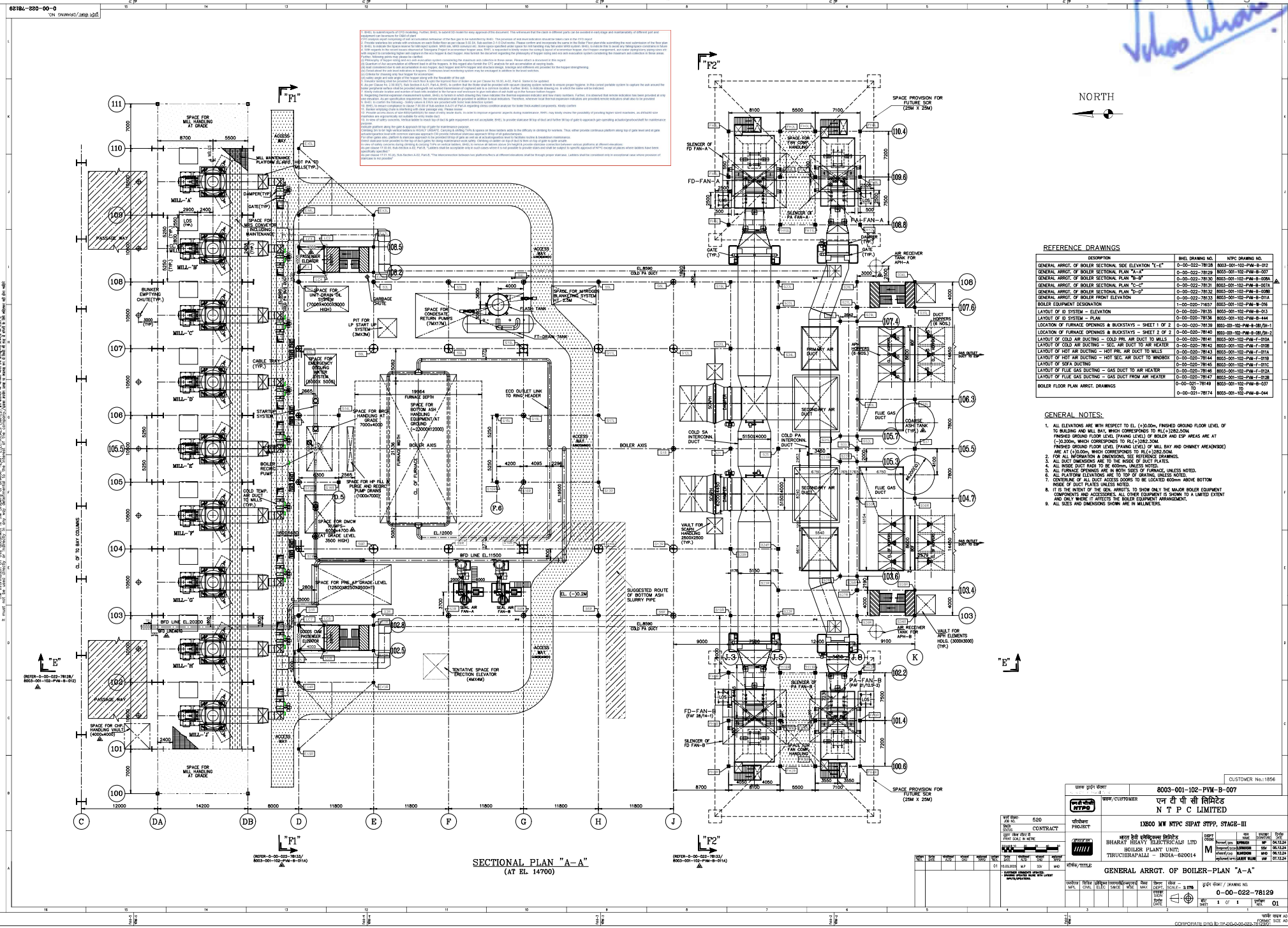

SECTIONAL PLAN "A-A"
(AT EL 14700)

