

HEO HEP (3x80MW) ARUNACHAL PRADESH, INDIA
ELECTRICAL & MECHANICAL WORKS
Drawings List

S.NO.	PARTICULARS OF DRAWINGS	DRAWING NO.
1.	POWERHOUSE GENERAL ARRANGEMENT CROSS-SECTION-A	WAP/HEO/E&M/TD/01
2.	POWERHOUSE GENERAL ARRANGEMENT CROSS-SECTION-B	WAP/HEO/E&M/TD/02
3.	POWERHOUSE PLAN AT EL.1193.30M SERVICE BAY / OPERATING FLOOR	WAP/HEO/E&M/TD/03
4.	POWERHOUSE PLAN AT EL.1187.05M GENERATOR / TURBINE FLOOR	WAP/HEO/E&M/TD/04
5.	POWERHOUSE PLAN AT EL.1180.80M MIV FLOOR	WAP/HEO/E&M/TD/05
6.	POWERHOUSE GENERAL ARRANGEMENT LONGITUDINAL - SECTION	WAP/HEO/E&M/TD/06
7.	POWERHOUSE PLAN AT EL.1202.80M CONTROL ROOM & GIS FLOOR	WAP/HEO/E&M/TD/07
8.	POWERHOUSE POTHEAD YARD PLAN AT EL.1215.30M	WAP/HEO/E&M/TD/08
9.	COOLING WATER SYSTEM FLOW DIAGRAM	WAP/HEO/E&M/TD/09
10.	DRAINAGE & DEWATERING SYSTEM FLOW DIAGRAM	WAP/HEO/E&M/TD/10
11.	COMPRESSED AIR SYSTEM FLOW DIAGRAM	WAP/HEO/E&M/TD/11
12.	POWERHOUSE AND SUBSTATION MAIN SINGLE LINE DIAGRAM	WAP/HEO/E&M/TD/12
13.	POWERHOUSE UNIT AND STATION SERVICE AUXILIARY SINGLE LINE DIAGRAM	WAP/HEO/E&M/TD/13
14.	SCADA SYSTEM ARCHITECTURE GENERAL	WAP/HEO/E&M/TD/14
15.	DC SYSTEM	WAP/HEO/E&M/TD/15
16.	UPS SINGLE LINE DIAGRAM POWER HOUSE	WAP/HEO/E&M/TD/16

- NOTE:-**
- ALL DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS IN METRES.
 - 220KV POTHEAD YARD ARRANGEMENT AT ROOF AND SUPPORT TO BE WORKED OUT DURING DETAILED ENGINEERING.
 - ADDITIONAL MECHANICAL PROTECTION FOR BUS DUCTS EMPLOYING GRILLED AL SECTION.

FOR TENDER PURPOSE ONLY

SHEET 1 OF 1

CLIENT: NORTH EASTERN ELECTRIC POWER CORPORATION LTD.

(MINI RATNA, CATEGORY-I, A GOVT. OF INDIA ENTERPRISE)

PROJECT: HEO HEP (3x80MW) ARUNACHAL PRADESH, INDIA



(A GOVT. OF INDIA UNDERTAKING)

