

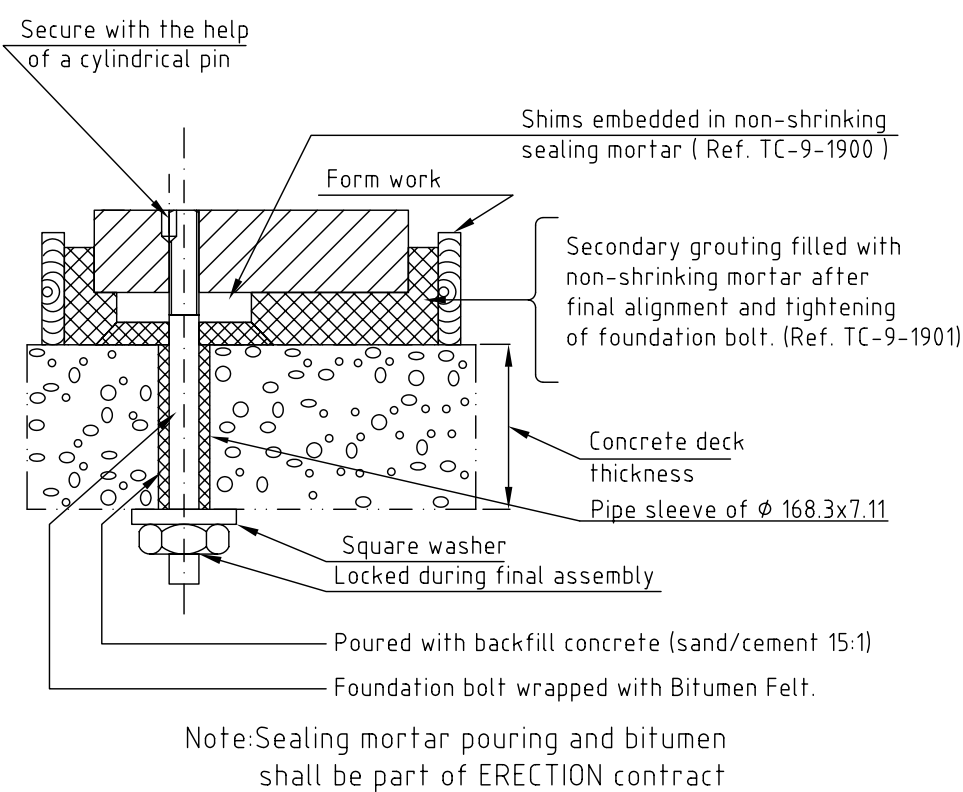
NOTE :- The installation details shown here are only informative. For final installation, refer the Assembly drawings furnished along with the respective equipment.

DETAIL - M

Diagram illustrating the cross-section of a column repair using the cast-in-place method. The repair is shown within a column of 250 SQ base. The repair consists of a 750 high section. The top 300 is OPC concrete mixture grouting, followed by a 100 high layer of quick setting cement, and a 200 high layer of OPC concrete mixture grouting. A sole plate is shown at the top of the repair.


