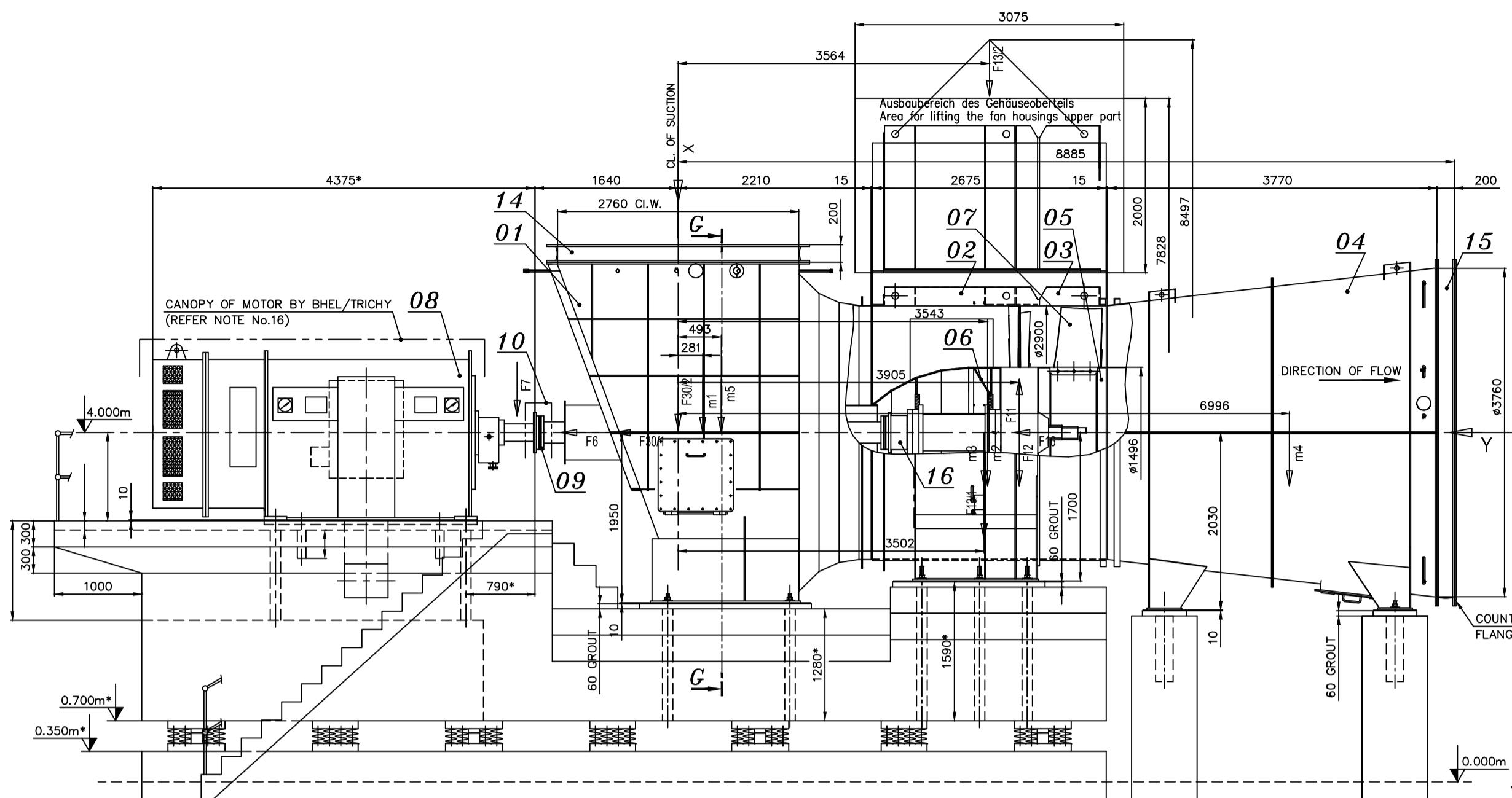