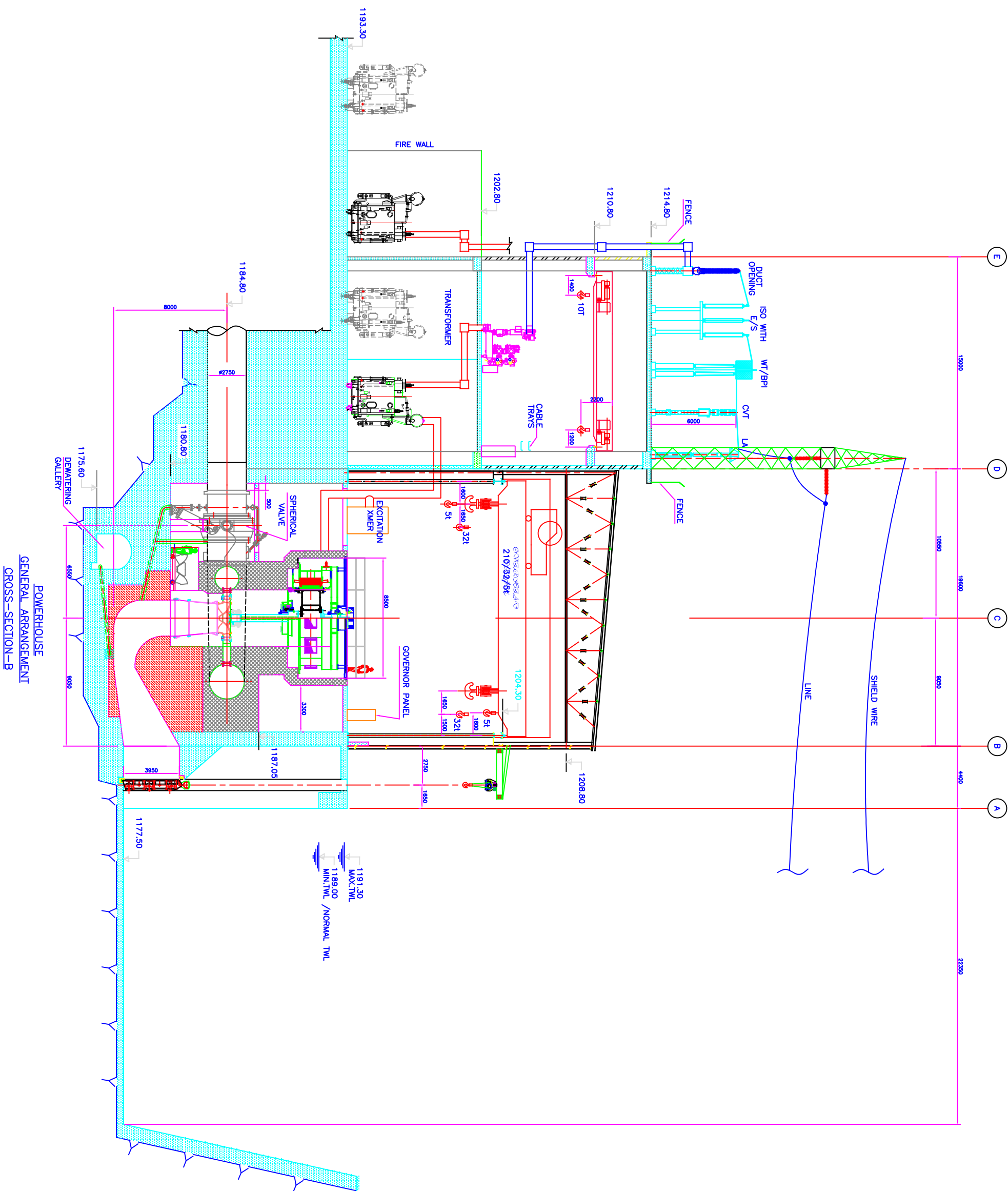
POWERHOUSE GENERAL

ARRANGEMENT CROSS-SECTION-B

DRAWING NO : WAP/HEO/EA&M/TD/02

DATE : AUGUST, 2024

ORIGINAL PRINT SIZE : A3

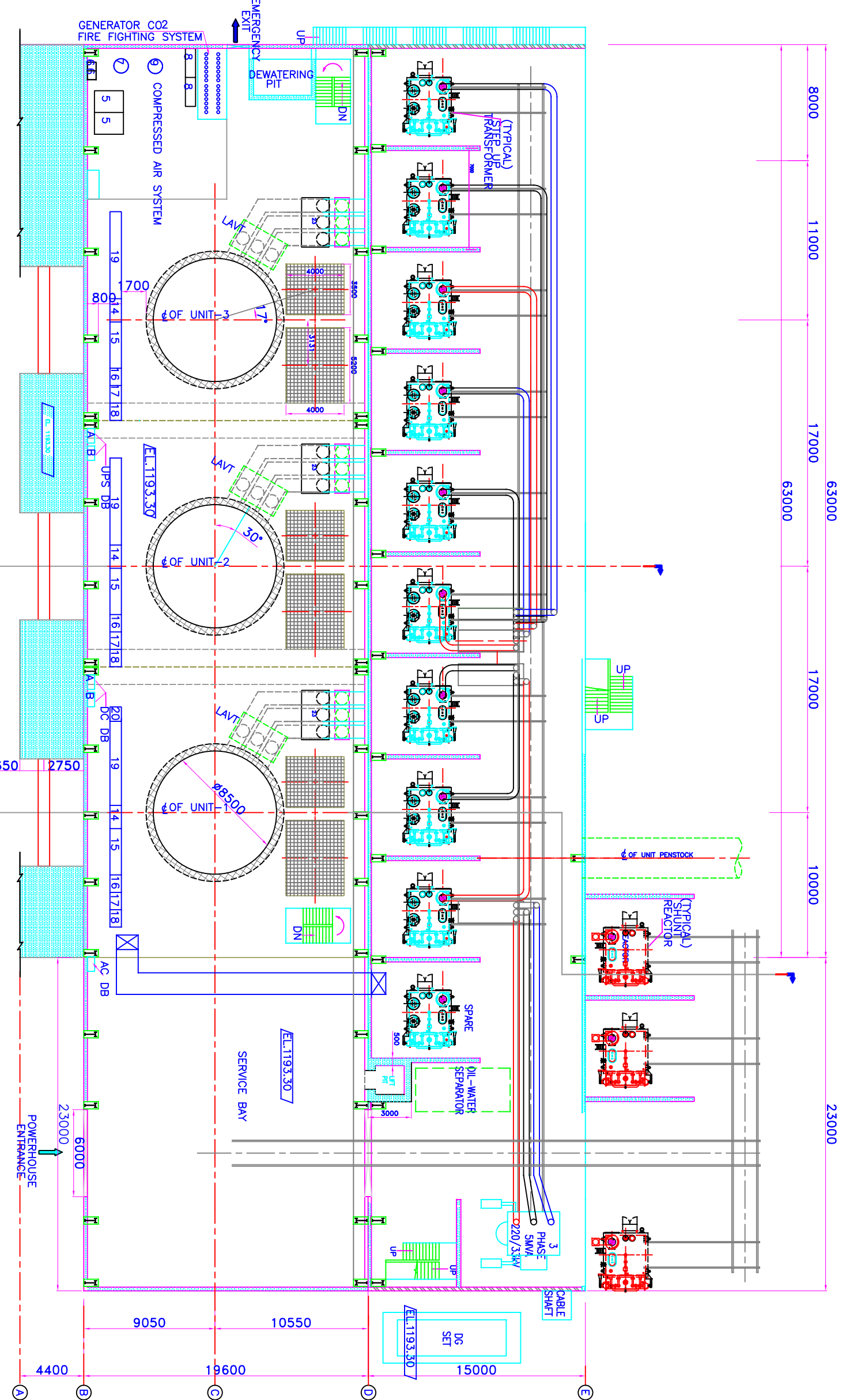


**POWERHOUSE
GENERAL ARRANGEMENT
CROSS-SECTION-B**

NOTE:-
1. ALL DIMENSIONS ARE IN MM. AND LEVELS ARE IN METRES.

LIST OF EQUIPMENT

ITEM NO.	DESCRIPTION	QUANTITY
1	CONTROL PANEL FOR OPU	3
2	CONTROL PANEL FOR MV	3
3	OPU	3
4	AIR VESSEL GOVERNOR	3
5	HP COMPRESSOR	2
6	HP AIR DRYER	2
7	HP AIR RECEIVER	1
8	PRESSURE REDUCING STATION	2
9	LP AIR RECEIVER	1
10	LUB. OIL PURIFICATION UNIT	2
11	MOTORISED STRAINERS	6
11A	FILLING FW TANKS	2
12	CYCLONE SEPARATOR	3
13	TURBINE JUNCTION BOX	3
14	GOVERNOR PANEL	3
15	UNIT LOCAL CONTROL BOARD	3
16	PROTECTION PANEL-A	3
17	PROTECTION PANEL-B	3
18	PROTECTION PANEL COMMON	3
19	EXCITATION CUBICLE	3
20	VIBRATION PANEL	1
21	UNIT AUXILIARY TRANSFORMER	3
22	UNIT AUXILIARY BOARD	3
23	EXCITATION TRANSFORMER	3
24	NG CUBICLE	3
25	TEMPERATURE MEASUREMENT & GAUGE PANEL	3
26	HMC	3
27	NEEDLE CONTROL CABINET	3
28	HS LUBE SYSTEM	3
29	HS LUBE CONTROL PANEL	3
30	BRAKE JACK CONTROL PANEL	3
31	GENERATOR MARSHALLING BOX	3
32	HEATER CONTROL PANEL	3
33	C.W. PUMP	6



POWERHOUSE
PLAN AT EL. 1193.30 M.
SERVICE BAY / OPERATING FLOOR

FOR TENDER PURPOSE ONLY

SHEET 1 OF 1

CLIENT: NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
(MINI RATNA, CATEGORY-I, A GOVT. OF INDIA ENTERPRISE)

PROJECT: HEO HEP (3x80MW) ARUNACHAL PRADESH, INDIA

CONSULTANTS
WAPCOS

(A GOVT. OF INDIA UNDERTAKING)

POWERHOUSE PLAN AT EL. 1193.30M
SERVICE BAY / OPERATING FLOOR

DRAWING NO : WAP/HEO/EA&MTD/03

DATE : AUGUST, 2024 ORIGINAL PRINT SIZE : A3

NOTE:- 1. ALL DIMENSIONS ARE IN MM. AND LEVELS ARE IN METRES.

LIST OF EQUIPMENT

ITEM NO.	DESCRIPTION	QUANTITY
1	CONTROL PANEL FOR OPU	3
2	CONTROL PANEL FOR MV	3
3	OPU	3
4	AIR VESSEL GOVERNOR	3
5	HP COMPRESSOR	2
6	HP AIR DRYER	2
7	HP AIR RECEIVER	1
8	PRESSURE REDUCING STATION	2
9	LP AIR RECEIVER	1
10	LUB. OIL PURIFICATION UNIT	2
11	MOTORISED STRAINERS	6
11A	FILLING FW TANKS	2
12	CYCLONE SEPARATOR	3
13	TURBINE JUNCTION BOX	3
14	GOVERNOR PANEL	3
15	UNIT LOCAL CONTROL BOARD	3
16	PROTECTION PANEL A	3
17	PROTECTION PANEL B	3
18	PROTECTION PANEL COMMON	3
19	EXCITATION CUBICLE	3
20	VIBRATION PANEL	1
21	UNIT AUXILIARY TRANSFORMER	3
22	UNIT AUXILIARY BOARD	3
23	EXCITATION TRANSFORMER	3
24	NG CUBICLE	3
25	TEMPERATURE MEASUREMENT & GAUGE PANEL	3
26	H/MC	3
27	NEEDLE CONTROL CABINET	3
28	HS LUBE SYSTEM	3
29	HS LUBE CONTROL PANEL	3
30	BRAKE JACK CONTROL PANEL	3
31	GENERATOR MARSHALLING BOX	3
32	HEATER CONTROL PANEL	3
33	C.W. PUMP	6

FOR TENDER PURPOSE ONLY

SHEET 1 OF 1

CLIENT: **NORTH EASTERN ELECTRIC POWER CORPORATION LTD.**
(MINI RATNA, CATEGORY-I, A GOVT. OF INDIA ENTERPRISE)

