



SHAHID TONDGOOIN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



DAELIM

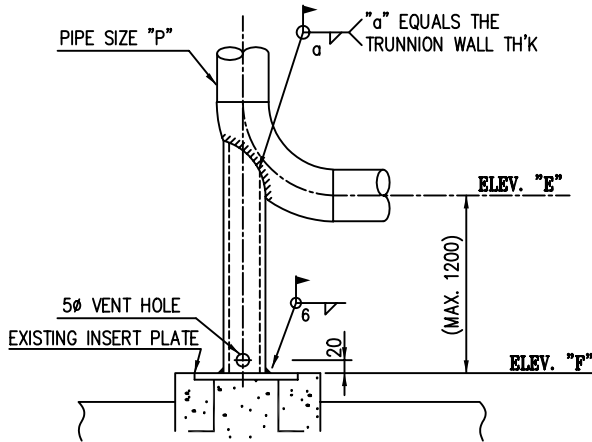
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

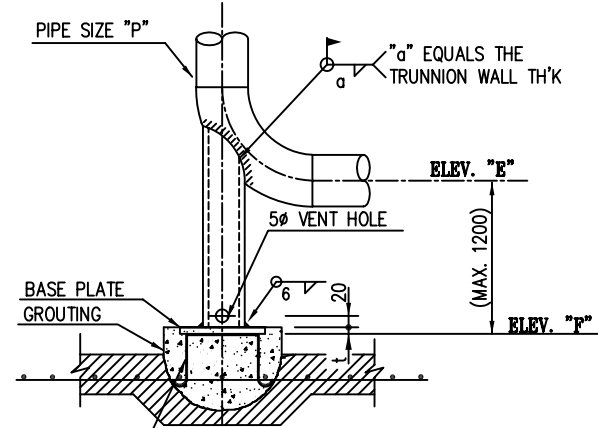
ST-A4-1111

ANCHOR **AF-31**
(TRUNNION TYPE ON F/D)

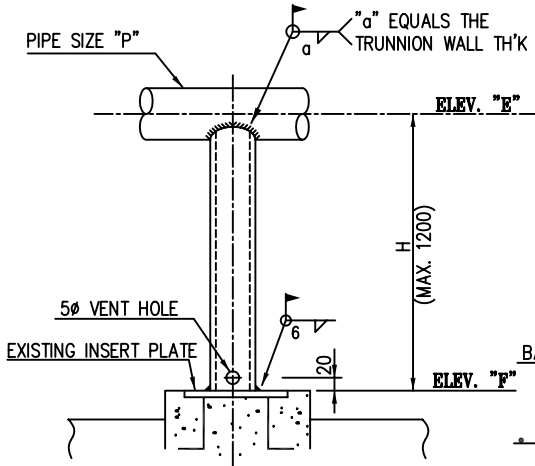
REV.
2



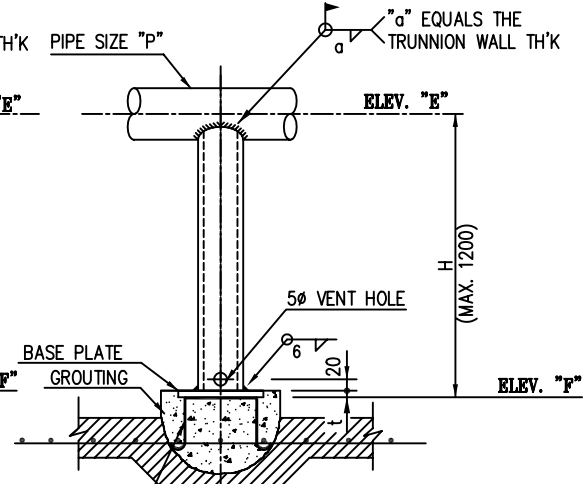
TYPE-F
(ON FOUNDATION)



TYPE-P
(ON PAVING)



TYPE-S
(ON FOUNDATION)



TYPE-T
(ON PAVING)

PIPE SIZE NPS "P"	SUPPORT PIPE
1-1/2"	1"
2"	1-1/2"
3"	2"
4"	2"
6"	4"
8"	4"
10"	6"
12"	8"
14"	8"
16"	10"
18"	10"
20"	12"
24"	12"
26"	14"
28"	14"
30"	16"
32"	16"
34"	18"
36"	18"
40"	20"
42"	20"

NOTE

1. MATERIAL

- FOR SUPPORT PIPE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	SUPPORT PIPE
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (31803)OR EQ

2. SEE DWG.NO.ST-A4-0006

FOR THE DETAIL OF LOCAL SUPPORT FOUNDATION

3. SEE DWG. NO. ST-A4-0004

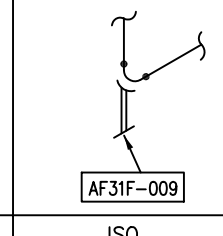
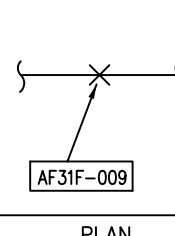
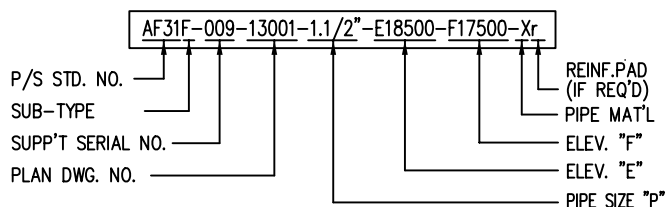
FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

4. SEE DWG.NO.ST-A4-1031

FOR THE DETAIL OF BASE PLATE.

GENERALLY REVISED.

SYMBOL & CODING





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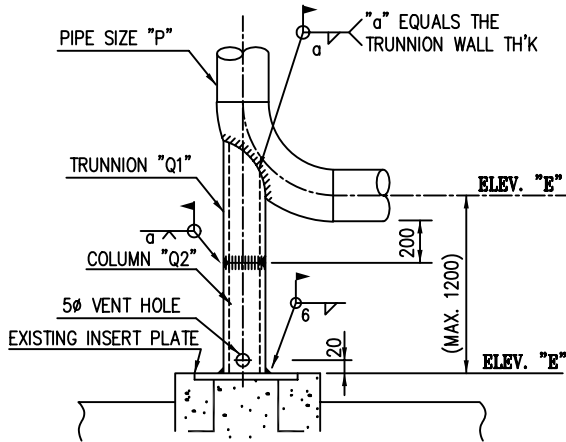
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

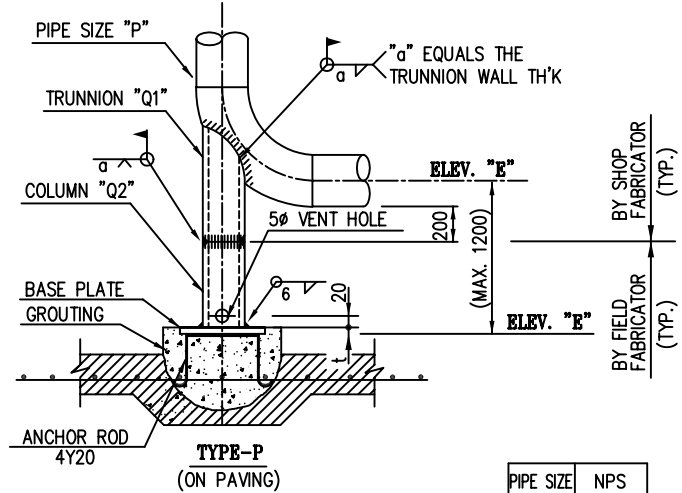
ST-A4-1112

ANCHOR **AF-32**
(TRUNNION TYPE FOR ALLOY -S/S AND
HEAT TREATED PIPE)

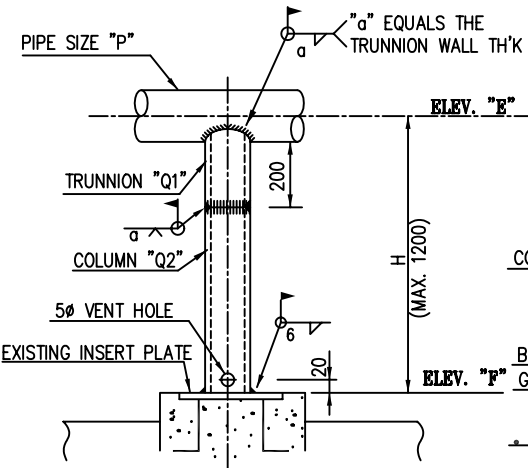
REV.
2



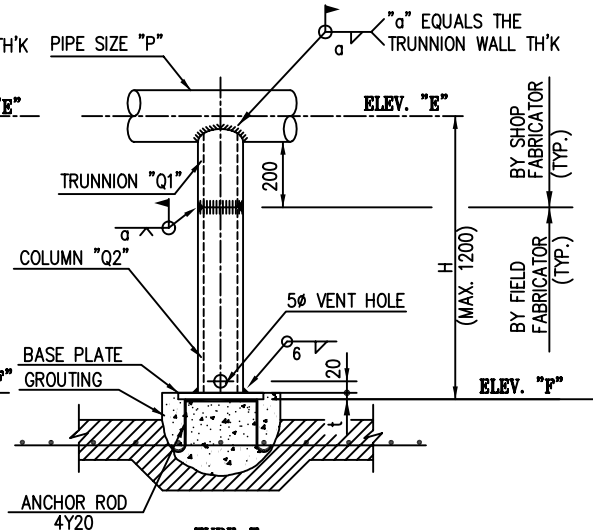
TYPE-F
(ON FOUNDATION)



TYPE-P
(ON PAVING)



TYPE-S
(ON FOUNDATION)



TYPE-T
(ON PAVING)

PIPE SIZE NPS "P"	NPS "Q1", "Q2"
1-1/2"	1"
2"	1-1/2"
3"	2"
4"	2"
6"	4"
8"	4"
10"	6"
12"	8"
14"	8"
16"	10"
18"	10"
20"	12"
24"	12"
26"	14"
28"	14"
30"	16"
32"	16"
34"	18"
36"	18"
40"	20"
42"	20"

NOTE

1. MATERIAL

- TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.
- COLUMN "Q2" : A53 GR.B OR EQ.

CODE	RUN PIPE	TRUNNION "Q1"
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ

2. SEE DWG.NO.ST-A4-0006

FOR THE DETAIL OF LOCAL SUPPORT FOUNDATION

3. SEE DWG. NO. ST-A4-0004

FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

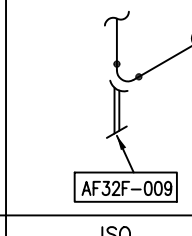
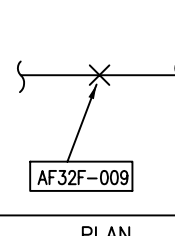
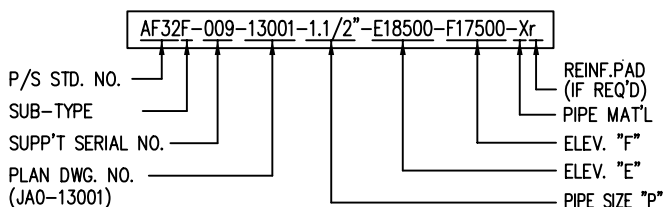
4. IF APPLICABLE ALL TRUNNIONS ON SHOP FABRICATED PIPE CAN BE INSTALLED BY THE SHOP.

5. SEE DWG.NO.ST-A4-1031

FOR THE DETAIL OF BASE PLATE.

GENERALLY REVISED.

SYMBOL & CODING





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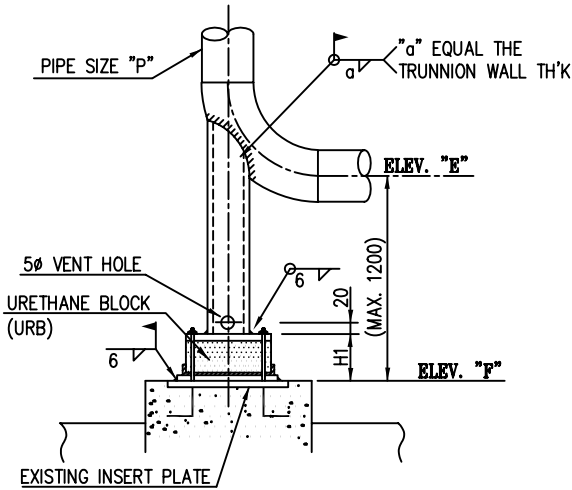
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

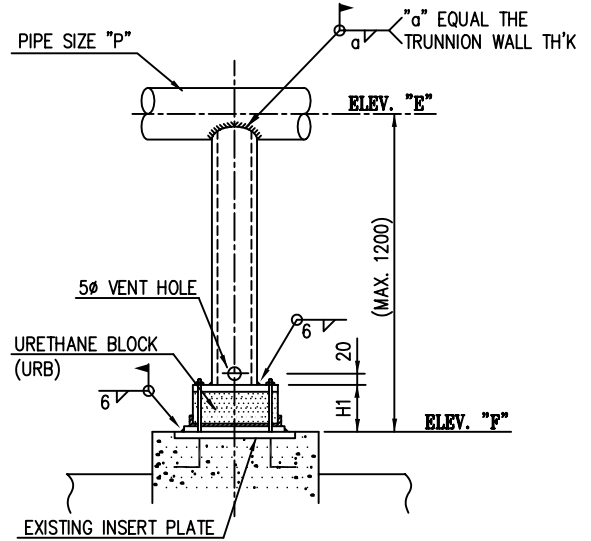
ST-A4-1113

ANCHOR **AF-41**
(FOR COLD INSULATED PIPE;
TRUNNION TYPE ON F/D)

REV.
2



TYPE-F
(ON FOUNDATION)



TYPE-S
(ON FOUNDATION)

UNIT (mm)

PIPE SIZE NPS "P"	SUPPORT PIPE	U.BLOCK H1
1-1/2"	1"	110
2"	1-1/2"	110
3"	2"	110
4"	2"	110
6"	4"	114
8"	4"	114
10"	6"	114
12"	8"	121
14"	8"	121
16"	10"	121
18"	10"	121
20"	12"	121
24"	12"	121
26"~28"	14"	121

NOTE

1. MATERIAL

- FOR SUPPORT PIPE : SAME AS RUN PIPE OR MAT'L TABLE.

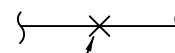
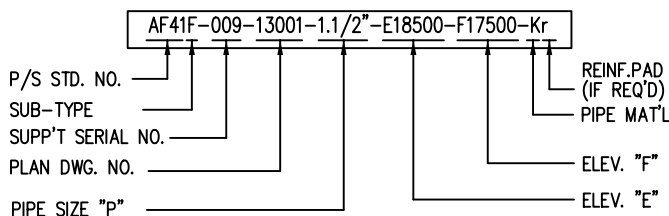
CODE	RUN PIPE	SUPPORT PIPE
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

2. SEE DWG. NO. ST-A4-1031 FOR THE DETAIL OF
BASE PLATE AND EXPANSION ANCHOR BOLT(BPLA)

3. SEE DWG. NO. ST-A4-1020 FOR THE DETAIL OF
URETHANE BLOCK ASSEMBLY(URB)

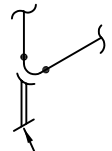
4. SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF
REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

SYMBOL & CODING



AF41F-009

PLAN



AF41F-009

ISO



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00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 1
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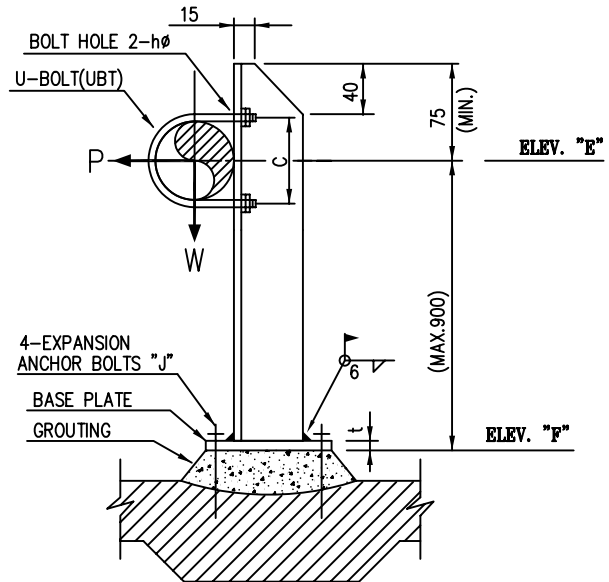
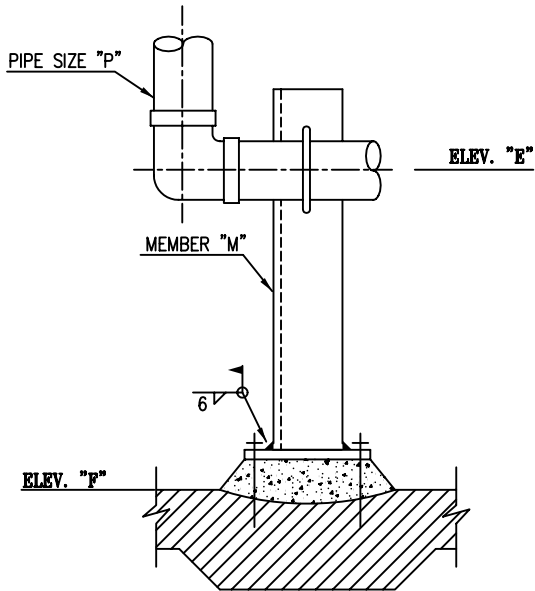
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1115

ANCHOR **AF-51**
(FOR 2" & SMALLER PIPE;
U-BOLT TYPE ON F/D)

REV.
1

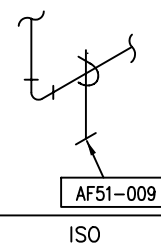
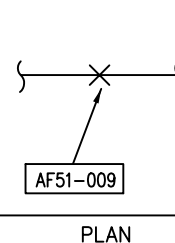
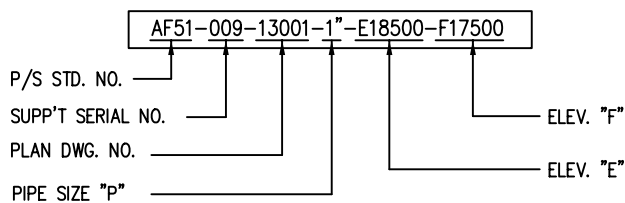


NOTE

- MATERIAL
- ANGLE : A36 OR EQ.
- SEE DWG. NO. ST-A4-1031 FOR THE DETAIL OF BASE PLATE AND EXPANSION ANCHOR BOLT(BPLA)
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.
- USE THIS SUPPORT ON ALL 2" & SMALLER SOCKETWELD, SCREWED, NON-WELDABLE PIPE, AND 2" & SMALLER PIPE IN HYDROGEN SERVICE.
- SEE DWG. NO. ST-A4-1001 FOR THE DETAIL OF U-BOLT(UBT)

PIPE SIZE NPS "P"	MEMBER SIZE "M"	C	hφ	UNIT (mm)	
				Wmax	Pmax
1/2"	A5	36	7	140	15
3/4"	↓	40	7	140	15
1"	↓	45	7	140	15
1-1/2"	A6	60	11	330	30
2"	↓	75	11	330	30

SYMBOL & CODING





SAZEH
CONSULTANTS



DAELIM

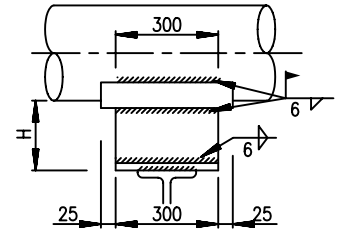
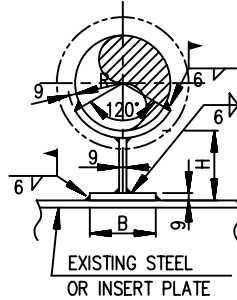
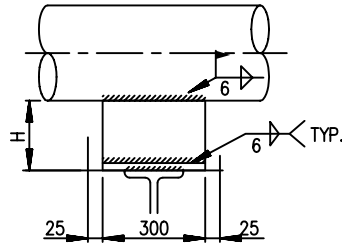
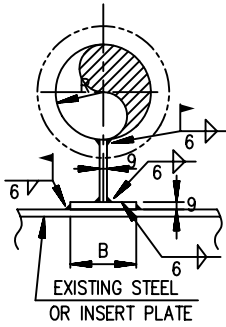
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1121

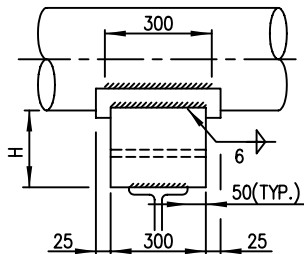
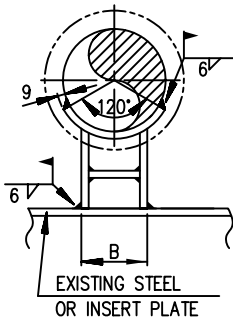
ANCHOR **AS-1**
(FOR HOT INSULATED PIPE; SHOE TYPE)

REV.
2

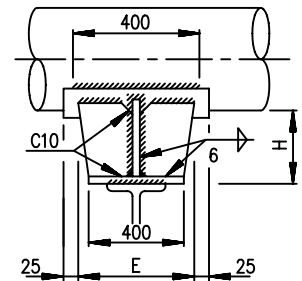
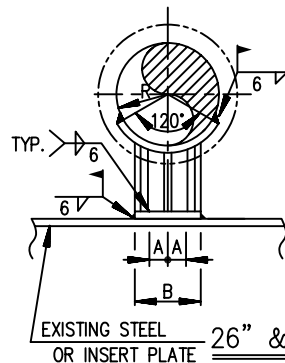


4" & SMALLER

5" TO 8"



10" TO 24"



26" & LARGER

UNIT (mm)

NOTE

1. MATERIAL

- PAD : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	PAD
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

- OTHER PARTS : A36 OR EQ.

2. SHOE HEIGHT

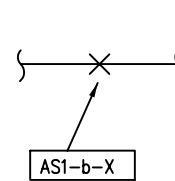
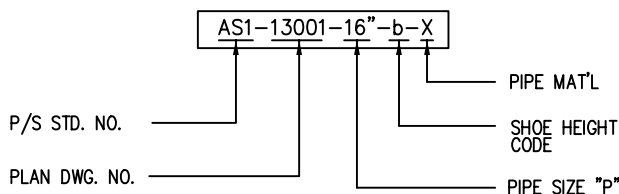
H	INS. TH'K	CODE	H	INS. TH'K	CODE
100	UP TO 75	b	200	126 TO 175	d
150	76 TO 125	c	250	176 TO 225	e

3. SEE DWG. NO. ST-A4-0003 FOR THE APPLICATION OF ALLOWABLE LOAD.

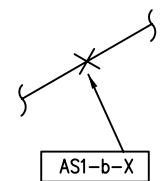
4. SEE DWG. NO. ST-A4-1101 FOR THE DETAIL OF SHOE.

PIPE SIZE	B	A	E	R	ALLOW. LOAD (kg)			
					H=100	H=150	H=200	H=250
2"	100	-	-	31				
2-1/2"	100	-	-	37				
3"	150	-	-	45				
4"	150	-	-	58				
5"	150	-	-	71				
6"	150	-	-	85				
8"	150	-	-	110				
10"	150	-	-	137				
12"	200	-	-	162				
14"	200	-	-	178				
16"	200	-	-	204				
18"	300	-	-	229				
20"	300	-	-	254				
22"	300	-	-	280				
24"	400	-	-	305				
26"	500	200	450	330				
28"	530	215	450	356				
30"	580	240	450	381				
32"	610	255	450	407				
34"	660	280	450	432				
36"	690	295	450	458				
40"	760	330	500	508				
42"	810	355	500	534				

SYMBOL & CODING



PLAN



ISO

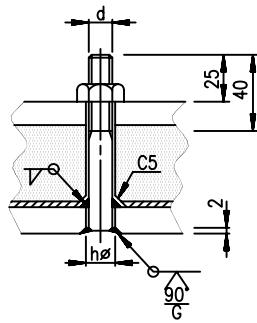
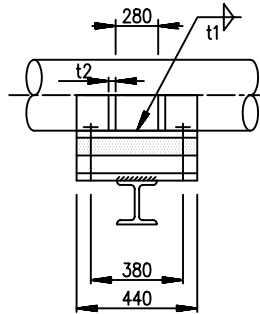
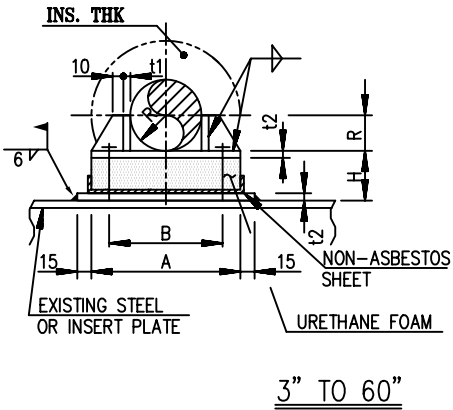
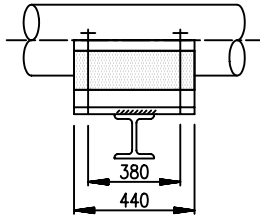
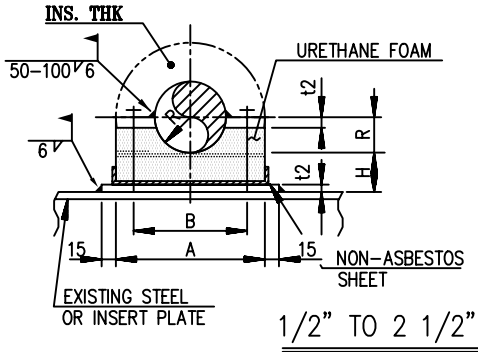


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1124

ANCHOR **AS-4**
(FOR COLD INSULATED PIPE;
URETHANE BLOCK TYPE)

REV.
2



DETAIL FOR BOLT/NUT

UNIT (mm)

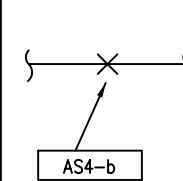
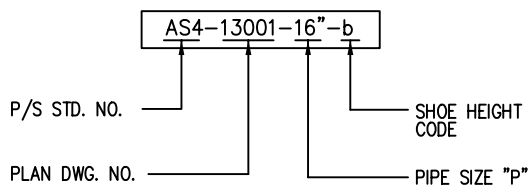
NOM. PIPE SIZE	A	B	R	hØ	t1	t2	BOLT/NUT (d, UNC)
1/2"	100	65	11	11	4.5	6	3/8"
3/4"	110	70	14	11	4.5	6	3/8"
1"	115	75	17	11	4.5	6	3/8"
1-1/2"	130	90	25	11	4.5	6	3/8"
2"	140	100	31	11	4.5	6	3/8"
2-1/2"	160	120	37	11	4.5	6	3/8"
3"	190	140	45	14	4.5	6	1/2"
4"	210	165	58	14	4.5	6	1/2"
5"	240	190	71	14	4.5	6	1/2"
6"	270	215	85	14	4.5	6	1/2"
8"	320	265	110	14	6	9	1/2"
10"	370	315	137	14	6	9	1/2"
12"	425	370	162	14	6	9	1/2"
14"	480	405	178	14	6	9	1/2"
16"	530	455	204	14	6	9	1/2"
18"	570	505	229	14	6	9	1/2"
20"	630	555	254	14	6	9	1/2"
22"	680	610	280	14	6	9	1/2"
24"	740	660	305	14	6	9	1/2"
26"	810	725	330	18	9	12	5/8"
28"	860	775	356	18	9	12	5/8"
30"	940	815	381	18	9	12	5/8"
32"	970	880	407	18	9	12	5/8"
34"	1020	930	432	18	9	12	5/8"
36"	1070	980	458	18	9	12	5/8"
40"	1180	1090	508	18	9	12	5/8"
42"	1220	1150	534	22	9	12	3/4"
44"	1295	1200	559	22	9	12	3/4"
48"	1390	1250	610	22	9	12	3/4"
52"	1470	1300	661	22	9	12	3/4"
54"	1560	1455	686	22	9	12	3/4"
60"	1720	1605	762	22	9	12	3/4"

NOTE

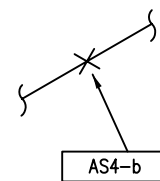
- MATERIAL
 - URETHANE FOAM : SEE DWG. NO. ST-A4-1022
 - PARTS DIRECTLY WELDED TO PIPE : A240-304 OR EQ.
 - BOLT/NUT : A320 B8/A194 GR.4 OR EQ.
 - OTHER PARTS : A36 OR EQ.

COLD INSUL. TH'K	SHOE HEIGHT	CODE
25 ~ 50	50	a
51 ~ 100	100	b
101 ~ 150	150	c
151 ~ 200	200	d
201 ~ 250	250	e

SYMBOL & CODING



PLAN



ISO

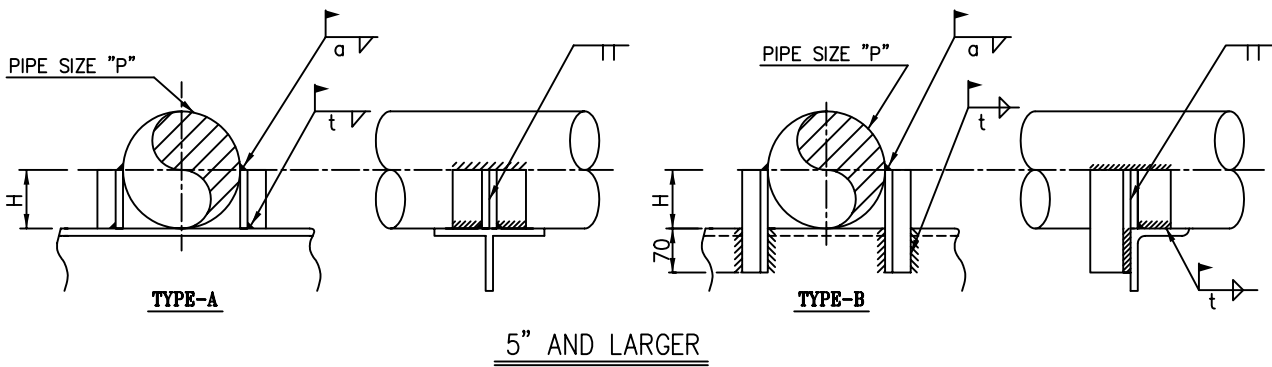
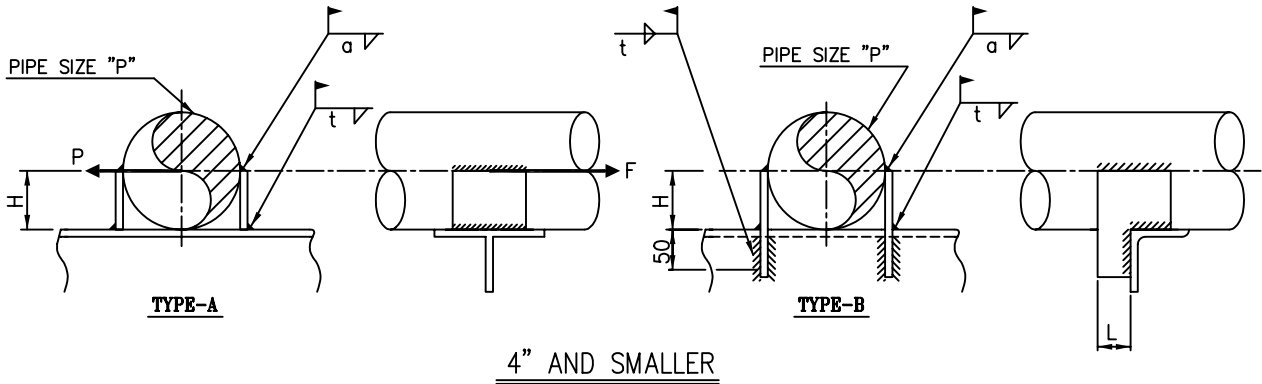


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1126

ANCHOR **AS-6**
(FOR C.S BARE PIPE)

REV.
2



NOTE

1. MATERIAL

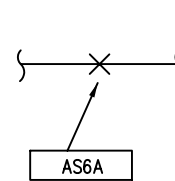
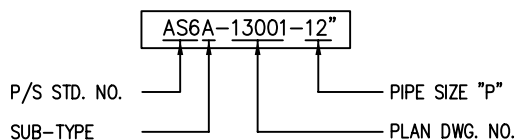
- FB : A36 OR EQ.
- ANGLE : A36 OR EQ.

2. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

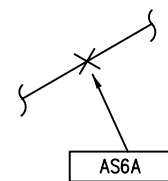
UNIT (mm)

PIPE SIZE NPS "P"	MEMBER	DIMENSIONS				WEIGHT (Kg)	ALLOW. LOAD (Kg)	
		a	t	H	L		Pmax	Fmax
1/2"	FB 75 X 9	9	6	11	35	0.1	2250	2250
3/4"	FB 75 X 9	9	6	14	35	0.1	2250	2200
1"	FB 75 X 9	9	6	17	35	0.3	2250	1900
1-1/2"	FB 75 X 9	9	6	25	35	0.3	2250	1450
2"	FB 75 X 9	9	6	31	35	0.6	2250	1200
2-1/2"	FB 100 X 9	9	6	37	50	0.6	2250	1200
3"	FB 100 X 9	9	6	45	50	0.8	3000	1500
4"	FB 100 X 9	9	6	58	50	0.8	3000	1200
5"	2*A7	9	6	70	-	2.3	3150	2000
6"	2*A7	9	6	83	-	3.3	3150	1670
8"	2*A7	9	6	109	-	4.3	3150	1300
10"	2*A7	9	6	134	-	5.3	3150	1020
12"	2*A7	9	6	160	-	6.4	3150	870

SYMBOL & CODING



PLAN



ISO

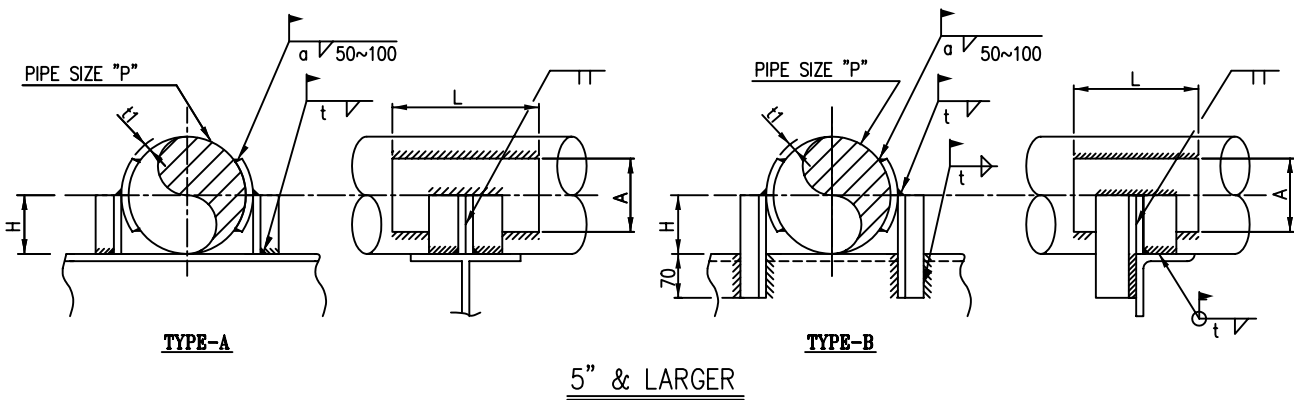
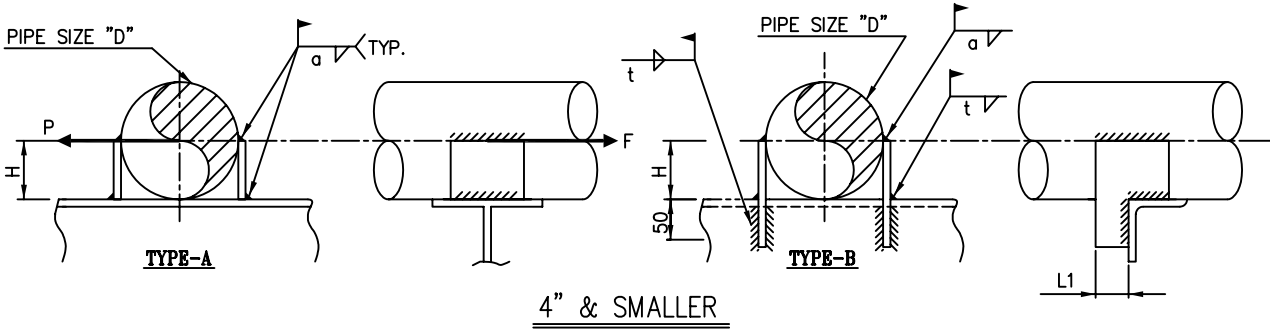


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1127

ANCHOR **AS-7**
(FOR S.S BARE PIPE)

REV.
2



UNIT (mm)

PIPE SIZE NPS "D"	MEMBER	DIMENSIONS							ALLOW. LOAD (Kg)	
		a	t	t1	H	A	L	L1	Pmax	Fmax
1/2"	FB 75 X 9	9	6	-	11	-	-	35	2250	2250
3/4"	FB 75 X 9	9	6	-	14	-	-	35	2250	2200
1"	FB 75 X 9	9	6	-	17	-	-	35	2250	1900
1-1/2"	FB 75 X 9	9	6	-	25	-	-	35	2250	1450
2"	FB 75 X 9	9	6	-	31	-	-	35	2250	1200
2-1/2"	FB 100 X 9	9	6	-	39	-	-	50	2250	1200
3"	FB 100 X 9	9	6	-	45	-	-	50	3000	1500
4"	FB 100 X 9	9	6	-	58	-	-	50	3000	1200
5"	2*A7	9	6	6	70	100	200	-	3150	2000
6"	2*A7	9	6	6	83	100	200	-	3150	1670
8"	2*A7	9	6	6	109	100	200	-	3150	1300
10"	2*A7	9	6	6	134	100	200	-	3150	1020

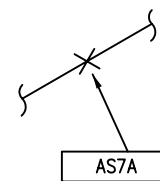
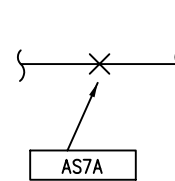
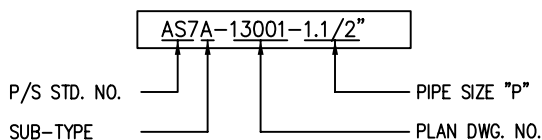
NOTE

1. MATERIAL

- ANGLE : A36 OR EQ.
- FB : A240-304 OR EQ.
- REINF. PAD : A240 TYPE 304 OR EQ.

2. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



PLAN

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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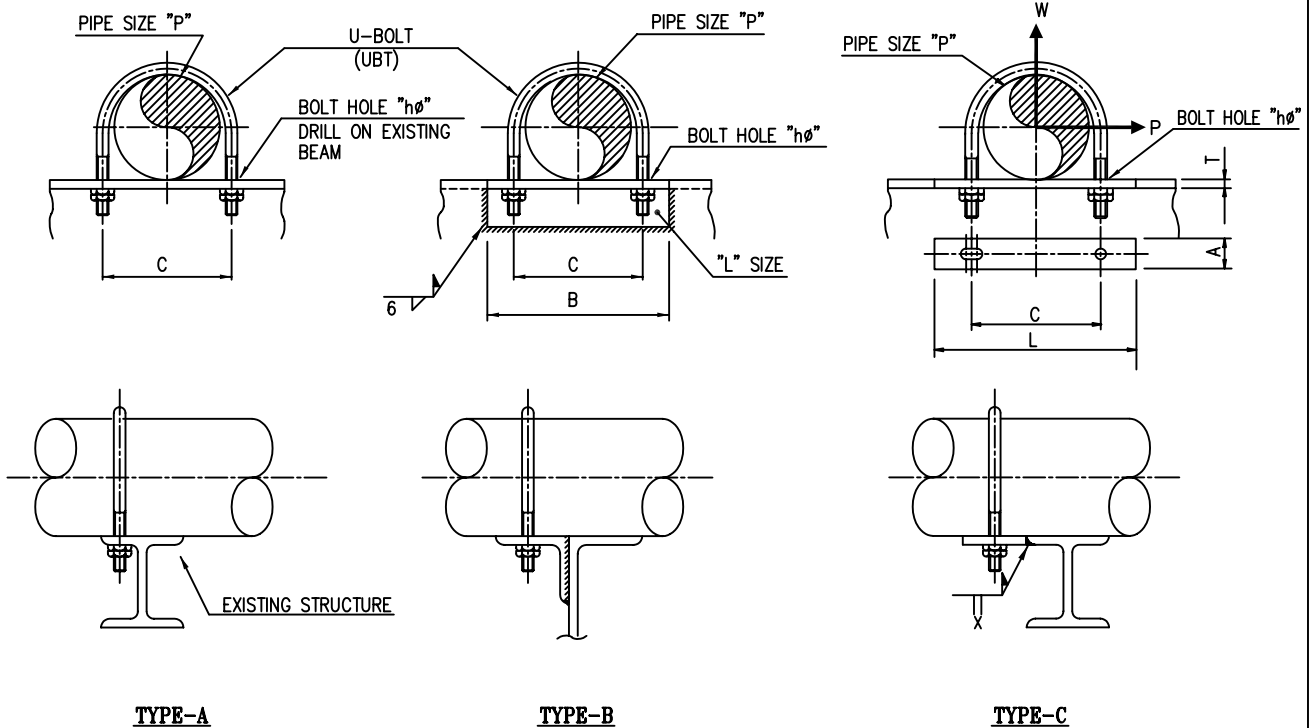


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1128

ANCHOR **AS-8**
(FOR 4" & SMALLER BARE PIPE;
U-BOLT TYPE)

REV
2



TYPE-A

TYPE-B

TYPE-C

UNIT (mm)

PIPE SIZE NPS "P"	B	C	hø	"L" SIZE	FB A x T x L	X	ALLOW. LOAD (Kg)	
							Wmax	Pmax
1/2"	90	36	7	A5	FB - 50x6x90	2	240	140
3/4"	90	40	7	A5	50x6x90	2	240	140
1"	90	45	7	A5	50x6x90	2	240	140
1-1/2"	120	60	11	A5	50x6x120	2	550	330
2"	120	75	11	A5	50x6x120	2	550	330
2-1/2"	150	90	14	A5	50x6x150	2	1030	580
3"	180	105	14	A5	50x6x180	2	1030	580
4"	200	135	18	A5	65x9x200	3	1640	900
5"	230	160	18	A5	65x9x230	3	1800	900
6"	260	190	18	A5	65x9x260	3	1950	900
8"	290	245	21	A6	80x9x290	3	2300	1100

NOTE

1. MATERIAL

- ANGLE : A36 OR EQ.
- FB : A36 OR EQ.

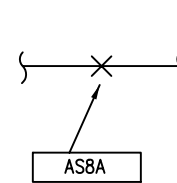
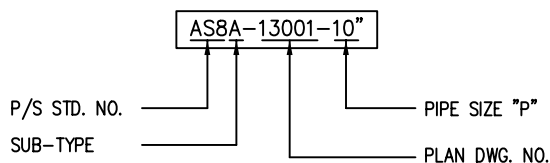
2. SEE DWG. NO. ST-A4-1001 FOR THE DETAIL OF U-BOLT.

3. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

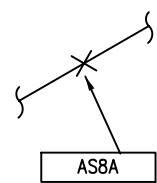
4. ASBESTOS SHEET OR RUBBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

6. ASBESTOS SHEET OR RUBBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



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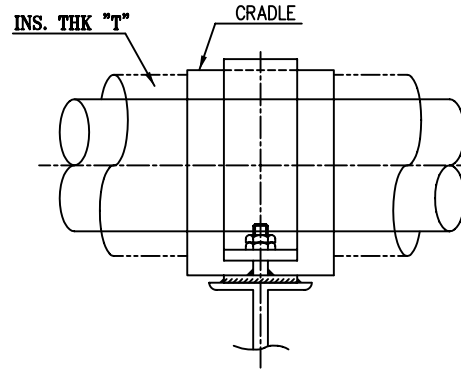
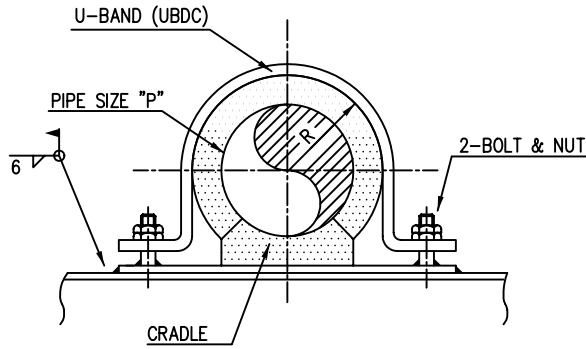
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

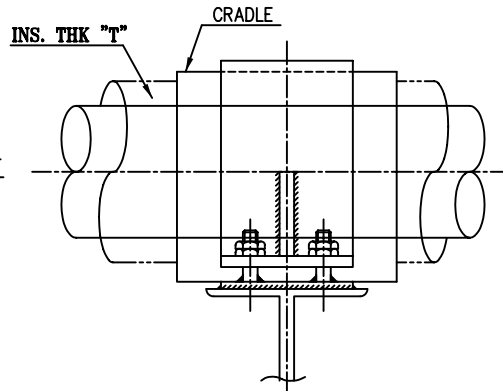
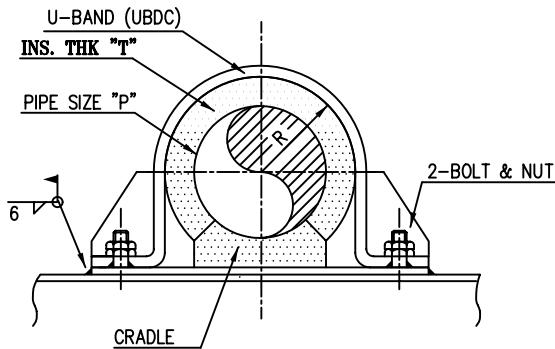
ST-A4-1130

ANCHOR **AS-10**
(FOR COLD INSULATED PIPE; U-BAND TYPE)

REV
2



R=126 & SMALLER



R=135 & LARGER

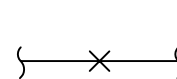
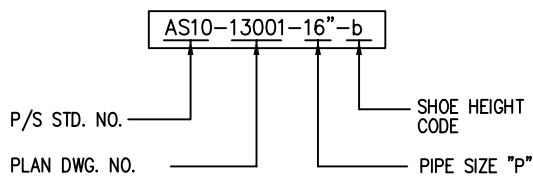
NOTE

- MATERIAL
 - PLATE : A36 OR EQ.
 - BOLT & NUT : A307 GR.B-GALV. OR EQ.
- 2-NUTS ARE REQUIRED PER EACH BOLT.
- SEE DWG. NO. ST-A4-1104 FOR THE DETAIL OF CRADLE.
- SEE DWG. NO. ST-A4-1004 FOR THE DETAIL OF U-BAND AND ALLOWABLE LOADS.

UNIT (mm)

COLD INSUL. TH'K	SHOE HEIGHT	CODE
25 ~ 50	50	a
51 ~ 100	100	b
101 ~ 150	150	c
151 ~ 200	200	d
201 ~ 250	250	e

SYMBOL & CODING



AS10-b

PLAN



AS10-b

ISO



SHAHID TONGGOORIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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DAELIM

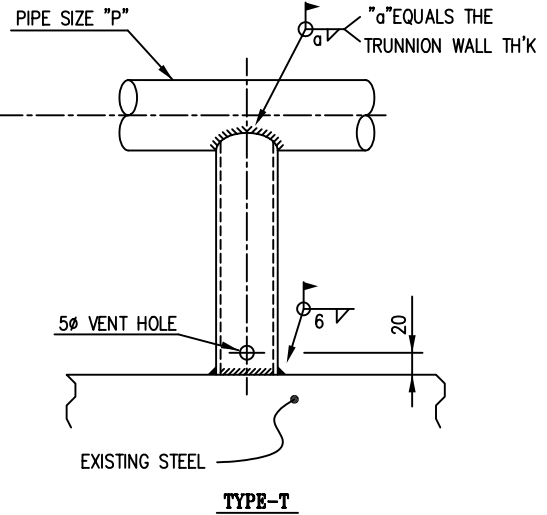
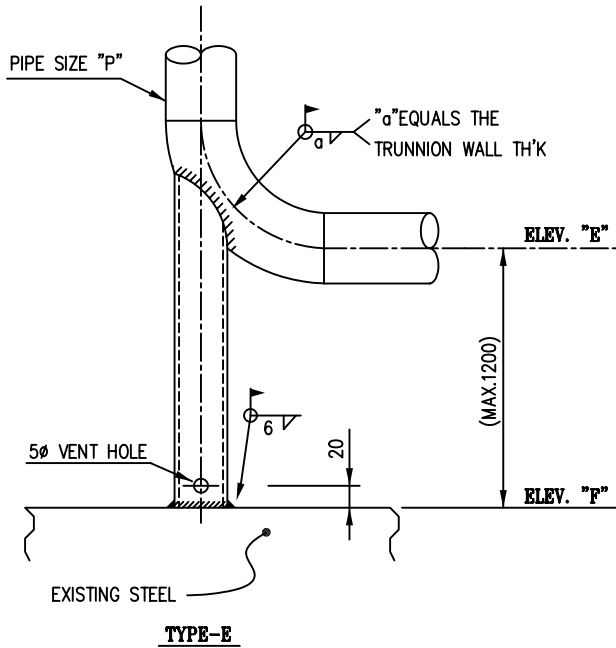
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1131

ANCHOR **AS-31**
(TRUNNION TYPE ON STRUCTURE)

REV.
2



PIPE SIZE NPS "P"	SUPPORT PIPE
1-1/2"	1"
2"	1-1/2"
3"	2"
4"	2"
6"	4"
8"	4"
10"	6"
12"	8"
14"	8"
16"	10"
18"	10"
20"	12"
24"	12"
26"	14"
28"	14"
30"	16"
32"	16"
34"	18"
36"	18"
40"	20"
42"	20"

NOTE

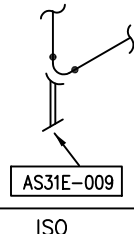
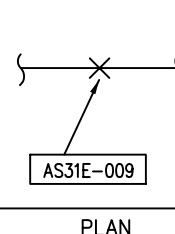
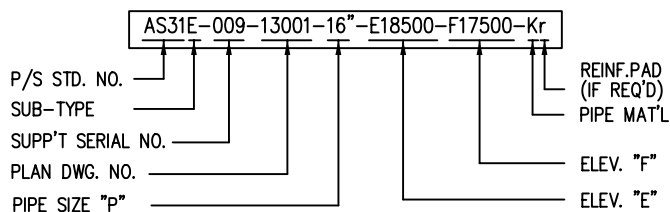
1. MATERIAL

- FOR SUPPORT PIPE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	SUPPORT PIPE
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

2. SEE DWG. NO. ST-A4-0004
FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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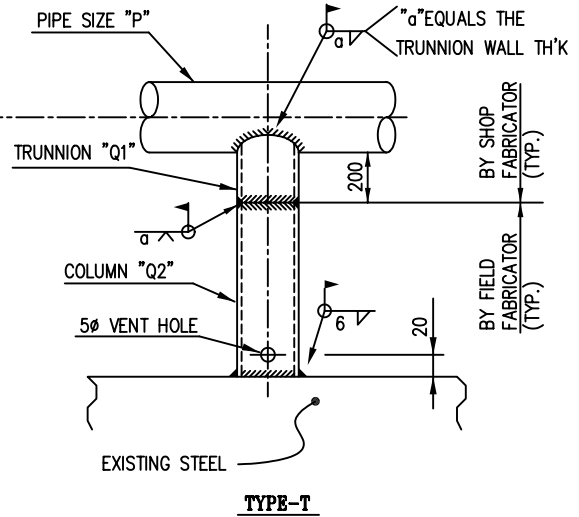
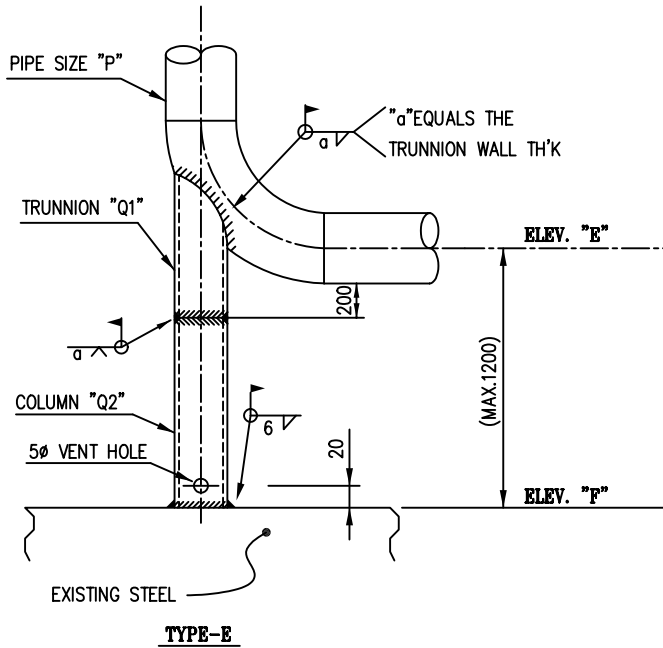
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1132

ANCHOR
(TRUNNION TYPE FOR ALLOY AND HEAT
TREATED PIPE) **AS-32**

REV.
2



PIPE SIZE NPS "P"	NPS "Q1", "Q2"
1-1/2"	1"
2"	1-1/2"
3"	2"
4"	2"
6"	4"
8"	4"
10"	6"
12"	8"
14"	8"
16"	10"
18"	10"
20"	12"
24"	12"
26"	14"
28"	14"
30"	16"
32"	16"
34"	18"
36"	18"
40"	20"
42"	20"

NOTE

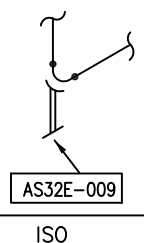
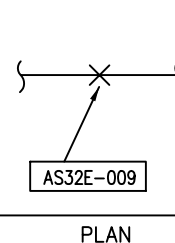
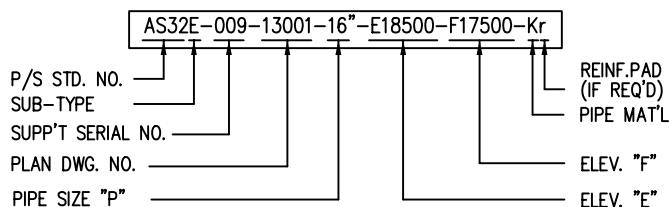
1. MATERIAL

- TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.
- COLUMN "Q2" : A53 GR.B OR EQ.

CODE	RUN PIPE	TRUNNION "Q1"
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803) ORR EQ.

- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- IF APPLICABLE ALL TRUNNIONS ON SHOP FABRICATED PIPE CAN BE INSTALLED BY THE SHOP.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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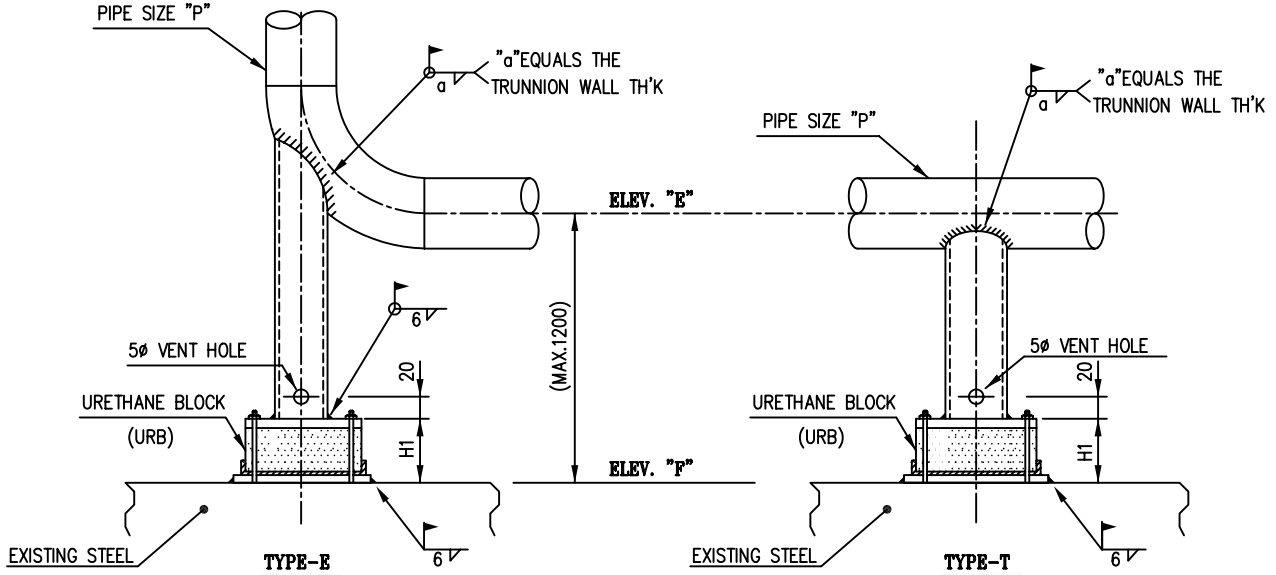
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1136

ANCHOR **AS-41**
(FOR COLD INSULATED PIPE;
TRUNNION TYPE ON STRUCTURE)

REV.
2



PIPE SIZE NPS "P"	SUPPORT PIPE	U.BLOCK H1 (mm)
1-1/2"	1"	104
2"	1-1/2"	104
3"	2"	104
4"	2"	104
6"	4"	111
8"	4"	111
10"	6"	117
12"	8"	117
14"	8"	117
16"	10"	117
18"	10"	117
20"	12"	117
24"	12"	117
26"	14"	117
28"	14"	117
30"	18"	124
36"	20"	133

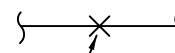
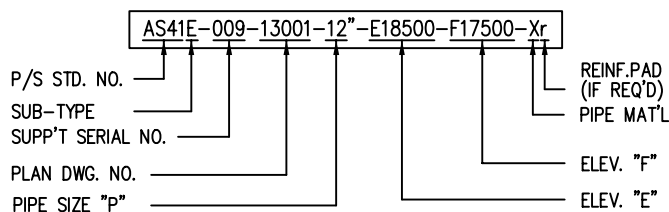
NOTE

- MATERIAL
- FOR SUPPORT PIPE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	SUPPORT PIPE
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR GR.6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

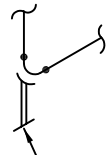
- SEE DWG. NO. ST-A4-0004
FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- SEE DWG. NO. ST-A4-1020 FOR THE DETAIL OF URETHANE
BLOCK ASSEMBLY(URB)

SYMBOL & CODING



AS41E-009

PLAN



AS41E-009

ISO



SAZEH
CONSULTANTS



DAELIM

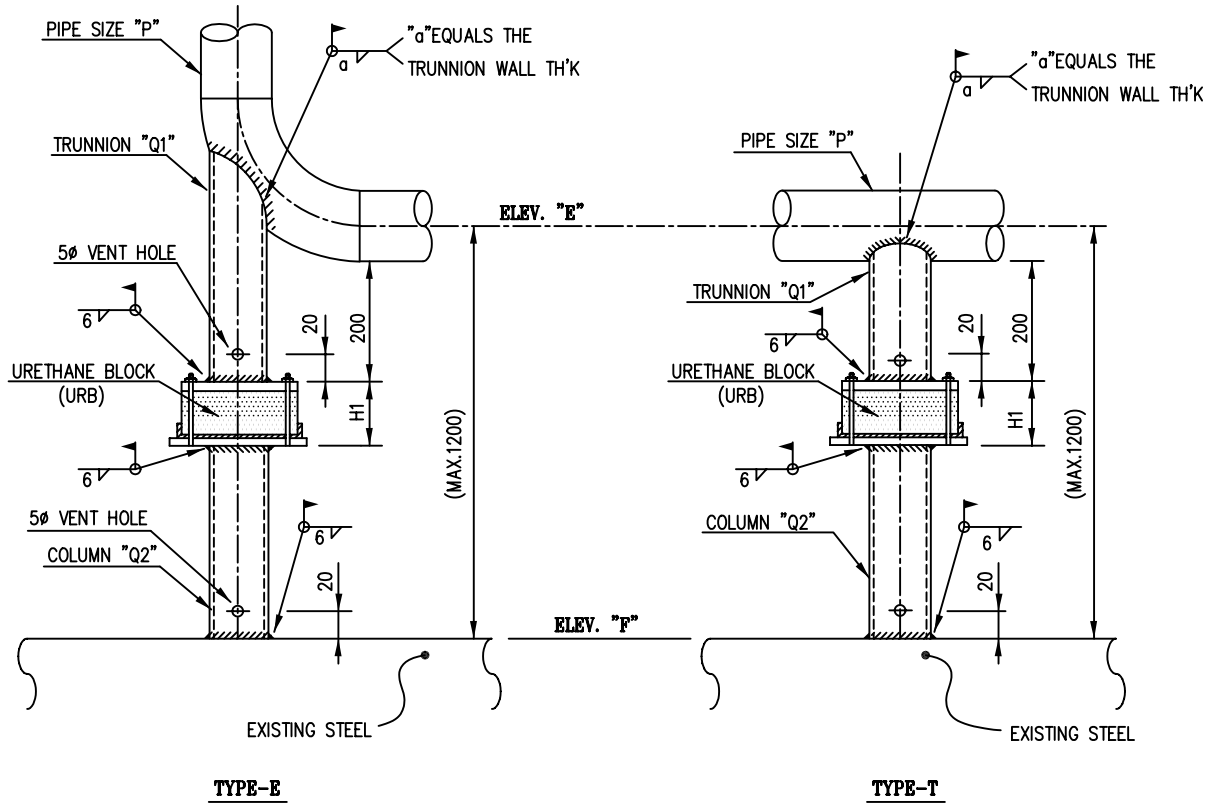
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1137

ANCHOR **AS-42**
(FOR COLD INSULATED PIPE;
TRUNNION TYPE ON STRUCTURE)

REV.
2



NOTE

1. MATERIAL

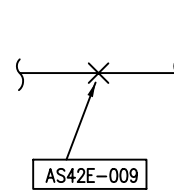
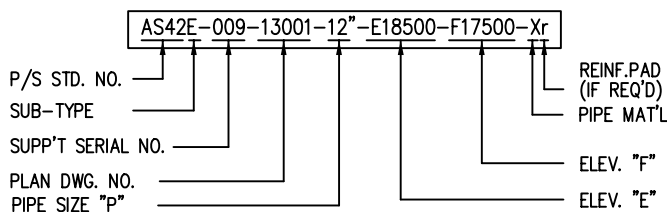
- TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.
- COLUMN "Q2" : A53 GR.B OR EQ.

CODE	RUN PIPE	TRUNNION "Q1"
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR GR.6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

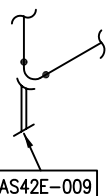
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- SEE DWG. NO. ST-A4-1020 FOR THE DETAIL OF URETHANE BLOCK ASSEMBLY(URB)

PIPE SIZE NPS "P"	NPS "Q1", "Q2"	U.BLOCK H1(mm)
1-1/2"	1"	104
2"	1-1/2"	104
3"	2"	104
4"	2"	104
6"	4"	111
8"	4"	111
10"	6"	117
12"	8"	117
14"	8"	117
16"	10"	117
18"	10"	117
20"	12"	117
24"	12"	117
26"	14"	117
28"	14"	117
30"	18"	124
36"	20"	133

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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CONSULTANTS



DAELIM

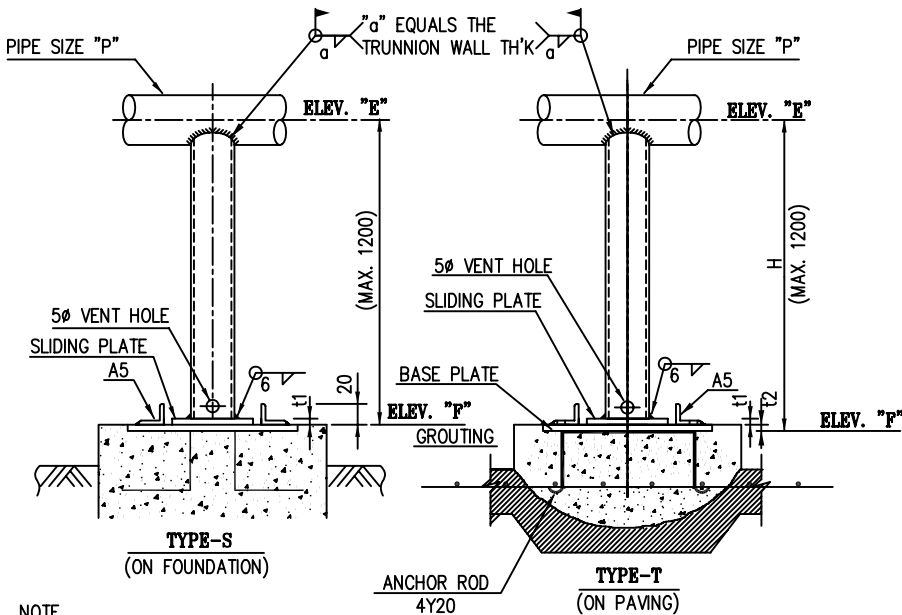
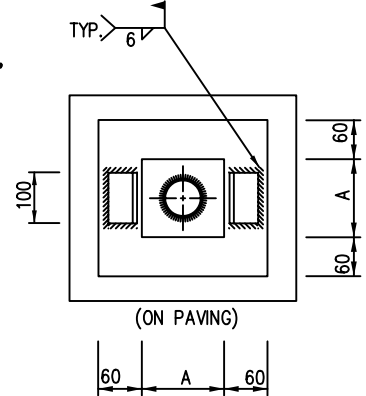
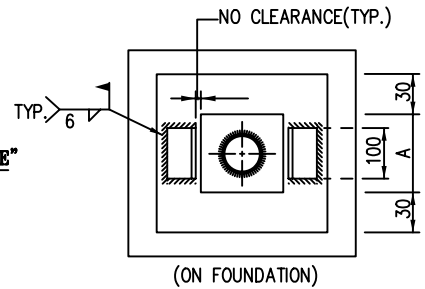
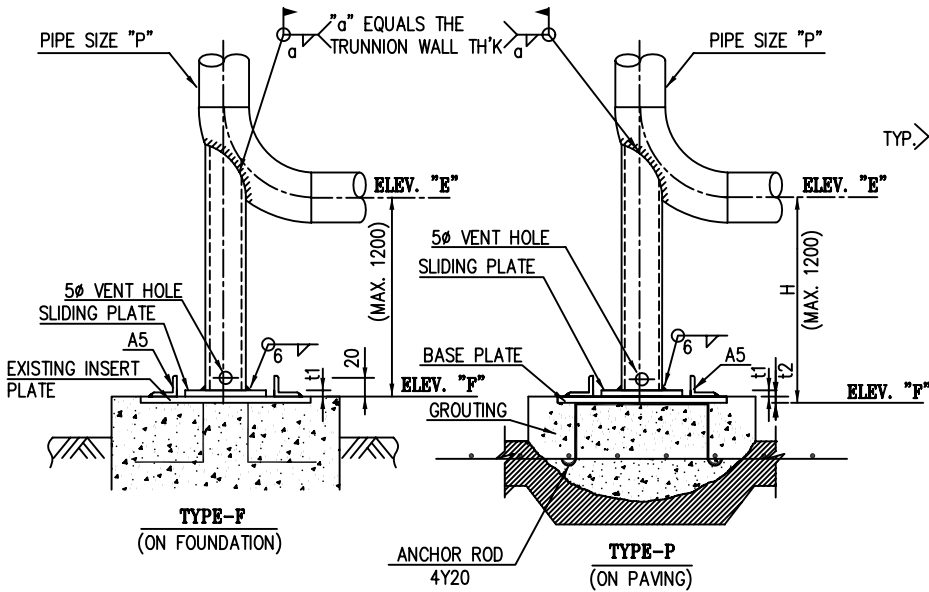
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1141

DIRECTIONAL STOP **DF-31**
(TRUNNION TYPE ON F/D)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	SUPPORT PIPE	BASE PLATE		
		A	t1	t2
1-1/2"	1"	140	9	9
2"	1.1/2"	140	9	9
3"	2"	140	9	9
4"	2"	140	9	9
6"	4"	160	9	9
8"	4"	160	9	9
10"	6"	210	12	12
12"	8"	260	12	12
14"	8"	260	12	12
16"	10"	320	16	16
18"	10"	320	16	16
20"	12"	350	16	16
24"	12"	350	16	16

NOTE

1. MATERIAL

- FOR SUPPORT PIPE : SAME AS RUN PIPE OR MAT'L TABLE.

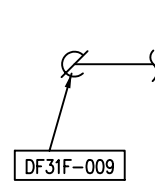
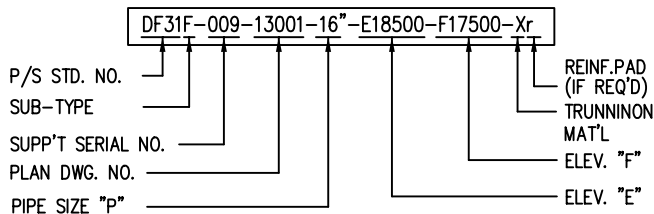
CODE	RUN PIPE	SUPPORT PIPE
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

- ANGLE : A36 OR EQ.

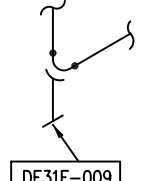
- SEE DWG. NO. ST-A4-0006 FOR THE DETAIL OF LOCAL SUPPORT FOUNDATION.
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

GENERALLY REVISED.

SYMBOL & CODING



PLAN



ISO



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CONSULTANTS



DAELIM

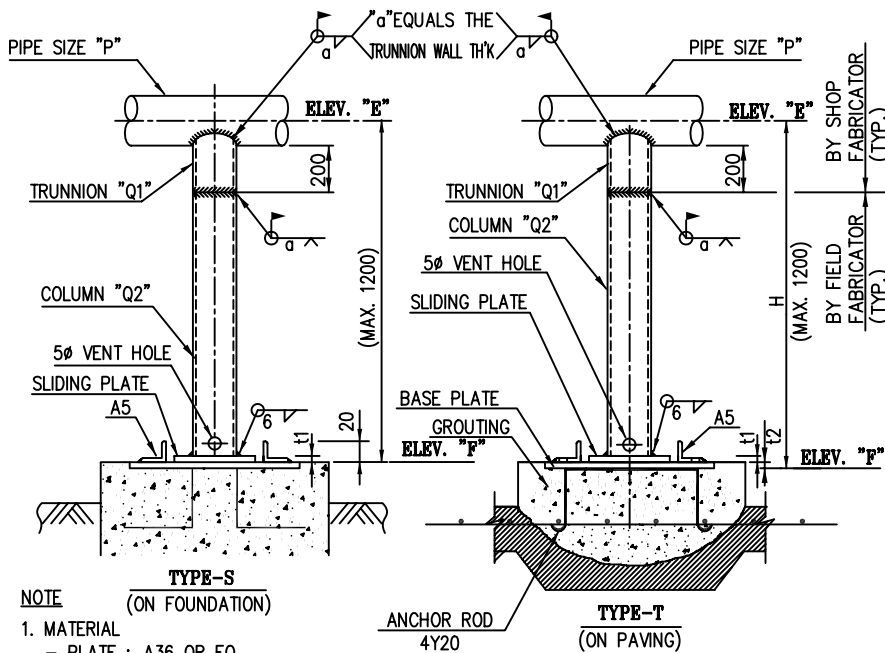
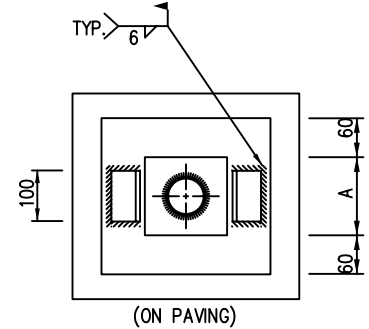
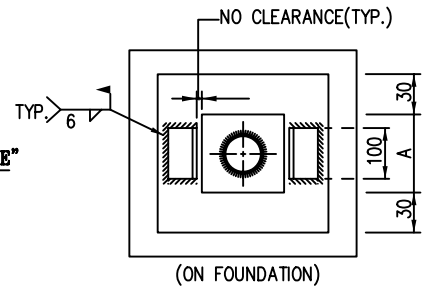
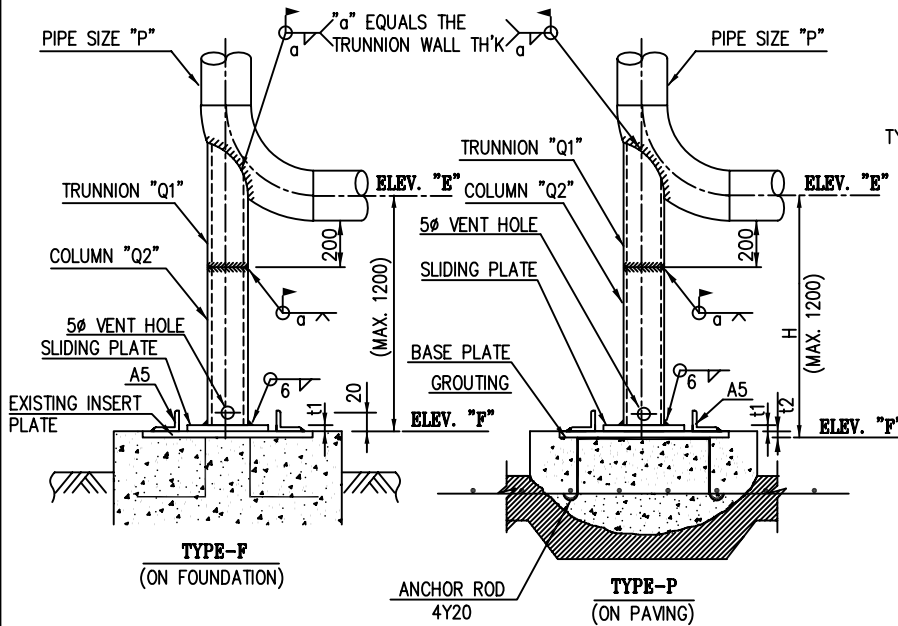
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1142

DIRECTIONAL STOP **DF-32**
(TRUNNION TYPE FOR ALLOY -S/S
AND HEAT TREATED PIPE)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	NPS "Q1", "Q2"	BASE PLATE		
		A	t1	t2
1-1/2"	1"	140	9	9
2"	1.1/2"	140	9	9
3"	2"	140	9	9
4"	2"	140	9	9
6"	4"	160	9	9
8"	4"	160	9	9
10"	6"	210	12	12
12"	8"	260	12	12
14"	8"	260	12	12
16"	10"	320	16	16
18"	10"	320	16	16
20"	12"	350	16	16
24"	12"	350	16	16

NOTE

- MATERIAL
 - PLATE : A36 OR EQ.
 - TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION "Q1"
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ

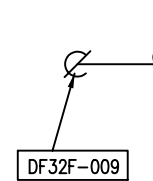
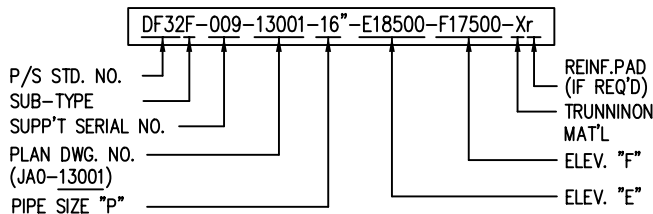
- ANGLE : A36 OR EQ.
- COLUMN "Q2" : A53 GR.B OR EQ.

- SEE DWG.NO.ST-A4-0006 FOR THE DETAIL OF LOCAL SUPPORT FOUNDATION
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

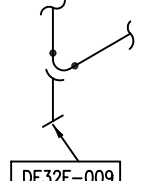
- IF APPLICABLE ALL TRUNNIONS ON SHOP FABRICATED PIPE CAN BE INSTALLED BY THE SHOP.

GENERALLY REVISED.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



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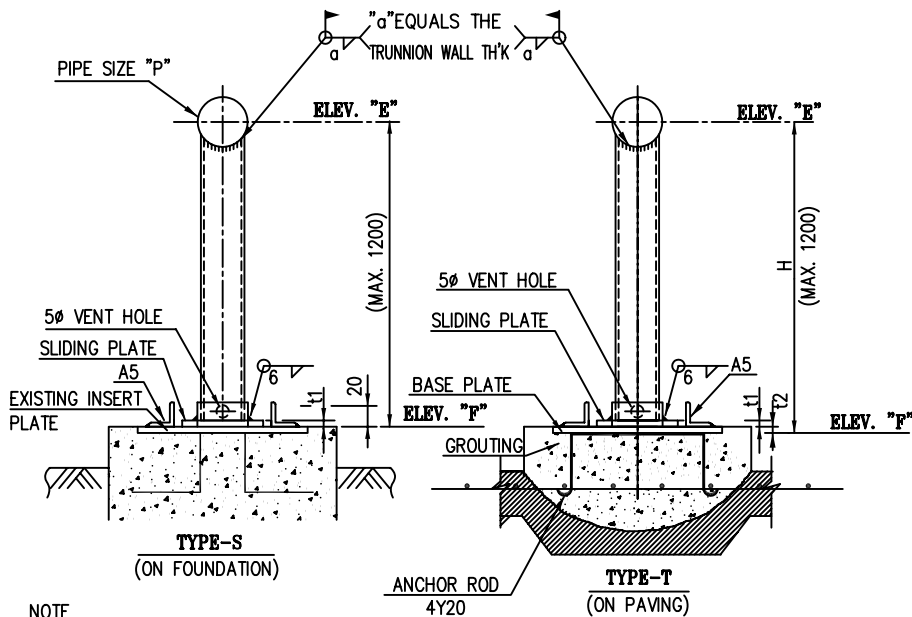
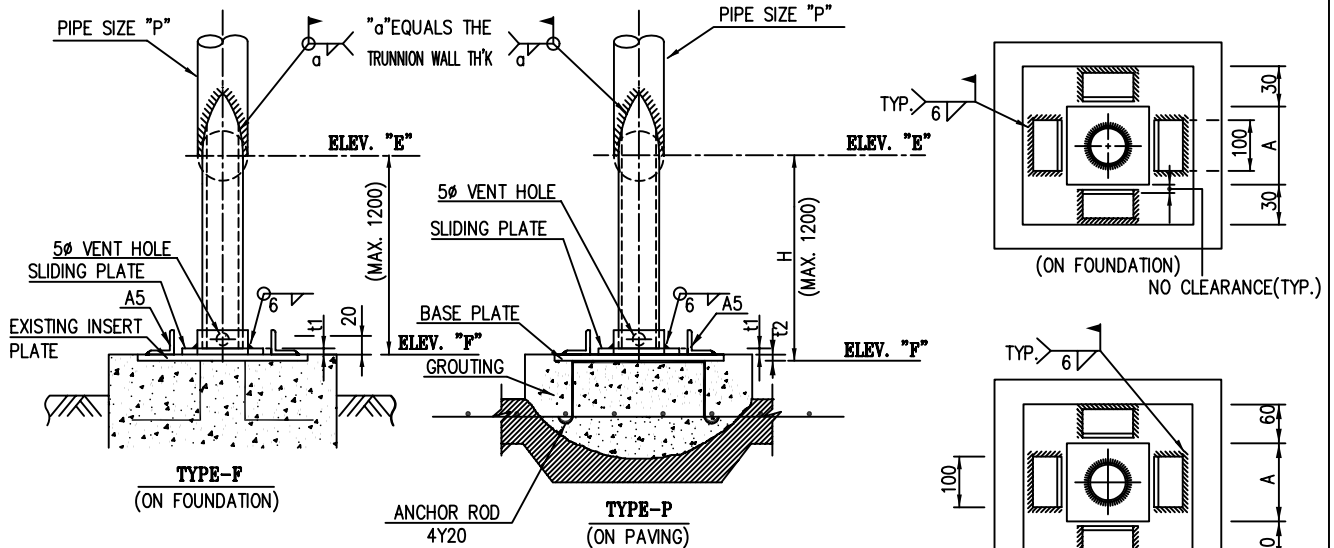
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1143

3-WAY STOP DF-33
(TRUNNION TYPE ON F/D)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	SUPPORT PIPE	BASE PLATE		
		A	t1	t2
1-1/2"	1"	140	9	9
2"	1.1/2"	140	9	9
3"	2"	140	9	9
4"	2"	140	9	9
6"	4"	160	9	9
8"	4"	160	9	9
10"	6"	210	12	12
12"	8"	260	12	12
14"	8"	260	12	12
16"	10"	320	16	16
18"	10"	320	16	16
20"	12"	350	16	16
24"	12"	350	16	16

NOTE

1. MATERIAL

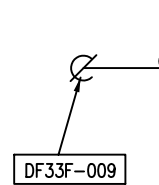
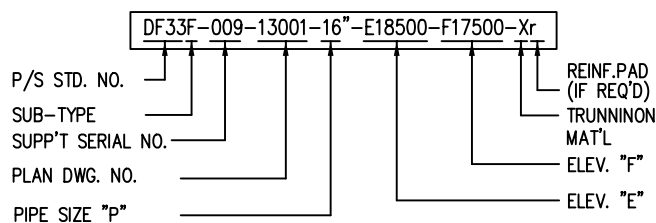
- FOR SUPPORT PIPE : SAME AS RUN PIPE OR MAT'L TABLE.
- OTHERS : A36 OR EQ.

CODE	RUN PIPE	SUPPORT PIPE
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (31803)OR EQ.

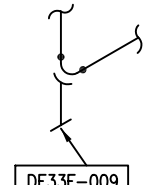
- SEE DWG.NO.ST-A4-0006 FOR THE DETAIL OF LOCAL SUPPORT FOUNDATION
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

GENERALLY REVISED.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit
SP 7702-00
11598-00

Dept.-Code
PD-09

Serial No.
003

Rev.
2



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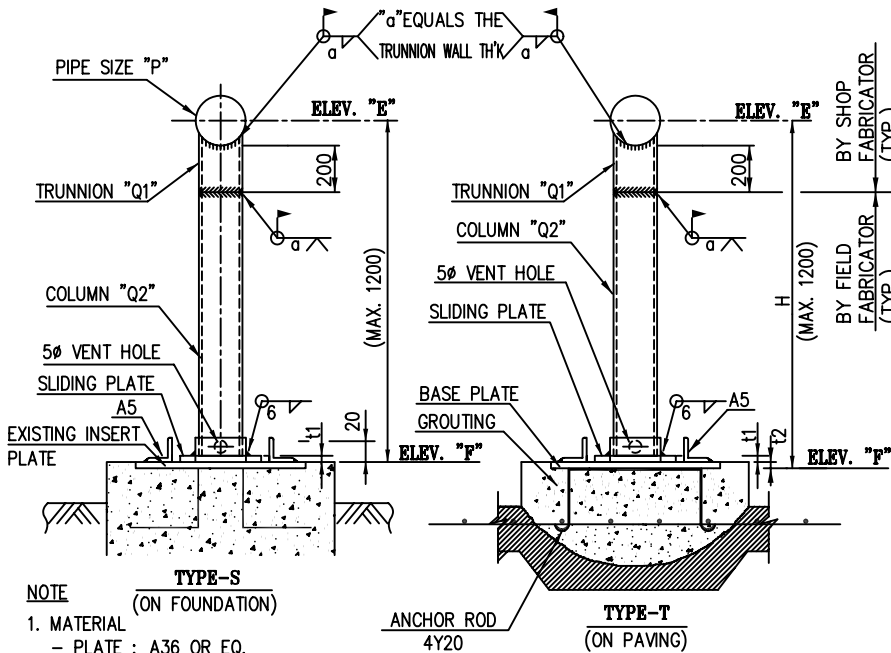
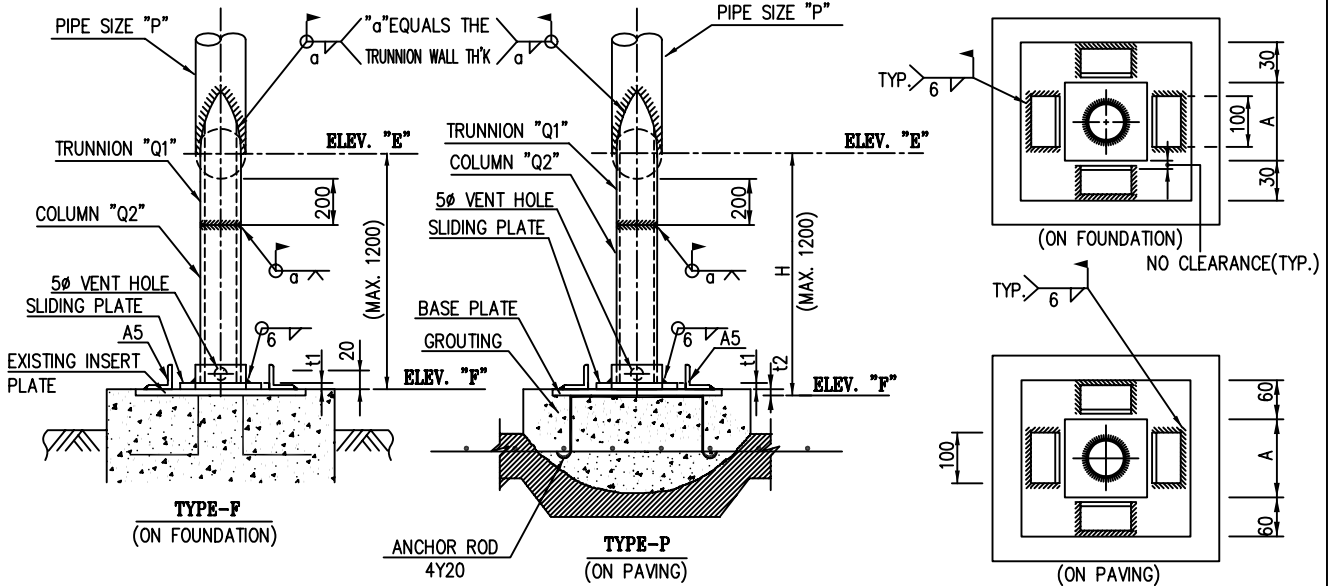
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1144

3-WAY STOP **DF-34**
(TRUNNION TYPE FOR ALLOY -S/S
AND HEAT TREATED PIPE)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	NPS "Q1", "Q2"	BASE PLATE		
		A	t1	t2
1-1/2"	1"	140	9	9
2"	1.1/2"	140	9	9
3"	2"	140	9	9
4"	2"	140	9	9
6"	4"	160	9	9
8"	4"	160	9	9
10"	6"	210	12	12
12"	8"	260	12	12
14"	8"	260	12	12
16"	10"	320	16	16
18"	10"	320	16	16
20"	12"	350	16	16
24"	12"	350	16	16

NOTE

- MATERIAL
 - PLATE : A36 OR EQ.
 - TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.

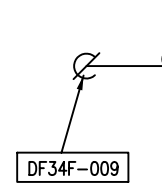
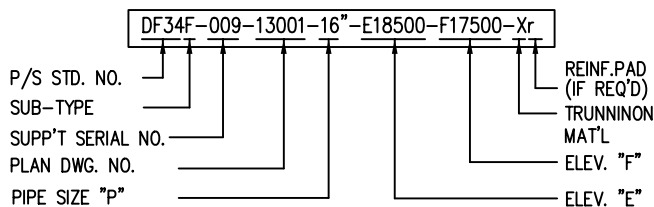
CODE	RUN PIPE	TRUNNION "Q1"
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ

- ANGLE : A36 OR EQ.
- COLUMN "Q2" : A53 GR.B OR EQ.

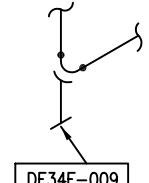
- SEE DWG.NO.ST-A4-0006 FOR THE DETAIL OF LOCAL SUPPORT FOUNDATION
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- IF APPLICABLE ALL TRUNNIONS ON SHOP FABRICATED PIPE CAN BE INSTALLED BY THE SHOP.

GENERALLY REVISED.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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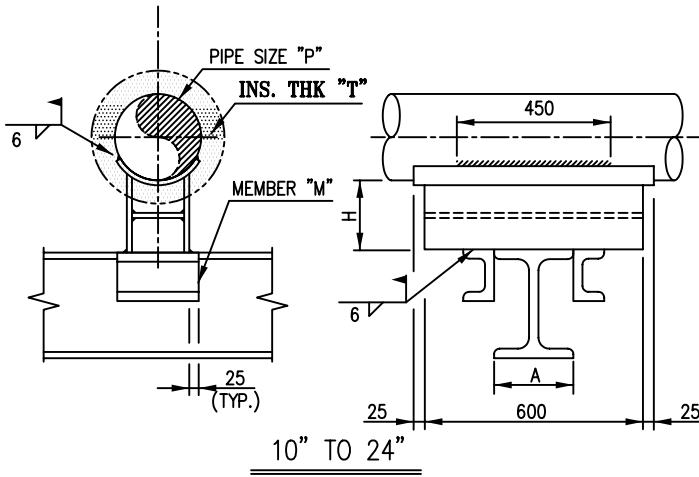
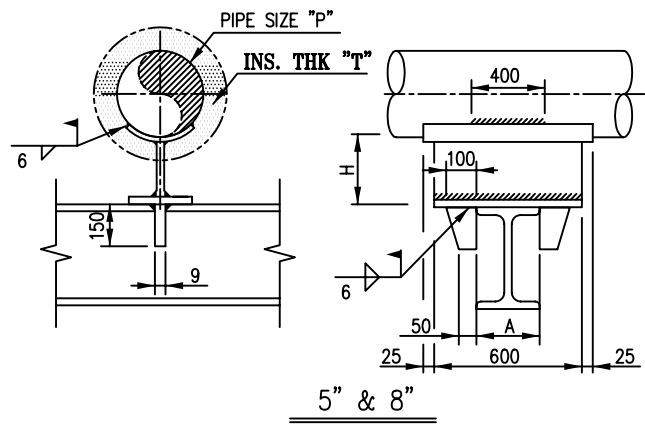
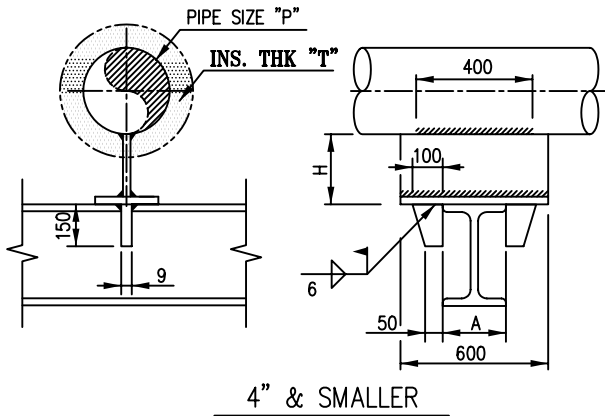
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1151

DIRECTIONAL STOP **DS-1**
(FOR HOT INSULATED PIPE; SHOE TYPE)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	MEMBER M	ALLOWABLE LOAD (Kg)							
		H=100		H=150		H=200		H=250	
		Wmax	Fmax	Wmax	Fmax	Wmax	Fmax	Wmax	Fmax
3"	-	900	1230	630	830	460	630	360	500
4"	-	1400	1230	1000	830	760	630	600	500
6"	-	2100	1230	1400	830	1100	630	900	500
8"	-	3900	1230	2700	830	2100	630	1700	500
10"~12"	C15	17000	5400	14100	4600	12000	3500	10000	2800
14"~18"	C20	17600	8300	14600	7000	12500	5700	10900	4600
20"~40"	H20	18000	7900	15200	6700	13000	5800	11400	5100

NOTE

1. MATERIAL

- PLATE & PAD : SAME AS RUN PIPE OR MAT'L TABLE.
- SHAPE STEEL : A36 OR EQ.

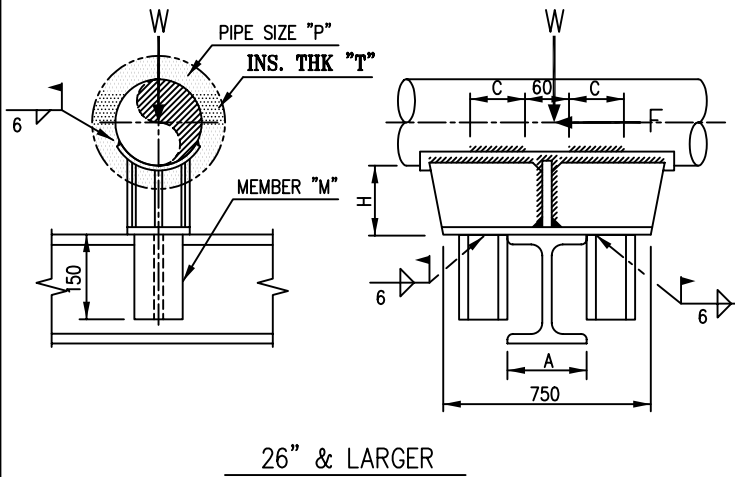
CODE	RUN PIPE	PAD
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

2. SHOE HEIGHT

H	INS. THK "T"	CODE
100	UP TO 75	b
150	76 TO 125	c
200	126 TO 175	d
250	176 & OVER	e

3. SEE DWG. NO. ST-A4-1101 AND 1121 FOR THE DETAIL OF SHOE.

4. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

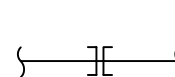


SYMBOL & CODING

DS1-13001-16"-A300-b-X

P/S STD. NO. ————
PLAN DWG. NO. ————
PIPE SIZE "P" ————

PIPE MAT'L ————
SHOE HEIGHT CODE ————
DIM "A" ————



DS1-b-X

PLAN



DS1-b-X

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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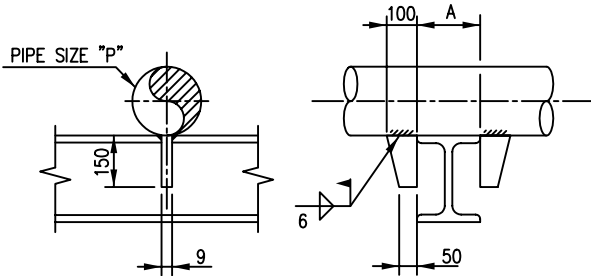
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

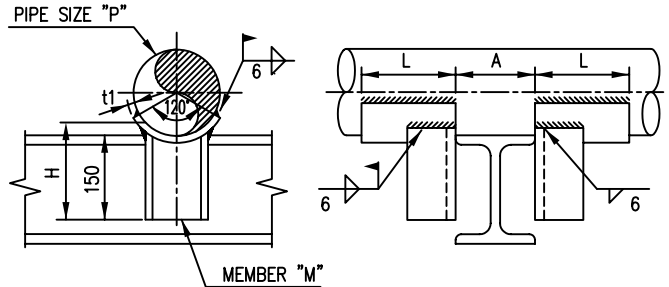
ST-A4-1156

DIRECTIONAL STOP DS-6
(FOR BARE PIPE)

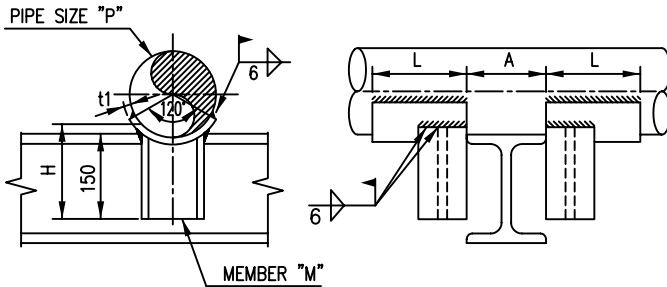
REV.
2



2" TO 8"



10" TO 16"



NPS 18" THRU 30"

UNIT (mm)

PIPE SIZE NPS "P"	t1	H	L	MEMBER "M"	ALLOW. LOAD F (Kg)
2"	6	-	-	-	1000
3"	9	-	-	-	1100
4"	9	-	-	-	1500
6"	9	-	-	-	1450
8"	9	-	-	-	1550
10"	-	170	100	C15	6300
12"	-	166	100	C15	6300
14"	-	181	115	C20	8500
16"	-	176	115	C20	8500
18"	-	223	220	H20	8000
20"	-	221	220	H20	7000
24"	-	217	220	H20	5600
26"	-	216	220	H20	5600
28"	-	214	220	H20	5600
30"	-	213	220	H20	5600

NOTE

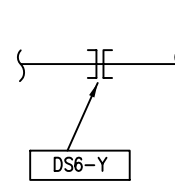
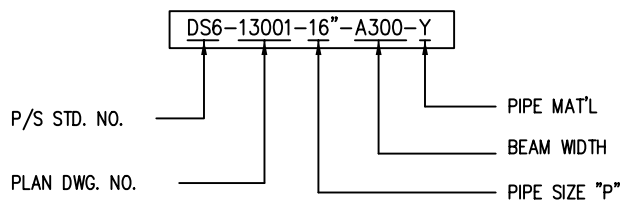
1. MATERIAL

- PLATE & PAD : SAME AS RUN PIPE OR MAT'L TABLE.
- SHAPE STEEL : A36 OR EQ.

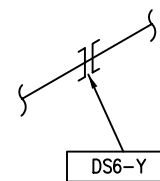
CODE	RUN PIPE	LUG PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803) OR EQ.

2. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1157

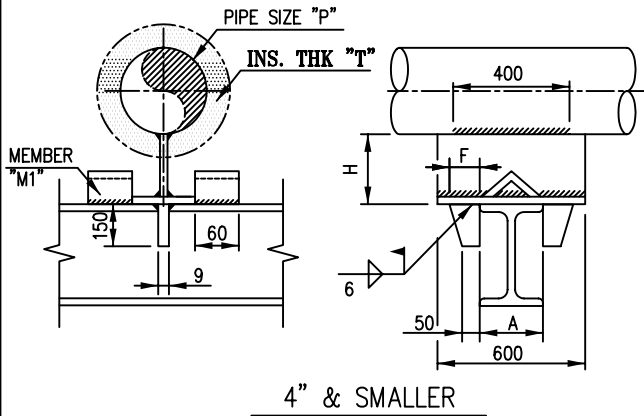
3-WAY STOP

DS-7

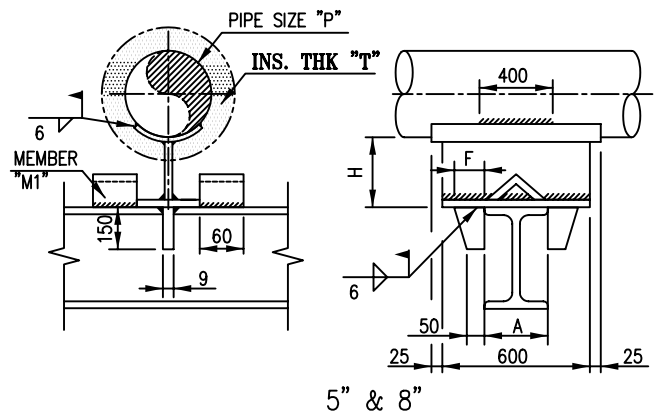
REV.

(FOR HOT INSULATED PIPE; SHOE TYPE)

2

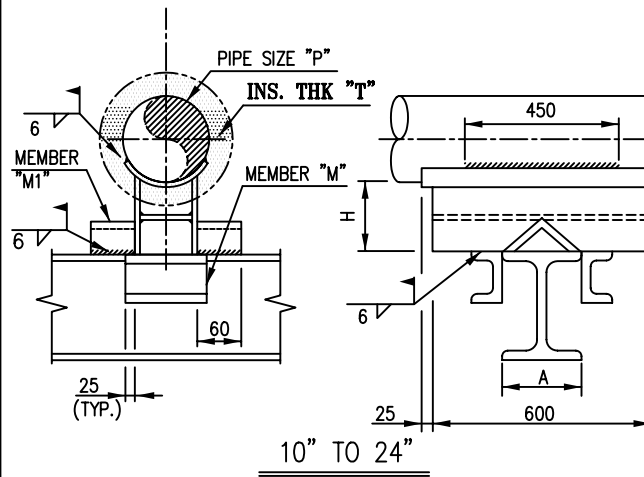


4" & SMALLER



5" & 8"

UNIT (mm)



10" TO 24"

PIPE SIZE	F	T	MEMBER M	MEMBER M1	ALLOWABLE LOADS FOR EACH SHOE HEIGHT (Kg)					
					H=100			H=150		
					W _{max}	F _{max}	P _{max}	W _{max}	F _{max}	P _{max}
2"	100	9	-	A6	600	1230	140	430	550	100
3"	100	9	-	A6	900	1230	200	630	830	150
4"	100	9	-	A6	1400	1230	360	1000	830	240
6"	100	9	-	A6	2100	1230	530	1400	830	360
8"	100	9	-	A7	3900	1230	1000	2700	830	760
10"~12"	-	-	C15	A7	17000	5400	1700	14100	4600	1700
14"~18"	-	-	C20	A7	17600	8300	1700	14600	7000	1700
20"~40"	-	-	H20	A7	18000	7900	1700	15200	6700	1700

PIPE SIZE	F	T	MEMBER M	MEMBER M1	ALLOWABLE LOADS FOR EACH SHOE HEIGHT (Kg)					
					H=200			H=250		
					W _{max}	F _{max}	P _{max}	W _{max}	F _{max}	P _{max}
3"	100	9	-	A6	460	630	110	360	500	90
4"	100	9	-	A6	760	630	180	600	500	120
6"	100	9	-	A6	1100	630	270	900	500	220
8"	100	9	-	A7	2100	630	590	1700	500	480
10"~12"	-	-	C15	A7	12000	3500	1700	10000	2800	1700
14"~18"	-	-	C20	A7	12500	5700	1700	10900	4600	1700
20"~40"	-	-	H20	A7	13000	5800	1700	11400	5100	1700

NOTE

1. MATERIAL

- PLATE & SHAPE STEEL : A36 OR EQ.
- PAD : SAME AS RUN PIPE OR MAT'L TABLE.

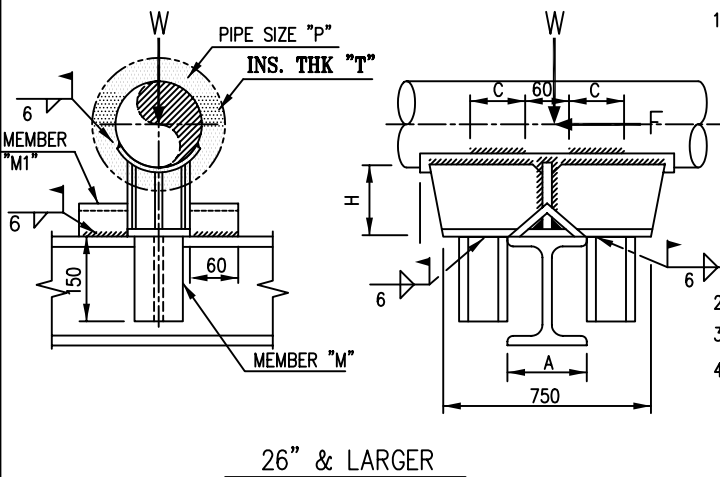
CODE	RUN PIPE	PAD
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

2. SEE DWG. NO. ST-A4-1101 AND 1121 FOR THE DETAIL OF SHOE.

3. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

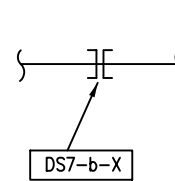
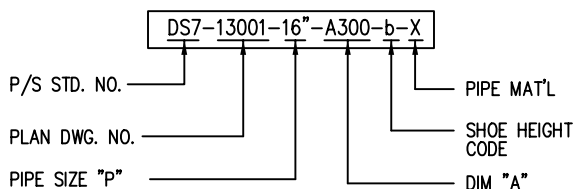
4. SHOE HEIGHT

H	INS. TH'K "T"	CODE
100	UP TO 75	b
150	76 TO 125	c
200	126 TO 175	d
250	176 & OVER	e

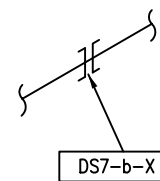


26" & LARGER

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2




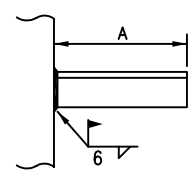
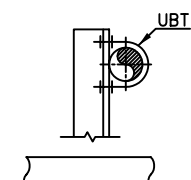
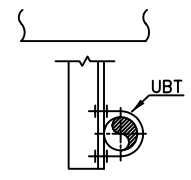
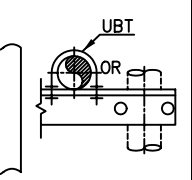
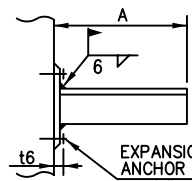
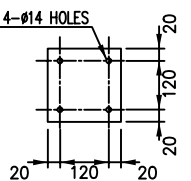
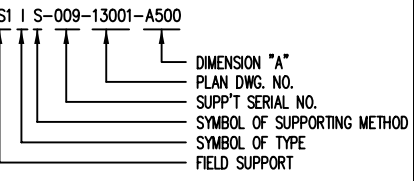
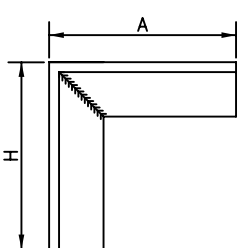
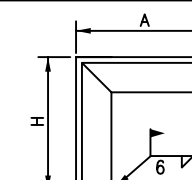
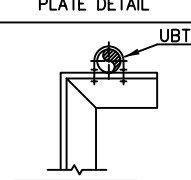
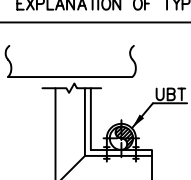
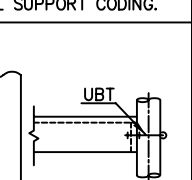
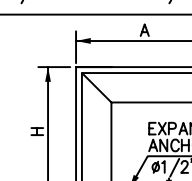
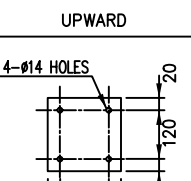
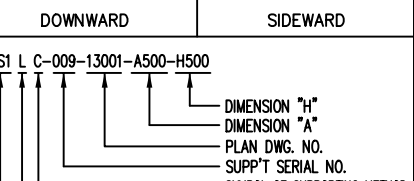
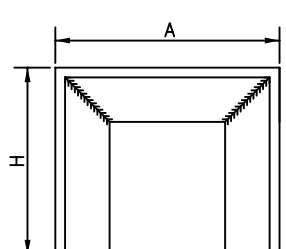
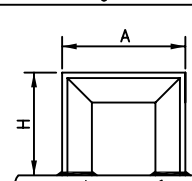
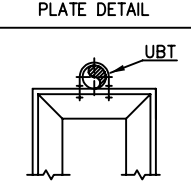
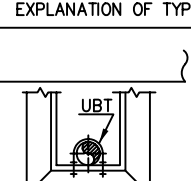
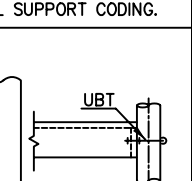
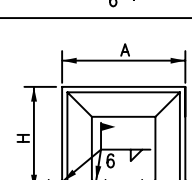
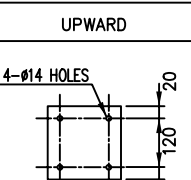
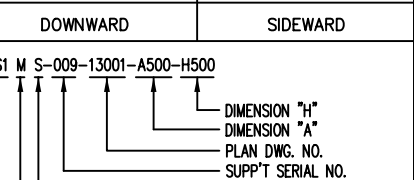
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

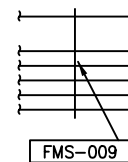
ST-A4-1381

FIELD SUPPORT FS-1

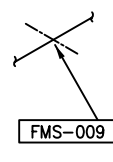
REV.
2

SYMBOL	TYPE	SYMBOL	SUPPORTING METHOD	SUPPORTING DIRECTION					
I	MEMBER : A7 	S	STEEL 						
				UPWARD	DOWNWARD	SIDWARD			
				C	CONCRETE 				
						PLATE DETAIL	EXPLANATION OF TYPICAL SUPPORT CODING.		
L	MEMBER : A7 	S	STEEL 						
				UPWARD	DOWNWARD	SIDWARD			
				C	CONCRETE 				
						PLATE DETAIL	EXPLANATION OF TYPICAL SUPPORT CODING.		
M	MEMBER : A7 	S	STEEL 						
				UPWARD	DOWNWARD	SIDWARD			
				C	CONCRETE 				
						PLATE DETAIL	EXPLANATION OF TYPICAL SUPPORT CODING.		

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



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DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

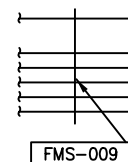
ST-A4-1382

FIELD SUPPORT FS-2

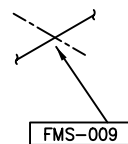
REV.
2

SYMBOL	TYPE	SYMBOL	SUPPORTING METHOD	SUPPORTING DIRECTION									
T	MEMBER : A7 	S	STEEL 										
				UPWARD	SIDEWARD								
		C	CONCRETE 										
				PLATE DETAIL	EXPLANATION OF TYPICAL SUPPORT CODING.								
V	MEMBER : A7 	S	STEEL 										
				UPWARD									
		C	CONCRETE 										
				PLATE DETAIL	EXPLANATION OF TYPICAL SUPPORT CODING.								
K	MEMBER : A5 <table border="1"> <tr> <th>PIPE SIZE</th> <th>"B" DIMENSION</th> </tr> <tr> <td>3/4"</td> <td>20</td> </tr> <tr> <td>1"</td> <td>25</td> </tr> <tr> <td>1-1/2"</td> <td>30</td> </tr> </table>	PIPE SIZE	"B" DIMENSION	3/4"	20	1"	25	1-1/2"	30	S	STEEL 		
		PIPE SIZE	"B" DIMENSION										
		3/4"	20										
		1"	25										
1-1/2"	30												
UPPER PLATE	LOW PLATE												
C	CONCRETE 												
		PLATE DETAIL	EXPLANATION OF TYPICAL SUPPORT CODING.										

