



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN – 06

Ref: PSER:SCT:KLN-C1904:TCN-06

Date: 12-07-2018

Sub	Tender change notice (TCN) 06	
Job	PACKAGE 13: Civil, structural & architectural works for Induced Draft Cooling Tower, unit # 1 & 2 for 2X660 MW Maitree RampaL Project, Bangladesh	
Ref	1.0	Tender no PSER:SCT:KLN-C1904:18
	2.0	BHEL's NIT, vide reference no PSER:SCT:KLN-C1904:6872 Dated 14-06-2018
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:KLN-C1904:TCN-01, Dated 28-06-2018.
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:KLN-C1904:TCN-02, Dated 03-07-2018.
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:KLN-C1904:TCN-03, Dated 04-07-2018.
	6.0	BHEL's TCN-04, vide reference no PSER:SCT:KLN-C1904:TCN-04, Dated 06-07-2018.
	7.0	BHEL's TCN-05, vide reference no PSER:SCT:KLN-C1904:TCN-05, Dated 10-07-2018.
	8.0	All other pertinent issues till date.

With reference to above, following points/ documents, relevant to tender, may please be noted and complied with while submitting offer.

- 1.0 GA drawing for IDCT as attached.
- 2.0 Revised 'No deviation certificate' as per enclosed Annexure-2. Bidder shall submit no deviation certificate as per enclosed format only.
- 3.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HYEAVY ELECTRICALS LTD

DY.MGR (SCT)

Encl : As above.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211691, 23211798, 23211796

FORMAT FOR NO DEVIATION CERTIFICATE
(To be submitted in the bidder's letter head)

BHARAT HEAVY ELECTRICALS LIMITED,
Power Sector - Eastern Region,
Plot no 9/1, DJ Block, Sector – II, Salt Lake City,
Kolkata – 700 091

Sub	No Deviation Certificate.	
Job	PACKAGE 13: Civil, structural & architectural works for Induced Draft Cooling Tower, unit # 1 & 2 for 2X660 MW Maitree Rampal Project, Bangladesh	
Ref	1.0	Tender no PSER:SCT:KLN-C1904:18
	2.0	BHEL's NIT, vide reference no PSER:SCT:KLN-C1904:6872 Dated 14-06-2018
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:KLN-C1904:TCN-01, Dated 28-06-2018.
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:KLN-C1904:TCN-02, Dated 03-07-2018.
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:KLN-C1904:TCN-03, Dated 04-07-2018.
	6.0	BHEL's TCN-04, vide reference no PSER:SCT:KLN-C1904:TCN-04, Dated 06-07-2018.
	7.0	BHEL's TCN-05, vide reference no PSER:SCT:KLN-C1904:TCN-05, Dated 10-07-2018.
	8.0	BHEL's TCN-06, vide reference no PSER:SCT:KLN-C1904:TCN-06, Dated 12-07-2018.
	9.0	All other pertinent issues till date.

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted/uploaded offer/documents in accordance with tender instructions with acceptance of the terms & conditions of the tender by us and as per aforesaid references.