PROJECT: **HEO HEP (3x80MW)ARUNACHAL PRADESH, INDIA**

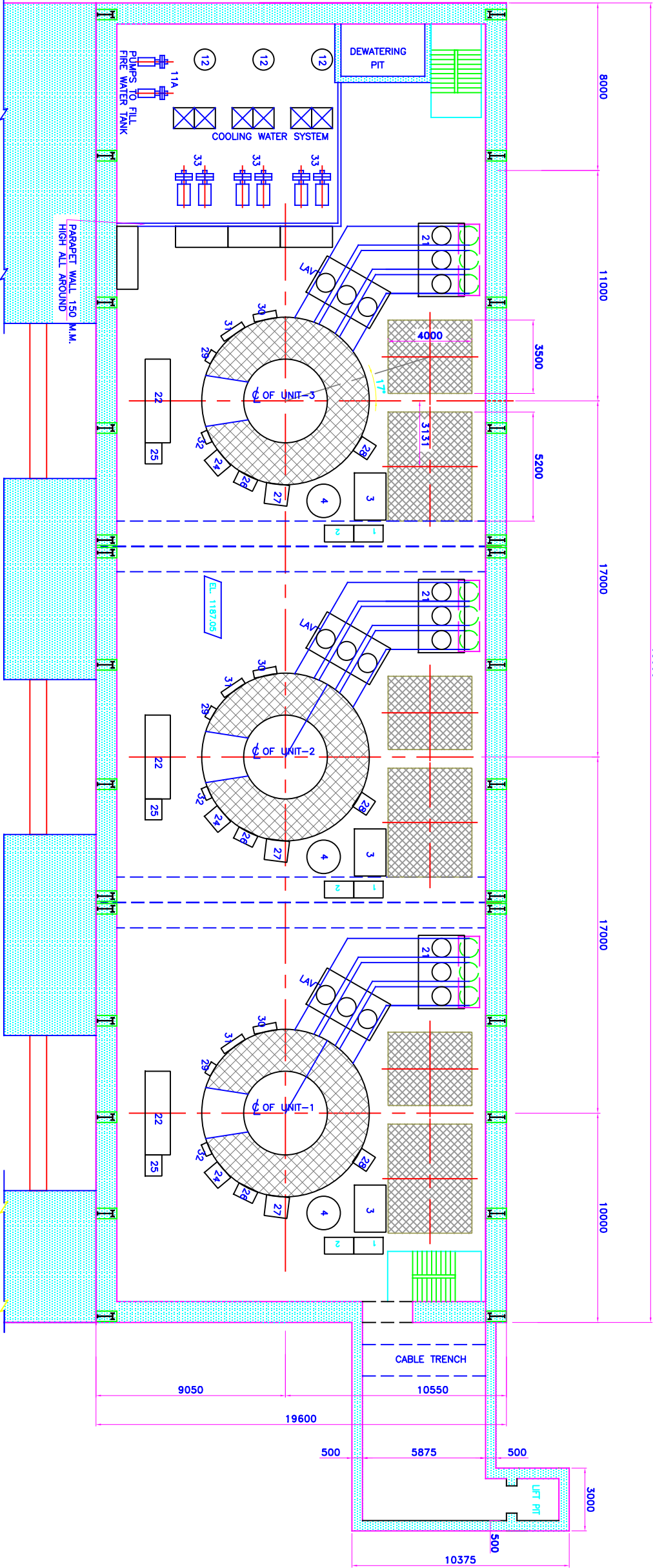


(A GOVT. OF INDIA UNDERTAKING)

**POWERHOUSE PLAN AT EL.1187.05M
GENERATOR / TURBINE FLOOR**

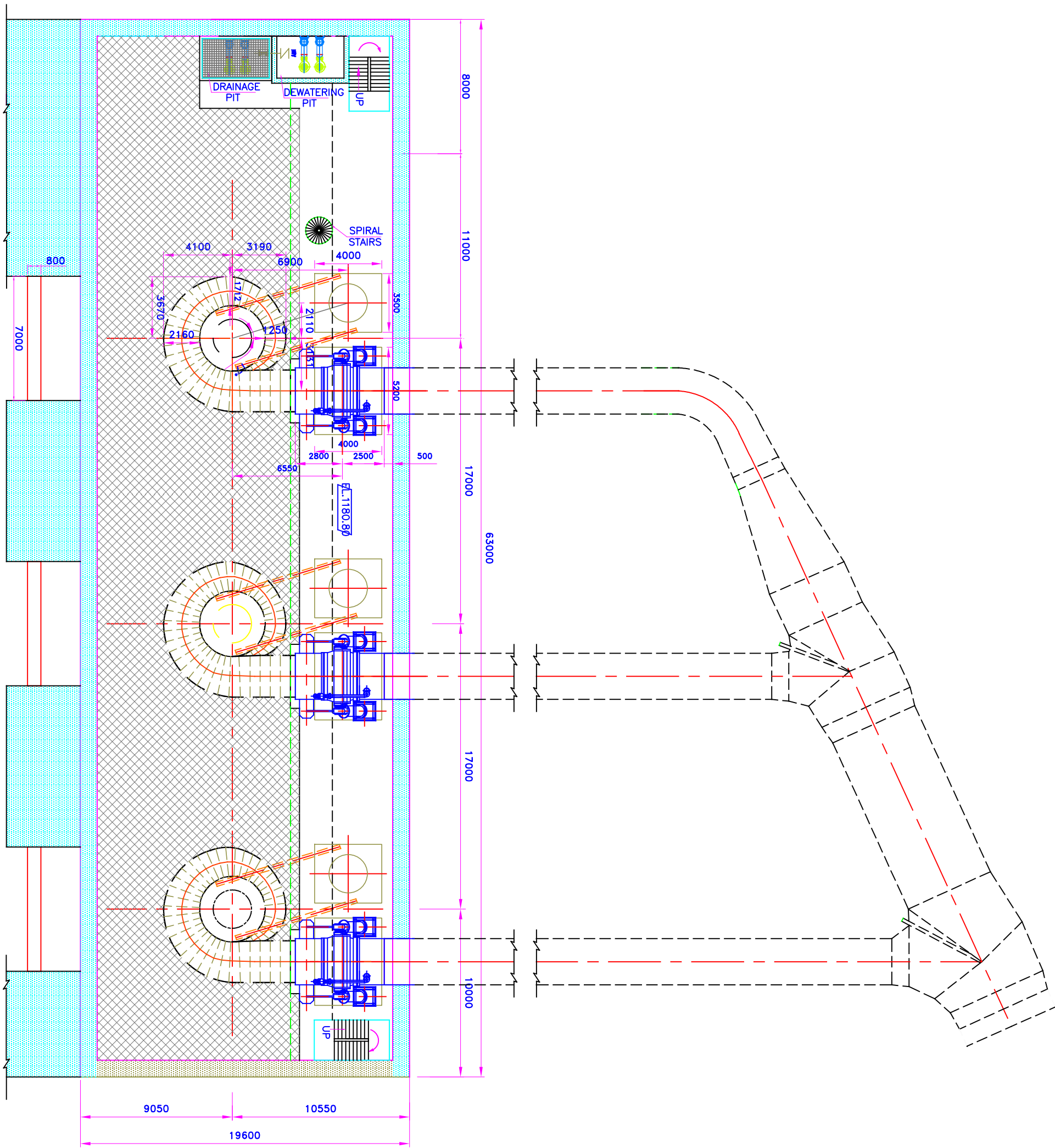
DRAWING NO : WAP/HEO/E&M/TD/04

DATE : AUGUST, 2024 ORIGINAL PRINT SIZE : A3




PLAN AT EL. 1187.05 M.
GENERATOR / TURBINE FLOOR

NOTE:-
1. ALL DIMENSIONS ARE IN MM. AND LEVELS ARE IN METRES.

