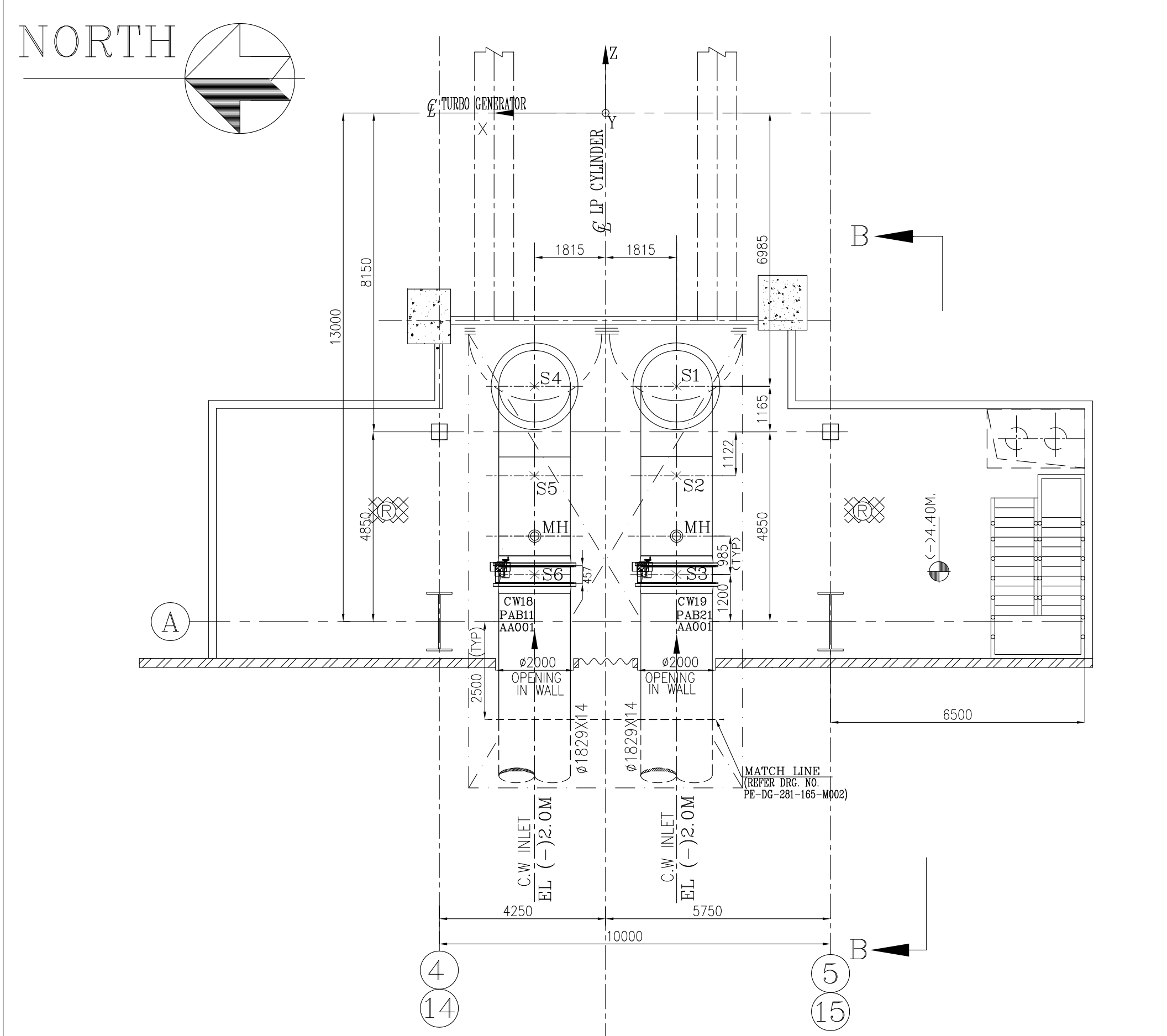