Thanking you,

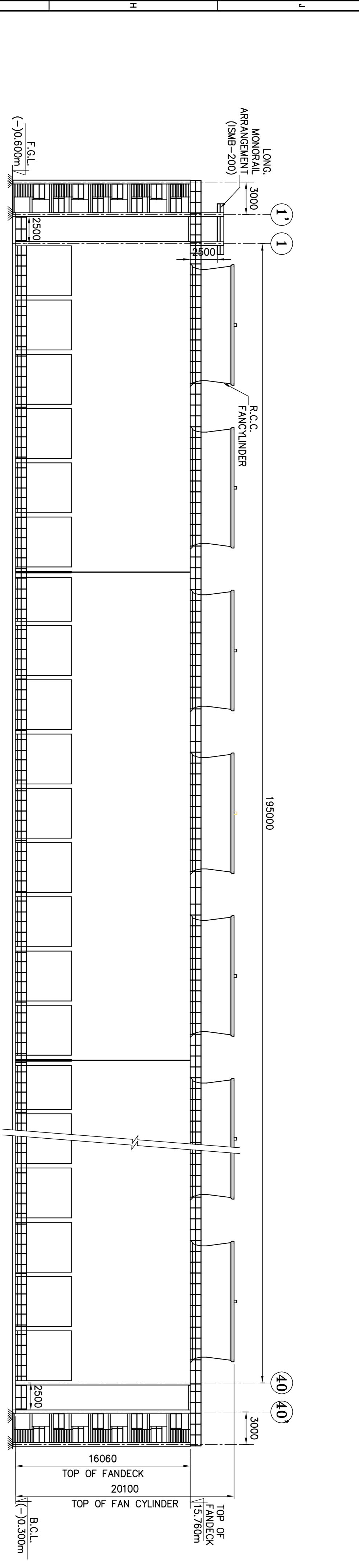
Yours faithfully,

(Signature, date & seal of authorized representative of the bidder)

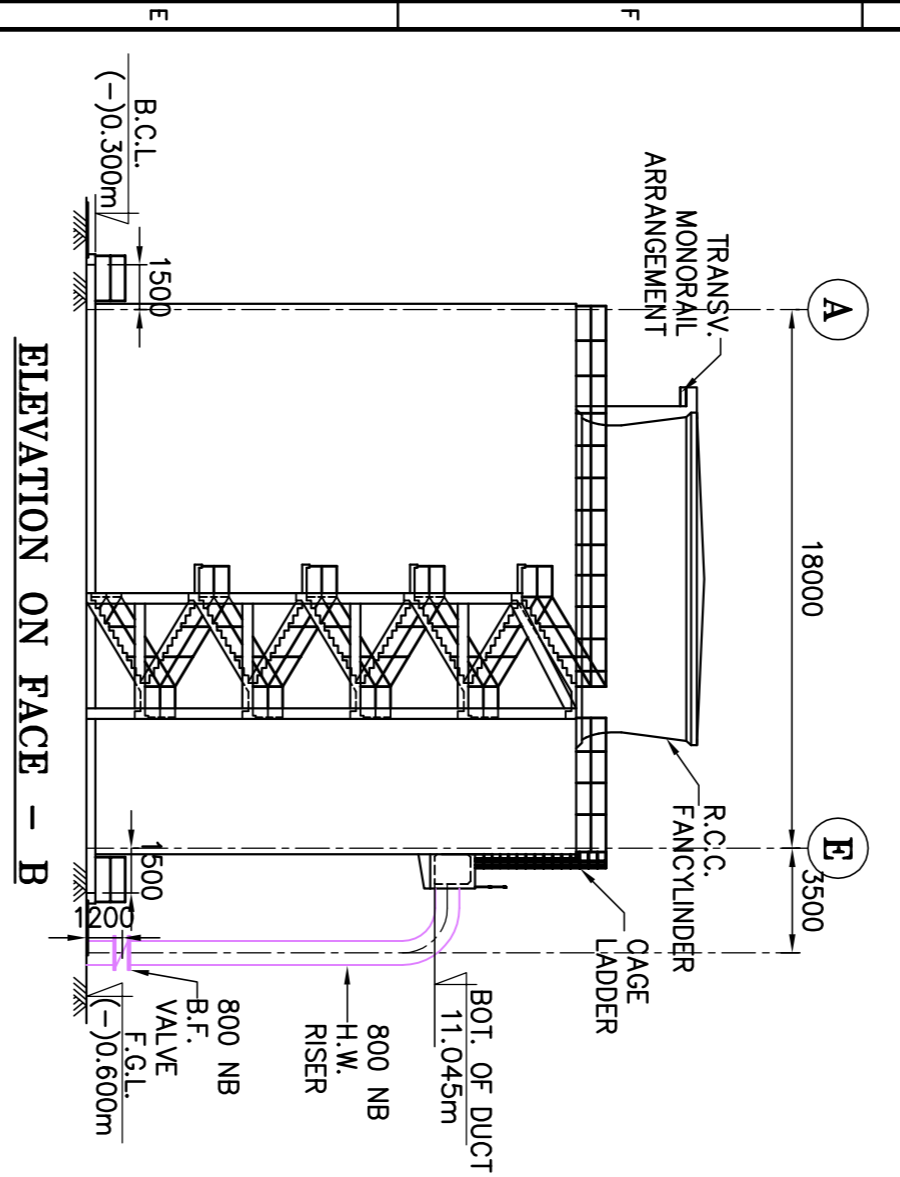
पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION DJ-9/1, SECTOR-II, SALLAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : (033) 2339-8000/ 2339-8231



