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COMPUTER FILE NAME  
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GENERAL DIMENSIONAL LIMITS, FITS &amp; TOLERANCES AS PER HY0230261

DRG. NO. 3-381-21-02501  
SH. 28 OF 01

# INSTRUMENT INSTALLATION DRWINGS

## (for BOP area Inst's)

**FICHTNER Consulting Engineers (India)**  
Private Limited

### VENDOR DOCUMENT REVIEW STATUS

- ☐ Action-A Drawing Approved as submitted. Release distribution prints.
- ☐ Action-B Drawing Approved with comments. Proceed with fabrication/ Manufacture / Construction considering comments and resubmit for approval and stamping.
- ☐ Action-C Drawing Not Approved. Correct the original.
- ☐ Action-D Correct the original drawing duly incorporating our comments and submit for records.
- ☒ Action-H Drawing not for approval, only for Information.  
Information furnished in the drawing is noted.




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FI Letter Ref. No. 3115161-KPCL-CI-VDT-703

CHD/APPD  
Date: 23.06.2016

Signature

A. M Sakthivel (LE-C&I)  
Initials: AM

		OWNER: <b>KARNATAKA POWER CORPORATION LIMITED</b> 1x370 MW YELAHANKA COMBINED CYCLE POWER PLANT			
		OWNER'S CONSULTANT: <b>FICHTNER Consulting Engineers (India) Pvt. Limited</b> Bangalore.			
		EPC CONTRACTOR: <b>BHARAT HEAVY ELECTRICALS LTD.</b> HYDERABAD			
		NAME	SIGN.	DATE	NO. OF
		DRN. ROBINSON		16.06.16	VAR.
		CHD. KAMAL		16.06.16	-N.A.-
		APPD. SEKHAR		16.06.16	-N.A.-
DEPT. PE&SD CODE 450	UNTO. DIMS. GR. 2/4/1/2	SCALE 1:40	WEIGHT (KG) N.A.	REF. TO ASSY. DRG. N.A.	ITEM NO. NO. OF ITEMS
TITLE <b>INSTRUMENT INSTALLATION DRWINGS</b> (for BOP area Inst's)		CARD CODE N.A.	DRAWING NO. <b>3-381-21-02501</b>		REV. 00
		SHT. No 01		NO. OF SHT. 28	

# INSTRUMENT INSTALLATION DRAWINGS



**Project:1x370 MW, CCPP YELAHANKA**

**CUSTOMER : M/s KARNATAKA POWER CORPORATION LIMITED**

**Consultant: FITCHNER CONSULTING ENGINEERS (INDIA) PVT LTD**

**Bharat Heavy Electricals Limited**

**Project Engineering System Division**

**Drg No:3-381-21-02501;Rev No:00**

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# INSTRUMENT INSTALLATION DRAWINGS

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## INSTRUMENT INSTALLATION DRAWINGS

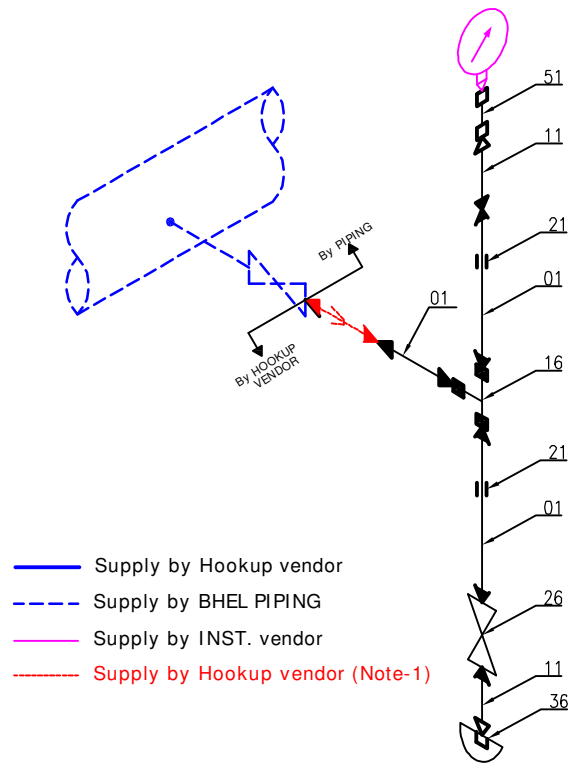
 	<b>Project:1x370 MW, CCPP YELAHANKA</b>	<b>Bharat Heavy Electricals Limited</b>
	<b>CUSTOMER : M/s KARNATAKA POWER CORPORATION LIMITED</b>	<b>Project Engineering System Division</b>
	<b>Consultant: FITCHNER CONSULTING ENGINEERS (INDIA) PVT LTD</b>	<b>Drg No:3-381-21-02501;Rev No:00</b>
<b><u>NOTES</u></b>  <p>(1) For all line mounted flanged instruments or wherever first isolation valve is flanged, gasket, bolts nuts etc shall be in piping scope.</p> <p>(2) Supply of tank standpipe shall be as shown on respective P&amp;ID's.</p> <p>(3) Installation of JB/ Inst shall at a height upto 1.5M from grade level/finished floor level. same shall be finalized at site.</p> <p>(4) Root valves for all the instruments are in piping scope. Root valves shown in these installation drawings are indicative. No. of roots valves (single/double) for low/high pressure services shall be as per P &amp; ID's.</p> <p>(5) Impulse line routing shown in this drawing are indicative. actual routing shall be decided at site &amp; unnecessary bends in impulse line shall be avoided as far as possible.</p> <p>(6) Instrument orientation shall be suitable for meter reading accessibility. Suitable space shall be provided for maintenance accesibility.</p> <p>(7) The orientation of tapping from process pipe (vertical/horizontal) shall be selected such that pressure gauge shall be accessible for maintenance.</p> <p>(8) Instrument impulse line shall be supported as interval of 3m.</p> <p>(9) Capillary tube and instrument air tubing shall be supported in light steel channel (50x50mm).</p> <p>(10) FRP Canopies are supplied for all transmitters, RTDs, Thermocouples, Junction Boxes and Positioners with respective instruments Tag number marking. Hence same shall be erected along with canopies</p> <p>(11) This drawing is applicable only for BOP area instruments and not applicable for insrtuments pertaining to GT, HRSG and packages.</p>		

# **INSTRUMENT INSTALLATION DRAWINGS**

 	<b>Project:1x370 MW, CCPP YELAHANKA</b>	<b>Bharat Heavy Electricals Limited</b>
	<b>CUSTOMER : M/s KARNATAKA POWER CORPORATION LIMITED</b>	<b>Project Engineering System Division</b>
	<b>Consultant: FITCHNER CONSULTING ENGINEERS (INDIA) PVT LTD</b>	<b>Drg No:3-381-21-02501;Rev No:00</b>

## **SUB-VENDOR LIST for HOOKUP ITEMS**

S.No	Item Description	Approved make	REMARKS
1	Tube / Pipes - Carbon Steel	JR SEAMLESS PRIVATE LIMITED, WUXI SPECIAL STEEL MATERIAL CO LTD, SHANDONG LIAOCHENG ZGL, YANGZHOU LONTRIN STEEL TUBE, JIANGSU CHENGDE STEEL TUBE, ZHEJIANG GROSS SEAMLESS, PATELS AIRFLOW LIMITED, EVERGREEN SEAMLESS PIPES & TUBES, MAHARASHTRA SEAMLESS LTD.,JINDAL SAW LIMITED, HEAVY METAL & TUBES LIMITED, ISMT LIMITED., MOKSHI INDUSTRIES PVT. LTD., AMARDEEP STEEL CENTRE, POONAM ENTERPRISE, NAGARDAS KANJI SHAH, TUBES INDIA SCORODITE STAINLESS, TUBOS REUNIDOS,S.A, LAL BABA SEAMLESS TUBES PVT. LTD.	
2	Tube/Pipes – Stainless steel	LINK WELL SEAMLESS TUBES (P) LTD., ZHEJIANG HI-TECH METALS CO. LTD., WUXI SPECIAL STEEL MATERIAL CO LTD, ZHEJIANG PENGYE STAINLESS STEEL, RATNAMANI METALS & TUBES LTD.,TPS TECHNITUBE ROHRENWERKE, MODERN TUBE INDUSTRIES, KRYSTAL STEEL MANUFACTURING CHANDAN STEEL LIMITED, SHUBHLAXMI METALS & TUBES, MAXIM TUBES COMPANY PVT. LTD. Steamline Industries Ltd, SURAJ LIMITED, MBM TUBES PRIVATE LIMITED, PRAKASH STEELAGE LTD., HEAVY METAL & TUBES LIMITED, REMI EDELSTAHL TUBULARS LIMITED, SANDVIK ASIA LIMITED SHEKASA ENGINEERING CO. PVT LTD, HINDUSTAN INOX LTD, AMARDEEP STEEL CENTRE, POONAM ENTERPRISE, TUBACEX PRAKASH INDIA PVT LTD, SCORODITE STAINLESS, IGAWARA INDL SERVICE & TRADING, TUBACEX TUBOS INOXIDABLES S.A.	
3	Pipe Fittings	S.S.PIPE FITTINGS & FORGINGS, UNIQUE ENGINEERING ENTPS. P. LTD., PRESHZINGER ENGINEERING FLASH FORGE PVT LTD, CARLO DYNATECH INDUSTRIES,U I PIPE FITTINGS PVT. LTD. TRUE FORGE PVT.LTD., P.K. TUBES & FITTINGS PVT. LTD., K. S. PIPE FITTINGS PVT. LTD., SKY FORGE PRIVATE LIMITED, PRECISION ENGINEERING INDS., FITTECH INDUSTRIES PVT. LTD., LEADER VALVES LIMITED, M.S. FITTINGS MANUFACTURING CO. PVT, PIPEFIT ENGINEERS PVT. LTD.	
4	Tube Fitting	KWALITY FORGED FITTINGS, UNIQUE ENGINEERING ENTPS. P. LTD. ,PRESHZINGER ENGINEERING CARLO DYNATECH INDUSTRIES, U I PIPE FITTINGS PVT. LTD., TRUE FORGE PVT.LTD., TRUE FAB ENGINEER (P) LTD., P.K. TUBES & FITTINGS PVT. LTD., DYNAFLUID VALVES AND FLOW CONTROLS, PANAM ENGINEERS PVT. LTD., NAV DURGA FORGING AND FITTINGS	
5	IBR Valves	FOURESS ENGINEERING (I)PVT.LTD, L & T VALVES LIMITED VALVITALIA S.P.A, B.F.E.SRL BONNEY FORGE, WEIR BDK VALVES, NSSL LIMITED, MICON VALVES (I) PVT. LTD., NITON VALVE INDUSTRIES LTD, SHALIMAR VALVES PVT. LTD., LEADER VALVES LIMITED K.S.B PUMPS LTD.	
6	Non IBR valves	FOURESS ENGINEERING (I)PVT.LTD, L & T VALVES LIMITED VALVITALIA S.P.A, B.F.E.SRL BONNEY FORGE, WEIR BDK VALVES, NSSL LIMITED, MICON VALVES (I) PVT. LTD., NITON VALVE INDUSTRIES LTD, SHALIMAR VALVES PVT. LTD., LEADER VALVES LIMITED K.S.B PUMPS LTD.	
7	MANIFOLD/ Needle valve /Condensate pots and syphon	MICRO PRECISION PRODUCTS (P) LTD., DYNAFLUID VALVES AND FLOW CONTROLS HYD-AIR VALVES PRIVATE LIMITED, TECNOMATIC (INDIA) PRIVATE LIMITED, EXCEL HYDRO PNEUMATICS PVT LTD, PERFECT INSTRUMENTATION CONTROL SWASTIK ENGINEERING WORKS, NAV DURGA FORGING AND FITTINGS PROTECH CONTROL INSTRUMENTS,	

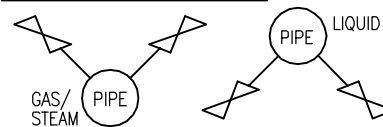


- Supply by Hookup vendor
- Supply by BHEL PIPING
- Supply by INST. vendor
- Supply by Hookup vendor (Note-1)

**NOTES ::**

- (1) Concentric reducer & male connector requirement is project specific. Requirement of these items shall be separately mentioned in enquiry with separate material code. Site to check the same in supplies and erect as per above scheme.
- (2) All the hookup items shall be supplied in loose condition.
- (3) Welding shall be done at site.
- (4) BOM listed above shall be packed each material code wise in ONE packing box except pipe/tubes.
- (5) Packing of pipes / tubes shall be as per vendor practice.



