

परियोजना
इंजीनियरिंग
प्रबंधन
Project Engineering
Management

भारत हेवी इलेक्ट्रिकल्स लिमिटेड
(भारत सरकार का उपक्रम)
Bharat Heavy Electricals Limited
(A Govt. of India Undertaking)



Ref: PE/PG/NT1/E-4513/2014/Corrigenda/01

Date: 16/Aug/2014

BHEL TENDER ENQUIRY NO: PE/PG/NT1/E-4513/2014 Dt: 21-07-2014
PACKAGE: VIS FOR ID/FD FAN FOUNDATION
PROJECT: 2X500 MW NEW NEYVELI TPP (SG PKG.)

DUE DATE
20-Aug-2014
BY 2.00 PM (IST)

Subject: Input Drawings of ID/FD FAN FOUNDATION of 2X500 MW NEW NEYVELI TPP (SG PKG.)

Bidders have to note that the Input Drawings enclosed along with NIT of above referred Tender Enquiry have been revised.

1. Revised input drawings, to be considered, are appended to this corrigendum.

Kindly submit your offer/Revised Offer (if submitted) considering the above point.

Please ensure submission of offer before due date & time.

Thanking You

With regards
For & on behalf of BHEL

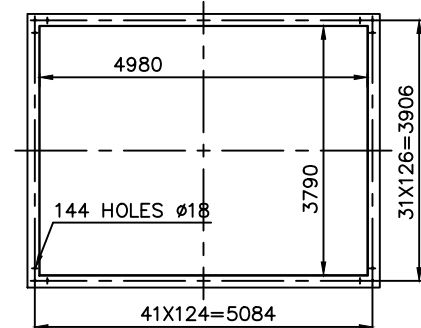

Dheeraj Singh

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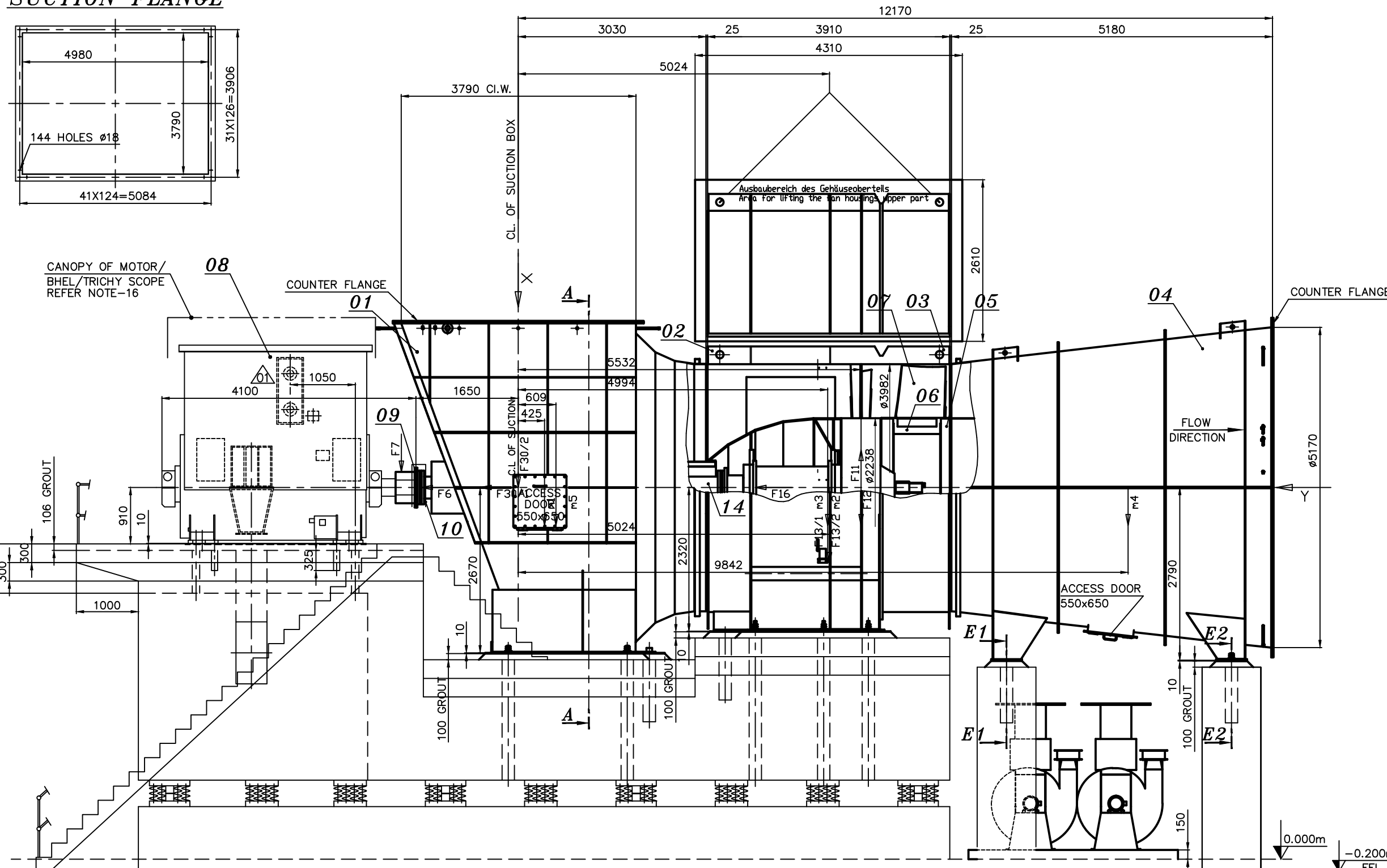
कृपया प्रेषित करें : Please reply to : फ़ोन Phone No:
बीएचईएल, पीएस-पीएम BHEL, PS-PEM, 91-120 - 436 8841
पीपीआईई भवन PPEI Building,
प्लॉट नं २५, सेक्टर १६ ए Plot No.25, Sector 16A,
नोएडा - २०१ ३०१ उ प्र Noida-201301 (U.P.)
भारत INDIA

पंजीकृत कार्यालय Registered Office :
बीएचईएल हाउस BHEL House,
सीरी फोर्ट Siri Fort,
नयी दिल्ली - ११० ०४९ New Delhi-110049
भारत INDIA

