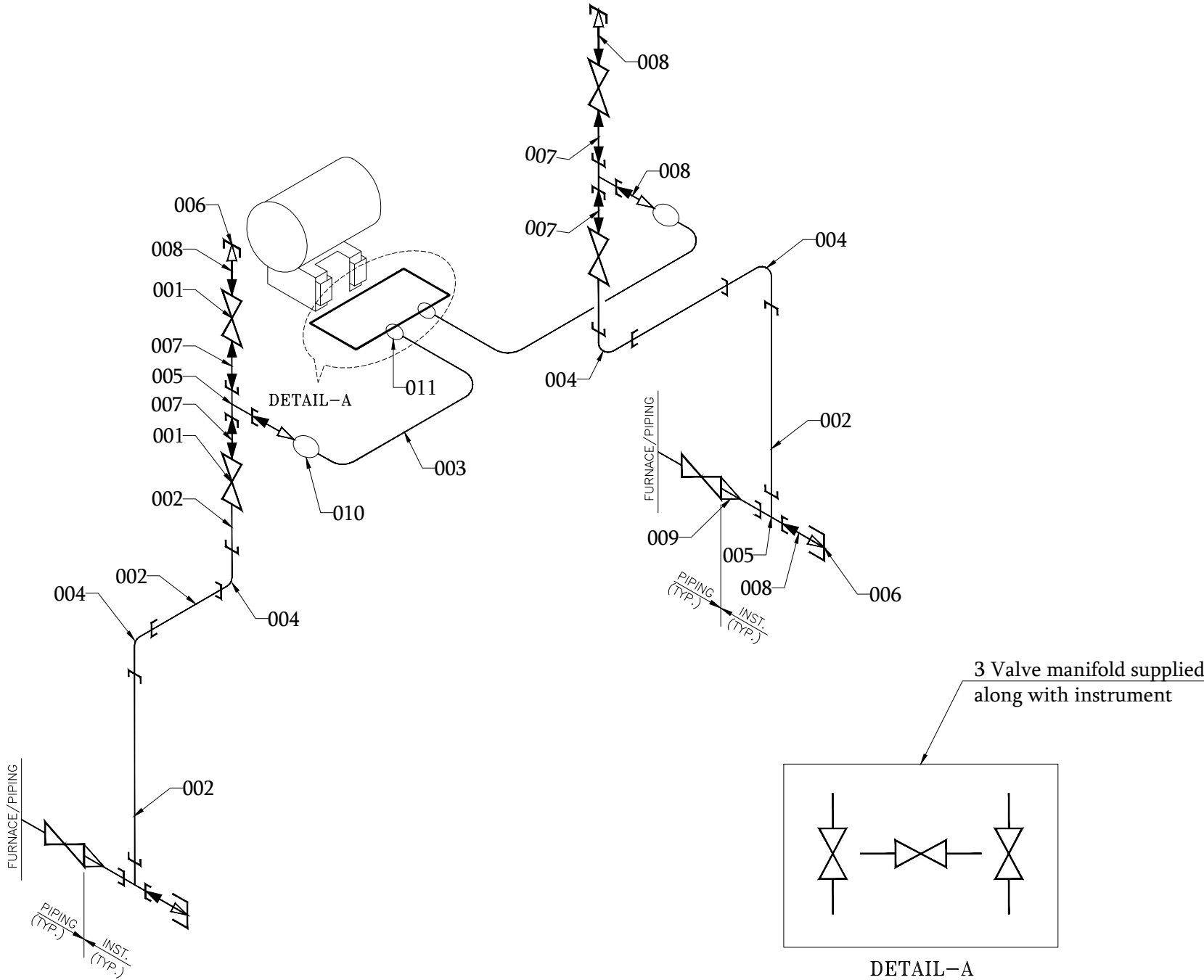


DIFFERENTIAL PRESSURE TRANSMITTER - REMOTE MOUNTED
GAS - SERVICE - 600LB AND BELOW

ITEM NO.	QTY.	DESCRIPTION	
001	4	GATE VALVE	1/2" SW X 1/2" SW 800#, A182 F316
002	20M	PIPE	1/2" SCH 160, A312 TP304
003	2M	TUBE	1/2" OD X 0.049", SS316
004	4	ELBOW 90 DEG	1/2" SW X SW 3000#, A182 F304
005	4	EQUAL TEE	1/2" SW X SW X SW 3000#, A182 F304
006	4	CAP	1/2" NPT (F), 3000#, A182 F304
007	4	PIPE NIPPLE	1/2" PL X PL X 150mm LG, SCH 160, A312 TP304
008	6	PIPE NIPPLE TOE	1/2" PL X NPT (M) X 150mm LG, SCH 160, A312 TP304
009	2	SWAGE NIPPLE	1" PL X 1/2" PL X 150mm LG, SCH 160, A312 TP304
010	2	FEMALE CONNECTOR	1/2" NPT (F) X 1/2" OD TUBE, 3000#, SS316
011	2	MALE CONNECTOR	1/2" NPT (M) X 1/2" OD TUBE, 3000#, SS316