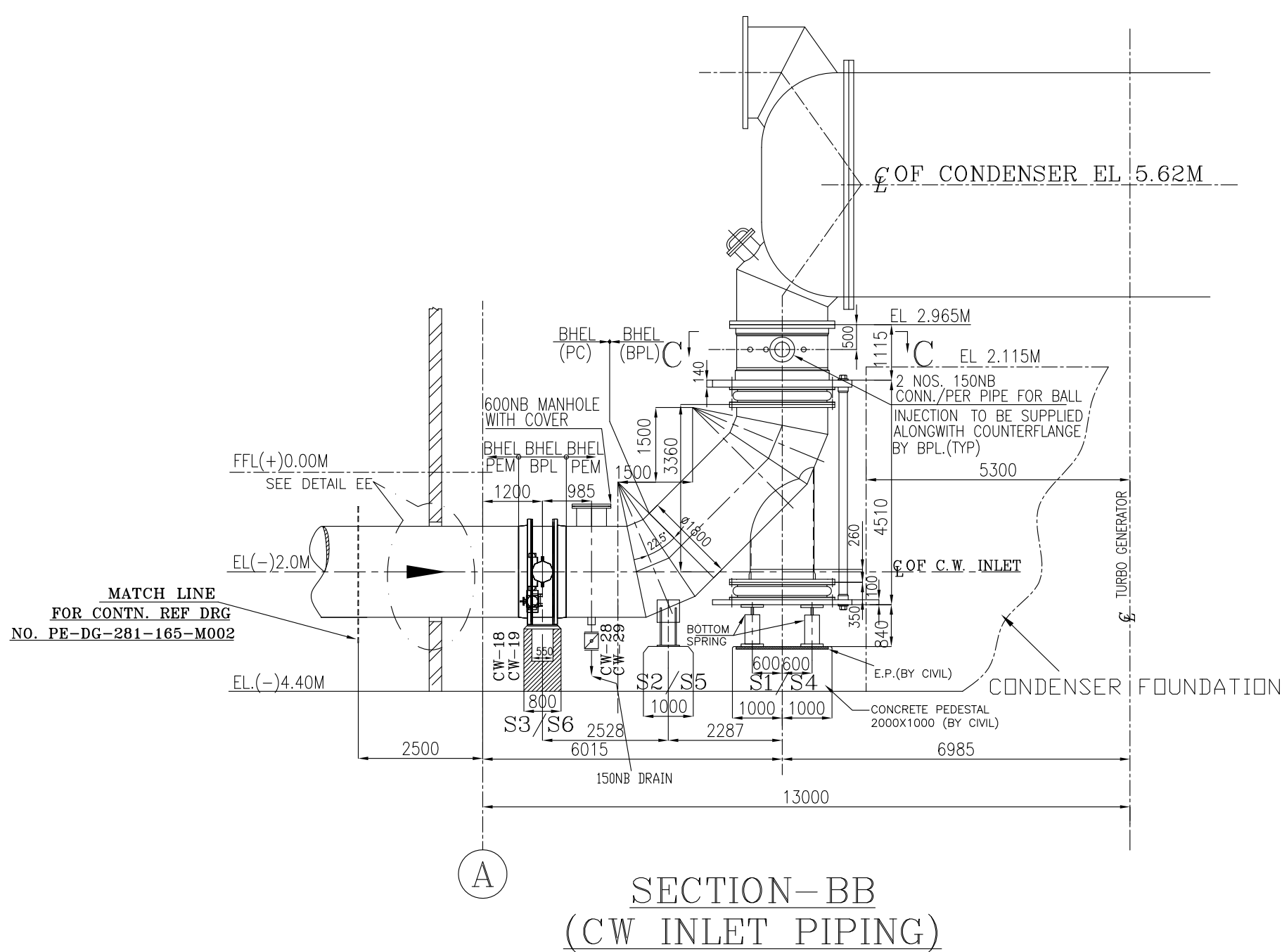