SUCTION FLANGE



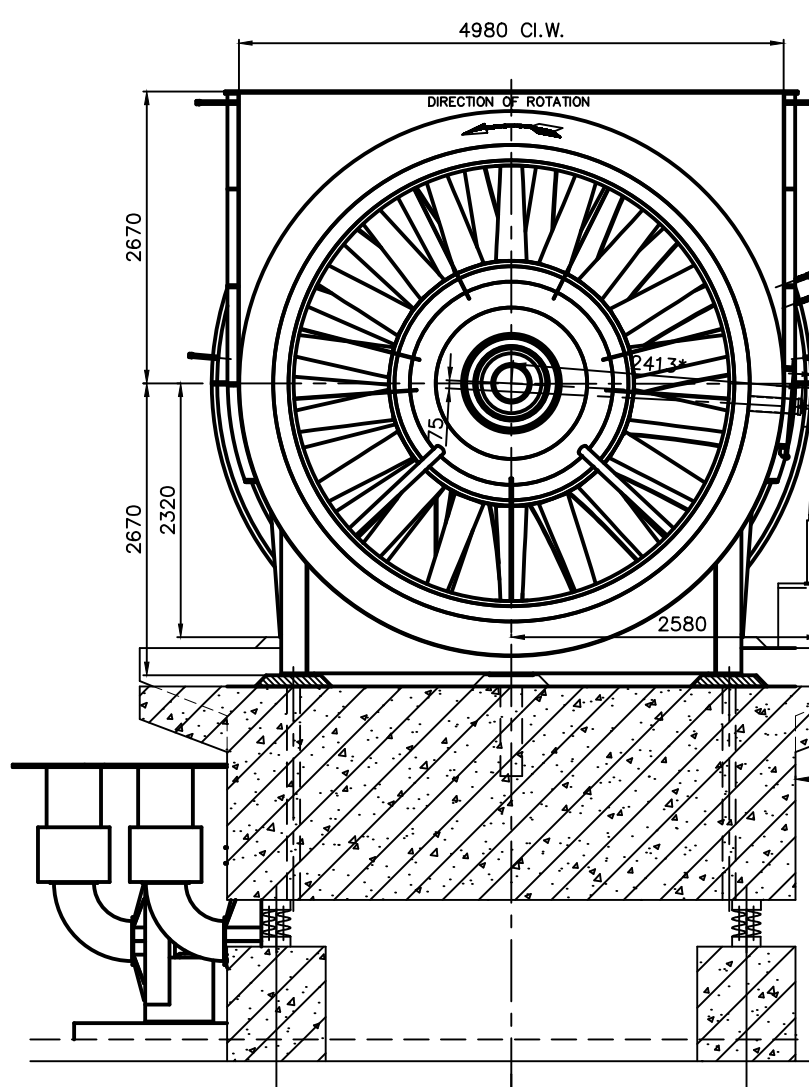
ELEVATION



FAN DESIGN DATA:

CAPACITY	792 m ³ /s
HEAD	500 MMWC
EFFICIENCY	87 %
TEMPERATURE	170 Deg.C
DENSITY	0.7199 kg/m ³

SECTION-AA

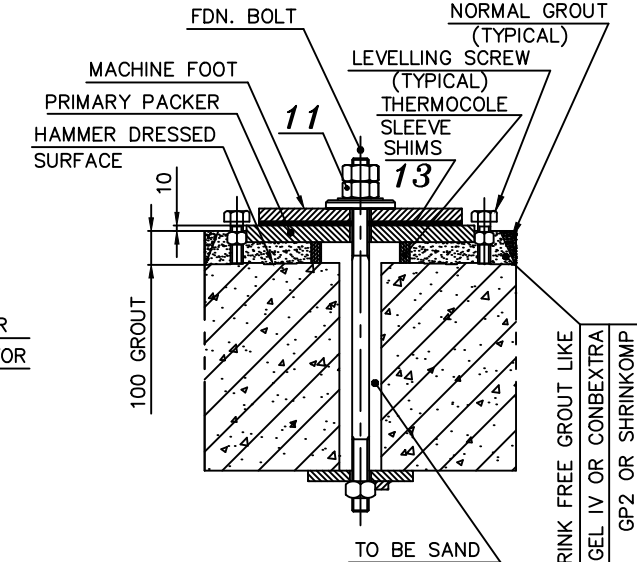


14	FAN SHAFT	42 CR Mo4	1
13	SHIMS	S.S	AS REQD.
12	PRIMARY PACKER	IS : 2062	AS REQD.
11	FOUNDATION FASTENERS FOR FAN	ASTM A105	17
10	COUPLING GUARD	IS : 2062	1
09	SPACER COUPLING	STEEL	1
08	MOTOR WITH FNDN. FASTENERS	5200KW / 745RPM	1
07	BLADES	AL. ALLOY	18
06	IMPELLER HUB	STEEL	1
05	HOUSING CORE	IS : 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

BILL OF MATERIAL PER FAN

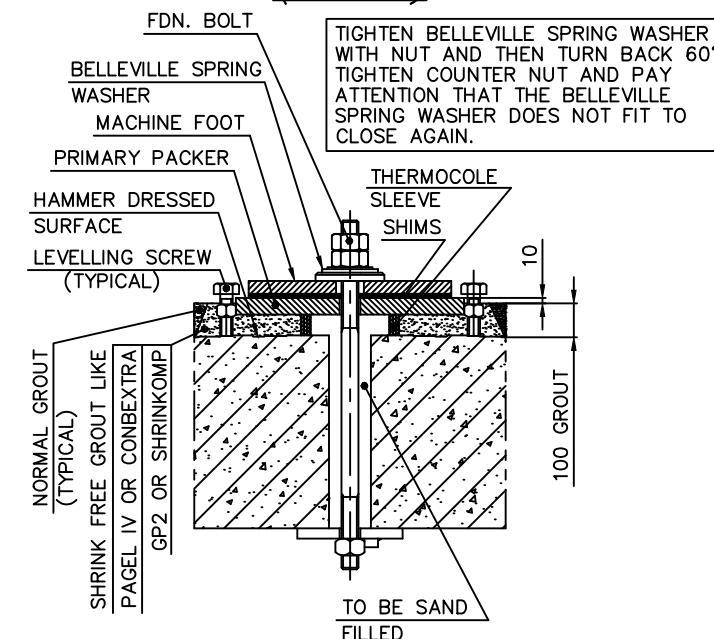
SECTION-B1B1

(AT I)

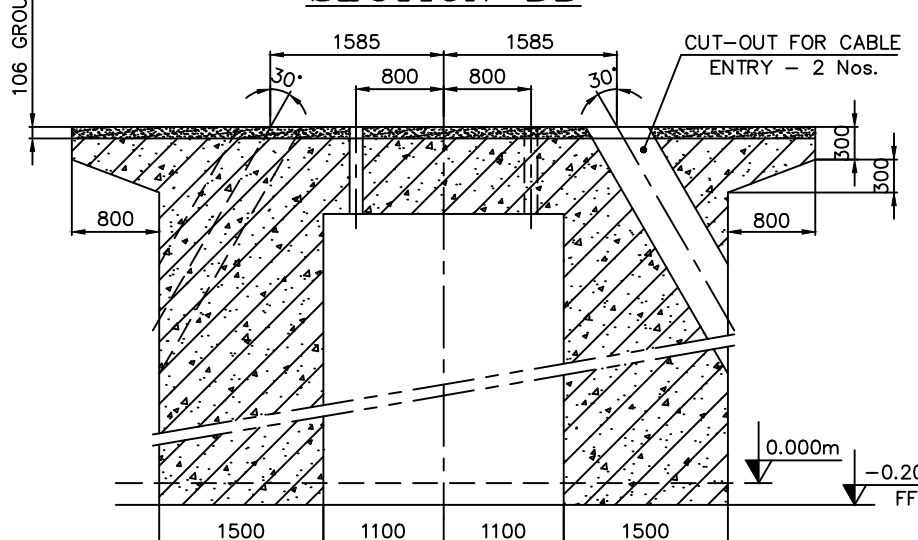


SECTION-B2B2

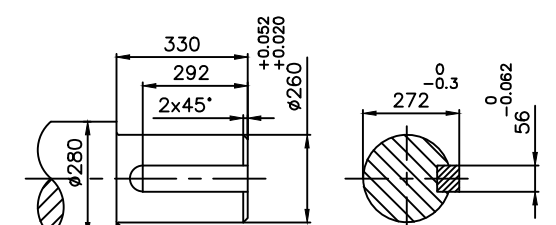
(AT II)