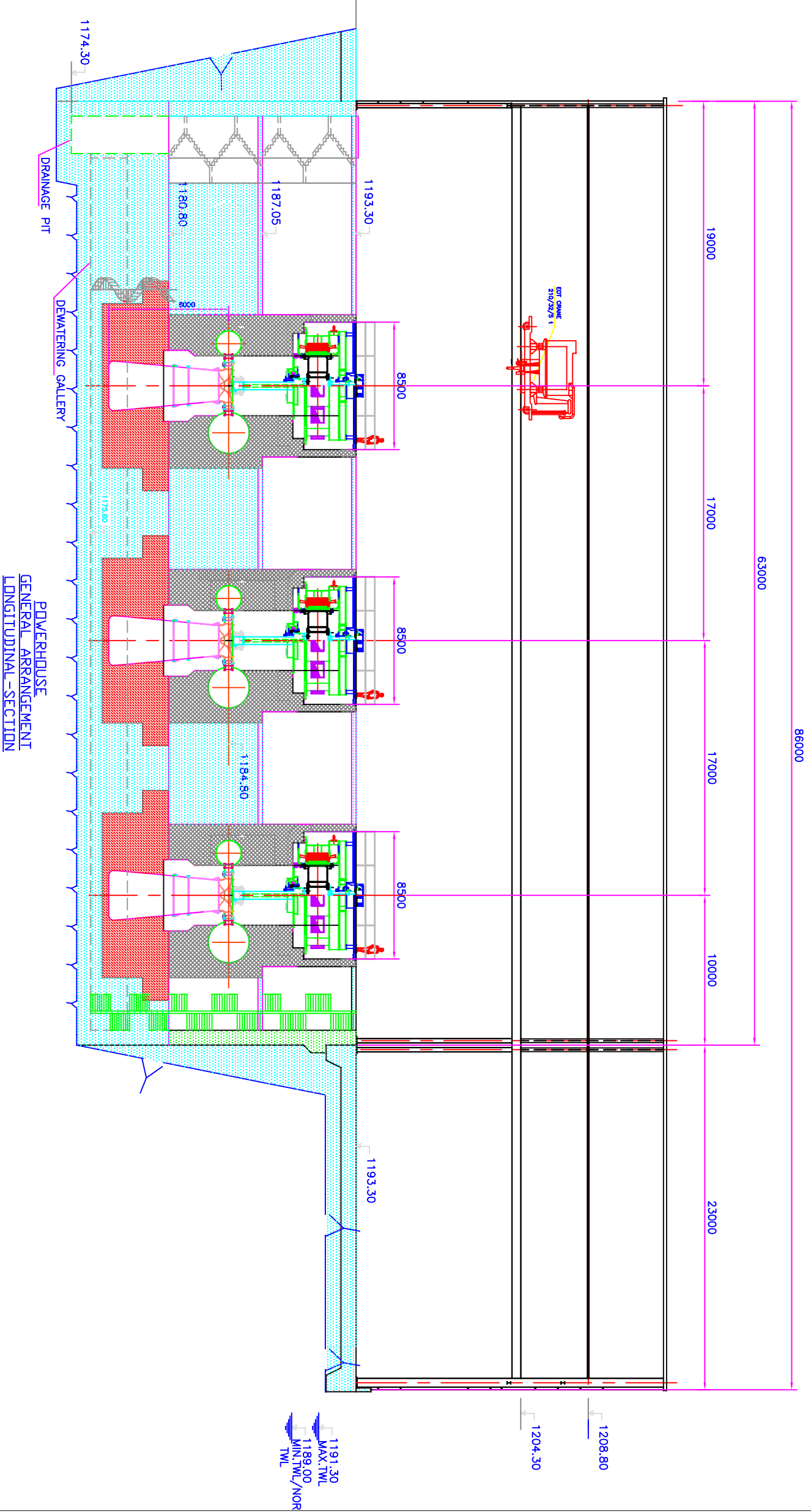


FOR TENDER PURPOSE ONLY

SHEET 1 OF 1



CLIENT:  NORTH EASTERN ELECTRIC POWER CORPORATION LTD. (MINI RATNA, CATEGORY-I, A GOVT. OF INDIA ENTERPRISE)	
PROJECT: HEO HEP (3x80MW) ARUNACHAL PRADESH, INDIA	
 WAPCOS CONSULTANTS (A GOVT. OF INDIA UNDERTAKING)	
POWERHOUSE PLAN AT EL. 1180.80M MIV FLOOR	
DRAWING NO : WAP/HEO/EA&M/TD/05	ORIGINAL PRINT SIZE : A3
DATE : AUGUST, 2024	

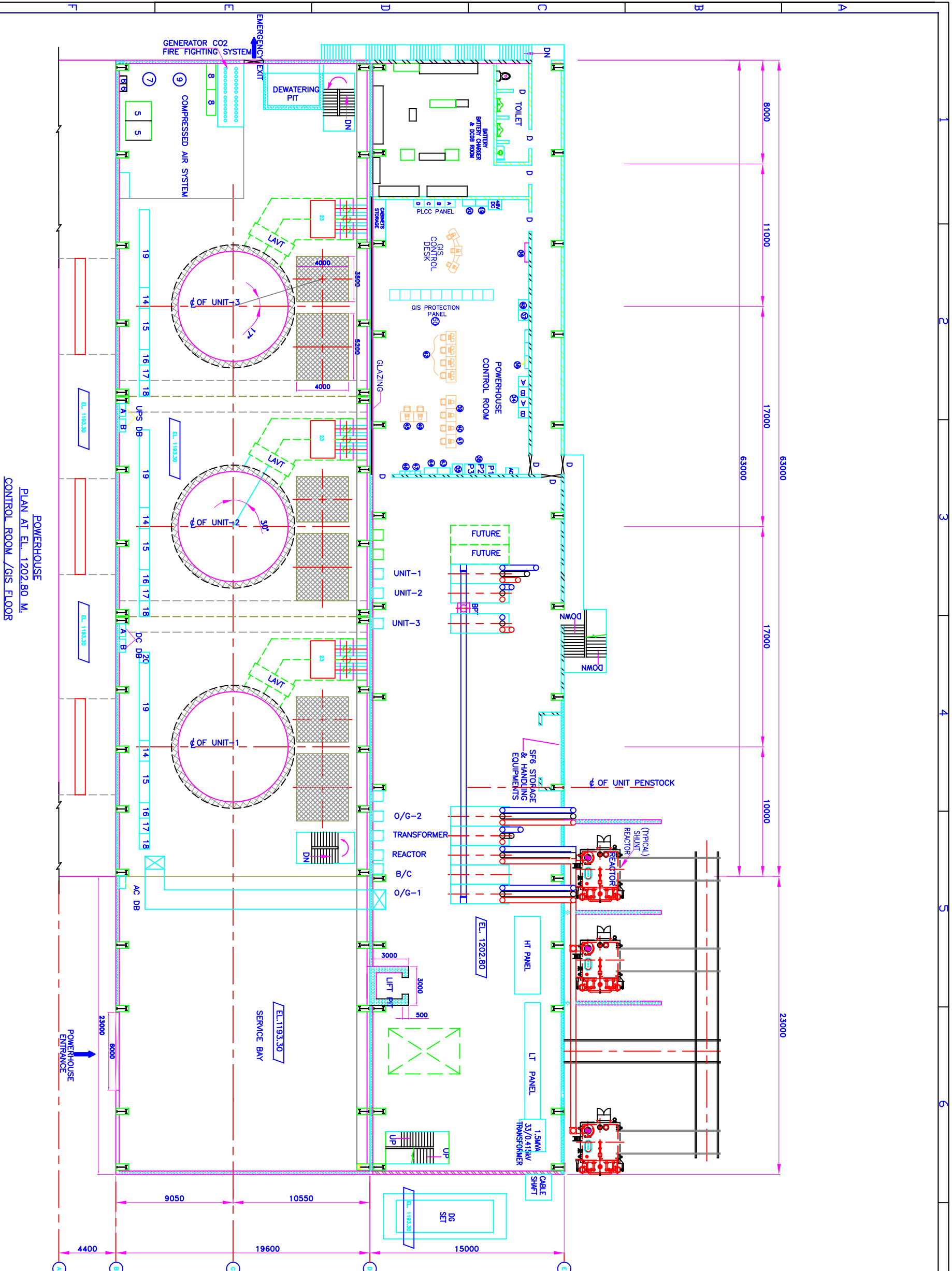
NOTE:-
1. ALL DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS IN METRES.