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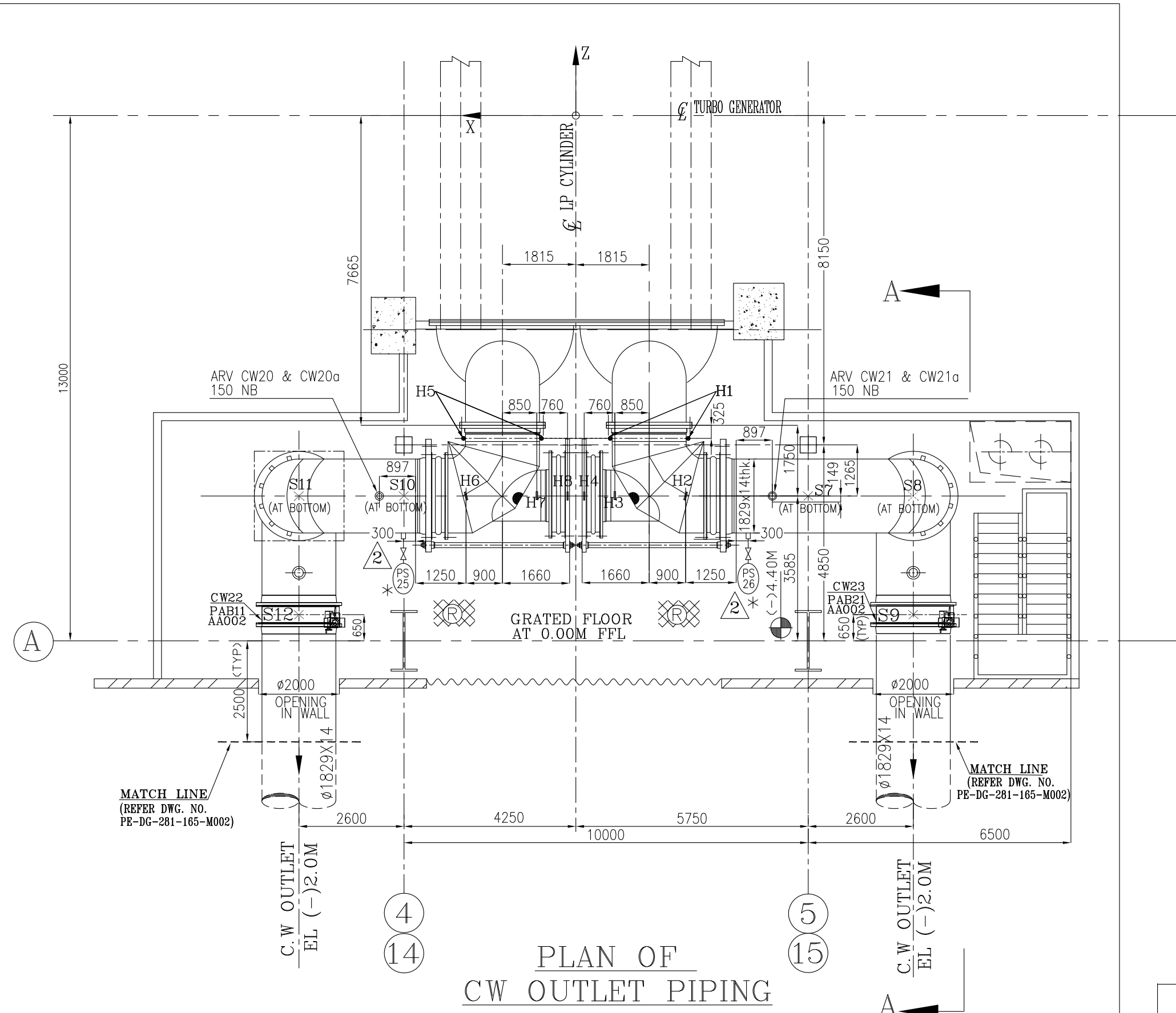