1. BHEL to submit reports of CFD modelling. Further, BHEL to submit 3D model for easy approval of this document. This will ensure that the clash in different parts can be avoided in early stage and maintainability of different part and equipment can be ensured by Clash of parts.
2. To analyse ash bypassing and ash accumulation behaviour of the flue gas to be submitted by BHEL. The provision of ash level indicators should be taken care in the CFD report
3. Provide waterlines for arrears with enclosure on each Boiler floor as per clause 5.32.8A, Sub-section C-1-5.0vol works. Please confirm and incorporate the same in the Boiler Floor plan while submitting the next submission of the floor plan
5. BHEL to indicate the Space reserve for bib reject system, MRSS silo, MRS conveyor etc. Some space specified under space for mill handling may fall under MRS system. BHEL to indicate this to avoid any fitting/space constrains in future
6. Provide adequate space between equipment and structure for easy maintenance. Not much space is left between Bottom ash hopper & bottom ash slurry pipe, Coal bunker hopper, duct hopper arrangement, ace water piping/pipes piping lines etc with respect to considering higher ash capture in the eco hopper & duct hopper. Also furnish the document regarding the philosophy of hopper sizing and anti ash accumulation system considering the maximum ash collection in these areas. Further, following points may please be clarified.
(i) Philosophy of hopper sizing and eco ash evacuation system considering the maximum ash collection in these areas. Please attach a document in this regard
(ii) Quantum of duct accumulation at different load in all the hoppers. In this regard also furnish the CFD analysis for ash accumulation at varying loads.
(iii) Provision of ash level indicators in hoppers. Provision of ash level indicators in hopper and structural design, leakage and stiffeners etc provided for the hopper strengthening.
(iv) Detail about the ash level indicators in hoppers. Continuous level monitoring system may be envisaged in addition to the level switches.
(v) Criteria for cleaning only four hopper for economizer.
vi) safety angle and side angle of the hopper along with the flowability of the ash
7. Elevator landing sheet be provided for each floor & upto the topmost floor or ladder or as per Clause No.16.30, A-01, Part-II. Same to be updated.
8. Provide Ladder at EL 20200 & EL 11500 of BFD line. Provide ladder at EL 20200 of BFD line and provide platform at EL 11500 of BFD line to ensure proper hygiene. In this context portable system to capture the ash around the boiler peripheral surface shall be provided alongside on evacuated transmission of conjoined ash to a common location. Further, BHEL to indicate drawing no. in which the same will be indicated.
7. Ideally indicate location and number of load cells installed in the furnace roof enclosure to give indication of ash build up in the furnace bottom hopper
9. Regarding thermal expansion measurement system, BHEL to furnish in which drawing they have indicated the thermal expansion indicator and how many numbers. Further, it is observed that remote indication has been provided at only one elevation. As per specification requirement, the remote indication shall be provided in addition to local indications. Therefore, wherever local thermal expansion indications are provided remote indication shall also to be provided at all locations. Please confirm and incorporate the same in the Boiler Floor plan.
10. BHEL to ensure compliance to clause 7.30.03 of Sub-section A-A-01 of Part-A regarding stress condition analysis for boiler thick-walled components. Kindly confirm
11. Bunker emptying chute is interfering with clear passage way. Please review
12. Provide access doors of size 600X1800mm for ease of entry inside ducts. In order to improve ergonomic aspects during maintenance, BHEL may kindly review the possibility of providing higher sized manholes, as 450x600 size manholes are ergonomically not suitable for entry inside duct.
13. In view of safety concerns, Vertical ladder to reach top of duct & gate equipment are not acceptable. BHEL to provide staircase till top of duct and further till top of gate to approach gate operating actuator/gearbox/shaft for maintenance purpose.
Include platform along the gate & approach till top of gate for maintenance purpose.
Vertical ladder to reach top of duct & gate is not acceptable. BHEL to provide staircase till top of duct & gate to approach gate operating actuator/gearbox/shaft for maintenance purpose.
Unclimbable gratings must be provided on the top of duct & gate to prevent accidents. Provide adequate space on these ladders aside to the difficulty in climbing for workers. Thus, either provide continuous platform along top of gate level and at gate operating actuator level with transverse staircase approach OR provide individual staircase approach till top of all gates/dampers.
For other gates also, platform & staircase approach to be provided till top of gate as well as at actuator/gearbox level to facilitate routine & breakdown maintenance.
Direct clearance to be provided to the top of duct/ gates for doing maintenance work safely. Climbing on ladder on top of duct & then on top of gate is quite unsafe
In view of safety concerns during climbing & carrying TWPs on vertical ladders, BHEL to remove all ladders above 2m height & provide staircase connection between various platforms at different elevations
Clause 17.21.16 (d), Sub-Section A-02, Part-B, "Ladders shall be acceptable only in such cases where it is not possible to provide stairs and shall be subject to specific approval of NTPC except at places where ladders have been specifically specified."
As per clause 17.21.16 (d), Sub-Section A-02, Part-B, "The interconnection between two platforms/floors at different elevations shall be through proper staircase. Ladders shall be considered only in exceptional case where provision of staircase is not possible"