ELEVATION ON FACE - A



ELEVATION ON FACE - B

SCHEDULE OF H.W. HEADER PIPES:-

CELL NOS.	DIA. OF PIPES
1 TO 3	2600
4 & 5	2500
6 & 7	2200
8 & 9	2000
10 & 11	1600
12	1100
13	800

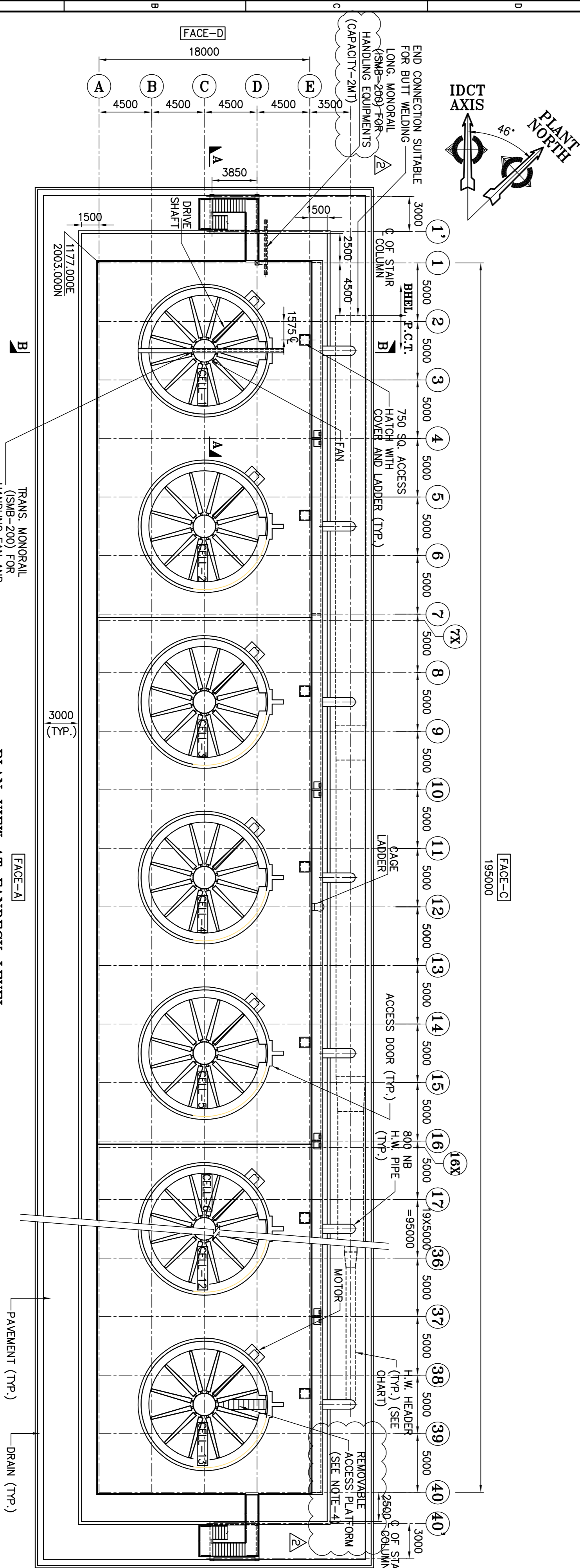
DESIGN PARAMETERS	
WATER FLOW RATE (GMH)	41.400
HOT WATER TEMP (°C)	42.50
COLD WATER TEMP (°C)	34.00
WET BULB TEMP (°C)	29.79
BHP/CELL	116.20