SECTION-DD



MOTOR SHAFT END

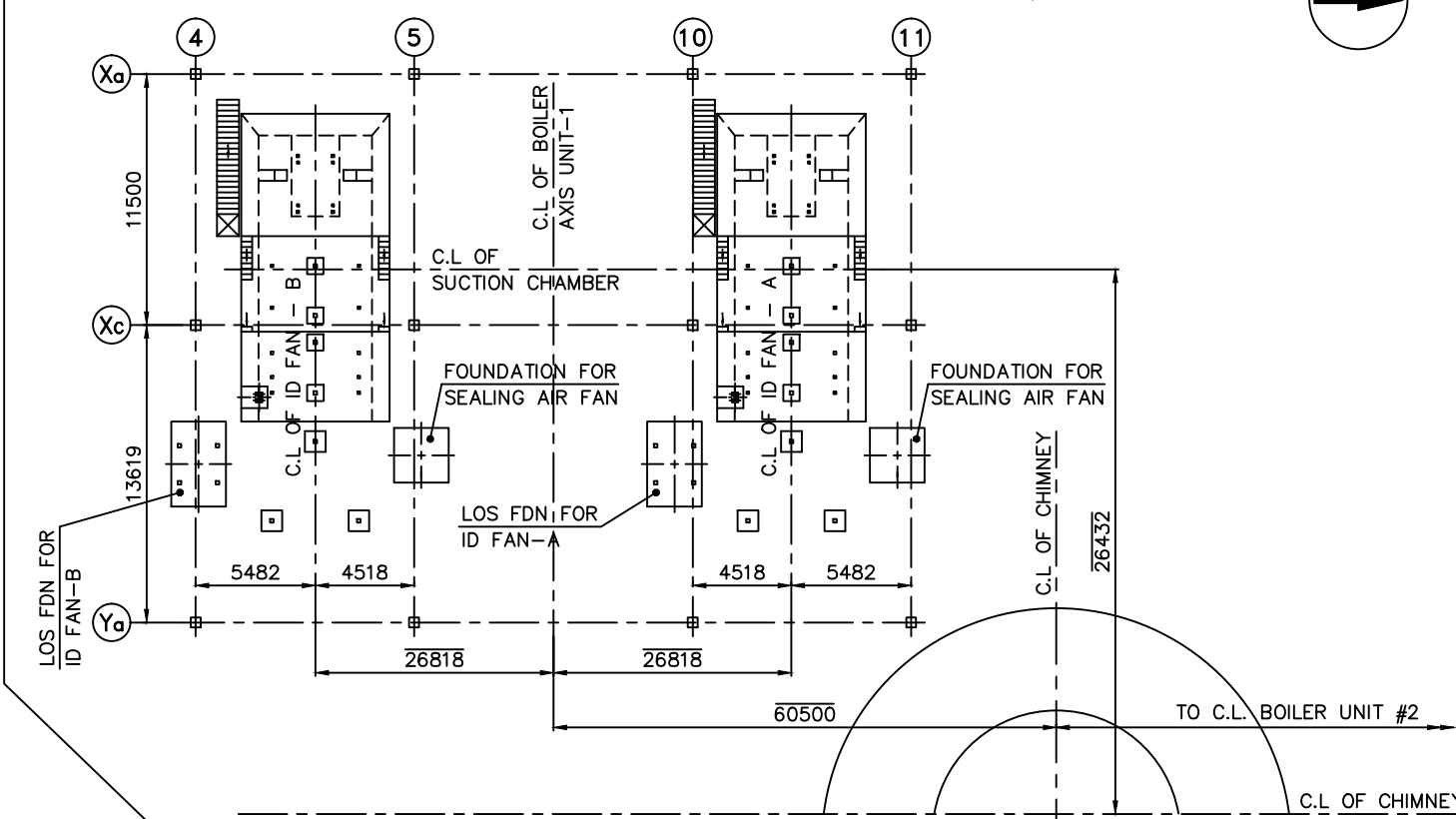


MOTOR BEARING DATA:

	DE	NDE
BEARING SIZE	22-#225	22-#225
OIL QTY.	23Lts.	23Lts.
MAX. OIL INLET TEMP.	40°C	40°C
OIL GRADE	ISO VG 46 OR EQUI.	ISO VG 46 OR EQUI.

KEY PLAN

REFERENCE DRG. NO. 0-00-020-78589 (LAYOUT OF ID SYSTEM PLAN)
(KEY PLAN SHOWN IS INFORMATIVE ONLY.
FOR EXACT LOCATION, REFER BOILER LAYOUT DRAWINGS)



NOTES:-

- THE LOADS INDICATED ON FOUNDATION ARE WITHOUT ALLOWANCES FOR VIBRATIONS. CIVIL DESIGNERS (BHEL) ARE RESPONSIBLE FOR TAKING INTO ACCOUNT OF THE ALLOWANCES FOR VIBRATION ALSO.
- THE DIFFERENT NATURAL FREQUENCY 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. $2 \times f_{nmax}$. 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 $f_{nmax} = 12.4166$ HZ
($2 \times f_{nmax}$) = 24.8333 HZ
- THE STIFFNESS OF THE FOUNDATION HAS TO BE AT LEAST $C_f > 1.0E+06$ N/mm FOR EACH LOAD POINT OF THE FAN IN LONGITUDINAL TRANSVERSAL AND VERTICAL DIRECTIONS RELATING TO THE FAN 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 PERMISSIBLE MAXIMUM AMPLITUDE REFERRED TO SUPPORTING AREA-TOP EDGE OF FOUNDATION IS 150 MICRONS.
- 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 CENTRES IS ± 5 mm.
- TOLERANCE ON CONCRETE LEVELS ± 5 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 20 mm 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.
- ELEVATION & POCKET DEPTHS SHOWN IN FOUNDATION PLAN ARE INCLUDE 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 FINALISED BY CIVIL DESIGNERS(BHEL).
- FOR MOTOR ERECTION, REFER MOTOR SUPPLIER'S (BHEL/BHOPAL) ERECTION MANUAL.
- BASE FRAME, SOLE PLATE, FOUNDATION BOLTS & FASTENERS RELATED TO MOTORS ARE IN THE SCOPE OF MOTOR SUPPLIER (BHEL BHOPAL UNIT)
- ALL ELEVATIONS ARE WITH RESPECT TO EL. 0.00 M WHICH CORRESPONDS TO RL. +69.5 M.

FAN DETAILS:-

TYPE	: SAF 40/22.4-1
MAKE	: M/s. BHEL/RANIPET
TOTAL WEIGHT OF FAN (WITHOUT MOTOR, COUPLING ETC.)	: 55000 Kg (APPROX)
WEIGHT OF ROTATING PARTS	: 11500 Kg
GD ² OF FAN	: 26000 Kg.m ²
SPEED OF FAN	: 745 RPM
NO. OF FANS PER BOILER	: TWO

MOTOR DETAILS:-

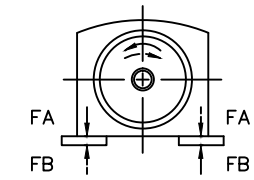
MAKE	: M/s. BHEL/BHOPAL
TYPE	: 1RN1906-B, CACW, IP55
CAPACITY	: 5200KW/745RPM/325AMP/11KV
GD ² OF MOTOR	: 3756 Kg.m ²
WEIGHT OF MOTOR	: 23000 Kg
WEIGHT OF ROTATING PARTS	: 7400 Kg
MOTOR DRAWING NUMBER	: 1 402 00 41304
METHOD OF COOLING	: IC 81W

MOTOR COOLER DATA

WATER PRESSURE DROP ACROSS COOLER	= 0.4 Kg/cm ²
TEMP. RISE OF WATER ACROSS COOLER	= 5 °C
WATER INLET TEMP.	= 38 °C
MAX. OPERATING PRESSURE OF WATER	= 6 Kg/cm ²
TOTAL REQUIREMENT OF WATER	= 590 LPM

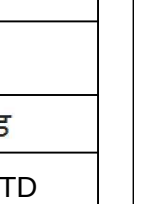
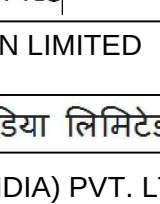
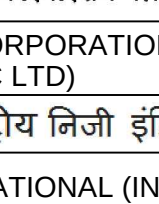
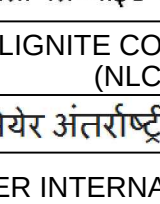
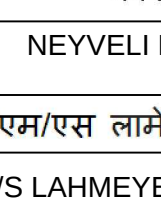
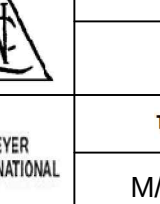
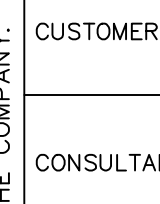
FOUNDATION LOAD OF MOTOR

MAX. FORCE CALCULATED FROM THE MAX. IMPULSE TORQUE - FM = 446KN
FORCE EXERTED BY WEIGHT ON EACH SIDE - FG = 115KN
FOUNDATION LOAD ON EACH SIDE COMPRESSION - FA = FM+FG = 561KN
TENSILE FORCE - FB = FM-FG = 331KN
THE FORCE OCCUR ALTERNATIVELY INDEPENDENT OF THE DIRECTION OF ROTATION.