SYMBOL & CODING



PLAN



ISO



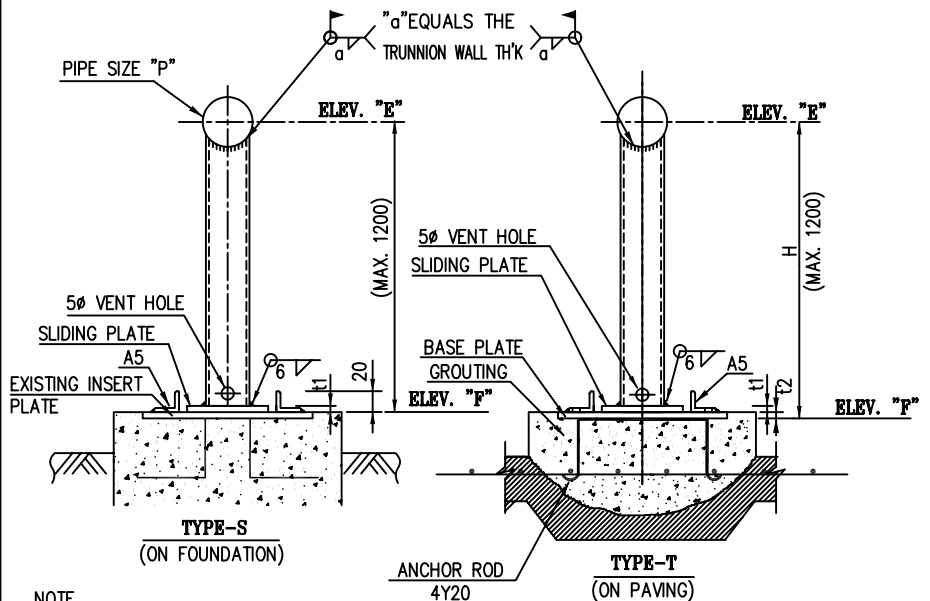
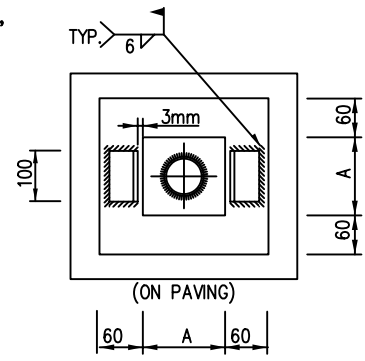
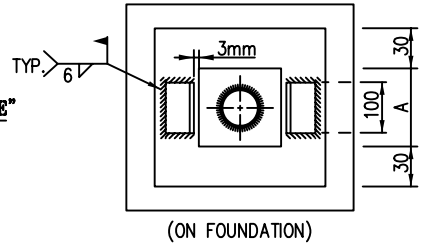
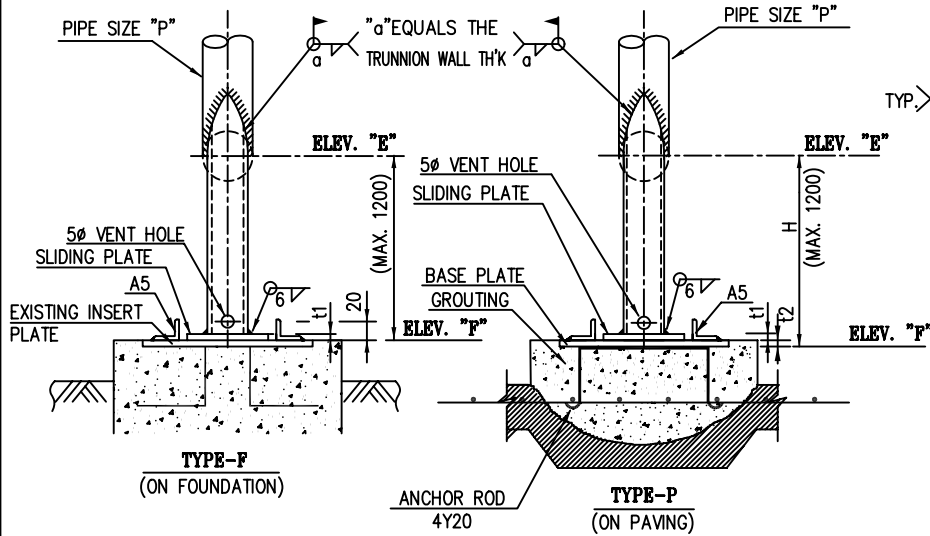
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1161

GUIDE **GF-31**
(TRUNNION TYPE ON F/D)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	SUPPORT PIPE	BASE PLATE		
		A	t1	t2
1-1/2"	1"	140	9	9
2"	1.1/2"	140	9	9
3"	2"	140	9	9
4"	2"	140	9	9
6"	4"	160	9	9
8"	4"	160	9	9
10"	6"	210	12	12
12"	8"	260	12	12
14"	8"	260	12	12
16"	10"	320	16	16
18"	10"	320	16	16
20"	12"	350	16	16
24"	12"	350	16	16

NOTE

1. MATERIAL

- FOR SUPPORT PIPE : SAME AS RUN PIPE OR MAT'L TABLE.
- OTHERS : A36 OR EQ.

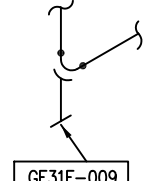
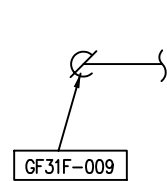
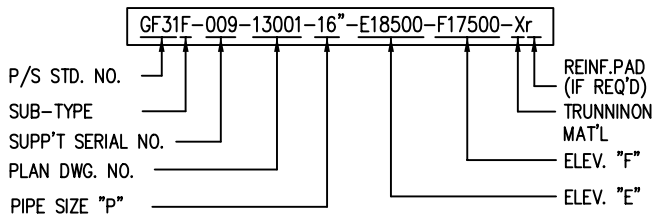
CODE	RUN PIPE	SUPPORT PIPE
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ

2. SEE DWG.NO.ST-A4-0006
FOR THE DETAIL OF LOCAL SUPPORT FOUNDATION

3. SEE DWG. NO. ST-A4-0004
FOR APPLICATION OF REINFORCING PAD
AND TRUNNION ALLOWABLE LOADS.

GENERALLY REVISED.

SYMBOL & CODING



PLAN

ISO



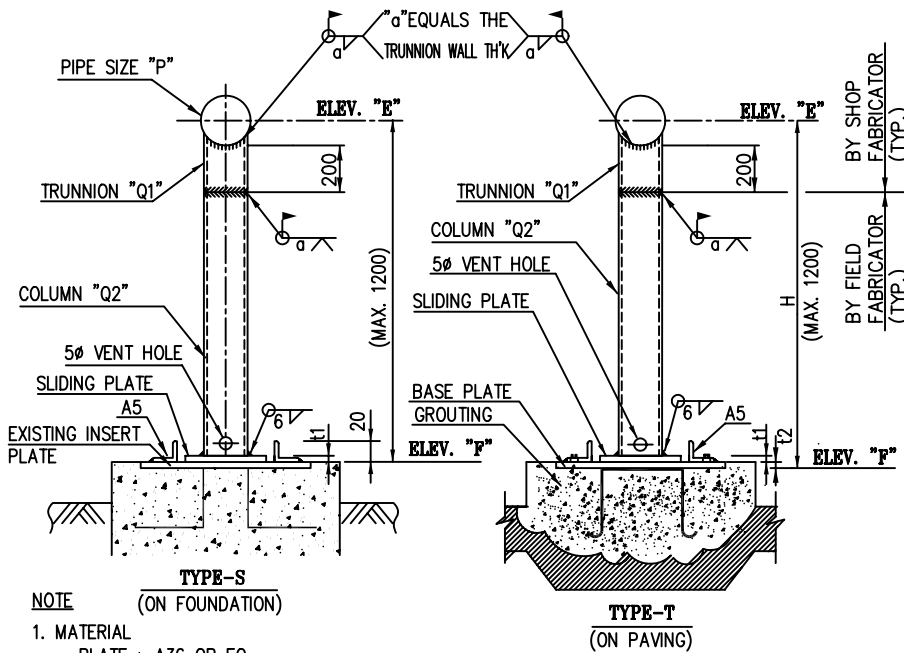
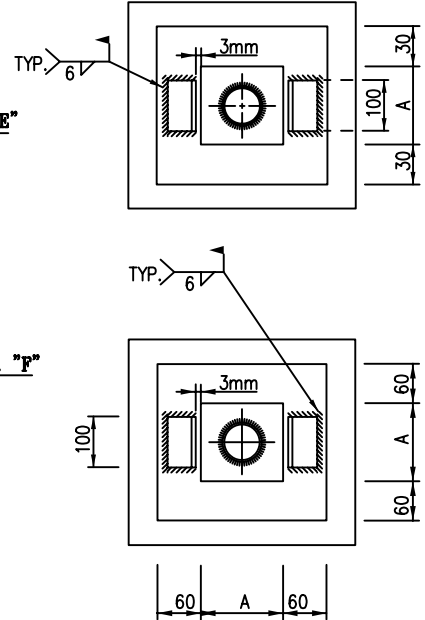
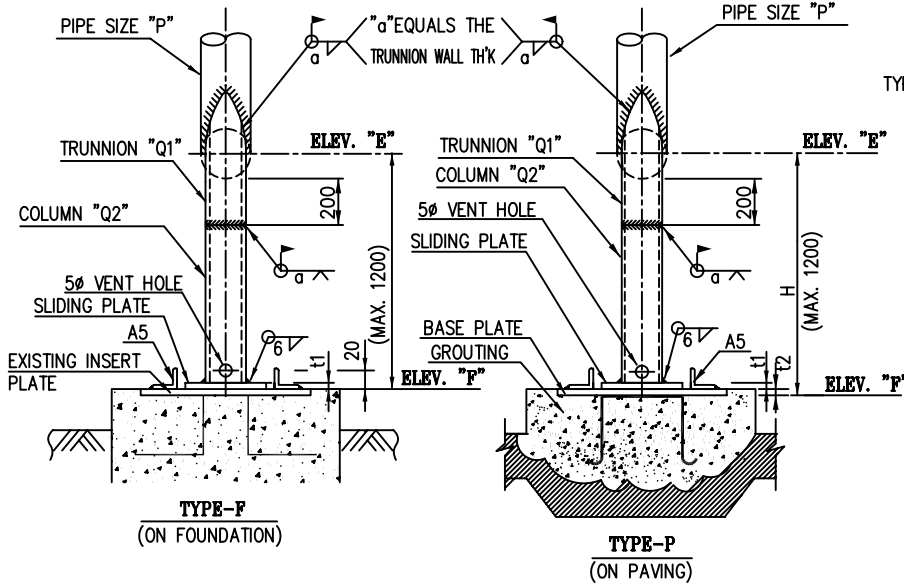
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1162

GUIDE **GF-32**
(TRUNNION TYPE FOR ALLOY -S/S
AND HEAT TREATED PIPE)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	NPS "Q1", "Q2"	BASE PLATE	
		A	t1 t2
1-1/2"	1"	140	9 9
2"	1.1/2"	140	9 9
3"	2"	140	9 9
4"	2"	140	9 9
6"	4"	160	9 9
8"	4"	160	9 9
10"	6"	210	12 12
12"	8"	260	12 12
14"	8"	260	12 12
16"	10"	320	16 16
18"	10"	320	16 16
20"	12"	350	16 16
24"	12"	350	16 16
40"	20"	550	16 16

- SEE DWG. NO. ST-A4-1032 FOR THE DETAIL OF EXPANSION ANCHOR BOLT(BPLR)
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- IF APPLICABLE ALL TRUNNIONS ON SHOP FABRICATED PIPE CAN BE INSTALLED BY THE SHOP.

GENERALLY REVISED

NOTE

(ON FOUNDATION)

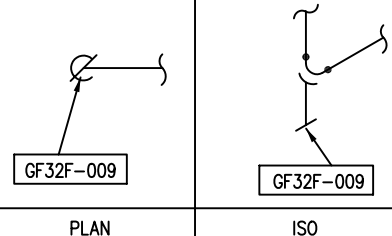
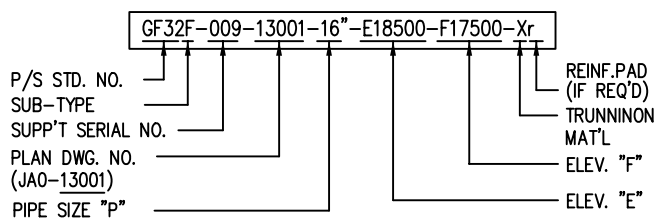
1. MATERIAL

- PLATE : A36 OR EQ.
- TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION "Q1"
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ

- ANGLE : A36 OR EQ.
- COLUMN "Q2" : A53-B OR EQ.

SYMBOL & CODING





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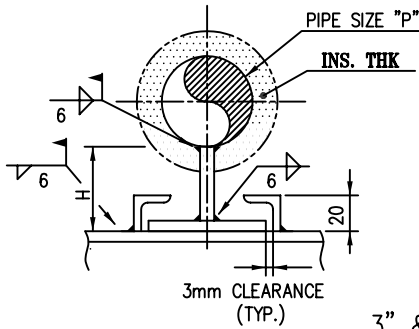
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

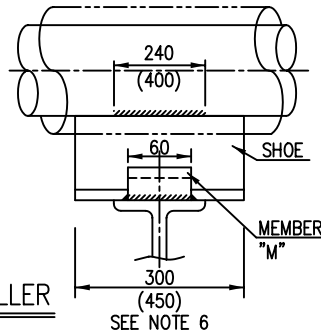
PIPING SUPPORT STANDARD DWG. ST-A4-1171

GUIDE **GS-1**
(FOR HOT INSULATED PIPE; SHOE TYPE)

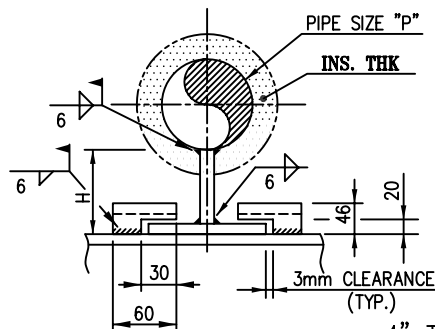
REV.
2



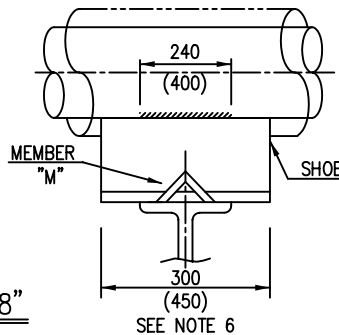
3" & SMALLER



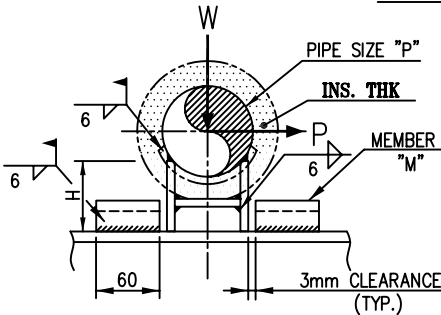
SEE NOTE 6



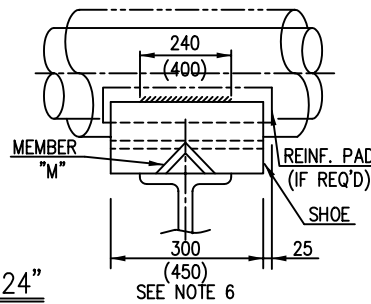
4" TO 8"



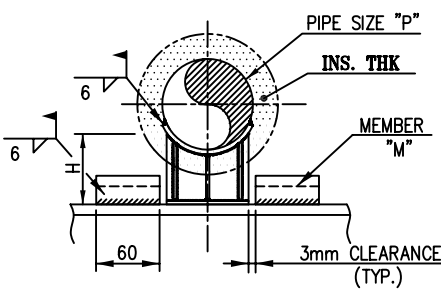
SEE NOTE 6



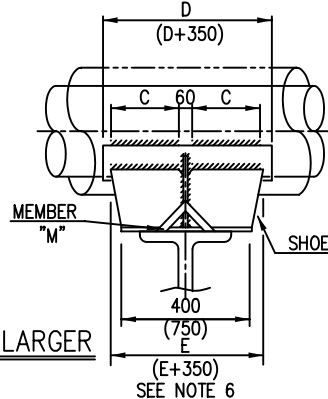
10" TO 24"



SEE NOTE 6



26" & LARGER



SEE NOTE 6

NOTE

- MATERIAL
 - PAD & PARTS DIRECTLY WELDED TO PIPE : SAME AS RUN PIPE OR MAT'L TABLE.
 - OTHER PARTS : A36 OR EQ.

CODE	RUN PIPE	PARTS DIRECTLY WELDED TO PIPE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ. A815 (S31803) OR EQ.

2. SHOE HEIGHT "H"

H	INS. TH'K	CODE
100	UP TO 75	b
150	76 TO 125	c
200	126 TO 175	d
250	176 & OVER	e

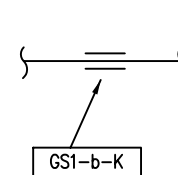
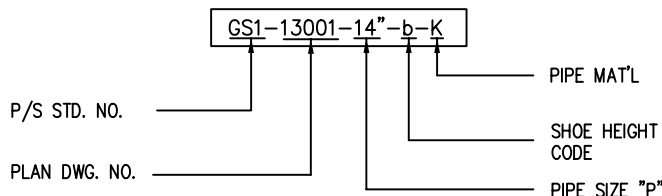
- SEE DWG. NO. ST-A4-1101 FOR THE DETAIL OF SHOES.
- REINF. PADS ARE REQUIRED FOR 10" & LARGER STAINLESS STEEL PIPE.
- FOR LINES 20" THRU 24" SIZE CARBON STEEL PIPE AND THOSE WITH WALL THICKNESS LESS THAN STANDARD WEIGHT SHALL BE CHECKED TO DETERMINE THE NEED FOR REINFORCING PADS.
- WHEN PIPE LONGITUDINAL EXPANSION EXCEEDS 100mm, A LONGER SHOE WILL BE USED AND DESIGNATED BY ADDING AN "L" TO THE END OF SYMBOL.

UNIT (mm)

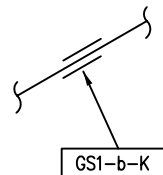
PIPE SIZE	MEMBER "M"	ALLOWABLE LOADS (Kg)			
		H=100		H=150	
		*Wmax	Pmax	*Wmax	Pmax
2"~2-1/2"	A5	325	100	300	90
3"	A5	500	150	400	120
4"~8"	A6	900	200	875	150
10"~24"	A7	2700	1700	1000	830
26"~40"	A7	8650	1700	7950	1700

PIPE SIZE	MEMBER "M"	ALLOWABLE LOADS (Kg)			
		H=200		H=250	
		*Wmax	Pmax	*Wmax	Pmax
2"~2-1/2"	A5	-	-	-	-
3"	A5	-	-	-	-
4"~8"	A6	-	-	-	-
10"~24"	A7	-	-	-	-
26"~40"	A7	7400	1700	6900	1700

SYMBOL & CODING



PLAN



ISO

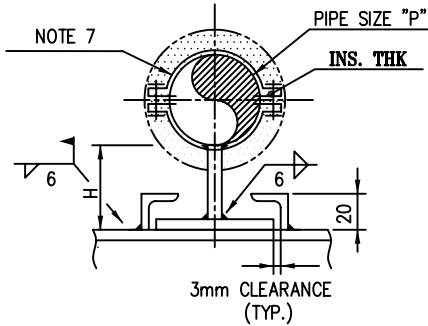


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

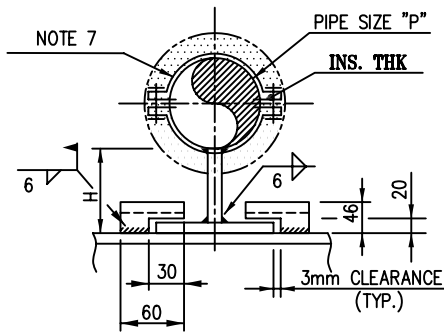
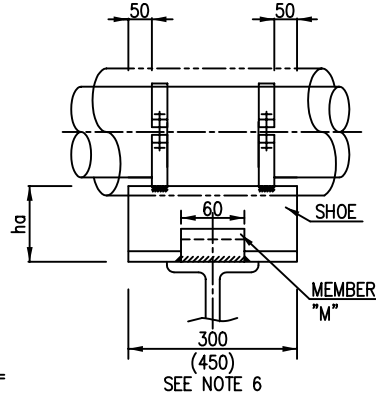
PIPING SUPPORT STANDARD DWG. ST-A4-1105/1

GUIDE **GS-2**
(FOR ALLOY -SS AND HEAT TREATAD PIPE)

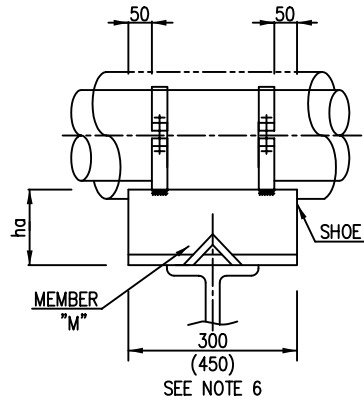
REV.
2



3" & SMALLER



4" TO 8"



H	INS. TH'K	CODE
100	UP TO 75	b
150	76 TO 125	c
200	126 TO 175	d
250	176 & OVER	e

SHOE ; A36 OR EQ.

NOTE

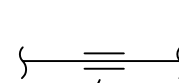
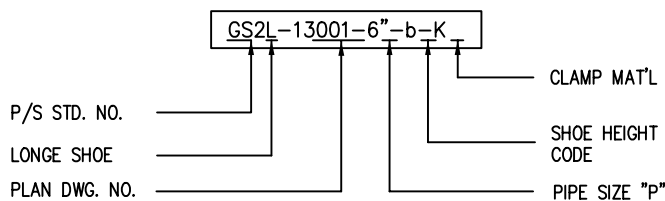
- MATERIAL
-CLAMP , BOLT/NUT.
- SHOE HEIGHT "H"
- SEE DWG. NO. ST-A4-1105 FOR THE DETAIL OF SHOES.
- SEE DWG. NO ST-A4-1014 FOR DETAIL OF CLAMP
- SEE DWG. NO.ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.
- WHEN PIPE LONGITUDINAL EXPANSION EXCEEDS 100mm, A LONGER SHOE WILL BE USED AND DESIGNATED BY ADDING AN "L" TO THE END OF SYMBOL.
- ASBESTOS SHEET OR RUBBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

CODE	TEMP	CLAMP	BOLT 8.NUT
K	~3502	A283 GR.B OR EQ	A307 GR.B
K1	~4202	A516 GR.60 OR EQ	A193 B7/A194 2H
Y	~6402	A387 GR.11 OR EQ	A193 B7/A194 2H

UNIT (mm)

PIPE SIZE	MEMBER "M"	ALLOWABLE LOADS (Kg)					
		H=100		H=150			
		ha*	Wmax	Pmax	ha*	Wmax	Pmax
2"~2-1/2"	A5	94	325	100	144	300	90
3"~5"	A5	94	500	150	144	400	120
6"~8"	A6	88	900	200	138	875	150

SYMBOL & CODING



GS1-b-K

PLAN



GS1-b-K

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



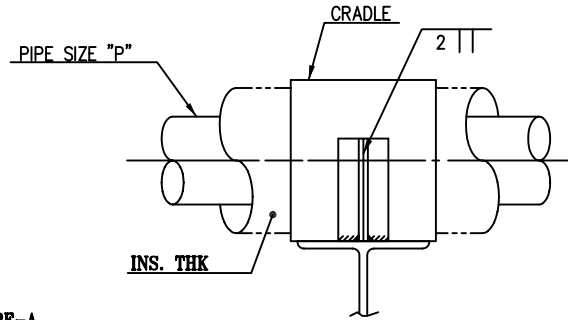
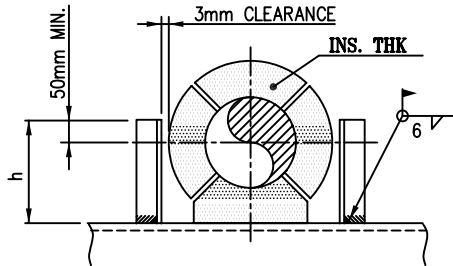
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

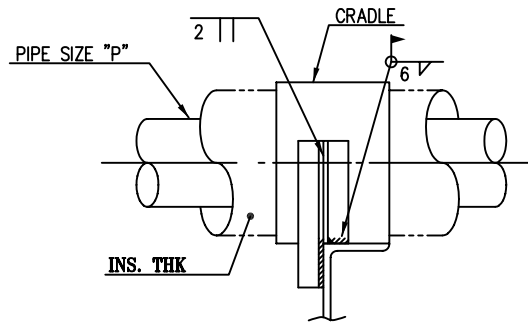
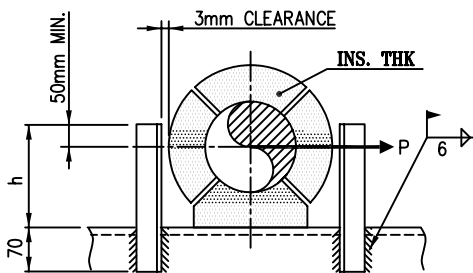
PIPING SUPPORT STANDARD DWG. ST-A4-1174

GUIDE **GS-4**
(FOR COLD INSULATED PIPE)

REV.
2



TYPE-A



TYPE-B

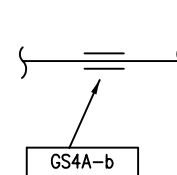
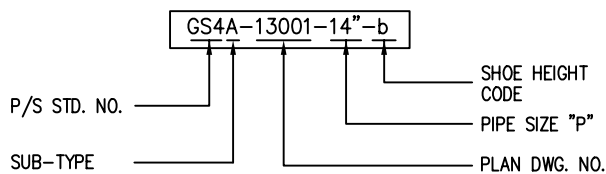
UNIT (mm)

INS. THK.	25~50	51~100	101~150	151~200	201~250	251~300	ALLOW. LOAD P (Kg)
CRADLE THK.	H=50	H=100	H=150	H=200	H=250	H=300	
SHOE HEIGHT CODE	a	b	c	d	e	f	
PIPE SIZE NPS "P"	MEMBER	h					
1/2"	2A5	110	160	210	—	—	430
3/4"	2A5	115	165	215	—	—	430
1"	2A5	120	170	220	—	—	420
1-1/2"	2A5	125	175	225	275	—	310
2"	2A5	130	180	230	280	—	310
2-1/2"	2A5	140	190	240	290	—	310
3"	2A5	145	195	245	295	—	290
4"	2A5	160	210	260	310	—	270
5"	2A7	170	220	270	320	—	580
6"	2A7	185	235	285	335	—	550
8"	2A7	210	260	310	360	410	430
10"	2A7	235	285	335	385	435	410
12"	2A7	260	310	360	410	460	390
14"	2A9	280	330	380	430	480	660
16"	2A9	305	355	405	455	505	630
18"	2A9	330	380	430	480	530	590
20"	2A9	355	405	455	505	555	605
22"	2A9	380	430	480	530	580	630
24"	2A9	405	455	505	555	605	655

NOTE

- MATERIAL
- SHAPE STEEL : A36 OR EQ.
- SEE DWG. NO. ST-A4-1104
FOR THE DETAIL OF CRADLE.
- SEE DWG. NO. ST-A4-0001
FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



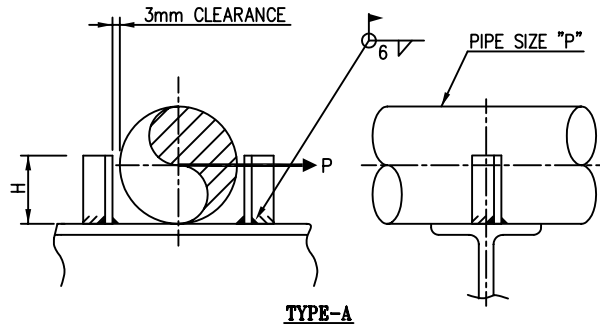
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1176

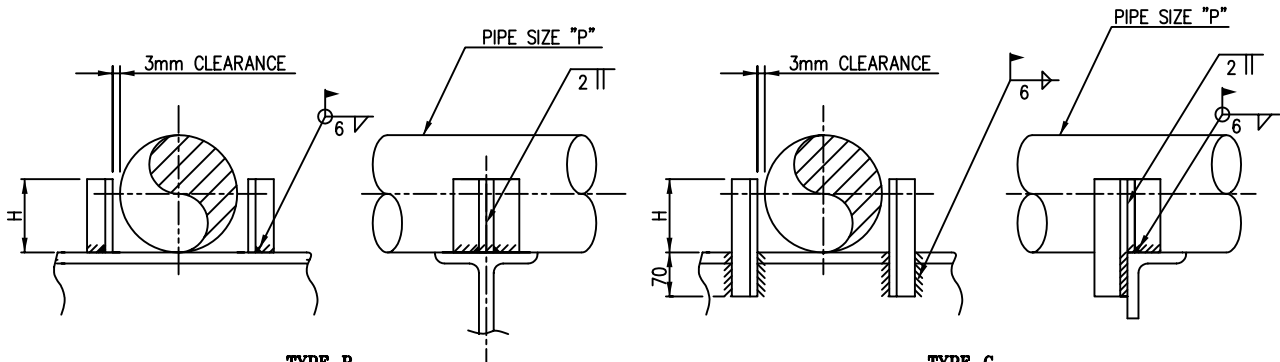
GUIDE **GS-6**
(FOR BARE PIPE)

REV.
2



TYPE-A

4" & SMALLER



TYPE-B

5" & LARGER

TYPE-C

UNIT (mm)							
PIPE SIZE NPS "P"	MEMBER	H	ALLOW. LOAD P (Kg)	PIPE SIZE NPS "P"	MEMBER	H	ALLOW. LOAD P (Kg)
1/2"	A3	50	310	6"	2 * A5	130	800
3/4"	A3	50	310	8"	2 * A5	130	650
1"	A3	50	310	10"	2 * A7	260	1150
1-1/2"	A3	50	310	12"	2 * A7	260	950
2"	A5	50	1050	14"	2 * A7	260	900
2-1/2"	A5	75	1050	16"	2 * A7	260	750
3"	A5	75	1050	18"	2 * A7	260	700
4"	A5	75	1000	20"	2 * A10	350	1100
5"	2A5	130	1000	24"	2 * A10	350	900

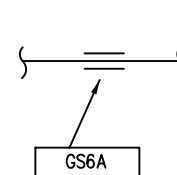
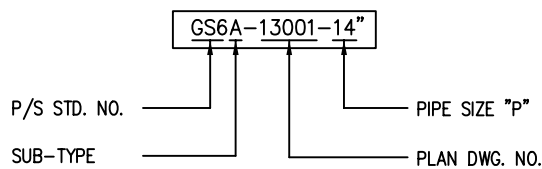
NOTE

1. MATERIAL

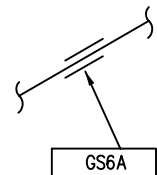
- SHAPE STEEL : A36 OR EQ.

2. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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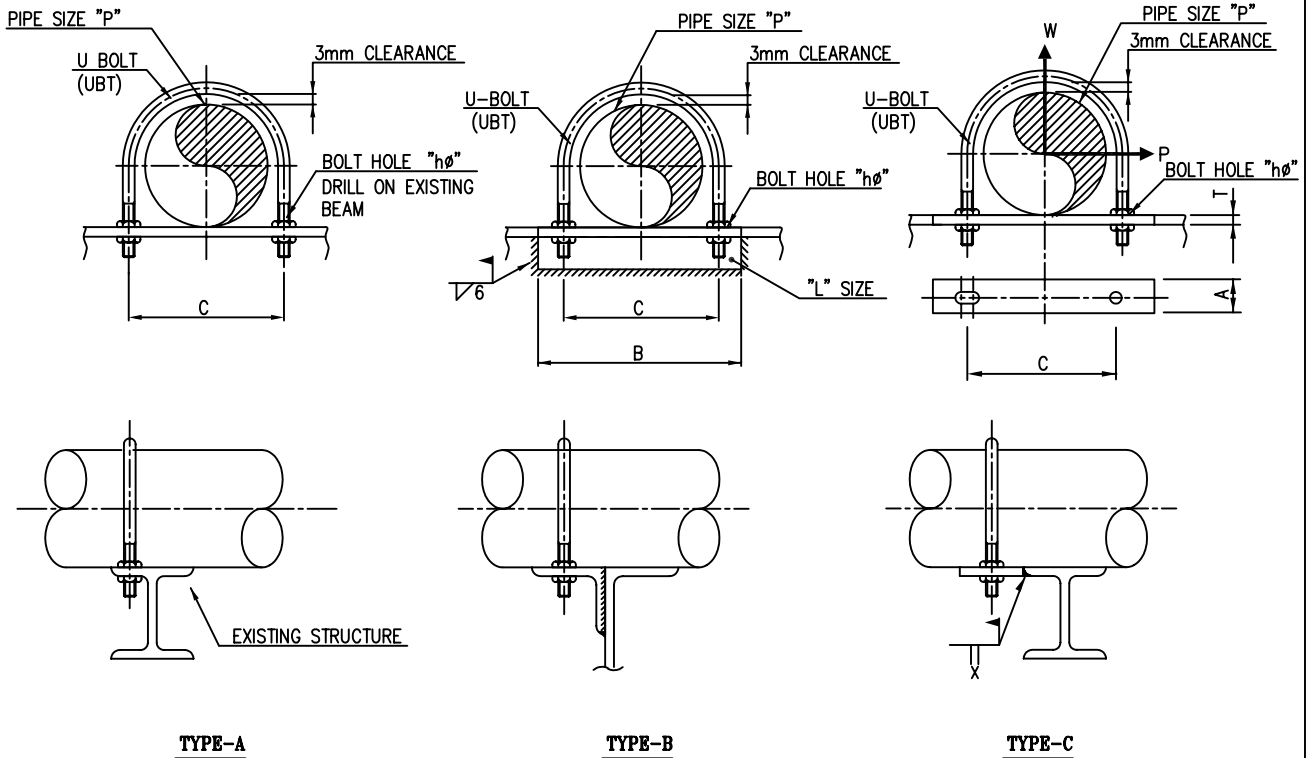
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1178

GUIDE **GS-8**
(FOR 4" & SMALLER BARE PIPE;
U-BOLT TYPE)

REV.
2



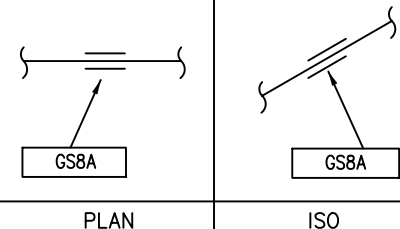
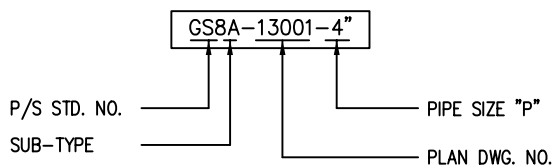
NOTE

- MATERIAL
- SHAPE STEEL : A36 OR EQ.
- SEE DWG. NO. ST-A4-1001 FOR THE DETAIL OF U-BOLT.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

UNIT (mm)

PIPE SIZE NPS "P"	B	C	hø	"L" SIZE	A x T x L	X	ALLOW. LOAD (Kg)	
							Wmax	Pmax
1/2"	90	36	11	A5	FB - 50x6x90	2	240	140
3/4"	90	40	11	A5	50x6x90	2	240	140
1"	90	45	11	A5	50x6x90	2	240	140
1-1/2"	120	60	11	A5	50x6x120	2	550	330
2"	120	75	11	A5	50x6x120	2	550	330
2-1/2"	150	90	14	A5	50x6x150	2	1030	580
3"	180	105	14	A5	50x6x180	2	1030	580
4"	200	135	18	A5	65x9x200	3	1640	900
5"	230	160	18	A5	65x9x230	3	1800	900
6"	260	190	18	A5	65x9x260	3	1950	900
8"	290	245	21	A6	65x9x290	3	2300	1150

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



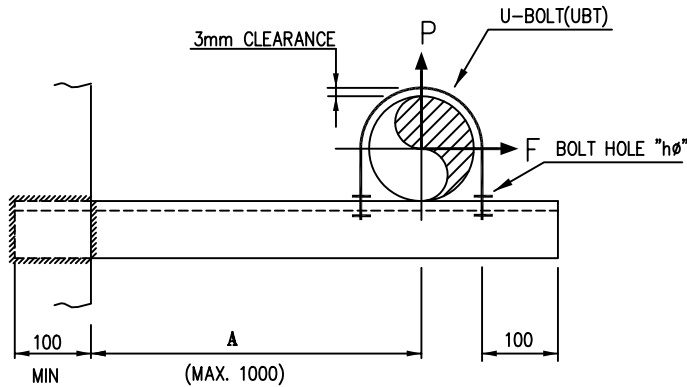
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1181

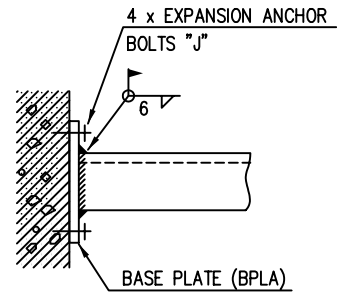
GUIDE **GS-21**
(FOR BARE RISER PIPE; U-BOLT TYPE)

REV.
2

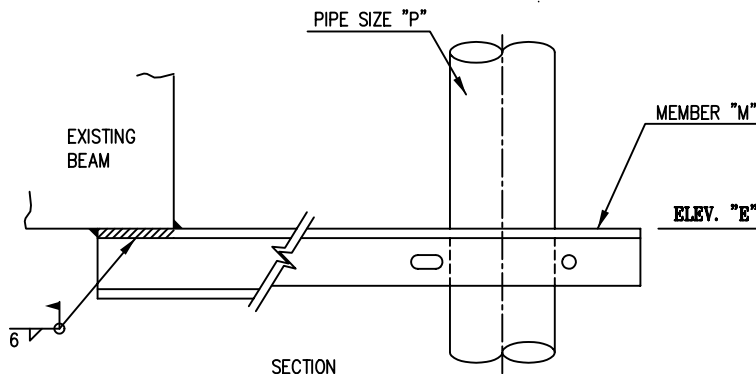


PLAN

TYPE-A



TYPE-B



SECTION

UNIT (mm)

NOTE

- MATERIAL
- SHAPE STEEL : A36 OR EQ.
- SEE DWG. NO. ST-A4-1001/1178 FOR THE DETAIL OF U-BOLT.
- SEE DWG. NO. ST-A4-1031 FOR THE DETAIL OF EXPANSION ANCHOR BOLT(BPLA).
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

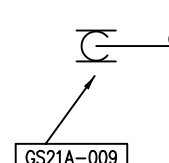
PIPE SIZE NPS "P"	hø	A ≤ 500				500 < A ≤ 1000			
		MEMBER "M"	ALLOW. LOAD (Kg)		MEMBER "M"	ALLOW. LOAD (Kg)			
			Pmax	Fmax		Pmax	Fmax		
3/4"	11	A5	80	140	A7	60	140		
1"	11	A5	80	140	A7	60	140		
1-1/2"	11	A5	80	330	A7	60	330		
2"	11	A6	150	330	A10	140	330		
3"	14	A7	280	580	C12	340	580		
4"	18	A10	560	900	C12	340	900		

SYMBOL & CODING

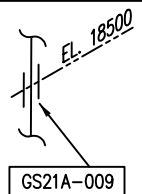
GS21A-009-13001-3"-A580-E18500

P/S STD. NO. →
SUB-TYPE →
SUPP'T SERIAL NO. →
PLAN DWG. NO. →

ELEV. "E" →
DIM "A" →
PIPE SIZE "P" →



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



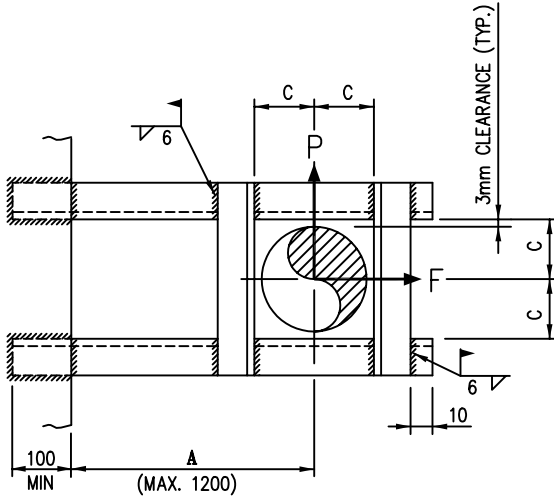
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

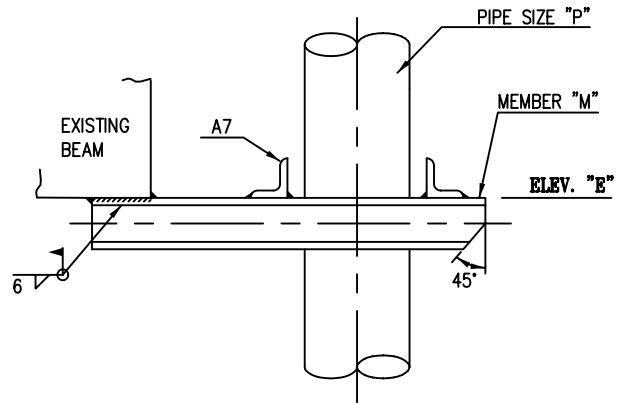
PIPING SUPPORT STANDARD DWG. ST-A4-1182

GUIDE **GS-22**
(FOR BARE RISER PIPE)

REV.
2



PLAN



SECTION

6" TO 40'



UNIT (mm)

PIPE SIZE NPS "P"	C	A < 500		500 < A ≤ 1000		1000 < A ≤ 1200	
		MEMBER SIZE "M"	* ALLOW. LOAD (Kg) Fmax Pmax	MEMBER SIZE "M"	* ALLOW. LOAD (Kg) Fmax Pmax	MEMBER SIZE "M"	* ALLOW. LOAD (Kg) Fmax Pmax
6"	87	C10	2200 900	C12	2300 540	C12	1900 300
8"~12"	113~165	C12	3300 1800	C15	3800 1000	C15	3200 600
14"~24"	181~308	C15	4500 2300	C15	4000 1400	C20	3600 900
26"~40"	333~511	C20	4800 2800	C20	4500 2000	C30	4000 1200



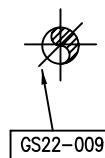
NOTE

- MATERIAL
- SHAPE STEEL : A36 OR EQ.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

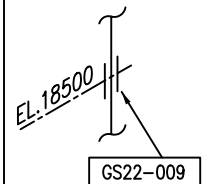
SYMBOL & CODING

GS22-009-13001-8"-A1250-E18500

P/S STD. NO. _____ ELEV. "E"
SUPP'T SERIAL NO. _____ DIM "A"
PLAN DWG. NO. _____ PIPE SIZE "P"



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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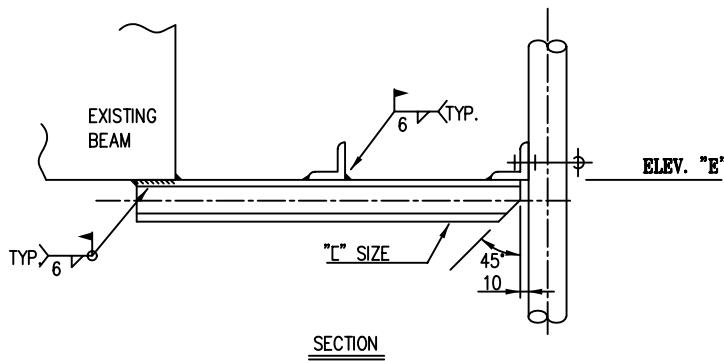
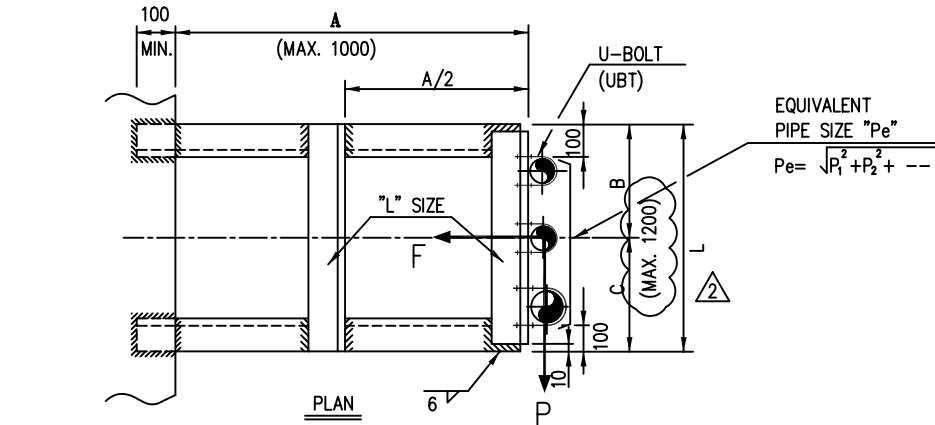


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1183

GUIDE **GS-24**
(FOR BARE RISER MULTI-PIPE)

REV.
2



Pe=12" & SMALLER

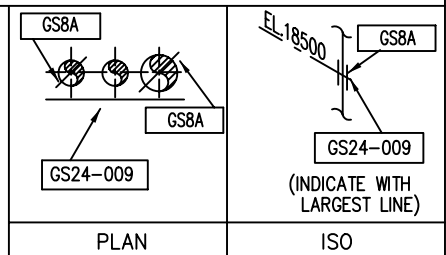
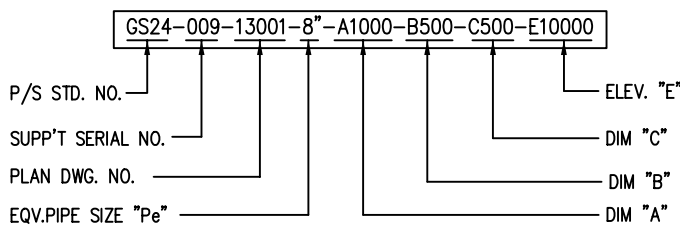
UNIT (mm)

EQUIV. PIPE SIZE "Pe"	"L" SIZE	"L" SIZE	A ≤ 500		500 < A ≤ 1000	
			Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)
3/4"~6"	C10	A5	170	270	110	260
12"~18"	C15	A6	390	490	270	480

NOTE

- MATERIAL
 - SHAPE STEEL : A36 OR EQ.
 - BOLT/NUT : A307 GR.B-GALV. OR EQ.
- SEE DWG. NO. ST-A4-1001/1178 FOR THE DETAIL OF U-BOLT.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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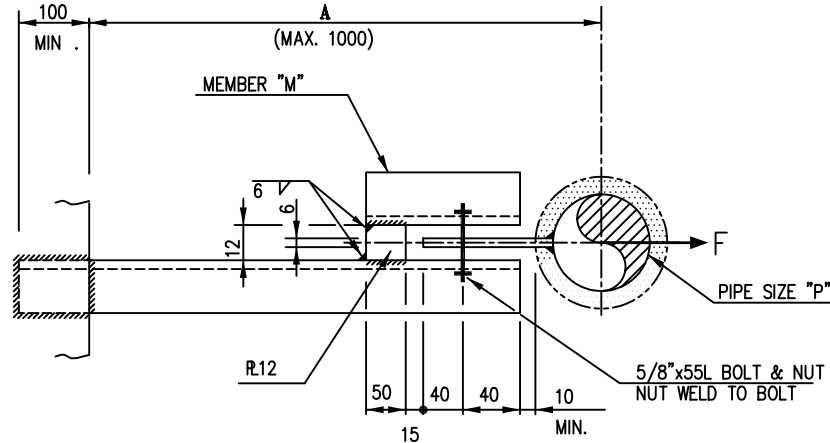
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1184

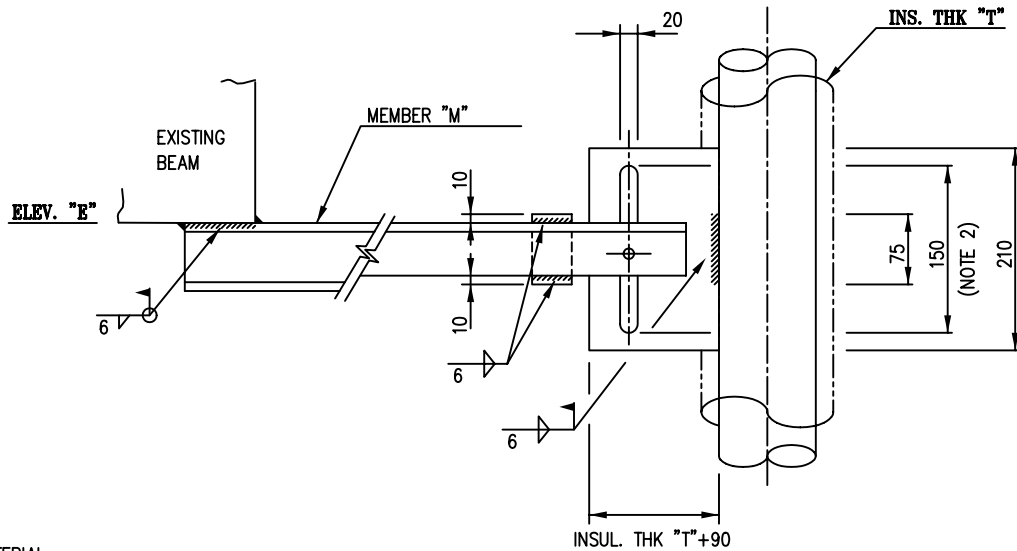
GUIDE **GS-31**
(FOR HOT INSULATED RISER PIPE)

REV.
2

PLAN



SECTION



NOTE

1. MATERIAL

- LUG PLATE : SAME AS RUN PIPE OR MAT'L TABLE.

4" & SMALLER

UNIT (mm)

CODE	RUN PIPE	LUG PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A875 (S31803) OR EQ.

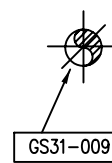
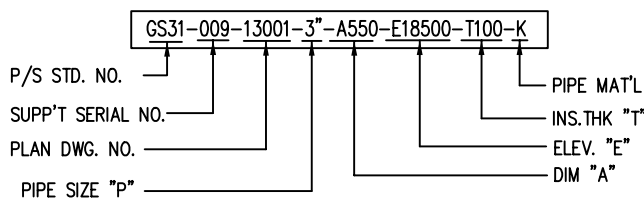
- SHAPE STEEL : A36 OR EQ.
- BOLT/NUT : A307 GR.B OR EQ.

2. MAX. ALLOWED MOVEMENT : ±75MM

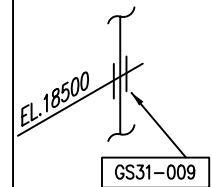
3. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

PIPE SIZE NPS "P"	A ≤ 500		500 < A ≤ 1000	
	MEMBER "M"	ALLOW.LOAD F(Kg)	MEMBER "M"	ALLOW.LOAD F(Kg)
3/4"	A5	550	A5	450
1"	A5	550	A6	850
1-1/2"	A6	850	A7	1450
2"	A6	850	A7	1450
3"	A6	850	A7	1450
4"	A10	2400	C10	1000
6"	C12	2400	C10	1000

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2

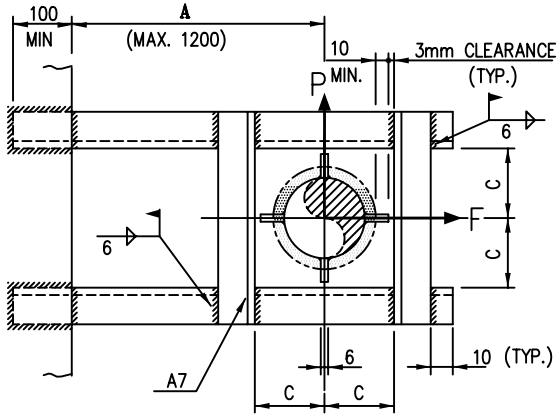


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1185

GUIDE **GS-32**
(FOR HOT INSULATED RISER PIPE)

REV.
2



PLAN

NOTE

1. MATERIAL

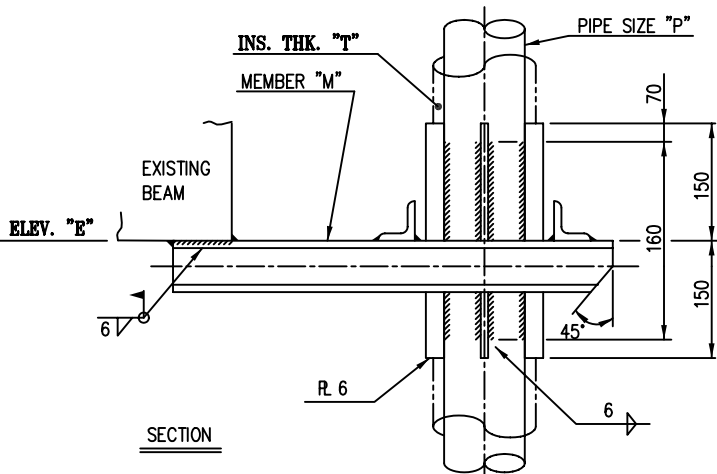
- LUG PLATE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	LUG PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803) OR EQ.

- SHAPE STEEL : A36 OR EQ.

2. MAX. ALLOWED MOVEMENT : ±130MM

3. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.



