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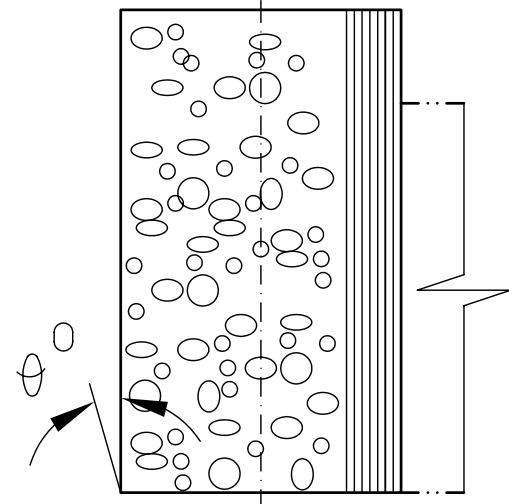
INVENTORY NO
SIGN AND DATE
REF. DRG. NO.
COMPUTER FILE NAME

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

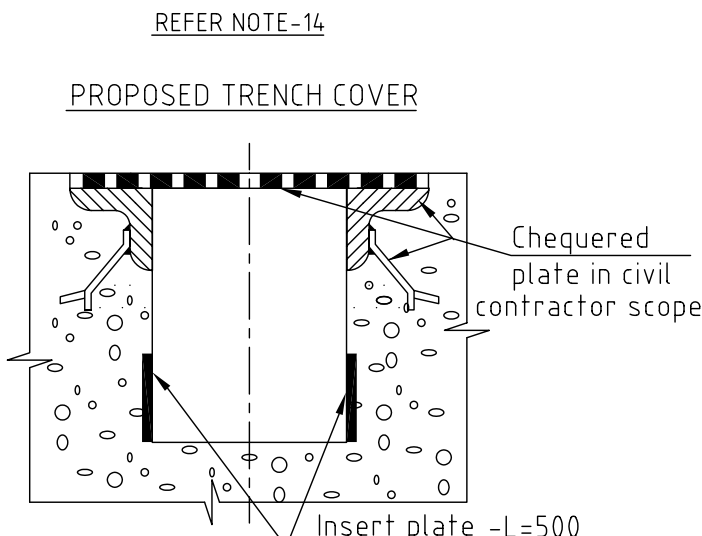
A	HY-TC-MPA1006-0111	DRG. NO. 2 SH. OF 03												
	TYPE OF TURBINE :-	NK 63/71-3												
	TYPE OF BOILER FEED PUMP :-	MDG 405(MHI)												
	TYPE OF BOOSTER PUMP :-	MLC 400X300H(MHI)												
	WEIGHT OF SINGLE HEAVIEST PIECE FOR													
	<table> <tr> <th></th><th>ERECTION in kg.</th><th>MAINTENANCE in kg.</th></tr> <tr> <td>TURBINE</td><td>26,000</td><td>14,000</td></tr> <tr> <td>BFP</td><td>21,600</td><td>3710</td></tr> <tr> <td>BP</td><td>6,150</td><td>1250</td></tr> </table>		ERECTION in kg.	MAINTENANCE in kg.	TURBINE	26,000	14,000	BFP	21,600	3710	BP	6,150	1250	
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TURBINE	26,000	14,000												
BFP	21,600	3710												
BP	6,150	1250												
B	DIRECTION OF ROTATION VIEWED FROM BOOSTER PUMP TO BFP FOR :- <table> <tr> <td>TURBINE</td><td>-</td><td>CLOCKWISE</td></tr> <tr> <td>BFP</td><td>-</td><td>CLOCKWISE</td></tr> <tr> <td>BP</td><td>-</td><td>COUNTER CLOCK WISE</td></tr> </table>		TURBINE	-	CLOCKWISE	BFP	-	CLOCKWISE	BP	-	COUNTER CLOCK WISE			
TURBINE	-	CLOCKWISE												
BFP	-	CLOCKWISE												
BP	-	COUNTER CLOCK WISE												

DETAIL 'PED'



THE THICKNESS OF THE CONCRETE MEMBER MUST BE SUFFICIENT TO ENSURE THAT THE ANGULAR DEFLECTION DOES NOT EXCEED : 0.015 DEG. WITH THE HORIZONTAL FORCES SPECIFIED.