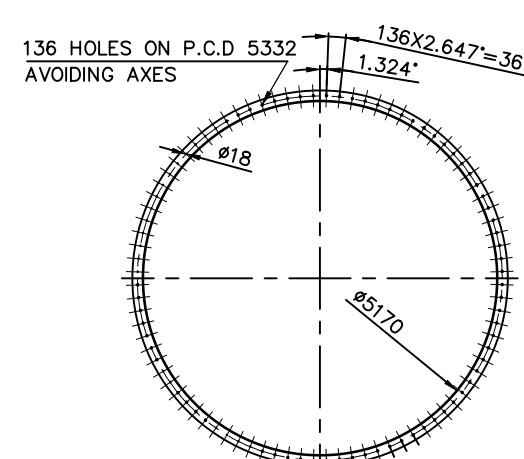


CUSTOMER NO : R550 & R551

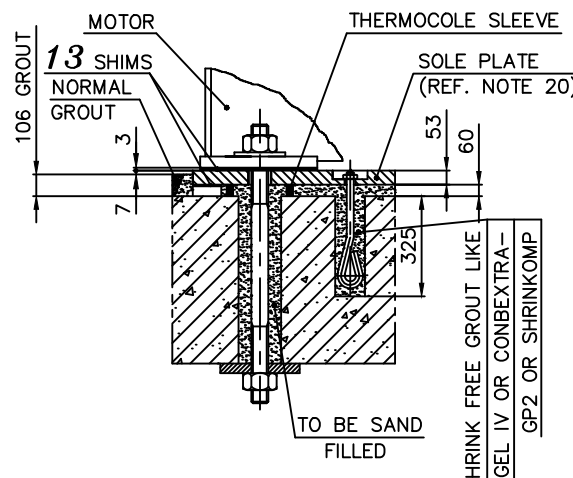
CUSTOMER	नेयवेली लिग्नाइट कार्पोरेशन लिमिटेड
CONSULTANT	एम/एस लाहमेयर अंतर्राष्ट्रीय निजी इंडिया लिमिटेड
PROJECT	NEVELI NEW THERMAL POWER PROJECT (NNTPP) 2 X 500 MW LIGNITE FIRED UNITS AT NEVELI
PACKAGE	STEAM GENERATOR AND AUXILIARIES (NTA1)
PROJECT	NEVELI NEW THERMAL POWER PROJECT (NNTPP) 2 X 500 MW LIGNITE FIRED UNITS AT NEVELI
PROJECT	BHARAT HEAVY ELECTRICALS LIMITED., BOILER AUXILIARIES PLANT RANIPET - 632 406
DRAWN	P.S.N
SADEP	Sd.....
28.05.14	TITLE
GA DRAWING FOR ID FAN WITH	
FOUNDATION PLAN AND LOADING DATA	
SAF 40/22.4-1	
ALL DIMENSIONS IN MILLIMETRE	
SCALE	N.T.S
DRG.NO.	1-00-099-28905
REV	01



DELIVERY FLANGE

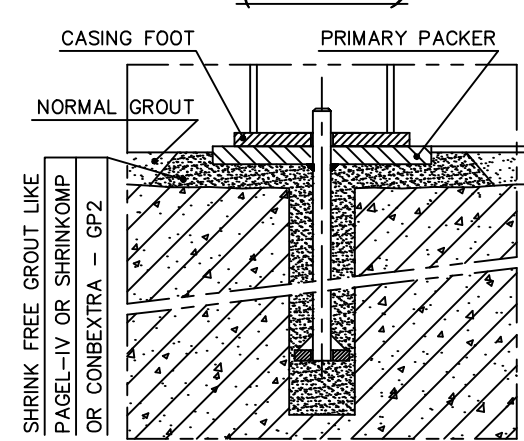


SECTION-CC



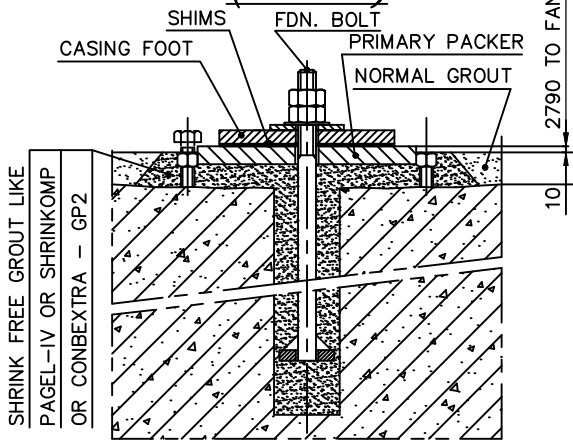
SECTION-E1E1

(AT III)



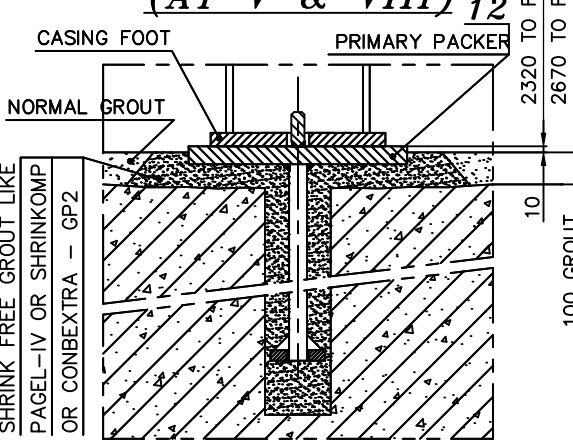
SECTION-E2E2

(AT IV)



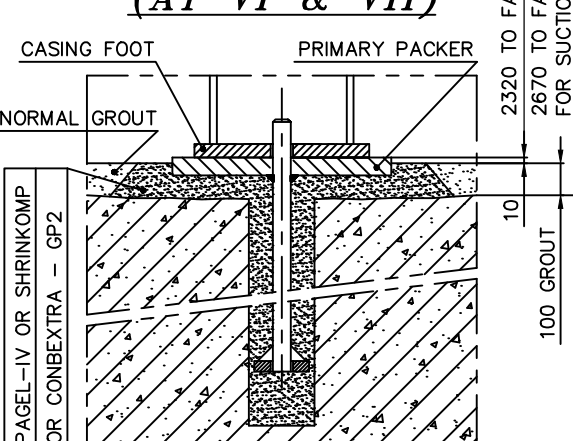
SECTION-E3E3

(AT V & VIII)



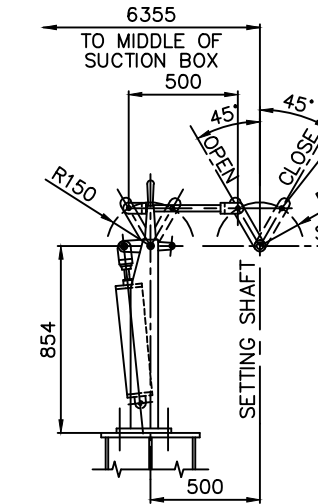
SECTION-E4E4

(AT VI & VII)