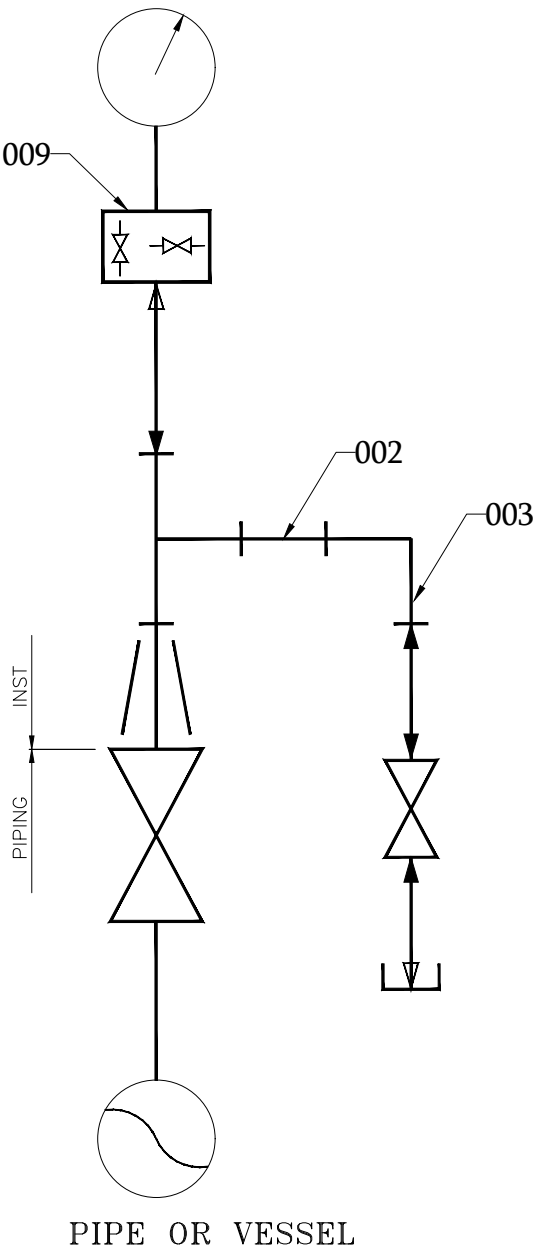
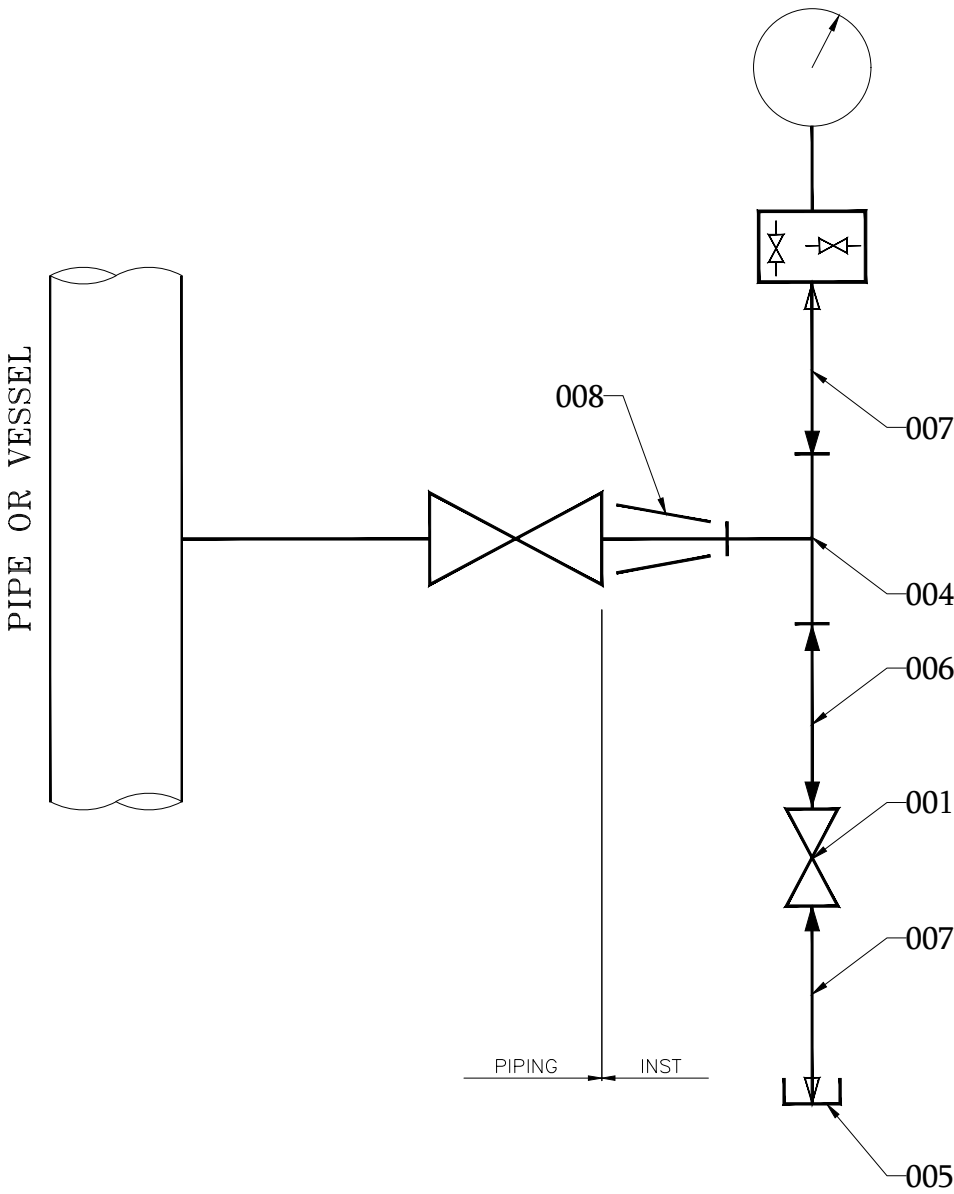
355-029

BHARAT HEAVY ELECTRICALS LIMITED
BOILER PLANT UNIT, HPVP VISAKHAPATNAM-533012

REV	DATE	ALTERED	DESIGNED	---	DWG TITLE	
		CHD/APPD	DRAWN	USHA	INSTRUMENT HOOK UP DRAWING DP TRANSMITTER	
			CHECKED	BDR/UKK		
			APPROVED	YPK		
			SCALE	NTS	DATE	19.05.26
			BHEL.DWG NO: 4-97-200-U0137			SHEET REV
						01 00

**PRESSURE GAUGE - DIRECT MOUNTED
GAS OR LIQUID - Service - 600LB AND BELOW**

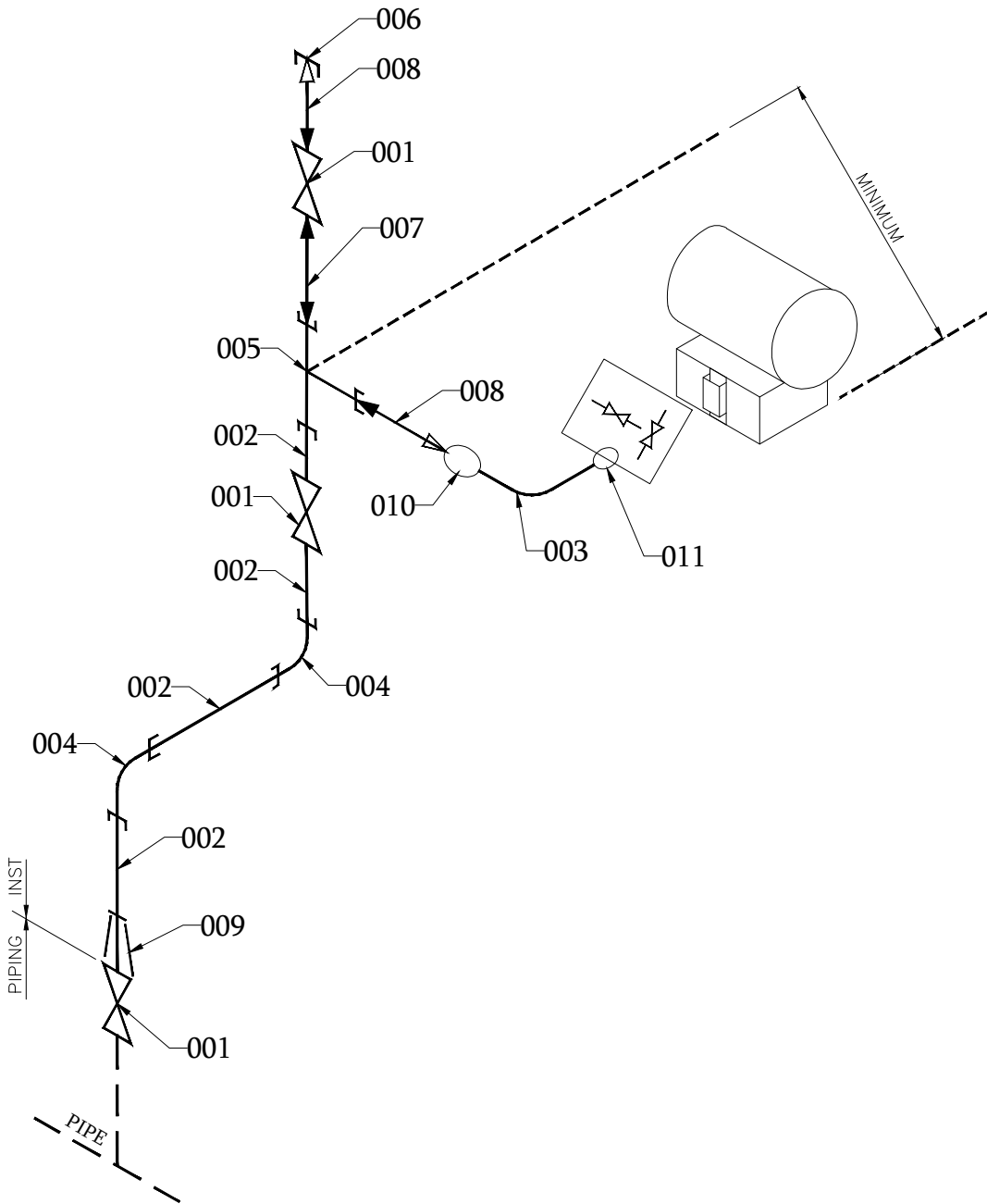
ITEM NO.	QTY.	DESCRIPTION	
001	1	GATE VALVE	1/2" SW X 1/2" SW 800# A182 F316
002	1M	PIPE	1/2" SCH 160 A312 TP304
003	1	ELBOW 90 DEG	1/2" SW X SW 6000# A182 F304
004	1	EQUAL TEE	1/2" SW X SW X SW 3000# A182 F304
005	1	CAP	1/2" NPT (F) 3000# A182 F304
006	1	PIPE NIPPLE	1/2" PL X PL X 150mm LG, SCH 160, A312 TP304
007	2	PIPE NIPPLE TOE	1/2" PL X NPT (M) X 150mm LG, SCH 160, A312 TP304
008	1	SWAGE NIPPLE	1" PL X 1/2" NPT (M) X 150mm LG, SCH 160, A312 TP304
009	1	2 VALVE MANFOLD	1/2" NPT(F) X 1/2" NPT(F) X 1/2" NPT (F) WITH PLUG, SUPPLIED ALONG WITH PRESSURE GAUGE



