PE-DG-100-511-M001

DRAWING NO.

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN MM

E=807800
N=2407850 (CO-ORDINATE AS PER TENDER STAGE PLOT PLAN)

NORTH

WIND SPEED (Knots)
>=22
17-21
11-17
7-11
4-7
1-4

WIND ROSE

LEGEND	DESCRIPTION
	FENCING
	COMPOUND WALL

ITEM No.	DESCRIPTION	ZONE
1	765kV GIS ROOM	G-7
2	400kV GIS ROOM	F-8
3	765kV,400kV & 33kV GIS COMMON CONTROL ROOM	G-8
4	C.W. DUCT CORRIDOR	G-8
5	TRANSFORMER YARD	G-8
6	DG SET	H-8
7	POWER HOUSE BUILDING	H-8
8	SERVICE BUILDING	H-7
9	BOILER UNITS	H-8
10	MILL BAY	H-8
11	ELECTROSTATIC PRECIPITATOR	H-8
12	CHIMNEY	J-8
13	E.S.P CUM FGD CONTROL ROOM	J-8
14	CPU REGENERATION FACILITY	H-6
15	DRY FLY ASH SILO & DEWATERING BIN (SPACE FOR FUTURE UNIT)	J-6
16	AUX. BOILER	G-7
17	STP AREA NEAR WATER POND	F-8
18	STP AREA NEAR LIMESTONE UNLOADING HOUSE	J-8
19	C.W. PUMP HOUSE	G-9
20	C.W. CHLORINATION CUM CHEMICAL TREATMENT BLDG.	G-9
21	COOLING TOWER (CCT)	G-F/10/9/8
22	TOILET BLOCK FOR BOILER AREA	J-8
23	AHP COMPRESSOR BUILDING	J-7
24	WTP & ETP AREA	H-7/6
25	FIRE WATER TANK & F.W. PUMP HOUSE	G-7
26	F.O. TANKS	H-7
27	FUEL OIL PUMP HOUSE	H-7
28	PERMANENT STORE	G-7
29	CMB	H-7
30	SMEPI OFFICE CUM STORE	G-8
31	33kV GIS ROOM	G-8
32	FIRST-AID CENTER	G-8
33	WORKSHOP	G-9
34	FIRE STATION	F-8
35	LAYDOWN / PREASSEMBLY AREA	G/H/J-9
36	HYDROGEN GENERATION PLANT	J-10
37	MAIN GATE COMPLEX	F-8
38	THERMAL PROJECT BUILDING	F-8
39	WATCH TOWER	ALONG PHOTOPHERAL ROAD/PLANT BOUNDARY
40	RAW WATER RESERVOIR	H-12
41	DRY FLY ASH SILO & DEWATERING BIN	J-6
42	SILO UTILITY BUILDING CUM HCSD PUMP HOUSE	J-6
43	CRUSHER HOUSE	H-6
44	CRUSHED COAL STOCK PILE	G-6
45	STACKER RECLAIMER	G-6
46	ASH WATER TRANSFER PUMP HOUSE	J-6
47	RAINWATER HARVESTING POND AND PUMP HOUSE	J-9
48	SETTLING CUM SLUDGE TANK	J-6
49	ASH WATER PUMP HOUSE	J-7
50	AHP MCC-1 CUM CONTROL ROOM	H-7
51	CANTEEN BUILDING	F-8
52	COMPRESSOR HOUSE	G-7
53	WDSH BRIDGE	J-7
54	CST & PUMP HOUSE	G-7
55	FGD ABSORBER FOR UNIT#1,2,&3	J-7/8
56	FGD ABSORBER RECIRCULATION PUMP FOR UNIT#1,2&3	J-7/8
57	COMMON FGD AUXILIARY ABSORBER TANK	J-8
58	FGD PROCESS WATER TANK	J-7
59	COMMON LIMESTONE UNLOADING HOUSE	J-8
60	COMMON LIMESTONE CRUSHER HOUSE	J-7
61	LIMESTONE SILO	J-7
62	DELETED/RESERVED	--
63	LIMESTONE SLURRY STORAGE TANK & AGITATOR	J-7
64	GYPSUM DEWATERING BUILDING	J-7
65	GYPSUM SHED	J-7
66	DELETED/RESERVED	--
67	COMMON FGD WASTE WATER TREATMENT BUILDING	J-7
68	FGD FILTRATE TANK & AGITATOR	J-7
69	DM PLANT AREA	H-6
70	AMMONIA STORAGE AND HANDLING SYSTEM	H-6
71	33/11kV CONSTRUCTION POWER SUBSTATION (CUSTOMER SCOPE)	F-8
72	NOT USED	--
73	BOILER MAINTENANCE BUILDING	H-7
74	SPACE FOR AIR WASHER	H-7/8
75	CHP MCC-2	H-7
76	PUMP CUM COMPRESSOR HOUSE FOR DSS/DFDS	H-6
77	COAL PILE RUN-OFF POND	H-6
78	DOZER SHED	F-5
79	CHP MAINTENANCE SHOP	G-6
80	TOILET BLOCK FOR CHP AREA	H-6
81	FGD DG SHED	J-8
82	IDCT SWITCHGEAR ROOM	G-F/10/9/8
83	FIRE WATER BOOSTER PUMP HOUSE	H-7
84	RESERVED	--
85	MINES TPS SUB STATION (MINES SCOPE)	J-6
86	BIOMASS HANDLING SYSTEM	H-6
87	CLARIFIED TANK AND CLARIFIED PUMP HOUSE	H-7
88	SIMULATOR BUILDING (PART OF SERVICE BUILDING)	--
89	RESERVED	--
90	RESERVED	--
91	DM TRANSFER AND POTABLE WATER PUMP HOUSE	H-7
92	DM STORAGE TANK	H-6
93	MRS SILO	H-7/8
94	CHEMICAL BUILDING	J-7
95	FIRE TREATMENT PLANT	J-7
96	RAW WATER PUMP HOUSE	H-11
97	RESERVED	--
98	AHP MCC-2	H-8
99	SLURRY PUMP HOUSE CUM AHP MCC-3/4/5	H-8/7
100	FGD FIRE RACK	J-8/7
101	LHP & GHP MCC	J-8
102	CHP MCC-1 CUM CONTROL ROOM	H-6
103	FOAM PUMP HOUSE	G-7
104	AMBIENT AIR QUALITY MONITORING STATION (AQMS-4NOS.)	--
105	RAIN WATER COLLECTION POND & P/H-1	K-8
106	RAIN WATER COLLECTION POND & P/H-2	D-9
107	WIND BARRIER AROUND COAL STOCKPILE	F-G/6/5

NOTES:
1. ALL DIMENSIONS AND LEVELS ARE IN METERS.
2. ±0.00 OF MAIN PLANT AREA CORRESPONDS TO RL(+)203.0M.
2.1. FFL OF MAIN PLANT BUILDING IS EL. 0.00M .
2.2. TOP OF PAVING FOR BOILER / ESP AREA EL. (-) 0.20M .
2.3. TOP OF PAVING FOR TRANSFORMER YARD EL. (-) 0.10M .
2.4. FFL OF MILL BUNKER BUILDING AND CHIMNEY EL. 0.00M.
2.5. FFL OF OTHER BUILDINGS IN MAIN PLANT AREA EL. 0.00M .
2.6. FFL OF OFFSITE BUILDINGS 500 MM ABOVE FGL OF RESPECTIVE AREA.
2.7. FGL OF BOILER AND POWER HOUSE AREA SHALL BE RL 202.500M.

3.BUILDING /FACILITIES OTHER THAN BHEL SCOPE ARE SHOWN AS INDICATIVE ONLY. REFERENCE DRGS.