DETAIL 'TRENCH'



NOT INCLUDED IN B.H.E.L. SCOPE OF SUPPLY.

SPEEDS (RPM)

EQUIPMENT	OPERATING MARGIN	RATED DESIGN	TRIP SPEED	CRITICAL SPEEDS
TURBINE	1134 TO 6240	-	-	4050
BFP	-	-	-	1184.7
BP	-	-	-	3000

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

FORCES ON FOUNDATION IN kgf

LOAD POINT	LOAD CONDITION						
	STATIC LOAD WITHOUT ROTATING WEIGHT	ROTATING WEIGHT	OPERATING WEIGHT OF CONDENSER/VACUUM PULL	SHORT CIRCUIT LOAD *	LOAD DUE TO OPERATING TORQUE	OPERATING UNBALANCE ** (Turbine - Blade breakage)	FAILURE MODE LOAD **
	1	2	3	4	5	6	7
A	-	2920	-	-	-	114.3	6858
A1	14375	-	1268	-	485	-	-
A2	14375	-	1268	-	-485	-	-
B	-	-	-	-	-	-	-
B1	15955	1555	14732	-	165	609	3654
B2	15955	1555	14732	-	-165	609	3654
C	733	-	-	-	-	-	-
C1	-	275	-	-	-2460	27	164
C2	-	38	-	-	2460	14	85

FOUNDATION LOADING DATA

LOAD APPLICATION POINT	EQUIPMENT	WEIGHT		STATIC LOAD ON EACH POINT (kg's)		DYNAMIC LOAD ON EACH POINT (kg's)		
		DRY	WET	VERTICAL		VERTICAL	HORIZONTAL	AXIAL
5A	BOILER FEED PUMP (MDG 405)	21600	21850	1561		1742	1742	1161
3A	BOOSTER PUMP (MLC 400x300 H)	6150	6450	540		475	475	320

** At each supporting point acting in radial direction over 360 deg.
* Loads on either side of TG axis act in opposite directions and the direction changes at 50 cycles/sec.

NOTE :-1. DOWNWARD FORCES ARE POSITIVE
2. GRADE OF BALANCING: BFP, BP-G2.5
3. MASS MOMENT OF INERTIA:

BFP : 215 N-Sq.m
BP : 466 N-Sq.m

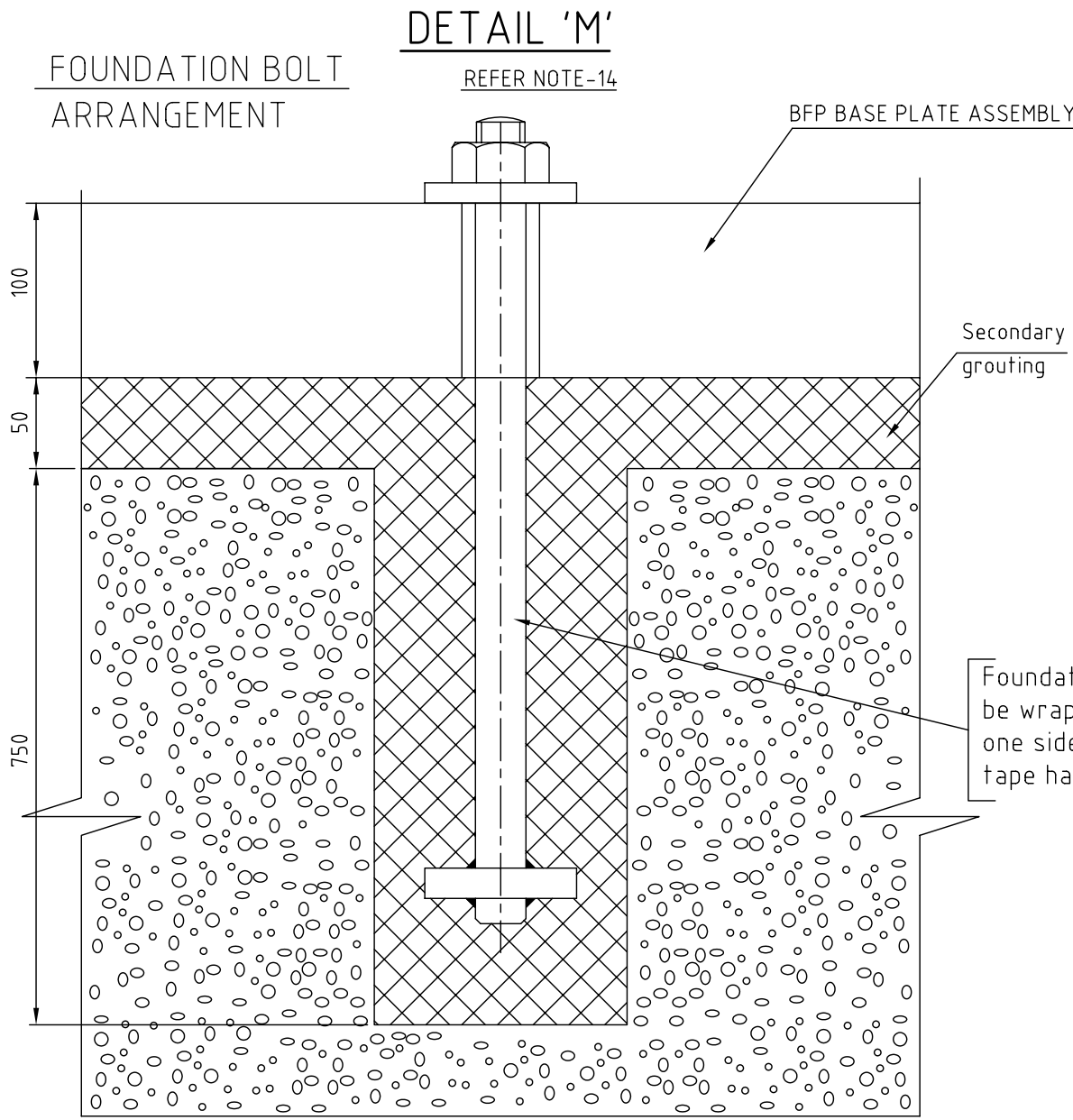
DETAILS FOR FOUNDATION CALCULATIONS

NOTES :-

- All dimensions are in mm and elevations are in metres.
- 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.
- Suitable earth quake coefficient applicable for the project site should be adopted for seismic design of foundation as per IS 1893.
- 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.
- Design of the foundation shall consider the allowable limits of vibration behaviour of machines (Group - T) as per VDI 2056.
- Bearing failure loads are less than failure load condition loads specified in col. 7 of the "Forces on Foundation" table.
- Dynamic loads in axial direction are negligible.
- Magnitude of unbalanced forces can be taken in vertical and horizontal directions as equal.
- Max. live load on top of the deck is : 2000 kg/sq.m
- Foundation block must not be joined to any other structure to avoid vibration transmission.
- Portions shown thus in top deck are 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.
- For grouting instructions ref. TC-9-1901 (5 sheets). And for grouting cement specification ref. TC-9-1900.
- All embedded plates, angles, sleeves, pipes, ducts and any other structural are not part of Turbine scope of supply unless otherwise specified.

