



TITLE:
**TECHNICAL SPECIFICATION FOR
COAL HANDLING PLANT
RUN-OFF WATER TREATMENT SYSTEM
3X800 MW PATRATU STPP EXT.PH-I**

BHEL DOCUMENTS NO.: PE-TS-434-157-A001

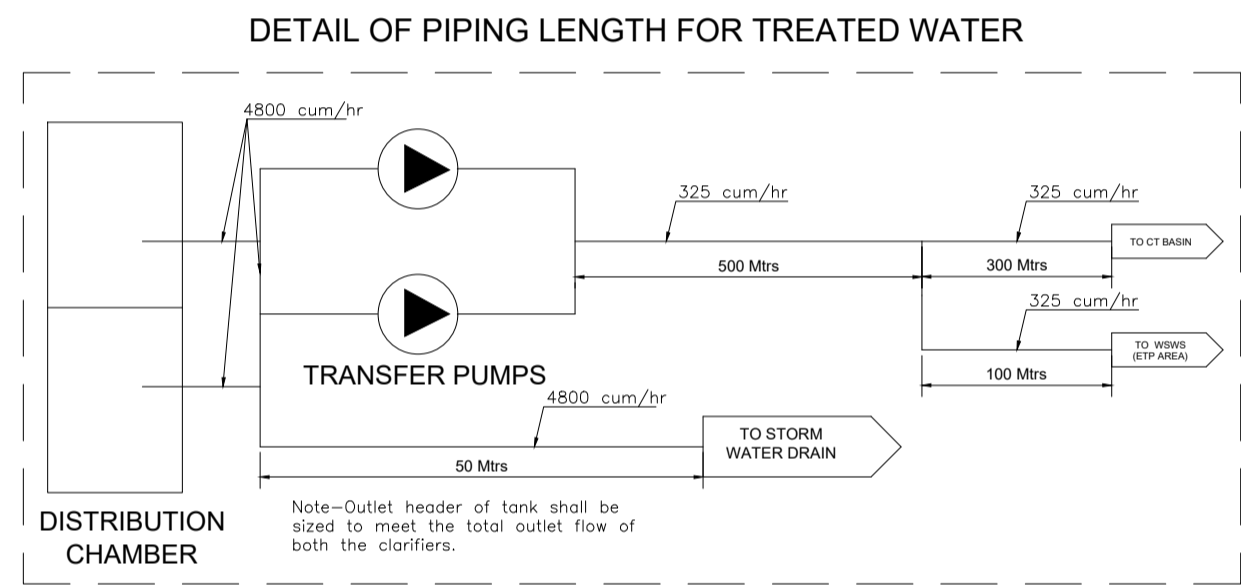
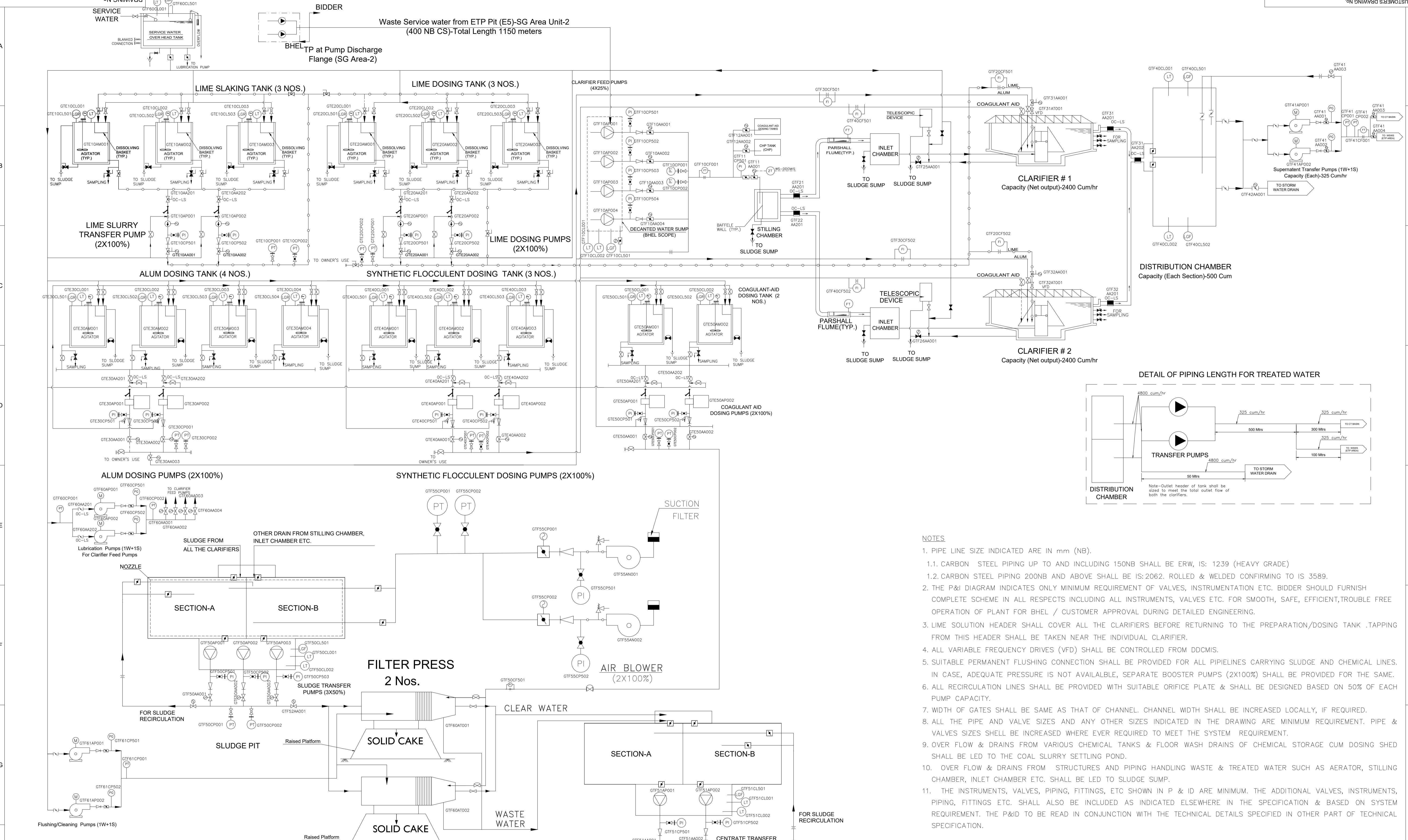
VOLUME-II-B

