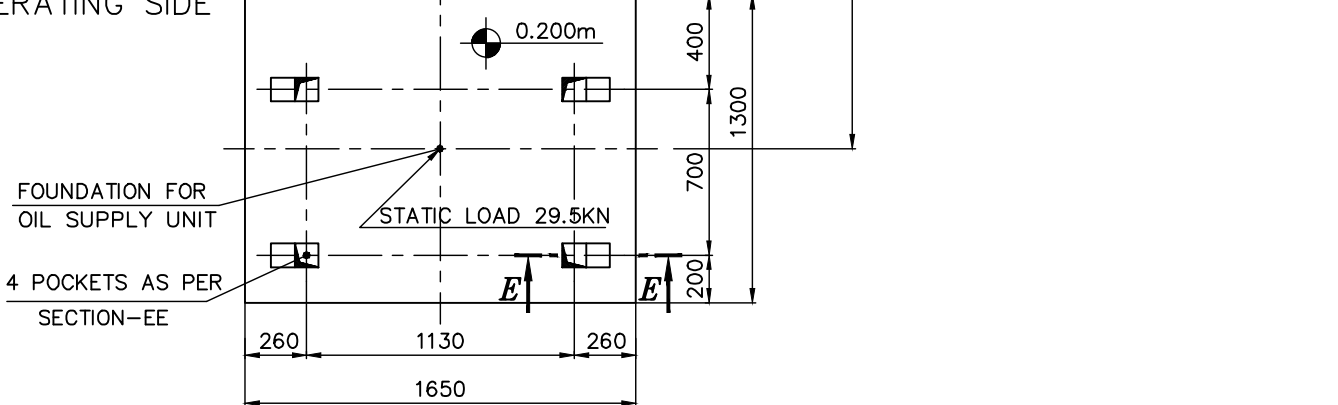
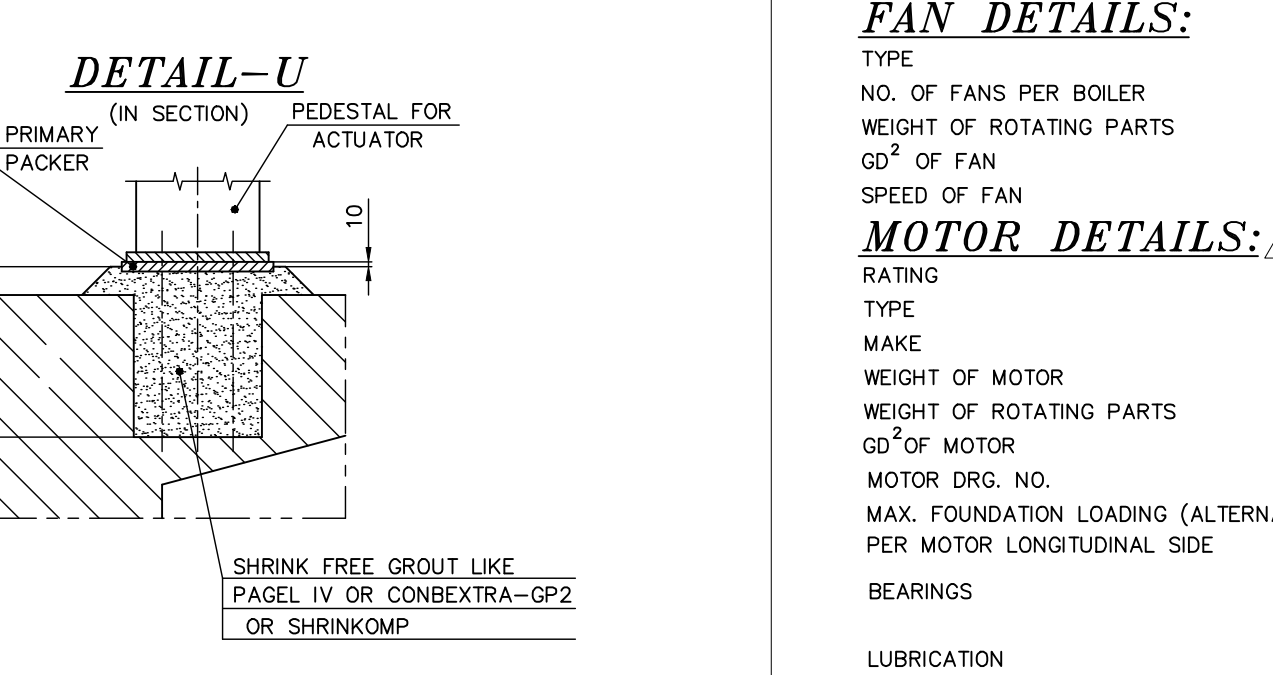
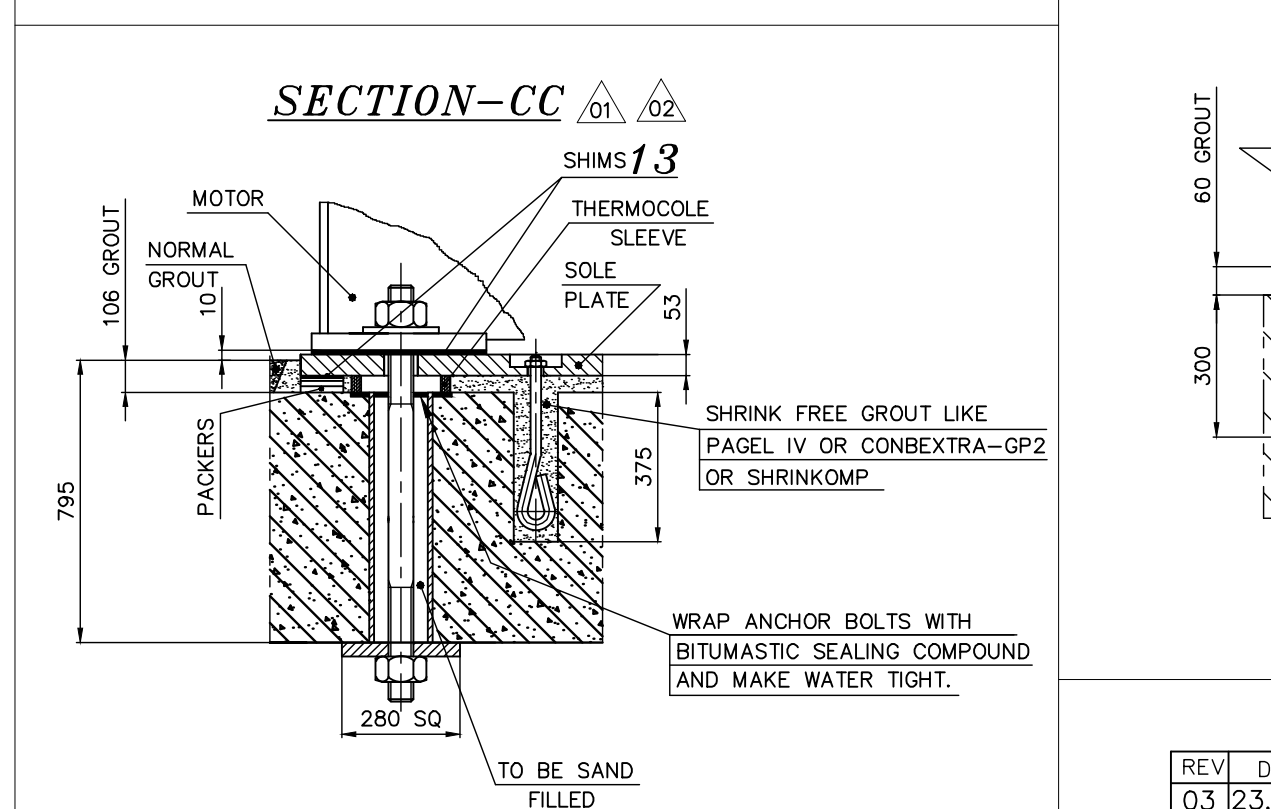