QTY.	SCOPE CONTD.:-
1/TOWER	INSTRUMENT LIST: a) TEMPERATURE ELEMENTS WITH TEMPERATURE TRANSMITTERS AND TEMPERATURE GAUGE WITH THERMOWELL FOR EACH HOT WATER HEADER b) TEMPERATURE ELEMENTS WITH TEMPERATURE TRANSMITTERS AND TEMPERATURE GAUGES FOR EACH GEAR BOX c) PRESSURE GAUGE FOR EACH HOT WATER HEADER d) TEMPERATURE ELEMENTS WITH TEMPERATURE TRANSMITTERS AND TEMPERATURE GAUGES WITH NECESSARY STUB, FITTINGS, MOUNTING ARRANGEMENTS IN COLD WATER CHANNEL e) DUAL INPUT TEMPERATURE TRANSMITTER FOR TEMPERATURE ELEMENT OF EACH GEAR BOX f) PILOT TUBES ALONG WITH MANOMETERS g) ANEMOMETER h) PSYCHROMETER
1/CELL	
2 NOS. FOR 1 NO. FOR 4 TOWERS	
1/CELL	
1 NO. FOR 4 TOWERS	

DRG. TITLE	DRG. NO.
SCHEMATIC VIEWS, GENERAL ARRANGEMENTS AND LAYOUT FOR COOLING TOWER	MAITRE-00-URA-MU-115101-PRQ(SHT. 2 OF 2)
GENERAL ARRANGEMENTS OF COLD WATER BASIN FOR COOLING TOWER	MAITRE-00-URA-MU-115102-PRM (PCT DRG. NO. 18-21-0030A/9/01)
HOT WATER MANIFOLD DETAILS	MAITRE-00-URA-WF-115134-PRM (PCT DRG. NO. 18-21-0030A/M/01)

FOR TENDER PURPOSE ONLY.

NOTES:-
 1. ALL DIMENSIONS ARE IN 'mm' AND LEVELS IN 'm'.
 2. F.F.L. RL (+)5.600m. CORRESPONDS TO PLANT EL.0.0000m. WHICH IS GROUND FLOOR OF STG BUILDING.
 3. F.G.L. SHAFT-BE-RF(+)-0.000m.
 4. ONE SET OF REMOVABLE GRATING WITH HANDRAILS WILL BE PROVIDED TO ACCESS THE INSIDE OF CYLINDER.



PLAN VIEW AT FANDECK LEVEL

(FOR DETAILS OF SECTION MARKED AS A-A AND B-B REFER DRG. NO. 18-21-0030A/G/02)

P.C.T.'S SCOPE OF SUPPLY:-	QTY.
1. FAN DIA :- 10M, RPM :- 114, TYPE :- HP-6-12	13 NOS.
2. GEAR REDUCER SERIES :- 56, RATIO :- 12.98:1	13 NOS.
3. DRIVE SHAFT SR :- 600, CLASS - IV, HARDWARE- SS316	13 NOS.
4. MOTOR HP :- 150, FRAME-315S WITH MOTOR CANOPY AND SPACE HEATER	13 NOS.
5. PWC DRIFT ELIMINATOR (VAPE TYPE)	LOT
6. PWC SPLASH FILL (TYPE D-128) ON DUPLEX STEEL GRIDS	LOT
7. PWC DISTRIBUTION PIPES INCLUDING NOZZLES (PP)	LOT
8. GENERAL HARDWARE - DUPLEX STEEL, BOLTS, NUTS AND WASHERS ONLY. ALL STEEL PARTS NOT IN DIRECT CONTACT WITH WATER OF GALVANISED STEEL	LOT
9. BASIN FITTINGS:- i) SCREEN: DUPLEX SS MESH ON DUPLEX SS FRAME ii) STOP LOG GATE: CI: S210 F0260/CARBON STEEL IS:2062 GR. B/EQ. ASTM STANDARD WITH PU COATING (MIN. DFT 2mm). iii) 150 NB SPOOL PIECES FOR OVERFLOW CONNECTION iv) 150 NB SPOOL PIECES FOR SLUDGE CONNECTION v) 150 NB SLUDGE VALVE vi) SLUDGE PUMPS	4 NOS. 4 NOS. 2 NOS. 2 NOS. 2 NOS.
10. SCREEN AND STOP LOG GATE LIFTING FACILITY COMPRISING OF:- i) MONORAIL (ISM-B-200) ii) TRAVELLING TROLLEY iii) CHAIN PULLEY BLOCK	2 NOS. 2 NOS. 2 NOS.
11. HOT WATER RISER PIPES, B.F. VALVES AND HEADERS UP TO BATTERY LIMIT AS SHOWN IN THE DRAWING	-
12. ACCESS HATCH WITH LADDER	13 NOS.
13. FAN STACK SHUTTERING	4 SETS
14. GALVANISED HANDRAIL	LOT
15. REMOVABLE ACCESS PLATFORM WITH HANDRAILS	1 SET
16. FRP CABLE TRAYS AND SUPPORTS FOR CABLES WITHIN BATTERY LIMIT	LOT
17. INSTRUMENT CABLE FROM LOCAL INSTRUMENTS UP TO JUNCTION BOX AT FANDECK LEVEL	LOT
18. JUNCTION BOX	LOT
19. VIBRATION TRANSMITTER FOR GEAR BOX	13 NOS.
20. OIL LEVEL TRANSMITTER FOR GEAR BOX	13 NOS.
21. ILLUMINATION SYSTEM	LOT
22. EXTENDED GEAR REDUCER OIL LINE WITH SIGHT GLASS ASSEMBLES	LOT
23. MECHANICAL EQUIPMENT HANDLING FACILITY COMPRISING OF: i) LONG. MONORAIL (ISM-B-200) ii) TRANS. MONORAIL (ISM-B-200) iii) TRAVELLING TROLLEYS. o) FOR LIFTING/LOWERING EQUIPMENTS BETWEEN F.G.L. AND FANDECK b) FOR HANDLING FAN AND GEAR BOXES c) FOR LIFTING/LOWERING EQUIPMENTS BETWEEN F.G.L. AND FANDECK d) FOR HANDLING FAN AND GEAR BOXES e) FOR LIFTING/LOWERING EQUIPMENTS BETWEEN F.G.L. AND FANDECK f) RATCHET HOIST FOR HANDLING MOTORS v) DOLLY CART	1 NO. 1 NO. 13 NOS. 1 NO. 1 NO. 1 NO. 1 NO.