RCV		DAIE	ALTERED		DESIGNED		--		DWG TITLE				
			CHD/APPD				USHA		INSTRUMENT HOOK UP DRAWING				
							BDR/UKK		PRESSURE GAUGE				
							YPK		SCALE		DATE	SHEET REV	
									NTS		19.05.26	01 00	
									BHEL.DWG NO: 4-97-200-U0135				

PRESSURE TRANSMITTER - REMOTE MOUNTED
FUEL GAS - Service - 600LB AND BELOW

ITEM NO.	QTY.	DESCRIPTION	
001	2	GATE VALVE	1/2" SW X 1/2" SW 800#, A182 F316
002	15M	PIPE	1/2" SCH 160, A312 TP304
003	1M	TUBE	1/2" OD X 0.049", SS316
004	2	ELBOW 90 DEG	1/2" SW X SW 3000#, A182 F304
005	1	EQUAL TEE	1/2" SW X SW X SW 3000#, A182 F304
006	1	CAP	1/2" NPT (F), 3000#, A182 F304
007	1	PIPE NIPPLE	1/2" PL X PL X 150mm LG, SCH 160, A312 TP304
008	2	PIPE NIPPLE TOE	1/2" PL X NPT (M) X 150mm LG, SCH 160, A312 TP304
009	1	SWAGE NIPPLE	1" PL X 1/2" PL X 150mm LG, SCH 160, A312 TP304
010	1	FEMALE CONNECTOR	1/2" NPT (F) X 1/2" OD TUBE, 3000#, SS316
011	1	MALE CONNECTOR	1/2" NPT (M) X 1/2" OD TUBE, 3000#, SS316