REFERENCE DRAWINGS

DESCRIPTION	BHEL DRAWING NO.	NTPC DRAWING NO.
GENERAL ARRGT. OF BOILER SECTIONAL SIDE ELEVATION "E-E"	0-00-022-78128	8003-001-102-PVM-B-012
GENERAL ARRGT. OF BOILER SECTIONAL PLAN "A-A"	0-00-022-78129	8003-001-102-PVM-B-007
GENERAL ARRGT. OF BOILER SECTIONAL PLAN "B-B"	0-00-022-78130	8003-001-102-PVM-B-008A
GENERAL ARRGT. OF BOILER SECTIONAL PLAN "C-C"	0-00-022-78131	8003-001-102-PVM-B-007A
GENERAL ARRGT. OF BOILER SECTIONAL PLAN "D-D"	0-00-022-78132	8003-001-102-PVM-B-009B
GENERAL ARRGT. OF BOILER FRONT ELEVATION	0-00-022-78133	8003-001-102-PVM-B-011A
BOILER EQUIPMENT DESIGNATION	1-00-020-71657	8003-001-102-PVM-W-016
LAYOUT OF ID SYSTEM - ELEVATION	0-00-020-78135	8003-001-102-PVM-B-043
LAYOUT OF ID SYSTEM - PLAN	0-00-020-78136	8003-001-102-PVM-B-444
LOCATION OF FURNACE OPENINGS & BUCKSTAYS - SHEET 1 OF 2	0-00-020-78139	8003-001-102-PVM-B-081/SH-1
LOCATION OF FURNACE OPENINGS & BUCKSTAYS - SHEET 2 OF 2	0-00-020-78140	8003-001-102-PVM-B-081/SH-2
LAYOUT OF COLD AIR DUCTING - COLD PRI. AIR DUCT TO MILLS	0-00-020-78141	8003-001-102-PVM-F-010A
LAYOUT OF COLD AIR DUCTING - SEC. AIR DUCT TO AIR HEATER	0-00-020-78142	8003-001-102-PVM-F-010B
LAYOUT OF HOT AIR DUCTING - HOT PRI. AIR DUCT TO MILLS	0-00-020-78143	8003-001-102-PVM-F-011A
LAYOUT OF HOT AIR DUCTING - HOT SEC. AIR DUCT TO WINDBOX	0-00-020-78144	8003-001-102-PVM-F-011B
LAYOUT OF SOFA DUCTING	0-00-020-78145	8003-001-102-PVM-F-011C
LAYOUT OF FLUE GAS DUCTING - GAS DUCT TO AIR HEATER	0-00-020-78146	8003-001-102-PVM-F-012A
LAYOUT OF FLUE GAS DUCTING - GAS DUCT FROM AIR HEATER	0-00-020-78147	8003-001-102-PVM-F-012B
BOILER FLOOR PLAN ARRGT. DRAWINGS	0-00-021-78149 TO 0-00-021-78174	8003-001-102-PVM-B-037 TO 8003-001-102-PVM-B-044

GENERAL NOTES:

1. ALL ELEVATIONS ARE WITH RESPECT TO EL. (+)0.00m, FINISHED GROUND FLOOR LEVEL OF TO BUILDING AND MILL BAY, WHICH CORRESPONDS TO RL(+)282.50M.
FINISHED GROUND FLOOR LEVEL (PAVING LEVEL) OF BOILER AND ESP AREAS ARE AT (-)0.200m, WHICH CORRESPONDS TO RL(+)282.30M.
FINISHED GROUND FLOOR LEVEL (PAVING LEVEL) OF MILL BAY AND CHIMNEY AREA(INSIDE) ARE AT (+)0.00m, WHICH CORRESPONDS TO RL(+)282.50M.
2. FOR ALL INFORMATION & DIMENSIONS, SEE REFERENCE DRAWINGS.
3. ALL DUCT DIMENSIONS ARE TO THE INSIDE OF DUCT PLATES.
4. ALL INSIDE DUCT RADII TO BE 600mm, UNLESS NOTED.
5. ALL FURNACE OPENINGS ARE IN BOTH SIDES OF FURNACE, UNLESS NOTED.
6. ALL PLATFORM ELEVATIONS ARE TO TOP OF GRATING, UNLESS NOTED.
7. CENTERLINE OF ALL DUCT ACCESS DOORS TO BE LOCATED 600mm ABOVE BOTTOM INSIDE OF DUCT PLATES UNLESS NOTED.
8. IT IS THE INTENT OF THE GEN. ARRGT'S. TO SHOW ONLY THE MAJOR BOILER EQUIPMENT COMPONENTS AND ACCESSORIES. ALL OTHER EQUIPMENT IS SHOWN TO A LIMITED EXTENT AND ONLY WHERE IT AFFECTS THE BOILER EQUIPMENT ARRANGEMENT.
9. ALL SIZES AND DIMENSIONS SHOWN ARE IN MILLIMETERS.

CUSTOMER No.:1856

8003-001-102-PVM-B-007

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N T P C LIMITED

1X800 MW NTPC SIPAT STPP, STAGE-III

भारत हेवी इलेक्ट्रिकल्स लिमिटेड
BHARAT HEAVY ELECTRICALS LTD
BOILER PLANT UNIT:
TIRUCHIRAPALLI - INDIA-620014

GENERAL ARRGT. OF BOILER-PLAN "A-A"

0-00-022-78129

01	15.03.2023	A.F	DD	MKD			

CORPORATE DRG ID:TP-DG-0-00-022-78129