OWNER PRAYAGRAJ POWER GENERATION COMPANY LIMITED			
CONSULTANT TATA Consulting Engineers Limited MUMBAI			
PROJECT PRAYAGRAJ STPP AT BARA (U.P.) PHASE I : 3 X 660 MW			
BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		NAME J.C.S/VVKR	SIGN
		DRN G.N.PAWAR	DATE 02.02.2011
		APPD. M.A.HASEB	DATE 02.02.2011
DEPT. TCEP	UNTOLO DIMS. GR. ENGINEER	SCALE 1:30	WEIGHT (KG) -N.A.-
CODE 415			REF. TO ASSY. DRG. -N.A.-
			ITEM NO. -N.A.-
TITLE FOUNDATION ARRANGEMENT FOR BFP & DRIVE TURBINE		CARD CODE N.A.	REV. 00
		SHT. No 03	NO. OF SHT. 03

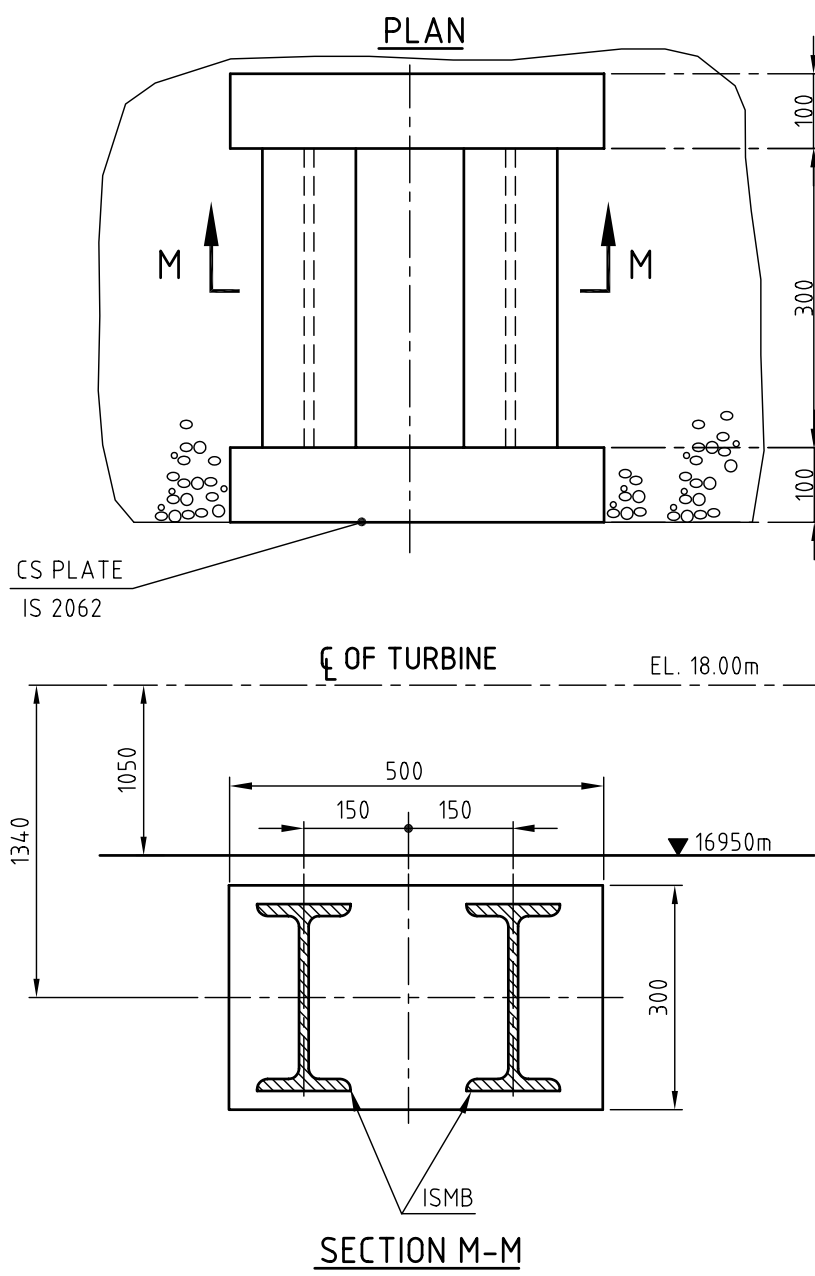
FOUNDATION BOLT ARRANGEMENT



Note: Sealing mortar pouring and bitumen shall be part of ERECTION contract

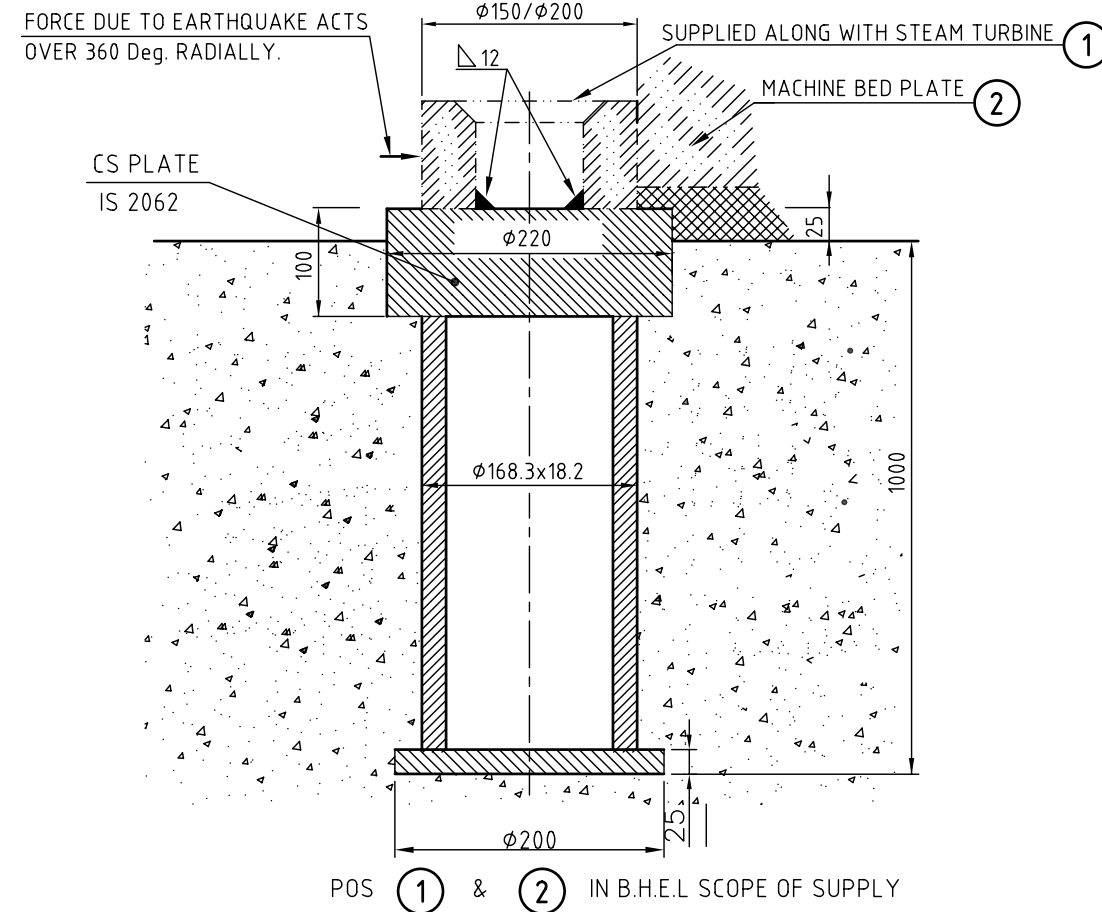
DETAIL 'GUIDE'

(FOR EXHAUST HOOD GUIDE SUPPORT)
NOT INCLUDED IN B.H.E.L. SCOPE OF SUPPLY.