BOM for Material Code : PY9756132019; [SCHEME : PG-600#-L/G(SS)]							
Pos. No.	DESCRIPTION			QTY/SET	UNITs	IBR in IIIC	
01	PIPE (SMLS)	SS 316L	1/2" SCH 80S	12	Mtrs	Not required	
06	REDUCER [NOTE-1]	SS 316L	3/4" PL x 1/2" PLXPL, SCH80S	1	No's	Not required	
11	NIPPLE	SS 316L	1/2" PL x NPT(M), SCH 80S	2	No's	Not required	
16	EQUAL TEE	SS 316	1/2" SW, CL 3000	1	No's	Not required	
21	COUPLING	SS 316	1/2" SW, CL 3000	2	No's	Not required	
51	COUPLING	SS 316	1/2" NPT(F), CL 3000	1	No's	Not required	
26	GATE VALVE	SS 316	1/2" SW, CL 800	1	No's	Not required	
36	CAP	SS 316	1/2" NPT(F), CL 3000	1	No's	Not required	
86	U-BOLT GALVZD	IS 226	1/2"	4	No's	Not required	

**Tapping Orientations**

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		
PAGE 2 OF 22								

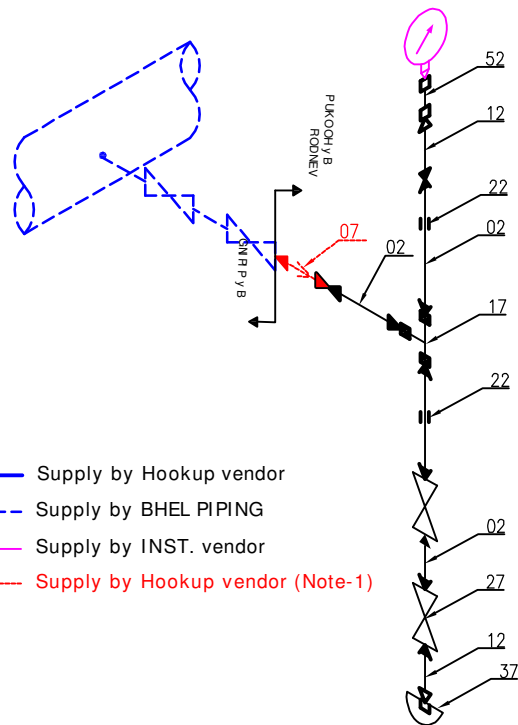
BHARAT HEAVY ELECTRICALS LTD. HYDERABAD				NAME	SIGN.	DATE	NO. OF VAR.
DRN.	SUNIL			03.08.15			
CHD.	SUJATHA			03.08.15			-N.A.-
APPD.	KAMAL			03.08.15			-N.A.-
DEPT. CODE	PE&SD 450	UNTDL. GR.	DIMS. GR. G/M/F	SCALE	NTS	WEIGHT (KG)	N.A.
TITLE				REF. TO ASSY. DRG.			
INSTALLATION DRAWING for PRESSURE GAUGE (Liquid/Gas)				DRAWING NO. PG-600# -L/G			
CARD CODE N.A.				REV. 00			
SHT. No 01				NO. OF SHT. 01			

# INSTRUMENT INSTALLATION DRAWINGS

 	Project:1x370 MW, CCPP YELAHANKA		Bharat Heavy Electricals Limited
	CUSTOMER : M/s KARNATAKA POWER CORPORATION LIMITED		Project Engineering System Division
	Consultant: FITCHNER CONSULTING ENGINEERS (INDIA) PVT LTD		Drg No:3-381-21-02501;Rev No:00

## APPLICABLE TAGs for HOOKUP SCHEME: PG-600#-L/G (SS)

S.No	FIELD TAG	DESCRIPTION	P&ID No.	S.No	FIELD TAG	DESCRIPTION	P&ID No.
1	PG-6805	GAS PRESSURE AT GCS I/L	138101-06695/1				
2	PG-6824	N2 PRESSURE AT I/L OF GCS	138101-06695/1				
3	PG-6812	GAS PRESSURE AT GCS O/L	138101-06695/1				
4	PG-6825	N2 PRES AT PERFORMANCE HEATER I/L	138101-06695/4				
5	PG-6827	GAS PREs AT IL OF PERFORMA HEATER	138101-06695/4				
6	PG-6831	GAS PRESSURE AT IL OF SCRUBBER	138101-06695/4				
7	PG-6843	N2 PRESSURE AT I/L OF GAS SCRUBBER	138101-06695/5				
8	PG-6849	GAS PRESSURE AT I/L OF GT	138101-06695/6				
9	PG-6851	N2 PRES AT PERFO HEATER DRAIN TANK	138101-06695/7				
10	PG-6855A	PERFORMANE HEATER DRAIN TANK PUMP PRES	138101-06695/7				
11	PG-6855B	PERFORMANE HEATER DRAIN TANK PUMP PRES	138101-06695/7				
12	PG-6856	N2 PRES AT NG DRAIN TANK	138101-06695/7				
13	PG-6860A	NG DRAIN TANK PUMP PRES	138101-06695/7				
14	PG-6860B	NG DRAIN TANK PUMP PRES	138101-06695/7				
15	PGC51CP003	CCWP-1 O/L PRES	1-38101-06694				
16	PGC51CP002	CCWP-1 I/L PRES	1-38101-06694				
17	PGC52CP003	CCWP-2 O/L PRES	1-38101-06694				
18	PGC52CP002	CCWP-2 I/L PRES	1-38101-06694				
19	PGC51CP005	CCW PRES AT PHE-1 I/L	1-38101-06694				
20	PGC52CP005	CCW PRES AT PHE-2 I/L	1-38101-06694				
21	PAB51CP007	CW PRES AT PHE-1 I/L	1-38101-06694				
22	PAB52CP007	CW PRES AT PHE-2 I/L	1-38101-06694				
23	PGC51CP006	CCW PRES AT PHE-1 O/L	1-38101-06694				
24	PGC52CP006	CCW PRES AT PHE-2 O/L	1-38101-06694				
25	PAB51CP008	CW PRES AT PHE-1 O/L	1-38101-06694				
26	PAB52CP008	CW PRES AT PHE-2 O/L	1-38101-06694				
27	SEC20CP002	INST. AIR PRES AT I/L AIR RECEIVER	1-38101-06696				
28	QJA20CP005	N2 PRES AT O/L N2 STORAGE TANK	1-38101-06696				
29							
30							



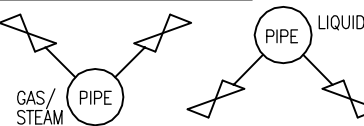
- Supply by Hookup vendor
- - - Supply by BHEL PIPING
- Supply by INST. vendor
- Supply by Hookup vendor (Note-1)

**NOTES ::**

- (1) Concentric reducer & male connector requirement is project specific. Requirement of these items shall be separately mentioned in enquiry with separate material code. Site to check the same in supplies and erect as per above scheme.
- (2) All the hookup items shall be supplied in loose condition.
- (3) Welding shall be done at site.
- (4) BOM listed above shall be packed each material code wise in ONE packing box except pipe/tubes.
- (5) Packing of pipes / tubes shall be as per vendor practice.

**BOM for Material Code : PY9756132060; [SCHEME : PG-1500#-L(SS) ]**

Pos. No.	DESCRIPTION			QTY/SET	UNITS	IBR in IIIC	
02	PIPE (SMLS)	SS 316L	1/2" SCH 160S	12	Mtrs	Required	
07	REDUCER [NOTE-1]	SS 316L	3/4" PL x 1/2" PLXPL, SCH160S	1	No's	Required	
12	NIPPLE	SS 316L	1/2" PL x NPT(M), SCH 160S	2	No's	Required	
17	EQUAL TEE	SS 316	1/2" BW, CL 6000	1	No's	Required	
22	COUPLING	SS 316	1/2" SW, CL 6000	2	No's	Required	
52	COUPLING	SS 316	1/2" NPT(F), CL 6000	1	No's	Required	
27	GATE VALVE	SS 316	1/2" SW, CL 1500	2	No's	Required	
37	CAP	SS 316	1/2" NPT(F), CL 6000	1	No's	Required	
86	U-BOLT GALVZD	IS 226	1/2"	4	No's	Not required	



**Tapping Orientations**

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		NAME	SUNIL	SIGN.	DATE	NO. OF VAR.
DEPT. PG-1500	UNTD. DIMS. GR. 5/16"	DRN.	SUJATHA		03.08.15	
CODE 450		APPD.	KAMAL		03.08.15	-N.A.-
TITLE		REF. TO ASSY. DRG.	-N.A.-	ITEM NO.	-N.A.-	NO. OF ITEMS
INSTALLATION DRAWING for PRESSURE GAUGE (LIQUID)		CARD CODE	N.A.	DRAWING NO.	PG-1500# -L	REV. 00
		SHT. No	01	NO. OF SHT.	01	

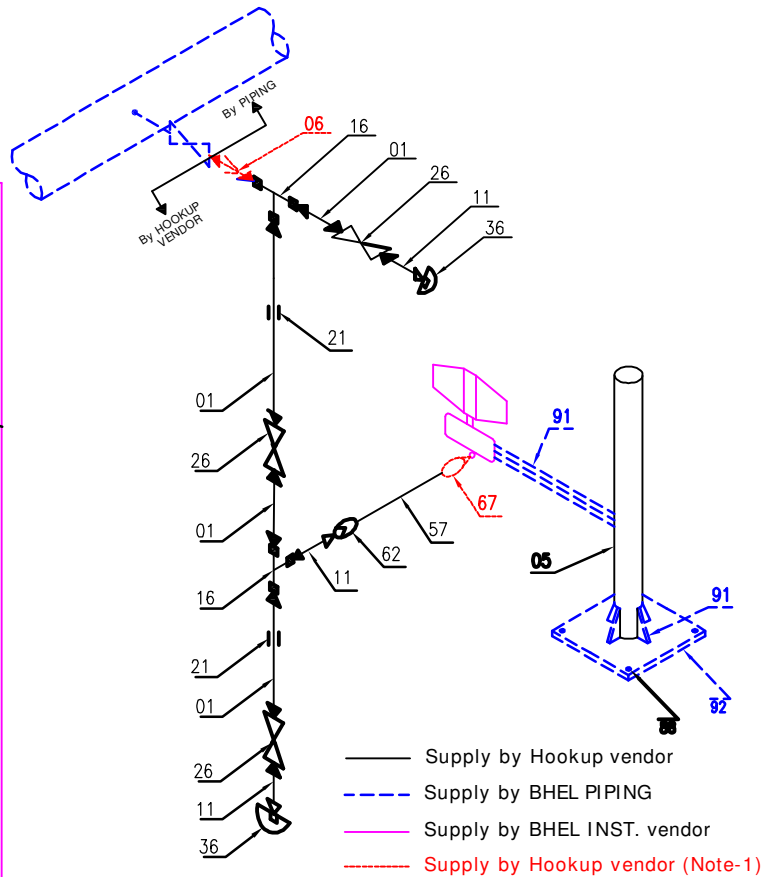


# INSTRUMENT INSTALLATION DRAWINGS

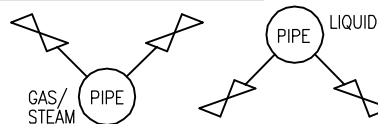
 	<b>Project: 1x370 MW, CCPP YELAHANKA</b>		<b>Bharat Heavy Electricals Limited</b>	
	<b>CUSTOMER : M/s KARNATAKA POWER CORPORATION LIMITED</b>		<b>Project Engineering System Division</b>	
	<b>Consultant: FITCHNER CONSULTING ENGINEERS (INDIA) PVT LTD</b>		<b>Drg No: 3-381-21-02501; Rev No: 00</b>	

<b>APPLICABLE TAGs for HOOKUP SCHEME: <a href="#">PG-1500#-L/G (SS)</a></b>			
S.No	FIELD TAG	DESCRIPTION	P&ID No.
1	PG-6836	FW PRES AT IL OF PERFORMA. HEATER	138101-06695/4
2	PG-6839	FW PRES AT O/L OF PERFORMA. HEATER	138101-06695/4
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**NOTES ::**

- (1) Concentric reducer & male connector requirement is project specific. Requirement of these items shall be separately mentioned in enquiry with separate material code. Site to check the same in supplies and erect as per above scheme.
- (2) All the hookup items shall be supplied in loose condition.
- (3) Welding shall be done at site.
- (4) BOM listed above shall be packed each material code wise in ONE packing box except pipe/tubes.
- (5) Packing of pipes / tubes shall be as per vendor practice.