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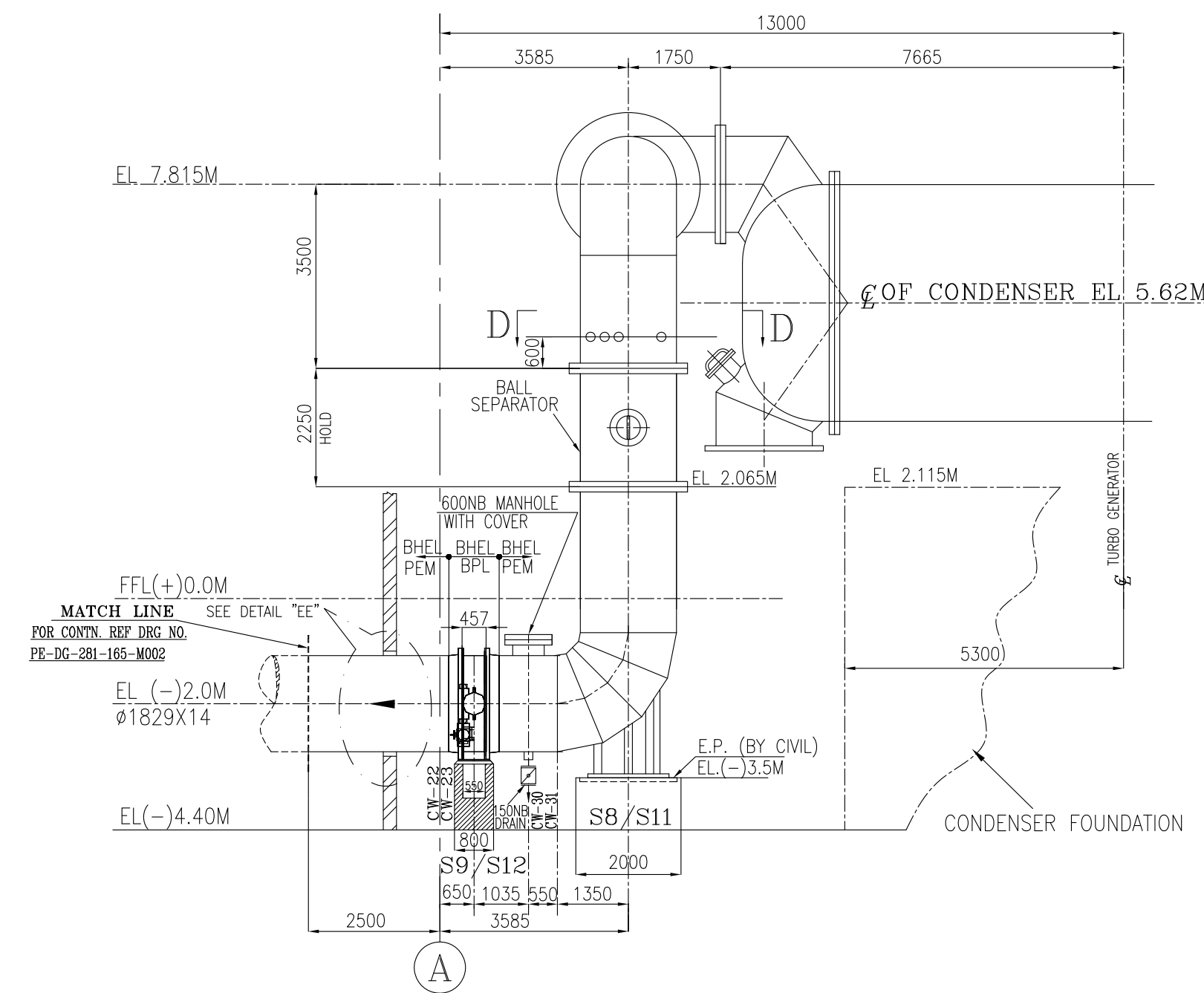
PLAN OF
CW INLET PIPING