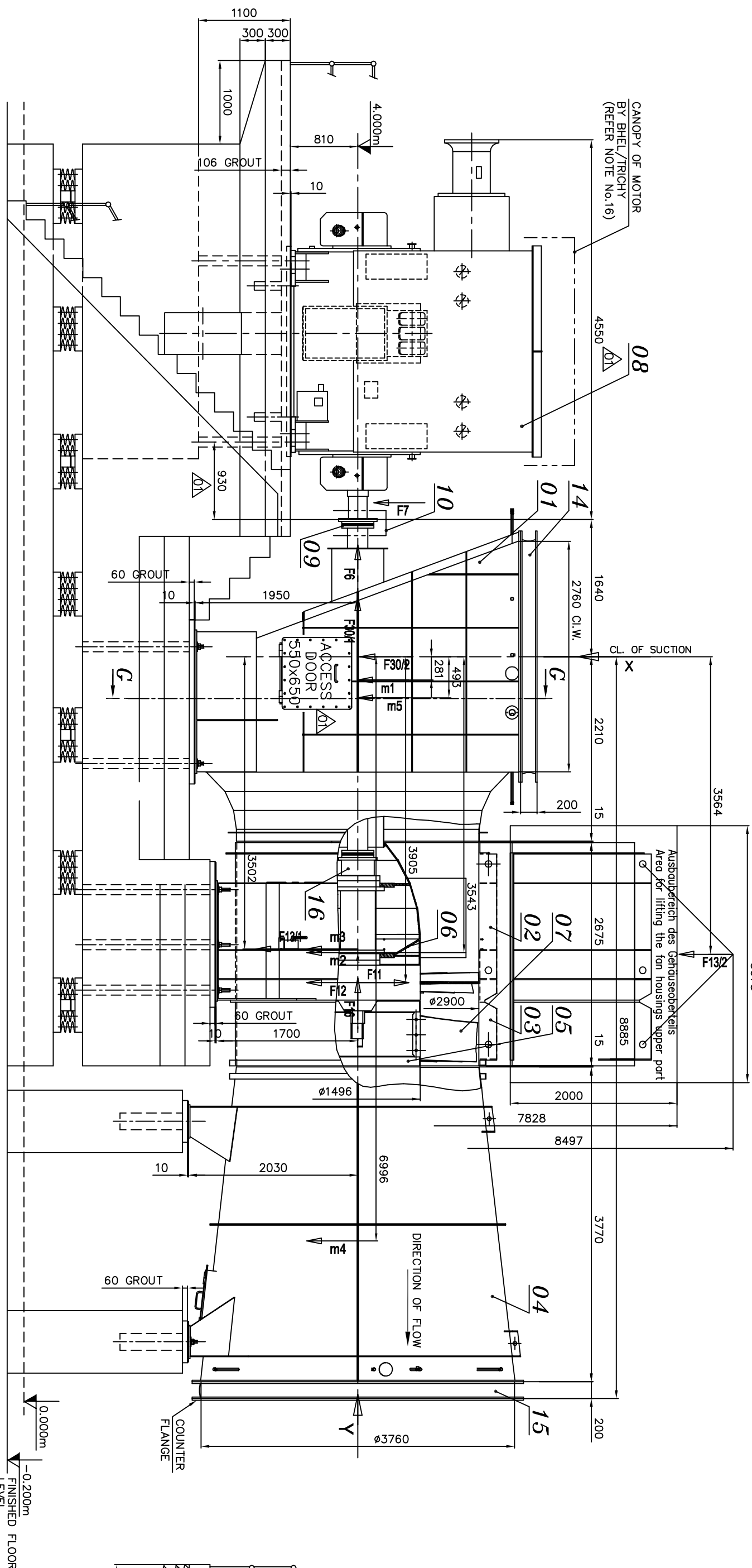


VIEW-R*

(ON ACTUATOR & ITS LINKAGE)