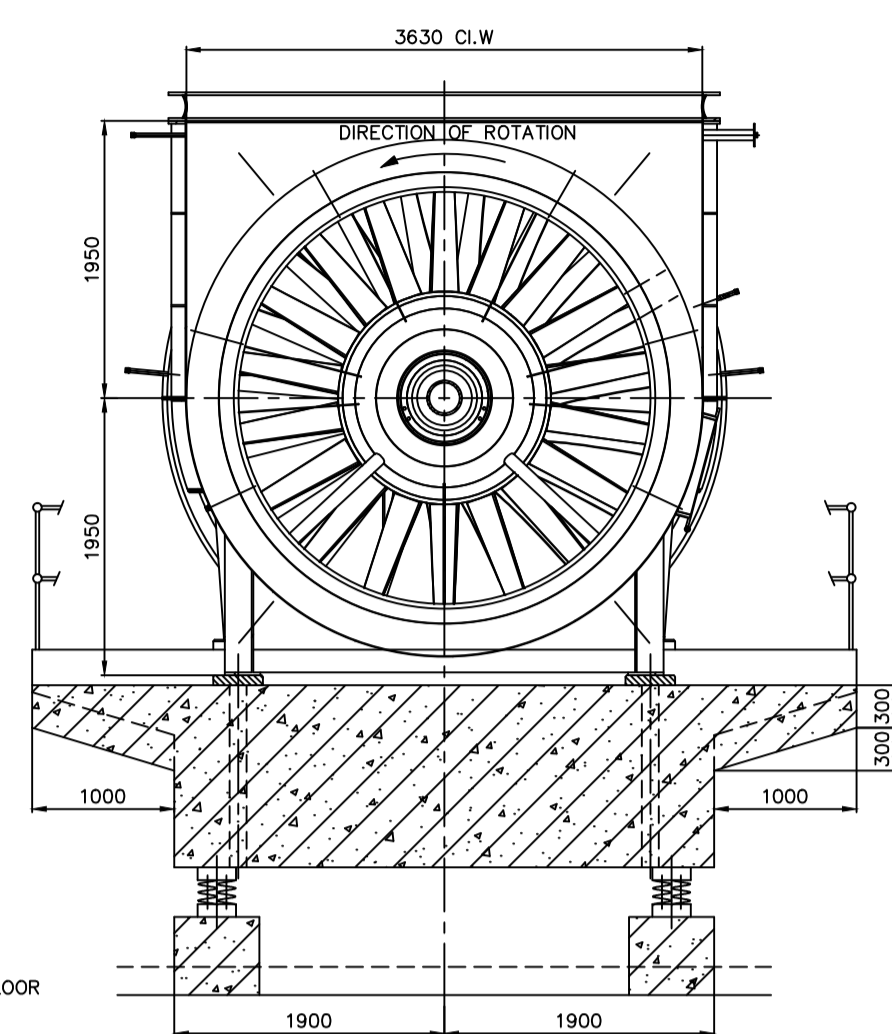