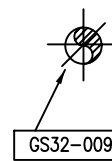
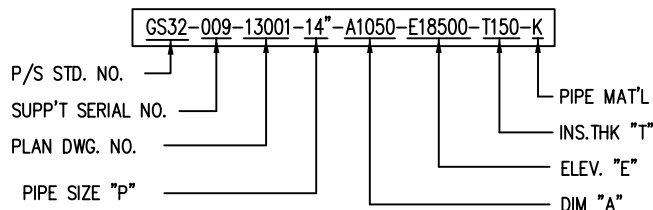
SECTION

6" TO 40'

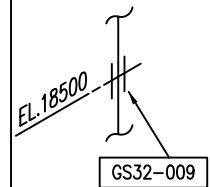
UNIT (mm)

PIPE SIZE NPS "P"	C	A < 500		500 < A ≤ 1000		1000 < A ≤ 1200				
		MEMBER SIZE "M"	* ALLOW. LOAD (Kg)		MEMBER SIZE "M"	* ALLOW. LOAD (Kg)		MEMBER SIZE "M"	* ALLOW. LOAD (Kg)	
			Fmax	Pmax		Fmax	Pmax		Fmax	Pmax
6"	87	C10	2200	900	C12	2300	540	C12	1900	300
8"~12"	113~165	C12	3300	1800	C15	3800	1000	C15	3200	600
14"~24"	181~308	C15	4500	2300	C15	4000	1400	C20	3600	900
26"~40"	333~511	C20	4800	2800	C20	4500	2000	C30	4000	1200

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2

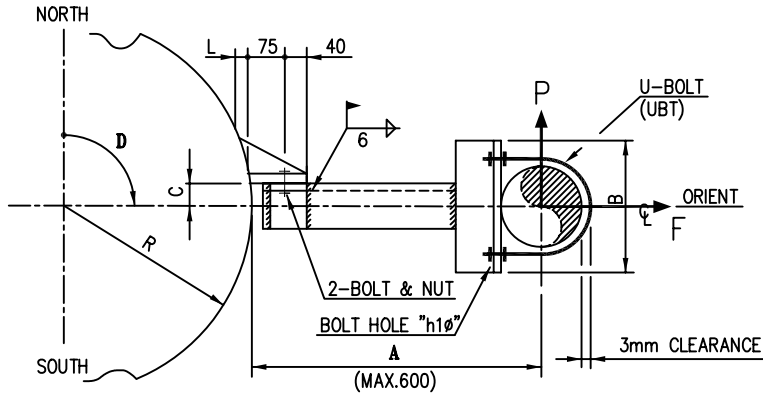


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

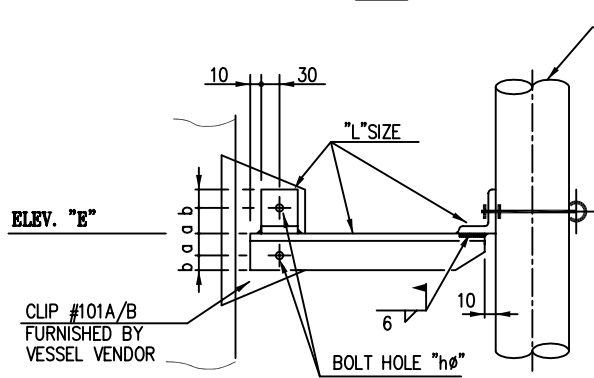
PIPING SUPPORT STANDARD DWG. ST-A4-1191

GUIDE **GV-21**
(FOR BARE RISER PIPE; VESSEL CLIP)

REV.
2



PLAN



SECTION

UNIT (mm)

PIPE SIZE NPS "P"	B	C		h1ø
		TYPE-A	TYPE-B	
1/2"	90	25	38	11
3/4"	90			
1"	90			
1-1/2"	120			
2"	120			
2-1/2"	150			14
3"	180			14
4"	200			18

UNIT (mm)

CLIP TYPE	CLIP MARK	a	b	hø	BOLT SIZE	"L" SIZE	A ≤ 400		400 < A ≤ 600	
							Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)
A	101A	30	20	18	5/8" x 40	A5	75	250	50	170
B	101B	40	35	21	3/4" x 45	A7	270	900	180	600

NOTE

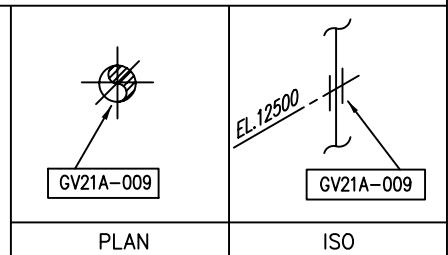
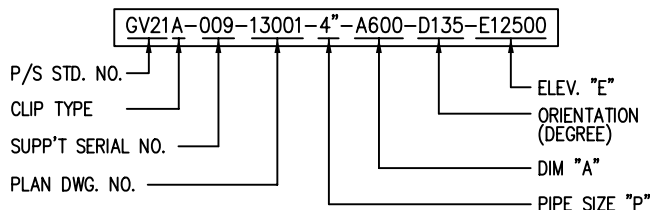
1. MATERIAL

- SHAPE STEEL : A36 OR EQ.
- BOLT/NUT : A307 GR.B-GALV. OR EQ.

2. DIM "L" = $R - \sqrt{R^2 - C^2}$

3. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

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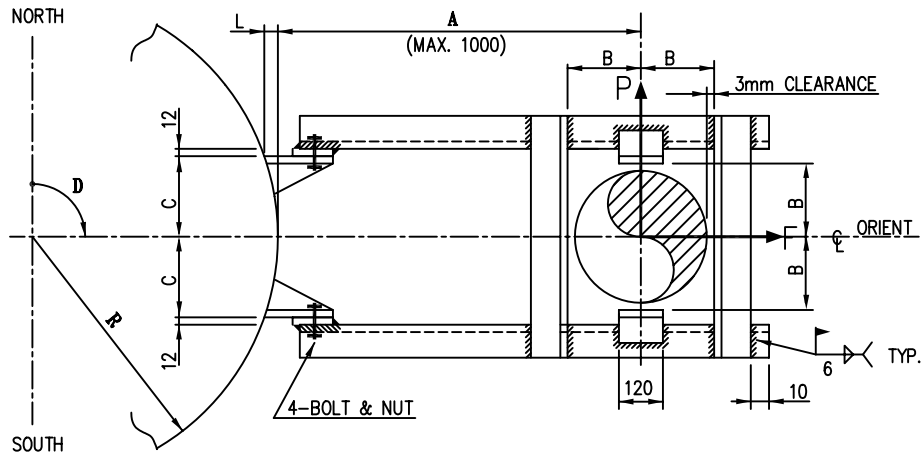
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

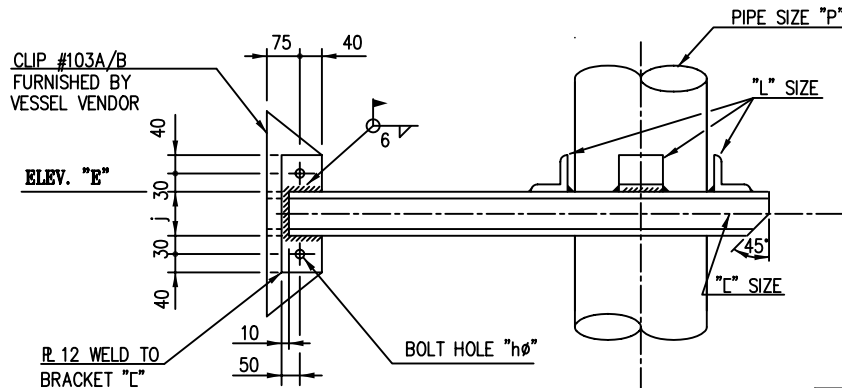
PIPING SUPPORT STANDARD DWG. ST-A4-1192

GUIDE **GV-22**
(FOR BARE RISER PIPE; VESSEL CLIP)

REV.
2



PLAN



SECTION

5" TO 12"

UNIT (mm)

PIPE SIZE NPS "P"	B	C
6"	88	100
8"	113	120
10"	140	150
12"	165	170

NOTE

1. MATERIAL

- SHAPE STEEL : A36 OR EQ.
- BOLT/NUT : A307 GR.B-GALV. OR EQ.

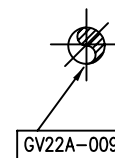
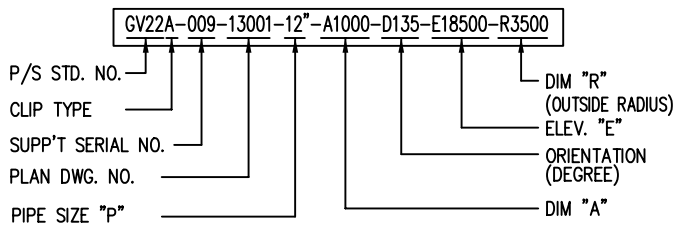
2. DIM. "L" = $R - \sqrt{R^2 - C^2}$

3. SEE DWG NO. ST-A4-0001
FOR THE SIZE OF SHAPE STEEL.

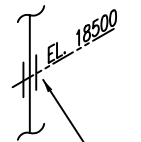
UNIT (mm)

CLIP TYPE	CLIP MARK	j	hφ	BOLT SIZE	"L" SIZE	"L" SIZE	A ≤ 500				500 < A ≤ 1000	
							Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)		
A	103A	100	21	3/4" x 50	C10	A5	170	270	110	260		
B	103B	150	21	3/4" x 50	C15	A6	390	490	270	480		

SYMBOL & CODING



PLAN



ISO



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OWNER NO.
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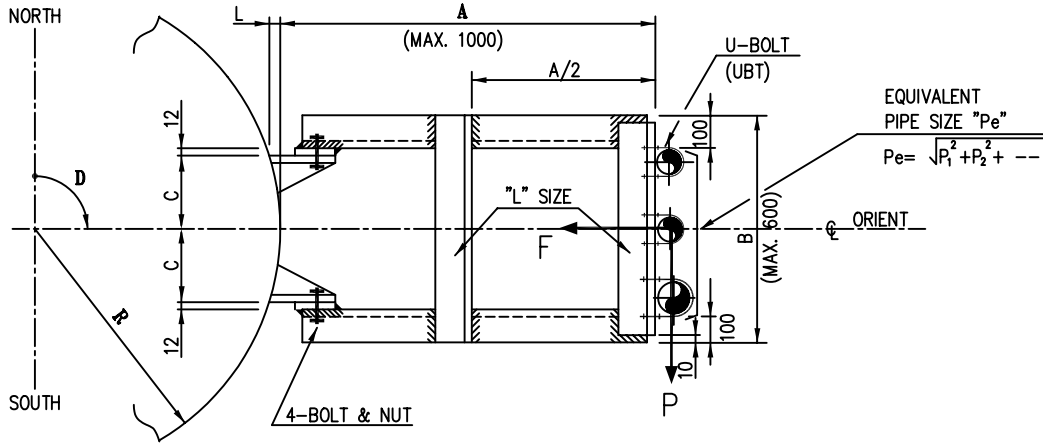


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

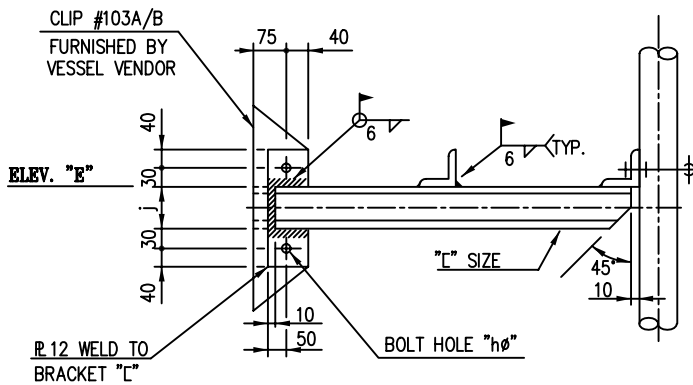
PIPING SUPPORT STANDARD DWG. ST-A4-1193

GUIDE **GV-24**
(FOR BARE RISER MULTI-PIPE; VESSEL CLIP)

REV.
2



PLAN



SECTION

Pe=12" & SMALLER

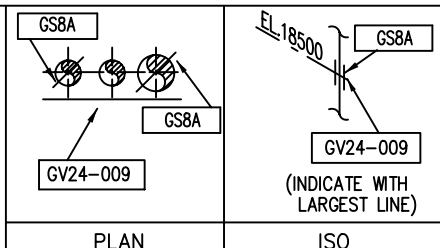
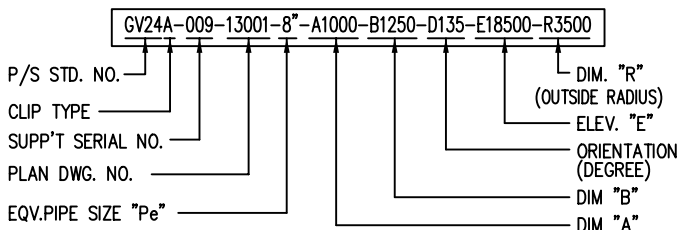
UNIT (mm)

CLIP TYPE	CLIP MARK	j	h ϕ	BOLT SIZE	"L" SIZE	"L" SIZE	A \leq 500		500 < A \leq 1000	
							Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)
A	103A	100	21	3/4" x 50	C10	A5	170	270	110	260
B	103B	150	21	3/4" x 50	C15	A6	390	490	270	480

NOTE

- MATERIAL
 - SHAPE STEEL : A36 OR EQ.
 - BOLT/NUT : A307 GR.B-GALV. OR EQ.
- DIM. "L" = $R - \sqrt{R^2 - C^2}$
- DIM. "C" = $B/2 - (E+12)$
- SEE DWG. NO. ST-A4-1001/1178 FOR THE DETAIL OF U-BOLT.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING





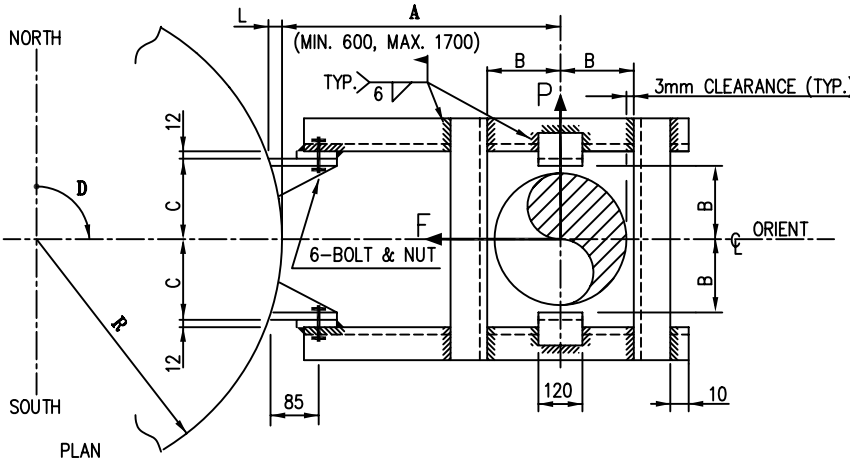
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1194

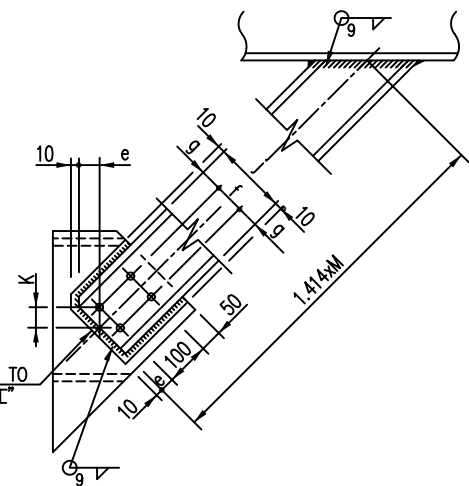
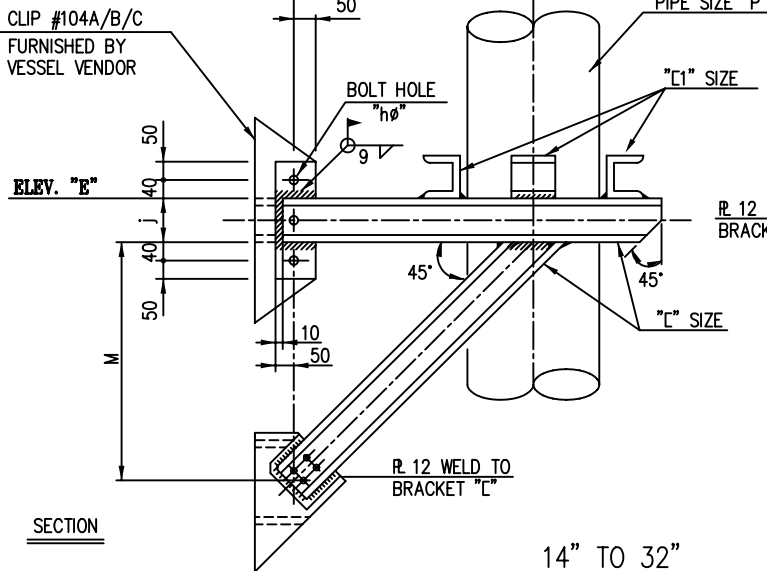
GUIDE **GV-25**
(FOR BARE RISER PIPE; VESSEL CLIP)

REV.
2



NOTE

1. MATERIAL
 - SHAPE STEEL : A36 OR EQ.
 - BOLT/NUT : A307 GR.B-GALV. OR EQ.
2. DIM "M"=(A+L)-85
3. DIM "L"= $R - \sqrt{R^2 - C^2}$
4. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.



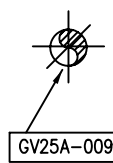
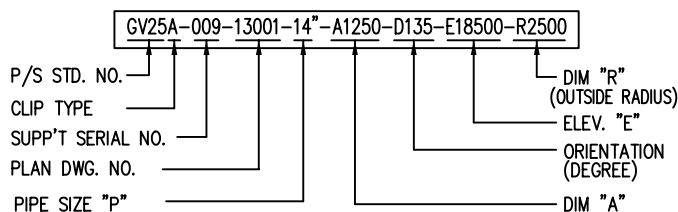
PIPE SIZE NPS "P"	B	C
14"	181	190
16"	207	220
18"	232	240
20"	257	270
22"	283	290
24"	308	320
26"	333	350
28"	359	380
30"	384	400
32"	410	430

14" TO 32"

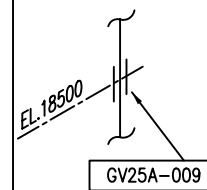
UNIT (mm)

CLIP TYPE	CLIP MARK	j	e	f	g	hø	k	BOLT SIZE	"L" SIZE	"C1" SIZE	A ≤ 1200		1200 < A ≤ 1700	
											Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)
A	104A	150	30	60	45	18	42	5/8" x 60	C15	C15	650	2000	250	1580
B	104B	200	45	90	55	21	64	3/4" x 65	C20	C15	1100	2000	450	1700
C	104C	300	75	150	75	28	106	1" x 65	C30	C15	1160	2000	490	1700

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

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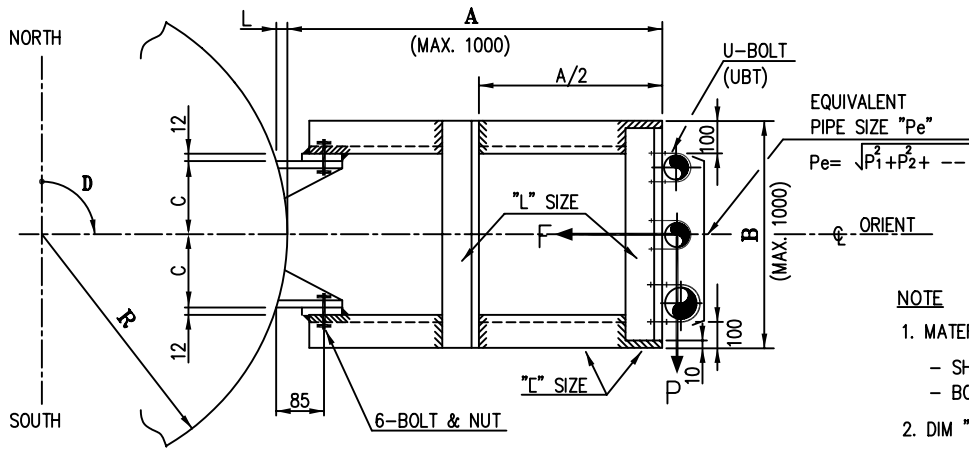
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1195

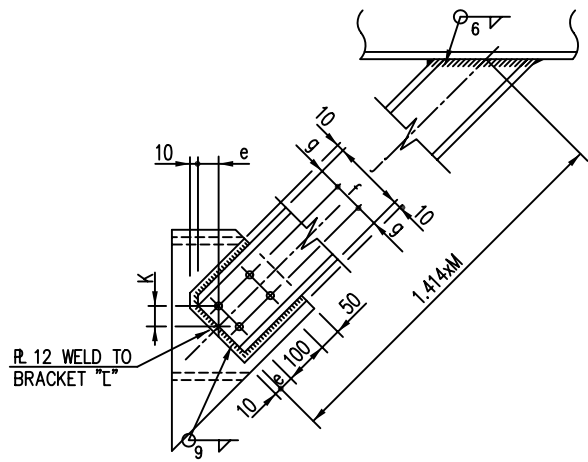
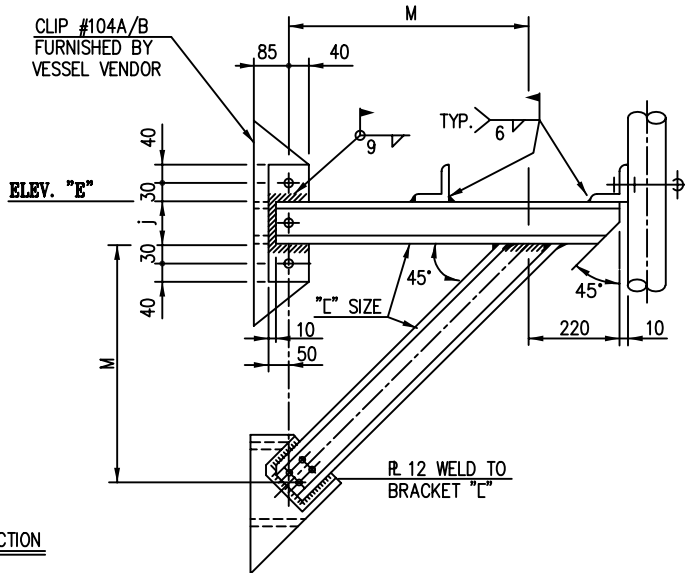
GUIDE **GV-26**
(FOR BARE RISER MULTI-PIPE;
VESSEL CLIP)

REV.
2



NOTE

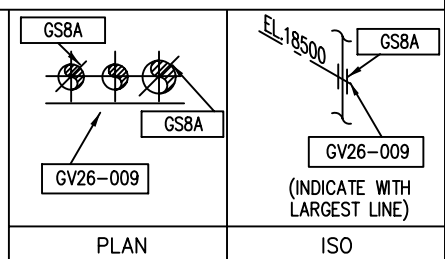
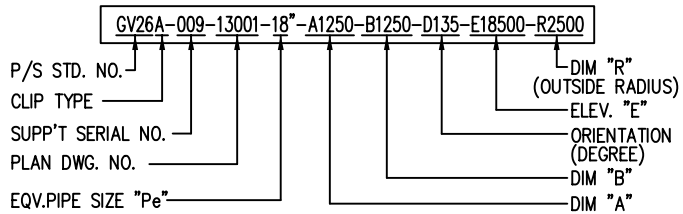
- MATERIAL
 - SHAPE STEEL : A36 OR EQ.
 - BOLT/NUT : A307 GR.B-GALV. OR EQ.
- DIM "M" = (A+L) - 85 - 230
- DIM "L" = $R - \sqrt{R^2 - C^2}$
- DIM "C" = 1/2B - (L+T2)
- SEE DWG. NO. ST-A4-1001/1178 FOR THE DETAIL OF U-BOLT.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.



Pe=14" TO 32"

CLIP TYPE	CLIP MARK	j	e	f	g	hø	k	BOLT SIZE	"L" SIZE	"L" SIZE	UNIT (mm)			
											A ≤ 1200		1200 < A ≤ 1700	
											Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)
A	104A	150	30	60	45	18	42	5/8" x 60	C15	A10	650	2000	250	1580
B	104B	200	45	90	55	21	64	3/4" x 65	C20	A10	1100	2000	450	1700
C	104C	300	75	150	75	26	106	1" x 65	C30	A10	1160	2000	490	1700

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

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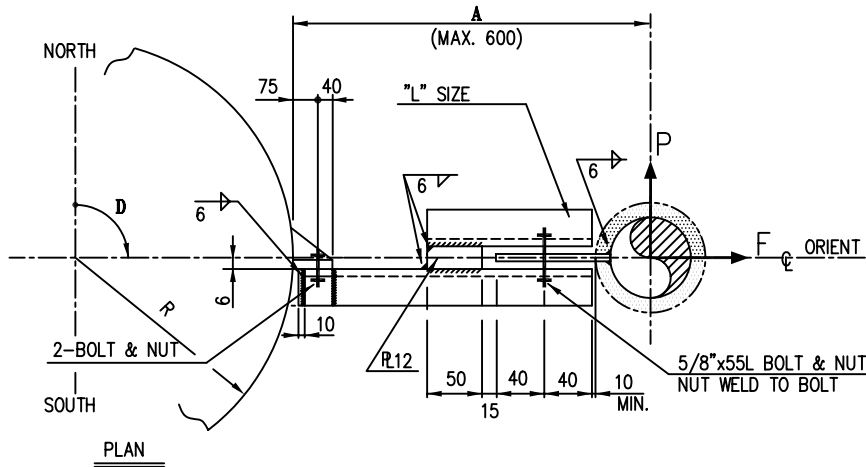
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

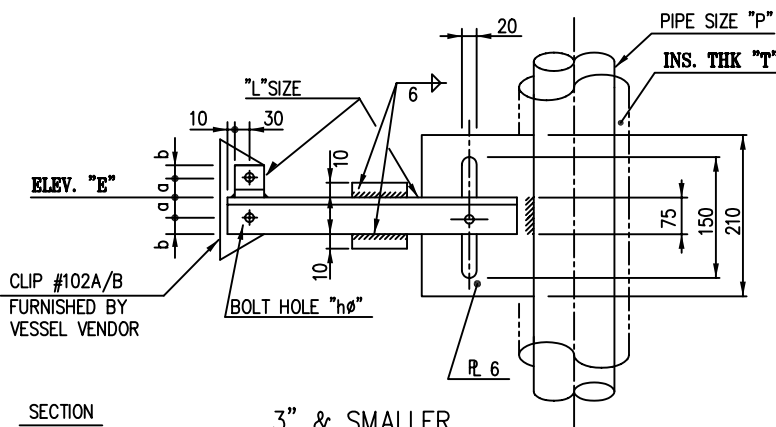
ST-A4-1196

GUIDE **GV-31**
(FOR HOT INSULATED RISER PIPE;
VESSEL CLIP)

REV.
2



PLAN



SECTION

3" & SMALLER

UNIT (mm)

NOTE

1. MATERIAL

- LUG PLATE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	LUG PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803) OR EQ.

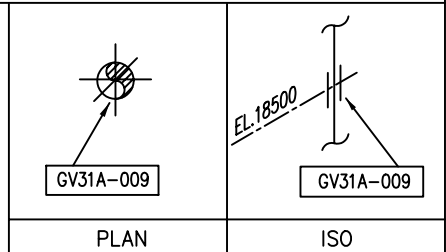
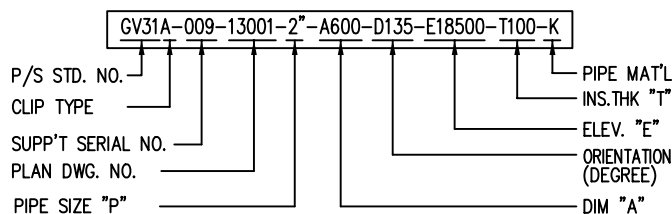
- SHAPE STEEL : A36 OR EQ.

- BOLT/NUT : A307 GR.B-GALV. OR EQ.

2. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

CLIP TYPE	CLIP MARK	a	b	hø	BOLT SIZE	"L" SIZE	A ≤ 400		400 < A ≤ 600	
							Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)
A	102A	30	20	18	5/8" x 40	A5	75	250	50	170
B	102B	40	35	21	3/4" x 45	A7	270	900	180	600

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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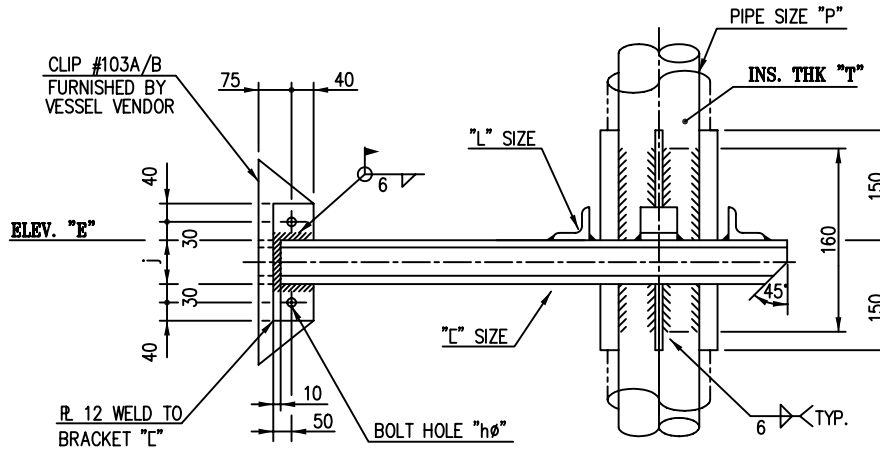
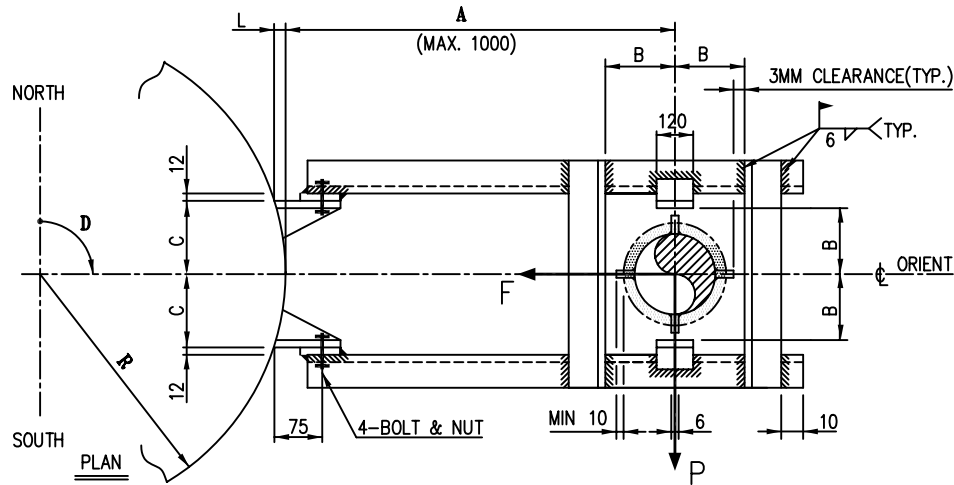
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1197

GUIDE **GV-32**
(FOR HOT INSULATED RISER PIPE;
VESSEL CLIP)

REV.
2



NOTE

SECTION

3" TO 8"

UNIT (mm)

1. MATERIAL

- LUG PLATE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	LUG PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803) OR EQ.

PIPE SIZE NPS "P"	B	C
3"	"T"+58	"T"+70
4"	"T"+70	"T"+80
6"	"T"+97	"T"+110
8"	"T"+123	"T"+140
10"	"T"+140	"T"+162
12"	"T"+175	"T"+188

- SHAPE STEEL : A36 OR EQ.
- BOLT/NUT : A307 GR.B-GALV. OR EQ.

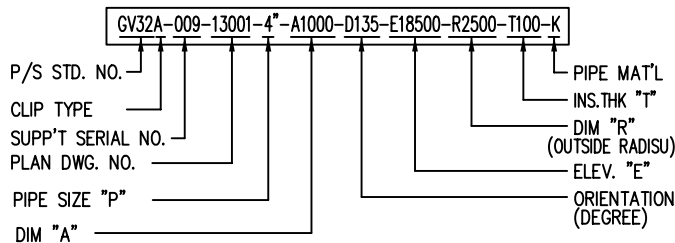
UNIT (mm)

2. DIM "L" = $R - \sqrt{R^2 - C^2}$

3. SEE DWG. NO. ST-A4-0001
FOR THE SIZE OF SHAPE STEEL.

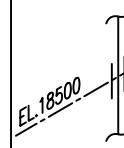
CLIP TYPE	CLIP MARK	j	h ϕ	BOLT SIZE	"L" SIZE	"L" SIZE	A \leq 400		400 < A \leq 600	
							Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)
A	103A	100	21	3/4" x 50	C10	A5	170	270	110	260
B	103B	150	21	3/4" x 50	C15	A6	390	490	270	480

SYMBOL & CODING



GV32A-009

PLAN



GV32A-009

ISO

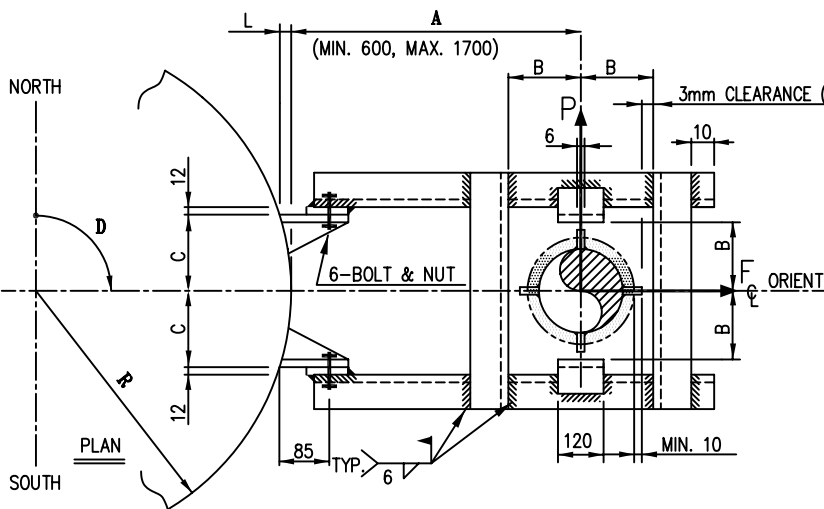


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1198

GUIDE **GV-33**
(FOR HOT INSULATED RISER PIPE:
VESSEL CLIP)

REV.
2



NOTE

1. MATERIAL

- LUG PLATE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	LUG PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803) OR EQ.

- SHAPE STEEL : A36 OR EQ.

- BOLT/NUT : A307 GR.B-GALV. OR EQ.

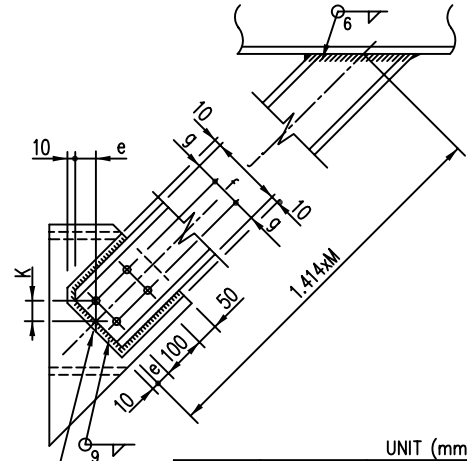
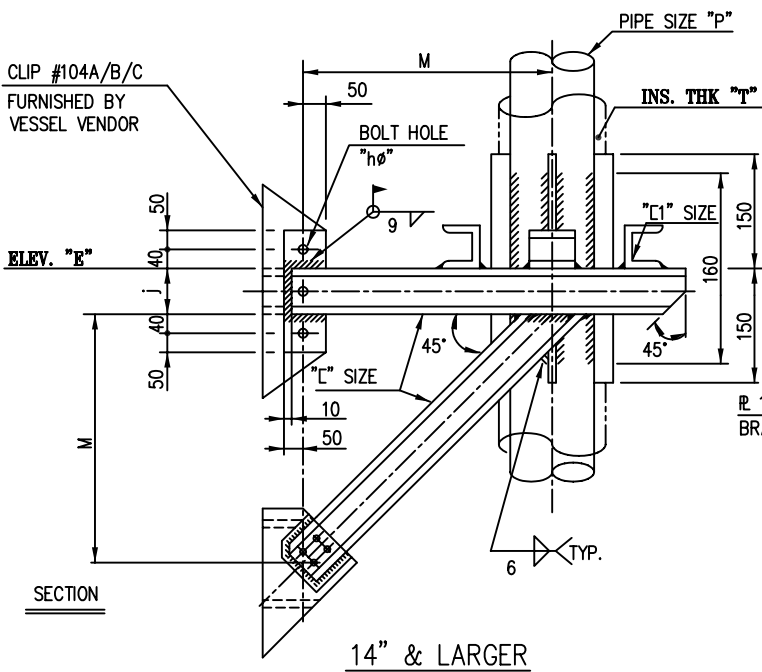
2.

DIM "M" = (A+L) - 85

3. DIM "L" = $R - \sqrt{R^2 - C^2}$

4. SEE DWG. NO. ST-A4-0001

FOR THE SIZE OF SHAPE STEEL.



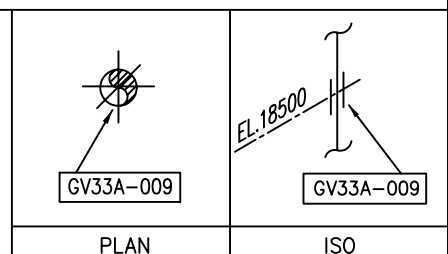
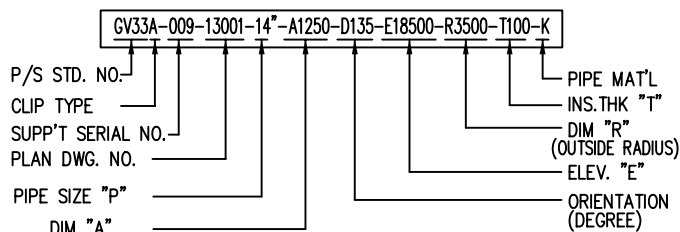
UNIT (mm)

PIPE SIZE NPS "P"	B	C
14"	"T"+191	"T"+200
16"	"T"+217	"T"+230
18"	"T"+242	"T"+250
20"	"T"+267	"T"+280
22"	"T"+293	"T"+300
24"	"T"+318	"T"+330
26"	"T"+343	"T"+360
28"	"T"+369	"T"+390
30"	"T"+394	"T"+410
32"	"T"+420	"T"+440

UNIT (mm)

CLIP TYPE	CLIP MARK	j	e	f	g	hø	k	BOLT SIZE	"L" SIZE	"C1" SIZE	A ≤ 1200		1200 < A ≤ 1700	
											Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)
A	104A	150	30	60	45	18	42	5/8" x 60	C15	C15	650	2000	250	1580
B	104B	200	45	90	55	21	64	3/4" x 65	C20	C15	1100	2000	450	1700
C	104C	300	75	150	75	28	106	1" x 65	C30	C15	1160	2000	490	1700

SYMBOL & CODING





SHAHID TONGGOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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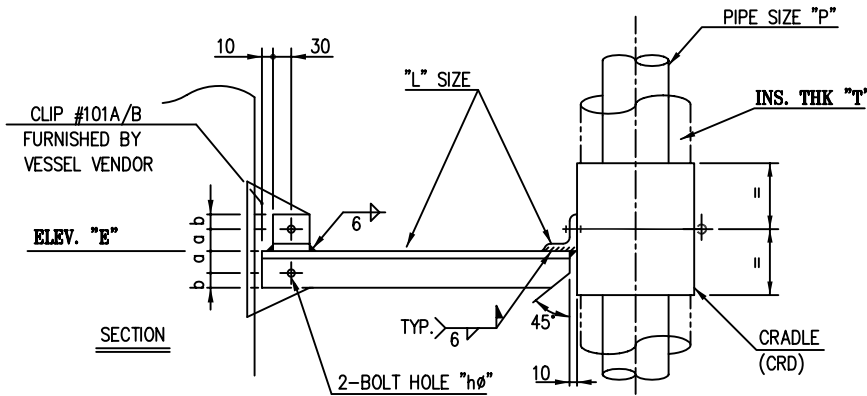
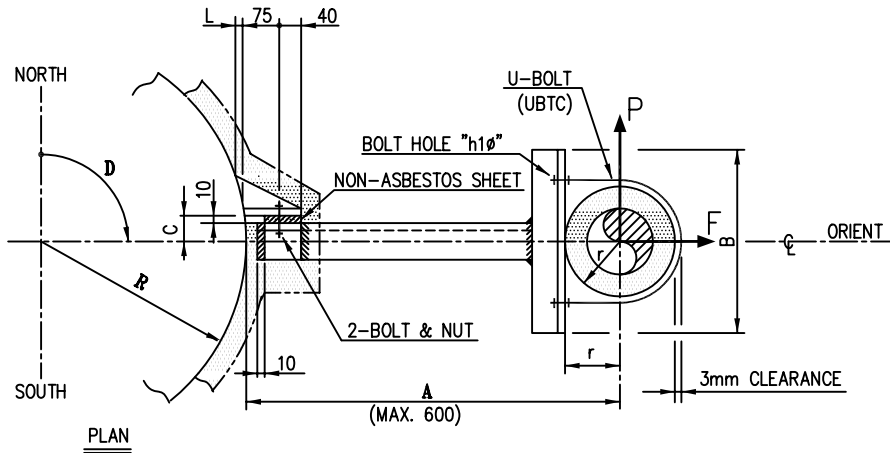
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1201

GUIDE **GV-41**
(FOR COLD INSULATED RISER PIPE;
VESSEL CLIP)

REV.
2



r=75 & SMALLER

UNIT (mm)

PIPE SIZE NPS "P"	CRADLE THK "H"	r	B	C		h1ø	d
				TYPE-A	TYPE-B		
1/2"	50	61	190	35	48	14	148
3/4"	50	64	190			14	148
1"	50	67	190			14	148
1-1/2"	50	75	220			14	176

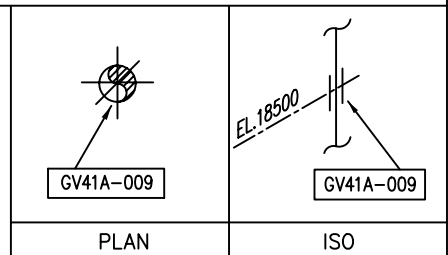
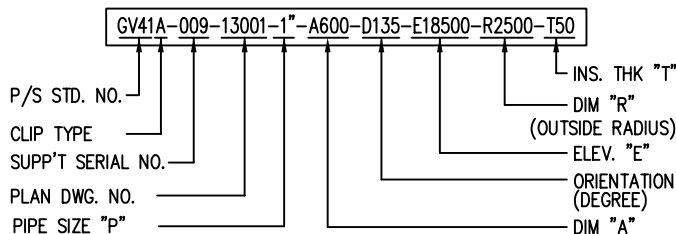
NOTE

- MATERIAL
 - SHAPE STEEL : A36 OR EQ.
 - BOLT/NUT : A307 GR.B-GALV. OR EQ.
- DIM "L" = $R - \sqrt{R^2 - C^2}$
- SEE DWG. NO. ST-A4-1002 FOR THE DETAIL OF U-BOLT.
- SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

UNIT (mm)

CLIP TYPE	CLIP MARK	a	b	hø	BOLT SIZE	"L" SIZE	UNIT (mm)			
							A ≤ 400		400 < A ≤ 600	
							Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)
A	101A	30	20	18	5/8" x 50	A5	75	250	50	170
B	101B	40	35	21	3/4" x 55	A7	270	900	180	600

SYMBOL & CODING



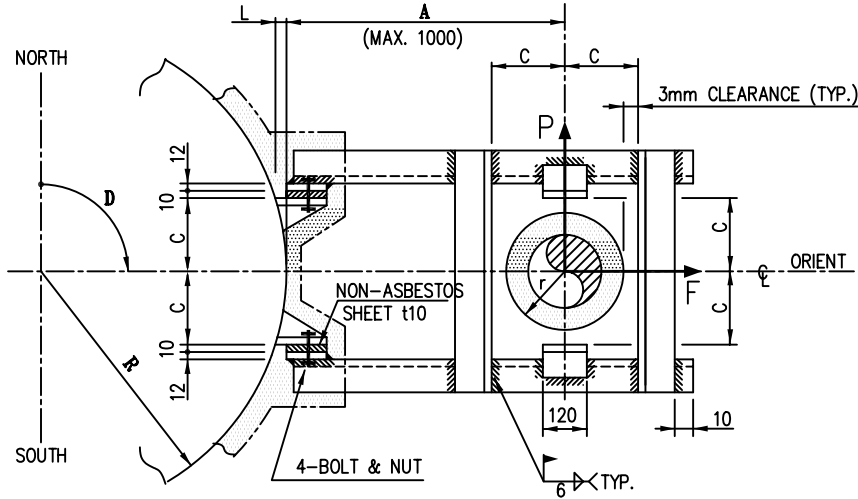


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

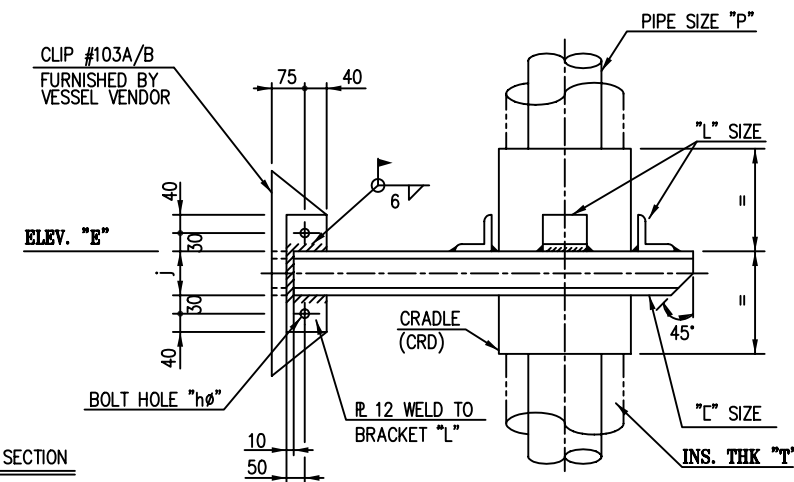
PIPING SUPPORT STANDARD DWG. ST-A4-1202

GUIDE **GV-42**
(FOR COLD INSULATED RISER PIPE;
VESSEL CLIP)

REV.
2



PLAN



SECTION

UNIT (mm)

COLD INSULATION TH'K	25-50	51-100	101-150
	CRADLE TH'K H=50	H=100	H=150
PIPE SIZE	DIM C		
1/2"	REFER TO GV-41	114	164
3/4"		117	167
1"		120	170
1-1/2"		128	178
2"	84	134	184
2-1/2"	90	140	190
3"	98	148	198
4"	111	161	REFER TO GV-43
5"	125	175	
6"	138	188	
8"	163		
10"	190		

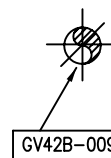
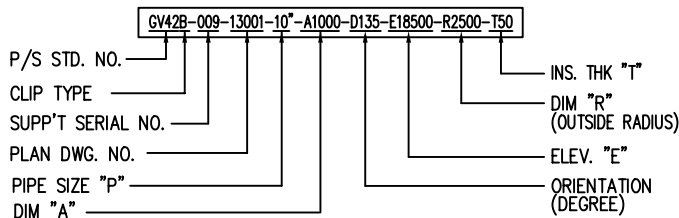
r=76 TO r=200

NOTE

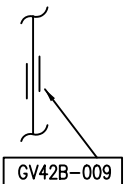
- MATERIAL
 - SHAPE STEEL : A36 OR EQ.
 - BOLT/NUT : A307 GR.B-GALV. OR EQ.
- $DIM "L" = R - \sqrt{R^2 - C^2}$
- SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

CLIP TYPE	CLIP MARK	j	hφ	BOLT SIZE	"L" SIZE	"L" SIZE	UNIT (mm)			
							A ≤ 500		500 < A ≤ 1000	
							Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)
A	103A	100	21	3/4" x 60	C10	A5	170	270	110	260
B	103B	150	21	3/4" x 60	C15	A6	390	490	270	480

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

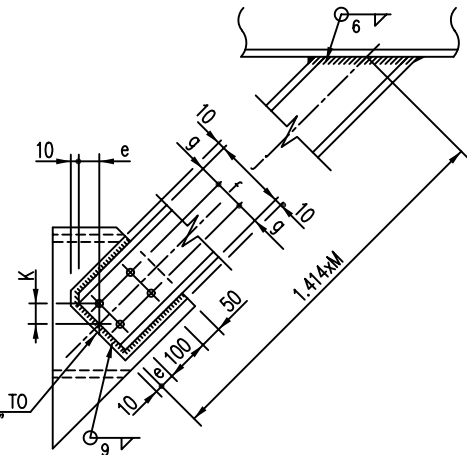
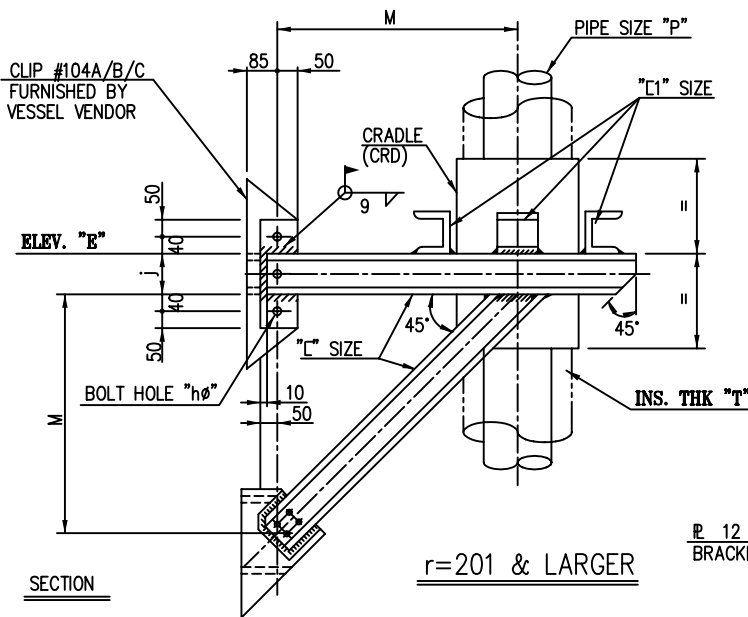
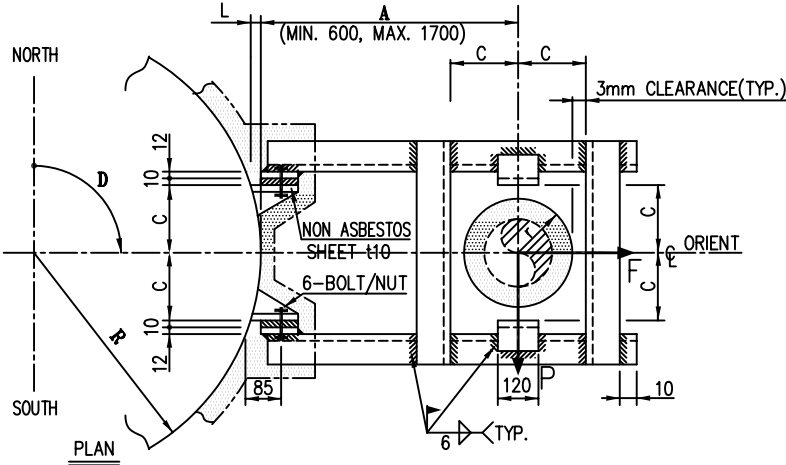
PIPING SUPPORT STANDARD DWG. ST-A4-1203

GUIDE **GV-43**
(FOR COLD INSULATED RISER PIPE;
VESSEL CLIP)

REV.
2

UNIT (mm)

COLD INSULATION TH'K	DIM. C					
	25-50	51-100	101-150	151-200	201-250	251-300
CRADLE TH'K	H=50	H=100	H=150	H=200	H=250	H=300
PIPE SIZE	REFER TO GV-42					
1-1/2"				228	-	-
2"				234	-	-
2-1/2"				240	-	-
3"				248	-	-
4"			211	261	-	-
5"			225	275	-	-
6"			238	288	-	-
8"		213	263	313	363	-
10"		240	290	340	390	-
12"	215	265	315	365	415	-
14"	231	281	331	381	431	-
16"	257	307	357	407	457	-
18"	282	332	382	432	482	-
20"	307	357	407	457	507	557
22"	333	383	433	483	533	583
24"	358	408	458	508	558	608



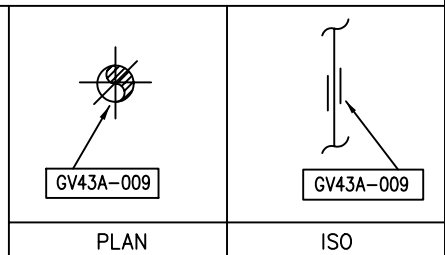
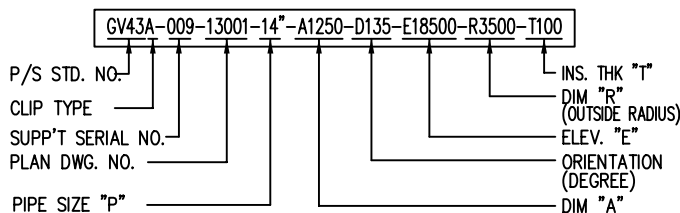
UNIT (mm)

NOTE

- DIM "M"=(A+L)-85
- DIM "L"= R-√R²-C²
- MATERIAL
 - SHAPE STEEL : A36 OR EQ.
 - BOLT/NUT : A307 GR.B-GALV. OR EQ.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

CLIP TYPE	CLIP MARK	j	e	f	g	hφ	k	BOLT SIZE	"L" SIZE	"L1" SIZE	A ≤ 1200		1200 < A ≤ 1700	
											Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)
A	104A	150	30	60	45	18	42	5/8" x 70	C15	C15	650	2000	250	1580
B	104B	200	45	90	55	21	64	3/4" x 75	C20	C15	1100	2000	450	1700
C	104C	300	75	150	75	26	106	1" x 75	C30	C15	1160	2000	490	1700