- NOTES:-**
- THE LOADS INDICATED ON FOUNDATION ARE WITHOUT ALLOWANCES FOR VIBRATIONS. CIVIL DESIGNERS/CONSULTANTS ARE RESPONSIBLE FOR PROPER DESIGN OF FOUNDATION TAKING INTO ACCOUNT OF THE ALLOWANCES FOR VIBRATION ALSO.
  - THE DIFFERENT NATURAL FREQUENCIES OF THE FOUNDATION HAVE TO BE 30% AWAY FROM THE SPEED FREQUENCY,  $f_{nmax} = n/60$  AND 20% AWAY FROM THE DOUBLE OF THE SPEED FREQUENCY,  $2 \times f_{nmax}$ . THIS MEANS:  $0.7 \times f_{nmax}$  TO  $1.3 \times f_{nmax}$  AND  $0.8 \times (2 \times f_{nmax})$  TO  $1.2 \times (2 \times f_{nmax})$ . SPEED FREQUENCY  $f_{nmax} = 24.83$  HZ ( $2 \times f_{nmax} = 49.66$  HZ)
  - THE STIFFNESS OF THE FOUNDATION HAS TO BE AT LEAST  $C_F > 1.0E+06$  N/mm 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 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  $\pm 5$  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 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.
  - ELEVATIONS & POCKET DEPTH SHOWN IN FOUNDATION PLAN ARE EXCLUDING GROUTING THICKNESS.
  - GROUTING IS IN THE SCOPE OF ERECTION GROUP/CONTRACTOR.
  - HANDRAILS, STEEL PLATFORMS, STEEL STAIRS, LADDERS, CANOPY OF MOTOR & 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/CONSULTANTS.
  - FOR MOTOR ERECTION, REFER MOTOR SUPPLIER'S ERECTION MANUAL.
  - CIVIL DESIGNER TO CHECK THE FOULING OF FAN FOUNDATION BOLT WITH VIS SPRING LOCATION.