FOR TENDER PURPOSE ONLY

SHEET 1 OF 1

CLIENT:  NORTH EASTERN ELECTRIC POWER CORPORATION LTD. (MINI RATNA, CATEGORY-I, A GOVT. OF INDIA ENTERPRISE)	
PROJECT: HEO HEP (3x80MW) ARUNACHAL PRADESH, INDIA	
 WAPCOS CONSULTANTS (A GOVT. OF INDIA UNDERTAKING)	
POWERHOUSE GENERAL ARRANGEMENT LONGITUDINAL - SECTION	
DRAWING NO : WAP/HEO/EA&W/TD/06	ORIGINAL PRINT SIZE : A3
DATE : AUGUST, 2024	



NOTE:-

1. ALL DIMENSIONS ARE IN MM. AND LEVELS ARE IN METRES

ITEM NO.	DESCRIPTION	QUANTITY	SIZE(MM)
34	PATCH PANELS	4	800X800X23
35	EPABX SYSTEM	1	800X800X23
36	LARGE VIDEO SCREEN	4	-
37	FIRE ALARM PANEL	1	800X800X23
38	PRINTERS	3	800X800
39	HISTORIAN WORK STATION	2	1000X800
40	ENERGY MAANGEMENT WORK STATION	1	1000X800
41	LARGE VIDEO SCREEN MATRIX WORK STATION	1	1000X800
42	OPERATOR WORK STATION	5	1000X800
43	DC PANELS (WALL MOUNTED)	2	500X1000
44	UPS PANELS (WALL MOUNTED)	2	500X1000
45	ENERGY MAANGEMENT WORK STATION	3	1000X800
46	ELDB	2	250X400
47	MLDB	2	250X400
48	VOIP SYSTEM	1	
49	ZOOM PROCESSOR ANALYSIS WORK STATION	1	
50	GIS PROTECTION PANEL	10	

FOR TENDER PURPOSE ONLY

SHEET 1 OF 1

CLIENT:

CLIENT: NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
(MINI RATNA, CATEGORY-I, A GOVT. OF INDIA ENTERPRISE)

PROJECT

HEO HEP (3x80MW) ARUNACHAL
PRADESH, INDIA

CONSULTANTS

GOVT. OF INDIA UNDERTAKING

POWERHOUSE PLAN AT EL.1202.80M CONTROL ROOM & GIS FLOOR

DRAWING NO : WAP/HEO/E&M/TD/07

DATE : AUGUST, 2024 ORIGINAL PRINT SIZE : A3

NOTE:-
1. DRAWING SHOWN HERE IS ONLY SCHEMATIC DETAIL DRAWINGS AND SCHEMATIC SHALL BE FINALISED DURING DETAIL ENGINEERING.

LEGEND:-	
	HOR. CENTRIFUGAL PUMP
	DIAL PRESSURE GAUGE
	PRESSURE SWITCH
	DIFFERENTIAL PRESSURE GAUGE
	DIFFERENTIAL PR. SWITCH
	DIAL TEMPERATURE GAUGE
	TEMPERATURE TRANSMITTER
	FLOW GAUGE & SWITCH
	GATE VALVE (N.O)
	GATE VALVE (N.C)
	BUTTERFLY VALVE (N.O)
	GLOBE VALVE
	CHECK VALVE
	DRAIN VALVE
	AIR RELEASE VALVE
	PRESSURE REDUCING VALVE
	MOTORISED VALVE
	FINE STRAINER
	LEVEL SWITCH
	AUTOMATIC MOTORISED STRAINER
	VERTICAL TURBINE PUMP
	CYCLONE SEPARATOR

FOR TENDER PURPOSE ONLY

SHEET 1 OF 1

CLIENT: NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
(MINI RATNA, CATEGORY-1, A GOVT. OF INDIA ENTERPRISE)

PROJECT: HEO HEP (3x60MW)ARUNACHAL PRADESH, INDIA

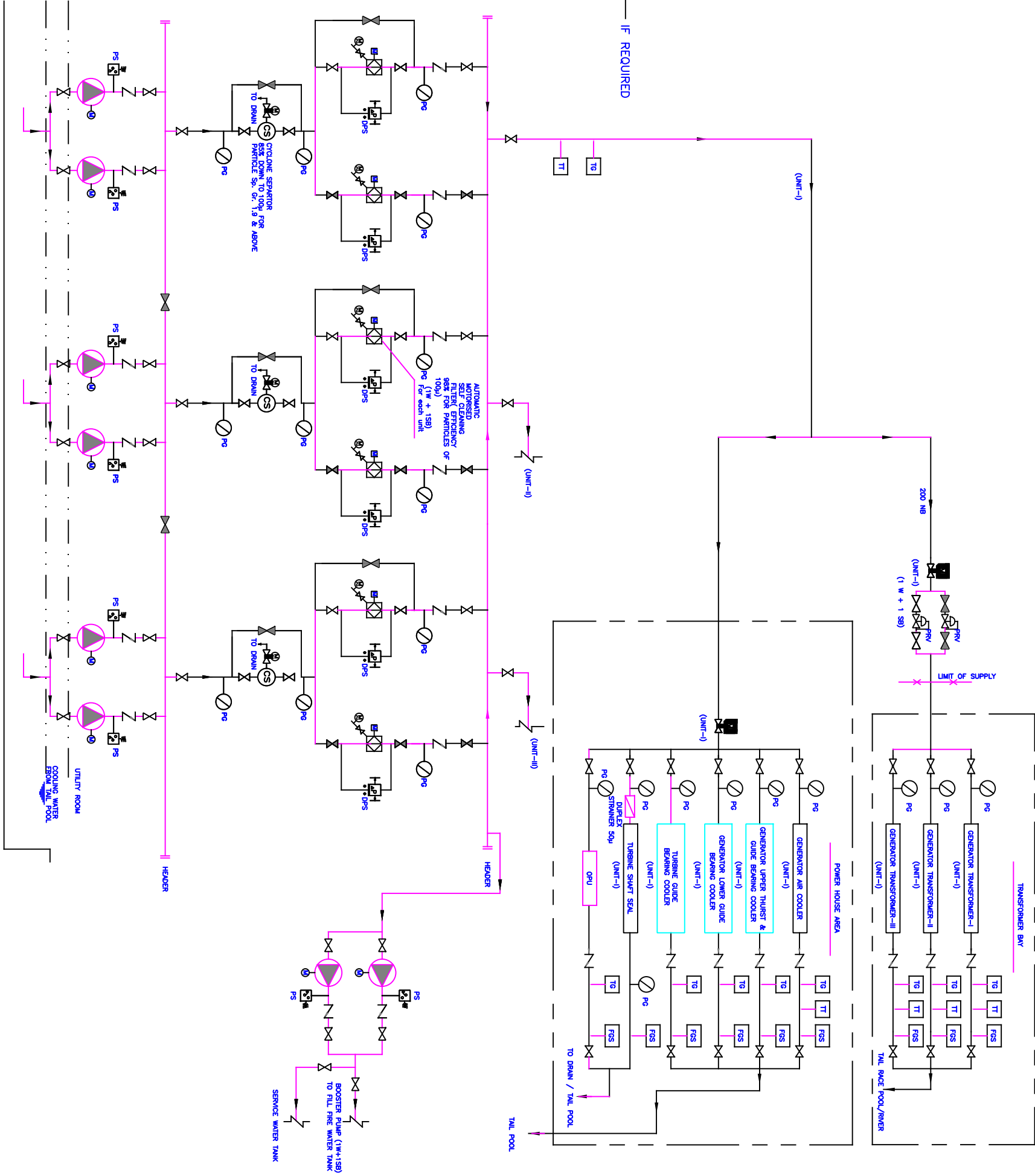


(A GOVT. OF INDIA UNDERTAKING)