SYMBOL & CODING



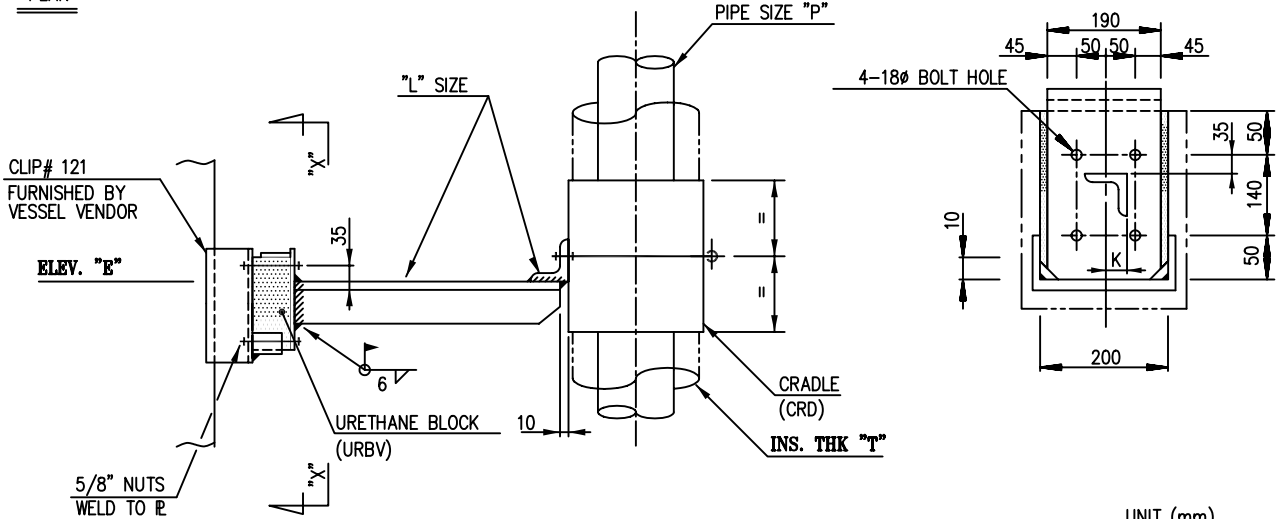
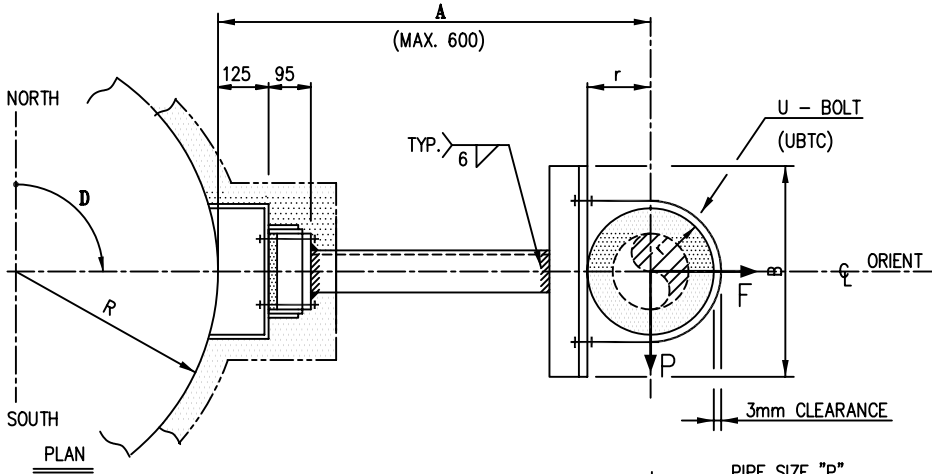


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1204

GUIDE **GV-51**
(FOR COLD INSULATED RISER PIPE;
VESSEL CLIP)

REV.
2



r=75 & SMALLER

UNIT (mm)

PIPE SIZE NPS "P"	CRADLE THK "H"	r	B	h1Ø	d
1/2"	50	61	190	14	148
3/4"	50	64	190	14	148
1"	50	67	190	14	148
1-1/2"	50	75	220	14	176

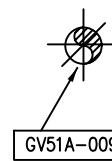
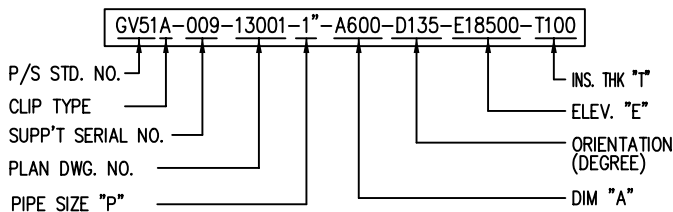
NOTE

- MATERIAL
- SHAPE STEEL : A36 OR EQ.
- SEE DWG. NO. ST-A4-1002 FOR THE DETAIL OF U-BOLT.
- SEE DWG. NO. ST-A4-1021 FOR THE DETAIL OF URETHANE BLOCK ASSEMBLY.
- SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

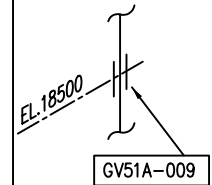
UNIT (mm)

CLIP TYPE	CLIP MARK	K	"L" SIZE	A ≤ 400		400 < A ≤ 600	
				Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)
A	121A	25	A5	60	200	40	130
B	121B	35	A7	210	720	140	480

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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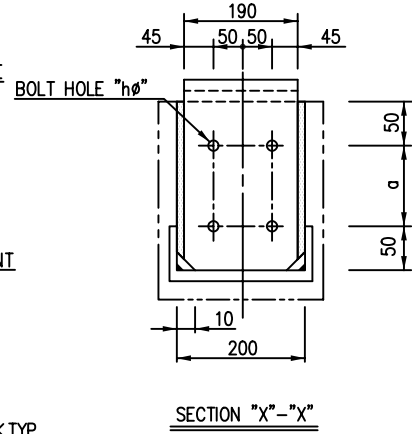
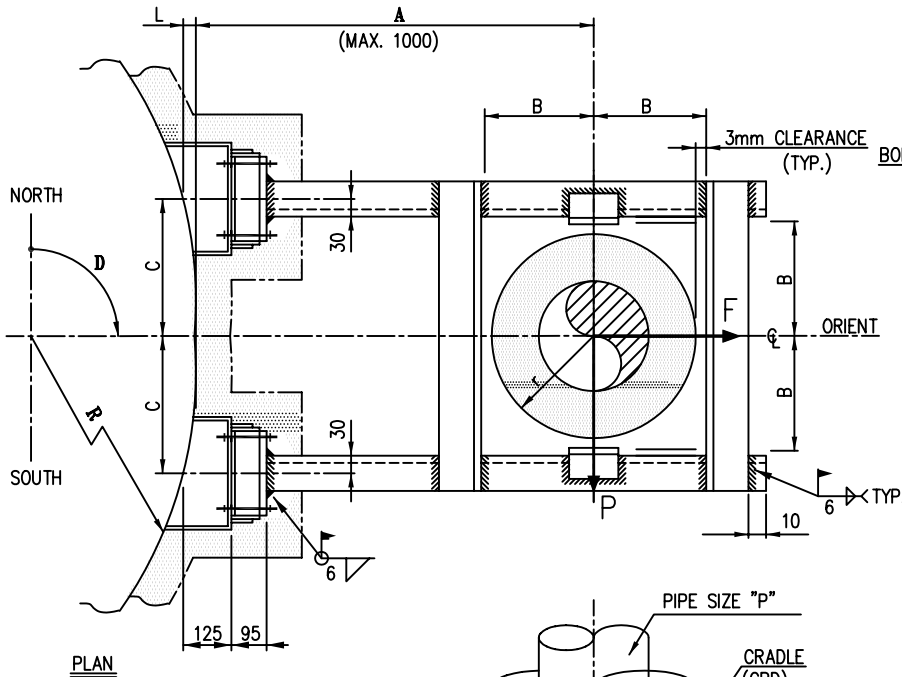


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1205

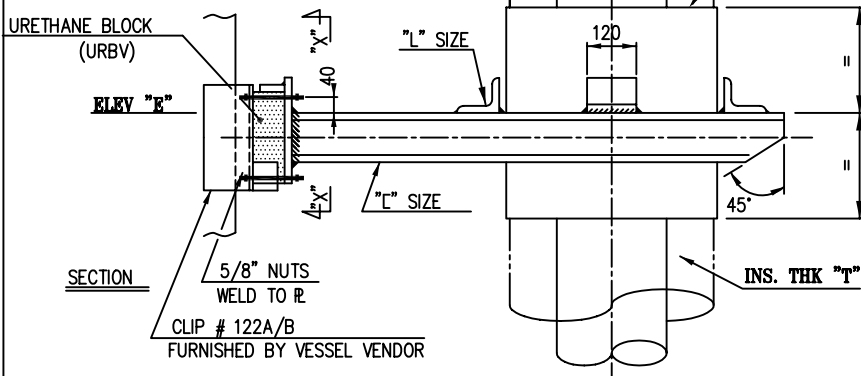
GUIDE **GV-52**
(FOR COLD INSULATED RISER PIPE;
VESSEL CLIP)

REV.
2



UNIT (mm)

COLD INSULATION TH'K	25-50	51-100	101-150
CRADLE TH'K	H=50	H=100	H=150
PIPE SIZE "P"	DIM. B/C		
1/2"	REFER TO GV-51	114/170	164/230
3/4"		117/170	167/230
1"		120/170	170/230
1-1/2"		128/170	178/230
2"	84/140	134/190	184/230
2-1/2"	90/140	140/190	190/240
3"	98/140	148/190	198/240
4"	111/170	161/220	REFER TO GV-53
5"	125/170	175/220	
6"	138/180	188/230	
8"	163/210		
10"	190/240		



NOTE

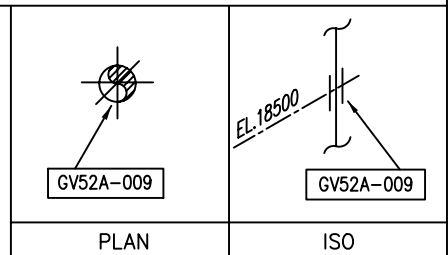
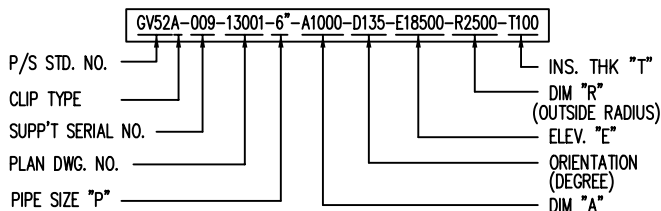
- MATERIAL
- SHAPE STEEL : A36 OR EQ.
- $DIM "L" = R - \sqrt{R^2 - C^2}$
- SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.
- SEE DWG. NO. ST-A4-1021 FOR THE DETAIL OF URETHANE BLOCK ASSEMBLY.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

$r=76$ TO $r=200$

UNIT (mm)

CLIP TYPE	CLIP MARK	h ϕ	a	"L" SIZE	"L" SIZE	A \leq 500				500 < A \leq 1000			
						Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)		
A	122A	18	180	C10	A5	170	270	110	260				
B	122B	18	230	C15	A6	390	490	270	480				

SYMBOL & CODING



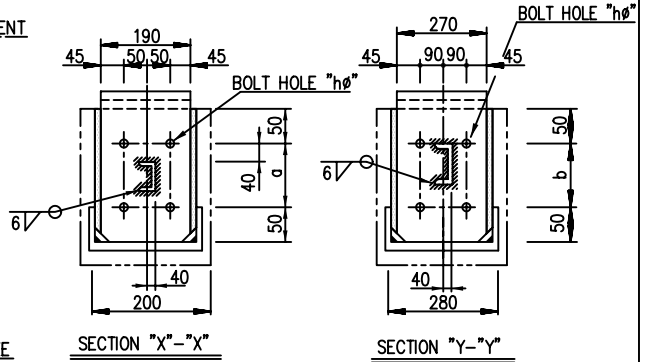
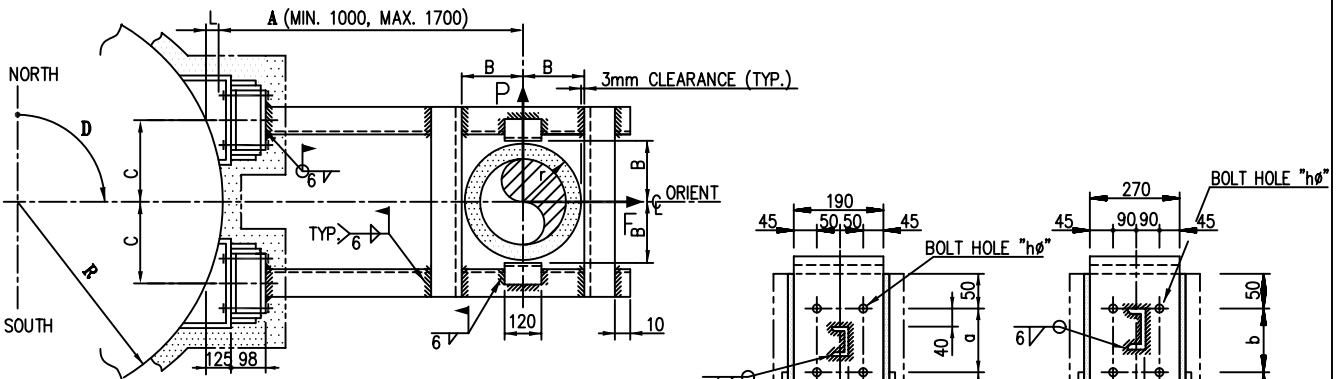


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

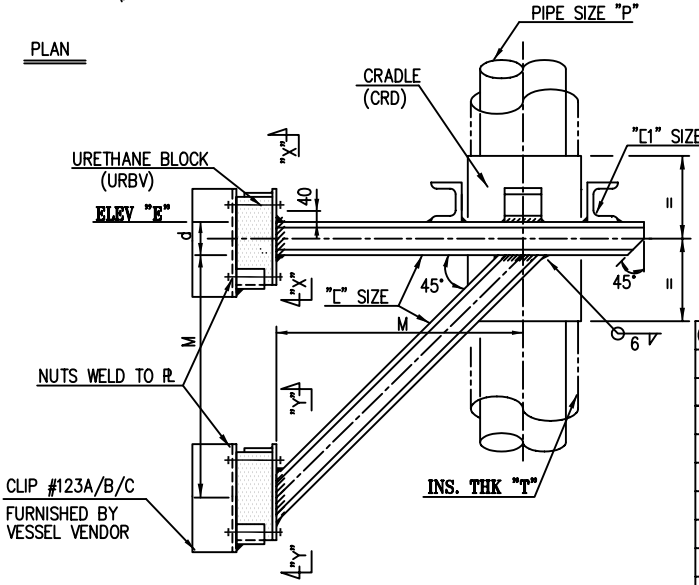
PIPING SUPPORT STANDARD DWG. ST-A4-1206

GUIDE **GV-53**
(FOR COLD INSULATED RISER PIPE;
VESSEL CLIP)

REV.
2



PLAN



SECTION

r=201 & LARGER

NOTE

- MATERIAL
- SHAPE STEEL : A36 OR EQ.
- DIM "M"=(A+L+d)-125-15-83
- DIM "L"= R- $\sqrt{R^2-C^2}$
- SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.
- SEE DWG. NO. ST-A4-1021 FOR THE DETAIL OF URETHANE BLOCK ASSEMBLY.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

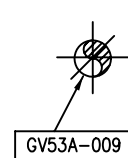
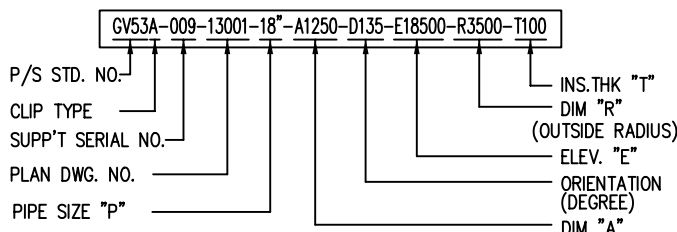
UNIT (mm)

COLD INSULATION THK	25-50	51-100	101-150	151-200	201-250	251-300
CRADLE TH'	H=50	H=100	H=150	H=200	H=250	H=300
PIPE SIZE "P"	DIM. B/C					
1-1/2"	REFER TO GV-52			228/300	-	-
2"	REFER TO GV-52			234/300	-	-
2-1/2"	REFER TO GV-52			240/320	-	-
3"	REFER TO GV-52			248/330	-	-
4"	REFER TO GV-52			211/300	261/330	-
5"	REFER TO GV-52			225/300	275/360	-
6"	REFER TO GV-52			258/330	288/360	-
8"	REFER TO GV-52			213/300	263/330	313/380
10"	REFER TO GV-52			240/320	290/360	340/400
12"	215/300	265/330	315/380	365/430	415/460	-
14"	231/300	281/360	331/400	381/460	431/500	-
16"	257/330	307/380	357/430	407/460	457/530	-
18"	282/360	332/400	382/460	432/500	482/560	-
20"	307/380	357/430	407/460	457/530	507/580	557/630
22"	333/400	383/460	433/500	483/560	533/610	583/660
24"	338/400	408/460	458/530	508/580	558/630	608/680

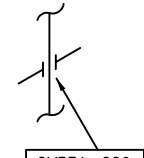
UNIT (mm)

CLIP TYPE	CLIP MARK	a	b	d	hφ	"L" SIZE	"L1" SIZE	UNIT (mm)			
								A ≤ 1200		1200 < A ≤ 1700	
								Pmax (kg)	Fmax (kg)	Pmax (kg)	Fmax (kg)
A	123A	230	220	150	18	C15	C15	520	1600	200	1260
B	123B	280	290	200	21	C20	C15	880	1600	360	1360
C	123C	380	430	300	28	C30	C15	920	1600	390	1360

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



DAELIM

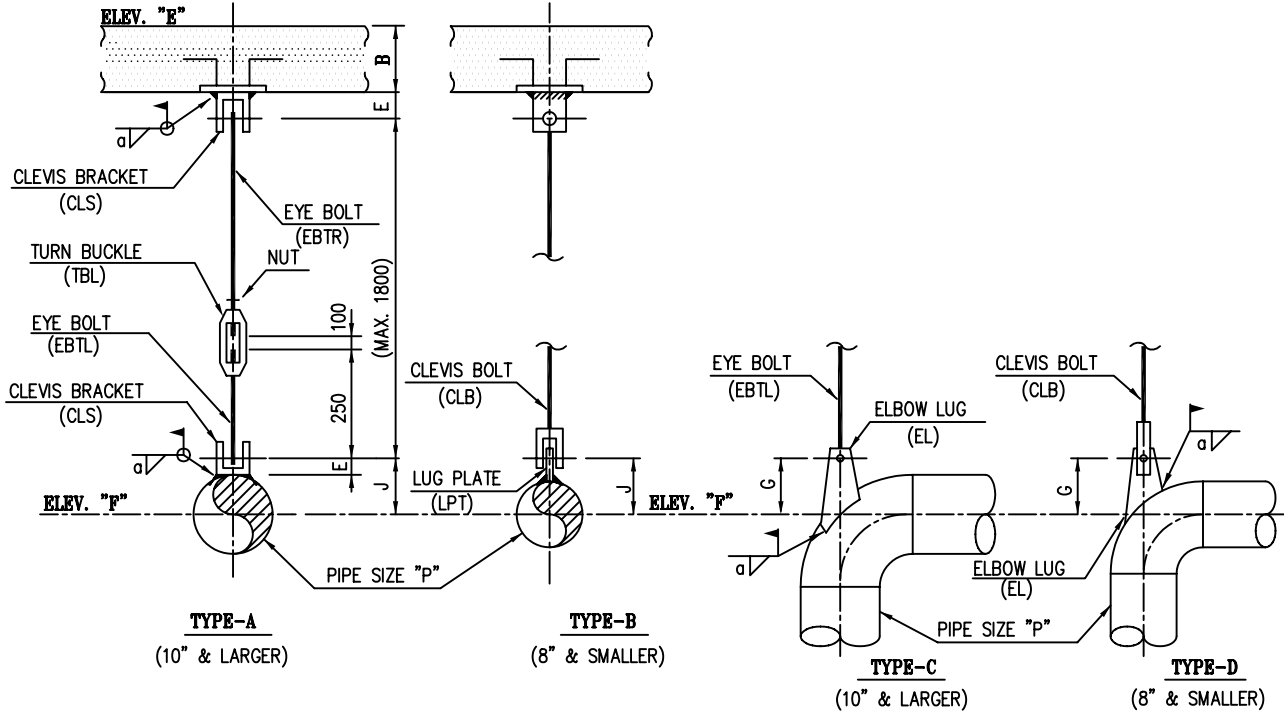
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1211

HANGER **HC-1**
(UNDER CONCRETE)

REV.
2



PIPE SIZE NPS "P"	ROD SIZE (inch)	E	G	J	a	UNIT (mm)	ALLOW.LOAD (Kg)
1/2"	3/8"	50	-	61	6		275
3/4"	3/8"	50	-	64	6		275
1"	3/8"	50	-	67	6		275
1-1/2"	3/8"	50	-	74	6		275
2"	3/8"	50	-	80	6		275
3"	1/2"	50	175	95	6		515
4"	5/8"	50	200	107	6		820
6"	3/4"	50	250	135	6		1230
8"	1"	75	250	185	6		2250
10"	1-1/4"	75	300	212	6		3630
12"	1-1/4"	75	300	252	6		3630
14"	1-1/4"	90	300	268	6		3630
16"	1-1/2"	90	300	294	9		5280
18"	1-1/2"	90	300	319	9		5280
20"	1-3/4"	90	300	364	9		7120
24"	1-3/4"	90	300	415	9		7120

NOTE

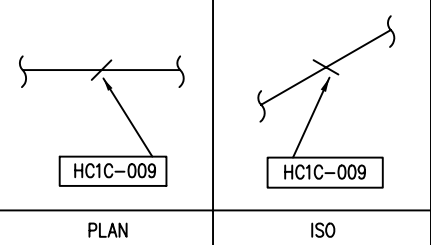
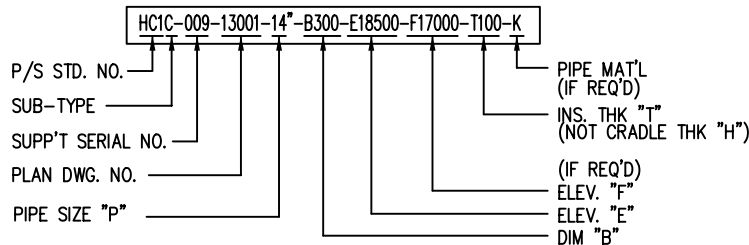
1. MATERIAL

- LUG PLATE/CLEVIS BRACKET : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	LUG PLATE/CLEVIS BRACKET
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803)OR EQ.

2. SEE DWG. NO. ST-A4-1006/1007/1008/1010/1011/1013
FOR THE DETAIL OF HANGER ASSEMBLY.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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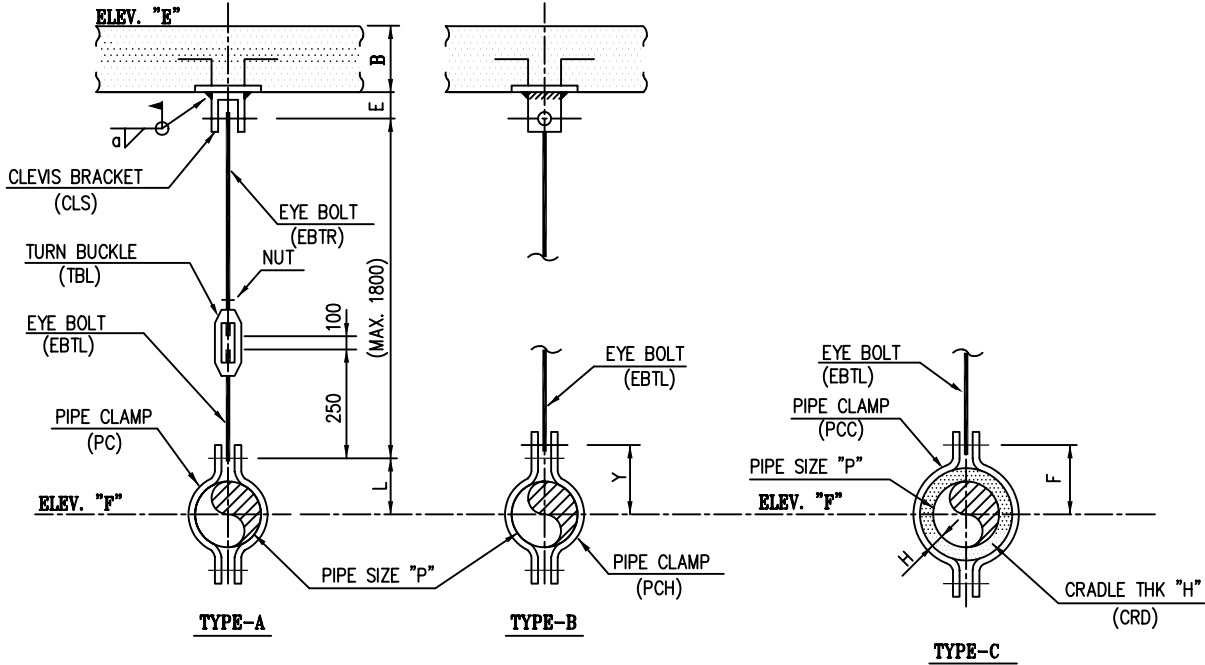
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1212

HANGER **HC-11**
(UNDER CONCRETE)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	ROD SIZE (inch)	E	F	Y	L	a	ALLOW.LOAD (Kg)
1/2"	3/8"	50	SEE ST-A4-1016	100	35	6	275
3/4"	3/8"	50		100	35	6	275
1"	3/8"	50		110	35	6	275
1-1/2"	3/8"	50		135	50	6	275
2"	3/8"	50		145	55	6	275
3"	1/2"	50		165	75	6	515
4"	5/8"	50		195	95	6	820
6"	3/4"	50		260	140	6	1230
8"	1"	75		300	165	6	2250
10"	1-1/4"	75		345	205	6	3630
12"	1-1/4"	75		370	230	6	3630
14"	1-1/4"	90		420	260	6	3630
16"	1-1/2"	90		445	285	9	5280
18"	1-1/2"	90		470	310	9	5280
20"	1-3/4"	90		520	350	9	7120
24"	1-3/4"	90		580	400	9	7120

NOTE

1. MATERIAL
- CLAMP, BOLT/NUT

CODE	TEMP.	CLAMP	BOLT & NUT
K	~350°C	A283 GR.B OR EQ.	A307 GR.B
K1	~420°C	A516 GR.B OR EQ.	A193 GR.B7/A194 2H
Y	~640°C	A387 GR.11 OR EQ.	A193 GR.B7/A194 2H

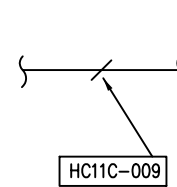
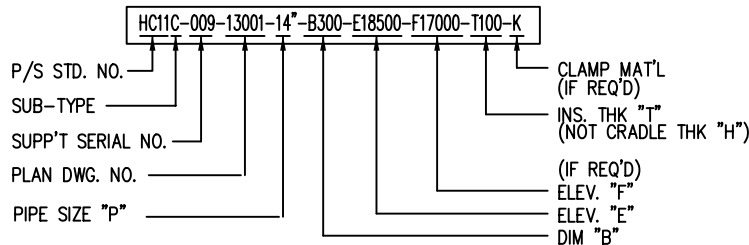
- OTHER PARTS : A36 OR EQ.

2. SEE DWG. NO. ST-A4-1006/1007/1008/1010/1011/1013 FOR THE DETAIL OF HANGER ASSEMBLY.

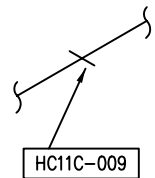
3. SEE DWG. NO. ST-A4-1019 FOR CRADLE(CRD) THK "H"

4. ASBESTOS SHEET OR RUBER SHALL BE APPLUD AS INTERMEDIATE MATERIAL FOR S.S PIPE. ⚠

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL CO.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



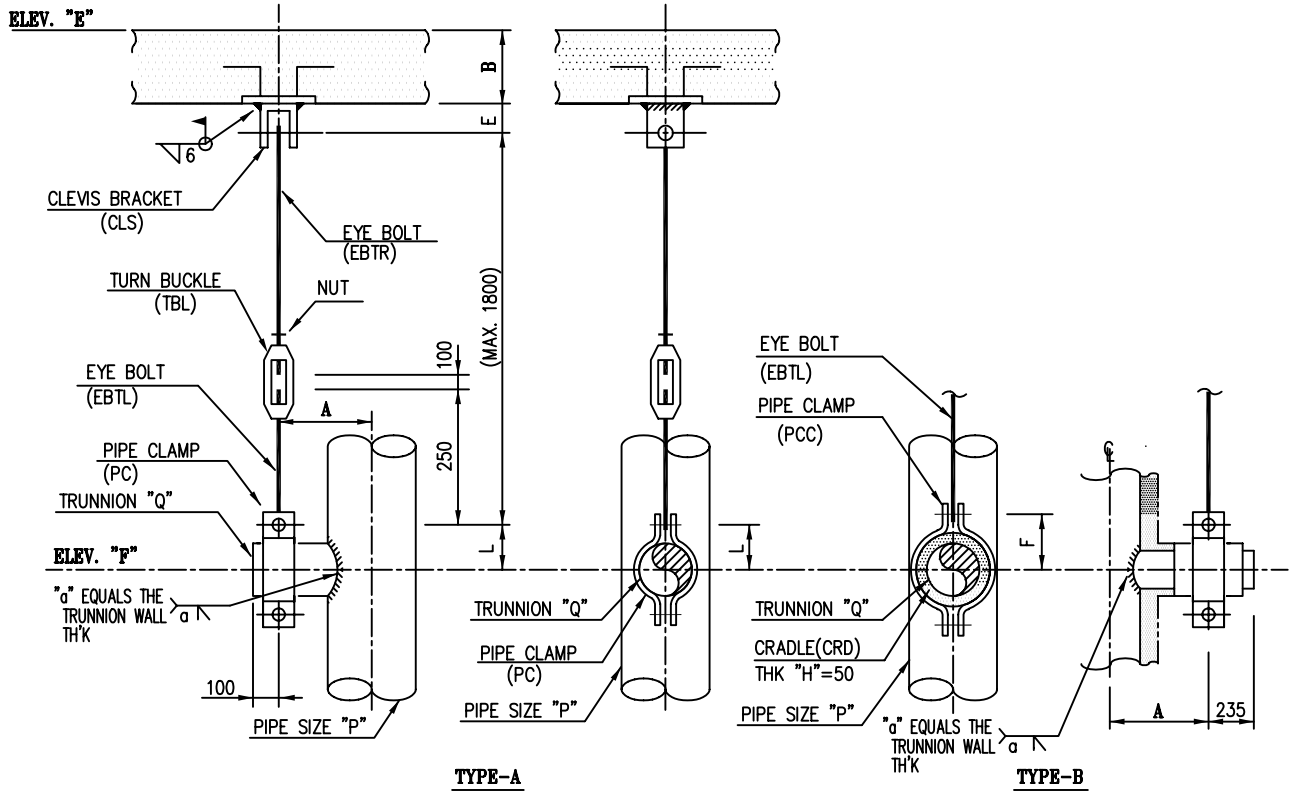
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1213

HANGER **HC-21**
(TRUNNION TYPE, UNDER CONCRETE)

REV.
2



NOTE

1. MATERIAL

- TRUNNION : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
Y	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

2. SEE DWG. NO. ST-A4-1006/1010/1013/1014/1016 FOR THE DETAIL OF HANGER ASSEMBLY.

3. SEE DWG. NO. ST-A4-0004

FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

4. SEE DWG. NO. ST-A4-1346 FOR THE DETAIL OF TRUNNION.

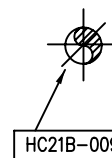
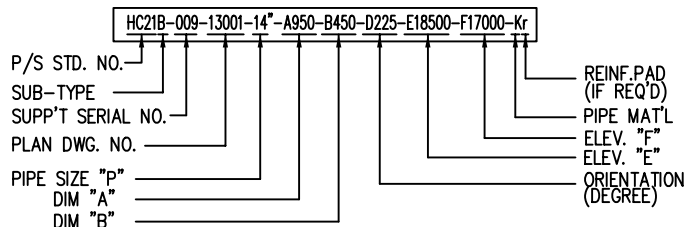
5. SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.

6. ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

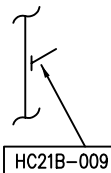
UNIT (mm)

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	ROD SIZE (inch)	E	F	L	ALLOW. LOAD (Kg)
1-1/2"	1"	3/8"	50	105	35	275
2"	1-1/2"	3/8"		105	50	275
3"	2"	3/8"		120	55	275
4"	2"	1/2"		120	55	515
6"	4"	5/8"		150	95	820
8"	4"	5/8"		150	95	820
10"	6"	3/4"	65	190	140	1230
12"	8"	1"	75	220	165	2250
14"	8"	1"		220	165	2250
16"	10"	1-1/4"		270	205	3630
18"	10"	1-1/4"		270	205	3630
20"	12"	1-1/4"		290	230	3630
24"	12"	1-1/4"		290	230	3630

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
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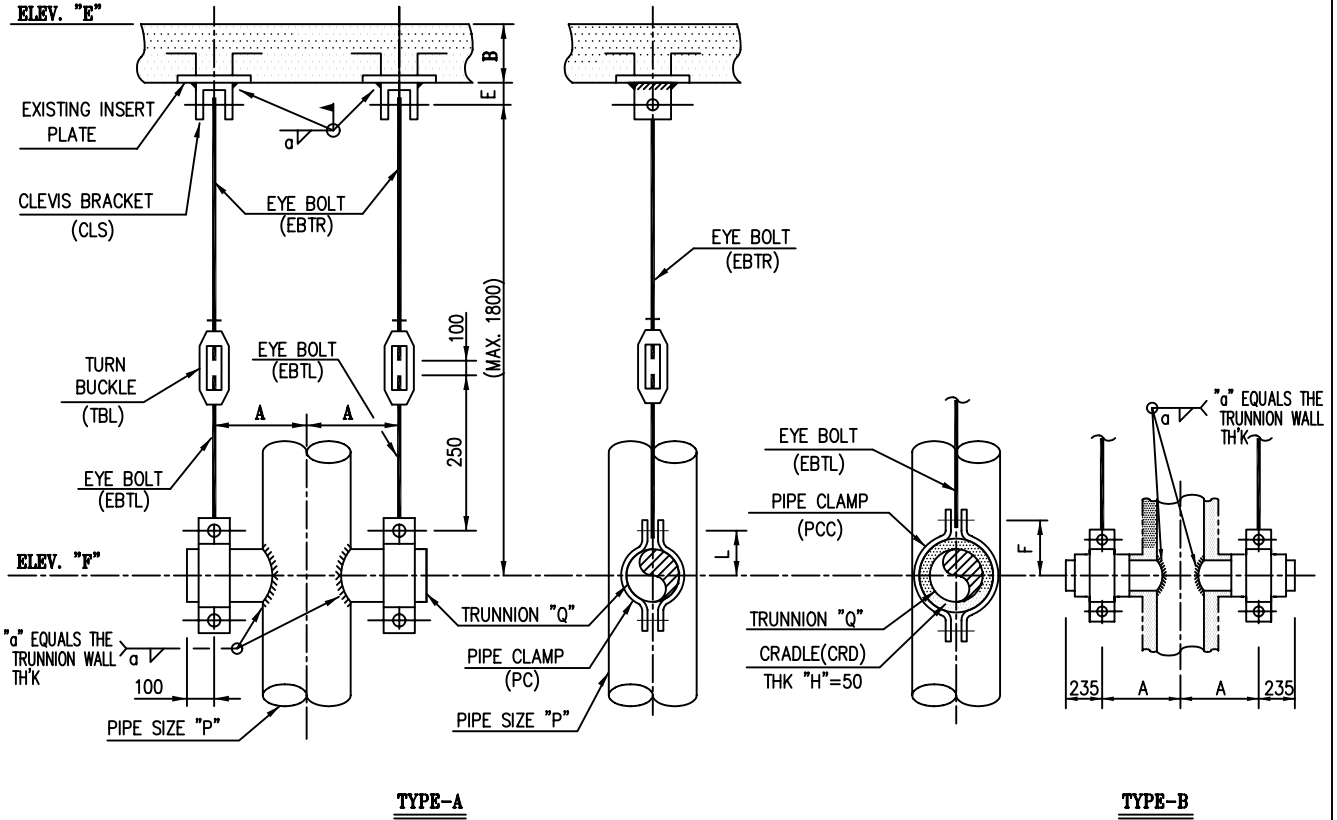
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1214

HANGER **HC-31**
(TRUNNION TYPE, UNDER CONCRETE)

REV.
2



NOTE

1. MATERIAL

- TRUNNION : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

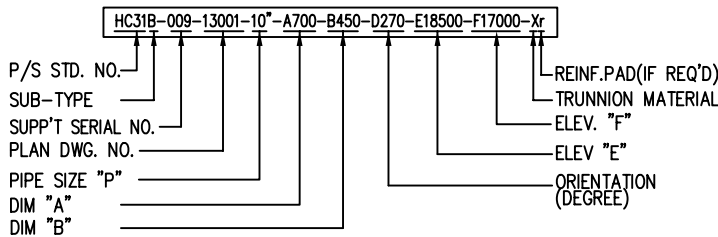
- SEE DWG. NO. ST-A4-1006/1010/1013/1014/1016 FOR THE DETAIL OF HANGER ASSEMBLY.
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- SEE DWG. NO. ST-A4-1346 FOR THE DETAIL OF TRUNNION.
- SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.

6. ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

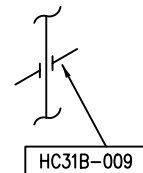
UNIT (mm)

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	ROD SIZE (inch)	E	F	L	α	ALLOW. LOAD (Kg)
1-1/2"	1"	3/8"	50	105	35	6	500
2"	1-1/2"	3/8"		120	50	6	500
3"	2"	3/8"		120	55	6	500
4"	2"	1/2"		120	55	6	800
6"	4"	5/8"		150	95	6	1300
8"	4"	3/4"		150	95	6	2000
10"	6"	3/4"	65	190	140	6	2000
12"	8"	1"	75	220	165	6	3500
14"	8"	1"		220	165	6	3500
16"	10"	1-1/4"		270	205	9	5500
18"	10"	1-1/4"		270	205	9	5500
20"	12"	1-1/2"		290	230	9	8000
24"	12"	1-1/2"		290	230	9	8000

SYMBOL & CODING



PLAN



ISO



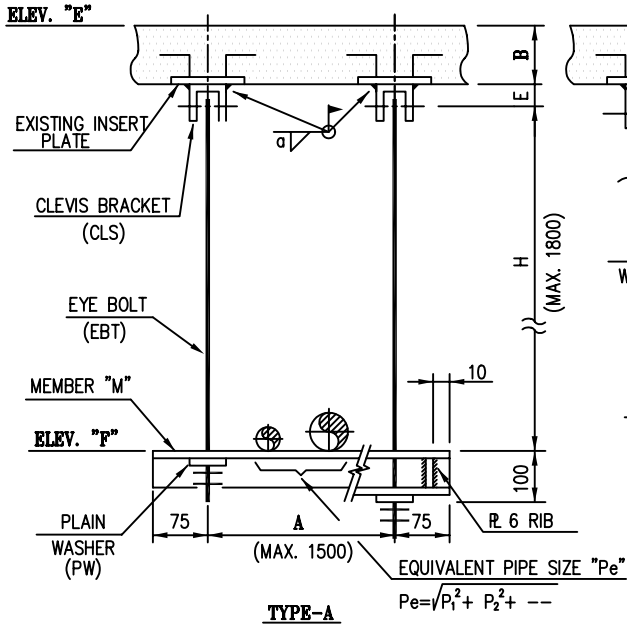
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1215

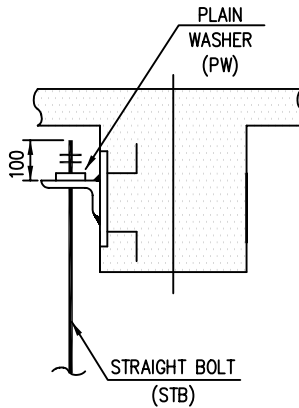
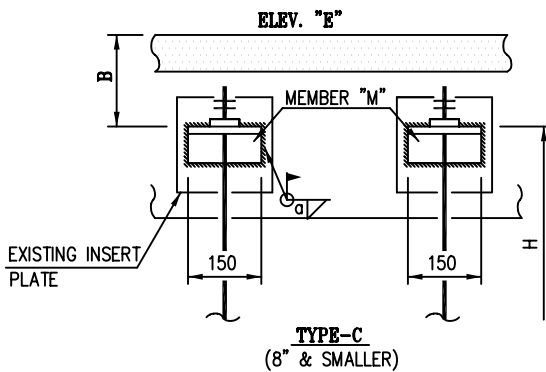
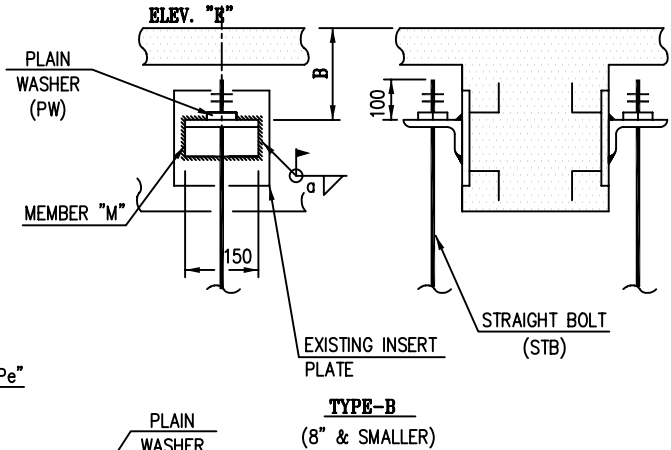
HANGER **HC-61**
(FOR MULTI PIPES UNDER CONCRETE)

REV.
2



NOTE

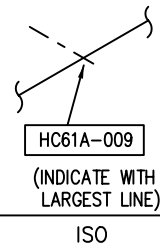
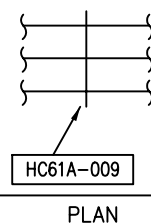
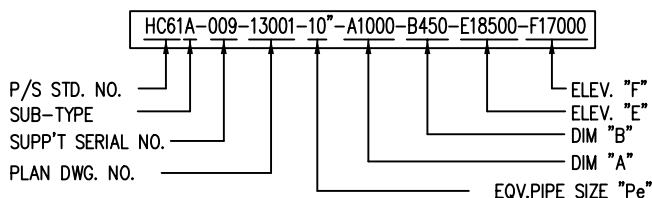
- SEE DWG. NO. ST-A4-1006/1010/1012/1027 FOR THE DETAIL OF HANGER ASSEMBLY.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.



UNIT (mm)

EQUIVALENT PIPE SIZE "Pe"	ROD SIZE (inch)	α	E	A (max)	MEMBER "M"	ALLOWABLE LOAD (Kg)	EQUIVALENT PIPE SIZE "Pe"	ROD SIZE (inch)	α	E	A (max)	MEMBER "M"	ALLOWABLE LOAD (Kg)
1/2"~2"	3/8"	6	50	500	A5	400	12"	1-1/4"	6	75	500	C10	4500
3"	1/2"	6	50	500	A6	750					1000	C12	4100
4"	5/8"	6	50	500	A6	750	14"	1-1/4"	6	90	500	C10	4500
				1000	A7	700					1000	C12	4100
6"	3/4"	6	50	500	A7	1400	16"	1-1/4"	6	90	1000	C12	4100
				1000	A10	1400					1500	C15	4000
8"	1"	6	75	500	A10	2900	18"	1-1/2"	9	90	1000	C15	6900
				1000	C10	2200					SEE HC-64		
10"	1"	6	75	500	A10	2900	20"	1-1/2"	9	90	1000	C15	6900
				1000	C10	2200					SEE HC-64		

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



DAELIM

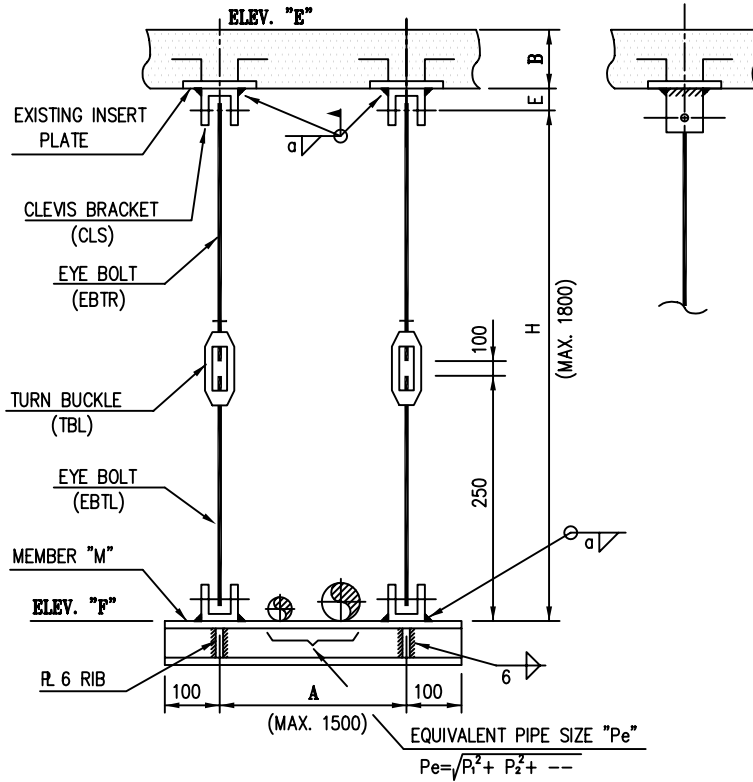
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1216

HANGER **HC-64**
(FOR MULTI PIPES UNDER CONCRETE)

REV.
2



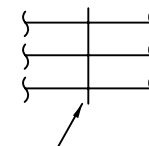
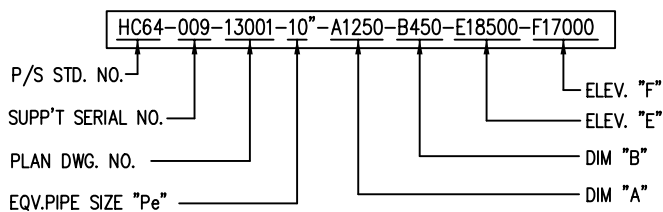
UNIT (mm)

EQUIVALENT PIPE SIZE "Pe"	ROD SIZE (inch)	α	E	A (max)	MEMBER "M"	ALLOWABLE LOAD (Kg)
18"	1-1/2"	9	90	1000	SEE HC-61	
				1500	H15	7500
				2000	H20	9300
20"	1-1/2"	9	90	1000	SEE HC-61	
				1500	H15	7500
				2000	H20	9300
24"	1-1/2"	9	90	1000	H12	8200
				1500	H15	7500
				2000	H20	9300

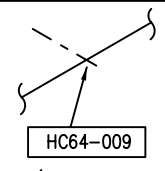
NOTE

- SEE DWG. NO. ST-A4-1006/1010/1013 FOR THE DETAIL OF HANGER ASSEMBLY.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



PLAN



(INDICATE WITH LARGEST LINE)

ISO



SAZEH
CONSULTANTS



DAELIM

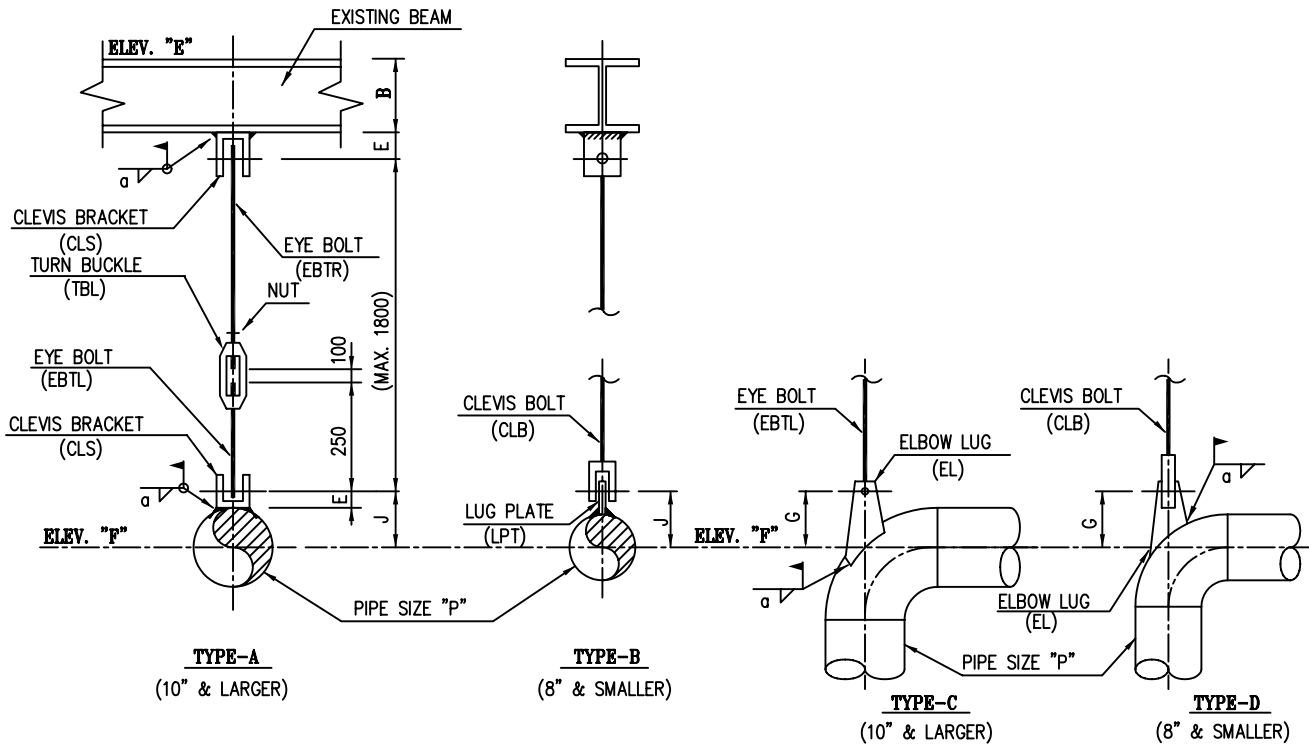
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1221

HANGER **HS-1**
(UNDER STRUCTURE)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	ROD SIZE (inch)	E	G	J	α	ALLOW. LOAD (Kg)
1/2"	3/8"	50	-	61	6	275
3/4"	3/8"	50	-	63	6	275
1"	3/8"	50	-	67	6	275
1-1/2"	3/8"	50	-	74	6	275
2"	3/8"	50	-	80	6	275
3"	1/2"	50	175	95	6	515
4"	5/8"	50	200	107	6	820
6"	3/4"	50	250	134	6	1230
8"	1"	75	250	185	6	2250
10"	1-1/4"	75	300	212	6	3630
12"	1-1/4"	75	300	237	6	3630
14"	1-1/4"	75	300	253	6	3630
16"	1-1/2"	90	300	294	9	5280
18"	1-1/2"	90	300	319	9	5280
20"	1-3/4"	90	300	345	9	7120
24"	1-3/4"	90	300	396	9	7120

NOTE

1. MATERIAL

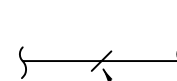
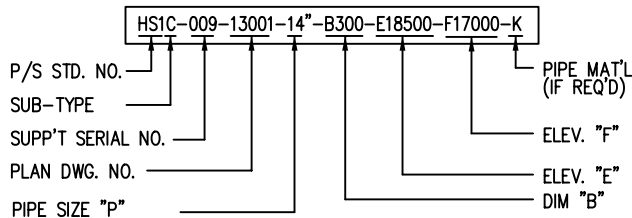
- LUG PLATE / CLEVIS BRACKET : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	LUG PLATE/CLEVIS BRACKET
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803) OR EQ.

2. SEE DWG. NO. ST-A4-1006/1007/1008/1010/1011/1013/1015/1016 FOR THE DETAIL OF HANGER ASSEMBLY.

3. SEE DWG. NO. ST-A4-1019 FOR CRADLE(CRD) THK "H"

SYMBOL & CODING



HS1C-009

PLAN



HS1C-009

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



DAELIM

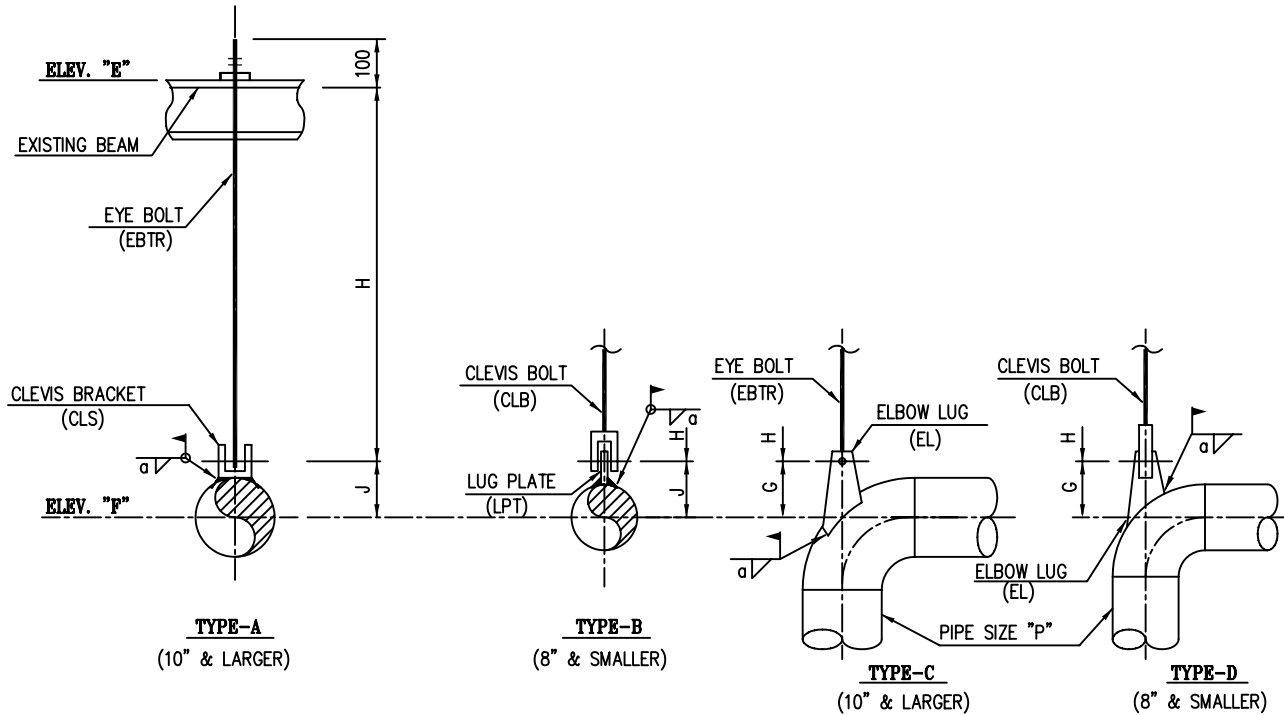
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1222

HANGER **HS-3**
(UNDER STRUCTURE)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	ROD SIZE (inch)	E	G	J	α	ALLOW.LOAD (Kg)
1/2"	3/8"	50	-	61	6	275
3/4"	3/8"	50	-	64	6	275
1"	3/8"	50	-	67	6	275
1-1/2"	3/8"	50	-	74	6	275
2"	3/8"	50	-	80	6	275
3"	1/2"	50	175	95	6	515
4"	5/8"	50	200	107	6	820
6"	3/4"	50	250	135	6	1230
8"	1"	75	250	185	6	2250
10"	1-1/4"	75	300	212	6	3630
12"	1-1/4"	75	300	252	6	3630
14"	1-1/4"	90	300	268	6	3630
16"	1-1/2"	90	300	294	9	5280
18"	1-1/2"	90	300	319	9	5280
20"	1-3/4"	90	300	364	9	7120
24"	1-3/4"	90	300	415	9	7120

NOTE

1. MATERIAL

- LUG PLATE / CLEVIS BRACKET : SAME AS RUN PIPE OR MAT'L TABLE.