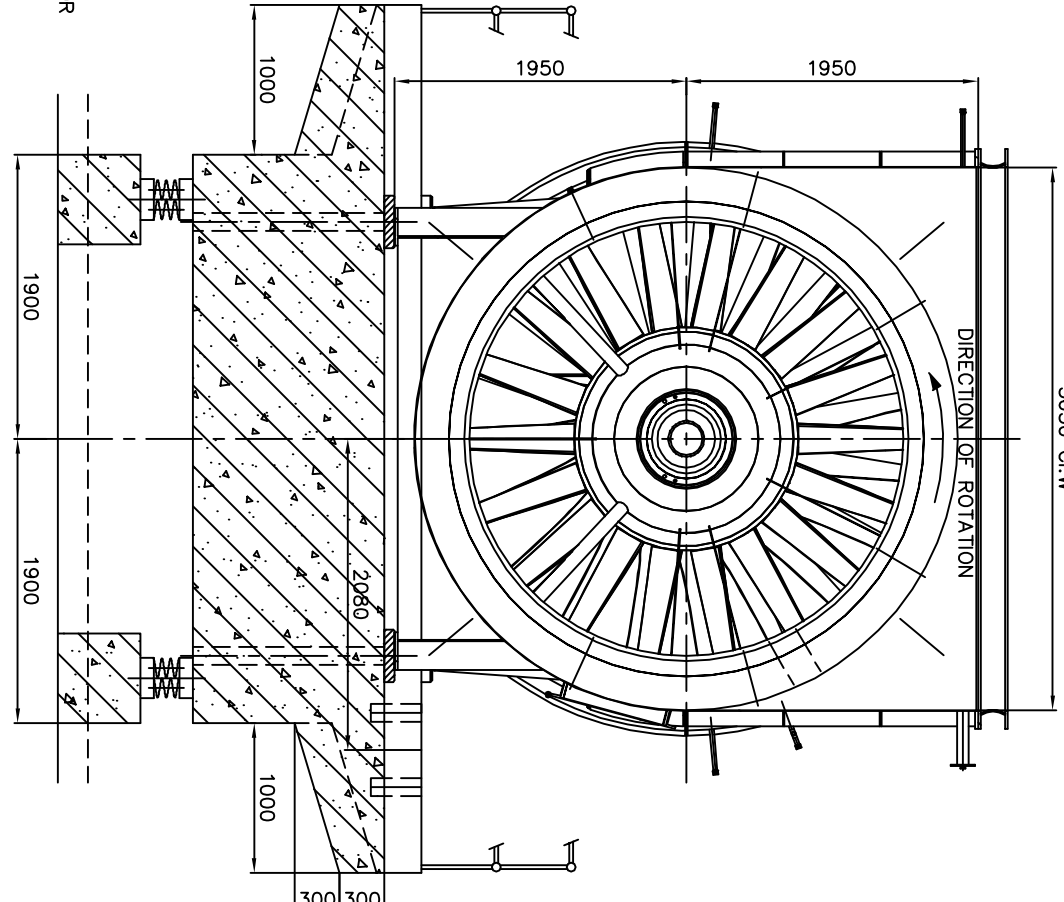


ELEVATION

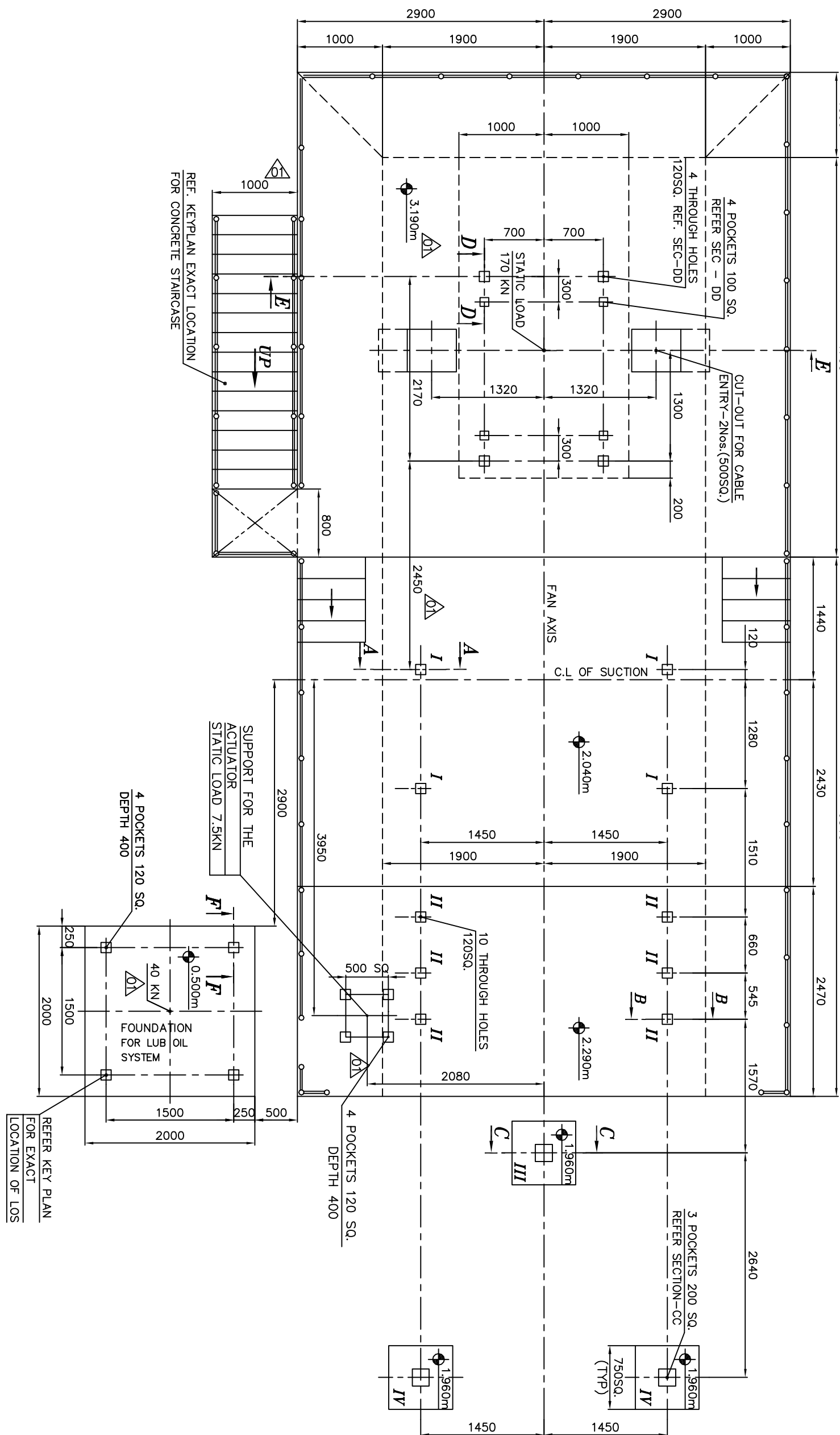


FAN DESIGN DATA

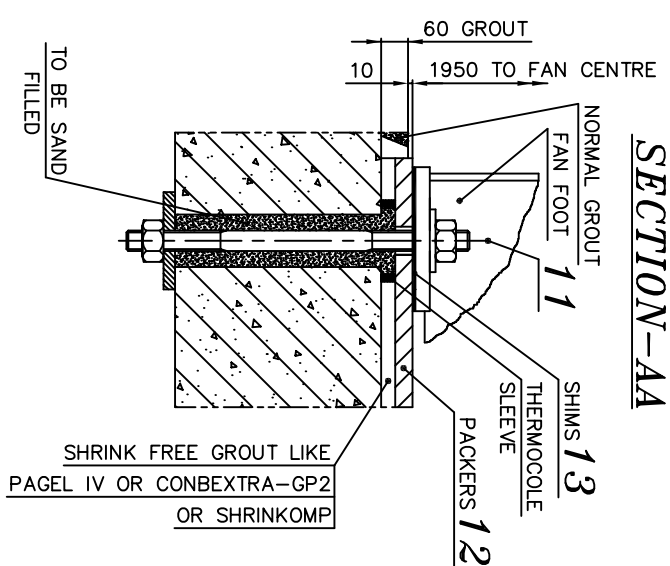
CAPACITY	392 m ³ /s
HEAD	627 mmWG
EFFICIENCY	83.3 %
TEMPERATURE	43 Deg.C
DENSITY	1.073 kg/m ³