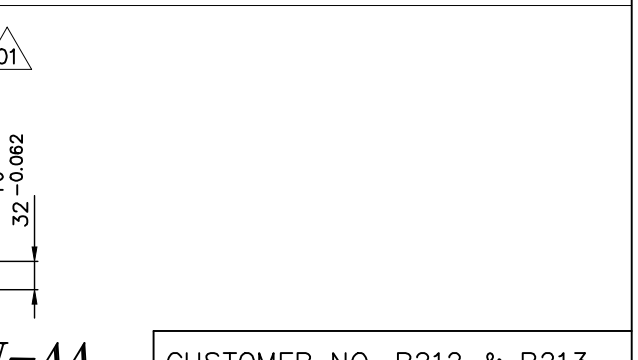
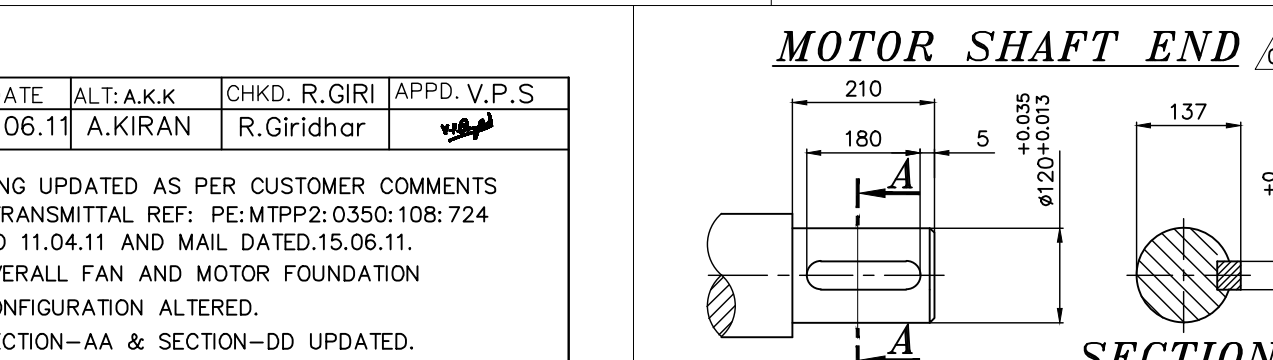


SL NO	DESCRIPTION	MATERIAL	THICKNESS (mm)	QTY
15	OUTLET EXPANSION JOINT	IS:2062 & RUBBER	-	1
14	INLET EXPANSION JOINT	IS:2062 & RUBBER	-	1
13	SHIMS	S.S	-	AS REQD.
12	PRIMARY PACKER	IS : 2062	25	8
11	FOUNDATION FASTENERS FOR FAN	ASTM A105	-	15
10	COUPLING GUARD	IS : 2062	-	1
09	SPACER COUPLING	STEEL	-	1
08	MOTOR WITH FNDN. FASTENERS	725 KW / 1486 RPM	-	1
07	BLADES	FORGED/CAST ALUMINIUM ALLOY, BHN MIN 75	-	16
06	IMPELLER HUB	P.355 NH	-	1
05	HOUSING CORE	IS : 2062	10	1
04	DIFFUSER	IS : 2062	5	1
03	OUTLET GUIDE VANE ASSY.	IS : 2062	12	1
02	IMPELLER HOUSING	IS : 2062	12	1
01	SUCTION CHAMBER	IS : 2062	5	1