OWNER CONSULTANT: **FICHTNER** M/s FICHTNER GmbH & Co KG, Stuttgart, GERMANY

OWNER: **BHARAT HEAVY ELECTRICALS LTD** BANGLADESH-INDIA FRIENDSHIP POWER COMPANY (PVT.) LIMITED, BANGLADESH

PROJECT: **2X360MW MAITREES SUPPER THERMAL POWER PROJECT, RAMPAL, BANGLADESH (BPC MAIN PLANT PACKAGE)**

PROJECT NO.: 18-21-0030A/G/01

DATE: 04.07.2018

REVISED AS PER FICHTNER'S COMMENTS (AT ZONES C, J, 1, 2, 4, 5, 11)

DATE: 19.06.2018

REVISED AS PER BHEL/FICHTNER'S COMMENTS (AT ZONES A-C, H, I, 11)

PREP. N.bose

CHKD. A.B.

APVD. G.D.B.

SCALE: AS NOTED

SHEET: 1 OF 2

PROJECT NO.: 18-21-0030A/G/01

FILE: 18-21-0030A/G/01

DRWG. NO.: MAITRE-00-URA-MU-115101-PRM-A

DATE: 01.06.2018

DESIGN BY: NISHI BISHI

CHECKED BY: S.B./A.S./S.M.

APPROVED BY: G.D.B.

DATE: 01.06.2018

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FILE: 18-21-0030A/G/01

DRWG. NO.: MAITRE-00-URA-MU-115101-PRM-A

DATE: 01.06.2018

DESIGN BY: NISHI BISHI

CHECKED BY: S.B./A.S./S.M.

APPROVED BY: G.D.B.

DATE: 01.06.2018

PROJECT NO.: 18-21-0030A/G/01

FILE: 18-21-0030A/G/01

DRWG. NO.: MAITRE-00-URA-MU-115101-PRM-A

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DATE: 01.06.2018

DESIGN BY: NISHI BISHI

CHECKED BY: S.B./A.S./S.M.