TENDER STAGE PLOT PLAN: 18A03-DWG-M-002A

CONVERSION OF CO-ORDINATES FROM PRESNT CO-ORDINATE SYSTEM TO EARLIER CO-ORDINATE SYSTEM SHOWN IN CUSTOMER PLOT PLAN OF TENDER STAGE:-

ORIGIN (N-0, E-0) OF PRESNT CO-ORDINATE CORRESPONDS TO (N-2407850, E-807800) OF EARLIER CO-ORDINATE SYSTEM

NORTH CO-ORDINATE OF ANY POINT IN EARLIER CO-ORDINATE SYSTEM = PRESENT NORTH CO-ORDINATE + 2407850

EAST CO-ORDINATE OF ANY POINT IN EARLIER CO-ORDINATE SYSTEM = PRESENT EAST CO-ORDINATE + 807800

DEVELOPMENT CONSULTANTS PVT. LIMITED.

Reviewed only for general conformance with contract drawings and specifications. Contractor to be responsible for any errors and for fulfillment of detailed requirements of contract documents

ACTION 2 | DATE 01/07/2024

DISTRIBUTED BY.SM

1	Approved	3	Returned with Comments. Please Resubmit.
2	Approved except as noted. Forward final drawings	4	For information only

SEE COVERING LETTER

LETTER REF NO. | DATE.

REV.	DATE	ALTD	CHD	APPD
02	22.06.24	MK	KK	BKA
01	REVISED INLINE WITH COMMENTS RCVD. FROM CUSTOMER DTD.19.04.2024 & VC DATED 13.05.2024.			

REV.	DATE	ALTD	CHD	APPD
01	21.05.24	MK	KK	BKA
01	REVISED INLINE WITH COMMENTS RCVD. FROM CUSTOMER DTD.19.04.2024			
02	REVISED INLINE WITH RCVD. INPUT FROM ISG CHP/AHP FACILITIES.			
03	REVISED INLINE WITH RCVD. INPUT FROM TBG			

CUSTOMER: NLC INDIA LIMITED, NEYVELI, TAMILNADU

CUSTOMER'S CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS, KOLKATA MUMBAI CHENNAI NEW DELHI

JOB NO: 511

STATUS: CONTRACT

DISTRIBUTION

TO

No. OF

NLC TALABIRA THERMAL POWER PROJECT (NTTPP) (3×800 MW PHASE-I)

BHARAT HEAVY ELECTRICALS LTD, POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA

DEPT CODE		NAME	SIGN	DATE
M	DRN.	MK	SD/-	06.04.24
	DESN.	MK	SD/-	06.04.24
	CHD.	KK	SD/-	06.04.24
	APPD.	BKA	SD/-	06.04.24

TITLE: PLOT PLAN

DEPT. | SCALE: | DRAWING NO. PE-DG-100-511-M001

SIGN. | DATE | SHEET 1 OF 1 | REV. 02

FORMAT SIZE A0

ELECTRONIC FILE NAME:

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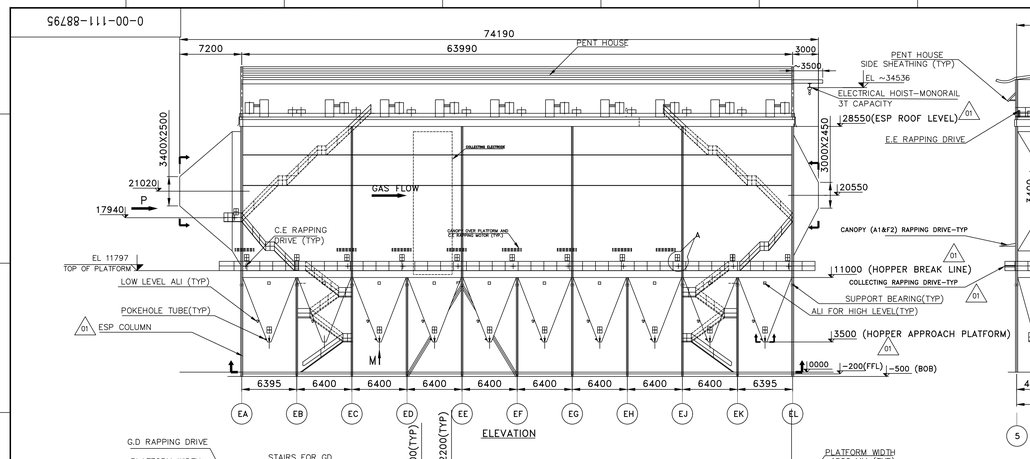
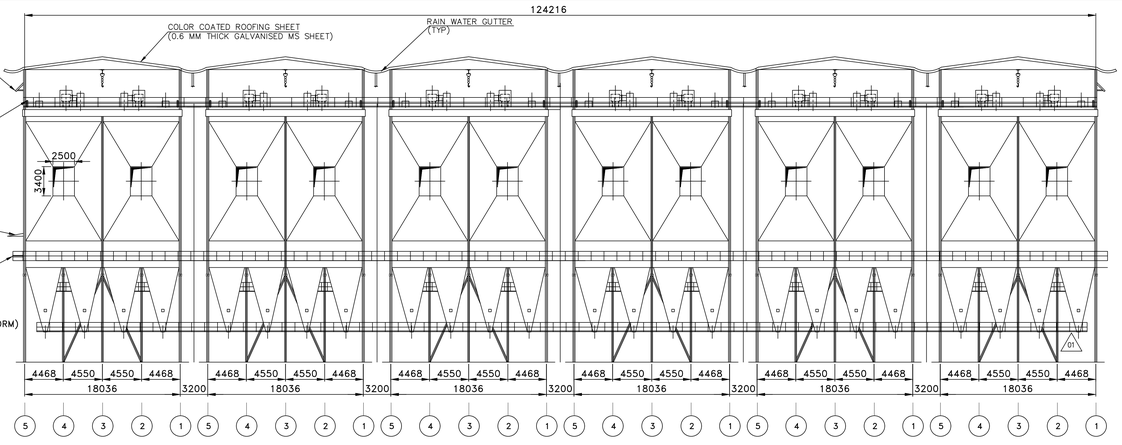
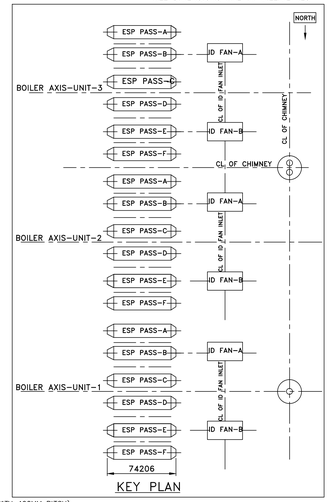
0-00-111-88795