ELEVATION

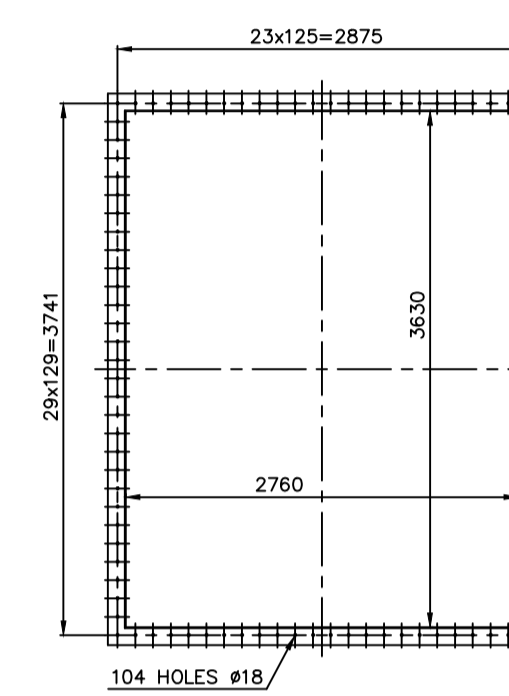


SECTION-GG

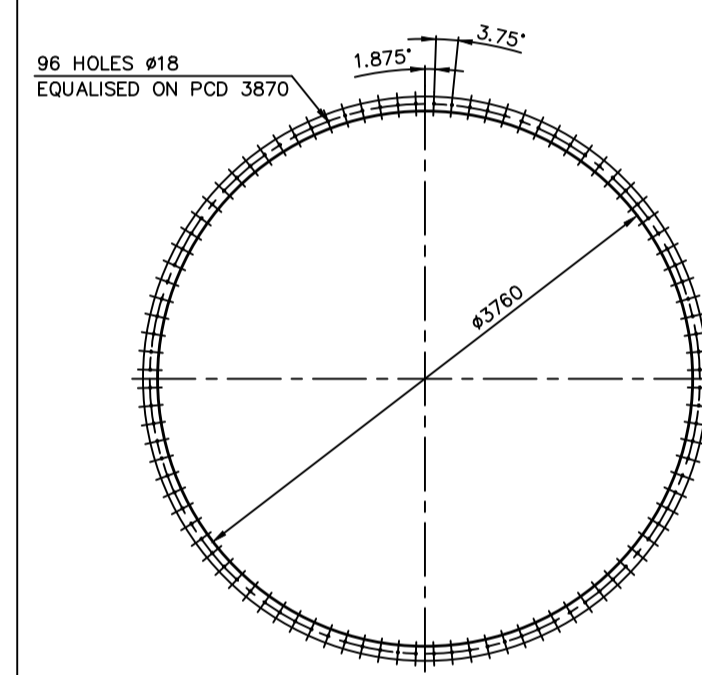


SL NO	DESCRIPTION	MATERIAL	QTY.
16	FAN SHAFT	42 CR Mo4	1
15	OUTLET EXPANSION JOINT	IS:2062 & RUBBER	1
14	INLET EXPANSION JOINT	IS:2062 & RUBBER	1
13	SHIMS	S.S	AS REQD.
12	PRIMARY PACKER	IS : 2062	7
11	FOUNDATION FASTENERS FOR FAN	ASTM A105	13
10	COUPLING GUARD	IS : 2062	1
09	SPACER COUPLING	STEEL	1
08	MOTOR WITH FNDN. FASTENERS		1
07	BLADES	AL. ALLOY	18
06	IMPELLER HUB	STEEL	1
05	HOUSING CORE	IS : 2062	1
04	DIFFUSER	IS : 2062	1
03	OUTLET GUIDE VANE ASSY.	IS : 2062	1
02	IMPELLER HOUSING	IS : 2062	1
01	SUCTION CHAMBER	IS : 2062	1