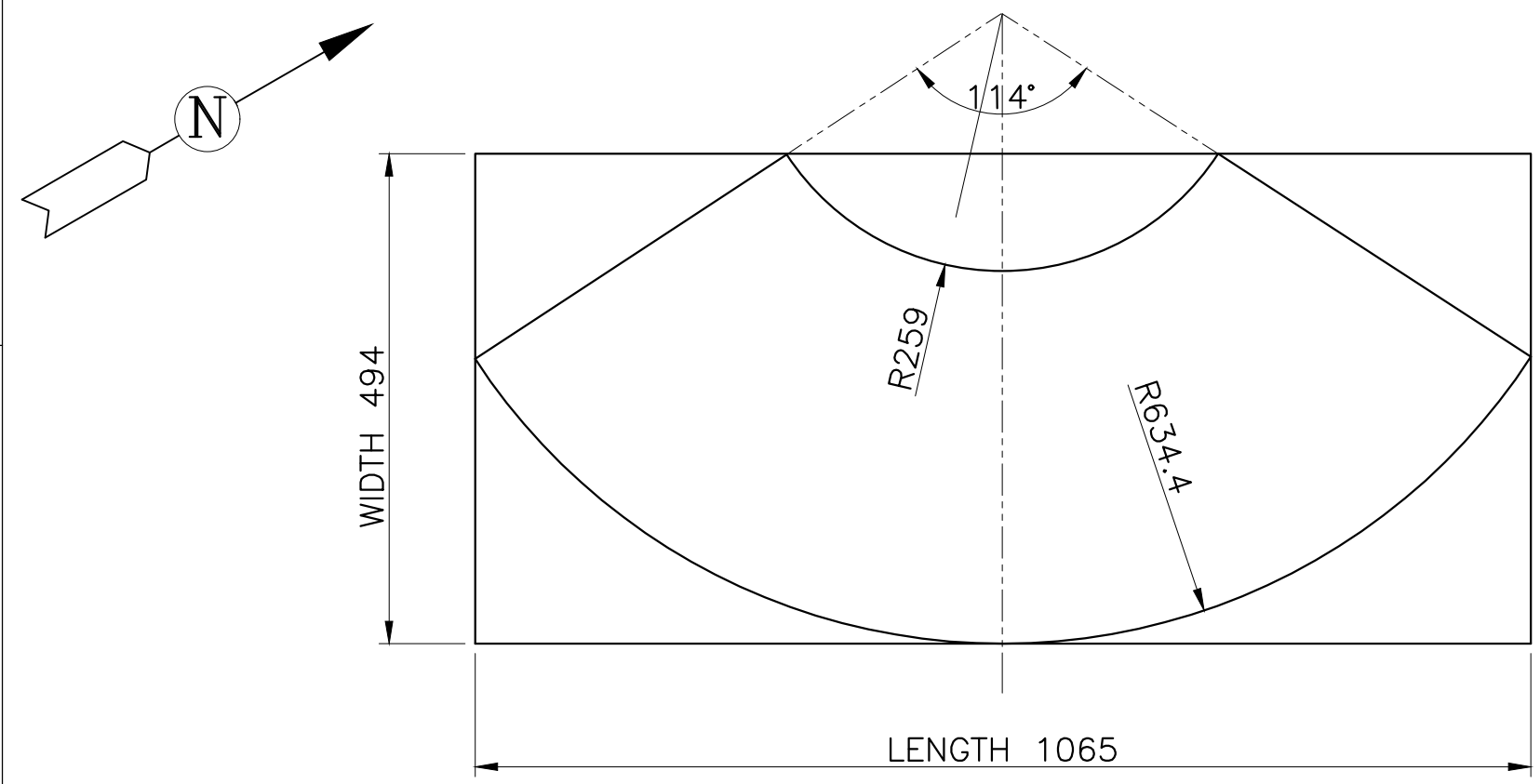


355-029

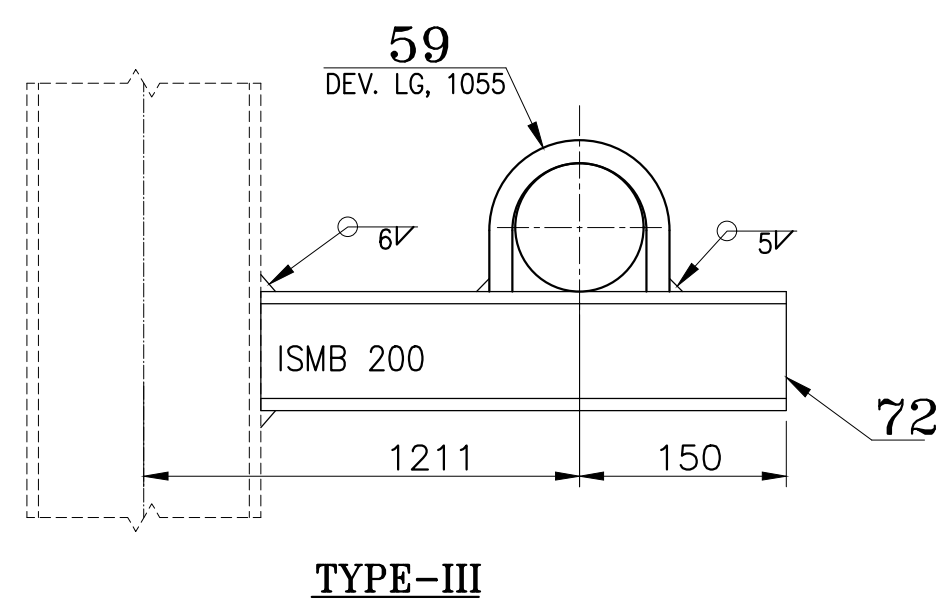
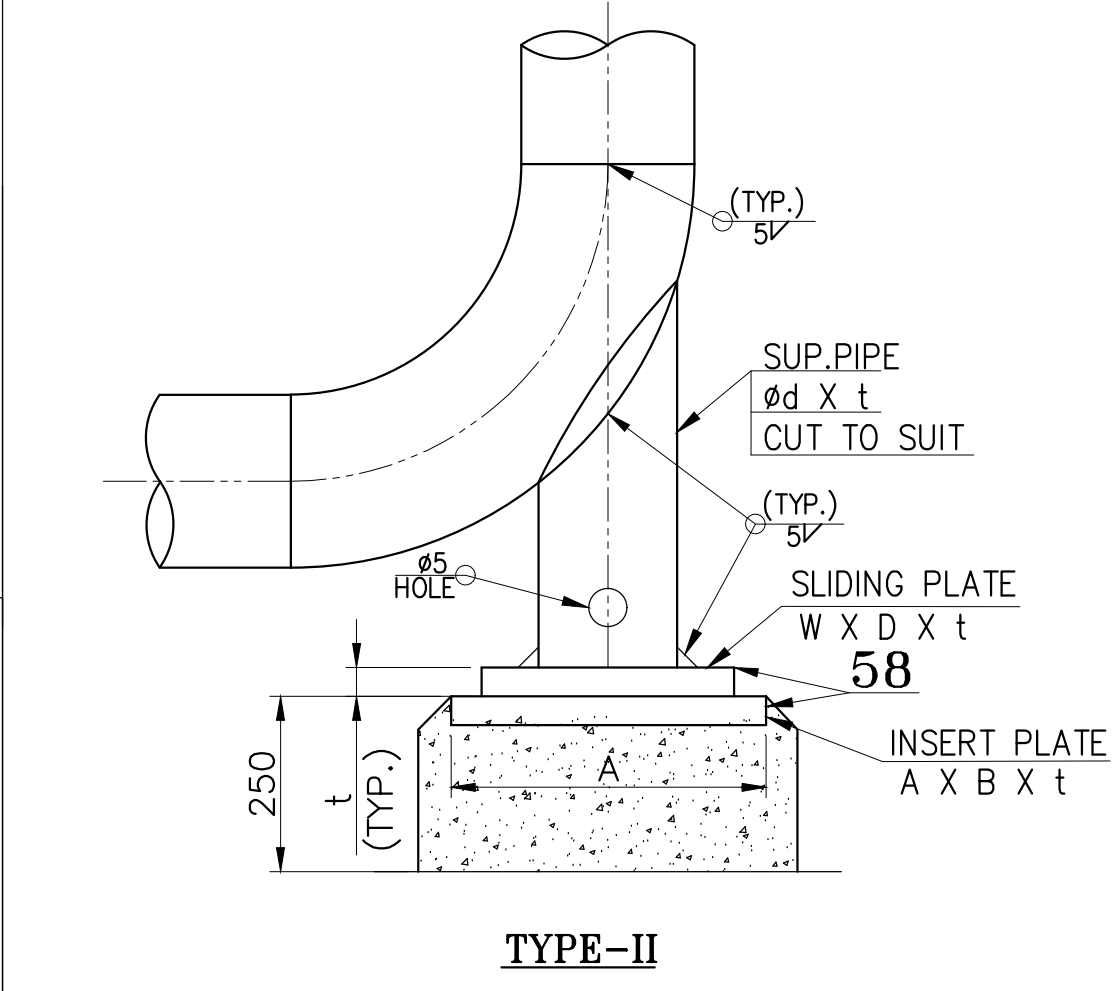
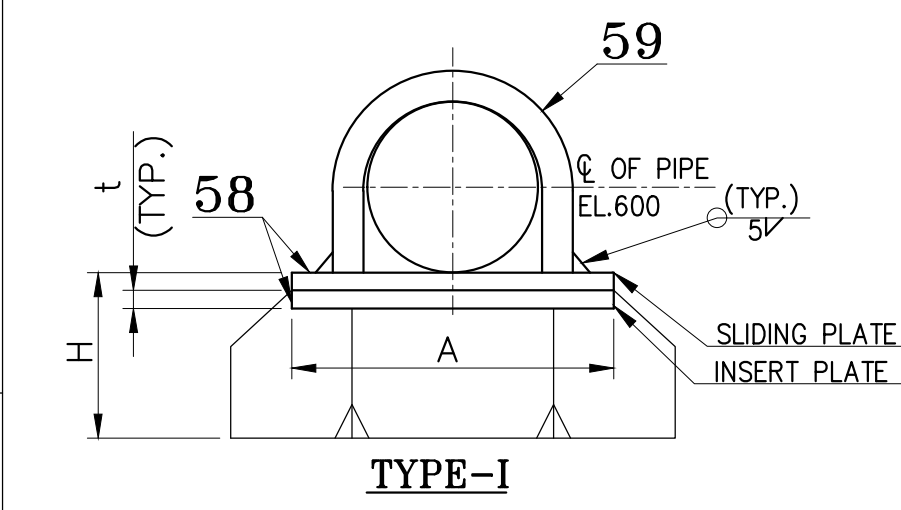
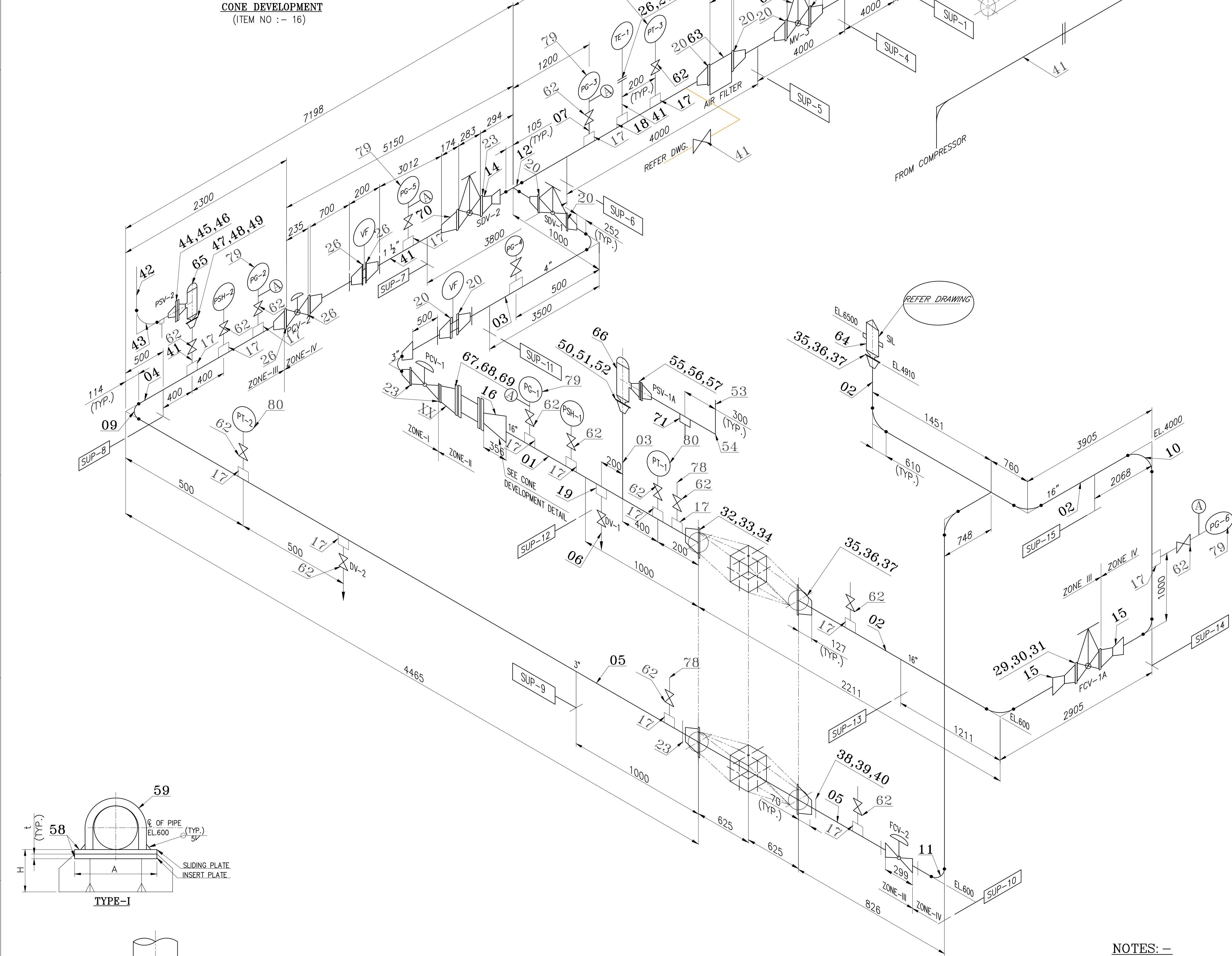
BHARAT HEAVY ELECTRIUCALS LIMITED