**Tapping Orientations****BOM for Material Code : PY9756132230; [SCHEME : PT/PS-600#-L/G(SS)].**

Pos. No.	DESCRIPTION			QTY/SET	UNITs	IBR in IIIC	
01	PIPE (SMLS)	SS 316L	1/2" SCH 80S	12	Mtrs	Not required	
11	NIPPLE	SS 316L	1/2" PL x NPT(M), SCH 80S	3	No's	Not required	
16	EQUAL TEE	SS 316	1/2" SW, CL 3000	2	No's	Not required	
21	COUPLING	SS 316	1/2" SW, CL 3000	2	No's	Not required	
26	GATE VALVE	SS 316	1/2" SW, CL 800	3	No's	Not required	
36	CAP	SS 316	1/2" NPT(F), CL 3000	2	No's	Not required	
57	TUBE (SMLS)	SS 316L	1/2" OD X 2.1 mm	3	Mtrs	Not required	
62	FEMALE CONNECTOR	SS 316	1/2"NPT(F) x 1/2" OD TUBE, CL6000	1	No's	Not required	
05	PIPE (SMLS)	SA 106 Gr. B	2" SCH 40	1.5	Mtrs	Not required	
86	U-BOLT GALVZD	IS 226	1/2"	4	No's	Not required	
88	ANCHOR BOLT	Chro coated MS	M10x160mm	4	No's	Not required	
67	MALE CONNECTOR [NOTE-1]	SS 316	1/2"NPT(M) x 1/2" OD TUBE, CL600	1	No's	Not required	
06	REDUCER [NOTE-1]	SS 316L	3/4" PL x 1/2" PLXPL, SCH80S(NOT	1	No's	Not required	
91	STR STEEL MS ANGLE(50x50x6) (BY BHEL PIPING)			2.7012	KG's	Not required	
92	STR STEEL 6 mm PLATE (BY BHEL PIPING)			23.55	KG's	Not required	

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

DEPT. <b>PE&amp;SD</b>		UNTD. DIMS. <b>GR. G/M/F</b>	SCALE <b>NTS</b>	WEIGHT (KG) <b>N.A</b>	REF. TO ASSY. DRG. <b>-N.A.-</b>	ITEM NO. <b>-N.A.-</b>	NO. OF ITEMS <b>-N.A.-</b>
TITLE <b>INSTALLATION DRAWING for PRESSURE TRANSMITTER</b>		CARD CODE <b>N.A</b>	DRAWING NO. <b>PT/PS-600#-L/G (SS)</b>		REV. <b>00</b>		
SHT. No <b>01</b>		NO. OF SHT. <b>01</b>					

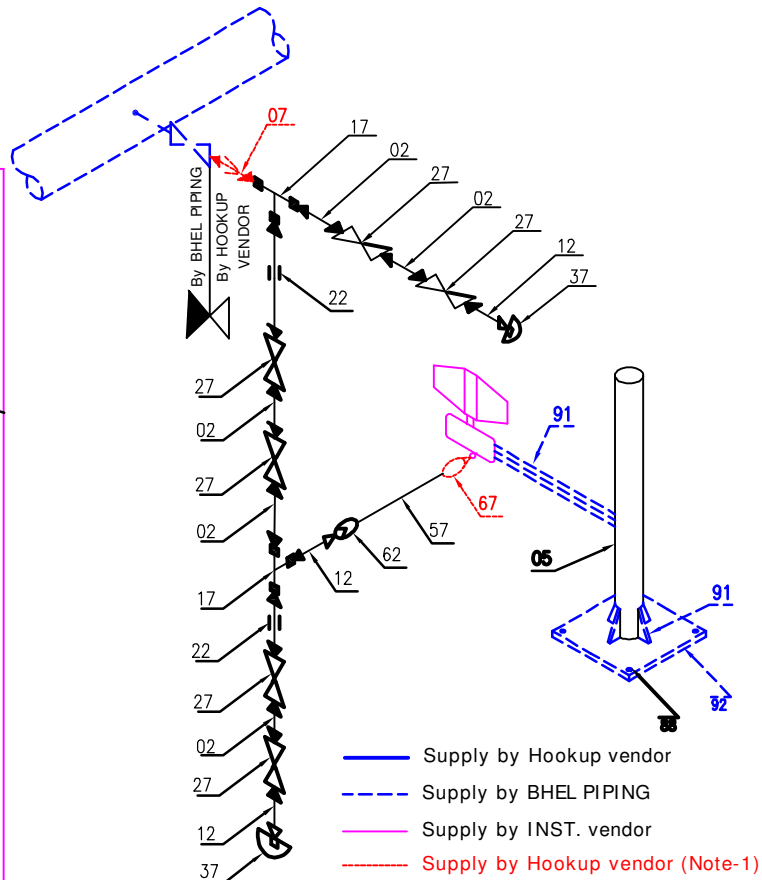
# INSTRUMENT INSTALLATION DRAWINGS

 	<b>Project:1x370 MW, CCPP YELAHANKA</b>	<b>Bharat Heavy Electricals Limited</b>
	<b>CUSTOMER : M/s KARNATAKA POWER CORPORATION LIMITED</b>	<b>Project Engineering System Division</b>
	<b>Consultant: FITCHNER CONSULTING ENGINEERS (INDIA) PVT LTD</b>	<b>Drg No:3-381-21-02501;Rev No:00</b>

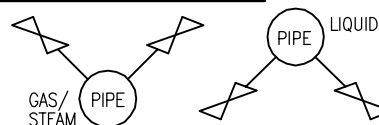
## **APPLICABLE TAGs for HOOKUP SCHEME: PT/PS-600#-L/G (SS)**

S.No	FIELD TAG	DESCRIPTION	P&ID No.
1	PT-6804	GAS PRESSURE AT GCS I/L	138101-06695/1
2	PT-6868	GAS PRES. AT COALESCENT FILTER O/L HDR	138101-06695/3
3	PT-6826	GAS PRES. AT IL OF PERFORM. HEATER	138101-06695/4
4	PT-6830	GAS PRESSURE AT IL OF SCRUBBER	138101-06695/4
5	PT-6877	PRES AT O/L OF GAS SCRUBBER	138101-06695/5
6	PT-6847	GAS PRESSURE AT I/L OF GT	138101-06695/6
7	PGC51CP009	CCW PRES AT CWP's I/L HDR	1-38101-06694
8	PGC51CP007	CCW PRES AT CWP's DISCH HDR	1-38101-06694
9	PGC51CP004	CCW PRES AT CWP's DISCH HDR	1-38101-06694
10	PGC51CP008	CCW PRES AT PHE-1& PHE-2 O/L HDR	1-38101-06694
11	SEC20CP001	INST. AIR PRES AT I/L AIR RECEIVER	1-38101-06696
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S.No	FIELD TAG	DESCRIPTION	P&ID No.
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**NOTES ::**

- (1) Concentric reducer & male connector requirement is project specific. Requirement of these items shall be separately mentioned in enquiry with separate material code. Site to check the same in supplies and erect as per above scheme.
- (2) All the hookup items shall be supplied in loose condition.
- (3) Welding shall be done at site.
- (4) BOM listed above shall be packed each material code wise in ONE packing box except pipe/tubes.
- (5) Packing of pipes / tubes shall be as per vendor practice.



**Tapping Orientations****BOM for Material Code : PY9756132337; [SCHEME : PT/PS-1500#-L(SS) ]**

Pos. No.	DESCRIPTION			QTY/SET	UNITs	IBR in IIIC
02	PIPE (SMLS)	SS 316L	1/2" SCH 160S	12	Mtrs	Required
12	NIPPLE	SS 316L	1/2" PL x NPT(M), SCH 160S	3	No's	Required
17	EQUAL TEE	SS 316	1/2" BW, CL 6000	2	No's	Required
22	COUPLING	SS 316	1/2" SW, CL 6000	2	No's	Required
27	GATE VALVE	SS 316	1/2" SW, CL 1500	6	No's	Required
37	CAP	SS 316	1/2" NPT(F), CL 6000	2	No's	Required
57	TUBE (SMLS)	SS 316L	1/2" OD X 2.1 mm	3	Mtrs	Not required
62	FEMALE CONNECTOR	SS 316	1/2"NPT(F) x 1/2" OD TUBE, CL6000	1	No's	Not required
05	PIPE (SMLS)	SA 106 Gr. B	2" SCH 40	1.5	Mtrs	Not required
86	U-BOLT GALVZD	IS 226	1/2"	4	No's	Not required
88	ANCHOR BOLT	Chro coated MS	M10x160mm	4	No's	Not required
67	MALE CONNECTOR [NOTE-1]	SS 316	1/2"NPT(M) x 1/2" OD TUBE, CL6000	1	No's	Not required
07	REDUCER [NOTE-1]	SS 316L	3/4" PL x 1/2" PLXPL, SCH160S	1	No's	Required
91	STR STEEL MS ANGLE(50x50x6) (BY BHEL PIPING)			2.7012	KG's	Not required
92	STR STEEL 6 mm PLATE (BY BHEL PIPING)			23.55	KG's	Not required

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

DEPT. <b>PE&amp;SD</b>		UNTO. <b>GR.</b>	DIMS. <b>G/M/F</b>	SCALE <b>NTS</b>	WEIGHT (KG) <b>N.A</b>	REF. TO ASSY. DRG. <b>-N.A.-</b>	ITEM NO. <b>-N.A.-</b>	NO. OF ITEMS <b>-N.A.-</b>
CODE <b>450</b>		TITLE <b>INSTALLATION DRAWING for PRESSURE TRANSMITTER</b>		CARD CODE <b>N.A</b>	DRAWING NO. <b>PT/PS-1500#-L(SS)</b>		REV. <b>00</b>	
SHT. No <b>01</b>		NO. OF SHT. <b>01</b>						

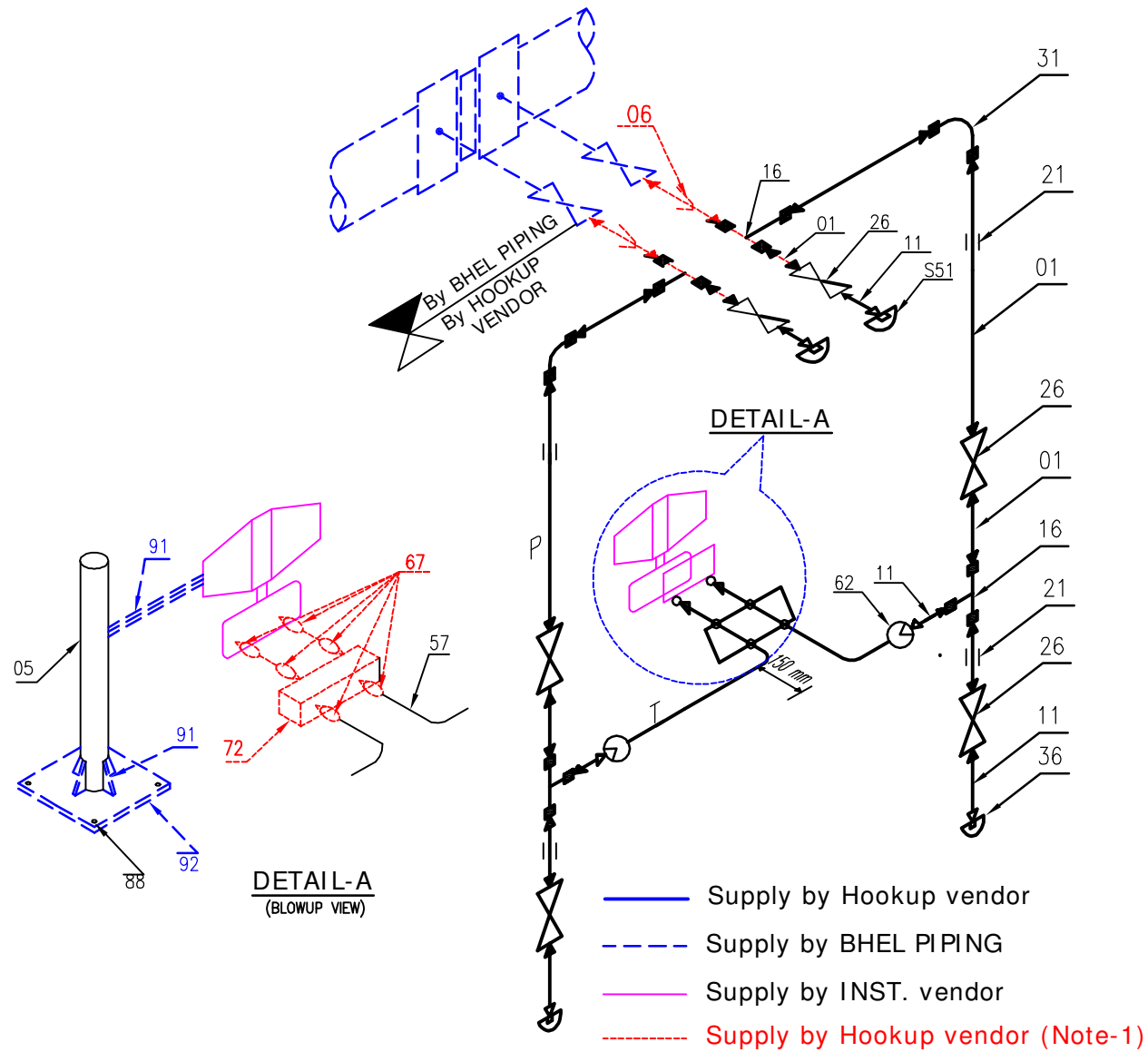
# INSTRUMENT INSTALLATION DRAWINGS

 	<b>Project:1x370 MW, CCPP YELAHANKA</b>		<b>Bharat Heavy Electricals Limited</b>
	<b>CUSTOMER : M/s KARNATAKA POWER CORPORATION LIMITED</b>		<b>Project Engineering System Division</b>
	<b>Consultant: FITCHNER CONSULTING ENGINEERS (INDIA) PVT LTD</b>		<b>Drg No:3-381-21-02501;Rev No:00</b>