COOLING WATER SYSTEM FLOW DIAGRAM

DRAWING NO : WAPIHEO&M/TD/09

DATE : FEBRUARY,2025 ORIGINAL PRINT SIZE : A3



Centrifugal pumps (1W + 1SB)
For a set of four reactors

Centrifugal pumps (1W + 1SB)
W: Working SB: Standby
For each TO unit

UTILITY ROOM
COOLING WATER FROM TAIL POOL

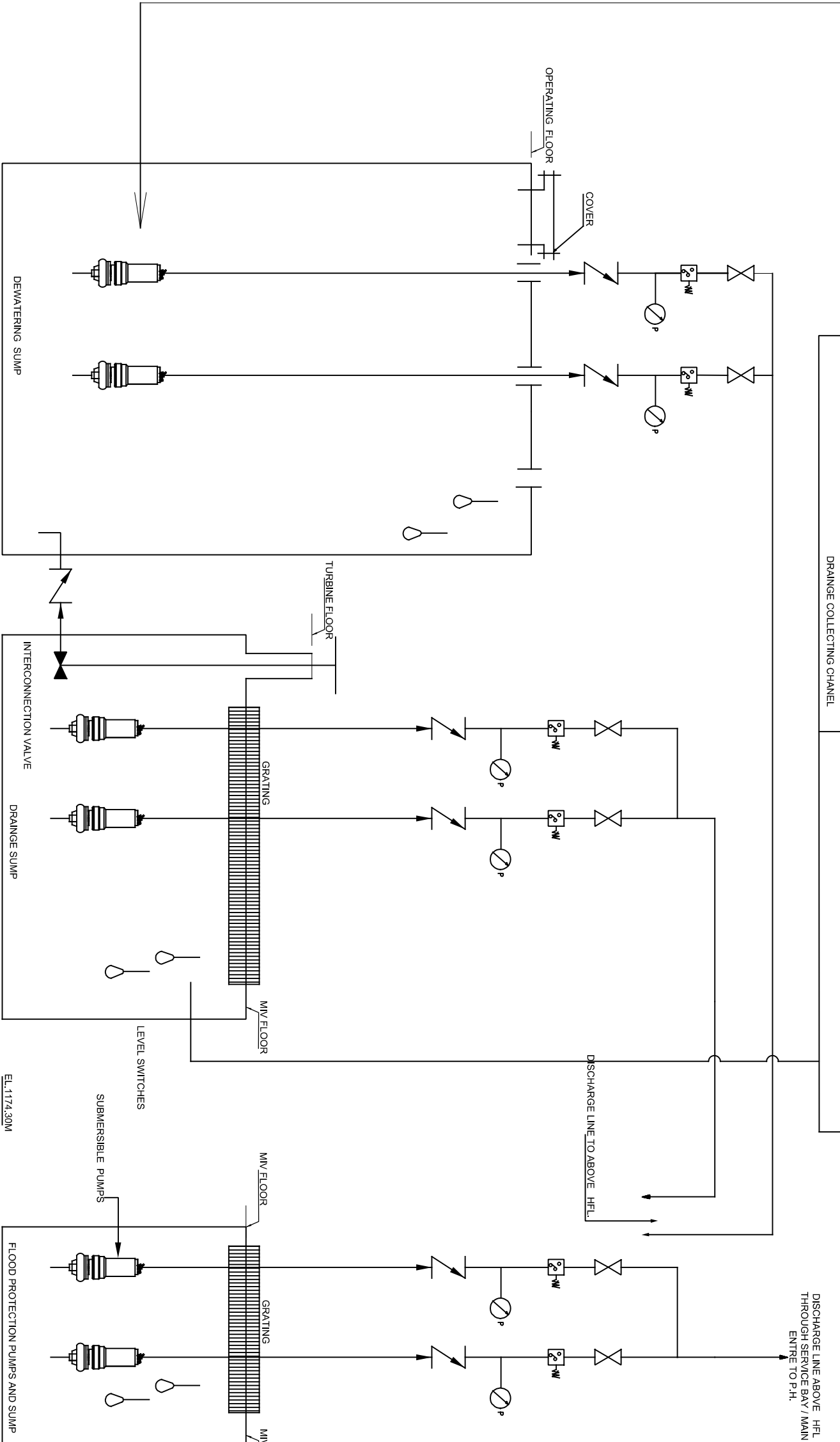
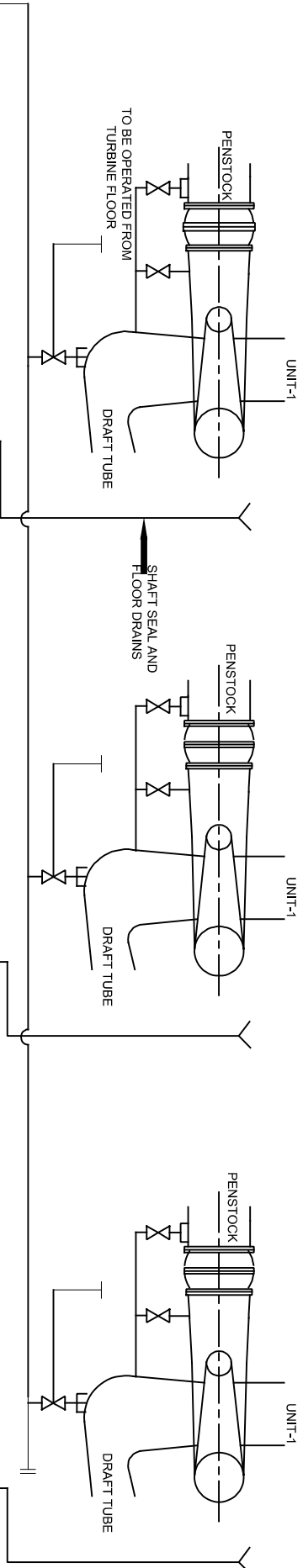
CYCLONE SEPARATOR
85% DOWN TO 100μ
PARTICLE SP. GR. 1.9 & ABOVE
TO DRAIN

CYCLONE SEPARATOR
85% DOWN TO 100μ
PARTICLE SP. GR. 1.9 & ABOVE
TO DRAIN

AUTOMATIC
MOTORISED
FINE STRAINER
98% FOR PARTICLES OF
100μ
For each unit

BOOSTER PUMP (1W+1SB)
TO FILL FIRE WATER TANK

SERVICE WATER TANK



- NOTE:-**
1. VALVES ARE INDICATIVES ONLY.BIDDER TO PROVIDE ADDITIONAL VALVES AS PER REQUIREMENT
 2. THE SCHEMATIC IS TENTATIVE BIDDER SHALL PROVIDE SYSTEM ACCORDING TO THE REQUIREMENTS

LEGEND:-

	PUMP
	DIAL PRESSURE GAUGE
	DIAL THERMOMETER
	TEMPERATURE DETECTOR
	PRESSURE SWITCH
	DIFFERENTIAL PRESSURE GAUGE
	DIFFERENTIAL PR. SWITCH WITH GAUGE
	FLOW SWITCH
	GATE VALVE (N.O.)
	GATE VALVE (N.C.)
	BUTTERFLY VALVE (N.O.)
	GLOBE VALVE
	CHECK VALVE
	DRAIN VALVE
	AIR RELEASE VALVE
	PRESSURE REDUCING VALVE
	MOTORISED VALVE
	FINE STRAINER
	LEVEL SWITCH
	SUBMERSIBLE PUMP

FOR TENDER PURPOSE ONLY

SHEET 1 OF 1

CLIENT:

NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
(MINI RATNA CATEGORY-I, A GOVT. OF INDIA ENTERPRISE)

PROJECT:
HED HEP (3x80MW)ARIJACHAL
PRADESH, INDIA

CONSULTANTS
(A GOVT. OF INDIA UNDERTAKING)

DRAINAGE & DEWATERING SYSTEM & FLOOD PROTECTION FLOW DIAGRAM

DRAWING NO : WAP/HED/EMTD/10

DATE : AUGUST, 2024 ORIGINAL PRINT SIZE : A3

- NOTE:-**
- ALL THE PIPING, FITTING, VALVES, INSTRUMENTS REQUIRED TO COMPLETE THE SYSTEM BUT , SPECIFICALLY NOT SHOWN IN THE DRG. ARE IN THE SCOPE OF CONTRACTOR.
 - DRAWING SHOWN HERE IS ONLY SCHEMATIC DETAIL. DRAWINGS AND SCHEMATIC SHALL BE FINALISED DURING DETAIL ENGINEERING.