## FOUNDATION BOLT ASSEMBLY

DETAIL - S



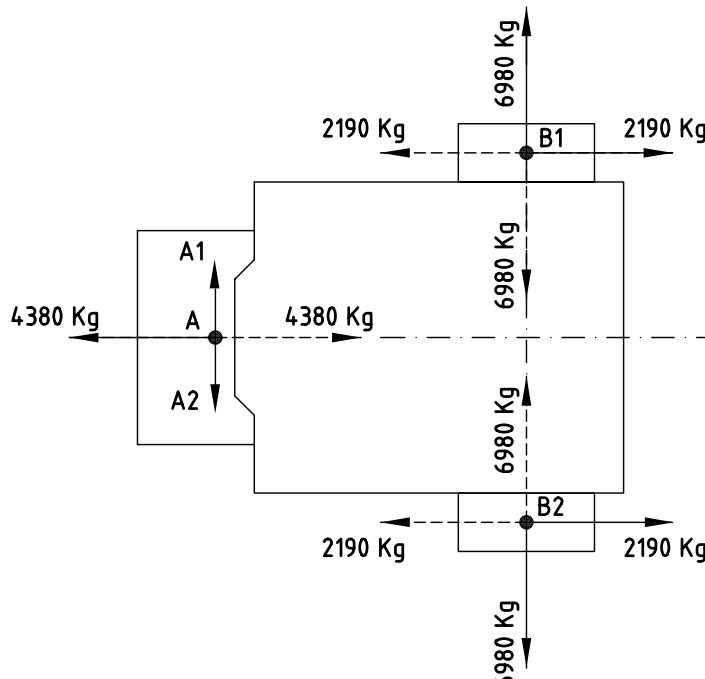
## DETAILS FOR FOUNDATION CALCULATIONS

NOTES :-

1. All dimensions are in mm and elevations are in metres.
2. This foundation drawing is only intended as basis for preparing the layout for foundation (by the BHEL). All civil structural dimensions are tentative and same shall be decided by the civil engineer concerned. The foundation design calculations shall consider all the static and dynamic loads acting simultaneously.
3. Suitable earth quake coefficient applicable for the project site should be adopted for seismic design of foundation as per IS 1893.
4. The foundation block should be designed so that natural frequencies of foundation are sufficiently away from the frequencies of machines. The design shall be as per DIN 4024 standard and IS.2974, part III.
5. Design of the foundation shall consider the allowable limits of vibration behaviour of machines (Group - T) as per VDI 2056.
6. Bearing failure loads are less than foundation load condition loads specified in col. 7 of the "Forces on Foundation" table.
7. Dynamic loads in axial direction are negligible.
8. Magnitude of unbalanced forces can be taken in vertical and horizontal directions as equal.
9. Max. live load on top of the deck is : 2000 kg./sq.m
10. Foundation block must not be joined to any other structure to avoid vibration transmission.
11. Portions shown thus  in these areas to be filled with secondary grouting. The concrete surface in these areas is to be ensured free from dust, grease and oil. Any wooden plugs present in these areas are to be removed. The packing plates below the machine sole plates shall be embedded into a 20 mm thick layer of special grout (local to plates) and are to be levelled horizontally. later, total secondary grouting may be completed.
12. For grouting instructions refer: TC-9-1901 (5 sheets). And for grouting cement specification refer: TC-9-1900.
14. Reference drawing nos. :-
  - a) Aircut arrangement - -NA-
  - b) Allowable forces & moments on turbine nozzles. - HY-DC-200-139-0125

## HORIZONTAL FRICTIONAL FORCES IN kgf

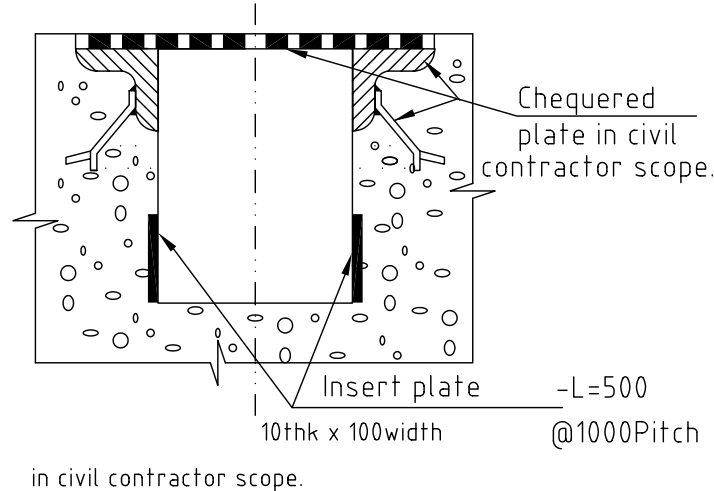
- |        |  |    |      |                       |
|--------|--|----|------|-----------------------|
| A-     | Working point of forces at front :     | mm | 680  | below<br>turbine axis |
| B1,B2- | Working point of forces at rear :      | mm | 480  |                       |
| C1,C2- | Working point of forces at gear rear : | mm | 1067 |                       |




THESE FORCES ALTERNATE IN DIRECTION



## PROPOSED TRENCH COVER

DETAIL - B



|                             |      |          |  |
|-----------------------------|------|----------|--|
| Job No:                     |      | 388      |  |
| STATUS :<br><br>PRILIMINARY |      |          |  |
| REV.                        | DATE | ALTERED  |  |
|                             |      | CHD/APPD |  |
| ZONE                        |      |          |  |



|   |  |  |  |   |  |            |  |                     |  |                           |  |
|---|--|--|--|---|--|------------|--|---------------------|--|---------------------------|--|
| CUSTOMER:   |  | NTPC LIMITED.                                  |  |   |  |            |  |                     |  |                           |  |
| TYPE OF PRODUCT   |  | NATIONAL THERMAL POWER CORPORATION LTD.        |  |   |  |            |  |                     |  |                           |  |
| OR  |  | NTPC, VIDHYACHAL(ST-V), 1x500MW                |  |   |  |            |  |                     |  |                           |  |
| NAME OF CLIENT  |  | BFP DRIVE TURBINE                              |  |   |  |            |  |                     |  |                           |  |
|  |  | BHARAT HEAVY ELECTRICALS LTD.                  |  |   |  |            |  |                     |  |                           |  |
|   |  | HYDERABAD                                      |  |   |  |            |  |                     |  |                           |  |
|   |  |  |  |   |  |            |  |                     |  |                           |  |
|   |  |  |  |   |  |            |  |                     |  |                           |  |
| DEPT. TCEP  |  | UNTL. DIMS. GR. <i>1000</i>                    |  |  |  | SCALE 1:30 |  | WEIGHT (KGI) -N.A.- |  | REF. TO ASSY. DRG. -N.A.- |  |
| CODE 4.15   |  |  |  |   |  |            |  |                     |  |                           |  |
| TITLE   |  | FOUNDATION ARRANGEMENT FOR BFP & DRIVE TURBINE |  |   |  |            |  | CARD CODE N A       |  | REV. 00                   |  |
| 1.0   |  |  |  |   |  | 1.1        |  | SHT NO. 03          |  | NO OF SHT. 03             |  |
|   |  |  |  |   |  |            |  |                     |  | 1.2                       |  |