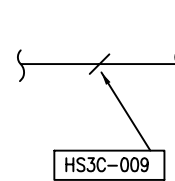
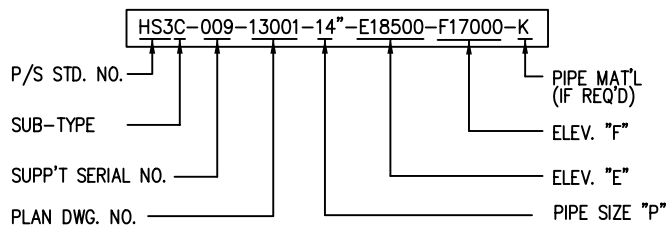
CODE	RUN PIPE	LUG PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (31803)	A815 (S31803) OR EQ.

2. COORDINATION WITH THE STRUCTURAL DEPARTMENT IS REQUIRED FOR THE ADDITION OF A STEEL ATTACHMENT.

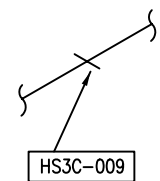
3. SEE DWG. NO. ST-A4-1006/1007/1008/1010/1011 FOR THE DETAIL OF HANGER ASSEMBLY.

4. SEE DWG. NO. ST-A4-1019 FOR CRADLE(CRD) THK "H"

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



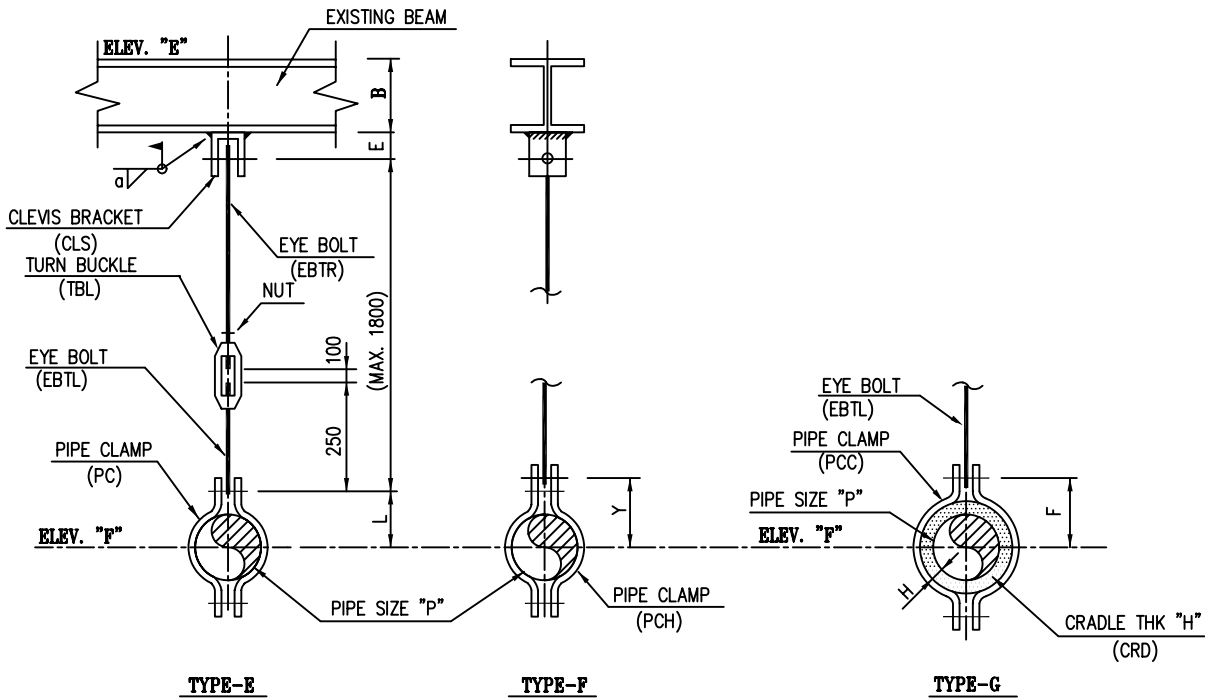
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1224

HANGER **HS-11**
(UNDER STRUCTURE)

REV.
2



PIPE SIZE NPS "P"	ROD SIZE (inch)	E	F	Y	L	a	ALLOW. LOAD (Kg)
1/2"	3/8"	50	SEE ST-A4-1016	100	35	6	275
3/4"	3/8"	50		100	35	6	275
1"	3/8"	50		110	35	6	275
1-1/2"	3/8"	50		135	50	6	275
2"	3/8"	50		145	55	6	275
3"	1/2"	50		165	75	6	515
4"	5/8"	50		195	95	6	820
6"	3/4"	50		260	140	6	1230
8"	1"	75		300	165	6	2250
10"	1-1/4"	75		345	205	6	3630
12"	1-1/4"	75		370	230	6	3630
14"	1-1/4"	75		420	260	6	3630
16"	1-1/2"	90		445	285	9	5280
18"	1-1/2"	90		470	310	9	5280
20"	1-3/4"	90		520	350	9	7120
24"	1-3/4"	90		580	400	9	7120

NOTE

1. MATERIAL

- CLAMP, BOLT/NUT

CODE	TEMP.	CLAMP	BOLT & NUT
K	~350°C		
K1	~420°C		
Y	~640°C	A283 GR.B OR EQ.	A307 GR.B

- OTHER PARTS : A516 GR.B OR EQ. A193 GR.B7/A194 2H
A36 OR EQ. A387 GR.11 OR EQ. A193 GR.B7/A194 2H

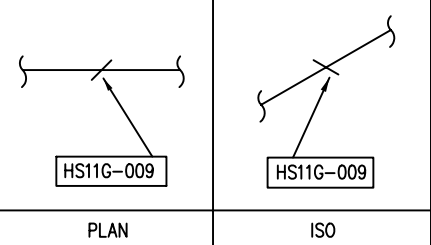
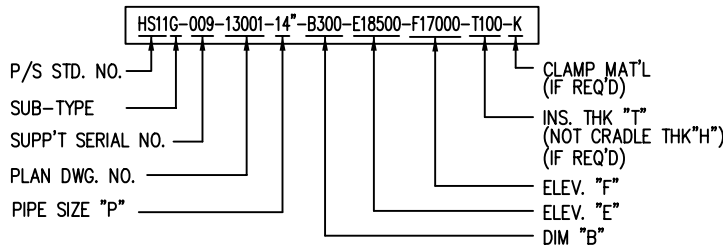
2. SEE DWG. NO. ST-A4-1006/1007/1008/1010/1011/1013/1015/1016 FOR THE DETAIL OF HANGER ASSEMBLY.

3. SEE DWG. NO. ST-A4-1019 FOR CRADLE(CRD) THK "H"

4. ASBESTOS SHEET OR RUBER SHALL BE APPLID AS INTERMEDIATE MATERIAL FOR S.S PIPE.



SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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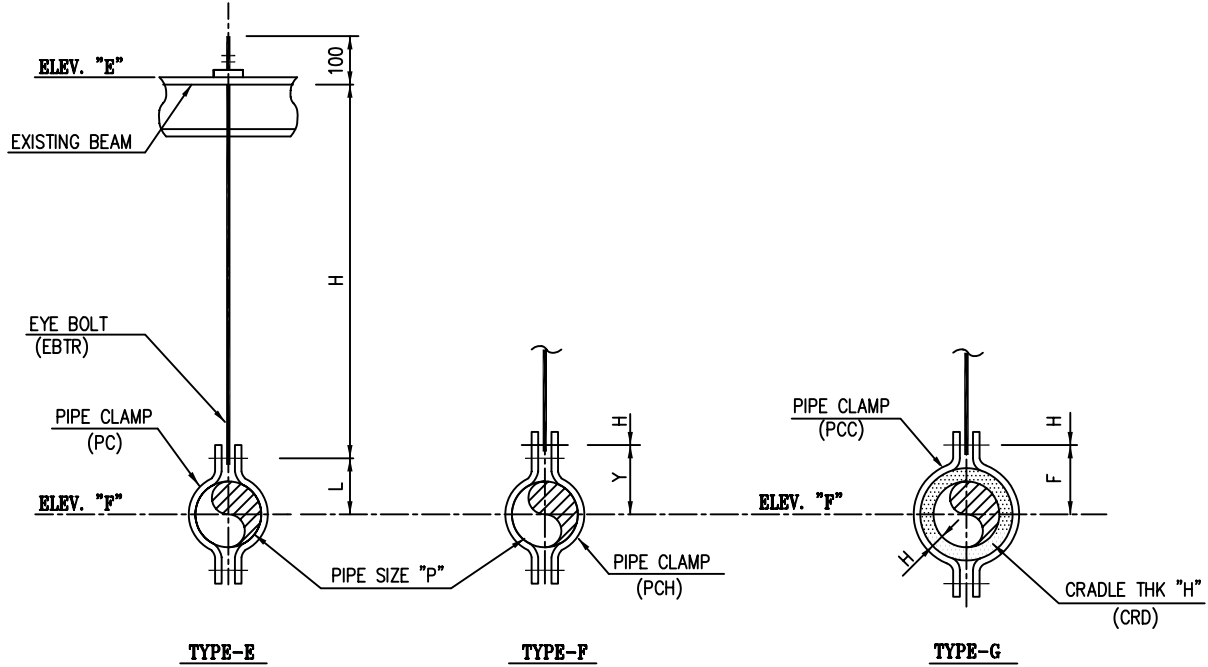
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1226

HANGER **HS-13**
(UNDER STRUCTURE)

REV.
2



PIPE SIZE NPS "P"	ROD SIZE (inch)	E	F	Y	L	a	ALLOW. LOAD (Kg)
1/2"	3/8"	50	SEE ST-A4-1016	100	35	6	275
3/4"	3/8"	50		100	35	6	275
1"	3/8"	50		110	35	6	275
1-1/2"	3/8"	50		135	50	6	275
2"	3/8"	50		145	55	6	275
3"	1/2"	50		165	75	6	515
4"	5/8"	50		195	95	6	820
6"	3/4"	50		260	140	6	1230
8"	1"	75		300	165	6	2250
10"	1-1/4"	75		345	205	6	3630
12"	1-1/4"	75		370	230	6	3630
14"	1-1/4"	75		420	260	6	3630
16"	1-1/2"	90		445	285	9	5280
18"	1-1/2"	90		470	310	9	5280
20"	1-3/4"	90		520	350	9	7120
24"	1-3/4"	90		580	400	9	7120

NOTE

1. MATERIAL

- CLAMP, BOLT/NUT

CODE	TEMP.	CLAMP	BOLT & NUT
K	~350°C		
K1	~420°C		
Y	~640°C	A283 GR.B OR EQ.	A307 GR.B

- OTHER PARTS : A36 GR.C OR EQ. A193 GR.B7/A194 2H
A387 GR.11 OR EQ. A193 GR.B7/A194 2H

2. SEE DWG. NO. ST-A4-1006/1007/1008/1010/1011/1013/1015/1016 FOR THE DETAIL OF HANGER ASSEMBLY.

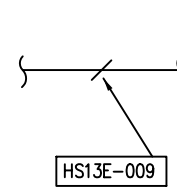
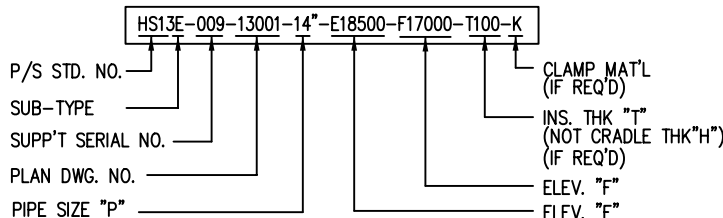
3. SEE DWG. NO. ST-A4-1019 FOR CRADLE(CRD) THK "H"

4. COORDINATION WITH THE STRUCTURE DEPARTMENT IS REQUIRED FOR THE ADDITION OF A STEEL ATTACHMENT.

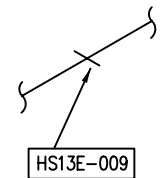
5. ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.



SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



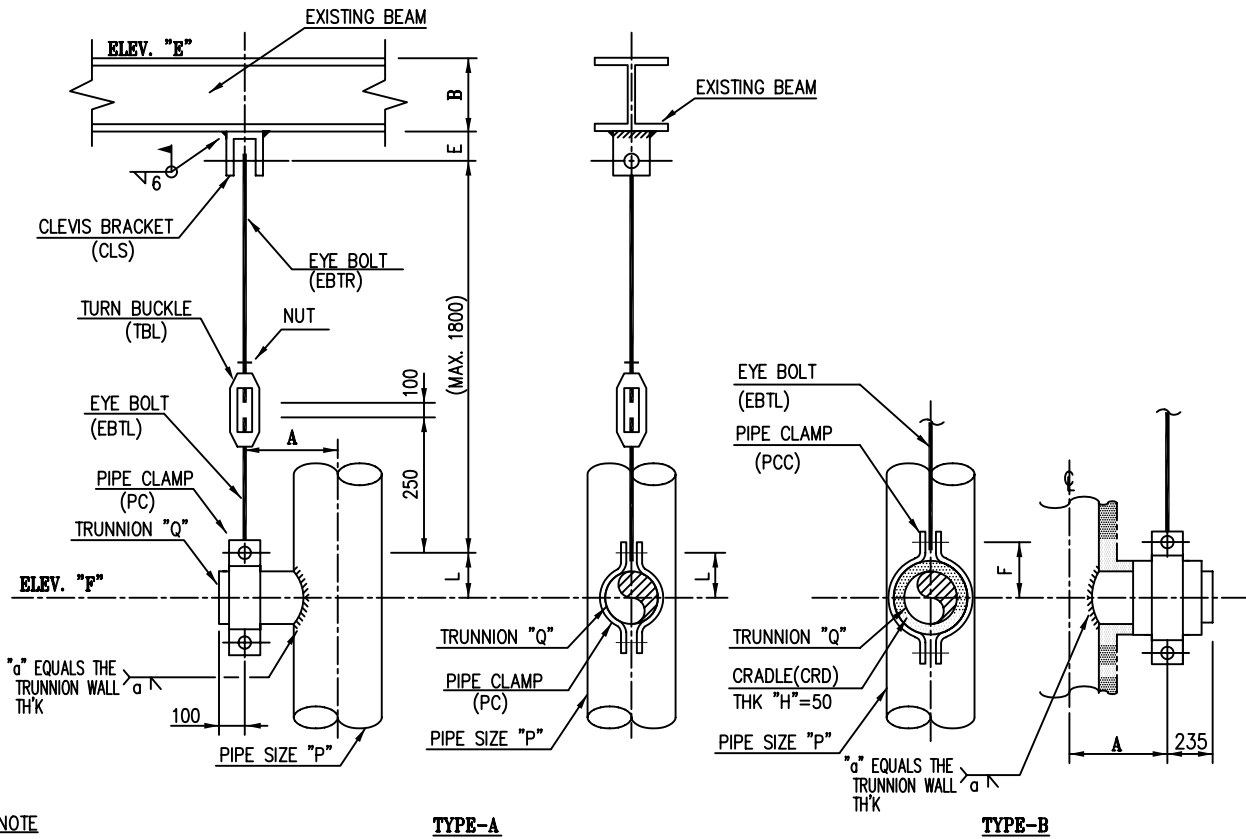
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1231

HANGER **HS-21**
(TRUNNION TYPE, UNDER STRUCTURE)

REV.
2



NOTE

1. MATERIAL

- TRUNNION : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

2. SEE DWG. NO. ST-A4-1006/1010/1013/1014/1016 FOR THE DETAIL OF HANGER ASSEMBLY.

3. SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

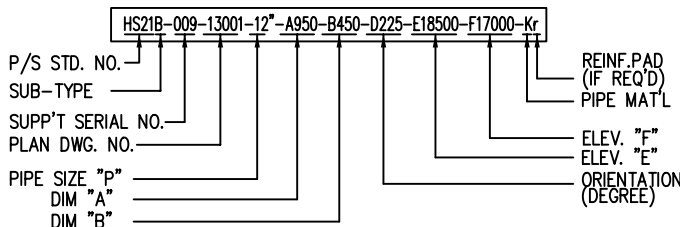
4. SEE DWG. NO. ST-A4-1346 FOR THE DETAIL OF TRUNNION.

5. SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.

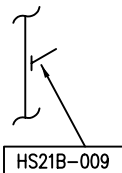
6. ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	ROD SIZE (inch)	E	F	L	ALLOW. LOAD (Kg)
1-1/2"	1"	3/8"	50	105	35	275
2"	1-1/2"	3/8"		105	50	275
3"	2"	3/8"		120	55	275
4"	2"	1/2"		120	55	515
6"	4"	5/8"		150	95	820
8"	4"	5/8"		150	95	820
10"	6"	3/4"	65	190	140	1230
12"	8"	1"	75	220	165	2250
14"	8"	1"		220	165	2250
16"	10"	1-1/4"		270	205	3630
18"	10"	1-1/4"		270	205	3630
20"	12"	1-1/4"		290	230	3630
24"	12"	1-1/4"		290	230	3630

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2

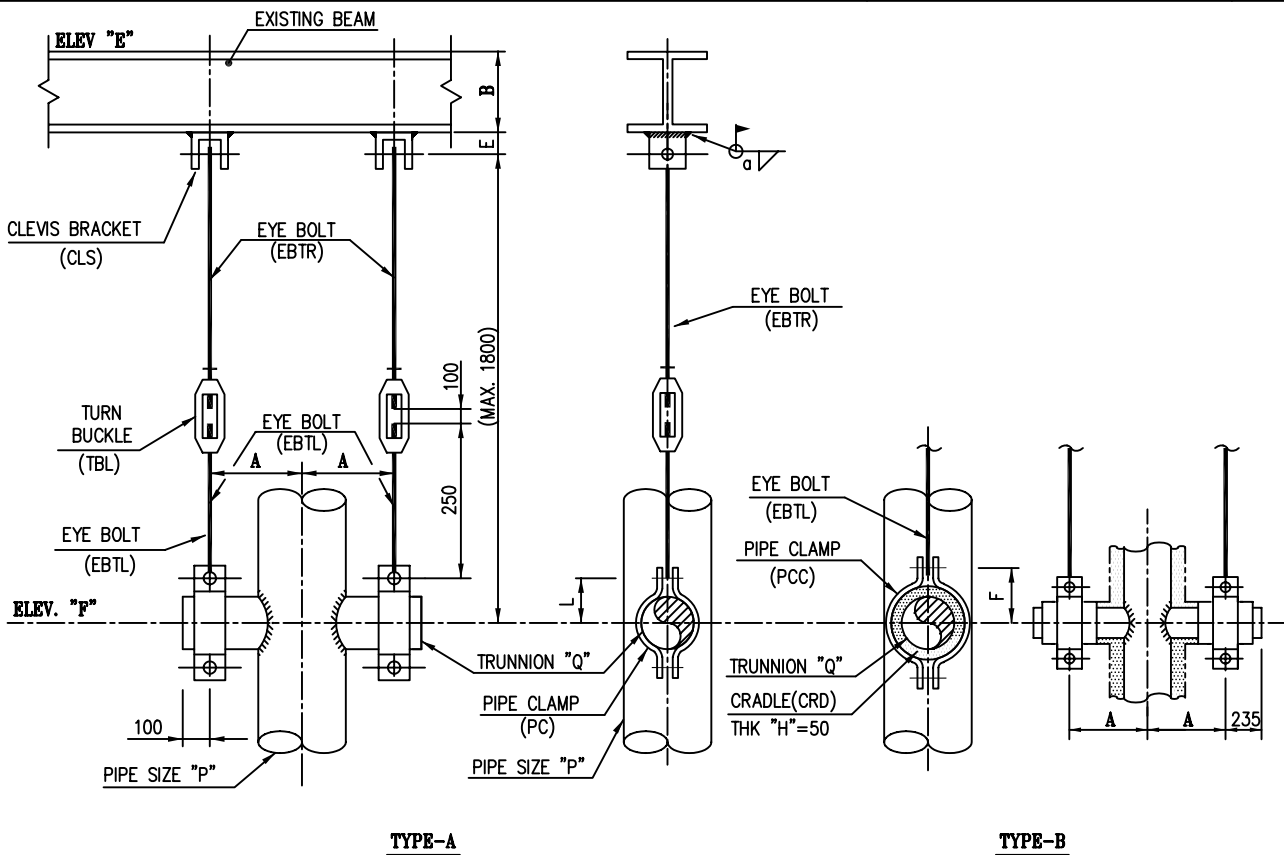


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1232

HANGER **HS-31**
(TRUNNION TYPE, UNDER STRUCTURE)

REV.
2



NOTE

1. MATERIAL

- TRUNNION : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

UNIT (mm)

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	ROD SIZE (inch)	E	F	L	a	ALLOW. LOAD (Kg)
1-1/2"	1"	3/8"	50	105	35	6	500
2"	1-1/2"	3/8"		105	50	6	500
3"	2"	3/8"		120	55	6	500
4"	2"	1/2"		120	55	6	800
6"	4"	5/8"		150	95	6	1300
8"	4"	3/4"		150	95	6	2000
10"	6"	3/4"	65	190	140	6	2000
12"	8"	1"	75	220	165	6	3500
14"	8"	1"		220	165	6	3500
16"	10"	1-1/4"		270	205	9	5500
18"	10"	1-1/4"		270	205	9	5500
20"	12"	1-1/2"		290	230	9	8000
24"	12"	1-1/2"		290	230	9	8000

2. SEE DWG. NO. ST-A4-1006/1010/1013/1014/1016 FOR THE DETAIL OF HANGER ASSEMBLY.

3. SEE DWG. NO. ST-A4-0004

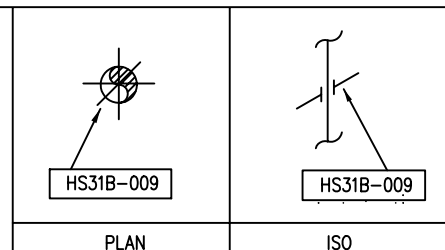
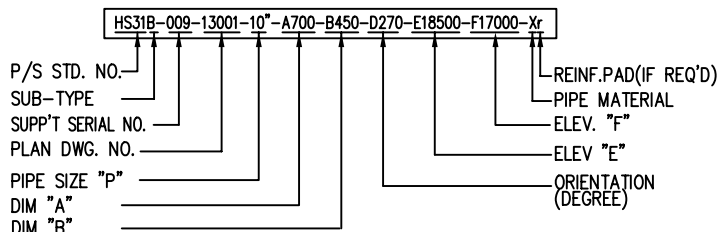
FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

4. SEE DWG. NO. ST-A4-1346 FOR THE DETAIL OF TRUNNION.

5. SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.

6. ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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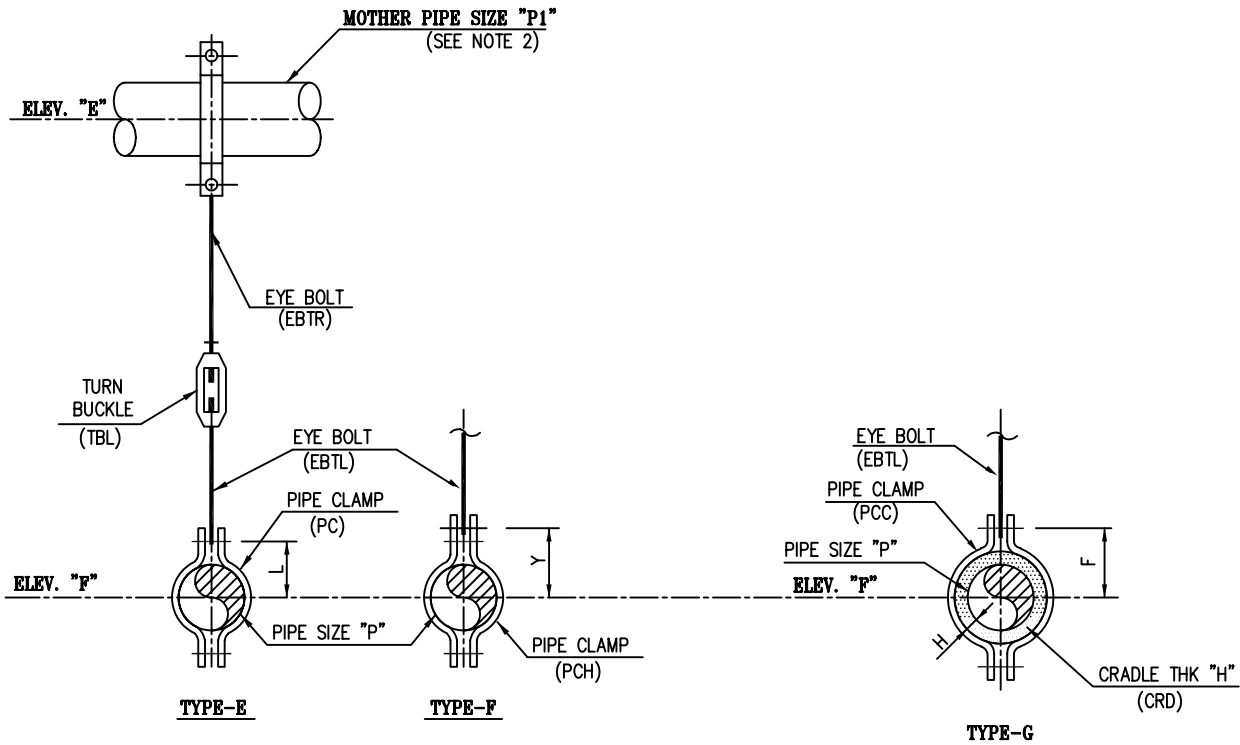


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1236

HANGER **HS-51**
(W/MOTHER PIPE, TRUNNION TYPE)

REV.
2



NOTE

1. MATERIAL

- CLAMP, BOLT/NUT

CODE	TEMP.	CLAMP	BOLT & NUT
K	~350°C	A283 GR.B OR EQ.	A307 GR.B
K1	~420°C	A516 GR.B OR EQ.	A193 GR.B7/A194 2H
Y	~640°C	A387 GR.11 OR EQ.	A193 GR.B7/A194 2H

2. UPPER LINE SHALL BE UNINSULATED AND OPERATED AT 95°C OR BELOW

3. THE USE OF THIS HANGER TYPE REQUIRES APPROVAL OF STRESS ENGINEER.

4. SEE DWG. NO. ST-A4-1010/1013/1014/1016 FOR THE DETAIL OF HANGER ASSEMBLY.

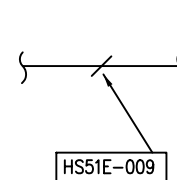
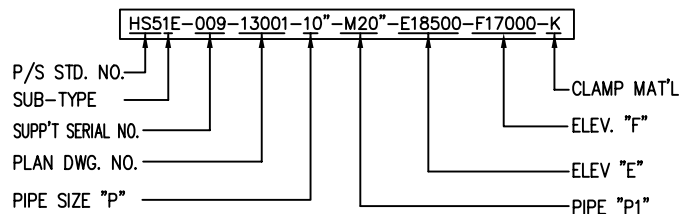
5. SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.

4. ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

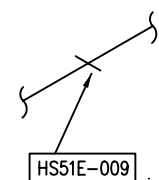


PIPE SIZE NPS "P"	ROD SIZE (inch)	UNIT (mm)			
		F	L	Y	ALLOW. LOAD (Kg)
1-1/2"	3/8"	SEE ST-A4-1016	35	135	500
2"	3/8"		50	145	500
3"	3/8"		55	165	500
4"	1/2"		55	195	800
6"	5/8"		95	260	1300
8"	3/4"		95	300	2000
10"	3/4"		140	345	2000
12"	1"		165	370	3500
14"	1"		165	420	3500
16"	1-1/4"		205	445	5500
18"	1-1/4"		205	470	5500
20"	1-1/2"		230	520	8000
24"	1-1/2"	230	580	8000	

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
7702-00 11598-00	PD-09	003	2



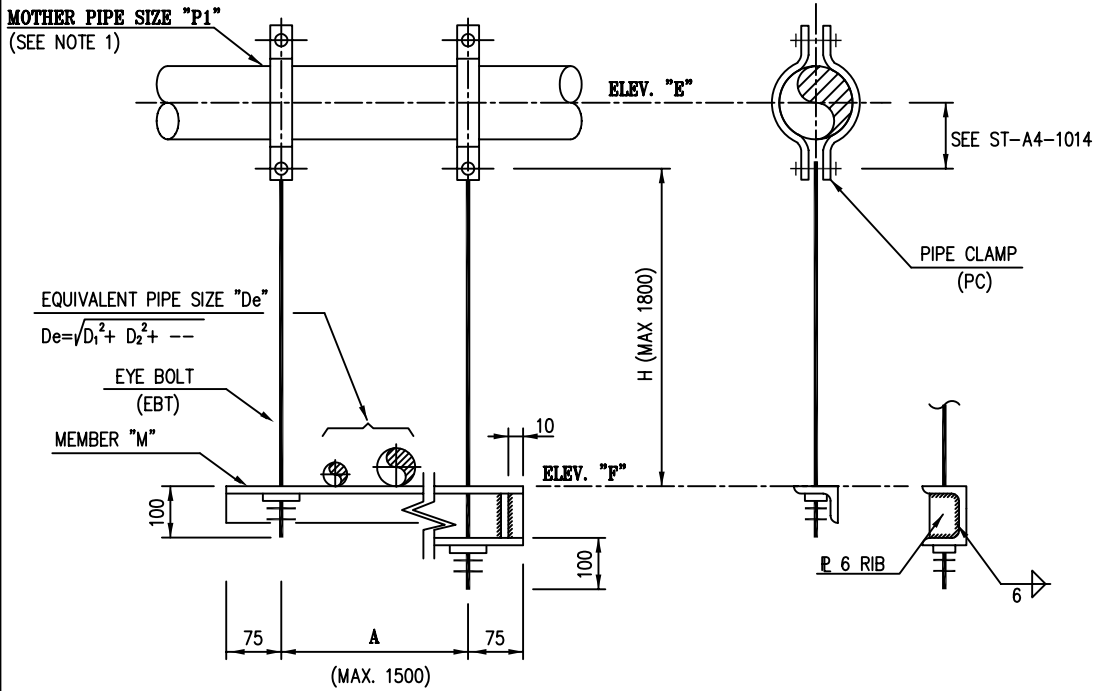
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1237

HANGER **HS-52**
(FOR MULTI PIPES W/MOTHER PIPE)

REV.
2



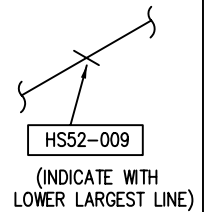
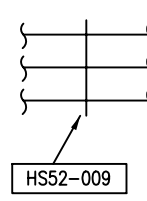
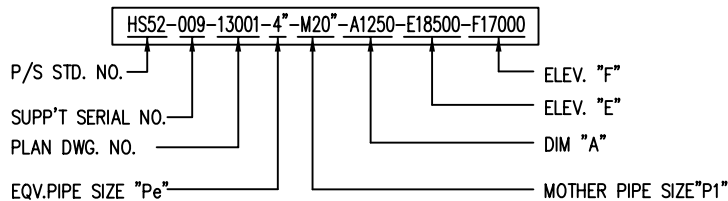
NOTE

- UPPER LINE SHALL BE UNINSULATED AND OPERATED AT 95°C OR BELOW.
- THE USE OF THIS HANGER REQUIRES APPROVAL OF STRESS ENGINEER.
- SEE DWG. NO. ST-A4-1010/1014/1027 FOR THE DETAIL AND ALLOWABLE LOAD OF HANGER ASSEMBLY.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.
- ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE. 2

UNIT (mm)

EQUIVALENT PIPE SIZE "Pe"	ROD SIZE (inch)	a	E	A (max)	MEMBER "M"	ALLOWABLE LOAD (Kg)	EQUIVALENT PIPE SIZE "Pe"	ROD SIZE (inch)	a	E	A (max)	MEMBER "M"	ALLOWABLE LOAD (Kg)
1/2"~2"	3/8"	6	50	500	A5	400	12"	1-1/4"	6	75	500	C10	4500
3"	1/2"	6	50	500	A6	750					1000	C12	4100
4"	5/8"	6	50	500	A6	750	14"	1-1/4"	6	90	500	C10	4500
				1000	A7	700					1000	C12	4100
6"	3/4"	6	50	500	A7	1400	16"	1-1/4"	6	90	1000	C12	4100
				1000	A10	1400					1500	C15	4000
8"	1"	6	75	500	A10	2900	18"	1-1/2"	9	90	1000	C15	6900
				1000	C10	2200					SEE HC-64		
10"	1"	6	75	500	A10	2900	20"	1-1/2"	9	90	1000	C15	6900
				1000	C10	2200					SEE HC-64		

SYMBOL & CODING





SHAHID TONGGOIAN
PETROCHEMICAL CO.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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CONSULTANTS



DAELIM

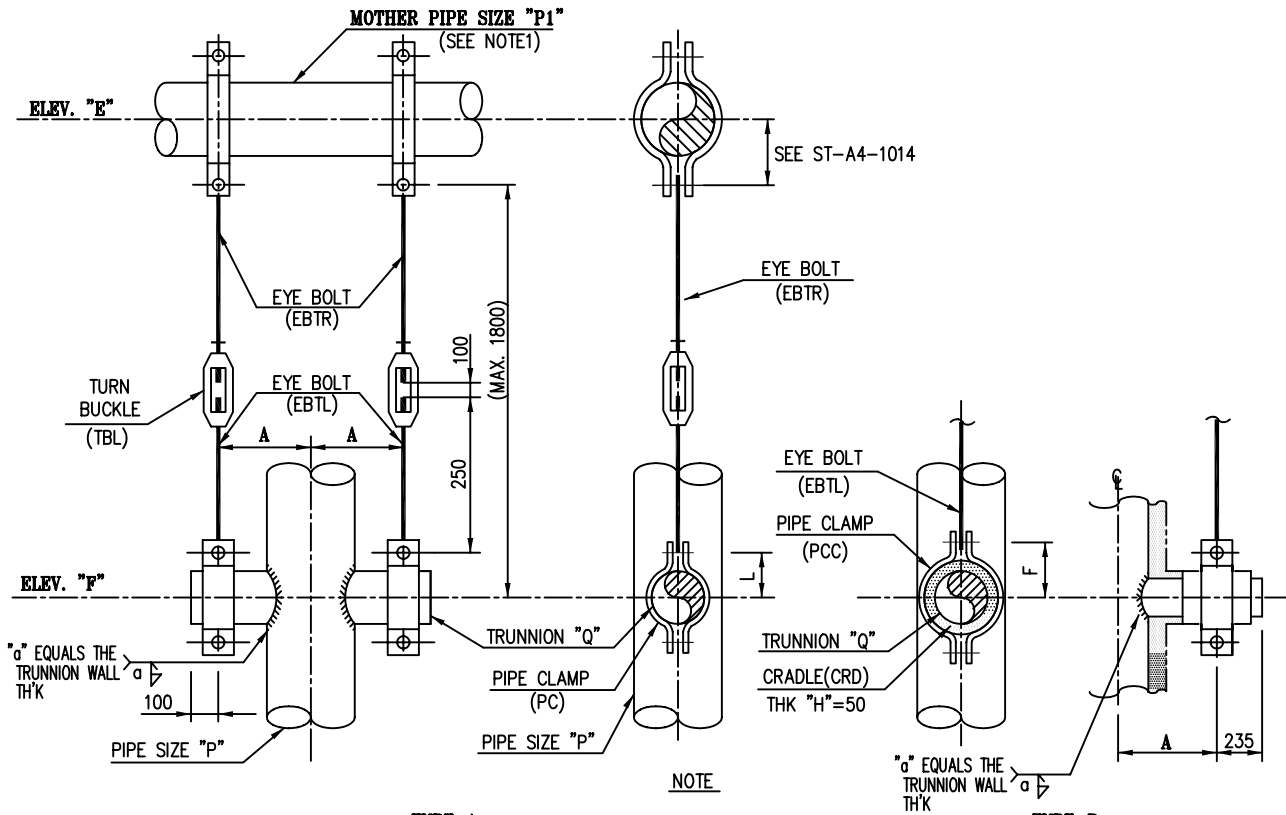
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1177

HANGER **HS-52**
(W/MOTHER PIPE, TRUNNION TYPE)

REV.
2



TYPE-A

TYPE-B

1. MATERIAL
- TRUNNION : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION
K	CARBON STEEL	A53 GR.B OR EQ.
Y	ALLOY STEEL	A335 GR.P11 OR EQ.
X	STAINLESS STEEL	A312-TP304 OR EQ.

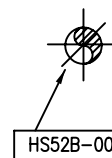
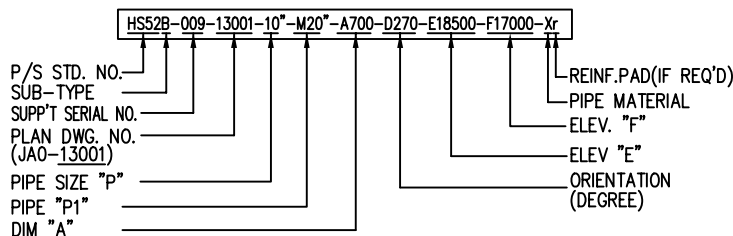
UNIT (mm)

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	ROD SIZE (inch)	F	L	ALLOW. LOAD (Kg)
1-1/2"	1"	3/8"	105	35	500
2"	1-1/2"	3/8"	105	50	500
3"	2"	3/8"	120	55	500
4"	2"	1/2"	120	55	800
6"	4"	5/8"	150	95	1300
8"	4"	3/4"	150	95	2000
10"	6"	3/4"	190	140	2000
12"	8"	1"	220	165	3500
14"	8"	1"	220	165	3500
16"	10"	1-1/4"	260	205	5500
18"	10"	1-1/4"	260	205	5500
20"	12"	1-1/2"	290	230	8000
24"	12"	1-1/2"	290	230	8000

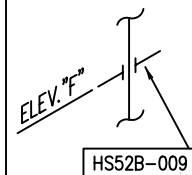
2. UPPER LINE SHALL BE UNINSULATED AND OPERATED AT 95°C OR BELOW
3. THE USE OF THIS HANGER TYPE REQUIRES APPROVAL OF STRESS ENGINEER.
4. SEE DWG. NO. ST-A4-1010/1013/1014/1016 FOR THE DETAIL OF HANGER ASSEMBLY.
5. SEE DWG. NO. ST-A4-0003 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
6. SEE DWG. NO. ST-A4-1262 FOR THE DETAIL OF TRUNNION.
7. SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.

8. ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

SYMBOL & CODING



PLAN



ISO



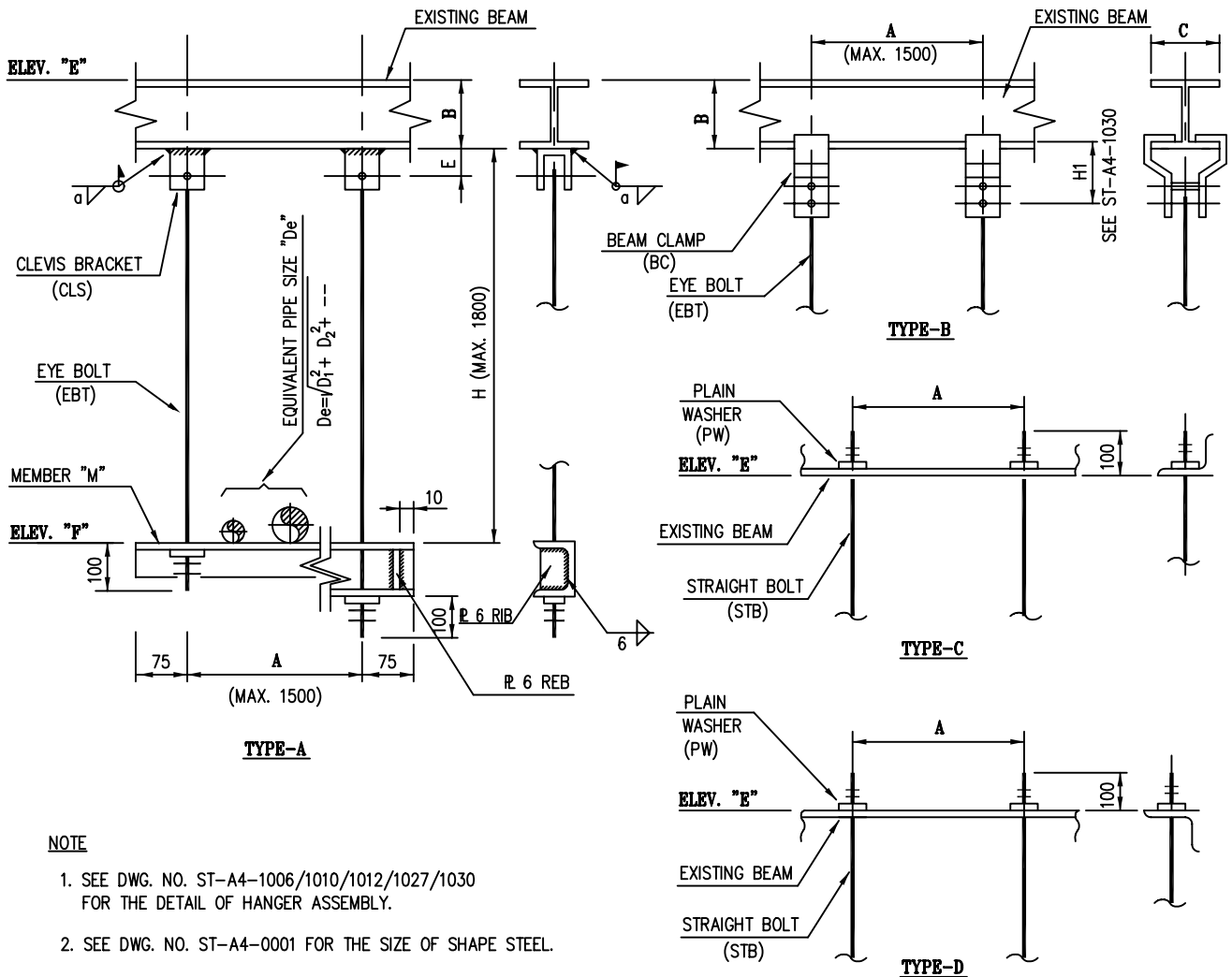
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1238

HANGER **HS-61**
(FOR MULTI PIPE, UNDER STURCTURE)

REV.
2



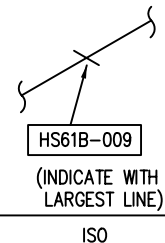
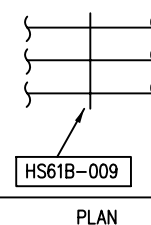
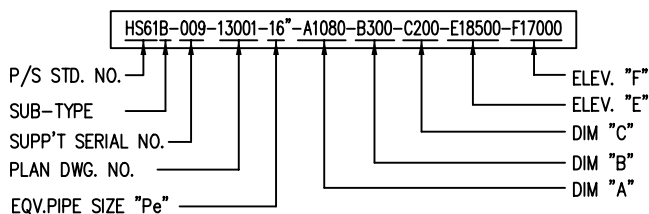
NOTE

- SEE DWG. NO. ST-A4-1006/1010/1012/1027/1030 FOR THE DETAIL OF HANGER ASSEMBLY.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

UNIT (mm)

EQUIVALENT PIPE SIZE "Pe"	ROD SIZE (inch)	a	E	A (max)	MEMBER "M"	ALLOWABLE LOAD (Kg)	EQUIVALENT PIPE SIZE "Pe"	ROD SIZE (inch)	a	E	A (max)	MEMBER "M"	ALLOWABLE LOAD (Kg)
1/2"~2"	3/8"	6	50	500	A5	400	12"	1-1/4"	6	75	500	C10	4500
3"	1/2"	6	50	500	A6	750					1000	C12	4100
4"	5/8"	6	50	500	A6	750	14"	1-1/4"	6	90	500	C10	4500
				1000	A7	700					1000	C12	4100
6"	3/4"	6	50	500	A7	1400	16"	1-1/4"	6	90	1000	C12	4100
				1000	A10	1400					1500	C15	4000
8"	1"	6	75	500	A10	2900	18"	1-1/2"	9	90	1000	C15	6900
				1000	C10	2200					SEE HC-64		
10"	1"	6	75	500	A10	2900	20"	1-1/2"	9	90	1000	C15	6900
				1000	C10	2200					SEE HC-64		

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



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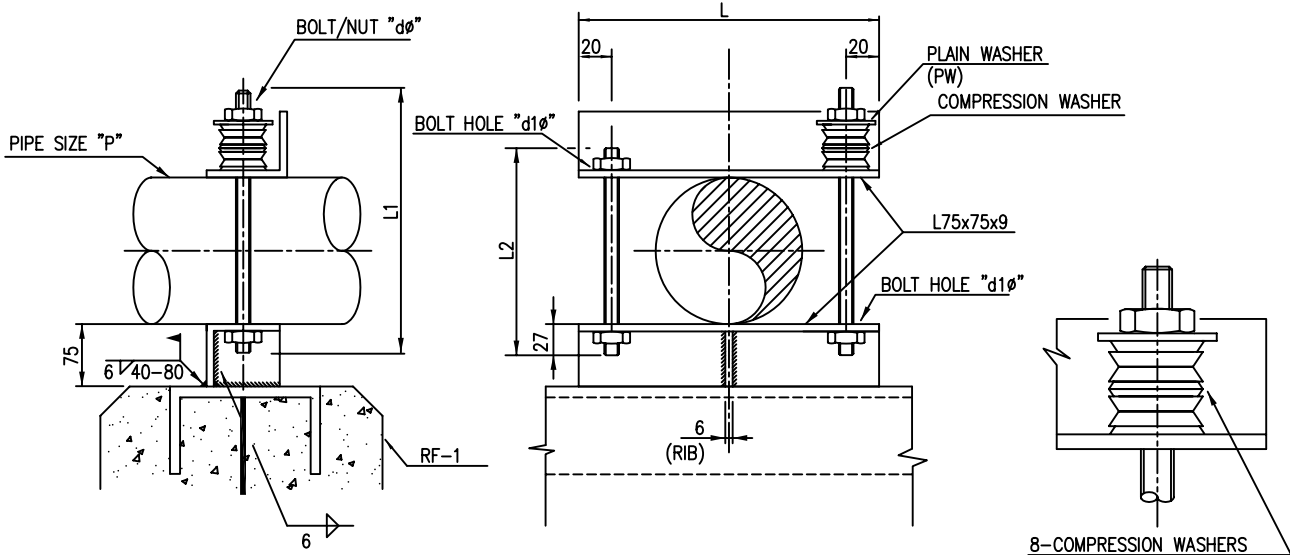
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1241

HOLD DOWNS **HD-1**
(FOR BARE OR HOT INSULATED PIPE
W/VIBRATION)

REV.
2



3" & SMALLER

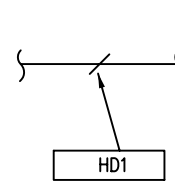
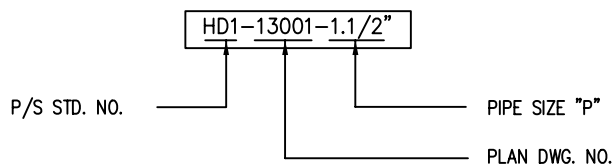
UNIT (mm)

PIPE SIZE NPS "P"	MEMBER "L"			STUD BOLT/NUT				PLAIN WASHER	COMPRESSION WASHER			ALLOW. LOAD(Kg)
	L	d1φ	Q'TY	dφ	L1	L2	Q'TY	Q'TY	TYPE	LOAD	Q'TY	
3/4"	130	11	2	3/8"	95	85	1EAx2	1EA	JIS B2706 NO.10 OR EQ.	175 Kg	8EA	700
1"	135	11	2	3/8"	100	90	1EAx2					
1-1/2"	150	11	2	3/8"	120	105	1EAx2					
2"	160	11	2	3/8"	130	115	1EAx2					
3"	190	11	2	3/8"	155	145	1EAx2					

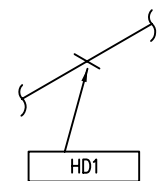
NOTE

- MATERIAL
SHAPE STEEL : A36 OR EQ.
BOLT/NUT : A193-B7/A194-2H WITH SELF LOCKING NUT
- COMPRESSION WASHER
STACK IN SERIES / PARALLEL ARRANGEMENT AS SHOWN
- FIELD PROCEDURE FOR TIGHTENING BOLTS
1) TIGHTEN ALL NUTS BY HAND (FINGER TIGHT)
2) TURN NUT AT COMPRESSION WASHER 1/2 ADDITIONAL OR 180°
ACTUAL LOAD AT COMPRESSION WASHER : 175Kg
- USE ONLY WITH CONFIRMING TO STRESS ENGINEER
- INSULATOR WILL NOT INSULATE HOLD DOWN AREA.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



DAELIM

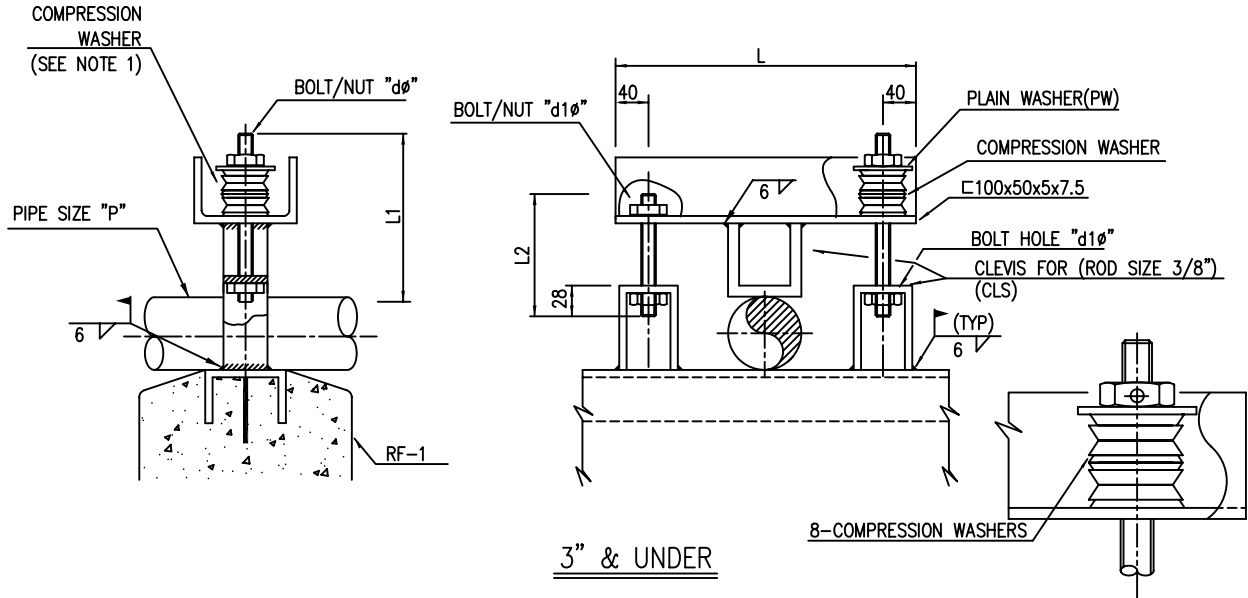
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1242

HOLD DOWNS **HD-2**
(FOR BARE OR HOT INSULATED PIPE
W/VIBRATION)

REV.
2



3" & UNDER

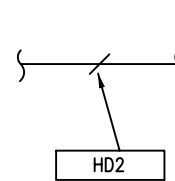
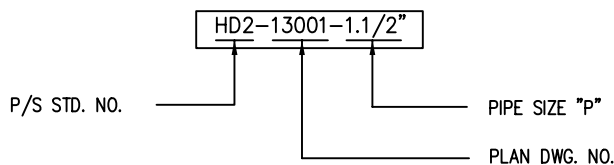
UNIT (mm)

PIPE SIZE NPS "P"	MEMBER "L"			STUD BOLT/NUT				PLAIN WASHER Q'TY	COMPRESSION WASHER			ALLOW. LOAD(Kg)
	L	d1 ϕ	Q'TY	d ϕ	L1	L2	Q'TY		TYPE	LOAD	Q'TY	
3/4"	200	11	1	3/8"	95	85	1EAx2	1EA	JIS B2706 NO.10 OR EQ.	175 Kg	8EA	700
1"	200	11	1	3/8"	100	90	1EAx2					
1-1/2"	200	11	1	3/8"	120	105	1EAx2					
2"	220	11	1	3/8"	130	115	1EAx2					
3"	250	11	1	3/8"	155	145	1EAx2					

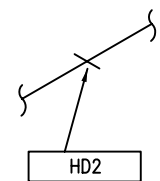
NOTE

- MATERIAL
SHAPE STEEL : A36 OR EQ.
BOLT/NUT : A193-B7/A194-2H WITH SELF LOCKING NUT.
- COMPRESSION WASHER
STACK IN SERIES / PARALLEL ARRANGEMENT AS SHOWN
- FIELD PROCEDURE FOR TIGHTENING BOLTS
1) TIGHTEN ALL NUTS BY HAND (FINGER TIGHT)
2) TURN NUT AT COMPRESSION 1/2 ADDITIONAL TURNS OR 180°
ACTUAL LOAD AT COMPRESSION WASHER : 175Kg
- SEE DWG NO. ST-A4-1006 FOR THE DETAIL OF CLEVIS.
- INSULATOR WILL NOT INSULATE HOLD DOWN AREA.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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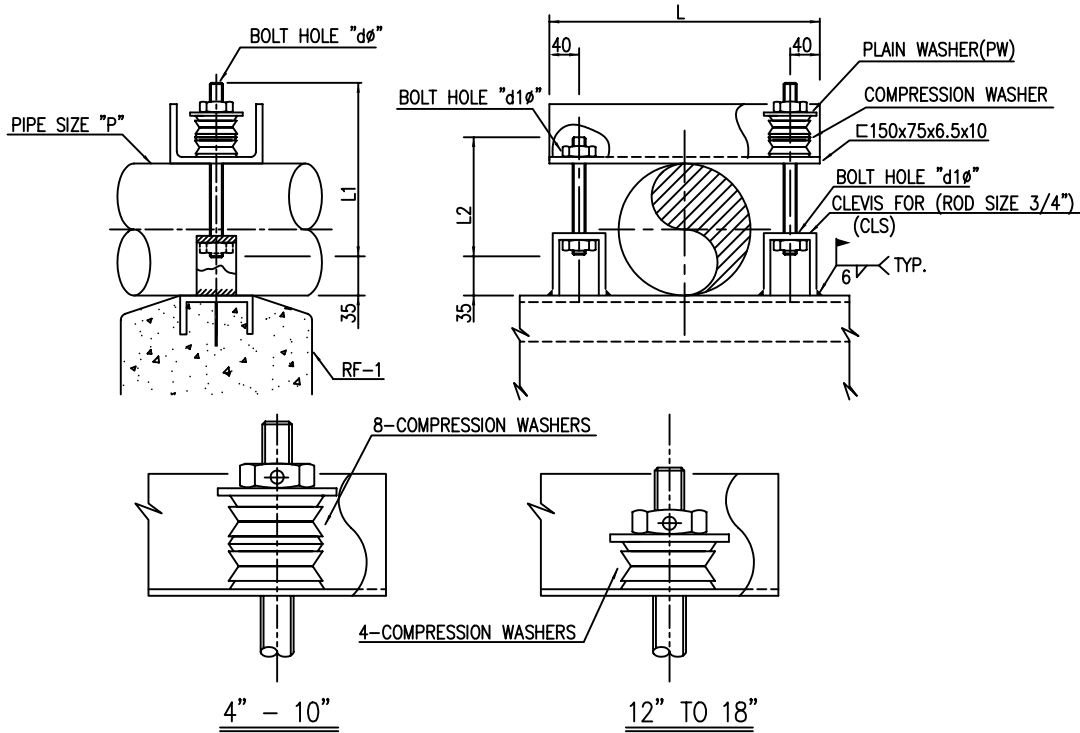
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1243

HOLD DOWNS **HD-3**
(FOR BARE OR HOT INSULATED PIPE
W/VIBRATION)

REV.
2



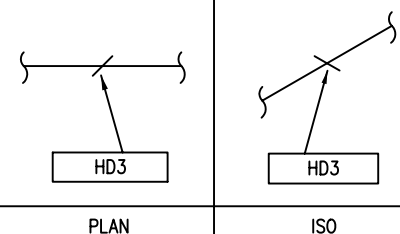
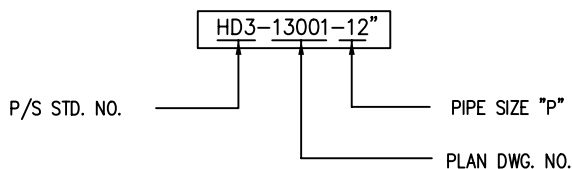
UNIT (mm)

TYPE	PIPE SIZE NPS "P"	"L" MEMBER			BOLT/NUT				PLAIN WASHER Q'TY	COMPRESSION WASHER			ALLOW. LOAD(Kg)
		L	d1φ	Q'TY	dφ	L1	L2	Q'TY		TYPE	LOAD	Q'TY	
TYPE I	4"	310	21	1	3/4"	140	115	1EAx2	1EAx1	JIS B2706 NO, 20 OR EQ.	250 Kg	8EAX1	1000
	6"	360	21	1	3/4"	190	170	1EAx2					
	8"	415	21	1	3/4"	240	220	1EAx2					
	10"	450	21	1	3/4"	300	275	1EAx2					
TYPE II	12"	480	21	1	3/4"	345	325	1EAx2	1EAx1	JIS B2706 NO, 20 OR EQ.	500 Kg	4EAX1	2000
	14"	510	21	1	3/4"	380	360	1EAx2					
	16"	560	21	1	3/4"	425	405	1EAx2					
	18"	610	21	1	3/4"	480	460	1EAx2					

NOTE

- MATERIAL
SHAPE STEEL : A36 OR EQ.
BOLT/NUT : A193-B7/A194-2H WITH SELF LOCKING NUT.
- COMPRESSION WASHER
STACK IN SERIES / PARALLEL ARRANGEMENT AS SHOWN
- FIELD PROCEDURE FOR TIGHTENING BOLTS
1) TIGHTEN ALL NUTS BY HAND (FINGER TIGHT)
2) TURN NUT AT COMPRESSION 1/4 ADDITIONAL TURNS OR 90°;
ACTUAL LOAD AT COMPRESSION WASHER : 250Kg FOR TYPE I AND 500Kg FOR TYPE II.
- SEE DWG. NO. ST-A4-1006 FOR THE DETAIL OF CLEVIS.
- USE ONLY WITH APPROVAL FROM STRESS ENGINEER
- INSULATOR WILL NOT INSULATE HOLD DOWN AREA.