SECTION-C1

REV. NO. 00

DATE:

(DRAWINGS)



- NOTES**
- PIPE LINE SIZE INDICATED ARE IN mm (NB).
 - CARBON STEEL PIPING UP TO AND INCLUDING 150NB SHALL BE ERW, IS: 1239 (HEAVY GRADE)
 - CARBON STEEL PIPING 200NB AND ABOVE SHALL BE IS:2062. ROLLED & WELDED CONFIRMING TO IS 3589.
 - THE P&I DIAGRAM INDICATES ONLY MINIMUM REQUIREMENT OF VALVES, INSTRUMENTATION ETC. BIDDER SHOULD FURNISH COMPLETE SCHEME IN ALL RESPECTS INCLUDING ALL INSTRUMENTS, VALVES ETC. FOR SMOOTH, SAFE, EFFICIENT, TROUBLE FREE OPERATION OF PLANT FOR BHEL / CUSTOMER APPROVAL DURING DETAILED ENGINEERING.
 - LIME SOLUTION HEADER SHALL COVER ALL THE CLARIFIERS BEFORE RETURNING TO THE PREPARATION/DOSING TANK. TAPPING FROM THIS HEADER SHALL BE TAKEN NEAR THE INDIVIDUAL CLARIFIER.
 - ALL VARIABLE FREQUENCY DRIVES (VFD) SHALL BE CONTROLLED FROM DDCMIS.
 - SUITABLE PERMANENT FLUSHING CONNECTION SHALL BE PROVIDED FOR ALL PIPELINES CARRYING SLUDGE AND CHEMICAL LINES. IN CASE, ADEQUATE PRESSURE IS NOT AVAILABLE, SEPARATE BOOSTER PUMPS (2X100%) SHALL BE PROVIDED FOR THE SAME.
 - ALL RECIRCULATION LINES SHALL BE PROVIDED WITH SUITABLE ORIFICE PLATE & SHALL BE DESIGNED BASED ON 50% OF EACH PUMP CAPACITY.
 - WIDTH OF GATES SHALL BE SAME AS THAT OF CHANNEL. CHANNEL WIDTH SHALL BE INCREASED LOCALLY, IF REQUIRED.
 - ALL THE PIPE AND VALVE SIZES AND ANY OTHER SIZES INDICATED IN THE DRAWING ARE MINIMUM REQUIREMENT. PIPE & VALVES SIZES SHALL BE INCREASED WHERE EVER REQUIRED TO MEET THE SYSTEM REQUIREMENT.
 - OVER FLOW & DRAINS FROM VARIOUS CHEMICAL TANKS & FLOOR WASH DRAINS OF CHEMICAL STORAGE CUM DOSING SHED SHALL BE LED TO THE COAL SLURRY SETTLING POND.
 - OVER FLOW & DRAINS FROM STRUCTURES AND PIPING HANDLING WASTE & TREATED WATER SUCH AS AERATOR, STILLING CHAMBER, INLET CHAMBER ETC. SHALL BE LED TO SLUDGE SUMP.
 - THE INSTRUMENTS, VALVES, PIPING, FITTINGS, ETC SHOWN IN P & ID ARE MINIMUM. THE ADDITIONAL VALVES, INSTRUMENTS, PIPING, FITTINGS ETC. SHALL ALSO BE INCLUDED AS INDICATED ELSEWHERE IN THE SPECIFICATION & BASED ON SYSTEM REQUIREMENT. THE P&I TO BE READ IN CONJUNCTION WITH THE TECHNICAL DETAILS SPECIFIED IN OTHER PART OF TECHNICAL SPECIFICATION.

