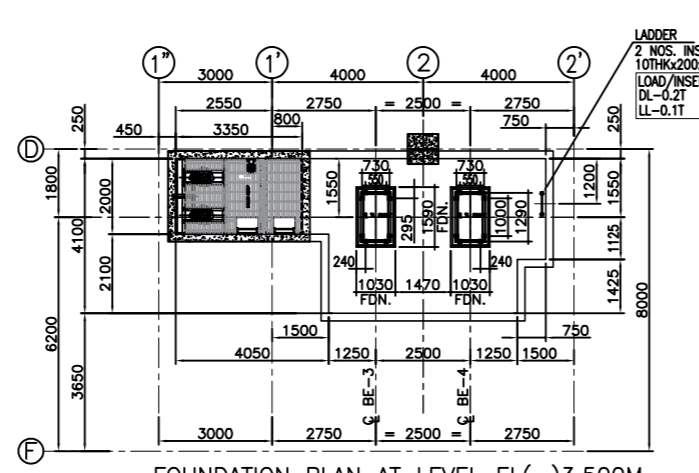
FLOOR PLAN AT LEVEL EL(+).7.500M (FFL)



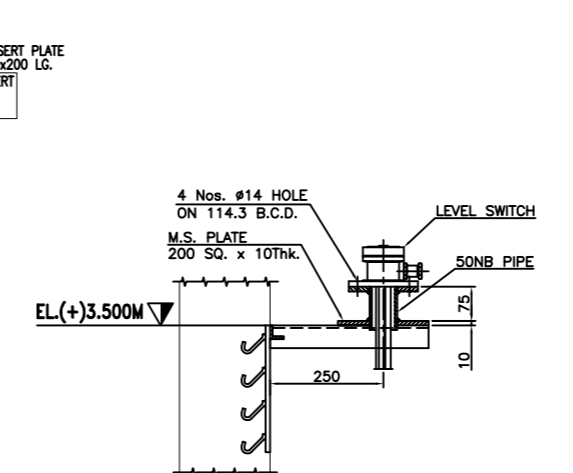
FOUNDATION PLAN AT LEVEL EL(+).7.500M (FFL)



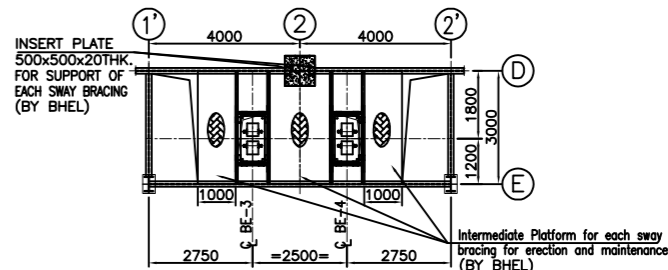
ROOF PLAN VIEW Y1-Y1 (FROM SHEET NO. 1 OF 4)