## APPLICABLE TAGs for HOOKUP SCHEME: [PT/PS-1500#-L/G \(SS\)](#)

S.No	FIELD TAG	DESCRIPTION	P&ID No.
1	PT-6837	FW PRESSURE AT IL OF PERFORMANCE HEATER	138101-06695/4
2	PT-6838	FW PRESSURE AT O/L OF PERFORMANCE HEATER	138101-06695/4
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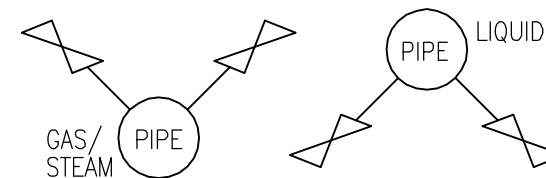
S.No	FIELD TAG	DESCRIPTION	P&ID No.
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**NOTES ::**

- (1) Concentric reducer & male connector requirement is project specific. Requirement of these items shall be separately mentioned in enquiry with separate material code. Site to check the same in supplies and erect as per above scheme.
- (2) All the hookup items shall be supplied in loose condition.
- (3) Welding shall be done at site.
- (4) BOM listed above shall be packed each material code wise in ONE packing box except pipe/tubes.
- (5) Packing of pipes / tubes shall be as per vendor practice.

**BOM for Material Code : PY9756132590; [SCHEME : FT/DPT-600#-L/G(SS)]**



Pos. No.	DESCRIPTION			QTY/SET [A]	UNITs	IBR in IIIC	
01	PIPE (SMLS)	SS 316L	1/2" SCH 80S	24	Mtrs	Not required	
11	NIPPLE	SS 316L	1/2" PL x NPT(M), SCH 80S	6	No's	Not required	
16	EQUAL TEE	SS 316	1/2" SW, CL 3000	4	No's	Not required	
26	GATE VALVE	SS 316	1/2" SW, CL 800	6	No's	Not required	
36	CAP	SS 316	1/2" NPT(F), CL 3000	4	No's	Not required	
21	COUPLING	SS 316	1/2" SW, CL 3000	4	No's	Not required	
31	ELBOW	SS 316	1/2" SW, CL 3000	2	No's	Not required	
57	TUBE (SMLS)	SS 316L	1/2" OD X 2.1 mm	6	Mtrs	Not required	
62	FEMALE CONNECTOR	SS 316	1/2"NPT(F) x 1/2" OD TUBE, CL6000	2	No's	Not required	
72	5 WAY MANIFOLD [NOTE-1]	SS 316	1/2" NPT(F), CL6000	1	No's	Not required	
05	PIPE (SMLS)	SA 106 Gr. B	2" SCH 40	1.5	Mtrs	Not required	
86	U-BOLT GALVZD	IS 226	1/2"	4	No's	Not required	
88	ANCHOR BOLT	Chro coated MS	M10x160mm	4	No's	Not required	
67	MALE CONNECTOR [NOTE-1]	SS 316	1/2"NPT(M) x 1/2" OD TUBE, CL6000	6	No's	Not required	
06	REDUCER [NOTE-1]	SS 316L	3/4" PL x 1/2" PLXPL, SCH80S	2	No's	Not required	
91	STR STEEL MS ANGLE(50x50x6) (BY BHEL PIPING)			2.7012	KG's	Not required	
92	STR STEEL 6 mm PLATE (BY BHEL PIPING)			23.55	KG's	Not required	

**Tapping Orientations**

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

		BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		NAME	SIGN.	DATE	NO.OF VAR.
				DRN.	SUNIL	03.08.15	
				CHD.	SUJATHA	03.08.15	-N.A.-
DEPT. CODE	PE&SD 450	UNTOL. DMS. GR. G/M/F	SCALE	NTS	WEIGHT (KG)	N.A	REF. TO ASSY. DRG.
TITLE	INSTALLATION DRAWING for FLOW AND DIFFERENTIAL PRESSURE TR.			CARD CODE	N.A.	DRAWING NO.	REV.
						FT/DPT-600#-L/G(SS)	00
						SHT. No 01	NO. OF SHT. 01

# INSTRUMENT INSTALLATION DRAWINGS

 	<b>Project:1x370 MW, CCPP YELAHANKA</b>		<b>Bharat Heavy Electricals Limited</b>
	<b>CUSTOMER : M/s KARNATAKA POWER CORPORATION LIMITED</b>		<b>Project Engineering System Division</b>
	<b>Consultant: FITCHNER CONSULTING ENGINEERS (INDIA) PVT LTD</b>		<b>Drg No:3-381-21-02501;Rev No:00</b>

## **APPLICABLE TAGs for HOOKUP SCHEME: FT/DPT-600#-L/G (SS)**

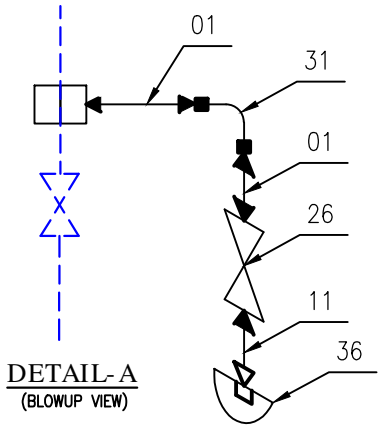
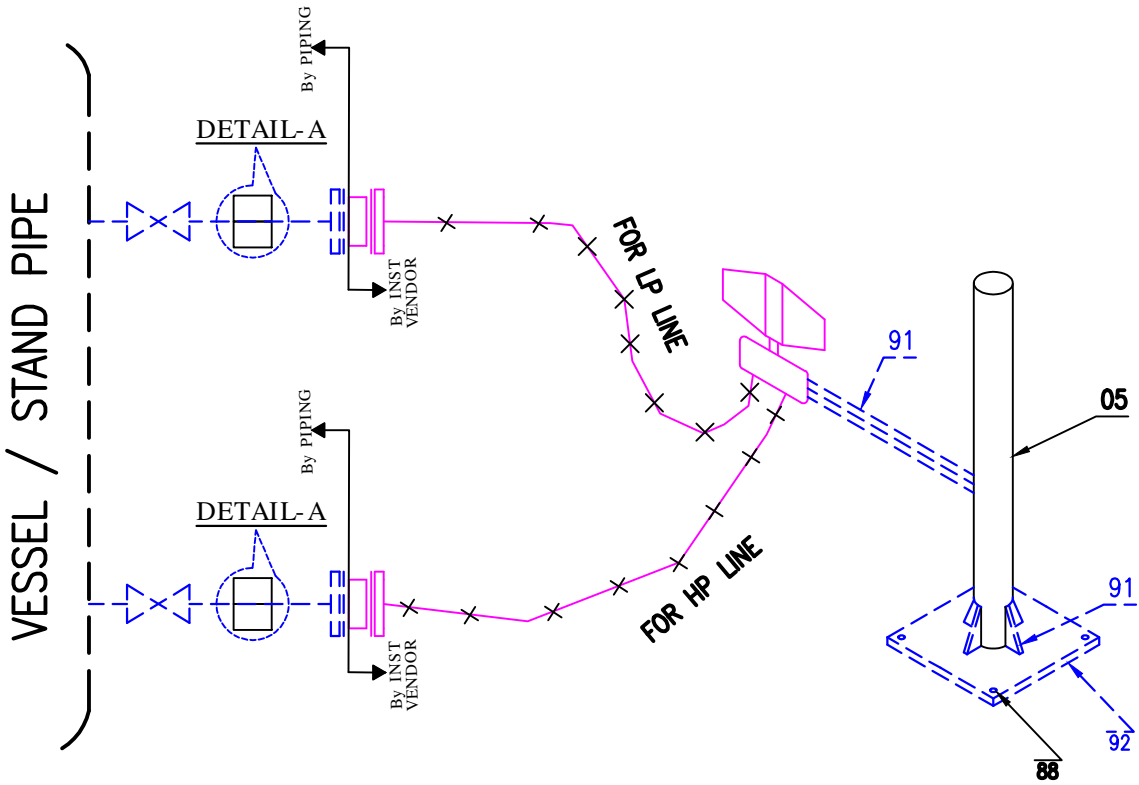
S.No	FIELD TAG	DESCRIPTION	P&ID No.
1	DPT-6801	GAS DIFF. PRES. ACROSS AT GCS I/L	138101-06695/1
2	PGC51CP001	DIFF PRES ACROSS CCWP-1 STRAINER	1-38101-06694
3	PGC52CP001	DIFF PRES ACROSS CCWP-2 STRAINER	1-38101-06694
4	PGC51CF001	CCWPs I/L HDR FLOW	1-38101-06694
5	PAB51CP009	CW DIFF PRES AT PHE-1 I/L	1-38101-06694
6	PAB52CP009	CW DIFF PRES AT PHE-2 I/L	1-38101-06694
7	PAB51CP010	CW DIFF PRES AT PHE-1& PHE-2 I/L & O/L	1-38101-06694
8			
9			
10			
11			
12			

S.No	FIELD TAG	DESCRIPTION	P&ID No.
13			
14			
15			
16			
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23			

INVENTORY NO. SIGN. AND DATE REF. DRG. NO. COMPUTER FILE NAME

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

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261



- Supply by Hookup vendor
- Supply by BHEL PIPING
- Supply by INST. vendor

BOM for Material Code : PY9756132817 ; [SCHEME : LT-2D-600#-L(SS) ]							
Pos. No.	DESCRIPTION			QTY/SET [A]	UNITs	IBR in IIC	
01	PIPE (SMLS)	SS 316L	1/2" SCH 80S	6	Mtrs	Not required	
11	NIPPLE	SS 316L	1/2" PL x NPT(M), SCH 80S	2	No's	Not required	
31	ELBOW	SS 316	1/2" SW, CL 3000	2	No's	Not required	
26	GATE VALVE	SS 316	1/2" SW, CL 800	2	No's	Not required	
36	CAP	SS 316	1/2" NPT(F), CL 3000	2	No's	Not required	
05	PIPE (SMLS)	SA 106 Gr. B	2" SCH 40	1.5	Mtrs	Not required	
86	U-BOLT GALVZD	IS 226	1/2"	4	No's	Not required	
88	ANCHOR BOLT	Chro coated MS	M10x160mm	4	No's	Not required	
91	STR STEEL MS ANGLE (50x50x6) (BY BHEL PIPING)			2.7012	KG's	Not required	
92	STR STEEL 6 mm PLATE (BY BHEL PIPING)			23.55	KG's	Not required	

NOTES ::

- (1) Materials shown in "DETAIL-A" are required only if drip ring is not supplied along with instrument. Requirement of these item shall be separately mentioned in enquiry with separate material code.
- (2) All the hookup items shall be supplied in loose condition.
- (3) Welding shall be done at site.
- (4) BOM listed above shall be packed each material code wise in ONE packing box except pipe/tubes.
- (5) Packing of pipes / tubes shall be as per vendor practice.