LEGEND

	FLOAT VALVE		PARSHALL FLUME		DIAPHRAGM VALVE NORMALLY OPEN / NORMALLY CLOSED		LEVEL GAUGE (REFLEX TYPE)		NIDDLE VALVE
	AIR BLOWER		PLUG VALVE		PNEUMATICALLY OPERATED		PRESSURE INDICATOR		GATE VALVE (MOTORIZED-INCHING TYPE)
	DIAPHRAGM SEAL		GATE VALVE		Y TYPE STRAINER		FLOW INDICATOR		BUTTERFLY VALVE (MOTORIZED-INCHING TYPE)
	OC-LS		GLOBE VALVE		FUNNEL		FLOW TRANSMITTER		
	ISOLATION GATE		BALL VALVE		ORIFICE PLATE		MOTOR OPERATED		
	ZT		BUTTERFLY VALVE		LEVEL SWITCH		LEVEL TRANSMITTER		
			PRESSURE RELIEF VALVE		PRESSURE SWITCH		DISTRIBUTED DIGITAL CONTROL MONITORING AND INFORMATION SYSTEM (OWNER'S)		
			NON RETURN VALVE		LEVEL GAUGE		PUMP		
			BUTTERFLY VALVE ELECTRICALLY OPERATED		LEVEL GAUGE (FLOAT TYPE)				

OWNER
NTPC Limited
(A GOVERNMENT OF INDIA ENTERPRISE)

CONTRACTOR
BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA

PROJECT
3X800 MW PATRATU STPP EXT.PH-1

TITLE
P&I DIAGRAM FOR CHP RUN-OFF WATER TREATMENT SYSTEM

JOB No. 434
STATUS CONTRACT
DISTRIBUTION

REV	DATE	ALTD	CHD	APPD

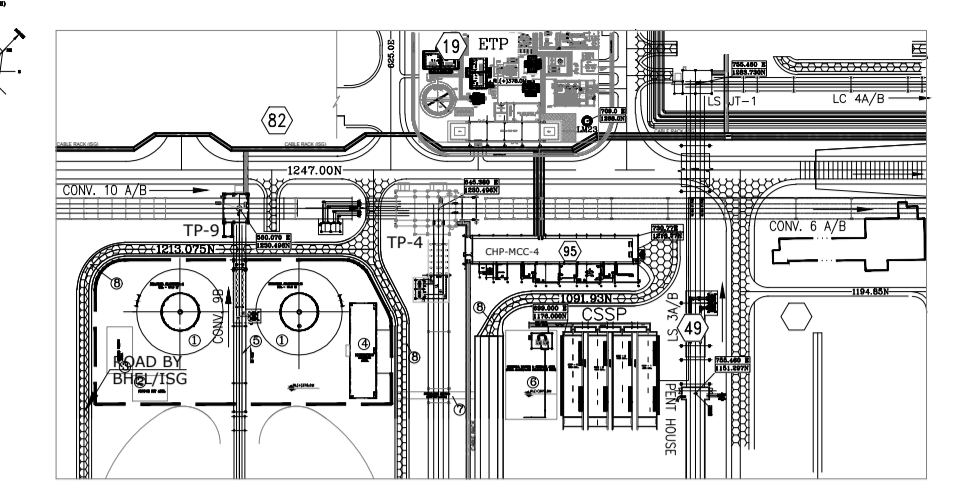
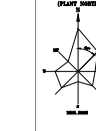
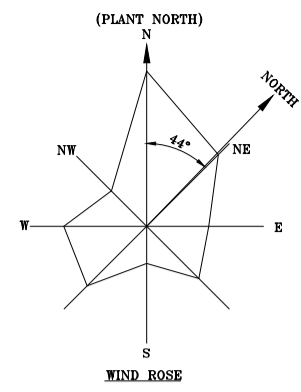
DEPT. CODE A
SCALE 1:100
DRAWING No. PE-DG-434-157-A001A
SHEET 01 OF 01
REV 00