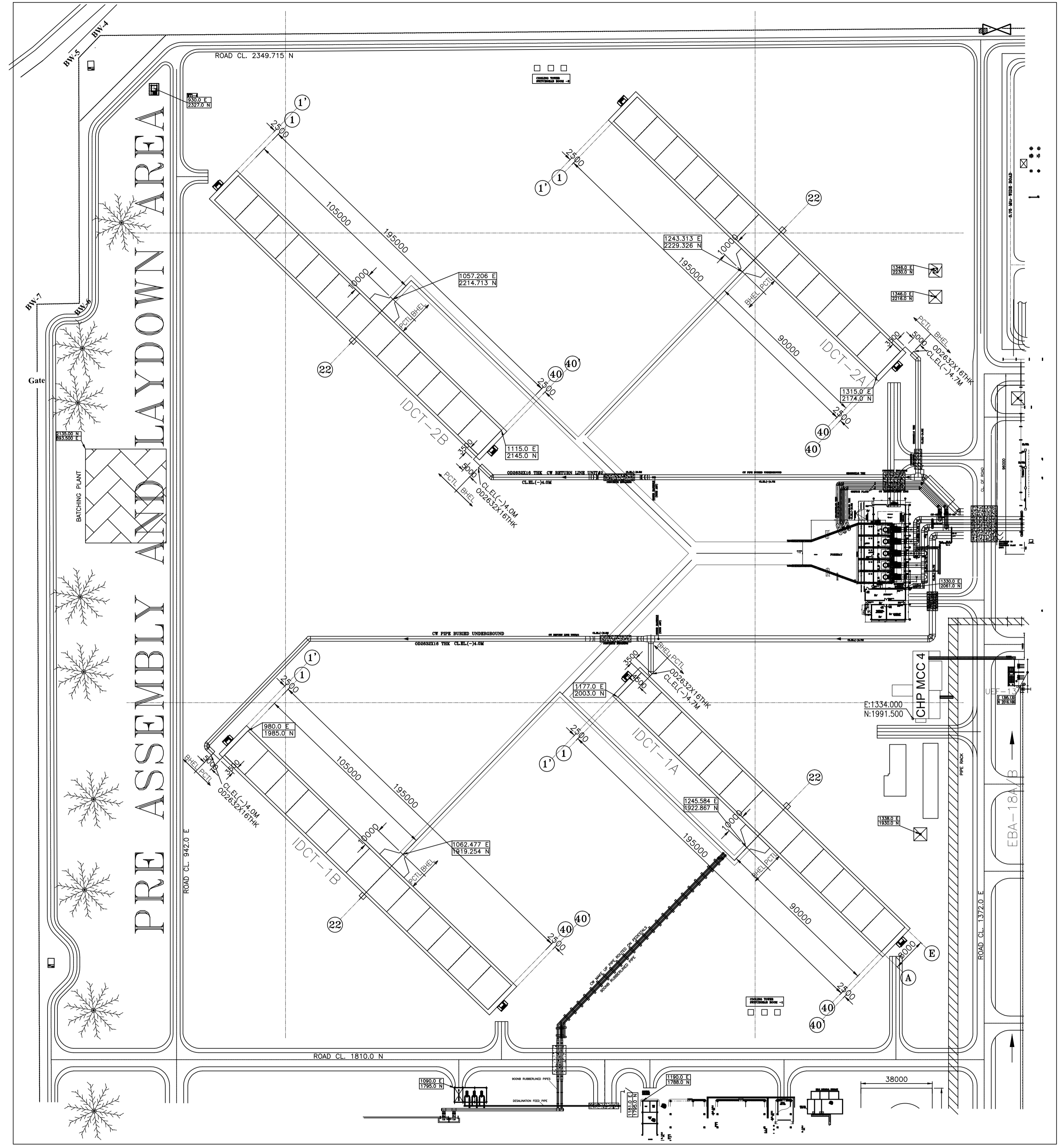
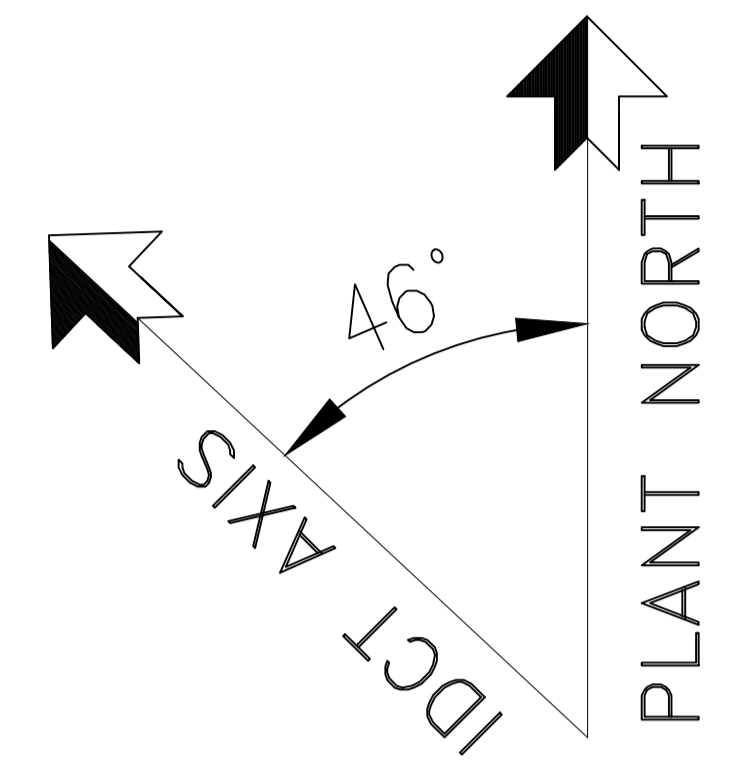
APPROVED BY: G.D.B.