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

BHARAT HEAVY ELECTRICALS LTD. HYDERABAD				NAME	SIGN.	DATE	NO. OF VAR.
				DRN.	SUNIL	03.08.15	
				CHD.	SUJATHA	03.08.15	-N.A.-
				APPD.	KAMAL	03.08.15	-N.A.-
DEPT. PE&SD	UNTOL. DIMS. GR. G/M/F	SCALE NTS	WEIGHT (KG) N.A	REF. TO ASSY. DRG.	-N.A.-	ITEM NO.	NO. OF ITEMS
CODE 450						-N.A.-	-N.A.-
TITLE				DRAWING NO.		REV.	
INSTALLATION DRAWING for LEVEL TRANSMITTER (DIA-SEALED)				LT-2D-600# -L		00	
				CARD CODE N.A.	SHT. No 01	NO. OF SHT. 01	

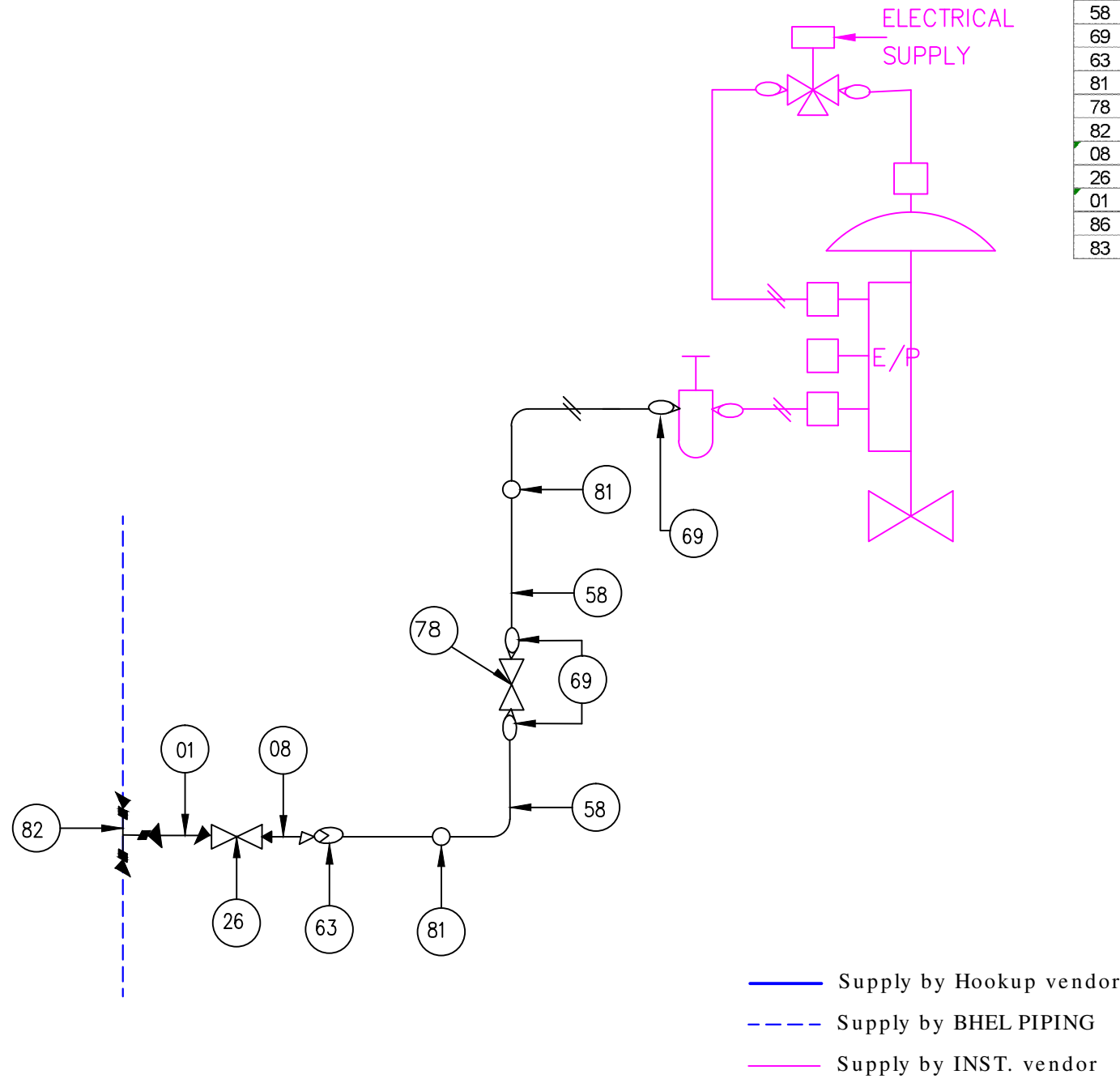


## INSTRUMENT INSTALLATION DRAWINGS

[illegible]

INVENTORY NO. SIGN. AND DATE REF. DRG. NO. COMPUTER FILE NAME 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

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261





BOM for Material Code : PY9756132841 ; [SCHEME : CV-600#(SS) ]							
Pos. No.	DESCRIPTION			QTY/SET [A]	UNITs	IBR in IIC	
58	TUBE (SMLS)	SS 316L	6 x 1mm	12	Mtrs	Not required	
69	MALE CONNECTOR	SS 316	1/4" NPT(F) x 6mm OD TUBE, CL6000	3	No's	Not required	
63	FEMALE CONNECTOR	SS 316	1/4" NPT(F) x 6mm OD TUBE, CL6000	1	No's	Not required	
81	TUBE UNION	SS 316	6mmOD, CL3000	2	No's	Not required	
78	NEEDLE VALVE	SS 316	1/2" NPT(F), CL 800	1	No's	Not required	
82	UNEQUAL TEE	SS 316	1" x 1" x 1/2" SW, CL 3000	1	No's	Not required	
08	REDUCER	SS 316	1/2" SW x 1/4" NPT(M), SCH 80S	1	No's	Not required	
26	GATE VALVE	SS 316	1/2" SW, CL 800	1	No's	Not required	
01	PIPE (SMLS)	SS 316L	1/2" SCH 80S	3	Mtrs	Not required	
86	U-BOLT GALVZD	IS 226	1/2"	2	No's	Not required	
83	SHELL TYPE PIPE CLAMP	MS	1/4"	4	No's	Not required	



NOTES ::

- (1) All the hookup items shall be supplied in loose condition.
- (2) Welding shall be done at site.
- (3) BOM listed above shall be packed each material code wise in ONE packing box except pipe/tubes.
- (4) Packing of pipes / tubes shall be as per vendor practice.

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

 <div>BHARAT HEAVY ELECTRICALS LTD. HYDERABAD</div>			NAME	SIGN.	DATE	NO.OF VAR.	
		DRN.	SUNIL	<i>Sunil</i>	03.08.15		
		CHD.	SUJATHA	<i>Sujatha</i>	03.08.15	—N.A.—	
		APPD.	KAMAL	<i>Kamal</i>	03.08.15		
DEPT. PE&SD	UNTOL. DIMS. GR.		SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO.OF ITEMS
CODE 450	G.M.F.		NTS	N.A	—N.A.—	—N.A.—	—N.A.—
TITLE				CARD CODE	DRAWING NO.		REV.
INSTALLATION DRAWING for CONTROL VALVE				N.A.	CV-600# (SS)		00
					SHT. No	01	NO. OF SHT. 01

# INSTRUMENT INSTALLATION DRAWINGS

 	<b>Project:1x370 MW, CCPP YELAHANKA</b>	<b>Bharat Heavy Electricals Limited</b>
	<b>CUSTOMER : M/s KARNATAKA POWER CORPORATION LIMITED</b>	<b>Project Engineering System Division</b>
	<b>Consultant: FITCHNER CONSULTING ENGINEERS (INDIA) PVT LTD</b>	<b>Drg No:3-381-21-02501;Rev No:00</b>

## APPLICABLE TAGs for HOOKUP SCHEME: CV-600# (SS)

S.No	FIELD TAG	DESCRIPTION	P&ID No.
1	CV-6812	CV AT I/L FOR GAS SCRUBBER	138101-06695/1
2	CV-6877	CV AT PERFORMANCE HEATER	138101-06695/4
3	CV-6839	CV AT FW I/L TO PERFORMANCE HEATER	138101-06695/4
4	CV-6842	CV AT O/L PERFORMANCE HEATER	138101-06695/4
5	CV-6842A	CV AT PERFORMANCE HEATER TO DRAIN TANK	138101-06695/4
6	CV-6842D	CV AT PERFORMANCE HEATER TO DRAIN TANK	138101-06695/4
7	CV-6846	CV AT PERFORMANCE HEATER TODEARATOR	138101-06695/4
8	CV-6874	CV AT I/L FOR GT	138101-06695/1
9	CV-6873	CV AT I/L FOR GT	138101-06695/1
10	CV-112	CV AT MAKE-UP WATER TO SURGE PIPE TANK	138101-06695/1
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S.No	FIELD TAG	DESCRIPTION	P&ID No.
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COMPUTER FILE NAME

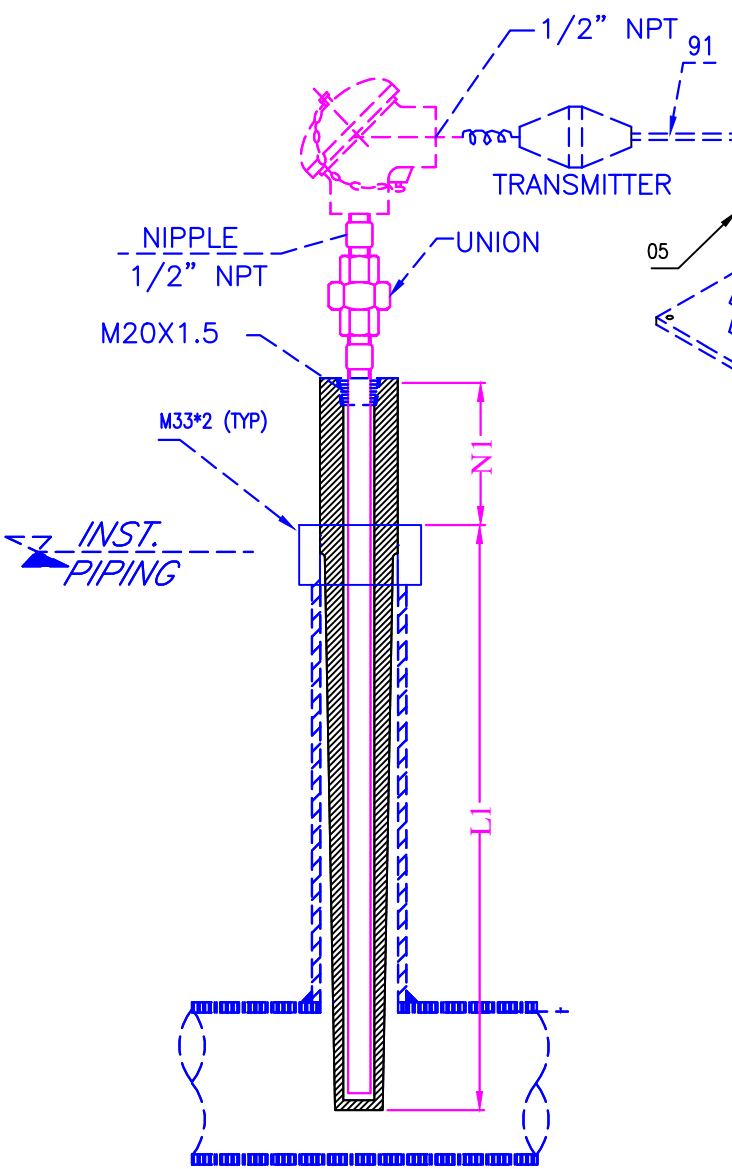
REF. DRG. NO.