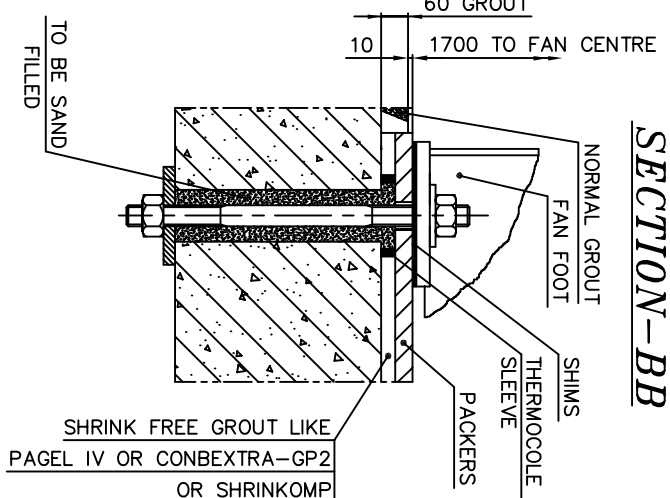
FOUNDATION PLAN



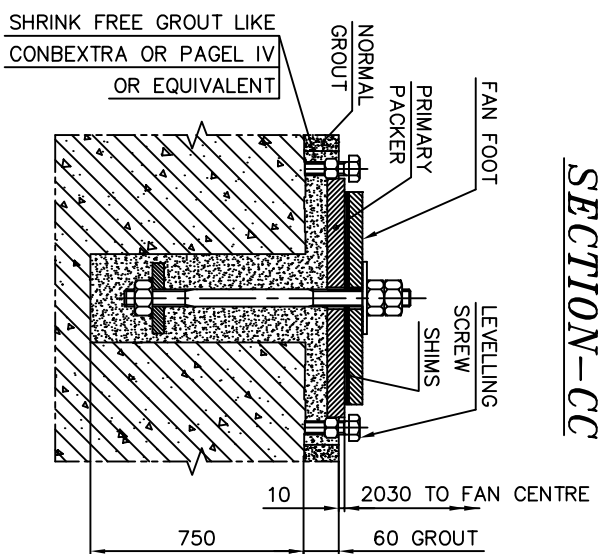
SECTION-AA



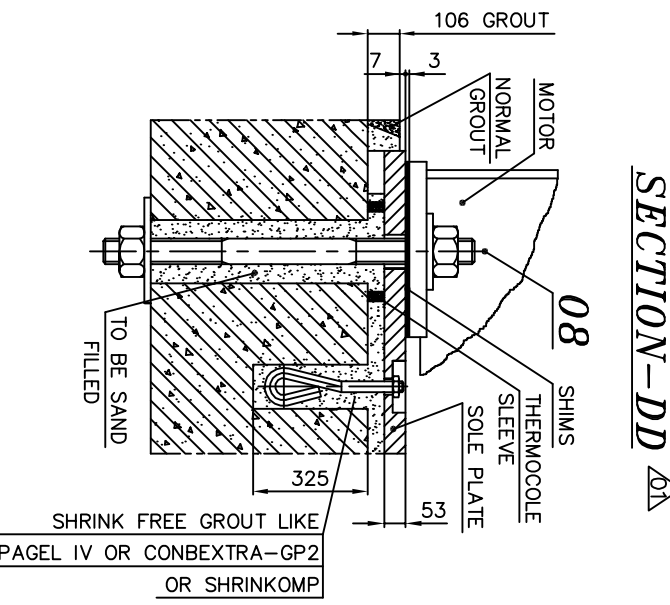
SECTION-BB



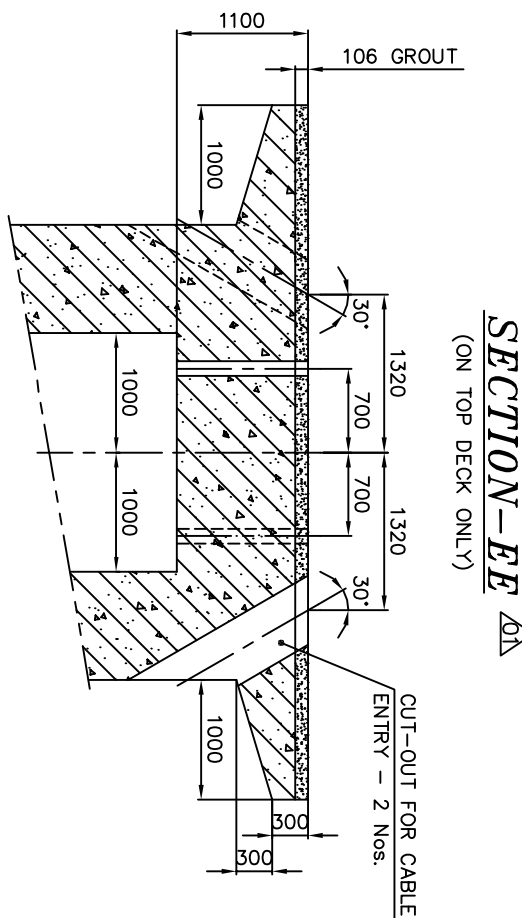
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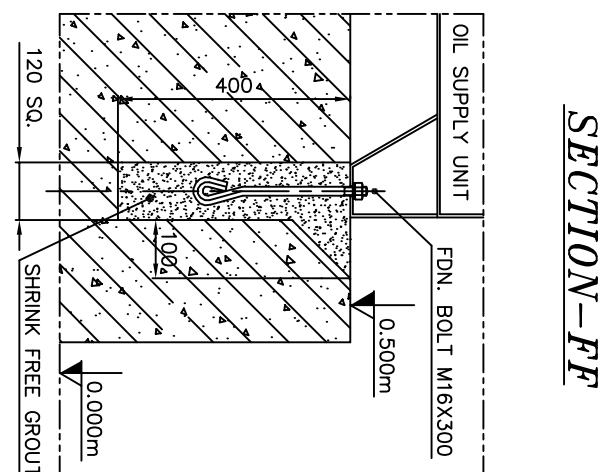
SECTION-DD



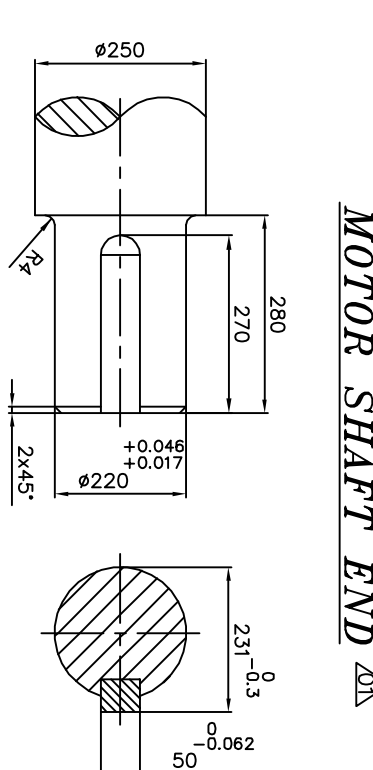
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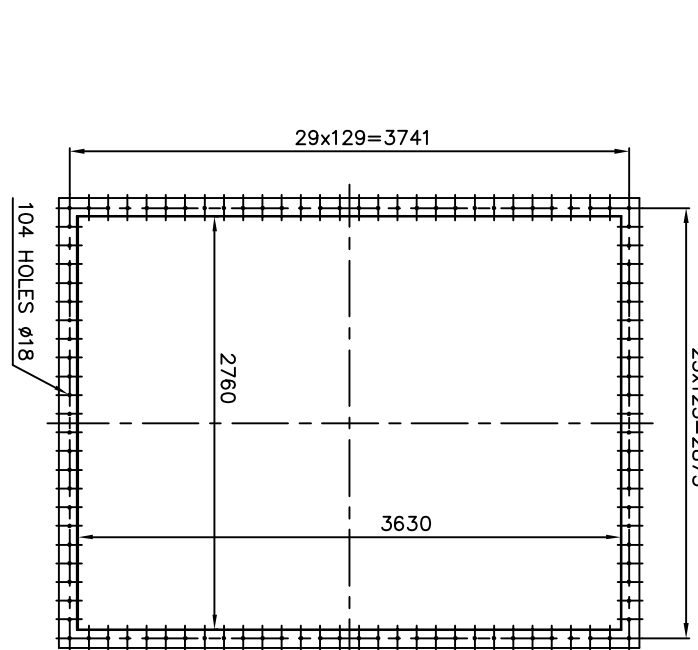
SECTION-FF



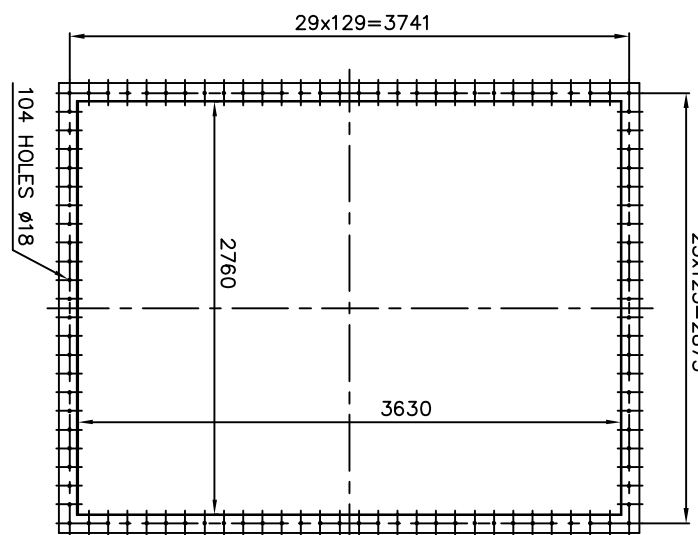
MOTOR SHAFT END



DELIVERY FLANGE



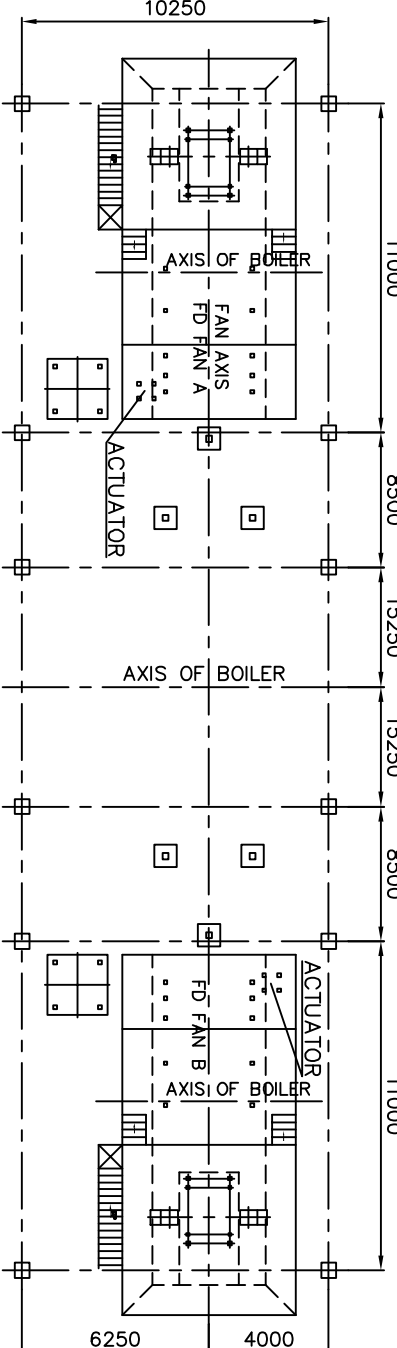
SUCTION FLANGE



NO.	DESCRIPTION	MATERIAL	QTY.
16	FAN SHAFT	42 CR M24	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 FAN FASTENERS	3400 KW/995 RPM	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
SL			