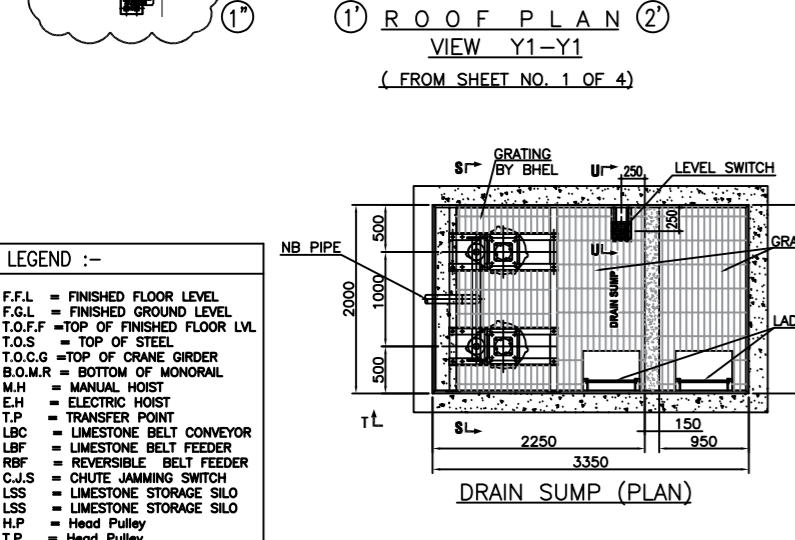
FOUNDATION PLAN AT LEVEL EL(-).3.500M



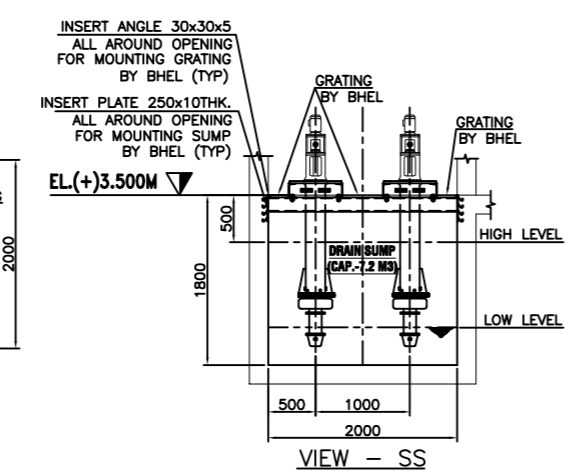
VIEW U-U



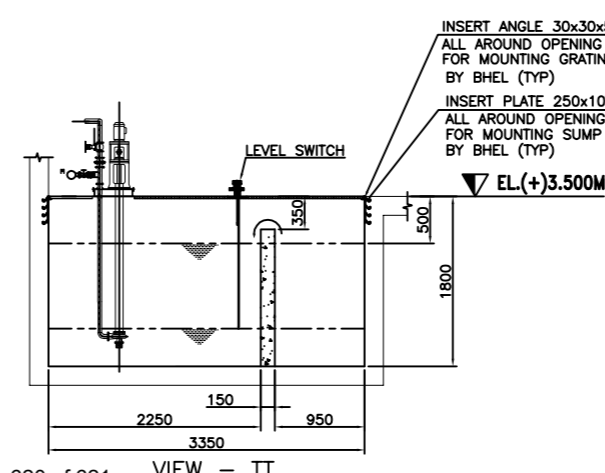
VIEW Y3-Y3 (FROM SHEET NO. 1 OF 4)



DRAIN SUMP (PLAN)



VIEW - SS



VIEW - TT

REV.	DESCRIPTION	REV. BY	CHKD. BY	APPD. BY	DATE
SUB CONTRACTOR: MAGAWBER BEEKAY PRIVATE LIMITED NOIDA U.P.(201301)					
DRN	YOGESH	YOGESH			15.01.2021
CHD	GKG	GKG			18.01.2021
APPD.	DKG	DKG			18.01.2021
DIRCTORY :	SCALE	WEIGHT(Kgr)	NTPC DRAWING NO.	ITEM NO.	NO.OF ITEMS
FILE NO. :			BHEL DRAWING NO.		
TITLE : G.A. AND LOAD DETAILS OF RBF-1/2 & LIMESTONE DAY SILO			MBPL DRAWING NO. MB/C-1597/110200	REV. 00	
			SHEET NO. 3	NO.OF SHTS. 4	

NTPC DRG NO: 3130-109-PVM-B-021

NTPC LTD.
RAMAGUNDEM I & II
(3X200MW + 3X500MW)
FGD SYSTEM PACKAGE

DEPT CODE	NAME	SIGN	DATE
M	GSM		02.08.2021
	MTT		02.08.2021
	AMAN		02.08.2021

BHARAT HEAVY ELECTRICALS LIMITED
UNIT: HEAVY POWER EQUIPMENT PLANT
RAMACHANDRAPURAM, HYDERABAD-502032

TITLE: GENERAL ARRANGEMENTS OF LIMESTONE DAY SILOS & WET BALL MILL BUILDING

DRAWING NO. 0-62-411-00017

SCALE : NTS

SHEET 3 OF 4

REV 02

CAUTION: THE DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD. AND IS NOT TO BE REPRODUCED OR USED TO FURNISH ANY INFORMATION FOR MAKING OF DRAWINGS OF APPARATUS EXCEPT WHERE PROVIDED FOR AGREEMENT WITH SAID COMPANY.