LOAD POINT	FORCE [N]	FORCE [N]	FORCE [N]	FORCE [N]	FORCE [N]
I	+14000	±300	±2200	±100	±300
II	+11000	±1000 ±9000	±1200	±100	±800 ±7000
III	+11000	±300	-	±100	±300
IV	+9000	±300	-	±100	±300



FAN DETAILS:		
TYPE		: FAF 17/9.5-1
NO. OF FANS PER BOILER		: TWO (IDENTICAL)
WEIGHT OF ROTATING PARTS		: 1900 kg
GD <sup>2</sup> OF FAN		: 480 kg.m <sup>2</sup>
SPEED OF FAN		: 1490 RPM
MOTOR DETAILS:		
RATING		: 725 KW/1486 RPM
TYPE		: 1LA7634-4P, TETV, IP55, B3
MAKE		: BHEL, BHOPAL
WEIGHT OF MOTOR		: 5400 KG
WEIGHT OF ROTATING PARTS		: 1100 KG
GD <sup>2</sup> OF MOTOR		: 112 KG.m <sup>2</sup>
MOTOR DRG. NO.		: 34020045258
MAX. FOUNDATION LOADING (ALTERNATING)		: 49 KN UPWARDS
PER MOTOR LONGITUDINAL SIDE		: 101 KN DNWARDS
BEARINGS		: NU226M+6226C3
		: NU222M
LUBRICATION		: GREASE SERVOGEM-3 OR EQUIVALENT



REV	DATE	ALT: A.K.K	CHKD: R.GIRI	APPD: V.P.S
03	23.06.11	A.KIRAN	R.Giridhar	

DRAWING UPDATED AS PER CUSTOMER COMMENTS VIDE TRANSMITTAL REF: PE:MTPP2:0350:108:724 DATED 11.04.11 AND MAIL DATED:15.06.11.

a. OVERALL FAN AND MOTOR FOUNDATION CONFIGURATION ALTERED.

b. SECTION-AA & SECTION-DD UPDATED.

REV	DATE	ALT: C.DHANA	CHKD: R.GIRI	APPD: V.P.S
02	26.03.11	C.DHANA	R.Giridhar	

DRAWING UPDATED AS PER CUSTOMER COMMENTS VIDE TRANSMITTAL REF: PE:MTPP2:0350:108:407 DATED 10.01.11.

a. MOTOR AND ITS FOUNDATION DETAILS UPDATED.

b. FAN AND ITS FOUNDATION DETAILS UPDATED WITH TYPICAL SPRING ARRANGEMENT (VIS).

c. KEY PLAN UPDATED.

d. NOTE NO: 20 ADDED.

REV	DATE	ALT: S.M	CHKD: R.GIRI	APPD: V.P.S
01	16.12.10	S.Mohana/OL	R.Giridharan	

DRAWING UPDATED AS PER CUSTOMER COMMENTS VIDE TRANSMITTAL REF: PE:MTPP2:0350:108:133 DATED 09.11.10.

a. MOTOR AND ITS FOUNDATION DETAILS UPDATED.

b. KEY PLAN UPDATED.

c. KEY PHASER SLOT INDICATED.

d. PADS FOR VIBRATION PICK UP INDICATED.

REV	DATE	ALT: S.M	CHKD: R.GIRI	APPD: V.P.S
01	16.12.10	S.Mohana/OL	R.Giridharan	

DRAWING UPDATED AS PER CUSTOMER COMMENTS VIDE TRANSMITTAL REF: PE:MTPP2:0350:108:133 DATED 09.11.10.

a. MOTOR AND ITS FOUNDATION DETAILS UPDATED.

b. KEY PLAN UPDATED.

c. KEY PHASER SLOT INDICATED.

d. PADS FOR VIBRATION PICK UP INDICATED.

**KANTI BIJLEE UTPADAN NIGAM LIMITED**  
(A JOINT VENTURE BETWEEN NTPC LTD. & BSEB)  
MUZAFFARPUR THERMAL POWER PROJECT  
STAGE-II (2x195 MW) UNITS-3&4

**BARHAT HEAVY ELECTRICALS LTD.**  
BOILER AUXILIARIES PLANT  
RANIPET - 632 406

**GENERAL ARRANGEMENT OF FD FAN: FAF 17/9.5-1**

DRAWN: S.M. sd,.....  
CHECKED: R.G. sd,.....  
APPROVED: V.P.S. sd,.....  
DATE: 18.10.2010

TITLE: GENERAL ARRANGEMENT OF FD FAN: FAF 17/9.5-1  
DRAWING NO: 1-00-098-21934  
SCALE: 1:30

REV: 03