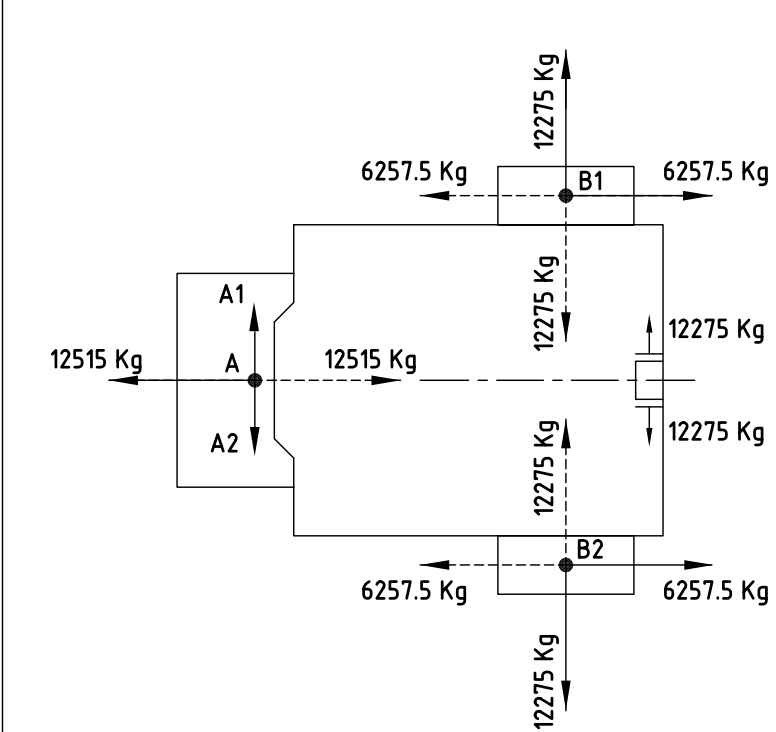
DETAIL 'EQ-TG'

REFER NOTE-14



HORIZONTAL FRICTIONAL FORCES IN kgf

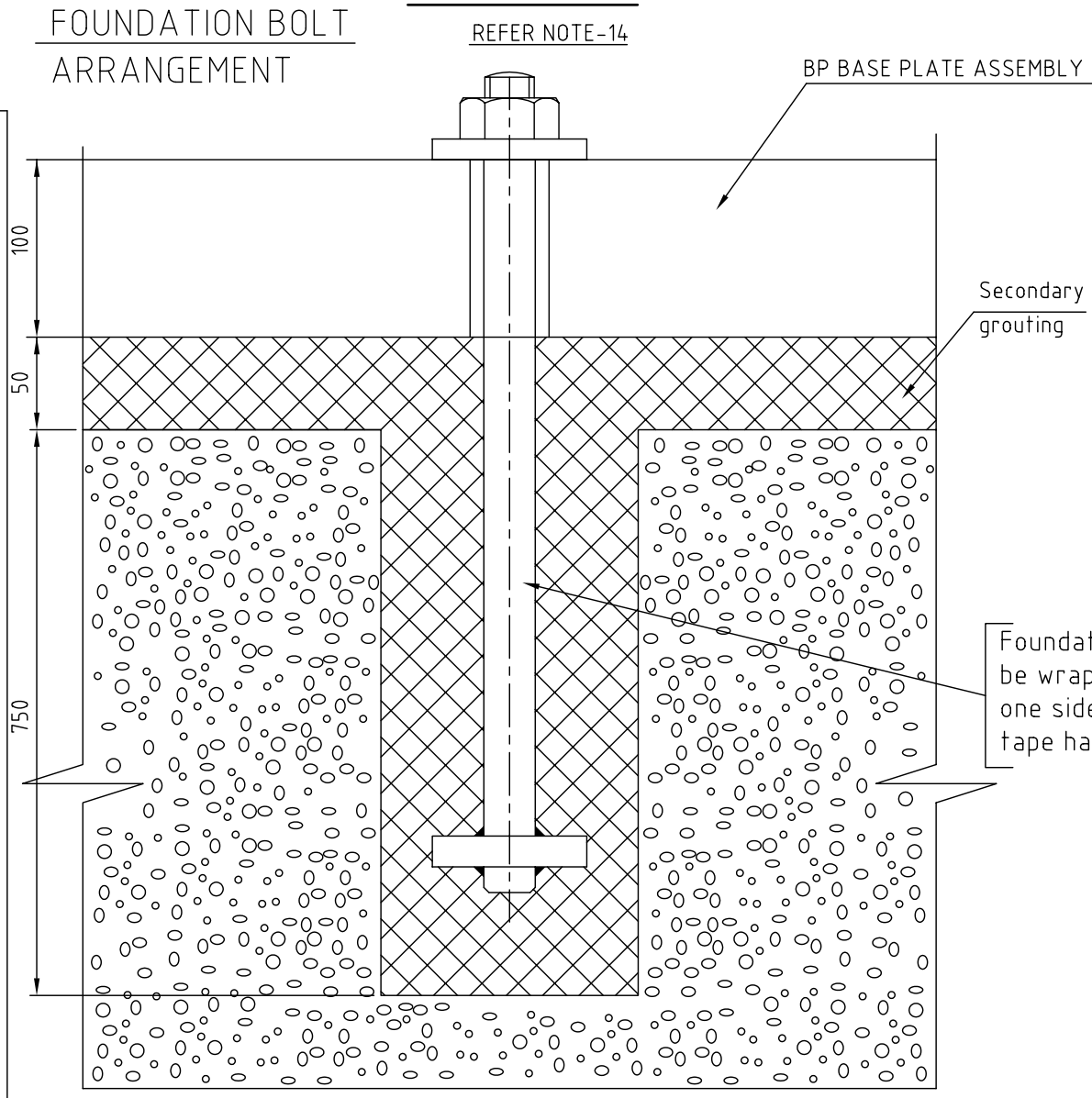
A- Working point of forces at front : 710 mm below turbine axis
B1, B2- Working point of forces at rear : 840 mm