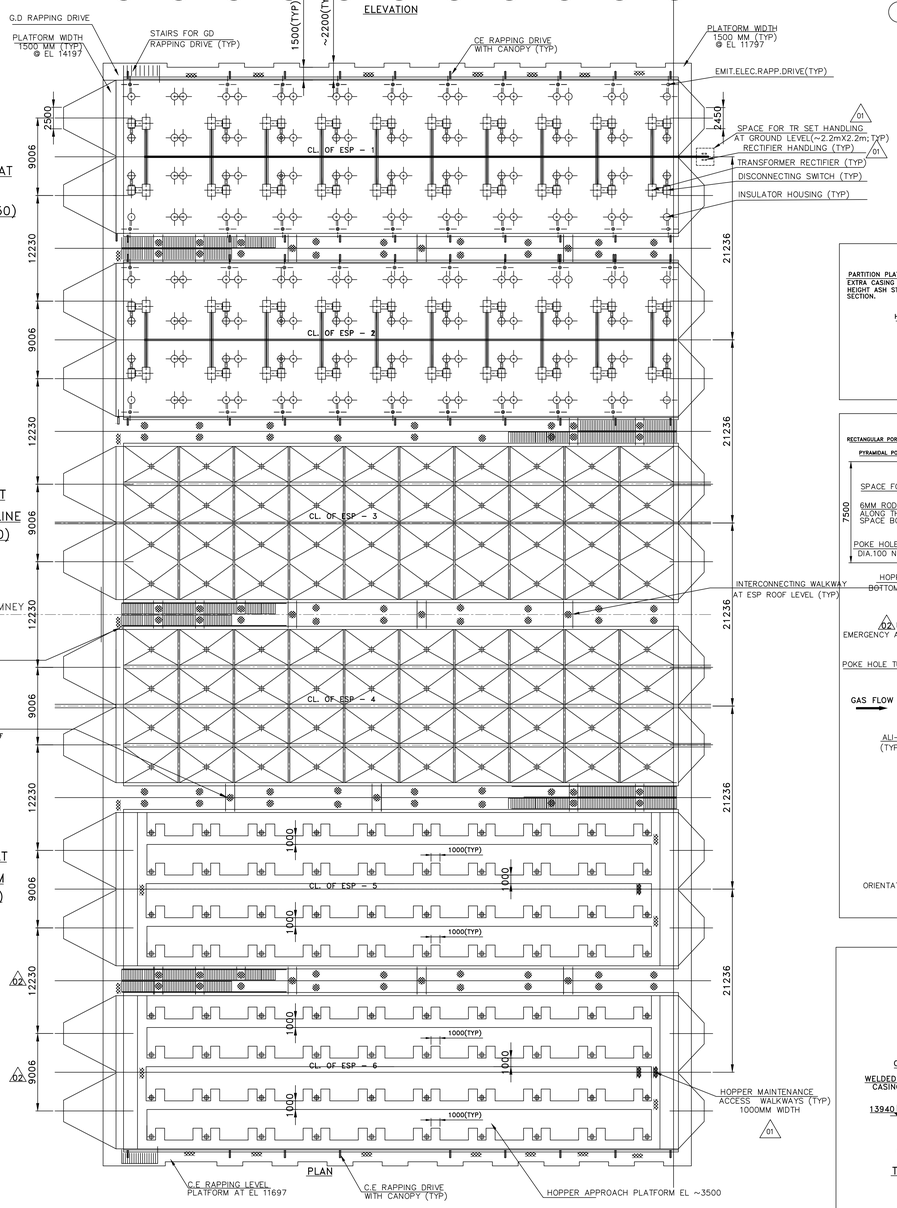
ELEVATION



VIEW-P



KEY PLAN

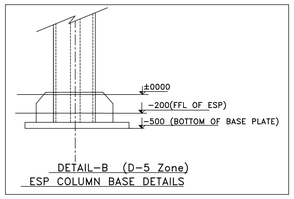


PLAN SHOWN AT ESP ROOF LEVEL(EL 28550)

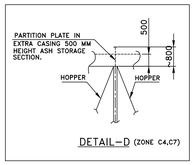
PLAN SHOWN AT HOPPER BREAKLINE LEVEL(EL 11000)

PLAN SHOWN AT HOPPER BOTTOM LEVEL(EL 3500)

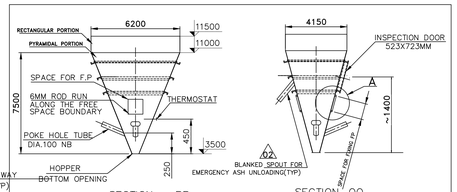
PLAN



DETAIL-B (D-5 Zone)
ESP COLUMN BASE DETAILS

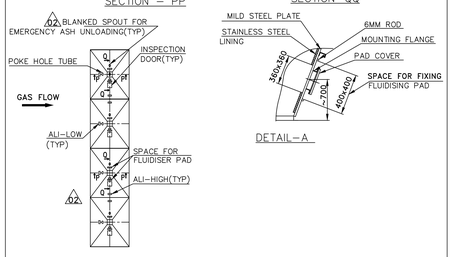


DETAIL-D (ZONE C4,C7)



SECTION - PP

SECTION-QQ

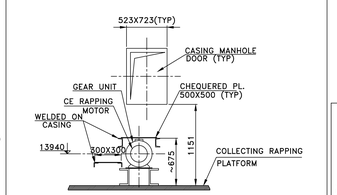


DETAIL-A

KEY PLAN FOR ONE FIELD SCALE = NTS

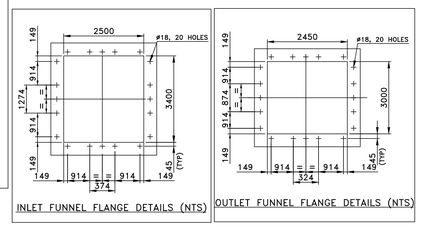
ORIENTATION OF POKE HOLE TUBES / SPACE FOR FLUIDISER PADS W.R.T HOPPER INSPECTION DOOR

HOPPER - DETAILS.



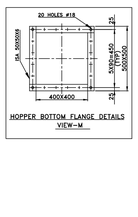
TYPICAL ACCESS ARRANGEMENT FOR CASING MANHOLE DOOR

DETAIL-A (ZONE C3)



INLET FUNNEL FLANGE DETAILS (NTS)

OUTLET FUNNEL FLANGE DETAILS (NTS)



HOPPER BOTTOM FLANGE DETAILS VIEW-M

SALIENT DATA:

Sl. No.	DESCRIPTION	
a.	RATING & NO.OF TR SET PER BOILER	95 kV & 1000 mA ; 120 (WITH SILICONE OIL). 01
b.	WEIGHT OF EACH TR SET	~1950 Kg
c.	WEIGHT OF EACH CE RAPPING MOTOR	~155 Kg
d.	WEIGHT OF EACH EE RAPPING MOTOR	~145 Kg
e.	MATERIAL, THICKNESS AND HEIGHT OF COLLECTING ELECTRODE.	1.25 mm THICK MILD STEEL, NOMINAL HEIGHT: 16.5m
f.	MATERIAL AND DIAMETER OF EMITTING ELECTRODE.	2.7 mm DIA STAINLESS STEEL WIRE CONFORMING TO GARBA 904L (or) 2 RK 66 (or) UNS N 08904 (EQUIVALENT TO UHB 904L).
g.	MATERIAL AND THICKNESS OF GD SCREEN	2mm THICK MILD STEEL PERFORATED SHEET AT INLET & PLAIN SHEET AT OUTLET 01
h.	MATERIAL AND THICKNESS OF ESP CASING, FUNNEL	6 mm THICK MILD STEEL PLATE CONFORMING TO IS 2062
i.	MATERIAL AND THICKNESS OF ESP HOPPER	8 mm THICK MILD STEEL PLATE CONFORMING TO IS 2062
j.	MATERIAL AND THICKNESS OF ESP HOPPER LINING	16 SWG CONFORMING TO SS 304 (LINING UPTO ONE THIRD HEIGHT FROM HOPPER BOTTOM AND FOR TRANSITION PIECE)
k.	ESP PENT HOUSE ROOF SHEET & THICKNESS	SINGLE TROUGHED PROFILE, PERMANENTLY COLOR COATED M.S GALVANISED, 0.6 MM THICK SHEET AS PER IS 513 & GRADE 275 AS PER IS:277. EXTERNAL FACE COLOUR : BLUE (RAL 5012). INTERNAL FACE COLOUR : GREY (RAL 9002).
l.	INSULATION TYPE, MATERIAL, THICKNESS AND CLADDING SHEET MATERIAL & THICKNESS	LIGHTLY RESIN BONDED MINERAL WOOL 75 mm THICK 100 KG/M3 BULK DENSITY. CLADDING MATERIAL: RIBBED ALUMINIUM SHEET, 0.71 mm THICKNESS.
m.	MATERIAL AND THICKNESS OF ESP INNER ROOF	6 mm THICK MILD STEEL PLATE CONFORMING TO IS 2062
n.	TR SET DIMENSION (APPROX.)	L = 1.74M, W =2.09M, H = 2.24M
o.	ASH LEVEL INDICATORS FOR HOPPERS	240 Nos HIGH ALI 240 Nos LOW ALI REFER NOTE 22. 01
p.	OPACITY MONITORS	6 Nos. REFER NOTE 17. 01
q.	Water wash system	Service water requirement: 100 m3/hr @ 5 kgf/m2(g) per Pass/boiler 02
r.	GRATING & TOE GUARD & HANDRAILS	40 mm thick Grating with 6mm x 100mm Toe Guard, 32NB Handrails. 03
s.	STEP TREAD & RISER DIMENSION	32mm x 275mm x 1200mm with riser of 180mm(max)