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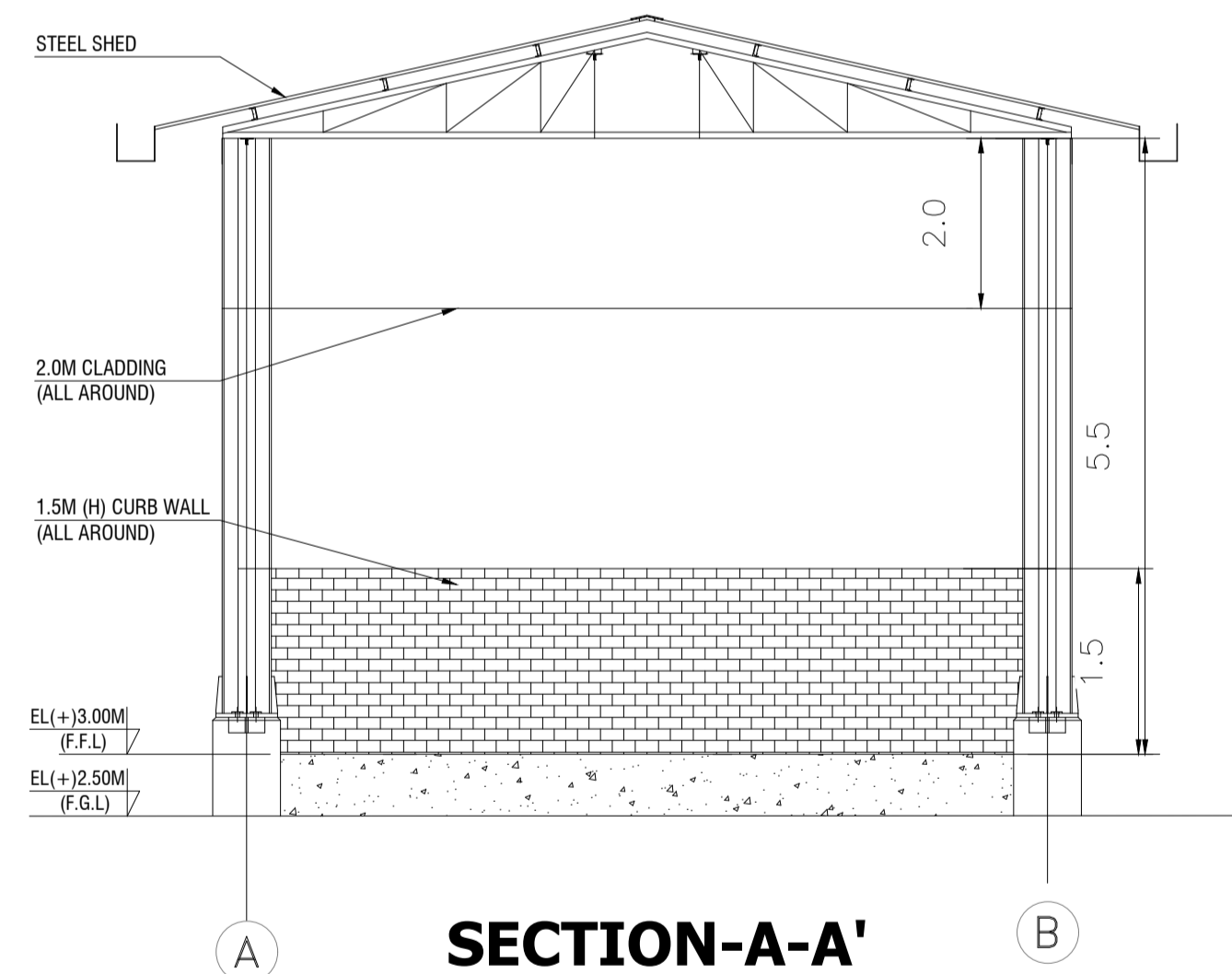
