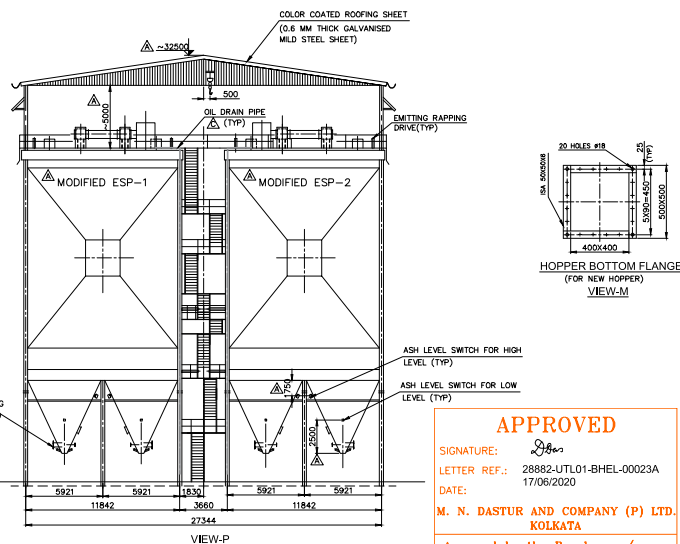
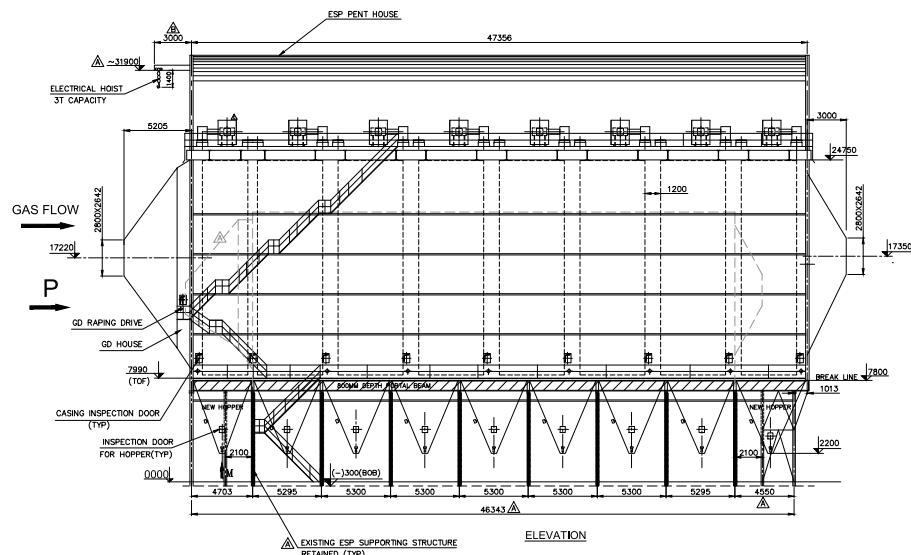


078562-111-00-1
ON DTM/PSD

ALL DIMENSIONS ARE IN MILLIMETERS



APPROVED
SIGNATURE: [Signature]
LETTER REF.: 28882-UTL01-BHEL-00023A
DATE: 17/06/2020
M. N. DASTUR AND COMPANY (P) LTD.
KOLKATA

Approval by the Purchaser / Consulting Engineer does not relieve the Contractor of his responsibility for the correctness of design, detail, manufacture and satisfactory performance of the equipment.

DESIGN DATA:

SL. NO.	DESCRIPTION	100% COAL	75% COAL + 25% BF GAS
a.	FLUE GAS FLOW, m ³ /s	190	230
b.	GAS TEMPERATURE, deg C	170	240
c.	INLET DUST BURDEN, g/m ³ Air	101.4	65
d.	OUTLET DUST BURDEN, mg/m ³	BELOW 50	BELOW 50
e.	COLLECTION EFFICIENCY, %	99.951	99.923
f.	COLLECTION AREA, m ²	82370	82370
g.	SPECIFIC COLLECTION AREA (SCA), m ² /m ³ A	338.26	271.17
h.	MIGRATION VELOCITY, m/s	0.1769	0.1895
i.	ASPECT RATIO	2.05	2.05
j.	ESP PRESSURE DROP, mmWC	18	18

SALIENT DATA:

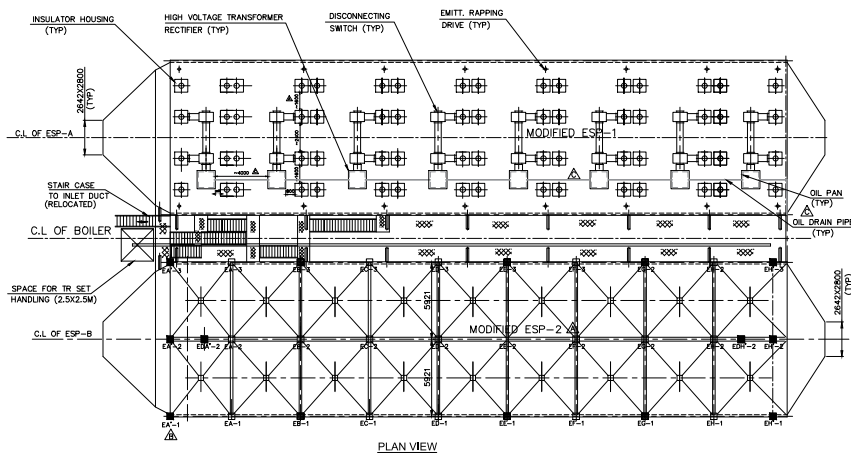
SL. NO.	DESCRIPTION	DETAILS
a.	DETAILS OF TRANSFORMER RECTIFIER (TR) SET	SINGLE PHASE TR SET, 800V/60A, 12000A/60A, 070:16 NOS. PER BOLTER
b.	HEIGHT OF EACH TR SET	1800 MM HEIGHT
c.	DETAILS OF COLLECTING ELECTRODE	1.25 mm THICK, 750 mm WIDE, 16.5 m HEIGHT, 15.513 MATERIAL, 250 NOS PER BOLTER
d.	DETAILS OF EMITTING ELECTRODE	5.7 mm DIA STAINLESS STEEL WIRE, CONFORMING TO GANBA SOL (2) 2 IN 66 (EQUIVALENT TO UNS SOL), 8 mm THICK MILD STEEL PLATE CONFORMING TO IS 2062 (SAME THICKNESS AS EXISTING ESP)
e.	MATERIAL AND THICKNESS OF ESP CASING, FUNNEL AND HOPPERS	LIGHTLY RESIN BONDED MINERAL WOOL 75 mm THICK 100 KG/M ³ DENSITY, CLADDING MATERIAL: G SHEET, 0.63 mm THICKNESS
f.	INSULATION TYPE, MATERIAL, THICKNESS AND CLADDING SHEET MATERIAL, & THICKNESS	LIGHTLY RESIN BONDED MINERAL WOOL 75 mm THICK 100 KG/M ³ DENSITY, CLADDING MATERIAL: G SHEET, 0.63 mm THICKNESS
g.	RAPPING MECHANISM TYPE	TAPPING HAMMER TYPE
h.	COLLECTING ELECTRODE RAPPING DRIVE	070:16 NOS PER BOLTER, LOCATION: SIDE OF ESP CASING
i.	EMITTING ELECTRODE RAPPING DRIVE	070:32 NOS PER BOLTER, LOCATION: ESP ROOF
j.	GD SCREEN RAPPING DRIVE	070:2 NOS PER BOLTER, LOCATION: GD HOUSING
k.	GD SCREEN PLATE THICKNESS	3 mm THICKNESS
l.	NUMBER OF ESPs PER BOLTER	2 NOS.
m.	NUMBER OF FIELDS PER BOLTER	16 NOS.
n.	NUMBER OF GAS PASSAGES PER ESP	28 NOS.

NOTES CONTINUED:

- A) EXISTING CABLE TRAYS/SUPPORTS ETC WITHIN ECR BUILDING CAN BE UTILIZED IF SUITABLE AND WHEREVER REQUIRED EXISTING CABLE TRAYS AND SUPPORTS ALL WITH GALVANIZED STEEL SHALL BE MODIFIED/STRENGTHENED/REPLACED AS PER REQUIREMENT
- B) EXISTING CABLE TRAYS AND SUPPORTS OUTSIDE ECR & ESP SHALL BE DISMANTLED AND NEW CABLE TRAY AND SUPPORTS (ALL WITH GALVANIZED STEEL) SHALL BE PROVIDED AS PER REQUIREMENT.
- C) HOWEVER, ALL CABLES SHALL BE REMOVED AND NEW CABLES SHALL BE SUPPLIED AND LAID.
- DRIP TRAYS SHALL BE PROVIDED OF TOTAL VOLUME OF COOLING FLUID. DRIP TRAYS TO BE CONNECTED TO A SEPARATOR CHAMBER THROUGH DRAIN PIPES. THE SEPARATOR CHAMBER LOCATED AT GROUND LEVEL TO BE SIZED TO CONTAIN OIL FROM DRAINAGE OF ANY TWO TR SETS. CABLE TRENCHES ARE PASSING NEAR TO ECR BUILDING UPTO IN FAN AREA CARRYING VARIOUS CABLES. IF SAME OBSTRUCT REVAMP/UPGRADED ESP, THESE CABLES SHALL BE RE-ROUTED BEFORE REVAMPING OF ESP BY PROVIDING NEW CABLE TRENCHES/CABLE ROUTING ETC. ALL CIVIL AND STRUCTURAL WORKS REQUIRED FOR COMPLETION OF NEW CABLE TRENCH / CABLE GALLERY ETC. SHALL BE INCLUDED IN THE SCOPE OF WORK. THIS MAY REQUIRE TIKV JOINTING KIT AND SAME SHALL BE IN BIDDER SCOPE
- MOBILE ALUMINUM LADDER WILL BE SUPPLIED FOR MAINTENANCE OF ASH LEVEL SWITCHES.