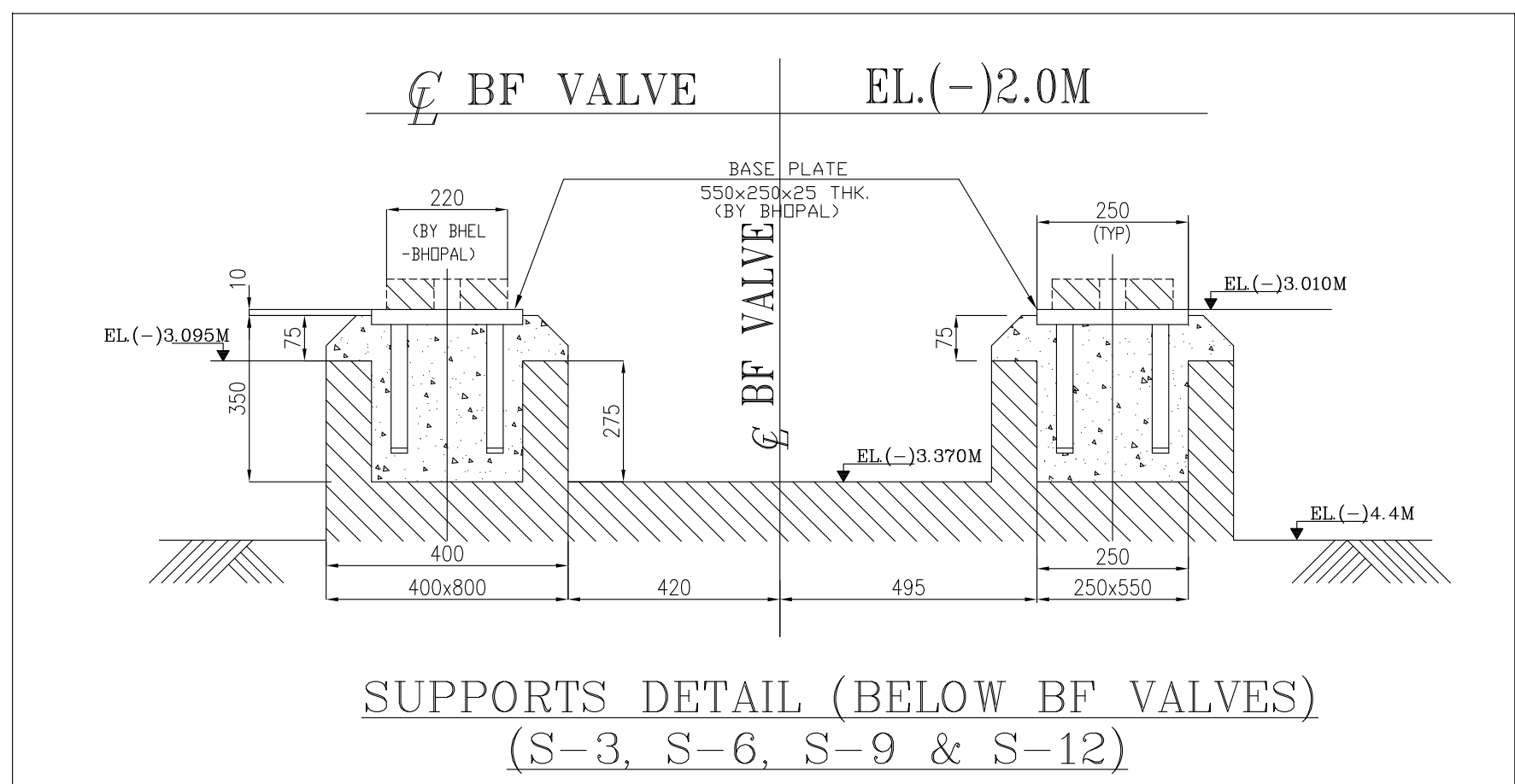
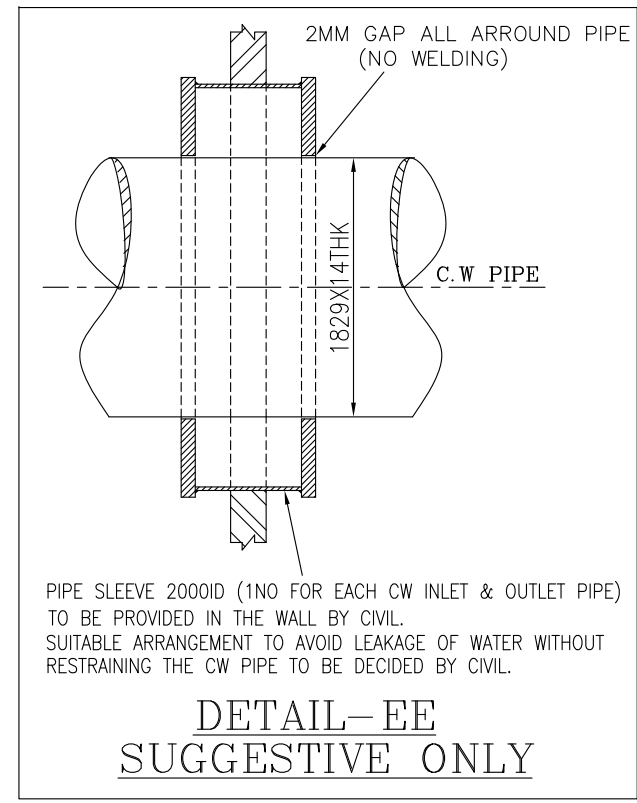
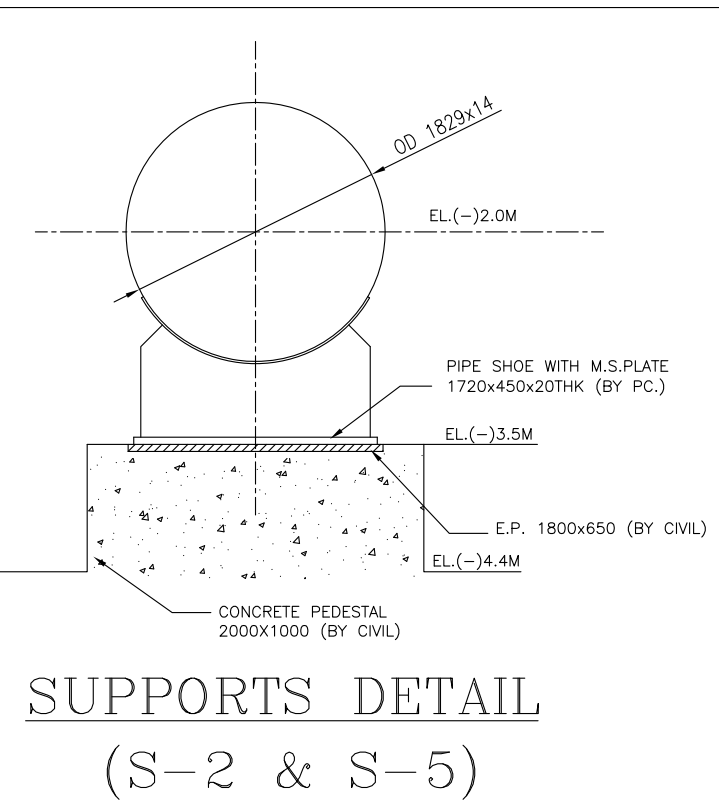
SECTION-BB
(CW INLET PIPING)