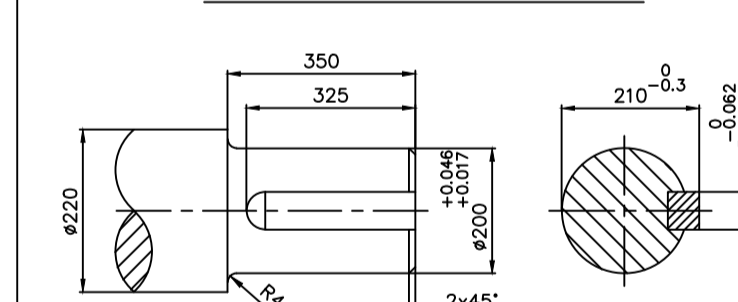
SUCTION FLANGE



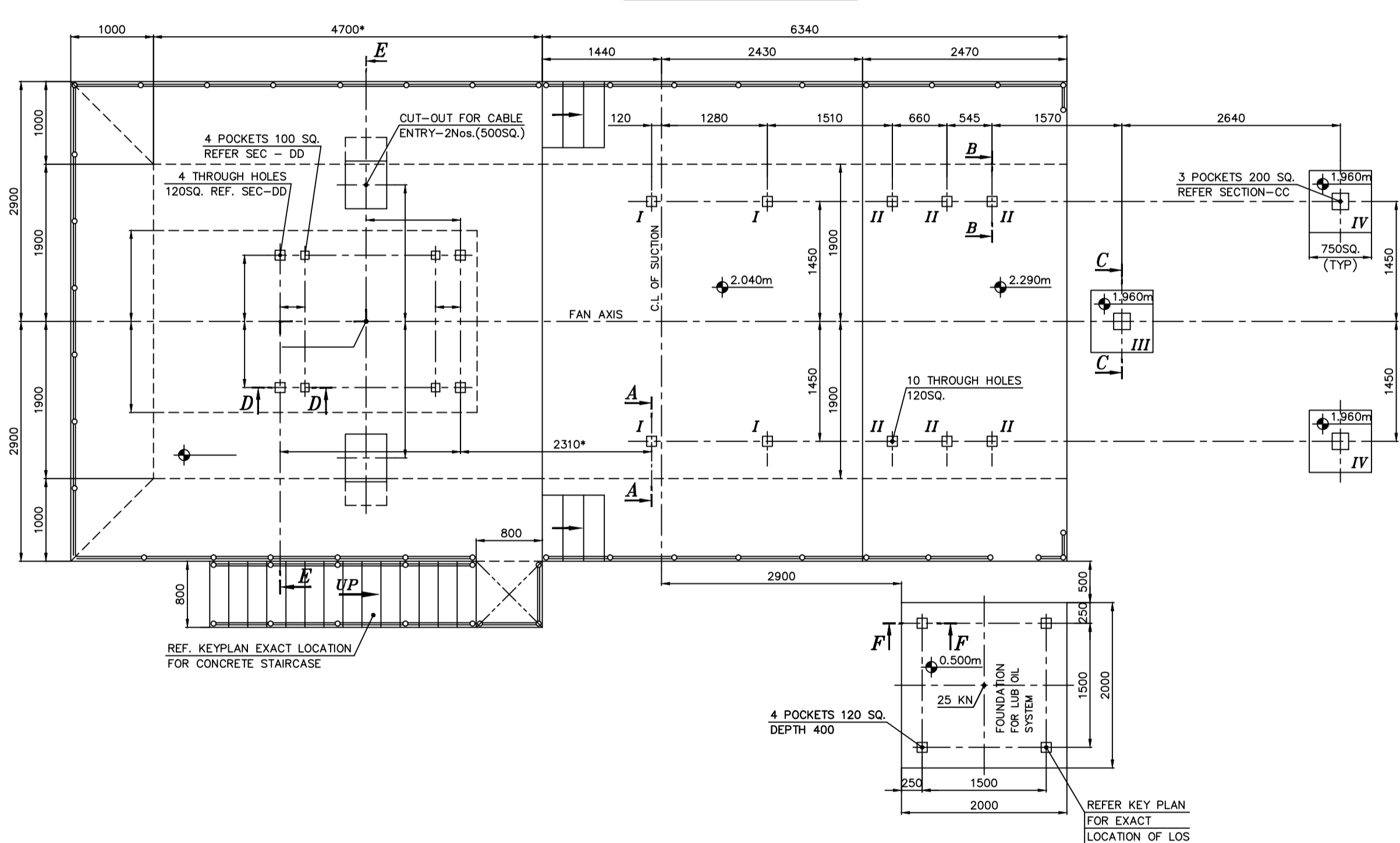
DELIVERY FLANGE



MOTOR SHAFT END\*



FOUNDATION PLAN



Point Forces in [N]	Dead Load Vertical	Dynamic Load Vertical	Stat. horiz. Dead Load horiz. across to the axis	Stat. horiz. Dead Load horiz. across to the axis	Dyn. Load horiz. across to the axis
IV	+22000	±1900	±6500	±1900	
III	+31600	±1900	±6500	±1900	
II	+47400	±2300	±5500	±2200	±2000
I	+51500	±1400	±14200	±4200	±27900

ID. NO.	(m) MASS IN (KG) INCLUDING INSULATION	(F) FORCE IN (N)	DESIGNATION
30/2	25023		Stat. and dyn. forces caused by air stream of suction box in vert. direction
30/1	37880		Stat. and dyn. forces caused by air stream of suction box in horiz. direction
16	32502		Axial thrust of the fan (due to pressure increase)
15	233750		Load during starting sequence by short-circuit torque of the motor
14	-		Foundation
13/2	41720		Max. load when lifting the fan housings upper part
13/1	34330		Max. load when lifting the rotor assembly
12	153570		Unbalance in case of damage
11	11685		Max. rotating load due to unbalance of the fan rotor
10	-		Oil supply unit with oil filling
9	-		Frame of the motor
8	-		Drive motor
7	5060		Radial load on motor shaft
6	2923		Axial thrust on motor shaft for motor with fixed bearing
5	920		Intermediate shaft with coupling
4	5630		Diffuser with tail fairing
3	3499		Complete rotor assembly
2	9450		Fan housing with straightener vane section and nose fairing
1	5460		Suction box with inlet nozzle and intermediate shaft cover