SYMBOL & CODING



PLAN

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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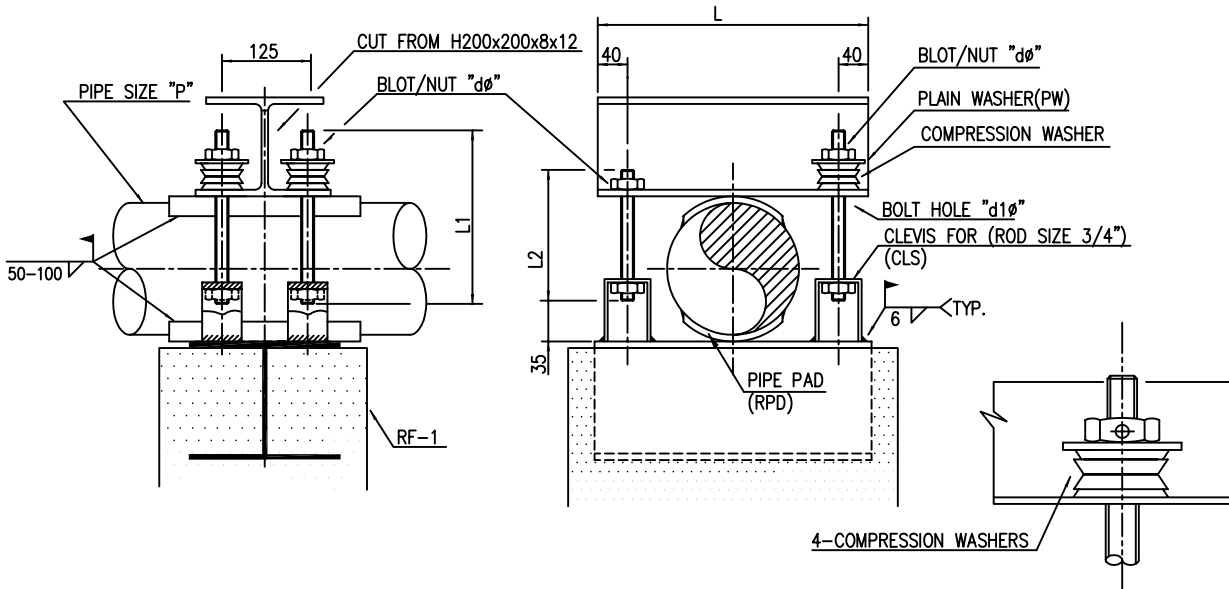
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1244

HOLD DOWNS **HD-4**
(FOR BARE OR HOT INSULATED PIPE
W/VIBRATION)

REV.
2



20" TO 36"

UNIT (mm)

PIPE SIZE NPS "P"	CT H20			BOLT/NUT				PLAIN WASHER Q'TY	COMPRESSION WASHER			ALLOW. LOAD(Kg)
	L	d1φ	Q'TY	dφ	L1	L2	Q'TY		TYPE	LOAD	Q'TY	
20"	660	21	1	3/4"	550	535	2EAx2	1EAx2	JIS B2706 NO. 20 OR EQ.	500 Kg	4EAx2	4000
24"	760	21	1	3/4"	650	635	2EAx2					
30"	915	21	1	3/4"	800	790	2EAx2					
36"	1065	21	1	3/4"	955	940	2EAx2					

NOTE

1. MATERIAL

- SHAPE STEEL : A36 OR EQ.
- BOLT/NUT : A197-B7/A194-2H WITH SELF LOCKING NUT
- PIPE PAD : SAME AS RUN PIPE OR MAT'L TABLE.

- 4. SEE DWG NO. ST-A4-1006 FOR THE DETAIL OF CLEVIS.
- 5. USE ONLY WITH CONFIRMING TO STRESS ENGINEER
- 6. INSULATOR WILL NOT INSULATE HOLD DOWN AREA.

CODE	RUN PIPE	LUG PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (31803)OR EQ.

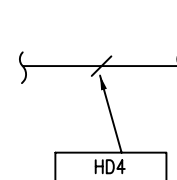
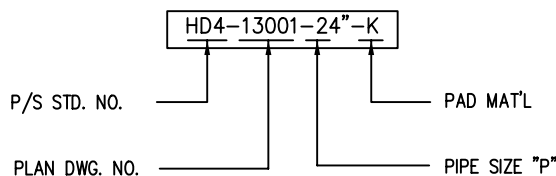
2. COMPRESSION WASHER

STACK IN SERIES / PARALLEL ARRANGEMENT AS SHOWN MARK

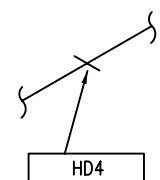
3. FIELD PROCEDURE FOR TIGHTENING BOLTS

- 1) TIGHTEN ALL NUTS BY HAND (FINGER TIGHT)
- 2) TURN NUT AT COMPRESSION 1/4 ADDITIONAL TURNS OR 90°
ACTUAL LOAD AT COMPRESSION WASHER : 500Kg

SYMBOL & CODING



PLAN



ISO



PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1245

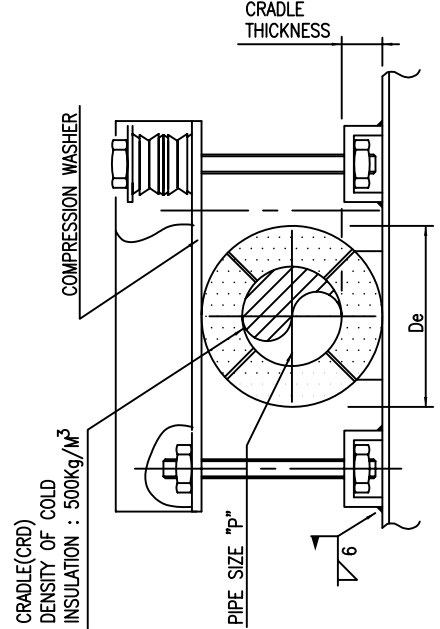
HOLD DOWNS **HD-5**
(FOR COLD INSULATED PIPES W/VIBRATION)

REV.
2

HOLD DOWN SELECTION TABLE FOR COLD INSULATED PIPING
(1-1/2" TO 30", -45° C & OVER)

PIPE SIZE NPS "p"	T (INCH)	HD TYPE	EQUIVALENT PIPE SIZE																		
			3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4	5	5 1/4	5 1/2
1-1/2"	4"	HD-3																			
2"	6"																				
3"	8"																				
4"	10"																				
6"	12"																				
8"	16"																				
10"	18"																				
12"	20"																				
14"	24"																				
16"	(18")	(HD-3)																			
18"	20"																				
20"	24"																				
24"	30"	HD-4																			
26"																					
28"																					
30"	36"																				

NOT AVAILABLE
SPECIAL DESIGN REQ'D



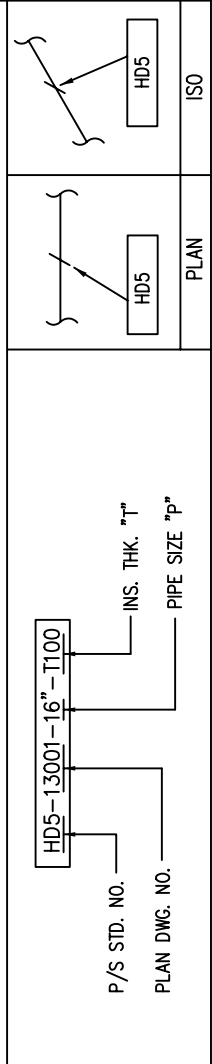
P : PIPE SIZE , De : EQUIVALENT PIPE SIZE, T : COLD INSULATION THICKNESS

HD-TYPE : HOLD DOWNS TYPE FOR APPLICATION OF EQUIVALENT PIPE SIZE

NOTE

- De : THIS DIM. TO BE O.D. EACH PIPE SIZE + 2 TIMES COLD INSULATION THICKNESS.
(EX. 14" LINE WITH 3" COLD INSUL. = 20" De)
- SPECIAL DESIGN : HOLD DOWNS FOR COLD INSULATION NEED APPROVAL FROM STRESS ENGINEER.
- FOR APPLICATION TEMPERATURES OF -46° C & BELOW CONSULT INSULATION ENGINEER
- SEE DWG. NO. ST-A4-1243 FOR THE DETAIL OF HD-3
SEE DWG. NO. ST-A4-1244 FOR THE DETAIL OF HD-4
- SEE DWG. NO. ST-A4-1104 FOR THE DETAIL OF CRADLE.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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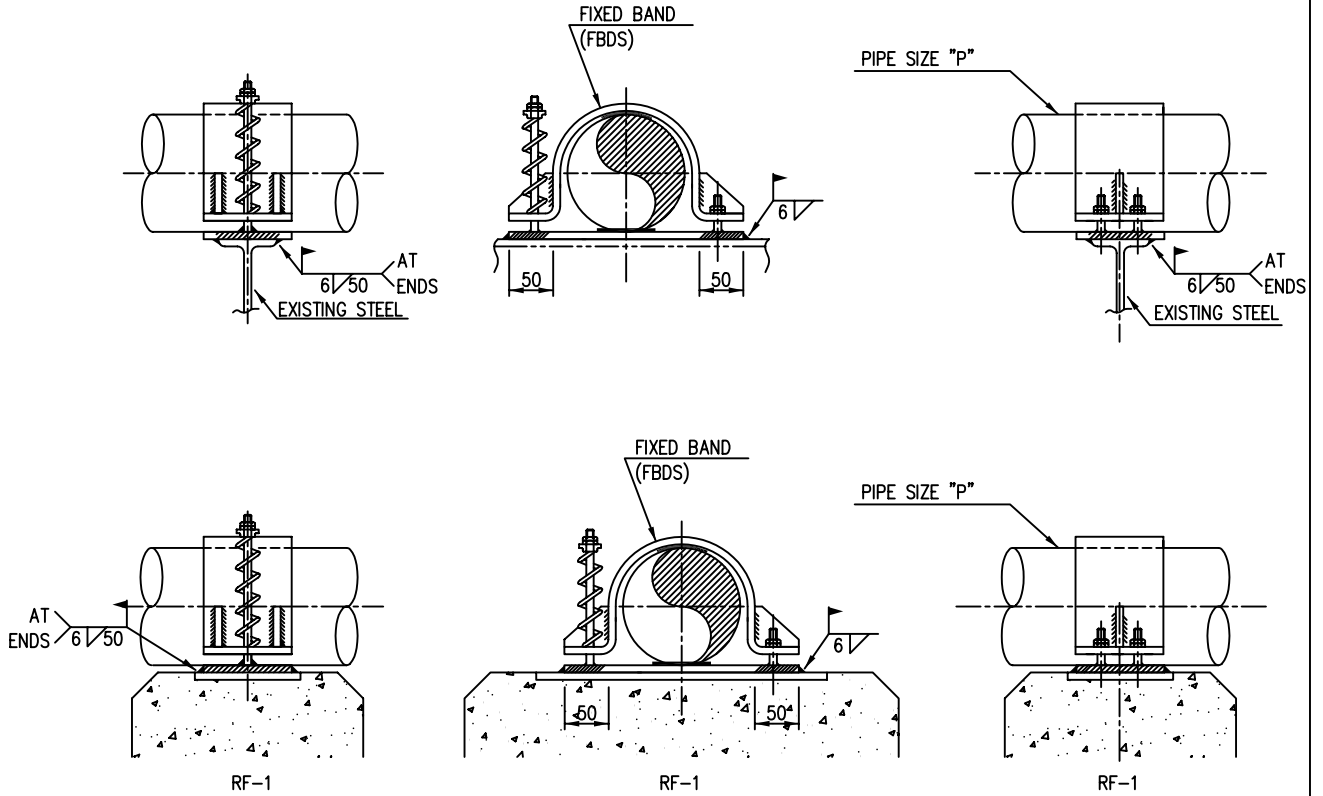
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1246

HOLD DOWNS **HD-11**
(FOR VIBRATION LINES, FIXED BAND TYPE)

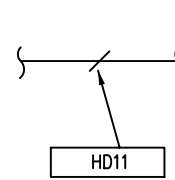
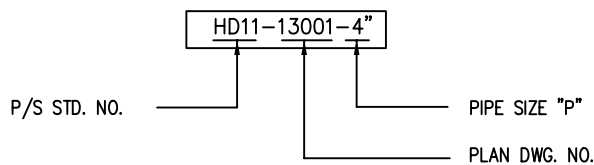
REV.
2



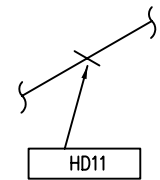
NOTE

1. USE ONLY WITH CONFIRMING TO STRESS ENGINEER.
2. INSULATOR WILL NOT INSULATE HOLD DOWN AREA.
3. SEE DWG. NO. ST-A4-1025 FOR THE DETAIL OF FIXED BAND(FBDS)

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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CONSULTANTS



DAELIM

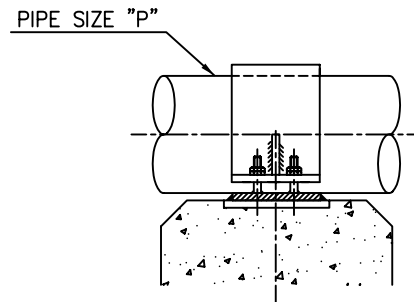
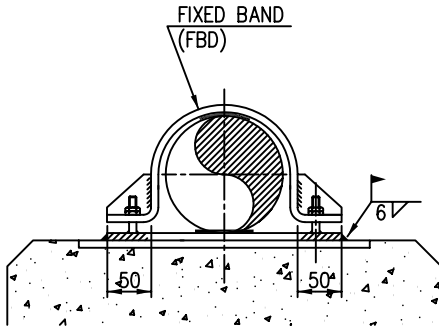
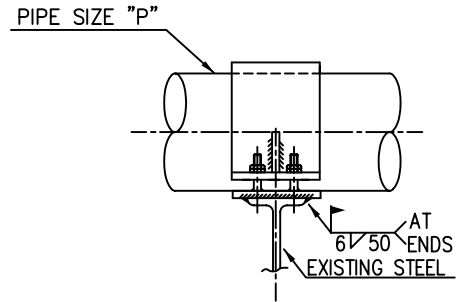
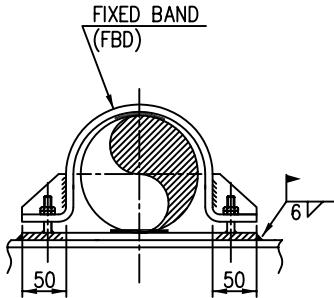
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1247

HOLD DOWNS **HD-12**
(FOR VIBRATION LINES, FIXED BAND TYPE)

REV.
2



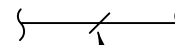
NOTE

1. USE ONLY WITH CONFIRMING TO STRESS ENGINEER.
2. INSULATOR WILL NOT INSULATE HOLD DOWN AREA.
3. SEE DWG. NO. ST-A4-1024 FOR THE DETAIL AND ALLOWABLE LOAD OF FIXED BAND(FBD)

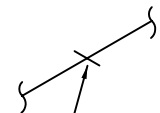
SYMBOL & CODING

HD12-13001-24"

P/S STD. NO. _____ PIPE SIZE "P"
_____ PLAN DWG. NO.



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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CONSULTANTS



DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

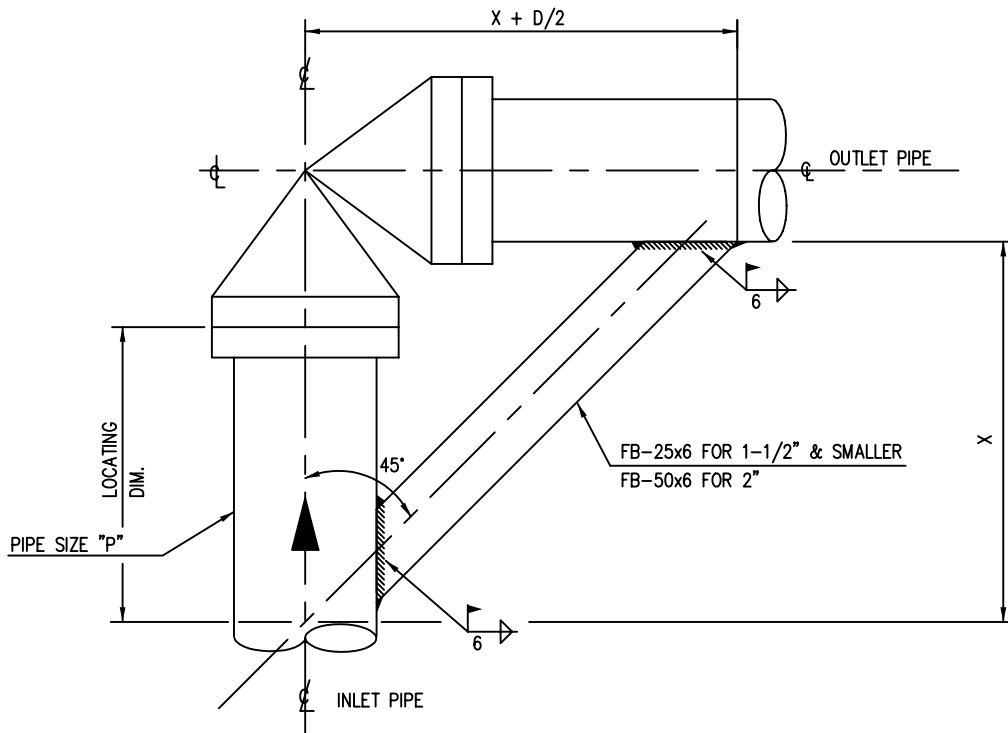
PIPING SUPPORT STANDARD DWG.

ST-A4-1251

GUSSET SUPPORT
(FOR ANGLE VALVE)

PS-1

REV.
2



2" & SMALLER

NOTE

1. MATERIAL

- GUSSET PLATE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	GUSSET PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (31803) OR EQ.

SYMBOL & CODING

PS1-009-13001-2"-K

P/S STD. NO. _____

SUPP'T SERIAL NO. _____

PLAN DWG. NO. _____

PIPE MATERIAL _____

PIP SIZE "P" _____

DO NOT INDICATE



PS1-009

PLAN

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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CONSULTANTS



DAELIM

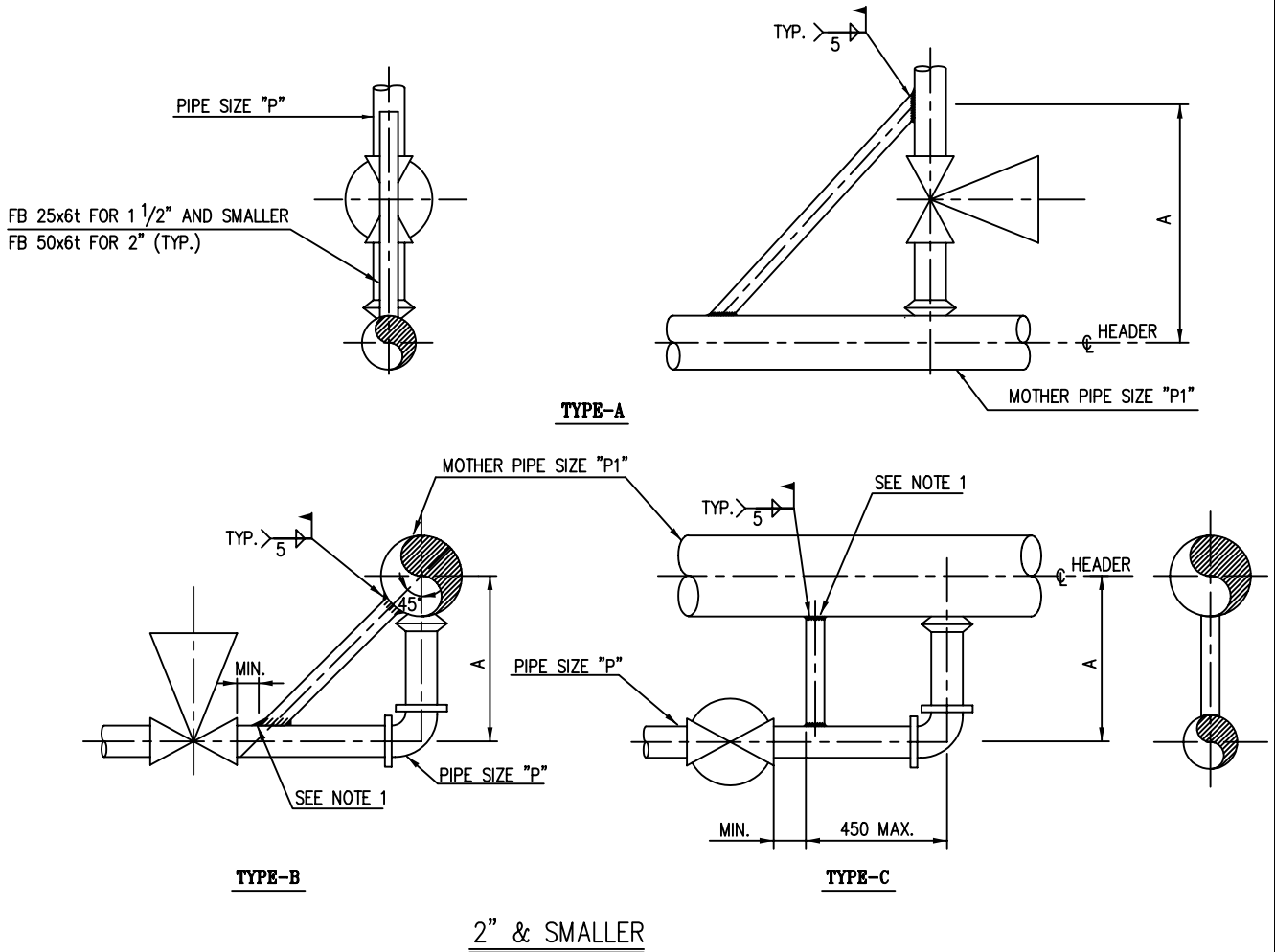
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1252

GUSSET SUPPORT **PS-2**
(FOR BRANCH PIPE, WELDING TYPE)

REV.
2



2" & SMALLER

NOTE

1. DESIGN APPLICATION

- LINES TO & FROM RECIPROCATING COMPRESSORS & PUMPS.
- LINES WITH ANSI 1500# RATING AND ABOVE
- LINES WITH DOUBLE BLOCK VALVES.
- LINES TO & FROM CENTRIFUGAL COMPRESSORS WITHIN 20" PIPE DIAMETER OF THE COMPRESSOR.

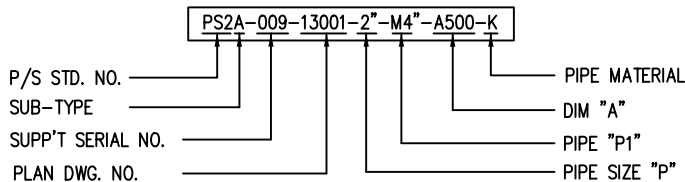
2. MATERIAL

- GUSSET PLATE : SAME AS RUN PIPE OR MAT'L TABLE.

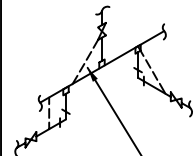
CODE	RUN PIPE	PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP.304, TP.316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803)OR EQ.



SYMBOL & CODING



DO NOT INDICATE



PS2A-009

PLAN

ISO



SAZEH
CONSULTANTS



DAELIM

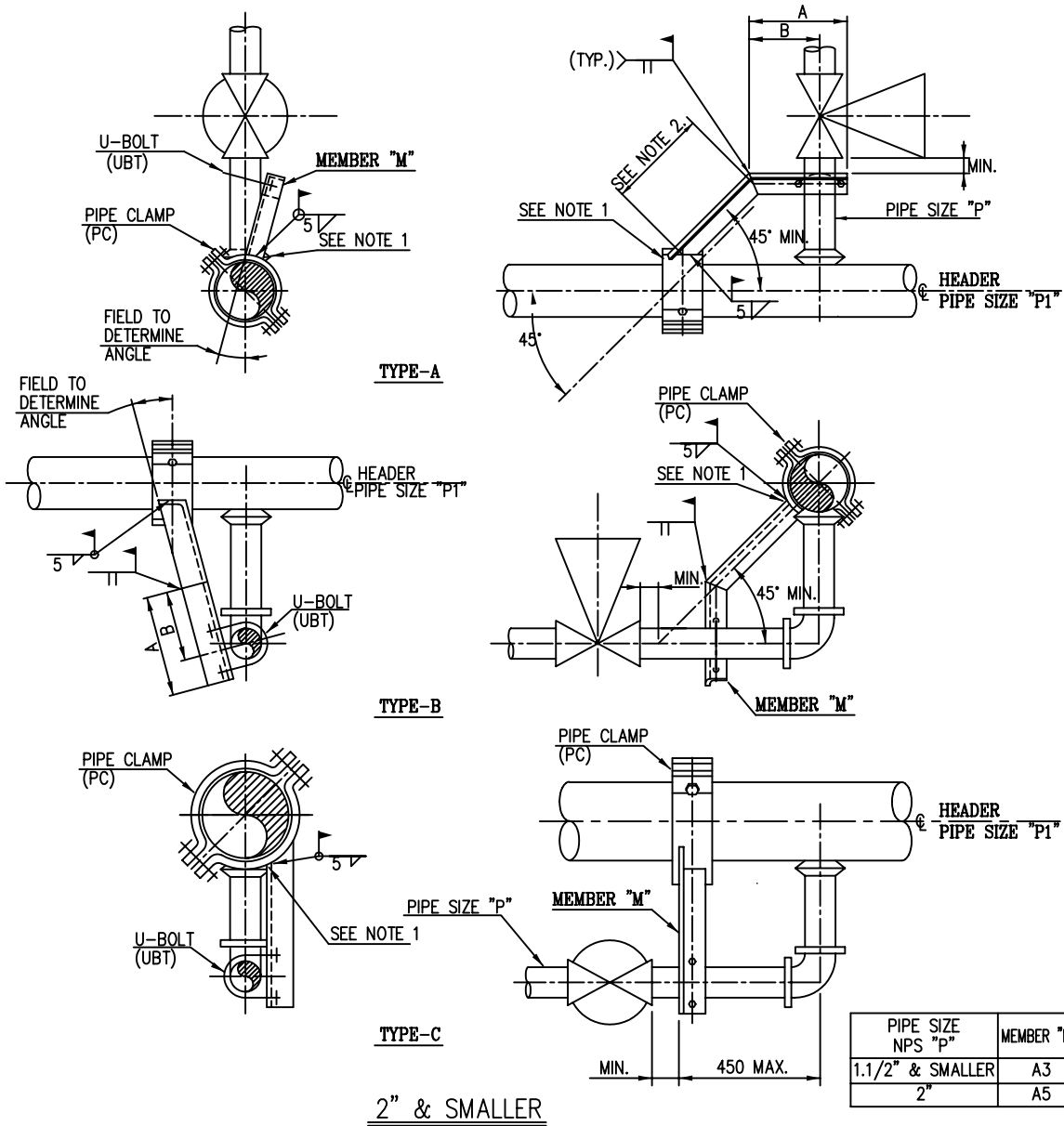
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1253

GUSSET SUPPORT **PS-3**
(FOR BRANCH PIPE, U-BOLT TYPE)

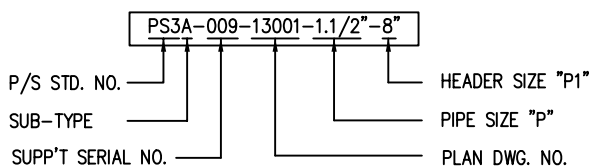
REV.
2



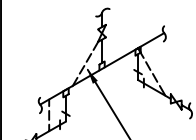
NOTE

- FIELD TO TRIM MEMBER TO MATCH RADIUS OF CLAMP.
- FIELD TO CUT LENGTH AS REQUIRED.
- DESIGN APPLICATION
 - LINES TO & FROM RECIPROCATING COMPRESSORS & PUMPS.
 - LINES WITH ANSI 1500# RATING AND ABOVE
 - LINES WITH DOUBLE BLOCK VALVES.
 - LINES TO & FROM CENTRIFUGAL COMPRESSORS WITHIN 20" PIPE DIAMETER OF THE COMPRESSOR.
- MATERIAL
 - SHAPE STEEL : A36 OR EQ.
- SEE DWG. NO. ST-A4-1001 FOR THE DETAIL OF U-BOLT.
- SEE DWG. NO. ST-A4-1014 FOR THE DETAIL OF CLAMP.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.
- ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

SYMBOL & CODING



DO NOT INDICATE



PS3A-009

PLAN

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

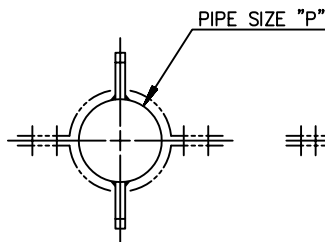
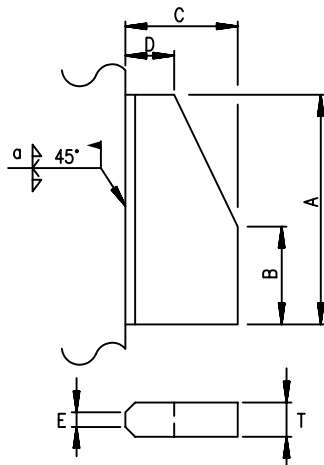
PIPING SUPPORT STANDARD DWG.

ST-A4-1255

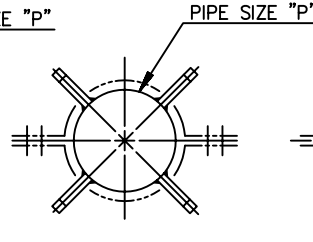
STOPPER LUG
(FOR RISER PIPE)

PS-11

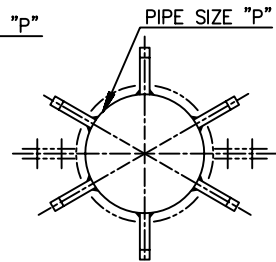
REV
2



2-1/2" & SMALLER



3" TO 12"



14" TO 30"

LOCATION OF STOPPER LUG

NOM. PIPE SIZE (INCH)	UNIT (mm)									
	A	B	C	D	E	T	REQ'D NO.	a	WEIGHT (Kg)	ALLOW. LOAD (Kg)
1/2"	50	20	30	15	2	6	2	4	0.12	650
3/4"	50	20	30	15	2	6	2	4	0.12	650
1"	50	20	30	15	2	6	2	4	0.12	650
1-1/2"	50	20	30	15	2	6	2	4	0.12	650
2"	50	20	30	15	2	6	2	4	0.12	650
2-1/2"	50	20	30	15	2	6	2	4	0.12	1000
3"	50	20	30	15	3	9	4	6	0.36	2600
4"	50	20	30	15	3	12	4	6	0.48	2600
5"	50	20	30	15	3	12	4	6	0.48	2600
6"	75	45	30	15	5	16	4	6	1.0	3800
8"	75	45	30	15	5	16	4	6	1.0	3800
10"	100	50	40	15	7	19	4	6	2.04	4600
12"	100	50	40	15	7	19	4	6	2.04	4600
14"	100	50	50	20	8	22	6	9	4.38	8350
16"	100	50	50	20	8	22	6	9	4.38	8350
18"	120	70	50	20	10	28	6	9	6.9	8700
20"	120	70	50	20	10	28	6	9	6.9	8700
24"	140	75	60	20	14	28	6	9	10.92	8700
26"	140	75	60	20	14	32	6	9	10.92	8700
28"	140	75	60	20	14	32	6	9	10.92	8700
30"	140	75	60	20	14	32	6	9	10.92	8700

NOTE

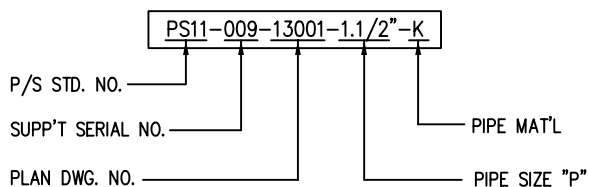
1. MATERIAL

- LUG PLATE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	LUG PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803)OR EQ



SYMBOL & CODING



PS11-009

PLAN



PS11-009

ISO



SHAHID TONGGOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



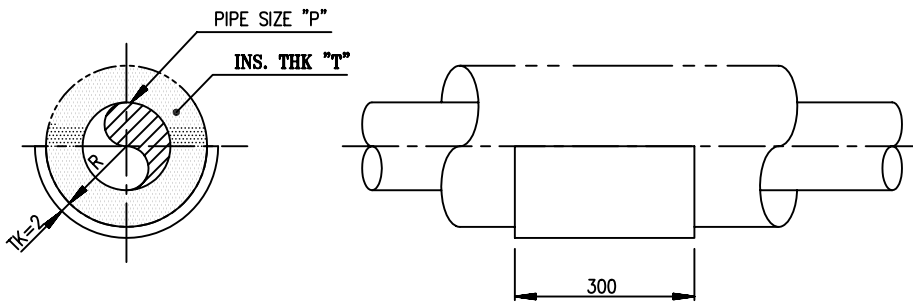
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1256

PROTECTION SHIELD **PS-22**
(FOR 1-1/2" & SMALLER INSULATED PIPE)

REV
2

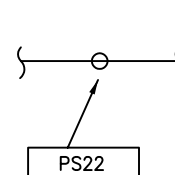
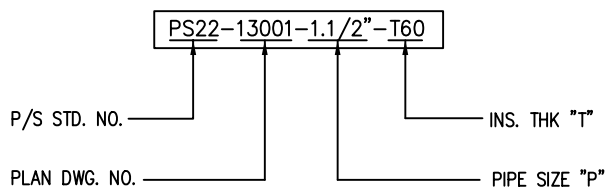


PIPE SIZE \ INS. THK	UNIT (mm)								
	25	40	50	60	65	75	80	90	100
1/2"	36	51	61	71	76	86	91	101	111
3/4"	39	54	64	74	79	89	94	104	114
1"	42	57	67	77	82	92	97	107	117
1-1/2"	50	65	75	85	90	100	105	115	125

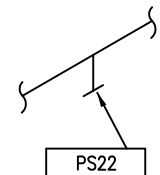
NOTE

1. MATERIAL : A36 OR EQ.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



SAZEH
CONSULTANTS



DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

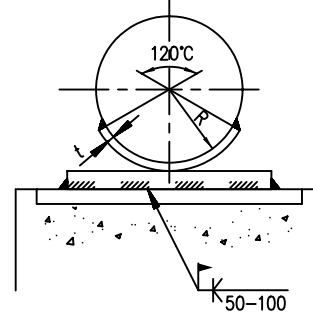
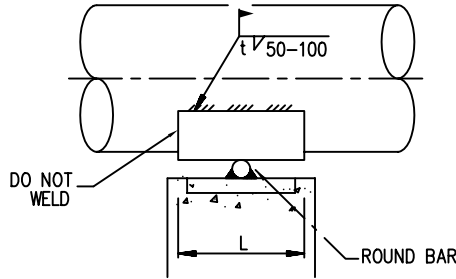
PIPING SUPPORT STANDARD DWG.

ST-A4-1257

PIPE PAD
(FOR POINT CONTACT)

PS-23

REV
2



UNIT (mm)

DIMENSION		RUN PIPE		ALLOWABLE LOAD (Kg)					
L	R	SIZE	THICK (t)	C.S		A.S		S.S	
				WITHOUT PAD	WITH PAD	WITHOUT PAD	WITH PAD	WITHOUT PAD	WITH PAD
400	109.6	8"	STD	200	500	200	500	100	400
400	136.5	10"	STD	300	700	200	700	200	600
400	161.9	12"	STD	300	900	300	800	300	700
400	177.8	14"	STD	300	900	300	900	300	800
400	203.2	16"	STD	400	1000	300	1000	300	800
400	228.6	18"	STD	400	1100	400	1000	300	900
400	254	20"	STD	400	1200	400	1100	300	1000
400	305	24"	STD	500	1400	400	1300	400	1100
450	331	26"	STD	500	1400	400	1300	400	1200
450	356	28"	STD	500	1500	500	1400	400	1200
450	381	30"	STD	500	1600	500	1500	400	1300
450	407	32"	STD	500	1600	500	1500	400	1300
450	432	34"	STD	500	1700	500	1600	400	1400
450	458	36"	STD	500	1700	500	1600	400	1400
500	534	42"	11.13	800	2400	700	2200	600	2000
500	610	48"	11.13	800	2500	700	2400	700	2100
500	762	60"	12.7	900	2800	800	2600	700	2300
500	838	66"	12.7	900	2900	800	2700	700	2400
500	864	68"	12.7	900	3000	800	2800	700	2500

NOTE

1. THE BASIS OF ALLOWABLE LOAD ARE AS FOLLOWS ;

- MAT'L : SEE TABLE
- OPER. TEMP : SEE TABLE
- CODE STRESS (DUE TO PRESSURE + BENDING) $\leq 0.5 S_h$
- RUN PIPE THICK : SEE TABLE
- AREA OF POINT CONTACTED $\leq 1 (mm^2)$

2. MATERIAL

- PAD : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	PAD
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

SYMBOL & CODING

PS23A-13001-18"-K

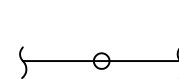
P/S STD. NO. ————

SUB TYPE ————

PLAN DWG. NO. ————

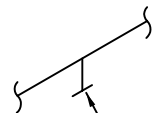
PIPE MAT'L ————

PIPE SIZE "P" ————



PS23A

PLAN



PS23A

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



SAZEH
CONSULTANTS



DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

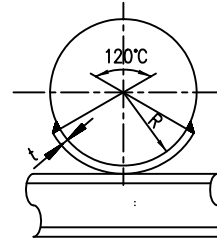
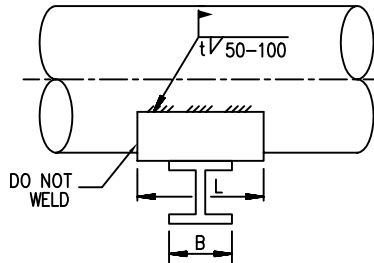
PIPING SUPPORT STANDARD DWG.

ST-A4-1258

PIPE PAD
(FOR LINE CONTACT)

PS-24

REV
2



UNIT (mm)

DIMENSION		RUN PIPE		ALLOWABLE LOAD (Kg)					
L	R	SIZE	THICK (t)	C.S		A.S		S.S	
				WITHOUT PAD	WITH PAD	WITHOUT PAD	WITH PAD	WITHOUT PAD	WITH PAD
400	110	8"	STD	1900	6400	1800	5900	1600	5300
400	137	10"	STD	2200	7300	2100	6800	1800	6100
400	162	12"	STD	2200	7200	2000	6700	1800	6000
400	178	14"	STD	2100	7000	2000	6500	1800	5900
400	203	16"	STD	2000	6700	1900	6200	1700	5600
400	229	18"	STD	2000	6400	1800	6000	1600	5400
400	254	20"	STD	1900	6200	1800	5800	1600	5200
400	305	24"	STD	1800	5800	1700	5400	1500	4800
450	331	26"	STD	1700	5600	1600	5300	1400	4700
450	356	28"	STD	1700	5500	1600	5100	1400	4600
450	381	30"	STD	1700	5400	1500	5000	1400	4500
450	407	32"	STD	1600	5200	1500	4900	1300	4400
450	432	34"	STD	1600	5100	1500	4800	1300	4300
450	458	36"	STD	1600	5000	1400	4700	1300	4200
500	534	42"	11.13	1900	6100	1800	5700	1600	5100
500	610	48"	11.13	1800	5800	1700	5400	1500	4900
500	762	60"	12.7	1700	5300	1600	5000	1400	4400
500	838	66"	12.7	1600	5100	1500	4800	1400	4300
500	864	68"	12.7	1600	5100	1500	4700	1300	4200

NOTE

1. THE BASIS OF ALLOWABLE LOAD ARE AS FOLLOWS ;

- . MAT'L : SEE TABLE
- . OPER. TEMP : SEE TABLE
- . CODE STRESS (DUE TO PRESSURE + BENDING) $\leq 0.5 S_h$
- . RUN PIPE THICK : SEE TABLE
- . LENGTH OF LINE CONTACTED(B) : 100mm (IF "B" IS 150mm, ALLOWABLE LOADS MAY INCREASE TO 40%)

2. MATERIAL

- PAD : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	PAD
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A790 (31803)OR EQ

SYMBOL & CODING

PS24A-13001-12"-K

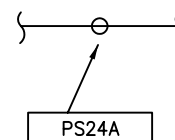
P/S STD. NO. ————

SUB TYPE ————

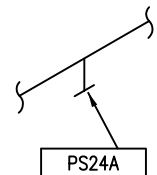
PLAN DWG. NO. ————

PIPE MAT'L ————

PIPE SIZE "P" ————



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2

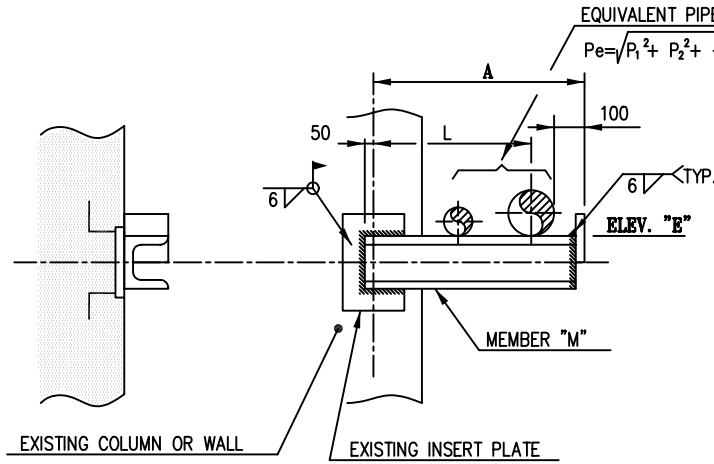


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1261

RESTING RC-1
(FOR MULTI PIPES ON CONCRETE WALL)

REV.
2



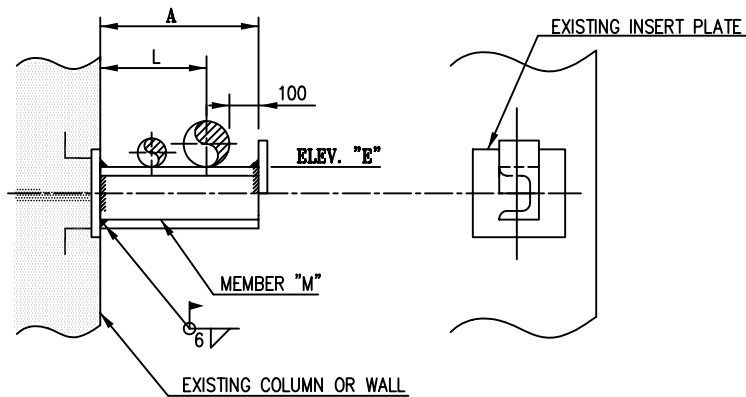
TYPE-A

UNIT (mm)

EQV. PIPE SIZE "Pe"	L ≤ 500		500 < L ≤ 1000	
	MEMBER SIZE "M"	ALLOW. LOAD (KG)	MEMBER SIZE "M"	ALLOW. LOAD (KG)
3/4"	A5	80	A7	60
1"	A5	80	A7	60
1-1/2"	A5	80	A7	60
2"	A6	150	A10	140
3"	A7	280	C12	340
4"	A10	560	C12	340
6"	C10	880	C15	680
8"	C12	1600	C20	1900

NOTE

1. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.