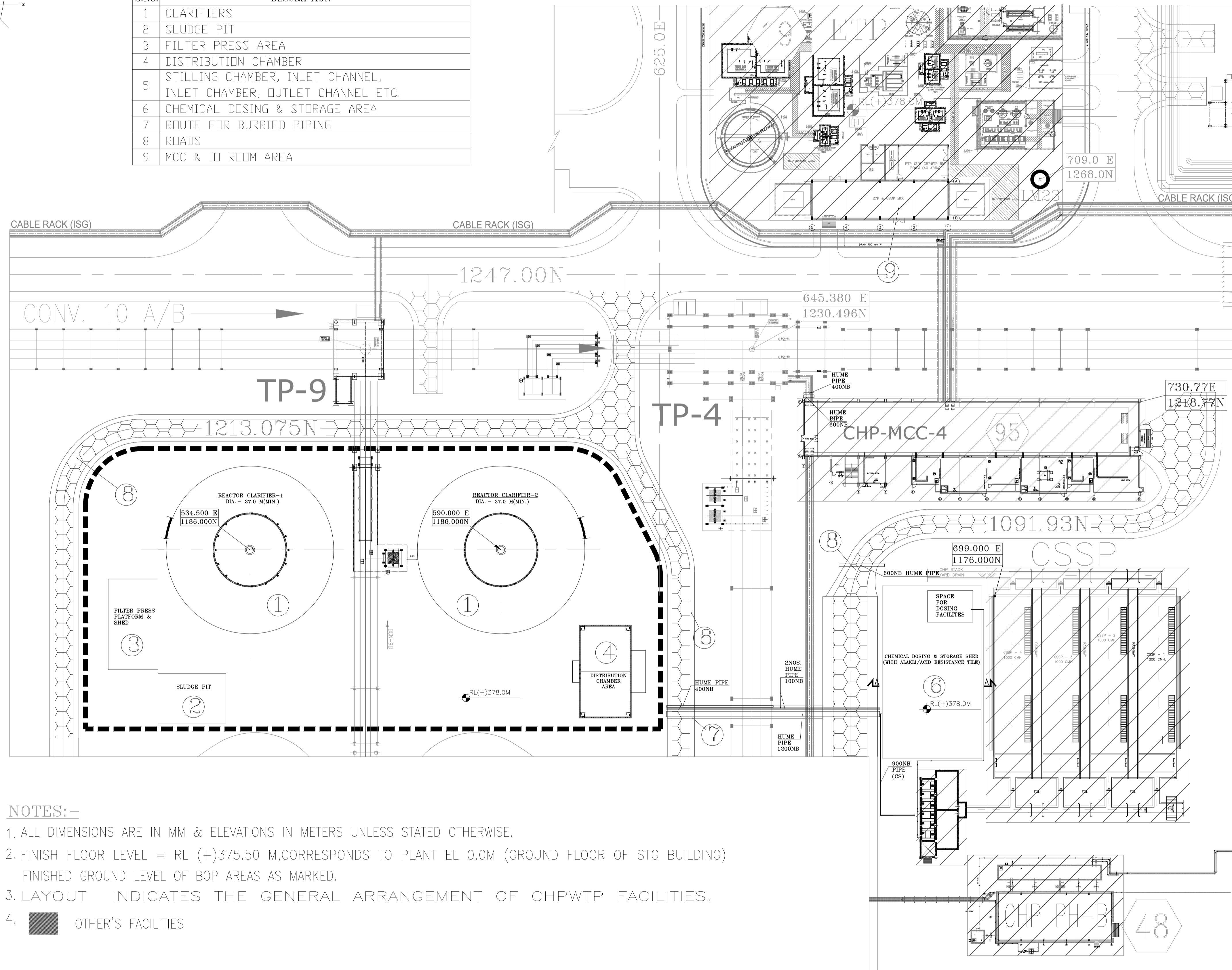
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LIST OF BUILDING/EQUIPMENT SHOWN