Sl. No.	Description	Unit	Guarantee point	Design Point
1.	Boiler load		TMCR DC	VWO WC
2.	Gas flow rate to ESP (Wet)	m^3/s	1190	1377
3.	Gas flow rate to ESP (Wet)	Nm^3/sec	776.5	839.5
4.	Gas temperature at ESP inlet	°C	125	145
5.	Precipitator mechanical design temperature	°C	200	
6.	Short temp excursion temperature (for approx. thirty (30) minutes at a time	°C	300	
7.	Dust concentration at inlet of ESP (Dry Vol @ 6% O2)	gm/Nm^3	57.8	99.8
8.	Moisture content in flue gas	% (Wt)	10.171	14.354
9.	Minimum Specific Collection Area as per specification (for 400 mm pitch)	$m^2/m^3/s$	-	200
10.	Specific Collection Area (Provided)	$m^2/m^3/s$	329.45 (N)	256.24 (N-1)
11.	Spacing between collecting electrodes	mm	400	
12.	No. of series electrical fields out of operation	-	NIL	One
11.	Required outlet dust concentration of ESP at the above conditions (Dry Vol @ 6% O2)	mg/Nm^3	<15	< 30
12.	Required Collection efficiency of ESP at the above conditions	%	> 99.9740	> 99.9699
13	Treatment Time	sec	66.176	51.266
14	Flue gas velocity	m/s	0.68	0.79
15	Casing withstand Pressure	mmwc	+/- 660	
16	Pressure Drop Across ESP	mmwc	25 (max)	
17	No of Hopper per Boiler	No	240	
18	Hopper Valley Angle		65.3	
19	Extra Casing Height	mm	600	
20	Hopper Volume	m^3	85.338	
21	Hopper Height	mm	7500	

NOTES:-

1. [ ] INDICATES BHEL/RANIPET SCOPE OF SUPPLY.
   BOB - BOTTOM OF BASE PLATE
   TOF - TOP OF FLOOR GRILL
2. ESP SIZE: 6XFAA-10X45M-2X88165-2 (ALL FIELDS WITH 400MM PITCH).
   NO. OF ESP/BOILER = 1 HAVING 6 PASSES.
3. ELEVATION ±0.000 M CORRESPONDS TO MAIN PLANT AREA ELEVATION WHICH CORRESPONDS TO RL. (+)203.0 M.
4. (-) 200 mm LEVEL CORRESPONDS TO ESP FINISHED FLOOR LEVEL.
5. (-) 500 mm LEVEL CORRESPONDS TO ESP COLUMN BASE PLATE BOTTOM LEVEL.
6. APPROACH FOR CASING INSPECTION DOOR (EXCEPT 2ND DOOR) WILL BE PROVIDED TO FACILITATE ENTRY OF MAINTENANCE PERSONNEL INSIDE THE CASING AS SHOWN IN DETAIL-A. FOR 2ND INSPECTION DOOR, LADDER WILL BE PROVIDED AS SHOWN IN ELEVATION.
7. SUITABLE FOOT REST WILL BE PROVIDED TO APPROACH THE HOPPER INSPECTION DOOR.
8. THE PLATFORM WIDTH SHALL BE 1500 MM ALL AROUND ALL ESP PASSES AT COLLECTING ELECTRODE RAPPING PLATFORM AND INTERCONNECTING PLATFORM AT ROOF LEVEL.
9. THE PLATFORM WIDTH SHALL BE 1000 MM AT LEVEL +3550 AROUND ESP HOPPER. HOPPER APPROACH PLATFORM SUPPORTING MEMBER BOTTOM LEVEL SHALL BE AT LEVEL +3550 MM TO AVOID FOULING WITH ASH HANDLING SYSTEM.
10. ALL STAIRS ARE OF 1200 mm WIDTH.
11. ALL GRATINGS, STEP TREADS & HAND RAILS ARE HOT DIP GALVANISED. TOE GUARD OF 150mm HEIGHT SHALL BE PROVIDED. 04
12. 3 NOS. OF STAIRCASE AT BOILER SIDE AND 2 NOS. OF STAIRCASE AT CHIMNEY SIDE OF ESP FOR EACH UNIT WILL BE PROVIDED. THIS IS IN LINE WITH TENDER SPEC. & ALSO AS PER TENDER DRAWING.
13. PORTABLE ALUMINUM LADDER LIGHT WEIGHT & EASY TO TRANSFER TWO NUMBERS PER UNIT WILL BE PROVIDED TO APPROACH FOR ASH LEVEL INDICATOR-HIGH & LOW LEVEL ALI.
14. OIL DRAIN PIPES (ERW PIPE) SHALL BE PROVIDED UPTO GROUND LEVEL AND TERMINATED AT THE GROUND FLOOR.
15. RAIN WATER GUTTERS WILL BE PROVIDED AND RAIN WATER DRAIN PIPE (ERW PIPE) WILL BE TERMINATED INTO THE NEAREST DRAIN.
16. THE PERFORMANCE TEST POCKET ADAPTERS WILL BE SUPPLIED IN ESP SCOPE UNDER PGMA 7X-X61 WHICH ARE TO BE SUITABLY LOCATED IN THE STRAIGHT PORTIONS OF ESP INLET AND OUTLET DUCTS. THE REQUIRED APPROACH PLATFORM FOR THESE TEST POCKETS SHALL BE SUPPLIED.
17. SIX NOs. OF OPACITY MONITORS PER BOILER (SUPPLIED IN ESP SCOPE UNDER PGMA 7X-X74) WILL BE INSTALLED ONE EACH IN THE COMMON OUTLET DUCT OF EACH ESP PASS. THE REQUIRED APPROACH PLATFORM FOR OPACITY MONITORS WILL BE SUPPLIED.
18. SAFETY INTERLOCKS WILL BE PROVIDED FOR ALL ACCESS DOORS.
19. ELECTRICAL HOIST OF CAPACITY 3 TONS WILL BE PROVIDED TO HANDLE TR SET WEIGHING 1800 KG APPROXIMATELY.
20. HOPPERS ARE PROVIDED WITH PANEL TYPE HEATERS. HOPPER BOTTOM ADAPTERS ARE PROVIDED WITH WRAP AROUND PAD TYPE HEATERS.
21. REQUIRED ASH STORAGE CAPACITY FOR 8.8Hrs IS PROVIDED IN VOLUME OF HOPPERS AND 500 MM EXTRA CASING HEIGHT.
22. EACH HOPPER IS PROVIDED WITH TWO NUMBERS OF ASH LEVEL INDICATORS (ALI) (ie ONE NO. FOR LOW LEVEL INDICATION AND ONE NO. FOR HIGH LEVEL INDICATION). HIGH LEVEL ALI WHICH IS MOUNTED ON HOPPER WILL EFFECT THE ALARM FOR HOPPER HIGH LEVEL AND TRIP THE RESPECTIVE TR SET WITH TIME LAG FOR REACHING THE MAXIMUM STORAGE VOLUME CORRESPONDING TO 8.8 HOURS. THIS TIME LAG CAN BE SET AT ESP AUXILIARY CONTROL PANEL AT SITE DURING ESP COMMISSIONING.
23. PLATFORM FOR ASH LEVEL INDICATOR (HIGH LEVEL) IS PROVIDED AS SHOWN IN VIEW-P.
24. INSTALLATION OF FLUIDISER PADS IN THE HOPPERS: 01
    A) SPACE PROVISION OF 400X400 MM IS MADE IN THE BOTTOM PORTION OF ALL THE HOPPERS FOR INSTALLING FLUIDISER PADS ON 2 OPPOSITE SIDES OF EACH HOPPER.
       FOR EASY FIXING OF FLUIDISER PADS, THE STAINLESS STEEL LINING INSIDE THE HOPPER TO THE EXTENT OF 360X360MM WILL BE CUT AT BHEL WORKS DURING MANUFACTURING.
       THE HOPPER WALL TO THE REQUIRED DIMENSION SHALL BE CUT AT SITE BY ASH HANDLING SYSTEM VENDOR /ASH HANDLING SYSTEM EXECUTING AGENCY AT THE TIME OF INSTALLING FLUIDISER PADS.
    B) THERMAL INSULATION SHALL BE APPLIED ON FLUIDIZING PADS AREA AFTER THE SAME IS INSTALLED BY THE ASH HANDLING SUPPLIER.
    C) SUPPORTS FOR ASH HANDLING COMPONENTS MAY BE TAKEN FROM HOPPER WALL STIFFENERS AND OTHER SUPPORTING STRUCTURES.
25. THE ARRANGEMENT OF ESPs SHOWN IN THIS DRAWING IS FOR ONE UNIT AND THE SAME ARRANGEMENT IS APPLICABLE FOR OTHER UNITS.
26. TERMINAL POINTS (Between BHEL Ranipet & Other BHEL Units):- 01
    1. ESP INLET FUNNEL FLANGE (WITH MATING FLANGE & FASTENERS)
    2. ESP OUTLET FUNNEL FLANGE (WITH MATING FLANGE & FASTENERS)
    3. HOPPER OUTLET FLANGE ABOVE KNIFE EDGE GATE VALVE.
    4. WATER WASHING PIPE FLANGE AT 3 M ELEVATION (APPROX) NEAR FIRST ROW AT ESP COLUMNS OF UNIT.
    5. INCOMER TERMINAL OF THE FOLLOWING FOR ELECTRICAL POWER:
       a) ELECTRONIC CONTROLLER PANELS.
       b) IOS PANELS.
       c) ELECTRICALLY OPERATED HOISTS.
27. HOPPER APPROACH PLATFORM IS PROVIDED FOR MAINTENANCE /ACCESS TO HOPPER INSPECTION DOOR, LOW LEVEL ALI, POKE HOLES AND CONTROLS OF HIGH LEVEL ALI.
28. LOCAL CANOPY (3 X 2 M) IS PROVIDED OVER PLATFORM IN THE COLLECTING RAPPING MOTOR AREA AT LEFT SIDE OF ESP-A AND RIGHT SIDE OF ESP-F TO PROTECT FROM RAIN AND FOR EASY MAINTENANCE.
29. PLATFORM BETWEEN TWO ESP CASING WILL HAVE A CLEAR WIDTH OF 2000 mm.
30. CAGE LADDER & PLATFORM (ONE NO./ESP) SHALL BE PROVIDED FOR THE APPROACH OF ELECTRICAL HOIST FOR MAINTENANCE AT ESP ROOF.
31. ADJACENT ESP CASING SHALL BE INTERCONNECTED AT THE ROOF LEVEL AT THREE LOCATIONS.
32. FOLLOWING SPECIAL TOOLS & TACKLES SHALL BE PROVIDED FOR ESP (COMMON FOR THREE BOILERS): 01
    a) STRETCHING DEVICE FOR MOUNTING EMITTING ELECTRODES - 4 Nos
    b) ALIGNMENT JIG FOR SUPPORT INSULATOR - 2 Nos
    c) LIFTING TOOL FOR SUPPORT INSULATOR REPLACEMENT - 2 Nos
    d) FORM TOOL FOR CORRECTING COLLECTING ELECTRODE - 2 Nos
    e) SHAFT INSULATOR REMOVAL TOOL - 3 Nos
33. THE WALKWAYS ON THE ROOF HAVE UNOBSTRUCTED AND CONTINUOUS RUNS ON THE SAME LEVEL AND ARE FREE OF CABLE TRAYS, RAILS ETC. THE CABLE TRAYS WILL BE PROVIDED AT AN ELEVATION OVER ESP ROOF. WALKOVER BRIDGES WILL BE PROVIDED MAXIMUM ONE NO. PER PASS IF UNAVOIDABLE.
34. LADDER (ONE (01) HOOK LADDER / ESP PASS) ARE PROVIDED FROM THE WALKWAYS BENEATH THE HOPPERS TO FACILITATE THE APPROACH TO ACCESS DOOR.
35. 2 NOS OF COMMON REMOVABLE TYPE RAIL SHALL BE PROVIDED FOR TR SET HANDLING. 04