NOTES:-

- THE LOADS INDICATED ON FOUNDATION ARE WITHOUT ALLOWANCES FOR VIBRATIONS. CIVIL DESIGNERS ARE RESPONSIBLE FOR DESIGN OF FOUNDATION TAKING INTO ACCOUNT OF THE ALLOWANCES FOR VIBRATION ALSO.
- THE DIFFERENT NATURAL FREQUENCIES OF THE FOUNDATION HAVE TO BE 20% AWAY FROM THE SPEED FREQUENCY.  $f_{nmax} = n/60$  AND 15% AWAY FROM THE DOUBLE OF THE SPEED FREQUENCY,  $2f_{nmax}$ . THIS MEANS:  $0.8x f_n$  TO  $1.2x f_n$  AND  $0.85x(2x f_n)$  TO  $1.15x(2x f_n)$ . SPEED FREQUENCY:  $f_{nmax} = 16.50$  HZ. ( $2 * f_{nmax} = 33.00$  HZ)
- THE STIFFNESS OF THE FOUNDATION HAS TO BE AT LEAST OF  $> 1.0E+06$  N/mm FOR EACH LOAD POINT OF THE FAN IN LONGITUDINAL TRANSVERSAL AND VERTICAL DIRECTIONS RELATING TO THE AXIS. IT HAS TO BE TAKEN INTO CONSIDERATION THAT ON SETTLING THE FOUNDATION THE TOTAL NATURAL FREQUENCIES OF THE FOUNDATION CAN ARISE DUE TO THE SOIL COMPACTION AND THE RESULTING INCREASES OF THE ELASTIC MODULUS. AN UNEVEN SETTLING OF THE FOUNDATION HAS TO BE EXCLUDED.
- THE RATIO OF THE FOUNDATION MASS TO THE ROTOR MASS HAS TO BE GREATER THAN 25.
- ADOPT IS : 2974 / PART-IV FOR THE FOUNDATION DESIGN.
- THE CONNECTING DUCTS AT INLET AND OUTLET OF FAN MUST BE SELF SUPPORTED AND SHOULD NOT BE WELDED WITH EXPANSION JOINTS.
- FOUNDATION POCKETS SHOULD BE PERPENDICULAR TO THE FLAT SURFACES OF FOUNDATION.
- ACCURATE TEMPLATES SHALL BE USED FOR LOCATING CORES FOR POCKET HOLES TO ENSURE THEIR DIMENSIONAL ACCURACY.
- TOLERANCE BETWEEN ANY TWO POCKET CENTERS IS  $\pm 5$ mm.
- TOLERANCE ON CONCRETE LEVELS  $\pm 25$ mm.
- IN AREAS WHERE SOLE PLATES AND ANCHOR PLATES ARE TO BE INCORPORATED IN FOUNDATION CONCRETE, THE SIZE OF THE COARSE AGGREGATE USED SHALL NOT EXCEED 20mm AND DOWN GRADED TO FACILITATE CHIPPING AND SCRAPPING AND THEREBY ENSURING MAXIMUM CONTACT ON THE MATING AREAS.
- NON-SHRINK GROUT IS TO BE USED. REFER GENERAL SPECIFICATIONS ISSUED BY BHEL/RANIPET FOR NON-SHRINK GROUT. THIS ALSO CONTAINS THE PREPARATIONS OF PRIMARY PACKERS & SHIMS.
- GROUTING SHOULD BE DONE ONLY AFTER FINAL ALIGNMENT OF FAN.
- ELEVATIONS & POCKET DEPTH SHOWN IN FOUNDATION PLAN ARE INCLUDING GROUTING THICKNESS.
- GROUTING IS IN THE SCOPE OF ERECTION GROUP / ERECTION CONTRACTOR.
- HANDRAILS, STEEL PLATFORMS & CANOPY FOR MOTOR AND THEIR EMBEDMENTS ARE IN THE SCOPE OF BHEL/TRICHY.
- FAN FOUNDATION SHOULD NOT BE USED AS SUPPORT FOR OTHER STRUCTURES OR EQUIPMENTS.
- FOUNDATION CONFIGURATION SHOWN IN THIS DRAWING IS ONLY INFORMATIVE/TYPICAL TYPE AND DETAILS OF FOUNDATION ARE TO BE FINALIZED BY CIVIL DESIGNERS.
- FOR MOTOR ERECTION, REFER MOTOR SUPPLIER'S ERECTION MANUAL.
- BASE FRAME, SOLE PLATE, FOUNDATION BOLTS & FASTENERS RELATED TO MOTORS WILL BE IN SCOPE OF MOTOR SUPPLIER (BHEL/BHOPAL UNIT).