NOTES:

- EXISTING ESP SIZE 2 NOS. FAA-7X30H-2X57125-2 (300MM PITCH), MODIFIED ESP SIZE: FAA-1X30M-6X40M+1X37.5M-2X56165-2 (400 MM PITCH), NUMBER OF MODIFIED ESP PER BOLTER: 2.
- EL. ±0.00 CORRESPONDS TO RL. +11.0 M LEVEL WHICH REFERS TO FFL OF ESP AREA. EL. -0.3M REFERS TO BOB OF ESP SUPPORTING STRUCTURE.
- METHOD OF ESP RENOVATION & RETROFITTING ARE DESCRIBED BELOW:
A) EXISTING ESP CASING & ITS COLUMNS, INTERNALS, HOPPERS WILL BE DISMANTLED. NEW CASING PANEL & ITS COLUMN, WILL BE BUILT UP TO ACCOMMODATE 16.5 M FIELD HEIGHT WITH NEW HOPPERS.
B) EXISTING SUPPORTING STRUCTURE & ITS FOUNDATION ARE RETAINED. AT INLET SIDE, ONE ADDITIONAL FIELD OF 3 M LENGTH WILL BE INSTALLED AFTER DISMANTLING STAIR CASE & ITS COLUMN. AT OUTLET SIDE, ONE ADDITIONAL FIELD OF 3.75M LENGTH WILL BE INSTALLED AFTER DISMANTLING STAIR CASE & ITS COLUMN.
C) ALL THE HOPPERS BELOW EXISTING ESPs WILL BE REPLACED WITH NEW HOPPERS WITH 6MM THICK SS PLATE AND SS LINING OF 1.5 M SHALL BE PROVIDED FOR ALL HOPPERS.
D) ESP THERMAL INSULATION LIGHTLY RESIN BONDED MINERAL WOOL 75 MM THICKNESS 120 KG/M³ DENSITY AND CLADDING SHEET 0.63 MM THICK GJ PLAIN SHEET.
- REFER DRAWING NO. 0-00-111-2768T FOR "LAYOUT OF AND DUCTING DRAWING"
- THIS DRAWING IS APPLICABLE FOR ALL FOUR UNITS (UNIT-2,3,4&5).



16.06.2020	C	REFER DASTUR COMMENTS VIDE EMAIL DT:15.06.20	KJADHU	SVANSHAW	KJ.PADH
08.06.2020	B	REFER DASTUR COMMENTS VIDE EMAIL DT:08.06.20	KJADHU	SVANSHAW	KJ.PADH
02.06.2020	A	REFER DASTUR COMMENTS VIDE EMAIL DT:02.06.20	KJADHU	SVANSHAW	KJ.PADH
02.06.2020	A	REFER DASTUR COMMENTS VIDE EMAIL DT:02.06.20	KJADHU	SVANSHAW	KJ.PADH
DATE	REV	REASON FOR REVISION	DRAWN	CHECKED	APPROVED
RASHTRIYA ISPAT NIGAM LTD VISAKHAPATNAM STEEL PLANT REVAMPING AND UPGRADEATION OF 4 NOS OF ESPs SYSTEM FOR TPP BOILERS					
DRG. TITLE			GENERAL ARRANGEMENT OF MODIFIED ESP FOR ESP NOS. 2 TO 5		
PRINCIPAL CONSULTANT			M.N.DASTUR & COMPANY (P) LTD. CONSULTING ENGINEERS, KOLKATA		
CLIENT DRG NO.			1-00-111-29384 REV.NO. C		
BHEL DRG NO.			BHARAT HEAVY ELECTRICALS LTD. UNIT: BOILER MAINTENANCE PLANT. RANBET - 823, 206.		
SUBMITTED FOR			SCALE: 1:100		
APPROVAL			DATE		
INFORMATION			DATE		
CONSTRUCTION			DATE		
JOB NO. 28882			DRG. NO. 28882-UTL01-BHEL-00023A		

Size A1
12