CUSTOMER NOS: R8/1557,1558,1559

ZONE	REV	DATE	ALTERED	APPROVED
	04	05.07.2025	VENKATESAN K	S K VAISHNAW
	Revised based on NLCIL/DCPL comments dated 18.06.2025 on ESP GA Rev-03			
ZONE	REV	DATE	ALTERED	APPROVED
	03	14.03.2025	VENKATESAN K	S K VAISHNAW
	Revised based on NLCIL/DCPL comments dated 10.01.2025 on ESP GA Rev-02			
ZONE	REV	DATE	ALTERED	APPROVED
	02	11.12.2024	VENKATESAN K	S K VAISHNAW
	Revised based on NLCIL/DCPL comments dated 06.08.2024 on ESP GA Rev-01			
ZONE	REV	DATE	ALTERED	APPROVED
	01	27.07.2024	VENKATESAN K	S K VAISHNAW
	Revised based on NLCIL/DCPL comments dated 09.07.2024 on ESP GA Rev-00			

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CUSTOMER: NLC INDIA LIMITED

PROJECT: TALABIRA THERMAL POWER PROJECT(3X800MW)
ELECTROSTATIC PRECIPITATOR PACKAGE

BHARAT HEAVY ELECTRICALS LIMITED
UNIT: BOILER AUXILIARIES PLANT, RANIPET:632 406.

DEPT CODE		NAME	SIGN	DATE
M	DRN	K.VENKATESAN	-sd-	08.07.24
	CHD	S K VAISHNAW	-sd-	08.07.24
	APPD	M.JEYAMURUGANAND	-sd-	08.07.24