SIGN. AND DATE

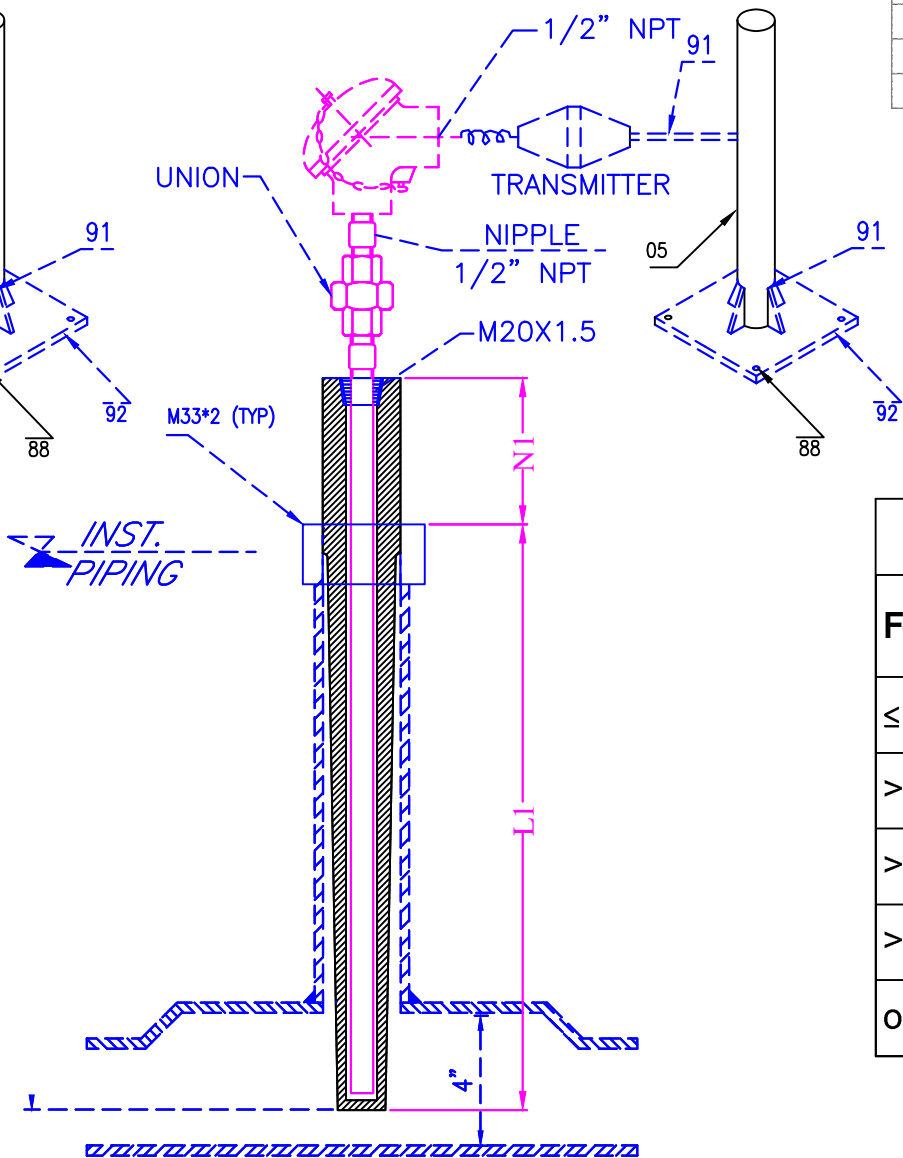
INVENTORY NO

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

FOR LINE SIZE 4" & ABOVE



FOR LINE SIZE BELOW 4"



- Supply by Hookup vendor
- Supply by BHEL

NOTES:

1) IN CASE OF DUPLEX RTD / THERMOCOUPLE, TWO INDEPENDENT ELECTRICAL ENTRIES WILL BE PROVIDED.

BOM for Material Code : PY9756132868 ; [SCHEME : TE/TT]

Pos. No.	DESCRIPTION			QTY/SET [A]	UNITs	IBR in IIIC	
05	PIPE (SMLS)	SA 106 Gr. B	2" SCH 40	1.5	Mtrs	Not required	
86	U-BOLT GALVZD	IS 226	1/2"	4	No's	Not required	
88	ANCHOR BOLT	Chro coated MS	M10x160mm	4	No's	Not required	
91	STR STEEL MS ANGLE(50x50x6) (BY BHEL PIPING)			2.7012	KG's	Not required	
92	STR STEEL 6 mm PLATE (BY BHEL PIPING)			23.55	KG's	Not required	

Thermowell Lengths

For Line Sizes	L1	N1	For process Temperature
≤ 10"	150 mm	27 mm	Up to 120 Deg C
> 10" & ≤ 14"	175 mm	75 mm	120 to 200 Deg C
> 14" & ≤ 20"	250 mm	100 mm	Above 200 Deg C
> 20"	325 mm		
on Vessels	325 mm		


NOTES ::

- (1) All the hookup items shall be supplied in loose condition.
- (2) Welding shall be done at site.
- (3) BOM listed above shall be packed each material code wise in ONE packing box except pipe/tubes.
- (4) Packing of pipes / tubes shall be as per vendor practice.

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

BHARAT HEAVY ELECTRICALS LTD. HYDERABAD				NAME	SIGN.	DATE	NO. OF VAR.
				DRN.	SUNIL	03.08.15	
				CHD.	SUJATHA	03.08.15	-N.A.-
				APPD.	KAMAL	03.08.15	-N.A.-
DEPT. PE&SD	UNTO. DIMS. GR. 450	SCALE NTS	WEIGHT (KG) N.A	REF. TO ASSY. DRG.	-N.A.-	ITEM NO. -N.A.-	NO. OF ITEMS -N.A.-
TITLE INSTALLATION DRAWING for RTD/TC WITH THERMOWELL				CARD CODE N.A.	DRAWING NO. TE/TT	REV. 00	
				SHT. No 01	NO. OF SHT. 01		

# INSTRUMENT INSTALLATION DRAWINGS

 	<b>Project:1x370 MW, CCPP YELAHANKA</b>		<b>Bharat Heavy Electricals Limited</b>
	<b>CUSTOMER : M/s KARNATAKA POWER CORPORATION LIMITED</b>		<b>Project Engineering System Division</b>
	<b>Consultant: FITCHNER CONSULTING ENGINEERS (INDIA) PVT LTD</b>		<b>Drg No:3-381-21-02501;Rev No:00</b>

## APPLICABLE TAGS for HOOKUP SCHEME: [TE/TT](#)

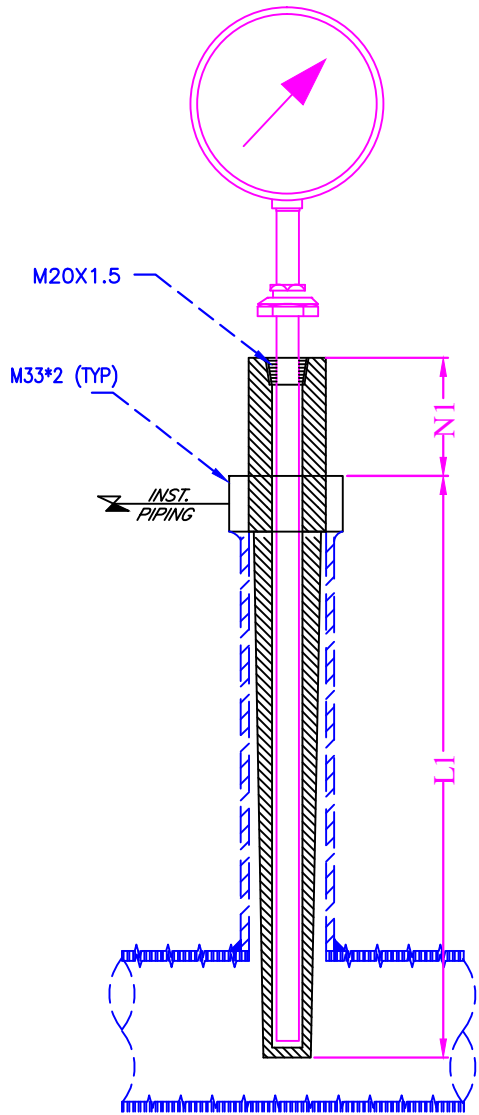
S.No	FIELD TAG	DESCRIPTION	P&ID No.
1	TE-6807	GAS TEMPERATURE AT GCS I/L	138101-06695/1
2	TT-6807	GAS TEMPERATURE AT GCS I/L	138101-06695/1
3	TE-6829	TEMP AT I/L OF PERFORMANCE HEATER	138101-06695/4
4	TT-6829	TEMP AT O/L OF PERFORMANCE HEATER	138101-06695/4
5	TE-6833	TEMP AT I/L OF SCRUBBER	138101-06695/4
6	TT-6833	TEMP AT I/L OF SCRUBBER	138101-06695/4
7	TE-6834	FW TEMP AT I/L OF PERFORM HEATER	138101-06695/4
8	TT-6834	FW TEMP AT I/L OF PERFORM HEATER	138101-06695/4
9	TE-6834	FW TEMP AT O/L OF PERFORM HEATER	138101-06695/4
10	TT-6834	FW TEMP AT O/L OF PERFORM HEATER	138101-06695/4
11	TE-6846A	GAS TEMP AT I/L OF GT	138101-06695/6
12	TE-6846B	GAS TEMP AT I/L OF GT	138101-06695/6
13	TT-6846A	GAS TEMP AT I/L OF GT	138101-06695/6
14	TT-6846B	GAS TEMP AT I/L OF GT	138101-06695/6
15	PAB51CT004	CW TEMP AT PHE-1& PHE-2 I/L HDR	1-38101-06694
16	PAB51CT003	CW TEMP AT AT PHE-1& PHE-2 O/L HDR	1-38101-06694
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S.No	FIELD TAG	DESCRIPTION	P&ID No.
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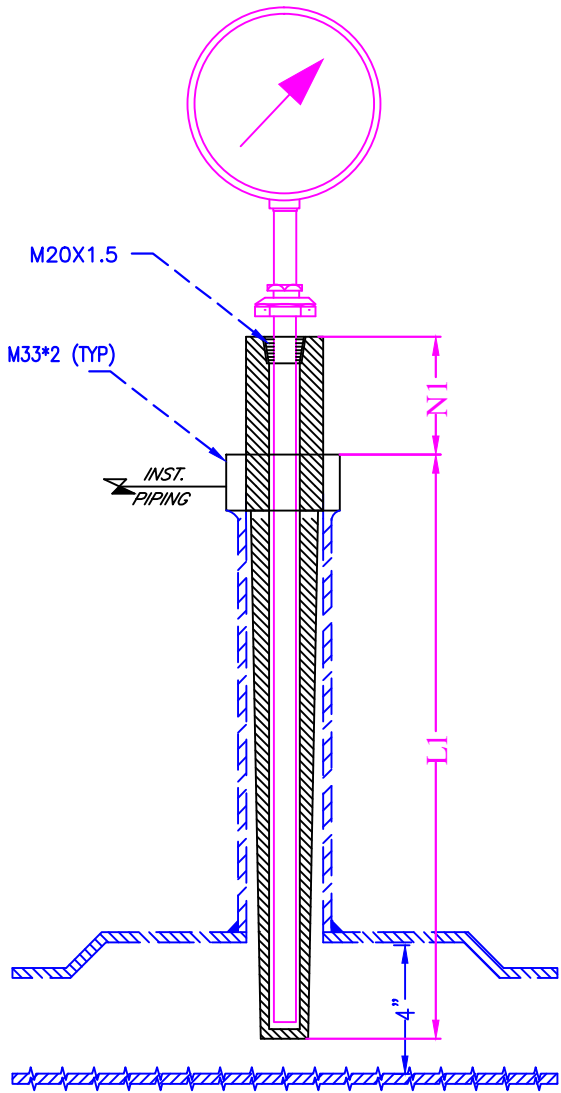
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SIGN. AND DATE  
REF. DRG. NO.  
COMPUTER FILE NAME  
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GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

FOR LINE SIZE 4" & ABOVE



FOR LINE SIZE BELOW 4"





Thermowell Lengths

For Line Sizes	L1	N1	For process Temperature
≤ 10"	150 mm	27 mm	Up to 120 Deg C
> 10" & ≤ 14"	175 mm	75 mm	120 to 200 Deg C
> 14" & ≤ 20"	250 mm	100 mm	Above 200 Deg C
> 20"	325 mm		
on Vessels	325 mm		

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

BHARAT HEAVY ELECTRICALS LTD. HYDERABAD				NAME	SIGN.	DATE	NO. OF VAR.
				DRN.	SUNIL	03.08.15	
				CHD.	SUJATHA	03.08.15	-N.A.-
				APPD.	KAMAL	03.08.15	-N.A.-
DEPT. PE&SD	UNTOL. DIMS. GR. G.M.F.	SCALE NTS	WEIGHT (KG) N.A	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITEMS	
CODE 450				-N.A.-	-N.A.-	-N.A.-	
TITLE INSTALLATION DRAWING for TG WITH THERMOWELL				CARD CODE N.A.	DRAWING NO. TG	REV. 00	
				SHT. No 01	NO. OF SHT. 01		