S.No.	DESCRIPTION
1	CLARIFIERS
2	SLUDGE PIT
3	FILTER PRESS AREA
4	DISTRIBUTION CHAMBER
5	STILLING CHAMBER, INLET CHANNEL, INLET CHAMBER, OUTLET CHANNEL ETC.
6	CHEMICAL DOSING & STORAGE AREA
7	ROUTE FOR BURRIED PIPING
8	ROADS
9	MCC & IO ROOM AREA



KEY PLAN



SECTION-A-A'

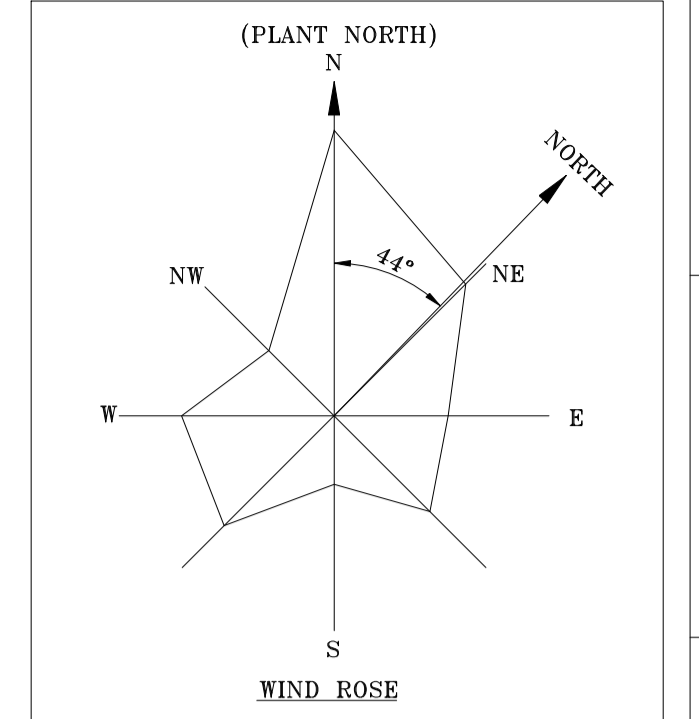
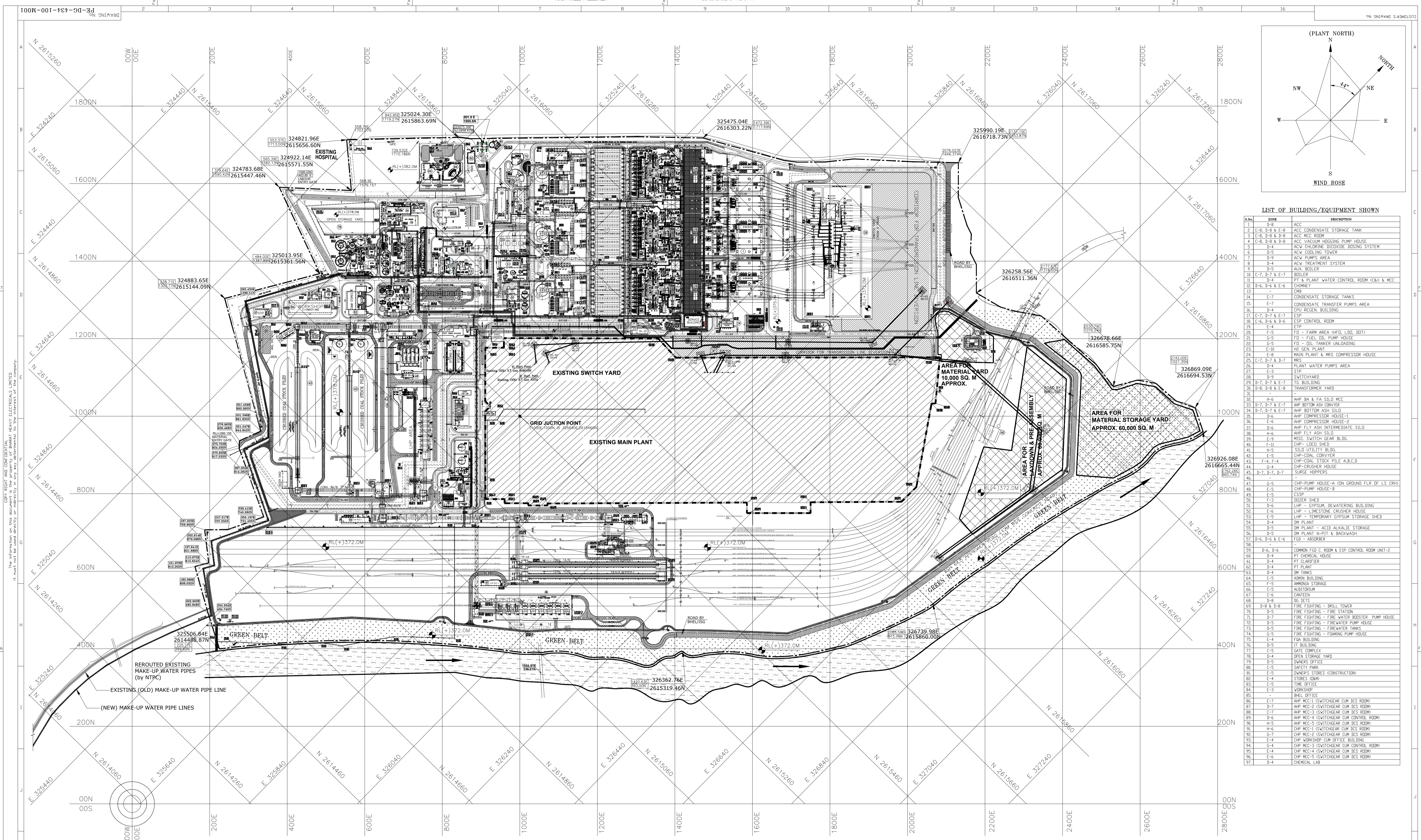
NOTES:-

1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. FINISH FLOOR LEVEL = RL (+)375.50 M, CORRESPONDS TO PLANT EL 0.0M (GROUND FLOOR OF STG BUILDING) FINISHED GROUND LEVEL OF BOP AREAS AS MARKED.
3. LAYOUT INDICATES THE GENERAL ARRANGEMENT OF CHPWTP FACILITIES.
4. OTHER'S FACILITIES

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JOB No.	434
STATUS	CONTRACT
DISTRIBUTION	
TO	
No. OF	
REV	DATE
	ALTD
	CHD
	APPD