PLAN OF
CW OUTLET PIPING



SECTION-AA
(CW OUTLET PIPING)



DESIGN DATA:-

DESIGN PRESSURE	5 KG/SQ CM (g)
CW INLET TEMP. TO CONDENSER	33°C
MAX. DESIGN TEMPERATURE	50°C
HYDRO TEST PRESSURE	7.5 KG/SQ CM (g)

PIPING MATERIAL:-

- A) PIPING 50NB AND BELOW SHALL BE SS CONFORMING TO ASTM-A312, GR.316.
- B) PIPING FROM 65NB AND UPTO 150 NB SHALL BE CARBON STEEL AS PER IS-1239,HEAVY GRADE WITH PU(POLYURETHANE) COATING INTERNALLY AS PER AWWA-C-222.
- C) PIPING 200NB AND ABOVE SHALL BE CARBON STEEL ROLLED AND WELDED AS PER IS-3589 FROM CS PLATE AS PER IS:2062 WITH PU(POLYURETHANE) COATING INTERNALLY AS PER AWWA-C-222.

NOTES:-

- ALL DIMENSIONS ARE IN MM & ELEVATIONS ARE IN METRES.
- ALL ELEVATIONS ARE REFERED TO (+)0.0M,WHICH CORRESPONDS TO RL +10.5M.
- CW PIPE DRAINS (150NB) TO BE ROUTED AT SITE TO THE NEAREST DRAIN PIT WITH SUITABLE LOCATION OF VALVES. THE COUNTER FLANGES WITH FASTNERS FOR VALVE CW 28 TO 31 SHALL BE SUPPLIED BY P.C. VALVE FLANGE DRILLING DETAIL SHALL BE AS PER ANSI B16.5,CLASS 150.
- COUNTER FLANGES FOR BALL SEPARATOR AND BUTTER FLY VALVES SHALL BE SUPPLIED ALONG WITH BALL SEPARATOR/B.F. VALVES BY RESPECTIVE VENDOR/UNITS. COUNTER FLANGES ALONGWITH FASTNERS FOR AIR RELEASE VENT VALVES (150NB) SHALL BE SUPPLIED BY PC.
- ALL PRESSURE TAPPINGS & ROOT VALVES TO BE OF 15 NB & TEMP. STUBS ARE OF M33x2 FEMALE WITH HEIGHT OF 45 MM UNLESS OTHERWISE NOTED.
- FOR PERFORMANCE MEASUREMENT PRESSURE & TEMPERATURE STUBS SHALL BE AS PER PPTS DRG NO. TS-PE-SP-200 & TS-PE-ST-200 RESPECTIVELY, PERFORMANCE MEASUREMENTS STUBS ARE MARKED AS *.
- FOR 1800 NB,MITRE BEND RADIUS = 0.75D(1350MM) UNLESS OTHERWISE NOTED.
- INTERNAL AND EXTERNAL SURFACE CLEANING AND PAINTING SHALL BE AS PER PID OF CW AND ACW SYSTEM DRG.NO PE-DG-281-165-N001.
- FOR DETAIL OF REJOINT, SPRING SUPPORT,WELD NECK FLANGE ETC REFER DRG NO. PE-DG-281-165-M032 (G.A. OF RE JOINT IN CW PIPING NEAR CONDENSER).

FORCES AND MOMENTS ON SUPPORTS/HANGER IN C.W PIPING WITHIN T.G HALL.

DESCRIPTION/LOCATION	OPERATING CASE	TYPE OFSUPPORT	F _x (T) in T	F _y (T) in T	F _z (T) in T	REMARKS
INLET TS: (S1)/(S4)	DEAD WT. OPERATING	BOTTOM SPRING SUPPORT		(-)12.2		TOTAL FOR ALL BOTTOM SPRING CAGES EXCLUDING SPRING CAGE WT.
INLET TS: (S2) Y-RESTRAINT	DESIGN LOAD	SLIDING SUPPORT	(-)0.1	(-)7.0	3.0	
INLET TS: (S3) Y-RESTRAINT (BELOW BF VALVE CW-19)	DESIGN LOAD	SLIDING SUPPORT	(-)0.5	(-)36.5	11.0	
INLET GS: (S5) Y-RESTRAINT	DESIGN LOAD	SLIDING SUPPORT	(-)0.1	(-)7.0	3.0	
INLET GS: (S6) Y-RESTRAINT (BELOW BF VALVE CW-18)	DESIGN LOAD	SLIDING SUPPORT	0.5	(-)36.5	11.0	
OUTLET TS: (S7) Y-RESTRAINT (BOTTOM SUPPORT)	DESIGN LOAD	SLIDING SUPPORT	4.5	(-)25.0	(-)3.0	
OUTLET TS: (S8) Y-RESTRAINT (BELOW VERTICAL LEG)	DESIGN LOAD	SLIDING SUPPORT	(-)1.0	(-)30.0	9.5	
OUTLET TS: (S9) Y-RESTRAINT (BELOW BF VALVE CW-23)	DESIGN LOAD	SLIDING SUPPORT	(-)1.0	(-)26.5	8.0	
OUTLET GS: (S10) Y-RESTRAINT (BOTTOM SUPPORT)	DESIGN LOAD	SLIDING SUPPORT	(-)2.5	(-)13.0	(-)2.0	
OUTLET GS: (S11) Y-RESTRAINT (BELOW VERTICAL LEG)	DESIGN LOAD	SLIDING SUPPORT	(-)0.5	(-)34.0	10.5	
OUTLET GS: (S12) Y-RESTRAINT (BELOW BF VALVE CW-22)	DESIGN LOAD	SLIDING SUPPORT	0.5	(-)27.0	8.2	
H3/H7 : VSH-ST (AT DEAD BELLOW END)	DEAD WT. OPERATING	SPRING SUPPORT	-	(-)2.2	-	
H2/H6 : VSH-ST (AT LIVE BELLOW END)	DEAD WT. OPERATING	SPRING SUPPORT	-	(-)1.4	-	
H1/H5 : VSH-ST (AT CONDENSER END)	DEAD WT. OPERATING	SPRING SUPPORT	-	(-)1.3	-	
H4/H8 : RGD-ST (AT BLANK FLANG)	DEAD WT. OPERATING	TIE ROD SUPPORT	-	(-)6.1	-	