THESE FORCES ALTERNATE IN DIRECTION

DETAIL 'M1'

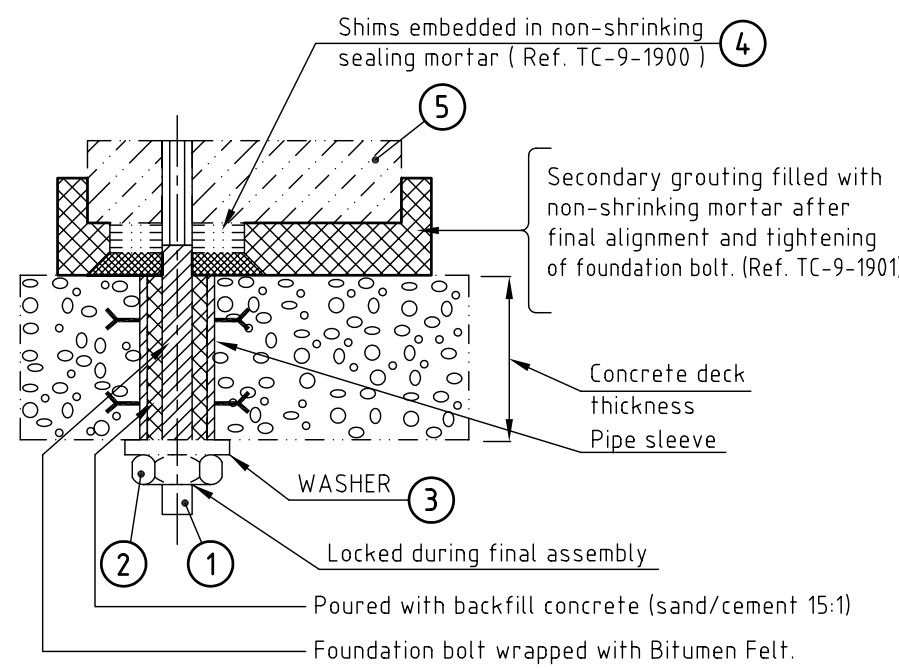
REFER NOTE-14



Note: Sealing mortar pouring and bitumen shall be part of ERECTION contract

DETAIL 'SP-WN'