TITLE: GENERAL ARRANGEMENT OF ESPs INCLUDING PLATFORM AND STAIRCASE

SCALE : N.T.S

DRAWING NO. 0-00-111-88795

REV. 04

Size A0

CORPORATE DRG ID:TP-DG-0-00-020-77983/01

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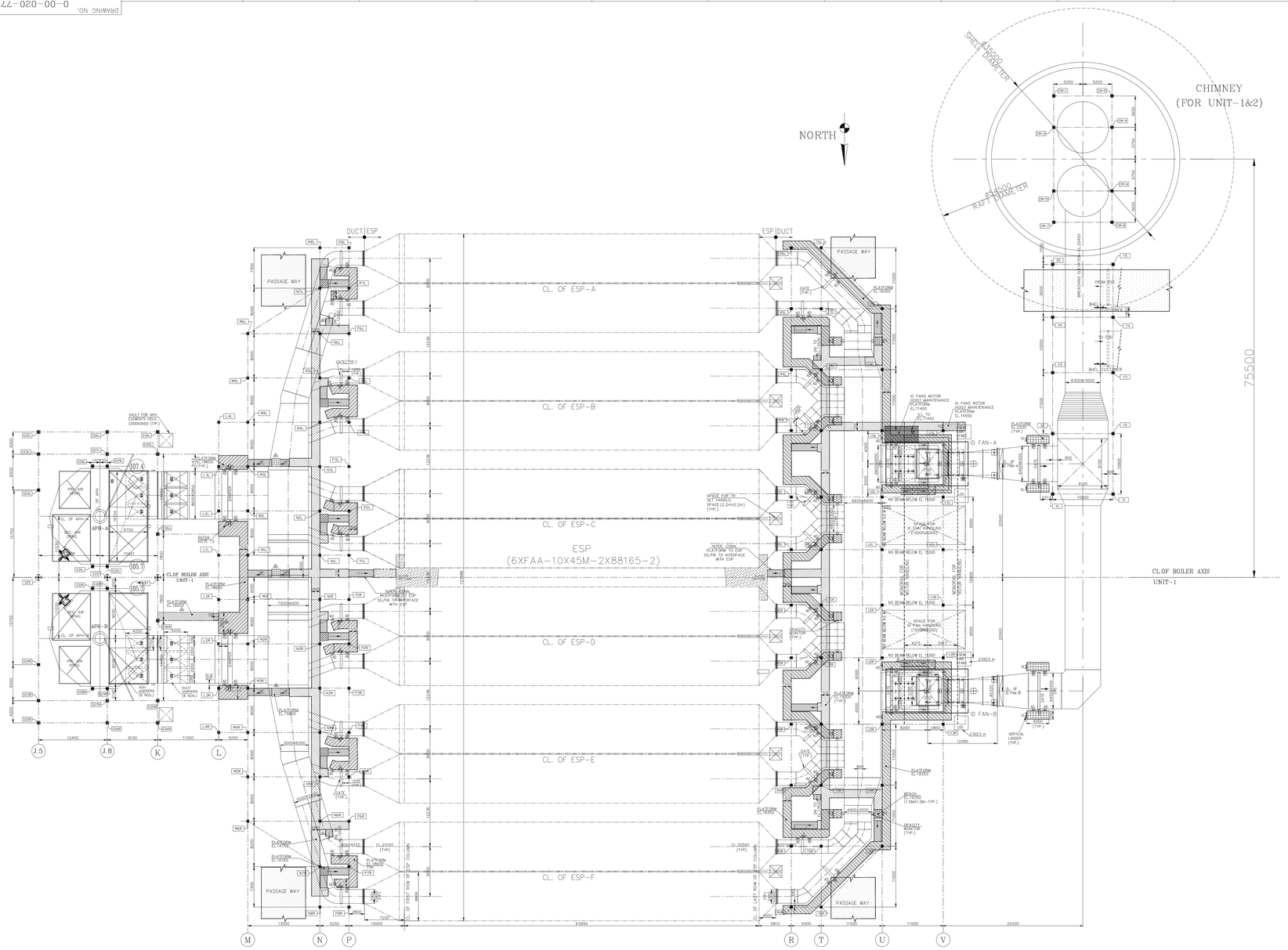
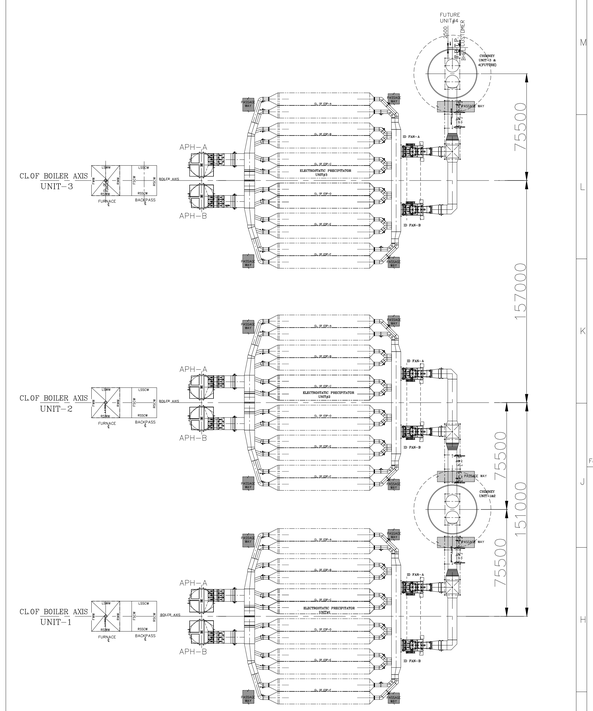


PLAN FOR UNIT -1 & 3

UNIT-2 IS MIRROR OF UNIT 1



NOTES:

1. ALL ELEVATIONS ARE WITH RESPECT TO EL. (+)0.00m CORRESPONDS TO RL203.0
2. TOP OF PAVING FOR BOILER AND ESP AREAS IS EL -0.2M
3. FFL OF MILL BUNKER BUILDING & CHIMNEY IS EL 0.0M
4. AD – ACCESS DOOR SIZE– 600X600 mm.
5. ALL THE DUCT SIZES ARE TO INSIDE ONLY UNLESS SPECIFIED.
6. ALL INNER CORNERS OF DUCT TURNING ARE 600 MM RADIUS UNLESS NOTED.
7. THE ACCESS DOORS ARE LOCATED 600 MM FROM EDGE OF DAMPER, DUCT & EXP. JOINT AS INDICATED AND SHALL BE SUITABLY ERECTED ACCORDING TO FLOOR PLAN.
8. ALL PLATFORM ELEVATIONS ARE TO TOP OF GRATING, UNLESS NOTED.
9. CENTERLINE OF ALL DUCT ACCESS DOORS TO BE LOCATED 600mm ABOVE BOTTOM INSIDE OF DUCT PLATES UNLESS NOTED.
10. ALL GATES SHOWN ARE PROVIDED WITH FLOOR AT BOTTOM OF DUCT. THE APPROACH FOR ACTUATORS & ALLIED ITEMS WILL BE PROVIDED BY INTEGRAL LADDERS & GRILL AS PART OF GATES.
11. ALL SIZES AND DIMENSIONS SHOWN ARE IN MILLIMETERS.
13. 600 MM UPSTREAM AND DOWNSTREAM NO DUCT INTERNALS TO CLEAR DAMPER BLADE MOVEMENT. REFER DAMPER DRAWINGS.
14. FOR ALL INFORMATION & DIMENSIONS, SEE REFERENCE DRAWINGS.

LEGEND:

APH	–	AIR PRE HEATER
FGD	–	FLUE GAS DESULPHURISATION
ID	–	INDUCED DRAFT
LOS	–	LUBE OIL SYSTEM
VL	–	VERTICAL LADDER
TYP.	–	TYPICAL
EL	–	ELEVATION
CL	–	CENTER LINE
ESP	–	ELECTROSTATIC PRECIPITATOR
T.P.	–	TERMINAL POINT
AD	–	ACCESS DOOR
NTS	–	NOT TO SCALE
ABS	–	ABSORBER

REFERENCE DRGS:

1. REFER GA DRG. NO.0-00-022-77975 FOR BOILER PARAMETERS, LEGEND, NOTES, REFERENCE DRGS. & UNIT DESCRIPTION.

DESCRIPTION	BHEL DRAWING NO.
GA OF BOILER SECTIONAL SIDE ELEVATION – SECTION "E–E"	0-00-022-77975
GENERAL ARRGT. OF BOILER SECTIONAL PLAN–SECTION "B–B"	0-00-022-77977
LAYOUT OF ID SYSTEM – ELEVATION	0-00-020-77982
LAYOUT OF FLUE GAS DUCTING – GAS DUCT FROM AIRHEATER	0-00-020-77994
MAIN PLANT EQUIPMENT LAYOUT AT EL(+/-) 0.0M	PE-DG-519-100-M002
GA OF ESP INCLUDING PLATFORM & STAIRCASE	0-00-111-88795
GA DRAWING FOR ID FAN WITH FOUNDATION PLAN AND LOADING DETAILS	1-00-099-29481
GA & DATASHEET FOR ABSORBER WITH ARRGT OF STAIRS & PLATFORMS	0-FW-000-13812
GA OF FGD DUCTING	0-FW-000-13811
GA OF CHIMNEY (UNIT#1)	PE-DG-511-620-C001
GA OF CHIMNEY (UNIT#2 & UNIT#3)	PE-DG-511-620-C101