LEGEND:-

	PRESSURE GAUGE
	PRESSURE SWITCH
	PRESSURE TRANSMITTER
	TEMPERATURE SWITCH
	GLOBE VALVE (N.O.)
	GLOBE VALVE (N.C.)
	ISOLATING VALVE (N.O.)
	ISOLATING VALVE (N.C.)
	CHECK VALVE
	SAFETY VALVE
	PRESSURE REGULATING VALVE
	SOLENOID VALVE
	AIR FILTER
	MOISTURE TRAP
	AUTOMATIC MOISTURE DRAIN
	LEVEL SWITCH

FOR TENDER PURPOSE ONLY

SHEET 1 OF 1

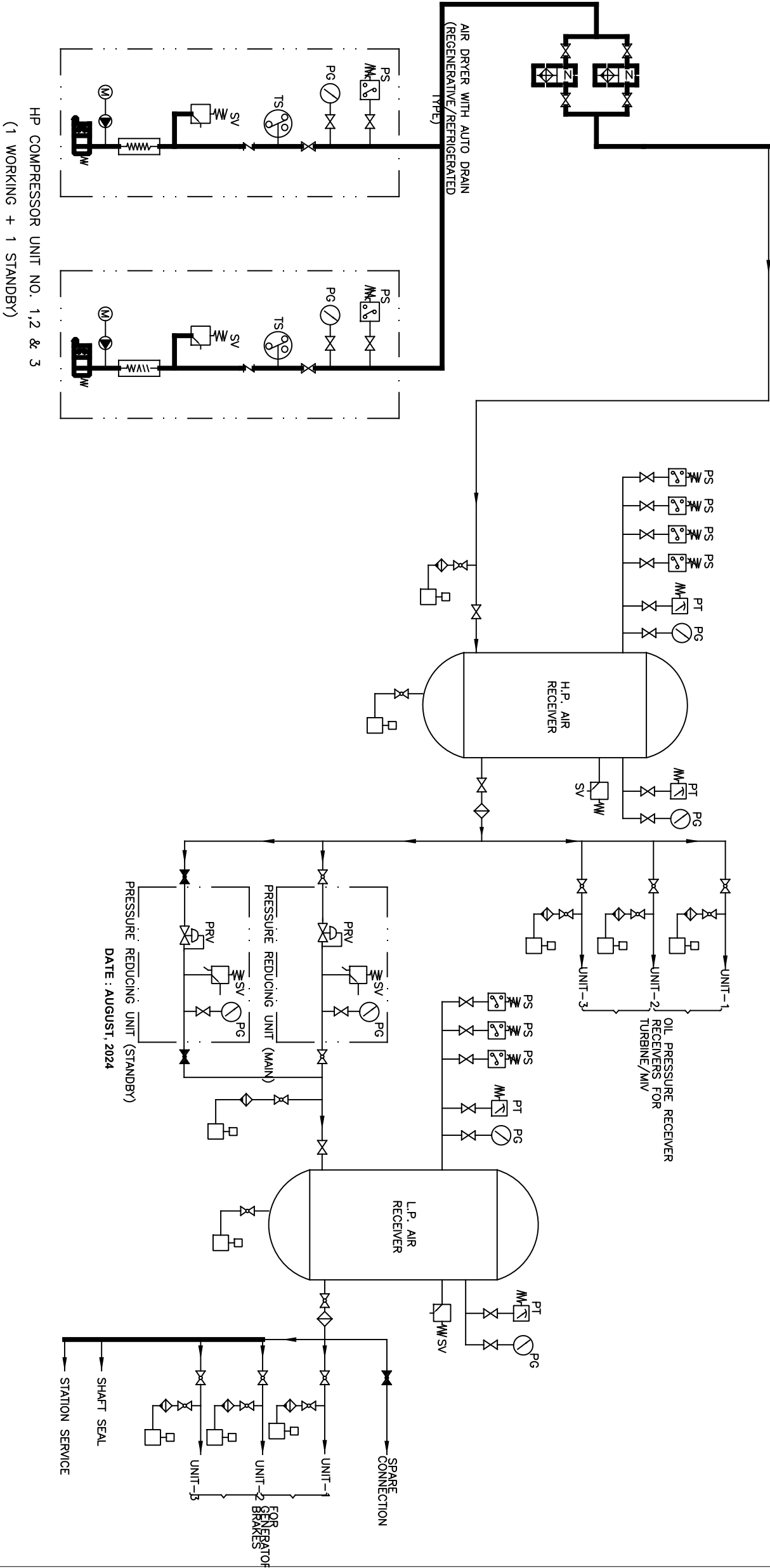
CLIENT: **NORTH EASTERN ELECTRIC POWER CORPORATION LTD.**
(MINI RATNA, CATEGORY-I, A GOVT. OF INDIA ENTERPRISE)

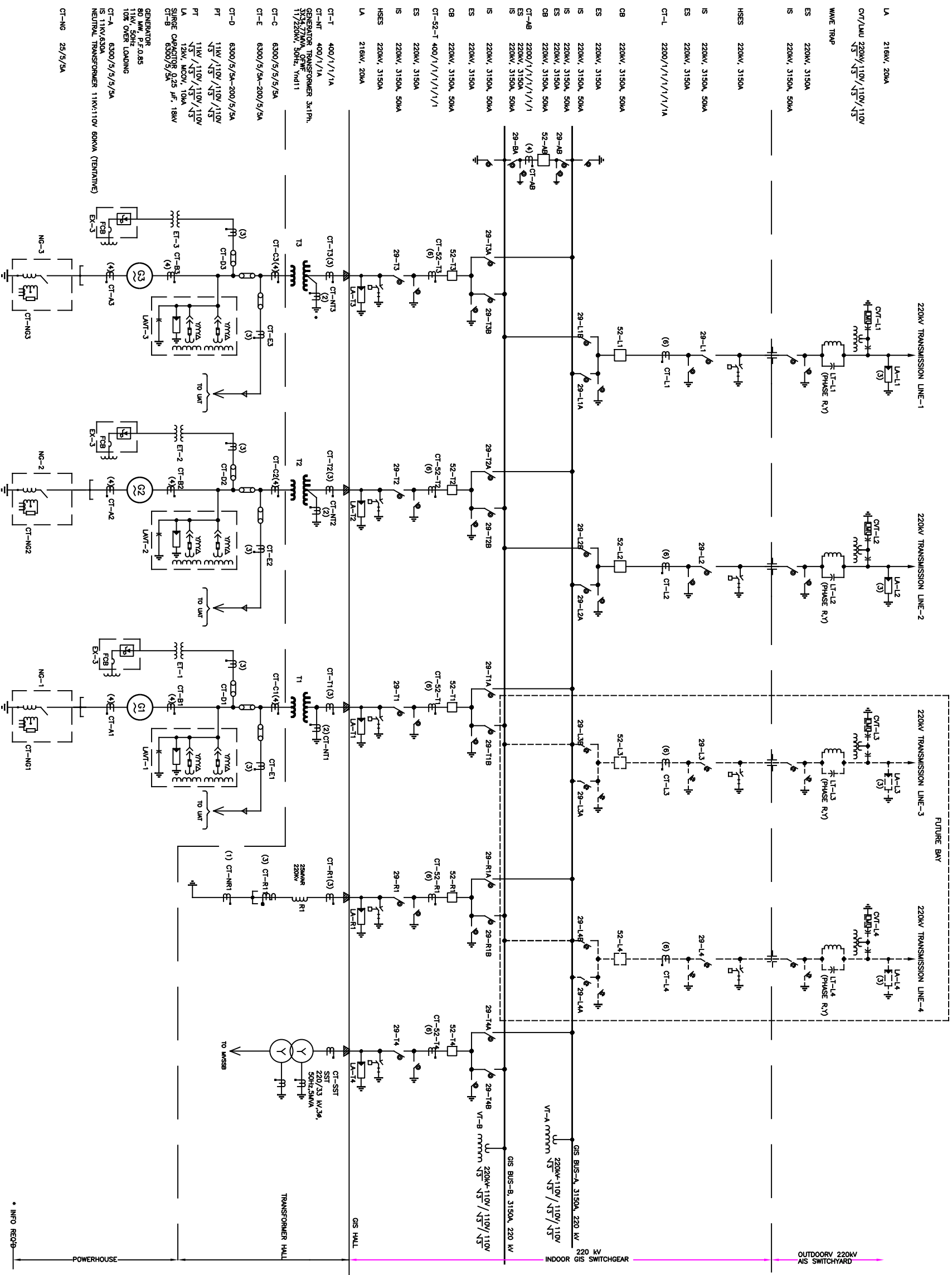
PROJECT: **HEO HEP (3x80MW) ARUNACHAL PRADESH, INDIA**

WAPCOS
(A GOVT. OF INDIA UNDERTAKING)

COMPRESSED AIR SYSTEM FLOW DIAGRAM

DRAWING NO : WAP/HEO/EA&MTD/11
DATE : AUGUST, 2024
ORIGINAL PRINT SIZE : A3





	ISOLATING LINK (IL)
	ISOLATOR (IS)
	EARTH SWITCH (ES)
	LIGHTING ARRESTER (LA)
	GROUND CONNECTION
	CB (220 kV)
	CONTROLLED RECTIFIER (THYRISTOR)
	CABLE TERMINATION
	CAPACITIVE DIVTER
	LINE TRAP
	CURRENT TRANSFORMER
	DRAWOUT INDUCTION VT
	FIXED INDUCTION VT
	POWER TRANSFORMER
	GENERATOR
	MOTOR OPERATED
	LINE MATCHING UNIT
	GIS/AIS TERMINATION
	GIS/OIL
	HIGH SPEED EARTH SWITCH

FOR TENDER PURPOSE ONLY

Note:- 1. The equipment rating indicated in the SLD are tentative may be decided during detail design stage.
2. CT Parameter Number of CT/VT Cores are tentative and the same shall be finalized during detail design stage.