DATE: 01.06.2018

PROJECT NO.: 18-21-0030A/G/01

FILE:

ORD.NO. 18-21-0030 DWG.NO. 18-21-0030A/G/01 (2 OF 2) REV 2



REFERENCE DRAWING NOS.	
DRG. TITLE	DRG. NO.
SCHEMATIC VIEWS, GENERAL ARRANGEMENTS AND LAYOUT FOR COOLING TOWER	MAITREE-00-URA-MLU-115101-PEM [PCT DRG. NO. 18-21-0030A/G/01 (SHT. 1/2)]
GENERAL ARRANGEMENTS OF COLD WATER BASIN FOR COOLING TOWER	MAITREE-00-URA-MLU-115102-PEM (PCT DRG. NO. 18-21-0030A/G/02)
HOT WATER MANIFOLD DETAILS	MAITREE-00-URA-MFE-115134-PEM (PCT DRG. NO. 18-21-0030A/M/01)

NOTES:-
1. ALL DIMENSIONS ARE IN 'mm' AND LEVELS IN 'm'.

LAYOUT OF COOLING TOWERS

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REV.	DATE	DESCRIPTION	PREP.	CHKD.	APVD.
2	04.07.2018	REVISED AS PER FICHTNER/BHEL'S COMMENTS	S.N.	A.B.	G.D.B.
1	19.06.2018	REVISED AS PER BHEL'S COMMENTS	S.N.	A.B.	G.D.B.

PROJECT: 2X660MW MAITREE SUPER THERMAL POWER PROJECT, RAMPAL, BANGLADESH (EPC MAIN PLANT PACKAGE)	
OWNER CONSULTANT: FICHTNER M/s FICHTNER GmbH & Co KG, Stuttgart, GERMANY	OWNER: BANGLADESH-INDIA FRIENDSHIP POWER COMPANY (PVT.) LIMITED, BANGLADESH
DESIGN BY DATE: 01.06.2018 NAME: SUJIPTA NANDI	DESIGN BY DATE: 01.06.2018 NAME: SUJIPTA NANDI
CHECKED BY DATE: 01.06.2018 NAME: A.B./S.M./A.C./S.B./A.G./S.M.	CHECKED BY DATE: 01.06.2018 NAME: G.D.B.
APPROVED BY DATE: 01.06.2018 NAME: G.D.B.	APPROVED BY DATE: 01.06.2018 NAME: G.D.B.
SUPERSEDED BY:	
C.T. CONTRACTOR: PAHARPUR COOLING TOWERS LTD. 8/1/B DIAMOND HARBOUR ROAD KOLKATA - 700 027	
TITLE: SCHEMATIC VIEWS, GENERAL ARRANGEMENTS AND LAYOUT FOR COOLING TOWER MODEL : 81815M-18V-13	
SCALE: AS NOTED	SCALE: AS NOTED
SHEET 2 OF 2	SHEET 2 OF 2
SIZE: A0	PROJECT NO.: 421
ANNEX:	FILE:
DRAWING NO.: Maitree-00-URA-MLU-115101-PEM-A	REV-2

CAT FILE NAME:- 18-21-0030A-G-01-SH02-Rev2.dwg