# INSTRUMENT INSTALLATION DRAWINGS

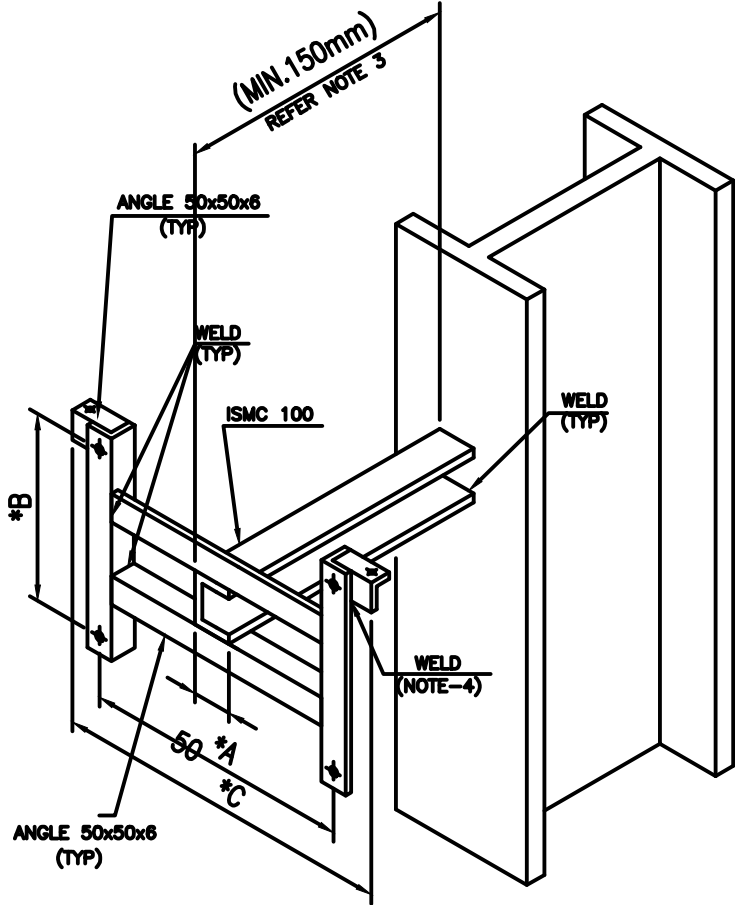
 	<b>Project:1x370 MW, CCPP YELAHANKA</b>		<b>Bharat Heavy Electricals Limited</b>
	<b>CUSTOMER : M/s KARNATAKA POWER CORPORATION LIMITED</b>		<b>Project Engineering System Division</b>
	<b>Consultant: FITCHNER CONSULTING ENGINEERS (INDIA) PVT LTD</b>		<b>Drg No:3-381-21-02501;Rev No:00</b>

## APPLICABLE TAGs for HOOKUP SCHEME: TG

S.No	FIELD TAG	DESCRIPTION	P&ID No.	S.No	FIELD TAG	DESCRIPTION	P&ID No.
1	TG-6806	GAS TEMPERATURE AT GCS I/L	138101-06695/1				
2	TG-6813	GAS TEMPERATURE AT GCS O/L	138101-06695/1				
3	TG-6828	TEMP AT IL OF PERFORMANCE HEATER	138101-06695/4				
4	TG-6832	TEMP AT IL OF SCRUBBER	138101-06695/4				
5	TG-6835	FW TEMP AT IL OF PERFORM HEATER	138101-06695/4				
6	TG-6835	FW TEMP AT O/L OF PERFORM HEATER	138101-06695/4				
7	TG-6850	GAS TEMP AT I/L OF GT	138101-06695/6				
8	PGC51CT001	CCW TEMP AT PHE-1 I/L	1-38101-06694				
9	PGC52CT001	CCW TEMP AT PHE-2 I/L	1-38101-06694				
10	PAB51CT001	CW TEMP AT PHE-1 I/L	1-38101-06694				
11	PAB52CT001	CW TEMP AT PHE-2 I/L	1-38101-06694				
12	PGC51CT002	CCW TEMP AT PHE-1 O/L	1-38101-06694				
13	PGC52CT002	CCW TEMP AT PHE-2 O/L	1-38101-06694				
14	PAB51CT002	CW TEMP AT PHE-1 O/L	1-38101-06694				
15	PAB52CT002	CW TEMP AT PHE-2 O/L	1-38101-06694				
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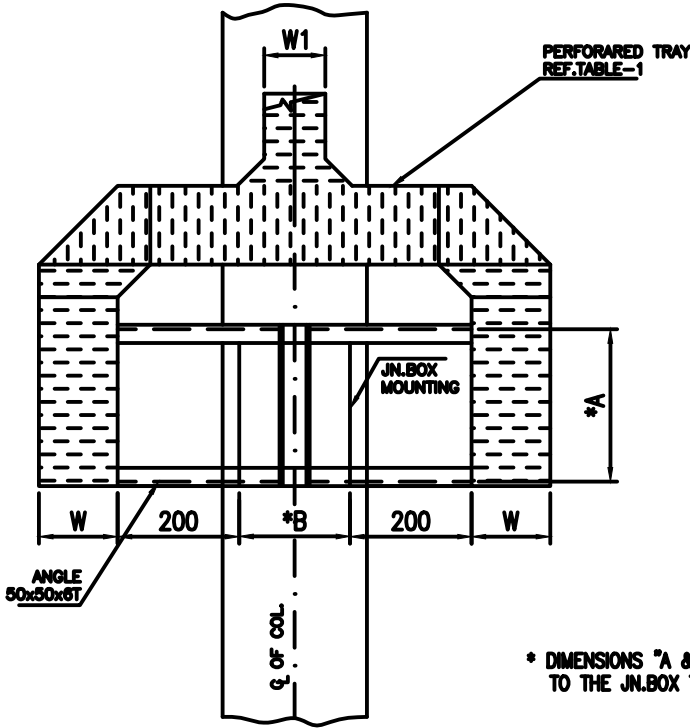
INVENTORY NO. SIGN. AND DATE REF. DRG. NO. COMPUTER FILE NAME THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

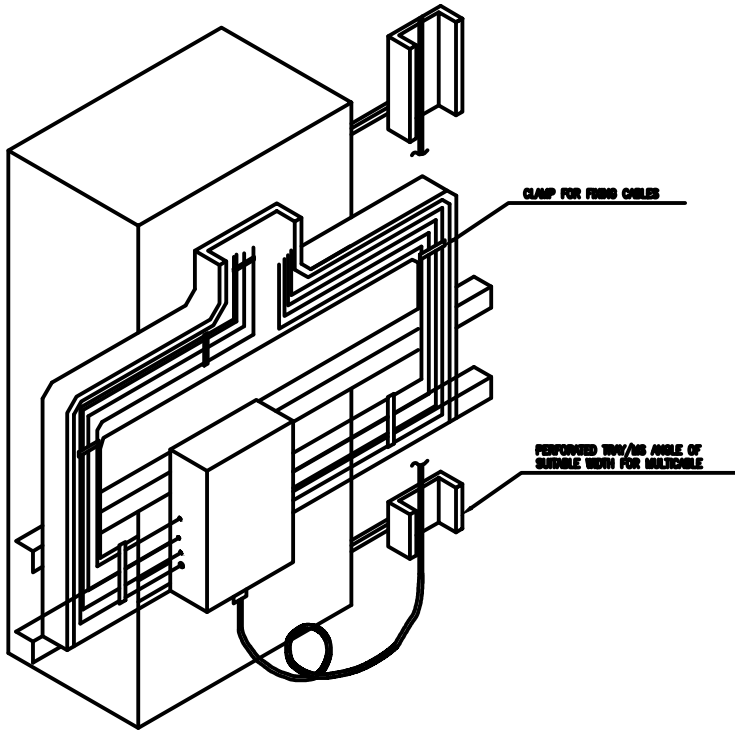


TABLES-1 (TYP)

JN.BOX	W1	W
12PAIR	300	150
8PAIR	300	150
6PAIR	200	100
4PAIR	150	100



\* DIMENSIONS "A & B" ARE THE CORRESPONDING TO THE JN.BOX TO BE MOUNTED.



BOM for Material Code : PY9756132876 ; [SCHEME : JB



Pos. No.	DESCRIPTION			QTY/SET [A]	UNITs	IBR in IIIC	
93	SCRU HEX M10X50 P8.8			6	No's	Not required	
94	NUT HEX P M10-8			6	No's	Not required	
95	WASHER MCD 10.5-ST			12	No's	Not required	
88	ANCHOR BOLT	Chro coated MS	M10x160mm	4	No's	Not required	

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

Bharat Heavy Electricals Ltd. Hyderabad		NAME	SIGN.	DATE	NO. OF VAR.
		DRN.	SUNIL	03.08.15	
		CHD.	SUJATHA	03.08.15	-N.A.-
		APPD.	KAMAL	03.08.15	-N.A.-
DEPT. PE&SD	UNTOL. DIMS. GR. G/M/F	SCALE	NTS	WEIGHT (KG)	REF. TO ASSY. DRG.
CODE 450				N.A	-N.A.-
TITLE	DRAWING NO. JB without SWAGELOK		CARD CODE	REV.	
INSTALLATION DRAWING for JUNCTION BOX			N.A.	00	
		SHT. No	01	NO. OF SHT.	01



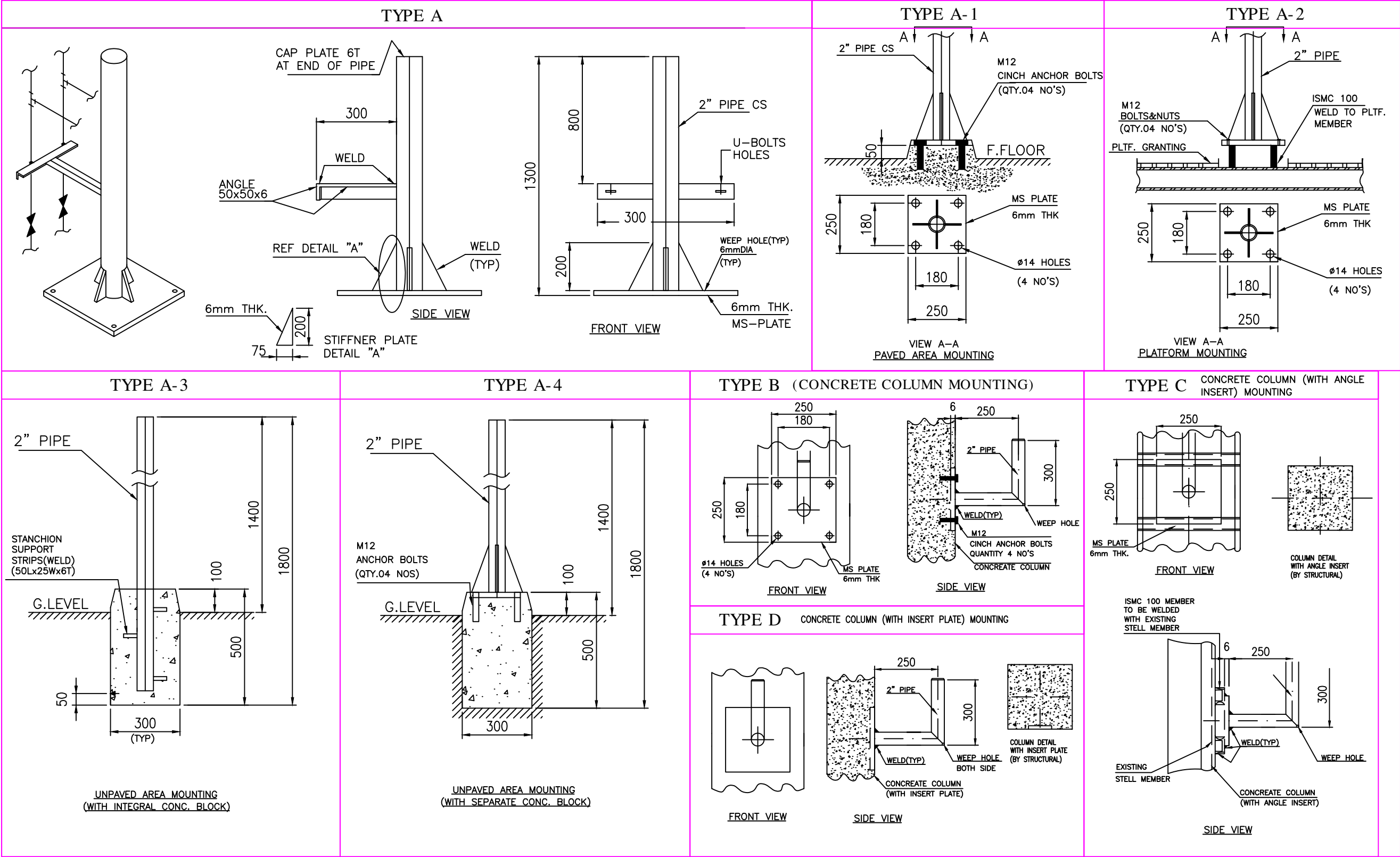
# INSTRUMENT INSTALLATION DRAWINGS

 	Project:1x370 MW, CCPP YELAHANKA		Bharat Heavy Electricals Limited
	CUSTOMER : M/s KARNATAKA POWER CORPORATION LIMITED		Project Engineering System Division
	Consultant: FITCHNER CONSULTING ENGINEERS (INDIA) PVT LTD		Drg No:3-381-21-02501;Rev No:00