SHEET 1 OF 1

WAPCOS
CONSULTANTS

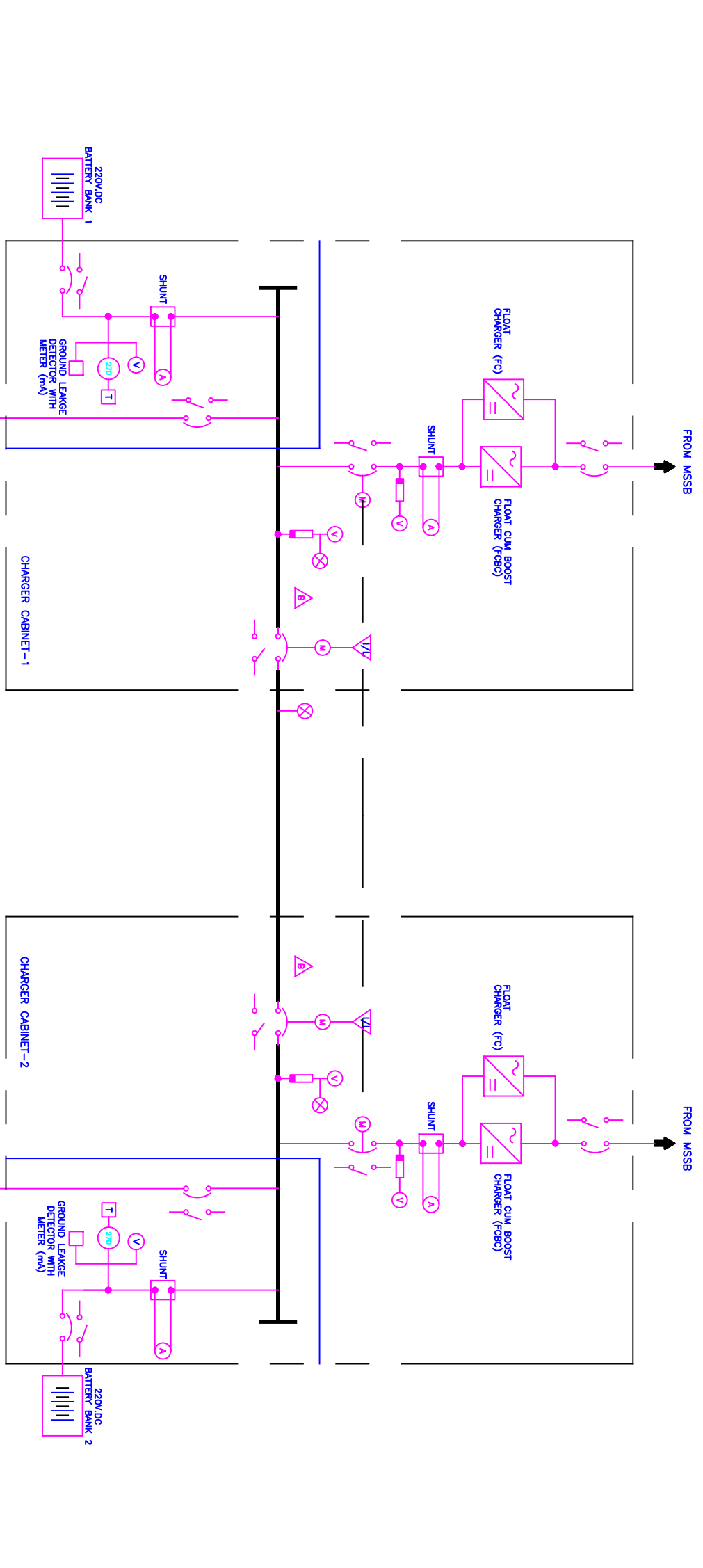
CLIENT:
NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
(MINI RATNA, CATEGORY-I, A GOVT. OF INDIA ENTERPRISE)

PROJECT:
HEO HEP (3x80MW)ARUNACHAL PRADESH, INDIA

POWERHOUSE AND SUBSTATION MAIN SINGLE LINE DIAGRAM

DRAWING NO : WAP/HEO/EA&M/TD/12

DATE : JANUARY, 2025



LEGEND:-

	MOULDED CASE CIRCUIT BREAKER WITH THERMAL INSTANTANEOUS & SHORT CIRCUIT PROTECTION (DRAW OUT TYPE)
	D.C. UNDER VOLTAGE RELAY
	D.C. TIMER
	D.C. VOLT/METER
	D.C. AMMETER
	D.C. FUSE
	D.C. SHUNT
	D.C. AUX CONTACT
	D.C. LED

NOTES:
1. PHILOSOPHY FOR 48VDC SLD SHALL ALSO BE SAME AS 220V SYSTEM.

FOR TENDER PURPOSE ONLY

SHEET 1 OF 1

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PROJECT:
HEO HEP (3x80MW) ARUNACHAL PRADESH, INDIA
CONSULTANTS
(A GOVT. OF INDIA UNDERTAKING)

DC SYSTEM

DRAWING NO : WAP/HEO/EA/MTD/15

DATE : FEBRUARY, 2025
ORIGINAL PRINT SIZE : A3

TABLE:-	
I/O	LIST - UPS SYSTEM (ALARM FOR SCADA)
A.	DIGITAL SIGNALS (POTENTIAL FREE CONTACT)
1.	AC INPUT MAIN FAIL
2	AC INPUT BYPASS FAIL
3	AC INPUT (MAINS) MCCB ON
4	AC INPUT (BYPASS) MCCB ON
5	BYPASS SWITCH MCCB ON
6	UPS DB MCCB OPEN
7	INVERTER FAIL
8	RECTIFIER FAIL
9	STATIC SWITCH LOCKOUT
10	LOAD ON BYPASS
11	BATTERY MCCB OPEN
12	BATTERY UNDER VOLTAGE
B. ANALOG SIGNALS	
1.	BATTERY CHARGE / DISCHARGE CURRENT
2.	UPS OUTPUT AC VOLTAGE (ON DB)

LEGEND:-

	MOULDED CASE CIRCUIT BREAKER WITH THERMAL INSTANTANEOUS & SHORT CIRCUIT PROTECTION (DRAW OUT TYPE)
	CAPACITOR
	RECTIFIER
	PWM INVERTER
	TRANSFORMER
	AUTO TRANSFORMER
	DISCONNECT SWITCH
	STATIC SWITCH
	NORMALLY CLOSED CONTACT
	VOLTAGE RELAY
	CHOKE COIL
	CT
	FUSE
	VOLTMETER
	AMMETER
	VOLTAGE STABILIZER
	VOLTAGE SELECTOR SWITCH
	ENERGY METER
	AUX. CONTACT
	DIODE
	BYPASS SWITCH

FOR TENDER PURPOSE ONLY

SHEET 1 OF 1

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(MINI RATNA, CATEGORY-I, A GOVT. OF INDIA ENTERPRISE)

PROJECT: HEO HEP (3x80MW) ARUNACHAL PRADESH, INDIA



(A GOVT. OF INDIA UNDERTAKING)

UPS SINGLE LINE DIAGRAM POWER HOUSE

DRAWING NO : WAP/HEO/EA&MTD/16

DATE : AUGUST, 2024

ORIGINAL PRINT SIZE : A3