NOTES:-

- AXIS (+) X --> TURBINE SIDE(TS) TO GENERATOR SIDE(GS) i.e. TOWARDS NORTH, (+) Y --> VERTICALLY UPWARD, +Z --> FROM "A"ROW TO "B"ROW
- FORCE AND MOMENTS ON ANCHORS & SUPPORT ARE FOR PIPING FROM R.E. JOINT UPTO ANCHOR. FOR DETAIL REFER DOCUMENT PE-DG-281-165-M001.
- THE EFFECT OF FURTHER PIPING (BEYOND ANCHOR) INCLUDING PRESSURE THRUST, BURIED PIPING RESISTANCE AND THERMAL MOVEMENT IS TO TAKE CARE WHILE CALCULATING THE TOTAL LOAD ON ANCHOR.
- WHILE DESIGNING THE FLANGE, EFFECT OF THE ABOVE FORCE AND MOMENT IS TO BE TAKEN IN ADDITION TO THE INTERNAL PRESSURE THRUST.

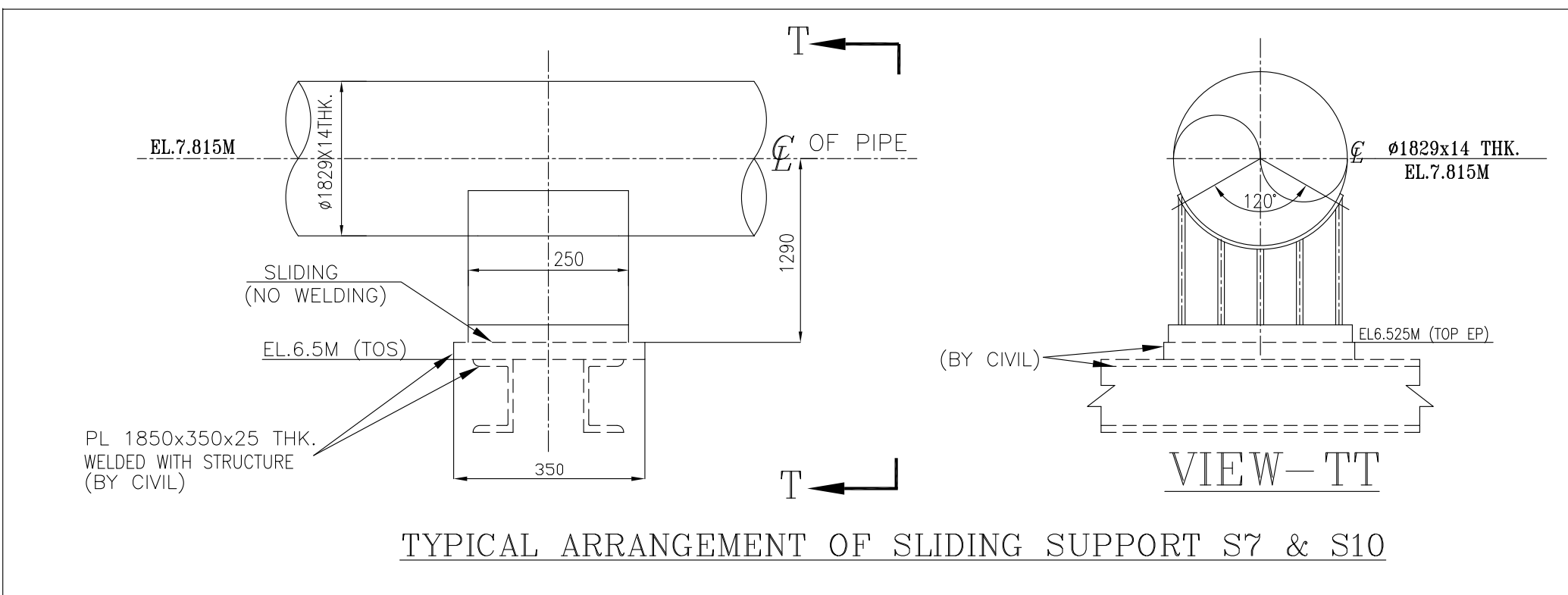
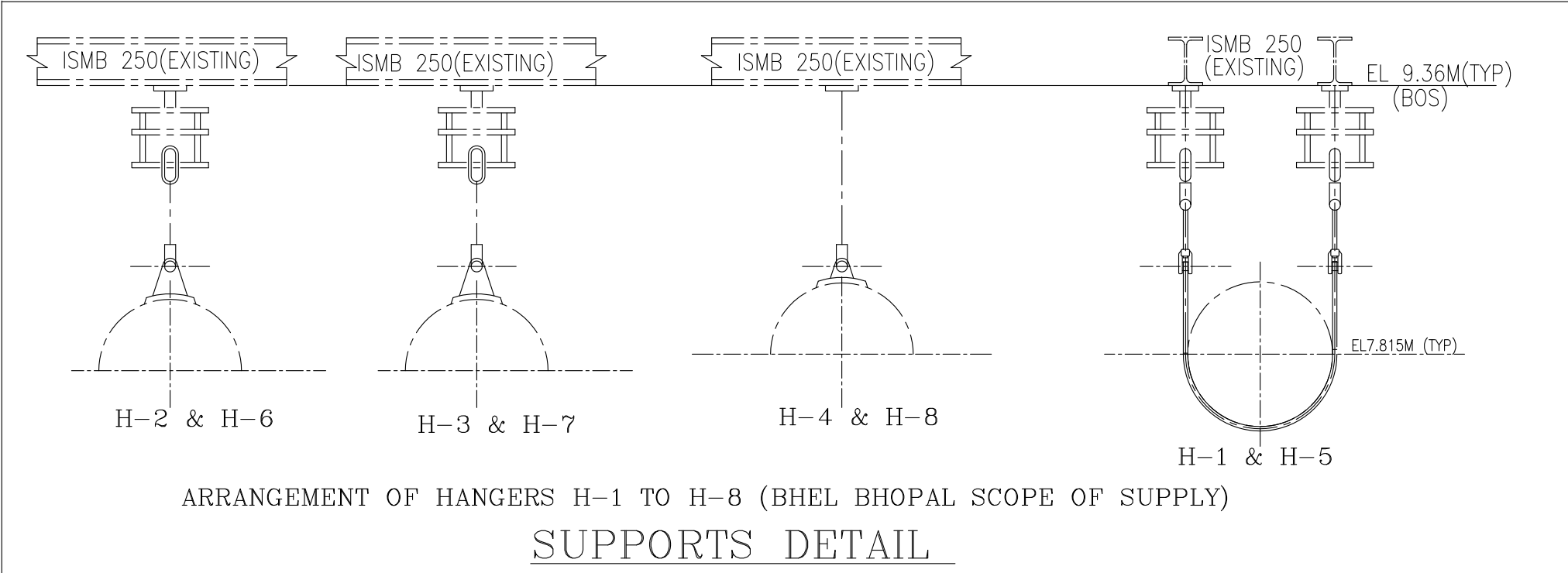
REFERANCE DRGS. :-