## APPLICABLE TAGs for HOOKUP SCHEME: JB

S.No	FIELD TAG	DESCRIPTION	P&ID No. / DRG No.	S.No	FIELD TAG	DESCRIPTION	P&ID No.
1	JB-1	JB of FUEL AREA	138101-06695/1				
2	JB-2	JB of FUEL AREA	138101-06695/1				
3	JB-3	JB of FUEL AREA	138101-06695/4				
4	JB-4	JB of FUEL AREA	138101-06695/4				
5	LATER	LATER	LATER				
6	LATER	LATER	LATER				
7	LATER	LATER	LATER				
8	LATER	LATER	LATER				
9	LATER	LATER	LATER				
10	LATER	LATER	LATER				
11	LATER	LATER	LATER				
12	LATER	LATER	LATER				
13	LATER	LATER	LATER				
14	LATER	LATER	LATER				
15	LATER	LATER	LATER				
16	LATER	LATER	LATER				
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24	LATER	LATER	LATER				
25	LATER	LATER	LATER				
26	LATER	LATER	LATER				
27	LATER	LATER	LATER				
28	LATER	LATER	LATER				
29	LATER	LATER	LATER				
30	LATER	LATER	LATER				
31							

SINGLE INSTRUMENT SUPPORT- GENERAL ARRANGEMENT



INVENTORY NO

SIGN. AND DATE

REF. DRG. NO.

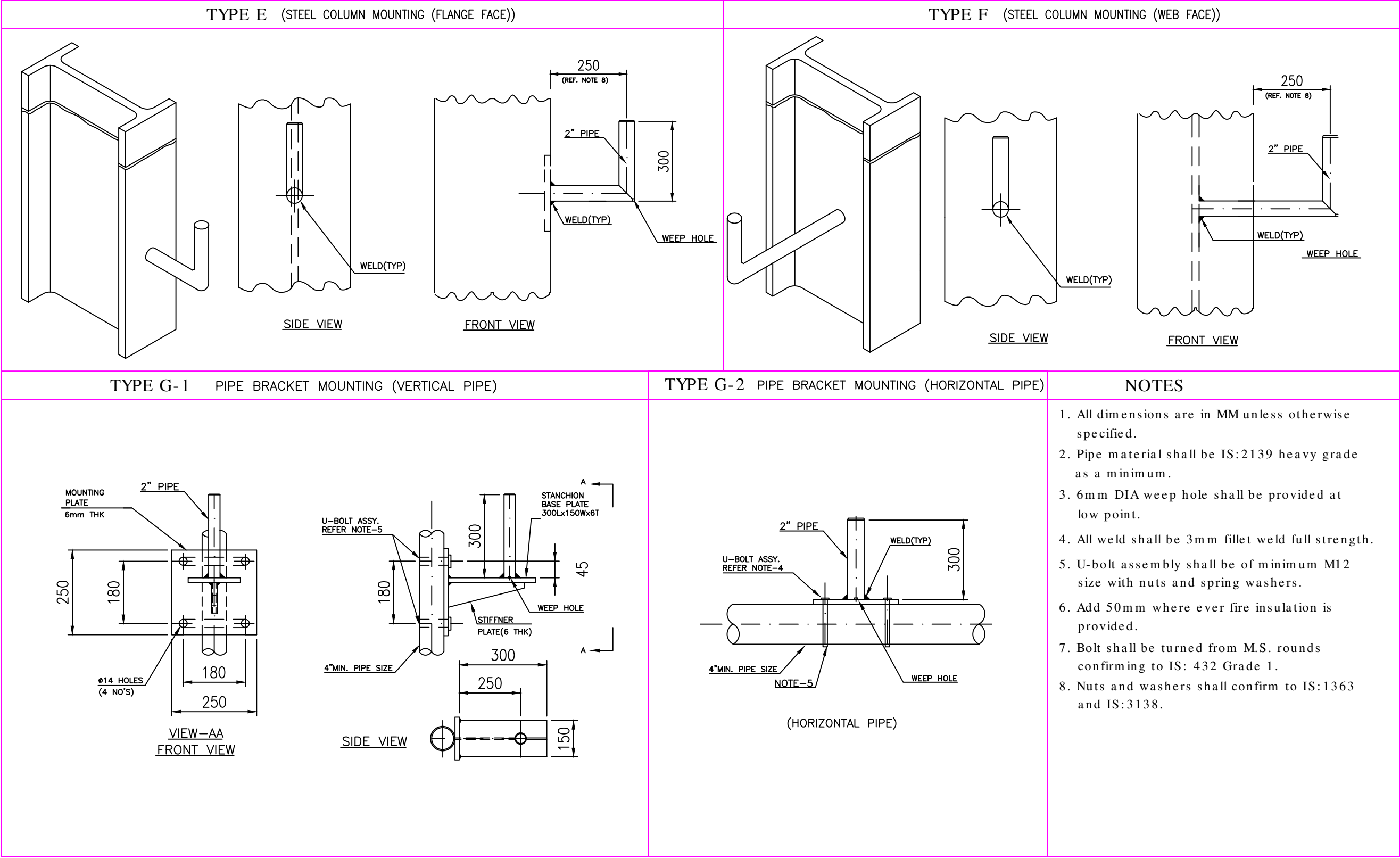
COMPUTER FILE NAME

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

Bharat Heavy Electricals Ltd.		NAME	SUNIL	SIGN.	DATE	NO. OF VAR.
HYDERABAD		DRN.	SUNIL		03.08.15	
		CHD.	SUJATHA		03.08.15	-N.A.-
		APPD.	KAMAL		03.08.15	-N.A.-
DEPT. PE&SD	UNTO. DIMS. GR.	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITEMS
CODE 450	G.M.F.	NTS	N.A	-N.A.-	-N.A.-	-N.A.-
TITLE		CARD CODE	DRAWING NO.	REV.		
INSTALLATION DRAWING for SINGLE INSTRUMENT SUPPORT		N.A.	INST-SUPPORT-1	00		
		SHT. No	01	NO. OF SHT.	01	

SINGLE INSTRUMENT SUPPORT- GENERAL ARRANGEMENT



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COMPUTER FILE NAME

REF. DRG. NO.

SIGN. AND DATE

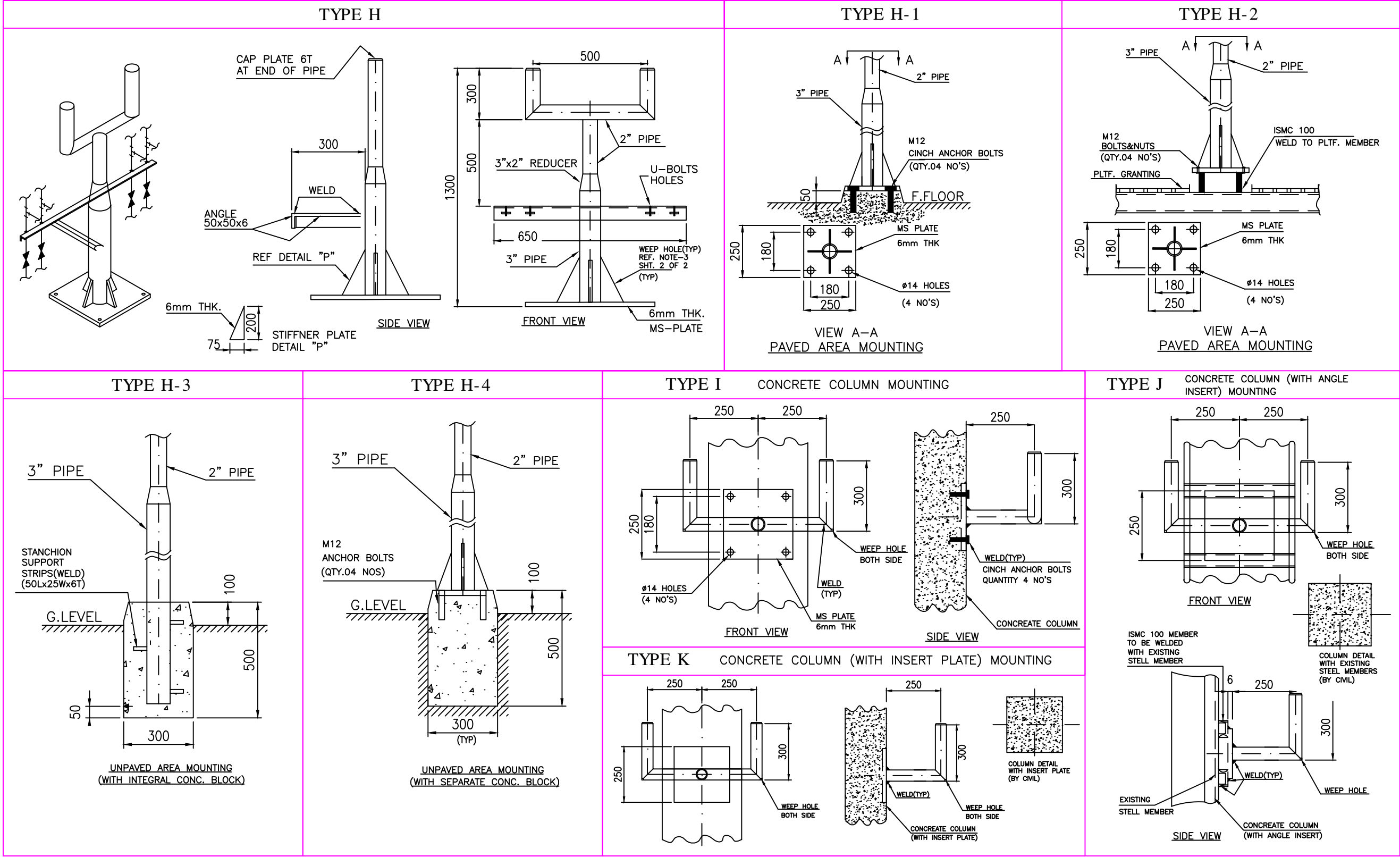
INVENTORY NO

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

		BHARAT HEAVY ELECTRICALS LTD. HYDERABAD		NAME	SIGN.	DATE	NO. OF VAR.
DRN.	CHD.	APPD.		SUNIL	Sujatha	03.08.15	
				KAMAL		03.08.15	-N.A.-
DEPT. PE&SD	UNTOL. DIMS. GR.	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITEMS	
CODE 450	450	NTS	N.A	-N.A.-	-N.A.-	-N.A.-	
TITLE	CARD CODE	DRAWING NO.	REV.				
INSTALLATION DRAWING for SINGLE INSTRUMENT SUPPORT	N.A.	INST-SUPPORT-2	00				
		SHT. No 01	NO. OF SHT. 01				

TWO INSTRUMENT SUPPORT- GENERAL ARRANGEMENT



GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

INVENTORY NO. SIGN. AND DATE REF. DRG. NO. COMPUTER FILE NAME 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

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHD/APPD			CHD/APPD			CHD/APPD
ZONE			ZONE			ZONE		

BHARAT HEAVY ELECTRICALS LTD.  
HYDERABAD

DEPT. PE&SD	UNTO. DIMS. GR. G.M.F.	SCALE NTS	WEIGHT (KG) N.A	REF. TO ASSY. DRG. -N.A.-	ITEM NO. -N.A.-	NO. OF ITEMS -N.A.-
CODE 450						
TITLE INSTALLATION DRAWING for TWO INSTRUMENT SUPPORT				CARD CODE N.A.	DRAWING NO. INST-SUPPORT-3 REV. 00	
				SHT. No 01	NO. OF SHT. 01	