FAN DETAILS:

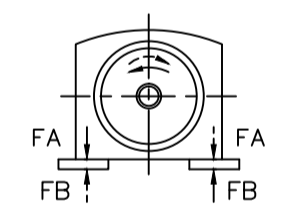
TYPE	: FAF 29/15-1
FAN DESIGN	: M/s. TLI/ombh, GERMANY
MAKE	: M/s. BHEL/RANIPET
NO. OF FANS PER BOILER	: TWO (IDENTICAL)
WEIGHT OF ROTATING PARTS	: 3500 kg
GD <sup>2</sup> OF FAN	: 2400 kg.m <sup>2</sup>
SPEED OF FAN	: 990 RPM
WT. OF THE FAN	: 25000 Kg

MOTOR DETAILS:\*

MAKE	: M/s. BHEL/BHOPAL
TYPE	: M/s. BHEL/RANIPET
CAPACITY	: 3400 KW/990 RPM
GD <sup>2</sup> OF MOTOR	: 3500 kg.m <sup>2</sup>
WEIGHT OF ROTATING PARTS	: 3500 kg
WEIGHT OF ROTATING PARTS	: 3500 kg
MOTOR DRAWING NUMBER	: 3400 KW/990 RPM
METHOD OF COOLING	: 3400 KW/990 RPM

FOUNDATION LOAD OF MOTOR\*

MAX. FORCE CALCULATED FROM THE MAX. IMPULSE TORQUE - FM = 142 KN  
 FORCE EXERTED BY WEIGHT ON EACH SIDE - FG = 78 KN  
 FOUNDATION LOAD ON EACH SIDE COMPRESSION - FA = FM+FG = 220 KN  
 TENSILE FORCE - FB = FM-FG = 64 KN  
 THE FORCE OCCUR ALTERNATIVELY INDEPENDENT OF THE DIRECTION OF ROTATION.



CUSTOMER NO : R550 & R551

CUSTOMER		नेयवेली लिग्नाइट कारपोरेशन लिमिटेड NEYVELI LIGNITE CORPORATION LIMITED (NLC LTD)
CONSULTANT		एम/एस लामेयर अंतर्राष्ट्रीय निजी इंडिया लिमिटेड M/S LAHMEYER INTERNATIONAL (INDIA) PVT. LTD
PROJECT	PACKAGE: STEAM GENERATOR AND AUXILIARIES (NTA1) NEYVELI NEW THERMAL POWER PROJECT (NNTPP) 2 X 500 MW LIGNITE FIRED UNITS AT NEYVELI BHARAT HEAVY ELECTRICALS LIMITED., BOILER AUXILIARIES PLANT RANIPET - 632 406	
DRAWN	P.S.N	Sd.... 26.05.14
CHECKED	SANDEEP	Sd.... 26.05.14
APPROVED	V.P.S	Sd.... 26.05.14
PROJECTION	SCALE	DRG.NO. 1-00-098-28904
ALL DIMENSIONS IN MILLIMETRE		REV 00

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DIMENSIONS / ITEMS MARKED WITH "\*" WILL BE CONFIRMED LATER.