BHEL CUSTOMER No.:1836, 1837 & 1838

CUSTOMER DRAWING NO. 0768

CUSTOMER: NLC INDIA LIMITED
NEYVELI, TAMILNADU

CONSULTANT: DEVELOPMENT CONSULTANTS PVT LTD.
CONSULTING ENGINEERS
KOLKATA MUMBAI CHENNAI NEW DELHI

PROJECT: NLC TALABIRA THERMAL POWER PROJECT (NTTPP)
(3X800 MW PHASE-I)

BHARAT HEAVY ELECTRICALS LTD
BOILER PLANT UNIT,
TIRUCHIRAPALLI – INDIA–620014
EQUIPMENT : STEAM GENERATOR

DEPT CODE		NAME	SIGN	DATE
M	DRN	M.NIRMALKUMAR	MNK	23.05.25
	DESN	M.NIRMALKUMAR	MNK	23.05.25
	CHD	S.SRINIVASAN	SSV	23.05.25
	APPD	M.HARIDASAN	MHD	23.05.25

JOB NO. 511
STATUS CONTRACT
DISTRIBUTION
TO

REV.	DATE	ALTD	CHD	APPD
01	15.05.26	MNK	SSV	MHD

1. ID FAN-B STAIR SHIFTED TOWARDS BOILER AXIS
2. PLATFORMS BEFORE ESP HAS BEEN MODIFIED
3. DUCTING AFTER ID FAN CHANGED COMPLETELY BASED ON DESIGNING PROPOSAL FROM CUSTOMER

TITLE: LAYOUT OF ID SYSTEM – PLAN

DEPT. | ALL DIMENSIONS ARE IN MILLIMETERS | DRAWING NO. 0-00-020-77983
SIGN
DATE | SCALE: 1:300 | SHEET 1 OF 1 | REV. 01

FORMAT SIZE A0

CORPORATE DRG ID:TP-DG-0-00-020-77983/01

CORPORATE DRG ID:TP-DG-0-00-020-77982/01

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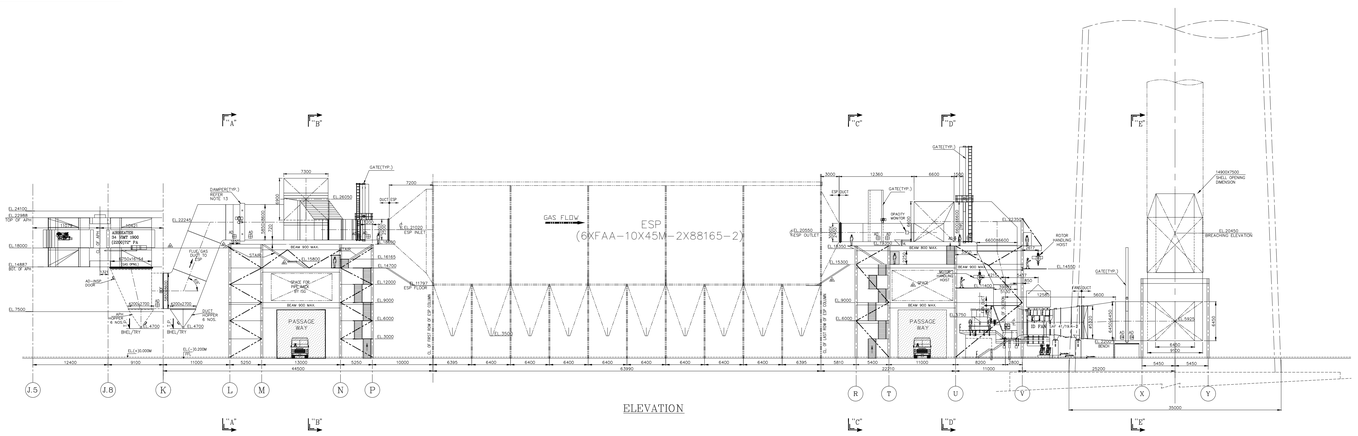
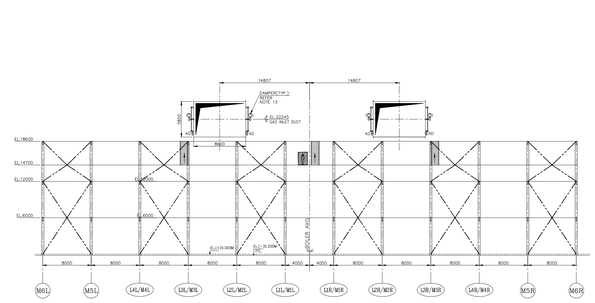
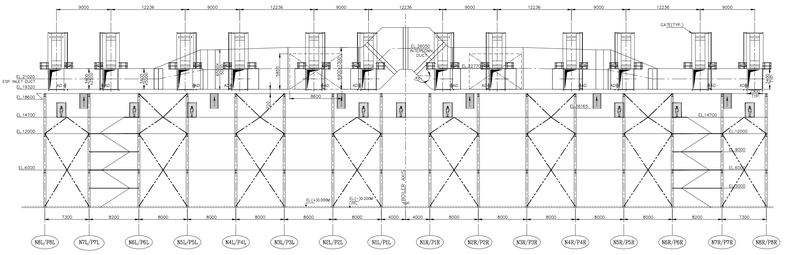


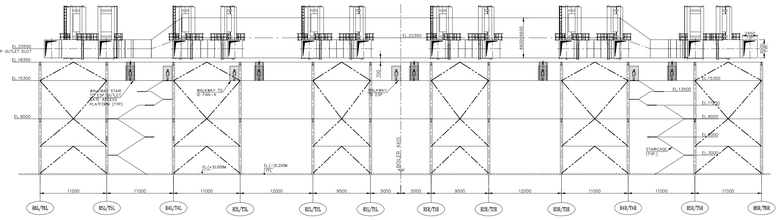
ELEVATION



SECTION "A–A"
(ROW L & M)



SECTION "B–B"
(ROW N & P)



SECTION "C–C"
(ROW R & T)

NOTES:

1. ALL ELEVATIONS ARE WITH RESPECT TO EL. (+)0.00m CORRESPONDS TO RL 203.0
2. TOP OF PAVING FOR BOILER AND ESP AREAS IS EL. –0.2M
3. FFL OF MILL BUNKER BUILDING & CHIMNEY IS EL 0.0M
4. AD – ACCESS DOOR SIZE– 600x600 mm.
5. ALL THE DUCT SIZES ARE TO INSIDE ONLY UNLESS SPECIFIED.
6. ALL DUCT CORNERS SHALL BE TURNING VANE AND MM RADIUS UNLESS NOTED.
7. THE ACCESS DOORS ARE LOCATED 1500 MM/ FROM EDGE OF DAMPER, DUCT & EXP. JOINT AS SHOWN. SUITABLY ERECTED ACCORDING TO FLOOR PLAN
8. ALL PLATFORM ELEVATIONS ARE TO TOP OF GRATING, UNLESS NOTED.
9. CENTERLINE OF ALL DUCT ACCESS DOORS TO BE LOCATED 600mm ABOVE BOTTOM INSIDE OF DUCT PLATES UNLESS NOTED.
10. ALL GATES SHOWN ARE PROVIDED WITH FLOOR AT BOTTOM OF DUCT. THE APPROACH FOR ACTUATORS & ALLIED ITEMS WILL BE PROVIDED BY INTERAL LADDERS & GRILL AS PART OF GATES.
11. ALL SIZES AND DIMENSIONS SHOWN ARE IN MILLIMETRS.
12. GUIDE VANES UPSTREAM AND DOWNSTREAM NO DUCT INTERNALS TO CLEAR DAMPER BLADE MOVEMENT. REFER DAMPER DRAWINGS.
14. FOR ALL INFORMATION & DIMENSIONS, SEE REFERENCE DRAWINGS.