BOILER PLANT UNIT; HPVP VISAKHAPATNAM-533012

REV	DATE	ALTERED	DESIGNED	---	DWG TITLE			
		CHD/APPD	DRAWN	USHA				
			CHECKED	BDR/UKK	INSTRUMENT HOOK UP DRAWING PRESSURE TRANSMITTER			
			APPROVED	YPK				
		SCALE	DATE	BHEL.DWG NO: 4-97-200-U0136		SHEET	REV	
		NTS	19.05.26			01	00	



CONE DEVELOPMENT
(ITEM NO :- 16)



SUPPORT TAG NO.	SIZE OF PIPE (NB)	INSERT PL./SLIDING PL SIZE AxBxt	H	DEV. LG.OF P.NO 59
SUPPORT - 4,5,6,11	4"	150x150x10	543	303
SUPPORT - 8,9	3"	150x150x10	556	238
SUPPORT - 12,13	16"	450x250x10	397	1055
SUPPORT - 7	1 1/2"	150x150x10	576	221

SUPPORT TAG NO.	SIZE OF PIPE (NB)	INSERT PLATE SIZE AxBxt	SLIDING PLATE SIZE WxBxt	SUPPORT PIPE SIZE Ød x t
SUPPORT - 1	4"	200x200x10	150x150x10	88.9 x 4.88
SUPPORT - 10	3"	200x200x10	150x150x10	60.3 x 3.91
SUPPORT - 14	16"	300x300x10	250x250x10	168.3 x 7.11

NOTES: -

- ITEM NO.01 PIPE SHALL BE MADE FROM PLATE.
- FOR COMPOSITE PIPING LAYOUT REFER DRG NO.HTCS-1-41014200-A-001.
- FOR WELD DETAILS OF PIPE TO PIPE, PIPE TO PIPE FITTINGS REFER STD.DRG.NO.B-100-022-00057.
- L.SEAM OF PIPE (ITEM NO.01) SHALL NOT FOUL WITH INST.TAPPINGS, SV, DRAIN CONN.
- SUPPORT MEMBERS HAS BEEN GIVEN IN RUNNING SIZES, CUT TO SUIT AT SITE.

DESIGN DATA :-

	ZONE-I	ZONE-II	ZONE-III	ZONE-IV
01 DESIGN PRESSURE KG/CM ² (g):	30	2.5	15	ATM
02 DESIGN TEMP. °C			50	
03 HYD TEST PR. KG/CM ² (g)	45	3.75	22.5	1.5
04 DESIGN CODE			ANSI B 31.3	
05 INSPECTION			BHEL/DGA QA	
06 RADIOGRAPHY	10%	10%	10%	NIL
07 P.W.H.T			NIL	
08 INSULATION			NIL	
09 PAINTING			NIL	YES

40	STUD+2 HEX.NUTS 5/8"x90LG		190014840000	0.2
39	SPW GASKET NB80x150#		190061360000	12
38	WN.RF FLANGE NB80x150#		156118160000	3
37	STUD+2 HEX.NUTS 1"x150LG		190253340000	5.2
36	SPW GASKET NB400x150#		190061420000	4
35	WN.RF FLANGE NB400x150#		156114990000	1.01
34	STUD+2 HEX.NUTS 1"x150LG		189300014729	32
33	SPW GASKET NB400x150#		190061420000	1.01
32	WN.RF FLANGE NB400x150#		156130210000	16
31	STUD+2 HEX.NUTS 7/8"x125LG		190014950000	1
30	SPW GASKET NB300x150#		190061540000	0.54
29	WN.RF FLANGE NB300x150#		156114830000	24
28	STUD+2 HEX.NUTS 3/4"x115LG		190016230000	NO 2
27	SW GASKET NB40x300#		190061620000	39.0
26	WN.RF FLANGE NB40x300#		156114830000	NO 2
25	STUD+2 HEX.NUTS 3/4"x115LG		190016230000	0.37
24	SW GASKET NB80x300#		190061650000	NO 28
23	WN.RF FLANGE NB80x300#		156130110000	NO 7
22	STUD+2 HEX.NUTS 3/4"x120LG		190016230000	3.2
21	SW GASKET NB100x300#		190061670000	NO 7
20	WN.RF FLANGE NB100x300#		156130110000	7.4
19	HALF COUPLING(S.W) NB25x3000#		190016230000	NO 7
18	HALF COUPLING(S.W) NB40x3000#		190016230000	0.42
17	HALF COUPLING(S.W) NB20x3000#		190016230000	NO 80
16	CONC.REDUCER(CONE) OD 406.4/168.3x4THK		190016230000	23.4
15	CONC.REDUCER OD 406.4/323.8x6.35THK		190016230000	22.0
14	CONC.REDUCER OD 114.3/88.9x3.05THK		190016230000	1.0
13	EQUAL TEE OD 114.3x6.02THK		190016230000	2
12	EQUAL TEE OD 114.3x3.05THK		190016230000	6.0
11	90° LR ELBOW OD 88.9x5.49THK		190016230000	NO 1
10	90° LR ELBOW OD 406.4x6.35THK		190016230000	3.0
09	90° LR ELBOW OD 88.9x3.05THK		190016230000	NO 1
08	90° LR ELBOW OD 114.3x3.05THK		190016230000	2.0
07	PIPE OD 26.7x3.91THK 4000LG		190016230000	8.76
06	PIPE OD 33.4x4.55THK 5000LG		190016230000	NO 1
05	PIPE 80NB OD 88.9x4.88THK 6000LG		190016230000	60.67
04	PIPE 80NB OD 88.9x5.4THK 10000LG		190016230000	NO 1
03	PIPE 100NB OD 114.3x3.05THK 23000LG		190016230000	112.8
02	PIPE 400NB OD 406.4x4.78THK 10300LG		190016230000	NO 1
01	PIPE 400NB OD 406.4x4.78THK 2012LG+80E.A		190016230000	97.4
ITEM NO.	DESCRIPTION	DRAWING NO.	REV. NO. / DATE	QTY.
				3566