BILL OF MATERIAL PER FAN

KEY PLAN



NOTES:-

- THE LOADS INDICATED ON FOUNDATION ARE WITHOUT ALLOWANCES FOR VIBRATIONS. CIVIL DESIGNER(SH) 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. THIS MEANS 0.8Hz TO 1.2Hz AND 0.8Hz TO 1.1Hz (2x).
- THE STIFFNESS OF THE FOUNDATION HAS TO BE AT LEAST OF $\geq 1.0 \times 10^6$ N/mm FOR EACH LOAD POINT OF THE FAN IN LONGITUDINAL DIRECTION AND TRANSVERSE DIRECTION. THE RATIO OF THE FOUNDATION MASS HAS TO BE GREATER THAN 25.
- THE RATIO OF THE FOUNDATION MASS TO THE ROTOR MASS HAS TO BE GREATER THAN 25.
- ADOPT IS : 2062 / PART-IV FOR THE FOUNDATION DESIGN.
- THE CONNECTING DIETS 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.
- ACQUIRE TEMPLATES SHALL BE USED FOR LOCATING CORES FOR POCKET HOLES TO ENSURE THEIR DIMENSIONAL ACCURACY.
- TOLERANCE BETWEEN ANY TWO POCKET CENTERS IS ± 5 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 SHAPING AND THEREBY ENSURING WORKMAN CEMENT ON THE MAKING AREAS.
- NON-SHRINK GROUT IS TO BE USED REFER GENERAL SPECIFICATIONS ISSUED BY BHEL/RANIPET FOR NON-SHRINK GROUT. THIS ALSO COVERING THE PREPARATIONS OF FORMWORK, 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.
- HANDBAILS, STEEL PLATFORMS & CANOPY FOR MOTOR AND THEIR EMBLEMENTS ARE IN THE SCOPE OF BHEL/RANIPET.
- FAN FOUNDATION SHOULD NOT BE USED AS SUPPORT FOR OTHER STRUCTURES OR EQUIPMENTS.
- FOUNDATION CORROSION SHOWN IN THIS DRAWING IS ONLY INFORMATIVE/TYPICAL TYPE AND DETAILS OF FOUNDATION ARE TO BE FINALIZED BY CIVIL DESIGNER(SH).
- FOR MOTOR ERECTION, REFER MOTOR SUPPLIER'S (BHEL/BOPAL) ERECTION MANUAL.
- SHIMS SHALL BE USED TO LEVEL FOUNDATION BOLTS & FASTENERS RELATED TO MOTORS WILL BE IN SCOPE OF MOTOR SUPPLIER (BHEL/BOPAL).
- ALL ELEVATIONS ARE WITH RESPECT TO EL. 0.00 M WHICH CORRESPONDS TO RL +69.5 M.

FAN DETAILS:

TYPE	: FAF 29/15-1
FAN DESIGN	: M/S. BHEL/BHEL-PAL
MAKE	: 1801B05-6, C-CA, IP55
NO. OF FANS PER BOILER	: TWO (IDENTICAL)
WEIGHT OF ROTATING PARTS	: 3500 Kg
G.D. OF FAN	: 2400 Kg/m ²
SPEED OF FAN	: 990 RPM
WT. OF FAN	: 25000 Kg
METHOD OF COOLING	: IC 616

MOTOR DETAILS:

MAKE	: M/S. BHEL/BHEL-PAL
TYPE	: 1801B05-6, C-CA, IP55
CAPACITY	: 3400KW/995RPM/213AMP/1KV
G.D. OF MOTOR	: 1212 Kg/m ²
WEIGHT OF ROTATING PARTS	: 16500 Kg
WT. OF ROTATING PARTS	: 4750 Kg
MOTOR DRAWING NUMBER	: 1 402 00 41303
METHOD OF COOLING	: IC 616

FOUNDATION LOAD OF MOTOR

MAX. FORCE CALCULATED FROM THE MAX. IMPULSE TORQUE - FM = 257 KN
FORCE EXERTED BY WEIGHT ON EACH SIDE - FG = 83 KN
FOUNDATION LOAD ON EACH SIDE COMPRESSION - FA = FM+FG = 340 KN
TENSILE FORCE - FB = FM-FG = 174 KN
THE FORCE OCCUR ALTERNATELY INDEPENDENT OF THE DIRECTION OF ROTATION.

MOTOR BEARING LUBRICATION DETAILS:

BEARING SIZE	DE	NDE
OIL FLOW RATE	22-4200	22-6200
OIL FLOW RATE	5.5 LPM	5.5 LPM
OIL INLET PRESSURE	0.2 TO 0.5 Kg/cm ²	0.2 TO 0.5 Kg/cm ²
MAX. OIL INLET TEMP.	62°C	50°C
MAX. OIL OUTLET TEMP.	62°C	62°C
OIL GRADE	ISO VG 68	ISO VG 68
LUBRICATION TYPE	FORCED OIL LUBRICATION	

CUSTOMER NO : R550 & R551

CUSTOMER	NEVEUL LUMITE CORPORATION LIMITED (NLC LTD)
CONSULTANT	M/S LAHMEYER INTERNATIONAL (INDIA) PVT. LTD

PACKAGE: STEAM GENERATOR AND AUXILIARIES (NTAL)

PROJECT	NEVEUL NEW THERMAL POWER PROJECT (NNTPP)
	2 X 500 MW LIGHT FIRE UNITS AT NEVEUL
	BHARAT HEAVY ELECTRICALS LIMITED, RANIPET - 632 406

REVISION	DATE	BY	CHKD	APPD	REV
01	02.08.2014	P.S.N	S.AKARWAL	V.P.S	
02	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
03	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
04	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
05	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
06	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
07	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
08	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
09	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
10	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
11	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
12	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
13	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
14	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
15	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
16	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
17	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
18	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
19	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
20	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
21	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
22	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
23	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
24	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
25	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
26	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
27	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
28	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
29	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
30	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
31	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
32	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
33	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
34	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
35	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
36	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
37	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
38	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
39	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
40	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
41	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
42	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
43	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
44	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
45	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
46	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
47	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
48	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
49	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
50	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
51	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
52	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
53	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
54	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
55	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
56	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
57	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
58	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
59	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
60	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
61	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
62	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
63	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
64	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
65	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
66	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
67	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
68	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
69	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
70	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
71	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
72	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
73	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
74	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
75	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
76	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
77	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
78	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
79	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
80	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
81	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
82	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
83	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
84	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
85	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
86	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
87	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
88	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
89	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
90	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
91	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
92	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
93	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
94	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
95	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
96	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
97	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
98	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
99	08.08.2014	P.S.N	S.AKARWAL	V.P.S	
100	08.08.2014	P.S.N	S.AKARWAL	V.P.S	