OWNER NTPC Limited (A GOVERNMENT OF INDIA ENTERPRISE)		PROJECT 3X800 MW PATRATU STPP EXT.PH-I	
ENGR / SUB CONTRACTOR BHEL	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NDIDA	DEPT CODE A	NAME SIGN DATE
TITLE LAYOUT FOR CHP RUN-OFF WATER TREATMENT SYSTEM			
MPL	C	MSE	I
MAX	E	DEPT.	SCALE
SIGN	DATE		
DRAWING No. PE-DG-434-157-A001B		SHEET 01 OF 01	
REV 00		SIZE-A1	



LIST OF BUILDING/EQUIPMENT SHOWN

S.No.	ZONE	DESCRIPTION
1	B-8	ACC
2	C-8, D-8 & E-8	ACC CONDENSATE STORAGE TANK
3	C-8, D-8 & E-8	ACC MCC ROOM
4	C-8, D-8 & E-8	ACC VACUUM HIGGING PUMP HOUSE
5	D-4	ACW CHARTRINE DICERATE DOSING SYSTEM
6	D-5	ACW COILING TOWER
7	D-9	ACW PUMPS AREA
8	D-4	ACW TREATMENT SYSTEM
9	D-5	AUX. BOILER
10	E-7, D-7 & E-7	BOILER
11	D-4	PT & PLANT WATER CONTROL ROOM (C&D) & MCC
12	D-6, D-6 & E-6	CHIMNEY
13	DMB	DMB
14	E-7	CONDENSATE STORAGE TANKS
15	E-7	CONDENSATE TRANSFER PUMPS AREA
16	D-4	CFU REGEN. BUILDING
17	C-7, D-7 & E-7	ESP
18	C-6, D-6 & E-6	ESP CONTROL ROOM
19	E-4	ETP
20	F-5	FD - FARM AREA (WFD, LDD, DOT)
21	G-5	FD - FUEL OIL PUMP HOUSE
22	G-5	FD - OIL TANKER UNLOADING
23	E-10	H2 GEN PLANT
24	E-8	MAIN PLANT & MRS COMPRESSOR HOUSE
25	C-7, D-7 & E-7	MRS
26	D-4	PLANT WATER PUMPS AREA
27	E-3	STIP
28	D-9	SWITCHYARD
29	D-7, D-7 & E-7	TG BUILDING
30	D-8, D-8 & E-8	TRANSFORMER YARD
31	H-6	ANP BA & FA SILD MCC
32	D-7, D-7 & E-7	ANP BOTTOM ASH CONVEYER
33	D-7, D-7 & E-7	ANP BOTTOM ASH SILD
34	D-7, D-7 & E-7	ANP COMPRESSOR HOUSE-1
35	E-6	ANP COMPRESSOR HOUSE-2
36	E-6	ANP COMPRESSOR HOUSE-1
37	D-6	ANP FLY ASH INTERMEDIATE SILD
38	H-6	ANP FLY ASH SILD
39	E-9	MISC. SWITCH GEAR BLDG.
40	F-11	CHP- LDCD SHED
41	H-5	SILD UTILITY BLDG.
42	C-5	CHP-COAL CONVEYER
43	F-4, F-4	CHP-COAL STOCK PILE A,B,C,D
44	G-4	CHP-CRUSHER HOUSE
45	D-7, D-7	SURGE HOPPERS
46	G-5	CHP-PUMP HOUSE-A (ON GROUND FLR OF LS CRD)
47	E-5	CHP-PUMP HOUSE-B
48	E-5	CHP-PUMP HOUSE-C
49	F-3	BOILER SHED
50	D-6	LHP - GYPSUM DEWATERING BUILDING
51	E-6	LHP - LIMESTONE CRUSHER HOUSE
52	E-5	LHP - TEMPORARY GYPSUM STORAGE SHED
53	D-4	DM PLANT
54	D-5	DM PLANT - ACID ALKALIE STORAGE
55	D-5	DM PLANT IN-PIT & BACKWASH
56	D-6, D-6 & E-6	FGD - ABSORBER
57	D-6, D-6	COMMON FGD C. ROOM & ESP CONTROL ROOM UNIT-2
58	D-4	PT CHEMICAL HOUSE
59	D-4	PT CLARIFIER
60	D-4	PT PLANT
61	D-4	DM TANKS
62	C-5	ADMIN BUILDING
63	F-5	AMMONIA STORAGE
64	C-5	AUTOSTORUM
65	C-6	CANTEN
66	D-8	DC SETS
67	D-8 & D-8	FIRE FIGHTING - DRILL TOWER
68	D-5	FIRE FIGHTING - FIRE STATION
69	D-7	FIRE FIGHTING - FIRE WATER BOOSTER PUMP HOUSE
70	D-5	FIRE FIGHTING - FIREWATER PUMP HOUSE
71	D-5	FIRE FIGHTING - FIREWATER TANKS
72	G-5	FIRE FIGHTING - FOWING PUMP HOUSE
73	E-4	FOA BUILDING
74	D-5	IT BUILDING
75	C-5	GATE COMPLEX
76	D-4	OPEN STORAGE YARD
77	D-5	DIVERS OFFICE
78	C-5	SAFETY PARK
79	C-5	DIAPERS STORES (CONSTRUCTION)
80	E-4	STORES (DMB)
81	C-5	TIME OFFICE
82	E-3	WORKSHOP
83	E-3	WELDER OFFICE
84	E-7	ANP MCC-1 (SWITCHEAR CUM DCS ROOM)
85	D-7	ANP MCC-2 (SWITCHEAR CUM DCS ROOM)
86	D-7	ANP MCC-3 (SWITCHEAR CUM DCS ROOM)
87	D-6	ANP MCC-4 (SWITCHEAR CUM DCS ROOM)
88	H-5	ANP MCC-5 (SWITCHEAR CUM DCS ROOM)
89	H-6	CHP MCC-1 (SWITCHEAR CUM DCS ROOM)
90	G-7	CHP MCC-2 (SWITCHEAR CUM DCS ROOM)
91	E-4	CHP MCC-3 (SWITCHEAR CUM DCS ROOM)
92	E-4	CHP MCC-4 (SWITCHEAR CUM DCS ROOM)
93	E-4	CHP MCC-5 (SWITCHEAR CUM DCS ROOM)
94	E-4	CHEMICAL LAB