PROJECT

M/S ADA - BANGALORE

BHARAT HEAVY ELECTRICALS LTD.,
Heavy Plates & Vessels Plant, Visakhapatnam-530012.

DRAWN G V USHARANI

CHECKED K KARAKESH

APPROVED Y PRASANNA KUMAR

DATE 26.09.2025

ALL DIMENSIONS ARE IN MILLIMETRES

SCALE NTS

TITLE

ISO PIPING FOR PR. DROP TESTING FACILITY FOR HEAT EXCHANGER

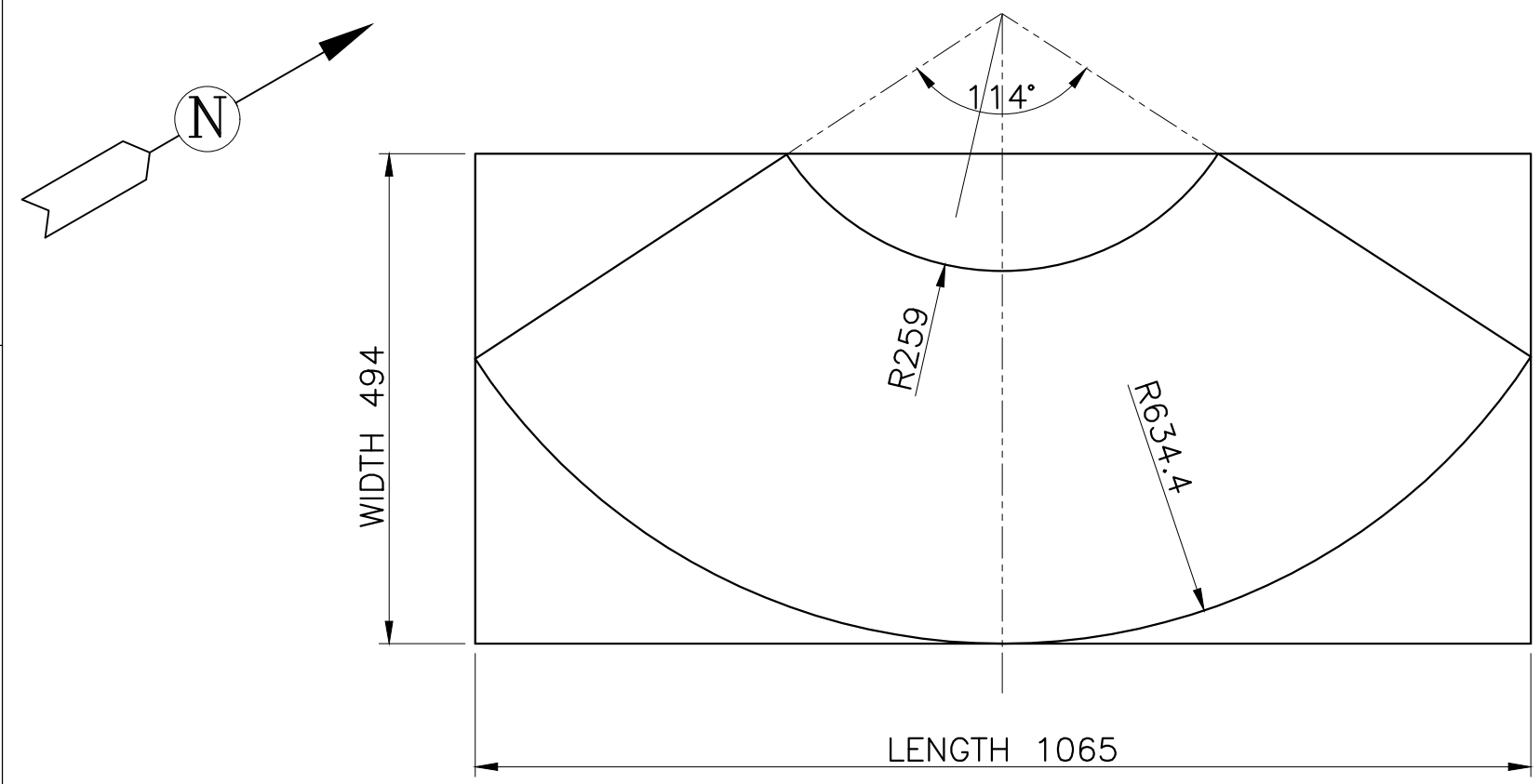
DRG No. HTCS-1-410142-01-4002

SHEET: 01 OF 02

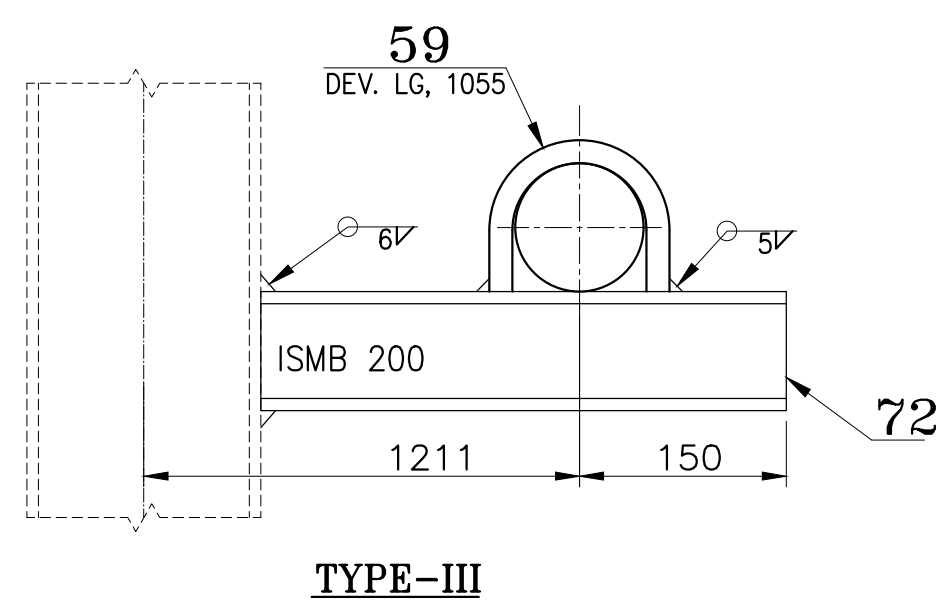
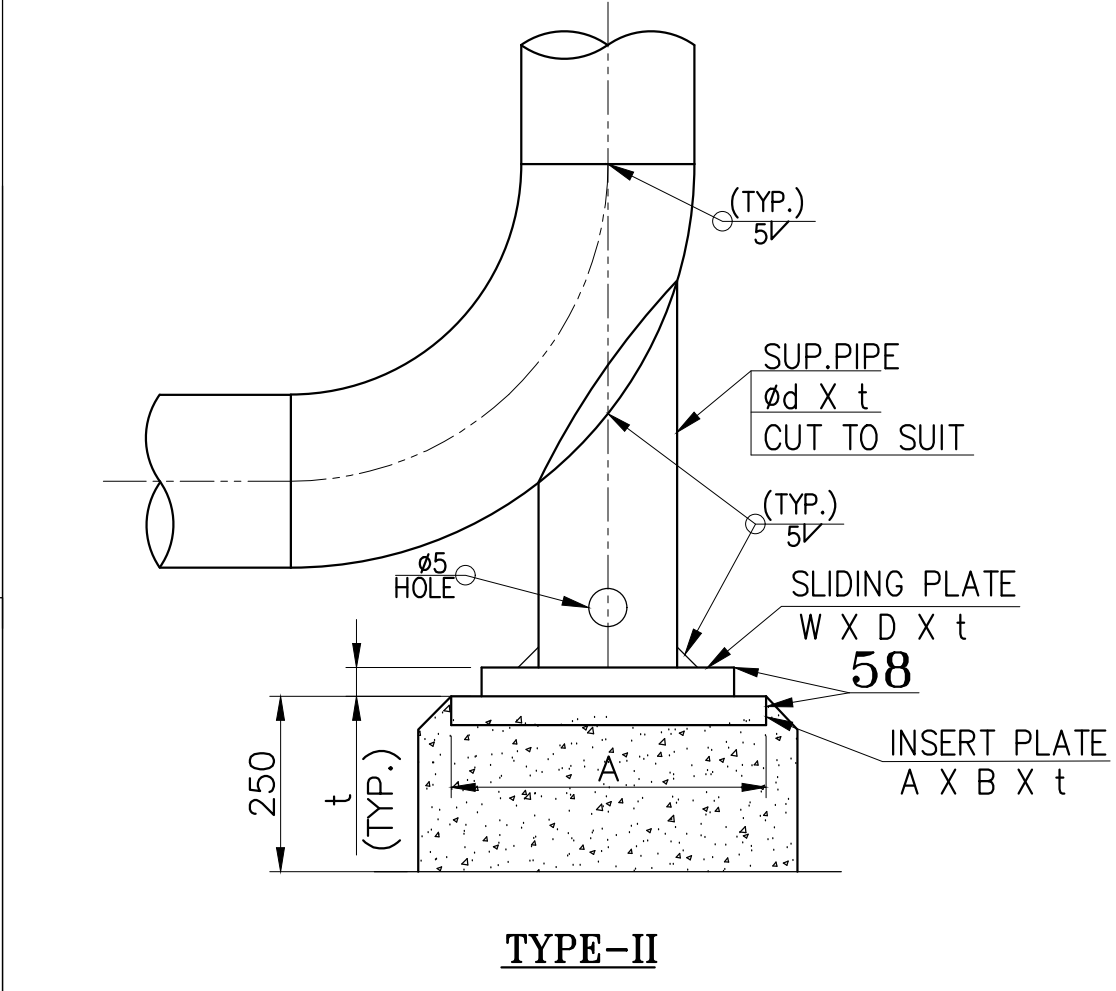
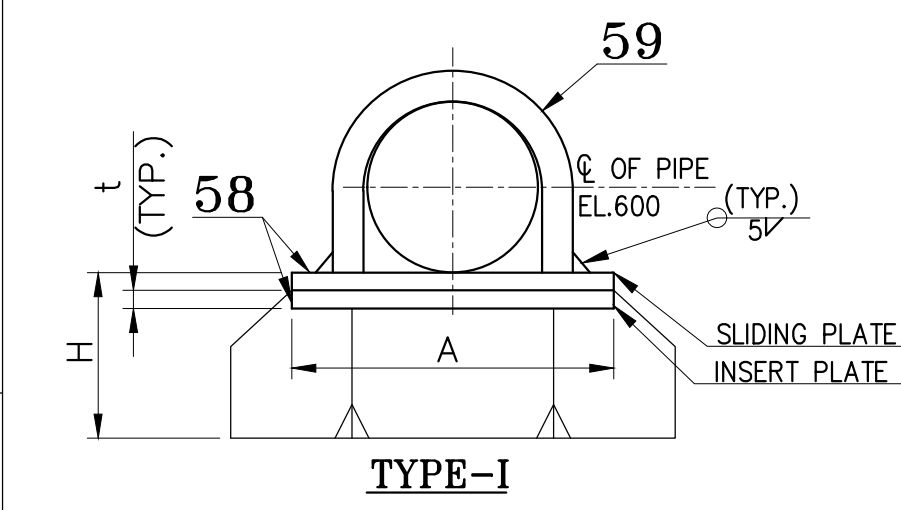
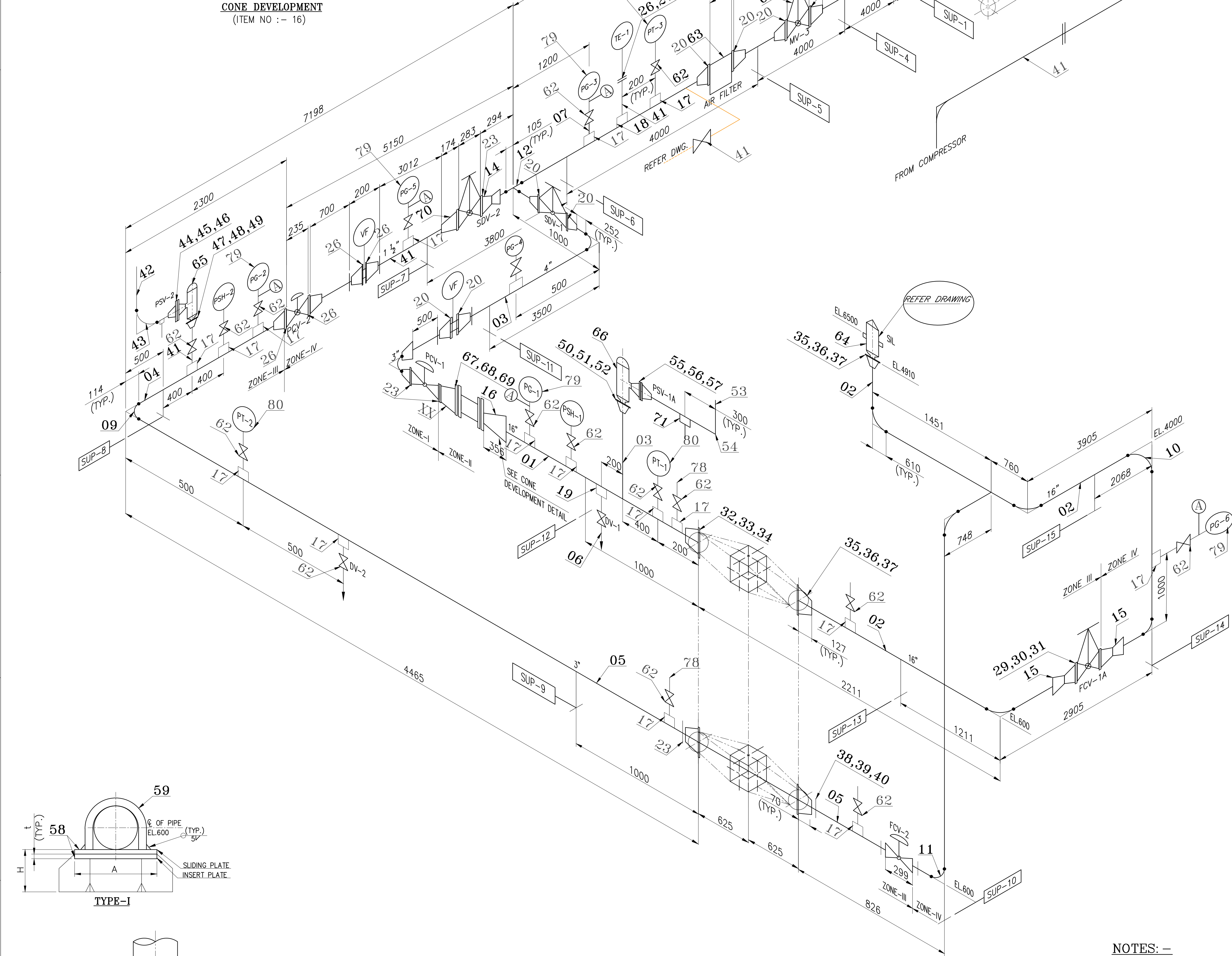
REV. 00