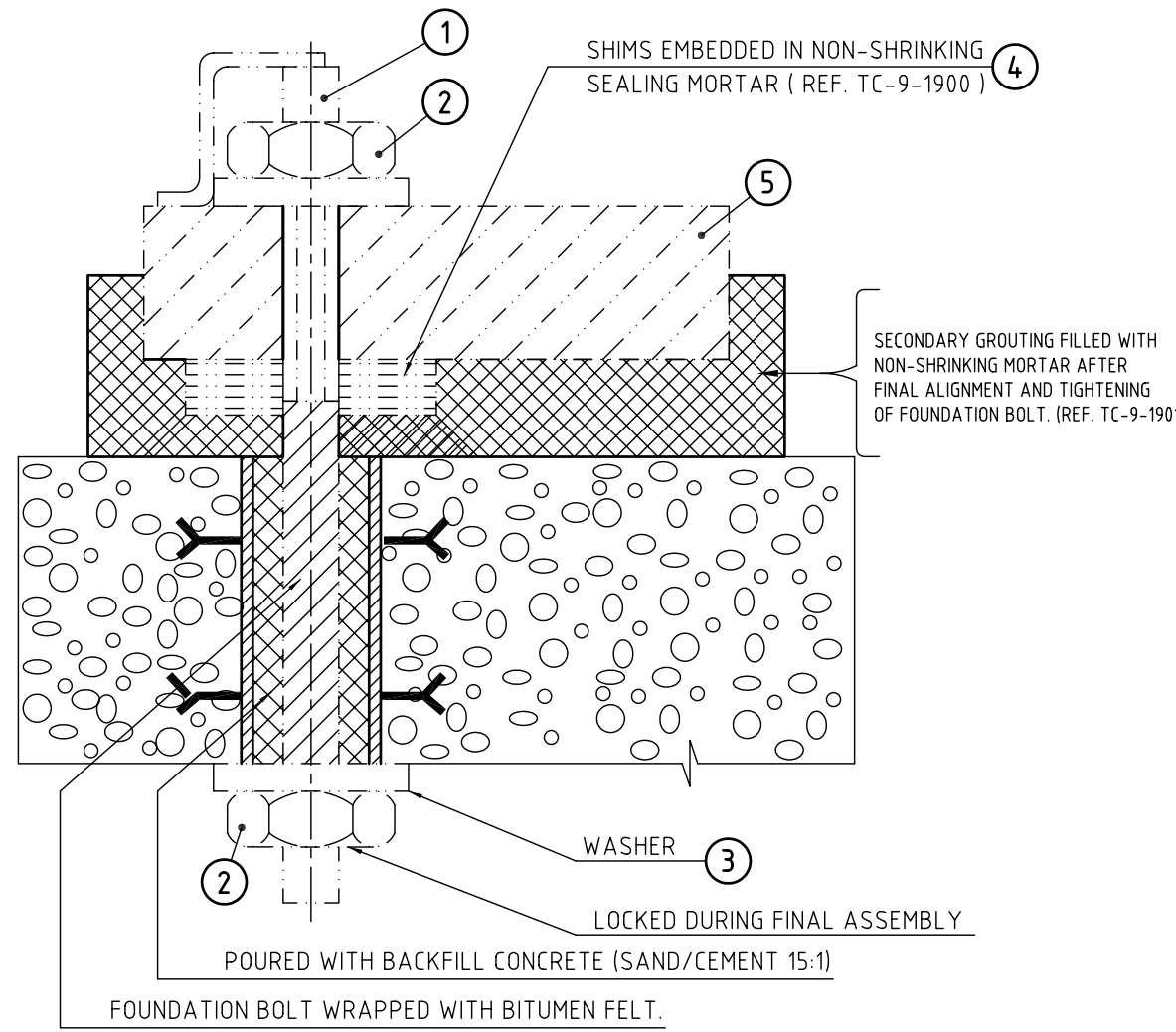
FOUNDATION BOLT ASSEMBLY
REFER NOTE-14



POS 1 TO 5 IN B.H.E.L. SCOPE OF SUPPLY

DETAIL 'SP-N'

REFER NOTE-14



POS 1 TO 5 IN B.H.E.L. SCOPE OF SUPPLY

STATUS :
PRELIMINARY