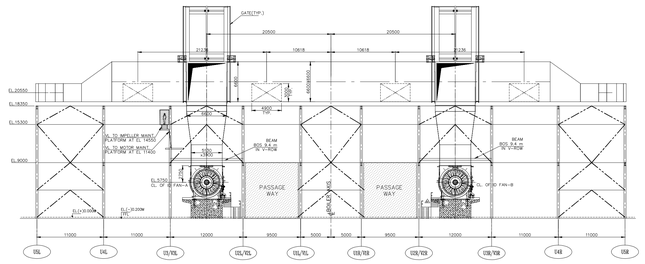
LEGEND:

APH	–	AIR PRE HEATER
FGD	–	FLUE GAS DESULPHURISATION
ID	–	INDUCED DRAFT
LOS	–	LUBE OIL SYSTEM
VL	–	VERTICAL LADDER
TYP.	–	TYPICAL
EL	–	ELEVATION
CL	–	CENTER LINE
ESP	–	ELECTROSTATIC PRECIPITATOR
T.P.	–	TERMINAL POINT
AD	–	ACCESS DOOR

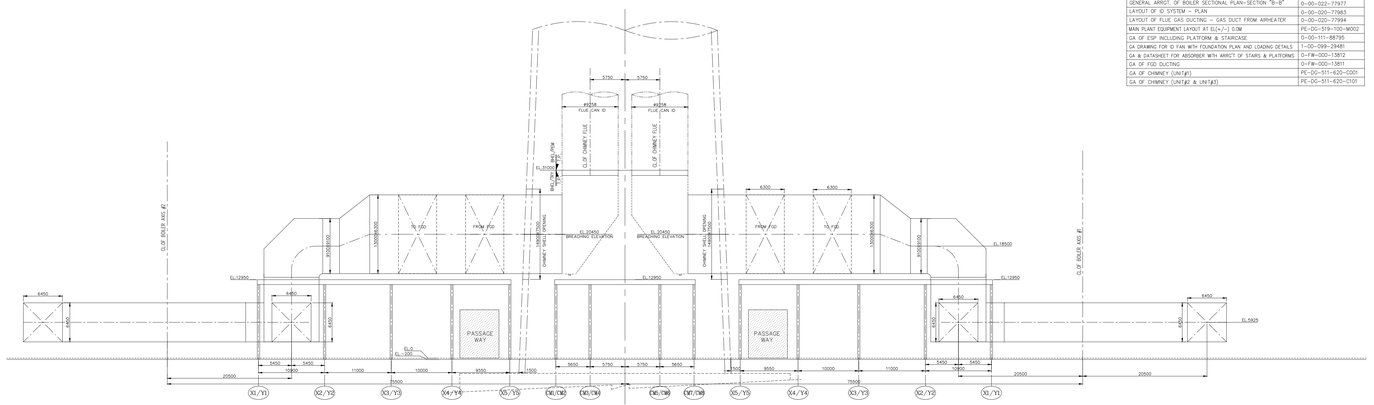
REFERENCE DRGS:

1. REFER GA DRG. NO.0-00-022-77975 FOR BOILER PARAMETERS, LEGEND, NOTES, REFERENCE DRGS. & UNIT DESCRIPTION.

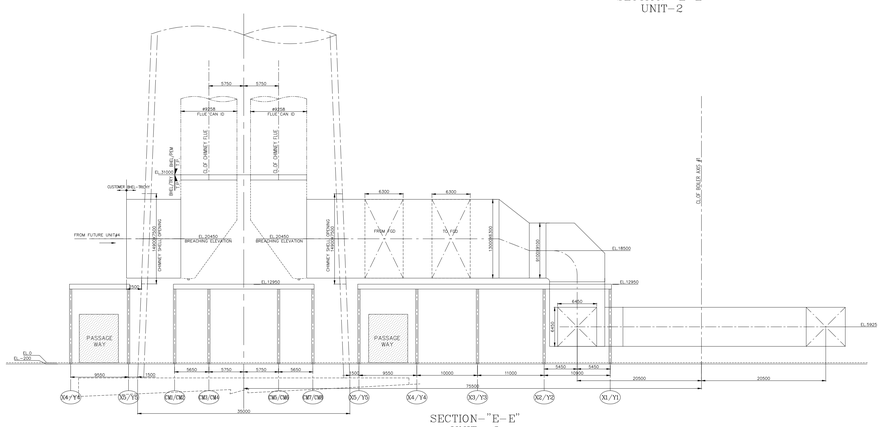
DESCRIPTION	BHEL DRAWING NO.
GA OF BOILER SECTIONAL SIDE ELEVATION – SECTION "E–E"	0-00-022-77975
GENERAL ARRGT. OF BOILER SECTIONAL PLAN–SECTION "B–B"	0-00-022-77977
LAYOUT OF ID SYSTEM – PLAN	0-00-005-77983
LAYOUT OF FLUE GAS DUCTING – GAS DUCT FROM AIRHEATER	0-00-020-77994
MAIN PLANT EQUIPMENT LAYOUT AT EL(+/-) 0.0M	PE-DG-519-100-M002
GA OF ESP INCLUDING PLATFORM & STAIRCASE	0-00-111-88795
GA DRAWING FOR ID FAN WITH FOUNDATION PLAN AND LOADING DETAILS	1-00-099-29481
GA & DATASHEET FOR ABSORBER WITH ARRGT OF STAIRS & PLATFORMS	0-FW-000-13812
GA OF FGD DUCTING	0-FW-000-13811
GA OF CHIMNEY (UNIT#2X)	PE-DG-511-620-C001
GA OF CHIMNEY (UNIT#2 & UNIT#3)	PE-DG-511-620-C101



SECTION "D–D"
(ROW U & V)



SECTION–"E–E"
UNIT–2



SECTION–"E–E"
UNIT– 3

BHEL CUSTOMER No.:1836, 1837 & 1838

CUSTOMER DRAWING NO.	0768						
CUSTOMER	NLC INDIA LIMITED NEYVELI, TAMILNADU						
CONSULTANT	DEVELOPMENT CONSULTANTS PVT LTD. CONSULTING ENGINEERS KOLKATA MUMBAI CHENNAI NEW DELHI						
PROJECT	NLC TALABIRA THERMAL POWER PROJECT (NTTPP) (3X800 MW PHASE–I)						
BHARAT HEAVY ELECTRICALS LTD BOILER PLANT UNIT; TIRUCHIRAPALLI – INDIA–620014 EQUIPMENT : STEAM GENERATOR		DEPT CODE		NAME	SIGN	DATE	
		M	DRN	M.NIRMALKUMAR	MNK	23.05.25	
			DESN	M.NIRMALKUMAR	MNK	23.05.25	
			CHD	S.SRINIVASAN	SSV	23.05.25	
			APPD	M.HARIDASAN	MHD	23.05.25	

JOB NO.	511
STATUS	CONTRACT
DISTRIBUTION	
TO	
NO. OF	

REV.	DATE	ALTD	CHD	APPD
01	19.05.25	MNK	SSV	MHD

1. 6 FAN-B STAIR SHIFTED TOWARDS BOILER AXIS
2. PLATFORM WIDTHS OF FAN WAS BEEN MODIFIED
3. DUCTING AFTER ID FAN CHANGED COMPLETELY BASED ON DEVIATION PROPOSAL FROM CUSTOMER

TITLE: LAYOUT OF ID SYSTEM – ELEVATION

DEPT.	ALL DIMENSIONS ARE IN MILLIMETERS	DRAWING NO. 0-00-020-77982
SIGN	SCALE: 1:300	
DATE		SHEET 1 OF 1 REV. 01

FORMAT SIZE A0

CORPORATE DRG ID:TP-DG-0-00-020-77982/01