REV. 00

CAUTION: THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.



CONE DEVELOPMENT
(ITEM NO :- 16)



SUPPORT TAG NO.	SIZE OF PIPE (NB)	INSERT PL./SLIDING PL SIZE AxBxt	H	DEV. LG.OF P.NO 59
SUPPORT - 4,5,6,11	4"	150x150x10	543	303
SUPPORT - 8,9	3"	150x150x10	556	238
SUPPORT - 12,13	16"	450x250x10	397	1055
SUPPORT - 7	1 1/2"	150x150x10	576	221

SUPPORT TAG NO.	SIZE OF PIPE (NB)	INSERT PLATE SIZE AxBxt	SLIDING PLATE SIZE WxBxt	SUPPORT PIPE SIZE Ød x t
SUPPORT - 1	4"	200x200x10	150x150x10	88.9 x 4.88
SUPPORT - 10	3"	200x200x10	150x150x10	60.3 x 3.91
SUPPORT - 14	16"	300x300x10	250x250x10	168.3 x 7.11

NOTES: -

- ITEM NO.01 PIPE SHALL BE MADE FROM PLATE.
- FOR COMPOSITE PIPING LAYOUT REFER DRG NO.HTCS-1-41014200-A-001.
- FOR WELD DETAILS OF PIPE TO PIPE, PIPE TO PIPE FITTINGS REFER STD.DRG.NO.B-100-022-00057.
- L.S.EAM OF PIPE (ITEM NO.01) SHALL NOT FOUL WITH INST.TAPPINGS, SV, DRAIN CONN.
- SUPPORT MEMBERS HAS BEEN GIVEN IN RUNNING SIZES, CUT TO SUIT AT SITE.

DESIGN DATA :-

	ZONE-I	ZONE-II	ZONE-III	ZONE-IV
01 DESIGN PRESSURE KG/CM ² (g):	30	2.5	15	ATM
02 DESIGN TEMP. °C			50	
03 HYD TEST PR. KG/CM ² (g)	45	3.75	22.5	1.5
04 DESIGN CODE			ANSI B 31.3	
05 INSPECTION			BHEL/DGA QA	
06 RADIOGRAPHY	10%	10%	10%	NIL
07 P.W.H.T			NIL	
08 INSULATION			NIL	
09 PAINTING			NIL	YES

40	STUD+2 HEX.NUTS 5/8"x90LG	190014840000	0.2
39	SPW GASKET NB80x150#	190061360000	12
38	WN.RF FLANGE NB80x150#	156118160000	3
37	STUD+2 HEX.NUTS 1"x150LG	190253340000	5.2
36	SPW GASKET NB400x150#	190061420000	4
35	WN.RF FLANGE NB400x150#	156114990000	1.01
34	STUD+2 HEX.NUTS 1"x150LG	189300014729	32
33	SPW GASKET NB400x150#	190061420000	1.01
32	WN.RF FLANGE NB400x150#	156130210000	16
31	STUD+2 HEX.NUTS 7/8"x125LG	190014950000	1
30	SPW GASKET NB300x150#	190061540000	0.54
29	WN.RF FLANGE NB300x150#	156114830000	24
28	STUD+2 HEX.NUTS 3/4"x115LG	190016230000	NO 2
27	SW GASKET NB40x300#	190061620000	39.0
26	WN.RF FLANGE NB40x300#	156114830000	NO 2
25	STUD+2 HEX.NUTS 3/4"x115LG	190016230000	0.37
24	SW GASKET NB80x300#	190061650000	NO 28
23	WN.RF FLANGE NB80x300#	156130110000	NO 7
22	STUD+2 HEX.NUTS 3/4"x120LG	190016230000	3.2
21	SW GASKET NB100x300#	190061670000	NO 7
20	WN.RF FLANGE NB100x300#	156130110000	7.4
19	HALF COUPLING(S.W) NB25x3000#	190061370000	NO 7
18	HALF COUPLING(S.W) NB40x3000#	190061370000	0.42
17	HALF COUPLING(S.W) NB20x3000#	190061370000	NO 80
16	CONC.REDUCER(CONE) OD 406.4/168.3x4THK	190061370000	NO 10
15	CONC.REDUCER OD 406.4/323.8x6.35THK	190061370000	11.9
14	CONC.REDUCER OD 114.3/88.9x3.05THK	190061370000	NO 16
13	EQUAL TEE OD 114.3x6.02THK	190061370000	0.34
12	EQUAL TEE OD 114.3x3.05THK	190061370000	NO 3
11	90° LR ELBOW OD 88.9x5.49THK	190061370000	0.57
10	90° LR ELBOW OD 406.4x6.35THK	190061370000	NO 2
09	90° LR ELBOW OD 88.9x3.05THK	190061370000	0.2
08	90° LR ELBOW OD 114.3x3.05THK	190061370000	12
07	PIPE OD 26.7x3.91THK 4000LG	190061370000	23.4
06	PIPE OD 33.4x4.55THK 5000LG	190061370000	22.0
05	PIPE 80NB OD88.9x4.88THK 6000LG	190061370000	1.0
04	PIPE 80NB OD88.9x5.4THK 10000LG	190061370000	6.0
03	PIPE 100NB OD114.3x3.05THK 23000LG	190061370000	2
02	PIPE 400NB OD406.4x4.78THK 10300LG	190061370000	NO 1
01	PIPE 400NB OD406.4x4.78THK 2012LG+80E.A	190061370000	3.0
ITEM NO.	DESCRIPTION	DRAWING NO.	QTY.
			TOTAL WT. IN KG. 3566

PROJECT

M/S ADA - BANGALORE

BHARAT HEAVY ELECTRICALS LTD.,
Heavy Plates & Vessels Plant, Visakhapatnam-530012.

DRAWN G V USHARANI

CHECKED K KARAKESH

APPROVED Y PRASANNA KUMAR

DATE 26.09.2025

TITLE

ISO PIPING FOR PR. DROP TESTING FACILITY FOR HEAT EXCHANGER

ALL DIMENSIONS ARE IN MILLIMETRES

DRG No. HTCS-1-410142-01-4002

SHEET: 01 OF 02

REV 01

DATE

ALTERED : CHD & APPD :

CAUTION: THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

SCALE NTS

REV. 00