1) P&ID OF CW & ACW SYSTEM.	PE-DG-281-165-N001	(PEM)
2) PERFORMANCE GURANTEET TEST INSTRUMENTATION SCHEME	PE-DG-281-100-N198	(PEM)
3) TG HALL EQUIPMENT PLAN AT 0.00M	PE-DG-281-100-M003	(PEM)
4) CROSS SECTION OF T.G. BUILDING	PE-DG-281-100-M006	(PEM)
5) CONDENSER	01601070055 C131	(HWR)
6) G.A. OF RUBBER EXPENSION JOINTS IN CW PIPING	PE-DG-281-165-M032	(BPL)
NEAR CONDENSER		
7) ARRGT. OF Ø1800 B.F. VALVE (CW INLET & CW OUTLET)	-	(BPL)
8) BALL SEPARATOR		(BPL)
9) H/S ARRGT. FOR CW IN TG BUILDING FOR BOTTOM SPRING HANGER	PE-DG-281-165-M033	(PEM)
10) H/S ARRGT. FOR CW IN TG BUILDING FOR TOP SPRING HANGER	PE-DG-281-165-M034	(PEM)

HOLD:-

- ARRGT. OF Ø1800 B.F. VALVE
- BALL SEPARATOR

CUSTOMER									
CUSTOMER'S CONSULTANT									
JOB No.					281				
STATUS					CONTRACT				
DISTRIBUTION									
TO									
No.DFF									
REV	DATE	ALTD	CHD	APPD	REV	DATE	ALTD	CHD	APPD
01	06-09-08	SD/-	SD/-	SD/-	01	06-09-08	SD/-	SD/-	SD/-
1. DW PIPING REVISED AS PER STRESS ANALYSIS REPORT.									
2. LOAD DATA, SUPPORTING ARRANGEMENT ADDED.									
3. INSTRUMENTS STUBS, NOTES UPDATED.									
4. DMG. GENERALLY REVISED AS PER LATEST INPUTS.									



TCE DRG. No. - TCE.5064A-EPC-BH(PEM)-M001

GUJARAT STATE ELECTRICITY CORPORATION LTD.

TCE CONSULTING ENGINEERS LIMITED

2 X 250 MW SIKKA THERMAL POWER PROJECT

(EXTENSION UNITS 3 & 4)

DIST. JAMNAGAR

BHARAT HEAVY ELECTRICALS LTD	DEPT	NAME	SIGN	DATE
POWER SECTOR	DRN	CHETAN	SD/-	22/01/08
PROJECT ENGINEERING MANAGEMENT	DES	SANJEEV	SD/-	
NEW DELHI	CHD	SANJEEV/BKA	SD/-	
	APPD	LPS/AJ	SD/-	

CW PIPING LAYOUT (INSIDE TG HALL)

DEPT.	SCALE: 150	DRAWING No.
SIGN		PE-DG-281-165-M001
DATE		SHEET 1 OF 1
		REV 02

SIZE-A1