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LEGEND:

1. ROADS (DOUBLE LINE)
2. ROADS (SINGLE LINE)
3. OWNER'S LAND BOUNDARY LINE
4. SLOPE LINE
5. BOUNDARY WALL (2.1M HIGH BRICK WORK) FOR ISOLATION OF EXISTING STATION
6. PIPE CUM CABLE TRESTLE (PEM)
7. CABLE TRESTLE (PEM)
8. PIPE CUM CABLE TRESTLE (FGD)
9. CABLE TRESTLE (IS)
10. ROAD (BY PEM)
11. ROAD (BY ISG)
12. CONSTRUCTION LIGHTNING MAST

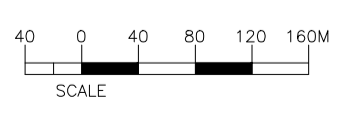
SPECIAL NOTE:
PLANT GRIDS ARE ROTATED AT AN ANGLE OF 44° COUNTER CLOCKWISE AND COMMON POINT OF ROTATION IS 1000E,1000N AS PER NEW GRID SYSTEM AND 325640E,2615460N AS PER OLD GRID SYSTEM (SURVEY GRID) AS SHOWN IN THE DRAWING.

NOTES:-
1. ALL DIMENSIONS ARE IN MM & ELEVATIONS IN METERS UNLESS STATED OTHERWISE.
2. FINISH FLOOR LEVEL = RL (+)375.50 M CORRESPONDS TO PLANT EL 0.0M (GROUND FLOOR OF STG BUILDING) (GROUND FLOOR OF STG BUILDING) FINISHED GROUND LEVEL OF BOP AREAS AS MARKED.

REFERENCE DRGS:

SL No.	TITLE	DRG. NUMBER	SCOPE
1	REFERENCE PLOT PLAN	9585-999-POC-F-001	NTPC
2	YARD PIPING & TRESTLE LAYOUT	9585-001-999-PCM-F-010	PEM

REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD	REV.	DATE	ALTD	CHD	APPD
1	05.08.2022	MC	PM	BVA	1	14.04.2020	MC	PM	BVA	1	23.03.2019	MC	BVA	JJ	1	27.09.2018	MC	BVA	JJ	1	16.07.2018	MC	BVA	JJ



NTPC DRG NO.: 9585-001-999-POC-F-001

CUSTOMER
NTPC LIMITED

3x800MW PATRATU SUPER THERMAL POWER PROJECT

CONTRACTOR
BHARAT HEAVY ELECTRICALS LTD
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NTPC Company

JOB NO. 434
STATUS CONTRACT
DISTRIBUTION

DEPT. CODE: M
DRN: MS
DESIGN: BVA/MS
CHD: BVA
APPD: JJ

NAME: MS
SIGN: MS
DATE: 26.03.2018

NAME: BVA
SIGN: BVA
DATE: 26.03.2018

NAME: JJ
SIGN: JJ
DATE: 26.03.2018

TITLE: PLOT PLAN

DEPT. SCALE 1:425
SIGN: [Signature]

DRAWING NO. PE-DG-434-100-M001
SHEET 1 OF 1 REV. 5