TYPE-B

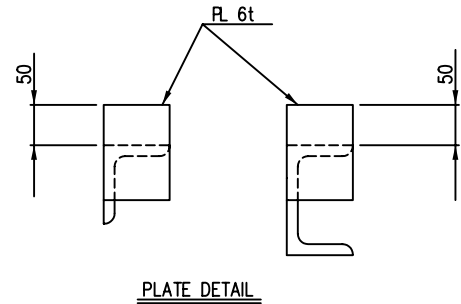
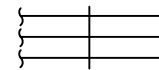
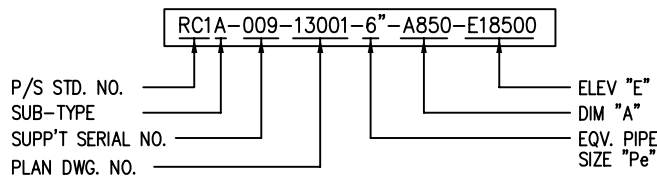


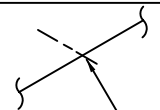
PLATE DETAIL

SYMBOL & CODING



RC1A-009

PLAN



RC1A-009

(INDICATE WITH LARGEST LINE)

ISO



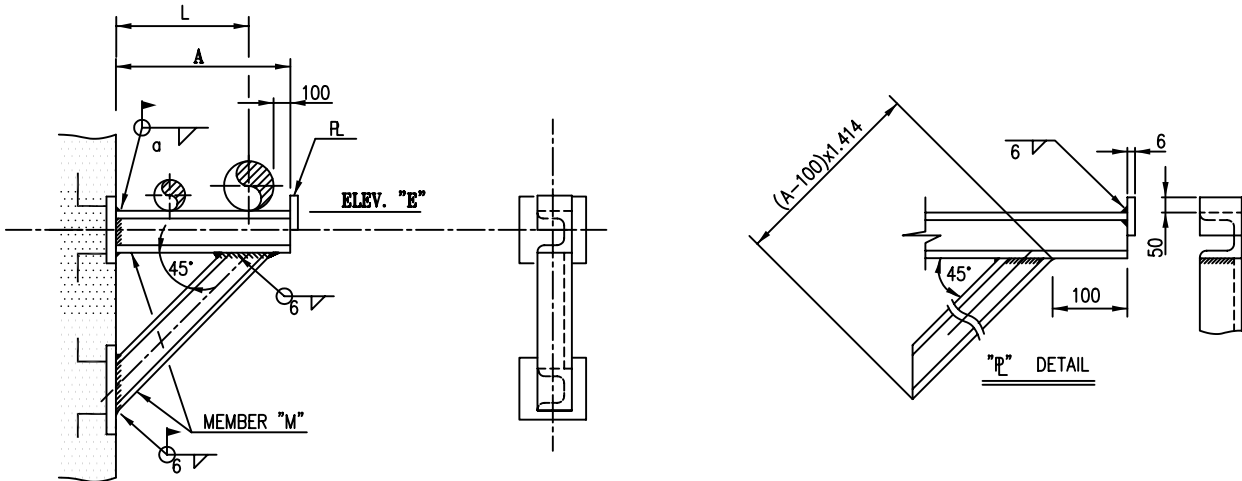
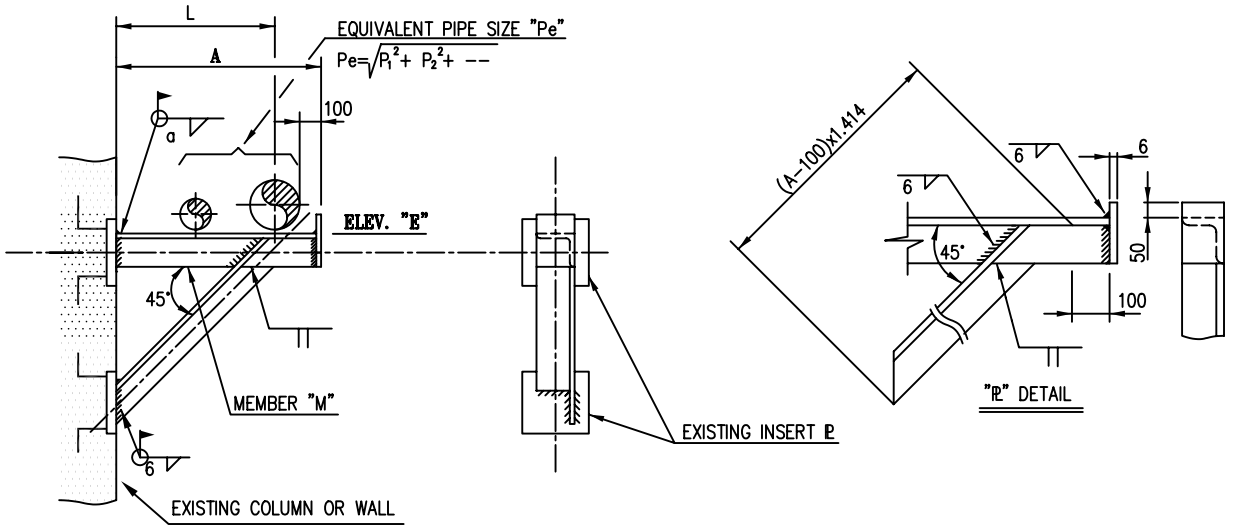
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1262

RESTING **RC-3**
(FOR MULTI PIPES ON CONCRETE WALL)

REV.
2



MEMBER SIZE "M" AND ALLOWABLE LOAD "W"

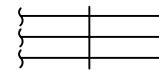
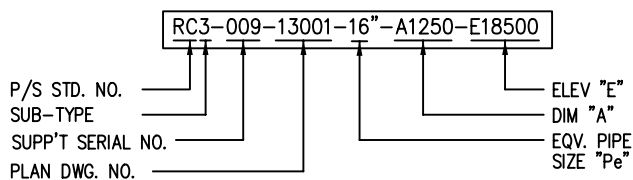
UNIT (mm)

EQUIV. PIPE SIZE "Pe"	a	L < 500		500 < L ≤ 1000		1000 < L ≤ 1500		EQUIV. PIPE SIZE "Pe"	a	L < 500		500 < L ≤ 1000		1000 < L ≤ 1500	
		"M"	W (kg)	"M"	W (kg)	"M"	W (kg)			"M"	W (kg)	"M"	W (kg)	"M"	W (kg)
3/4"	6	-	-	A6	200	A6	140	10"	6	C12	1700	C15	1500	H12	2300
1"	6	-	-	A6	200	A6	140	12"	6	C12	1700	C15	1500	H12	2300
1-1/2"	6	-	-	A6	200	A6	140	14"	6	C15	2800	H12	3300	H12	2300
2"	6	-	-	A7	400	A7	260	16"	6	C15	2800	H12	3300	H12	2300
3"	6	-	-	A7	400	C12	500	18"	9	C15	2800	H12	3300	H12	2300
4"	6	-	-	C10	500	C12	500	20"	9	H12	5700	H15	5100	H15	3500
6"	6	C10	950	C12	900	C15	1000	24"	9	H12	5700	H15	5100	H15	3500
8"	6	C10	950	C12	900	C15	1000								

NOTE

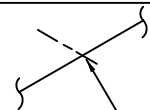
1. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RC3-009

PLAN



RC3-009

(INDICATE WITH LARGEST LINE)

ISO

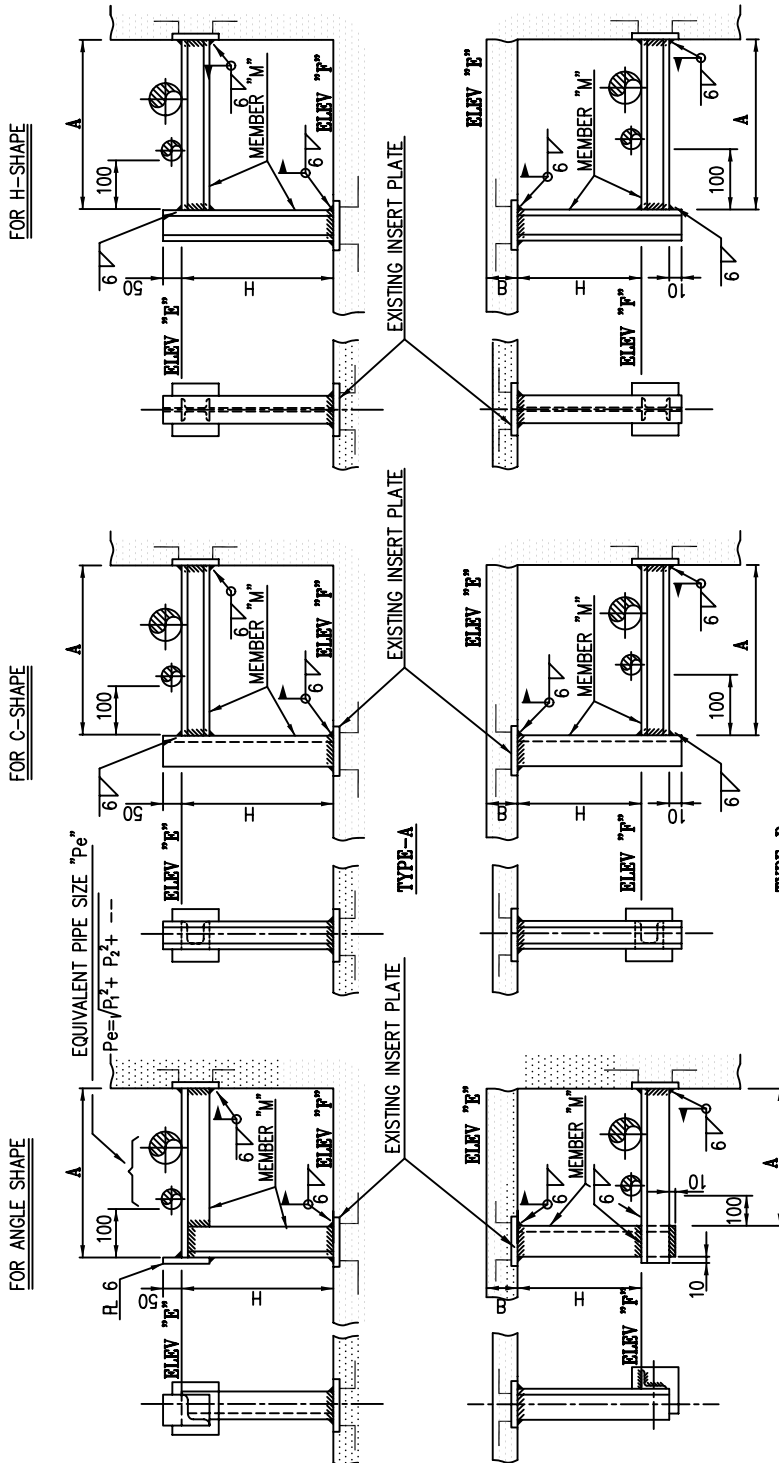


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1263

RESTING **RC-5**
(FOR MULTI PIPES ON CONCRETE WALL)

REV.
2

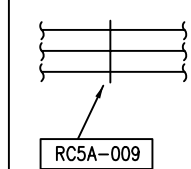
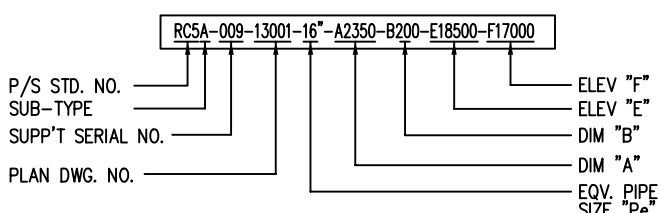


UNIT (mm)

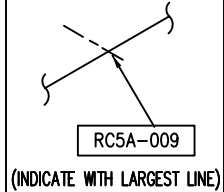
EQUIV. PIPE SIZE "Pe"	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000	
		"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)
12"	1000	C12	2000	C15	2100	C15	2100	C15	3100
14"	1500	C12	2000	C15	1820	C15	1820	C15	2700
16"	1000	C12	2000	C15	2100	C15	2100	C15	3100
18"	1500	C12	2000	C15	1820	C15	1820	C15	2700
20"~24"	1000	-	-	C15	3500	C15	4670	C15	4800
	1500	-	-	C15	3120	C15	4050	C15	4250
	1500	-	-	C15	3500	C15	4670	C15	4800
	1500	-	-	C15	3120	C15	4050	C15	4250
	1500	-	-	C15	3120	C15	4670	C15	4800
	1500	-	-	C15	3120	C15	4050	C15	4250

NOTE
1. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



PLAN



ISO



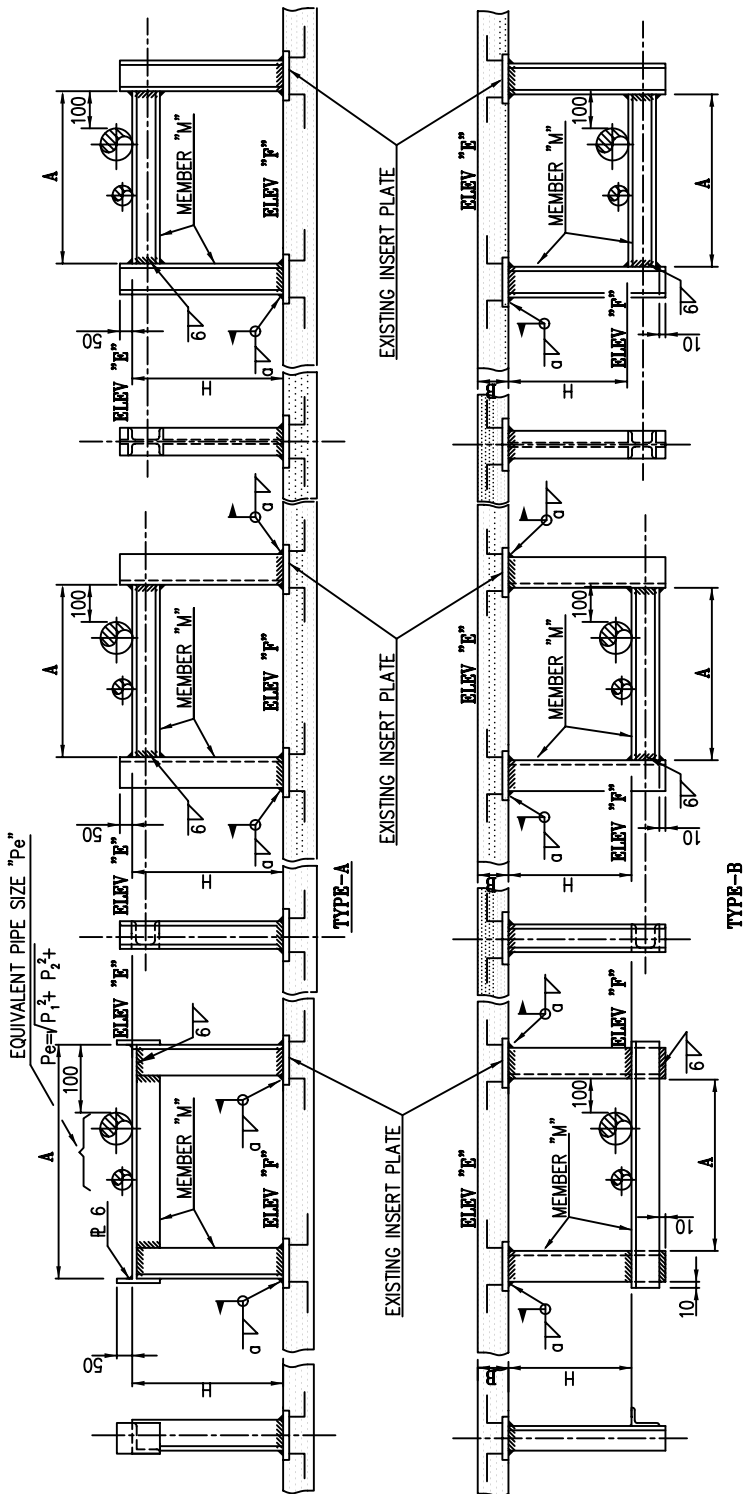
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1264

RESTING **RC-8**
(FOR MULTI PIPES ON CONCRETE WALL)

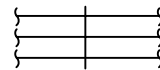
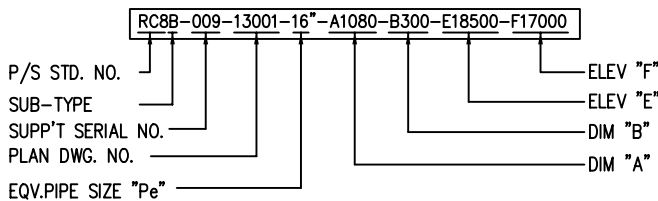
REV.
2



EQUIV. PIPE SIZE "Pe"	d	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000		UNIT (mm)							
			"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)				
2"	6	1000	A5	180	A5	180	A5	180	C15	2200	C15	2100	C15	2000	C15	2000	C15	2000
3"	6	1500	A5	130	A5	130	A5	130	H12	3800	H12	3300	H12	3100	H12	3100	H12	2900
4"	6	1000	A6	330	A6	330	A6	330	C15	2200	C15	2100	H12	3700	H12	3100	H12	2900
6"	6	1500	A7	430	A7	430	A7	430	H12	3800	H12	3300	H12	3100	H12	3100	H12	2900
8"	6	1000	C12	850	C12	830	C12	770	-	-	-	-	-	-	-	-	-	-
10"	6	1500	C15	1500	C15	1500	C15	1400	-	-	-	-	-	-	-	-	-	-

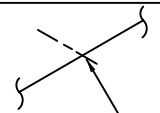
NOTE
1. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RC8A-009

PLAN



RC8A-009

(INDICATE WITH LARGEST LINE)

ISO



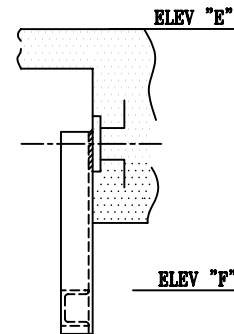
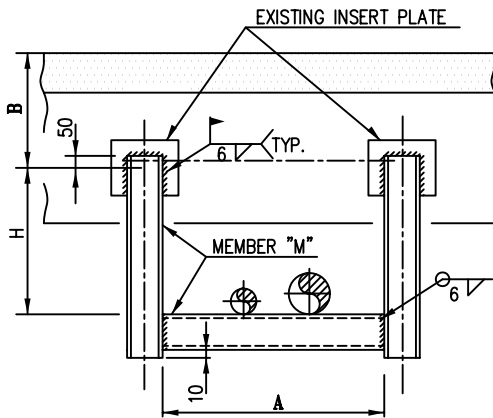
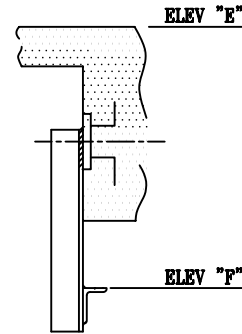
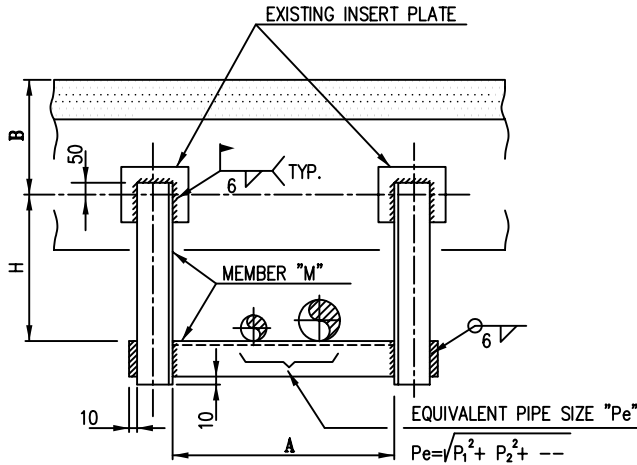
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1266

RESTING RC-10
(FOR MULTI PIPES ON CONCRETE WALL)

REV.
2



MEMBER SIZE "M" AND ALLOWABLE LOAD "W"

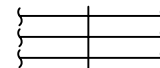
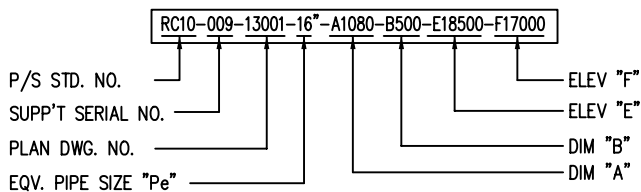
UNIT (mm)

EQUIV. PIPE SIZE "Pe"	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000		EQUIV. PIPE SIZE "Pe"	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000	
		"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)			"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)
2"	1000	A5	180	A5	180	-	-	-	-	8"	1000	C12	1300	C12	1300	C12	1200	C12	1000
	1500	A5	130	A5	130	-	-	-	-		1500	C15	1500	C15	1500	C15	1400	C15	1250
3"	1000	A6	330	A6	330	-	-	-	-	10"	1000	C15	2200	C15	2100	C15	2000	C15	1650
	1500	A6	230	A6	230	-	-	-	-		1500	C15	1500	C15	1500	-	-	-	-
4"	1000	A7	630	A7	630	A7	550	A7	400	12"	1000	C15	2200	C15	2100	C15	2000	C15	1650
	1500	A7	430	A7	430	A7	500	A7	400		1500	-	-	-	-	-	-	-	-
6"	1000	C10	700	C10	700	C12	1200	C12	1000	14"	1000	C15	2200	C15	2100	-	-	-	-
	1500	C12	850	C12	830	C12	770	C12	650		1500	-	-	-	-	-	-	-	-

NOTE

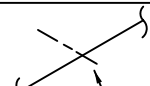
1. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RC10-009

PLAN



RC10-009

(INDICATE WITH LARGEST LINE)

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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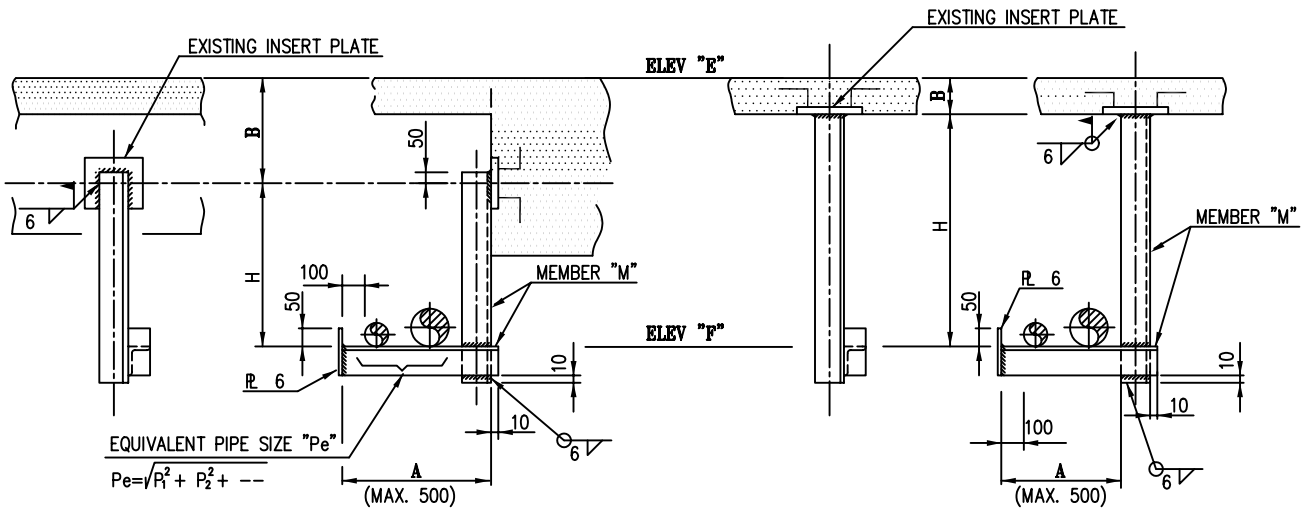
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1277

RESTING RC-11
(FOR MULTI PIPES ON CONCRETE WALL)

REV.
2



TYPE-A

TYPE-B

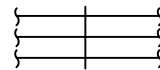
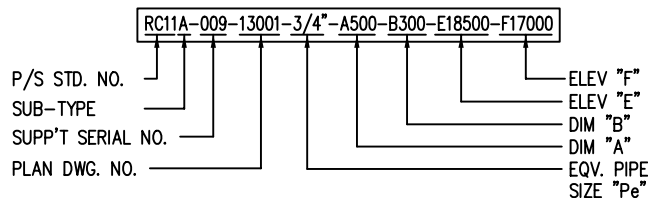
UNIT (mm)

EQUI. PIPE SIZE "Pe"	H ≤ 500		500 < H ≤ 1000		1000 < H ≤ 1500	
	MEMBER "M"	ALLOWABLE LOAD (Kg)	MEMBER "M"	ALLOWABLE LOAD (Kg)	MEMBER "M"	ALLOWABLE LOAD (Kg)
3/4"	A5	100	A6	100	A6	80
1"	A5	100	A6	100	A6	80
3"	C10	300	C10	270	C10	230
4"	C12	400	C12	330	C12	300

NOTE

1. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RC11A-009

PLAN



RC11A-009

(INDICATE WITH LARGEST LINE)

ISO



SHAHID TONGDOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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DAELIM

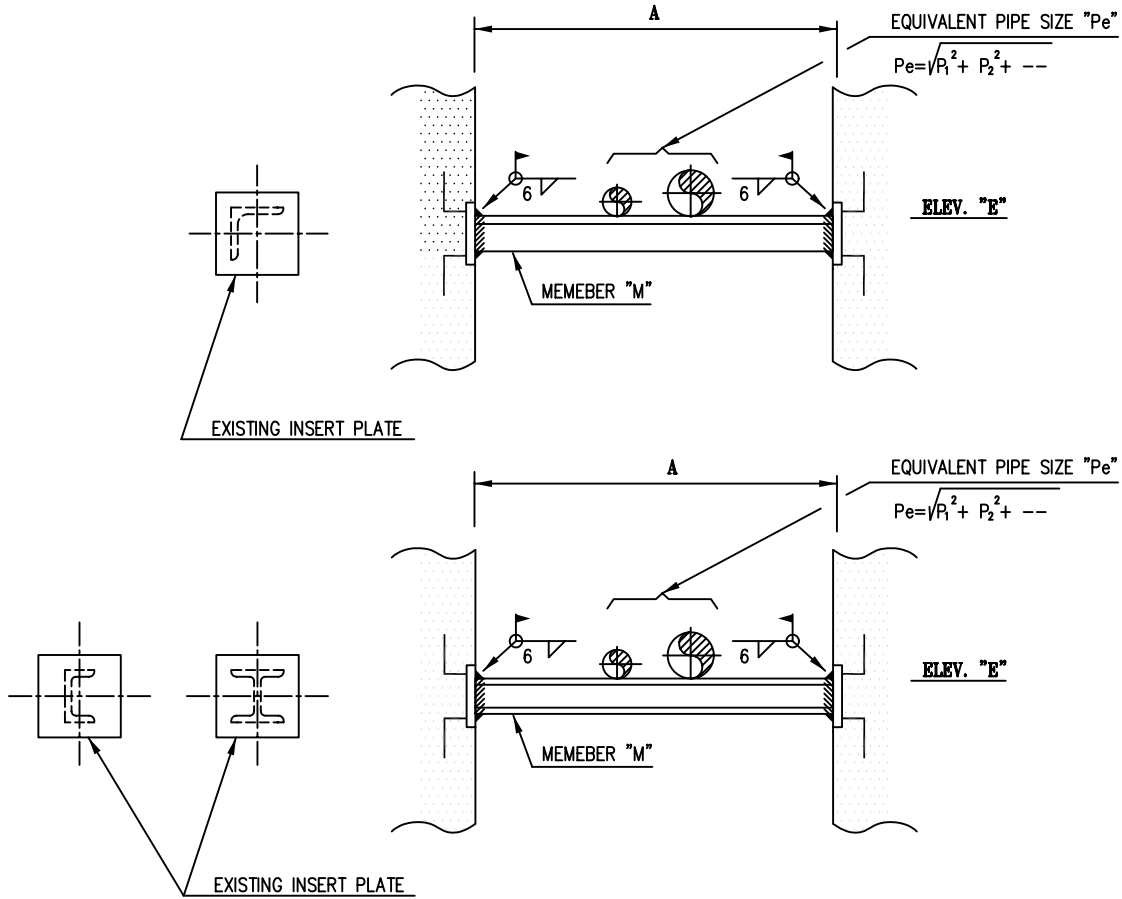
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1268

RESTING RC-13
(FOR MULTI PIPES ON CONCRETE WALL)

REV.
2



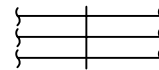
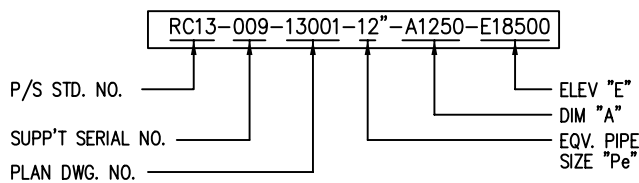
UNIT (mm)

EQUIV. PIPE SIZE "Pe"	A ≤ 500		500 < A ≤ 1000		1000 < A ≤ 1500		EQUIV. PIPE SIZE "Pe"	A ≤ 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000	
	MEMBER SIZE "M"	ALLOW. LOAD(Kg)	MEMBER SIZE "M"	ALLOW. LOAD(Kg)	MEMBER SIZE "M"	ALLOW. LOAD(Kg)		MEMBER SIZE "M"	ALLOW. LOAD(Kg)	MEMBER SIZE "M"	ALLOW. LOAD(Kg)	MEMBER SIZE "M"	ALLOW. LOAD(Kg)	MEMBER SIZE "M"	ALLOW. LOAD(Kg)
2"	A5	400	A5	200	A5	150	14"	C12	5000	C12	2400	C15	2800	C15	2000
3"	A5	400	A5	200	A6	250	16"	C15	8000	C15	4000	C15	2800	C15	2000
4"	A6	800	A6	400	A7	500	18"	C15	8000	C15	4000	C15	2800	C15	2000
6"	A7	1400	A7	700	A7	500	20"	C15	8000	C15	4000	H12	5000	H12	4000
8"	A7	1400	A7	700	C12	1500	24"	H12	15000	H12	8000	H12	5000	H12	4000
10"	C10	2800	C10	1400	C12	1500									
12"	C10	2800	C10	1400	C15	2800									

NOTE

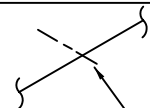
1. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RC13-009

PLAN



RC13-009

(INDICATE WITH LARGEST LINE)

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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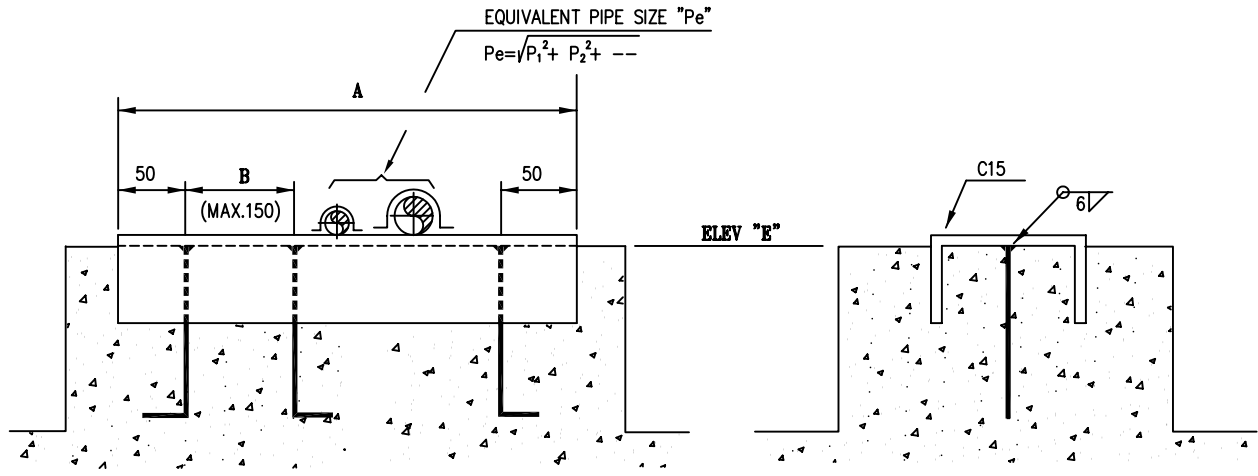
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

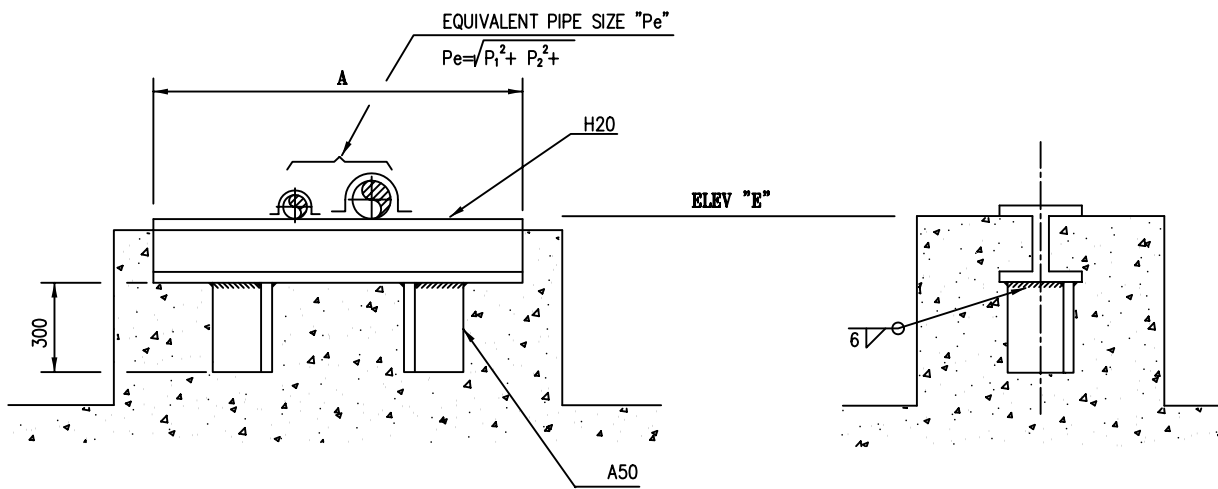
ST-A4-1271

RESTING **RF-1**
(FOR VIBRATED MULTI PIPES ON F/D)

REV.
2



TYPE-A

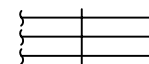
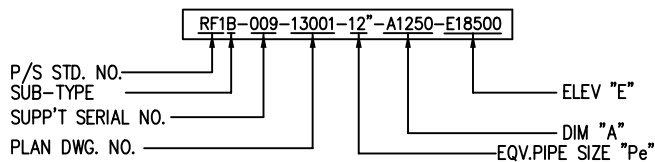


TYPE-B

NOTE

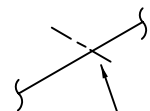
1. TYPE-A : Pe=8" & SMALLER
TYPE-B : Pe=10" & LARGER
2. THE SUPPORT LOCATION & ELEVATION SHOULD BE INFORMED TO CIVIL ENGINEER FOR FOUNDATION DESIGN.
3. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RF1A-009

PLAN



RF1A-009

(INDICATE WITH LARGEST LINE)



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
7702-00 11598-00	PD-09	003	2



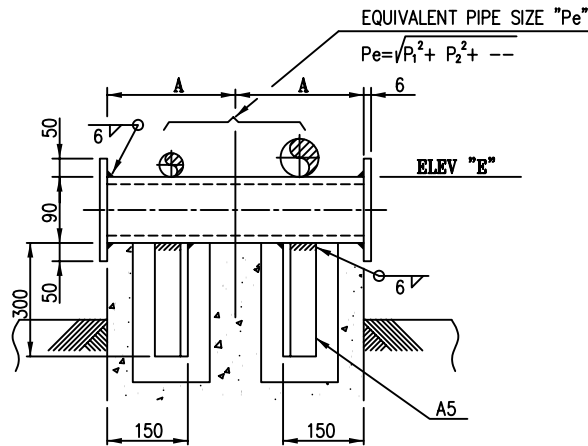
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

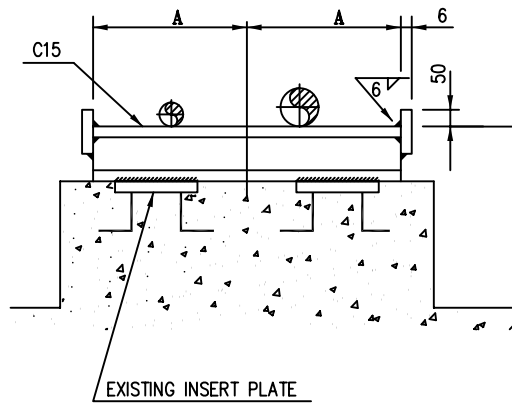
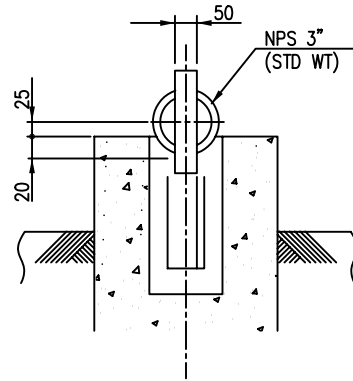
ST-A4-1272

RESTING **RF-2**
(FOR MULTI PIPES ON F/D)

REV.
2



TYPE-A



TYPE-B

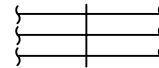
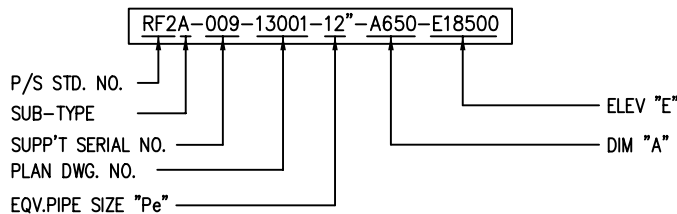
ELEV. "E"

6 TYP.

NOTE

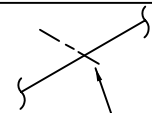
1. TYPE-A IS FOR SLOPPED LINE ONLY.
2. THE SUPPORT LOCATION & ELEVATION SHOULD BE INFORMED TO CIVIL ENGINEER FOR FOUNDATION DESIGN.
3. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RF2A-009

PLAN



RF2A-009

(INDICATE WITH LARGEST LINE)

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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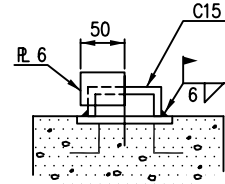
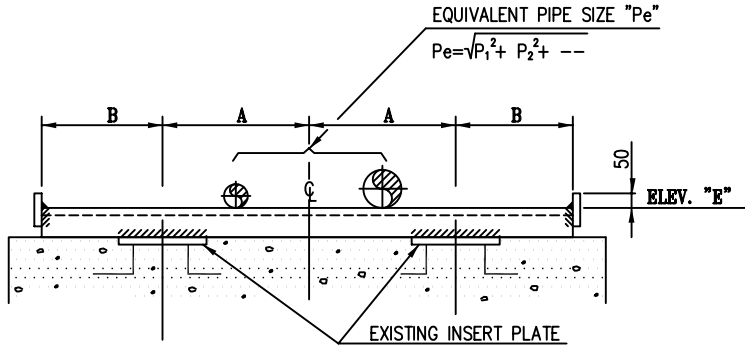
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

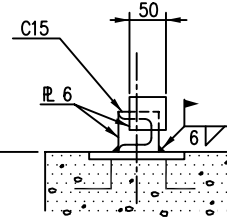
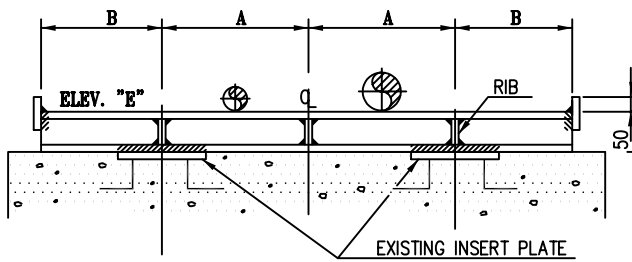
ST-A4-1273

RESTING **RF-3**
(FOR MULTI PIPES ON F/D)

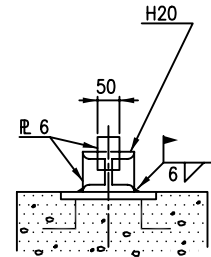
REV.
2



TYPE-A



TYPE-B

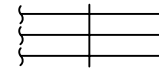
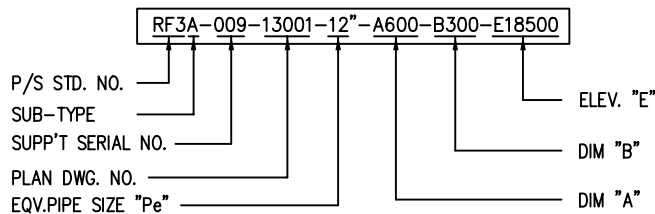


TYPE-C

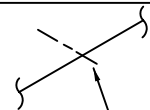
NOTE

1. THE SUPPORT LOCATION & ELEVATION SHOULD BE INFORMED TO CIVIL ENGINEER FOR FOUNDATION DESIGN.
2. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



PLAN



(INDICATE WITH LARGEST LINE)

ISO



SAZEH
CONSULTANTS



DAELIM

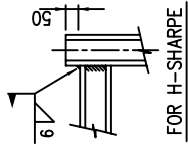
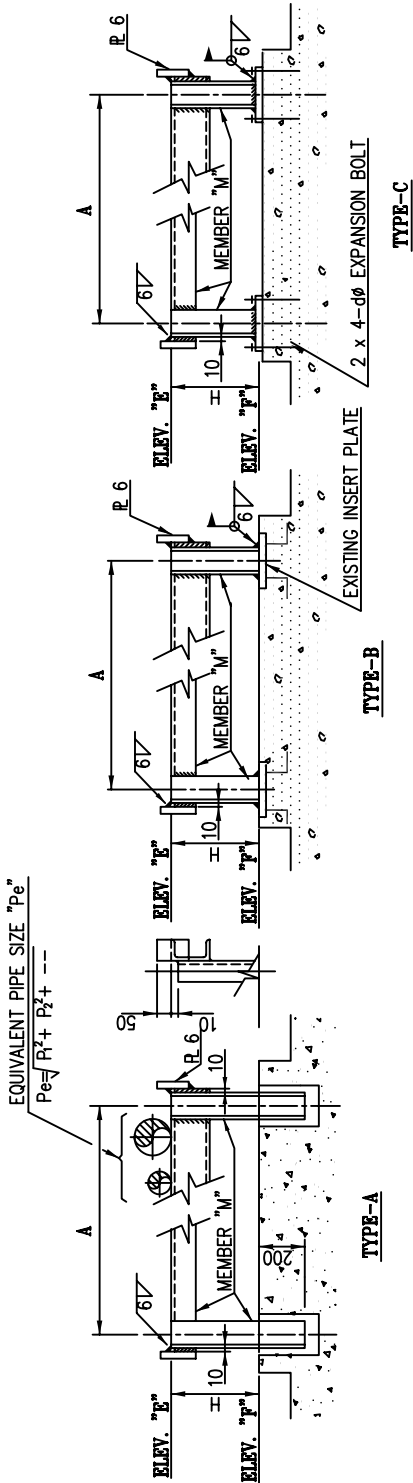
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1274

RESTING **RF-5**
(FOR MULTI PIPES ON F/D)

REV.
2

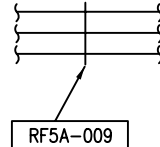
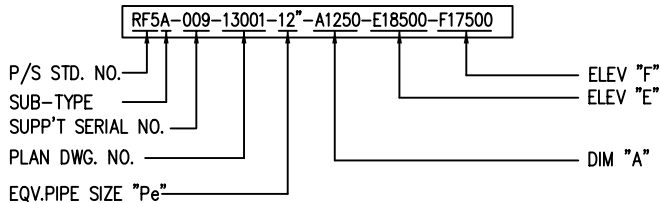


NOTE
1. SEE DWG. NO. ST-A4-1032 FOR EXPANSION ANCHOR BOLT AND BASE PLATE(BPLR) DETAIL AND ALLOWABLE LOADS.
2. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

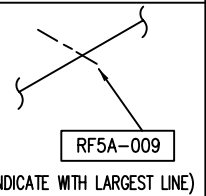
EQUIV. PIPE SIZE "Pe"	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000		UNIT (mm)
		"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	
12"	1000	C15	2200	C15	2100	C15	2000	C15	1650	1500 < A ≤ 2000
	1500	H12	3800	H12	3300	H12	3100	H12	2900	
14"	1000	C15	2200	C15	2100	H12	3700	C15	3000	1000 < A ≤ 1500
	1500	H12	3800	H12	3300	H12	3100	H12	2900	
16"	1000	H12	5000	H12	4600	H12	3700	H12	3000	500 < A ≤ 1000
	1500	H12	3800	H12	3300	H12	3100	H12	2900	
18"	1000	-	-	H12	4600	H12	3700	H12	3000	1000 < A ≤ 1500
	1500	-	-	H12	3300	H12	3100	H12	2900	
20"	1000	-	-	H12	4600	H12	3700	H12	3000	500 < A ≤ 1000
	1500	-	-	H12	3300	H12	3100	H12	2900	
24"	1000	-	-	H15	7500	H15	6000	H15	4800	1000 < A ≤ 1500
	1500	-	-	H15	5300	H15	5000	H15	4700	

EQUIV. PIPE SIZE "Pe"	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000	
		"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)
2"	1000	A5	180	A5	180	-	-	-	-
	1500	A5	130	A5	130	-	-	-	-
3"	1000	A6	330	A6	330	-	-	-	-
	1500	A6	230	A6	230	-	-	-	-
4"	1000	A7	630	A7	630	A7	550	A7	400
	1500	A7	430	A7	430	A7	500	A7	400
6"	1000	C10	700	C10	700	C12	1200	C12	1000
	1500	C12	850	C12	830	C12	770	C12	650
8"	1000	C12	1300	C12	1300	C12	1200	C12	1000
	1500	C15	1500	C15	1500	C15	1400	C15	1250
10"	1000	C15	2200	C15	2100	C15	2000	C15	1650
	1500	C15	1500	C15	1500	H12	3100	H12	2900

SYMBOL & CODING

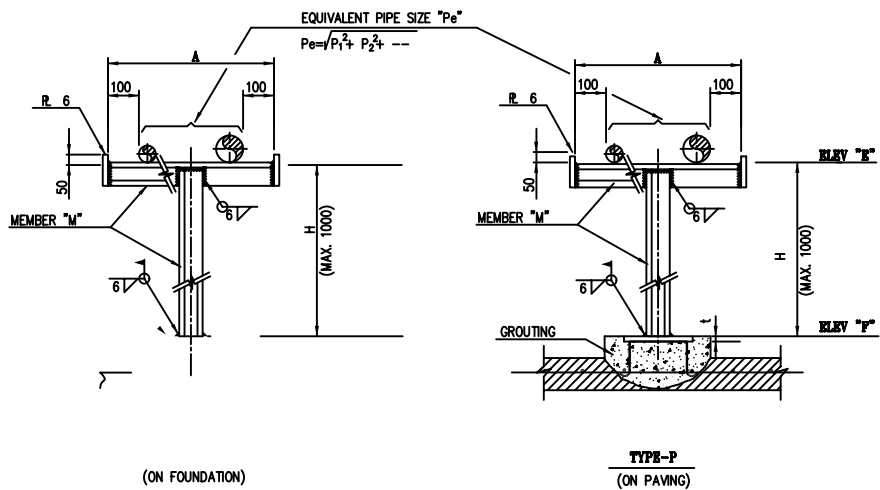


PLAN



(INDICATE WITH LARGEST LINE)

ISO



6" & SMALLER

UNIT (mm)

EQUIVALENT PIPE SIZE "Pe"	MEMBER SIZE "M"	
	A ≤ 500	
	H ≤ 500	500 < H ≤ 1000
3/4"	A5	A6
1"		
1-1/2"	A6	A7
2"		
3"	A6	A7
4"	C10	C10
6"	C12	C12



SAZEH
CONSULTANTS



DAELIM

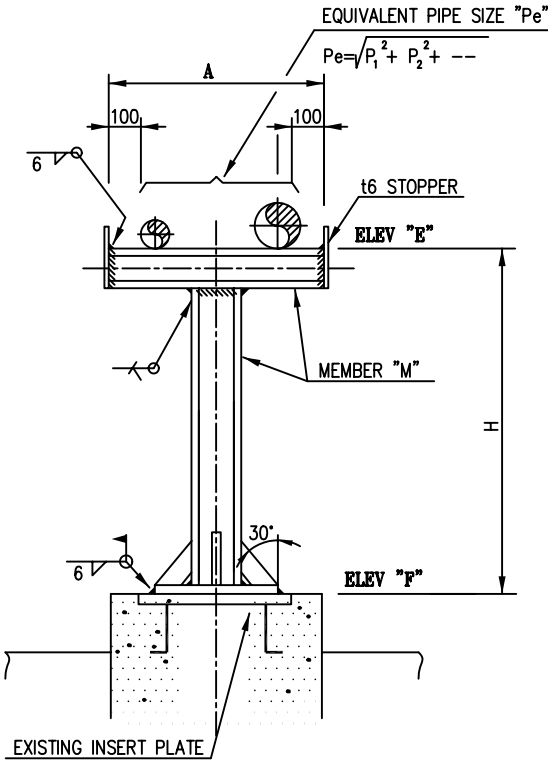
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

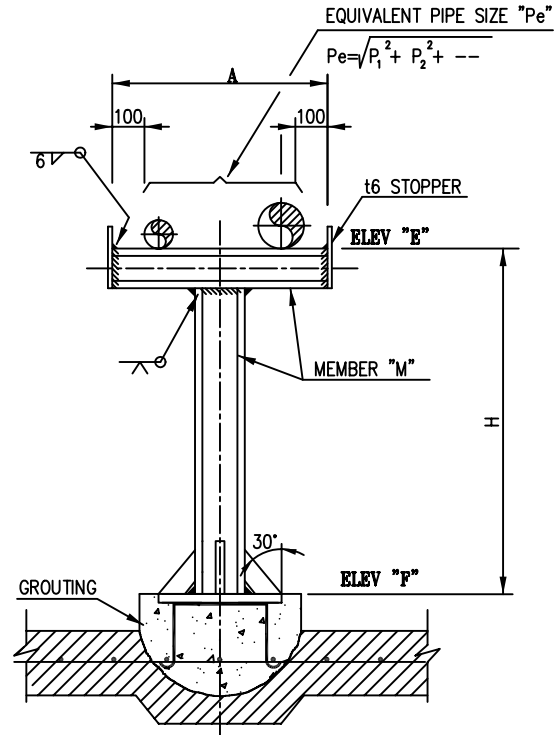
ST-A4-1276

RESTING **RF-9**
(T-TYPE FOR HEAVY DUTY)

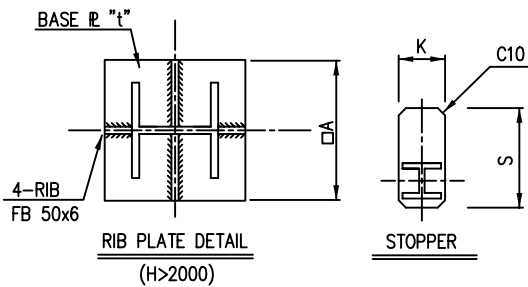
REV.
3



TYPE-F
(ON FOUNDATION)



TYPE-P
(ON PAVING)



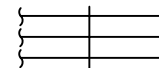
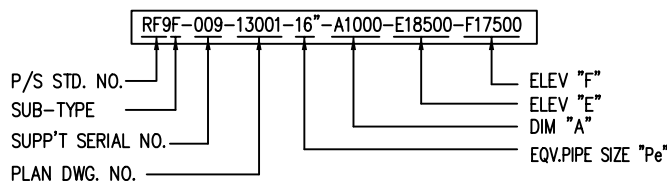
UNIT (mm)								
EQUIVALENT PIPE SIZE "Pe"	MEMBER "M"	A (MAX.)	H (MAX.)	K	S	□A	t	ALLOW. LOAD (Kg)
2"	C15	1000	2500	160	260	300	16	740
3"	C15					300	16	740
4"	C15					300	16	740
6"	C15					300	16	740
8"	C15					300	16	800
10"	H12					300	16	800
12"	H12					300	20	1500
14"	H15					300	20	3400
16"	H15					300	20	3400

NOTE

- SEE DWG. NO. ST-A4-1031 FOR THE DETAIL OF BASE PLATE(BPLA)
- FOR THE TYPE-P, USE ONLY FOR Hmax=1000.

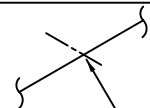
GENERALLY REVISED.

SYMBOL & CODING



RF9F-009

PLAN



RF9F-009

(INDICATE WITH LARGEST LINE)

ISO



SHAHID TONGDOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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DAELIM

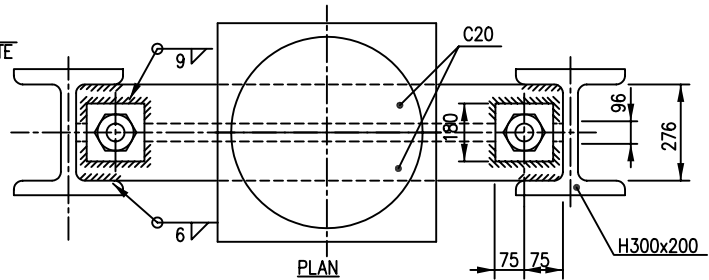
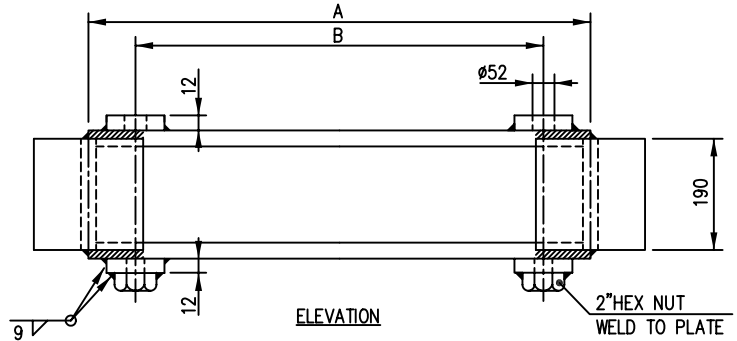
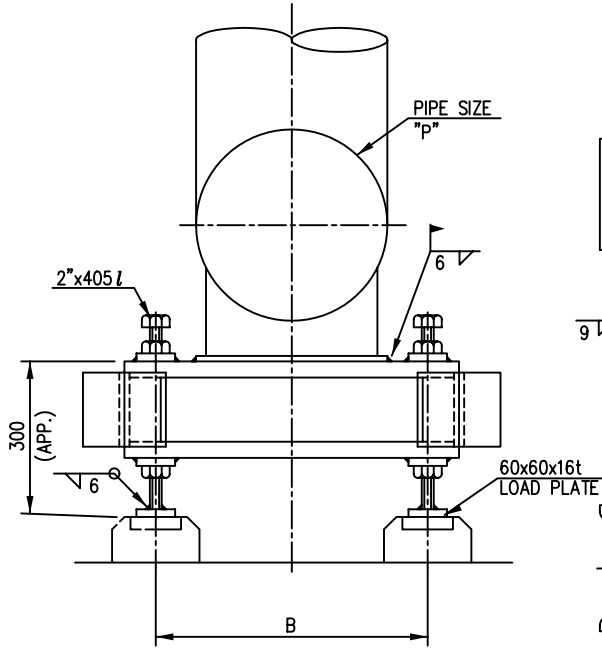
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1277

RESTING **RF-12**
(FOR 26" & OVER PIPE, ADJUSTABLE TYPE)

REV.
2



UNIT (mm)

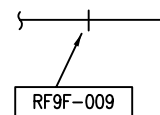
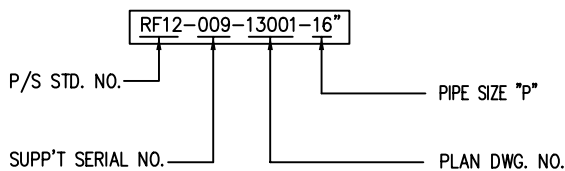
PIPE SIZE NPS "P"	A	B	ALLOW. LOADS (Kg)
26"	930	750	10000
28"	960	780	10000
30"	1000	820	10000
32"	1030	850	10000
34"	1080	900	10000
36"	1110	930	10000
38"	1140	960	10000
40"	1180	1000	10000
42"	1230	1050	10000
48"	1340	1160	10000

NOTE

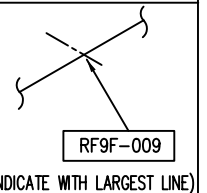
1. MATERIAL

- BOLT/NUT : A193-B7/A194-2H, USE 2" HEAVY HEX NUTS.
- SHAPE STEEL/PLATE : A36 OR EQ.

SYMBOL & CODING



PLAN



ISO



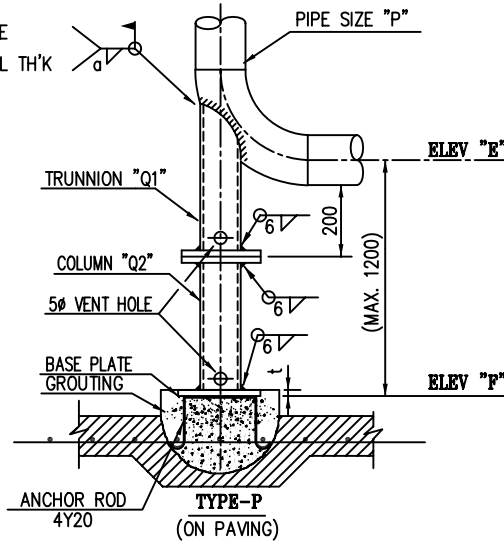
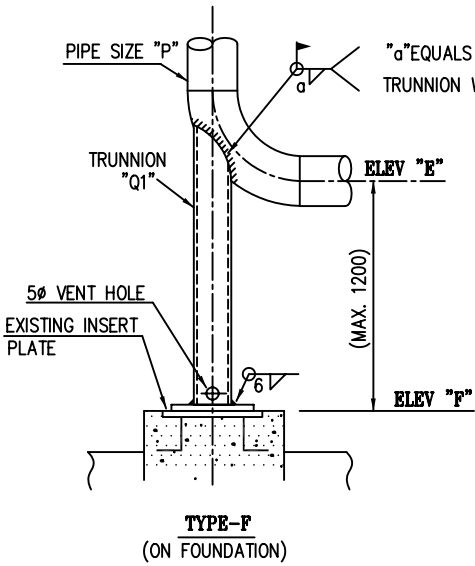
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

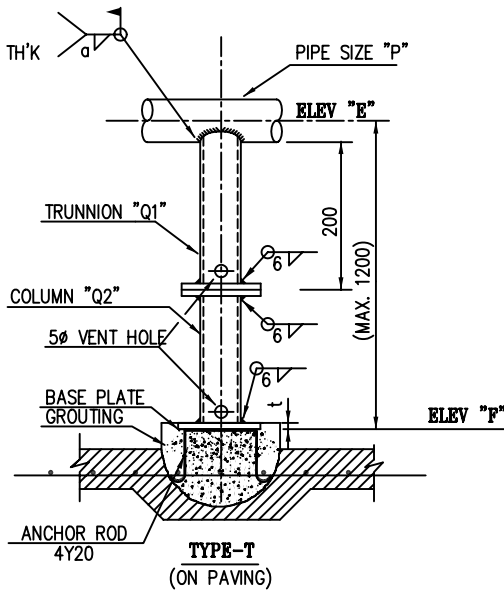
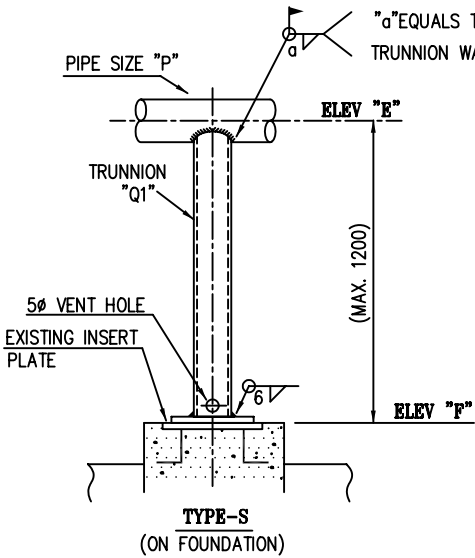
ST-A4-1278

RESTING **RF-31**
(TRUNNION TYPE ON F/D)

REV.
2



PIPE SIZE NPS "P"	NPS "Q1", "Q2"
2"	1-1/2"
3"	2"
4"	2"
6"	4"
8"	4"
10"	6"
12"	8"
14"	8"
16"	10"
18"	10"
20"	12"
24"	12"
26"	14"
28"	14"
30"	16"
32"	16"
34"	18"
36"	18"
40"	20"
42"	20"



NOTE

1. SEE DWG. NO. ST-A4-0004
FOR APPLICATION OF REINFORCING PAD AND
TRUNNION ALLOWABLE LOADS.

3. SEE DWG. NO. ST-A4-1032
FOR THE DETAIL OF BASE PLATE(BPLR)

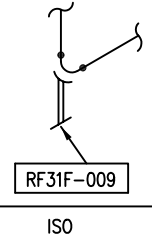
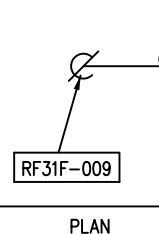
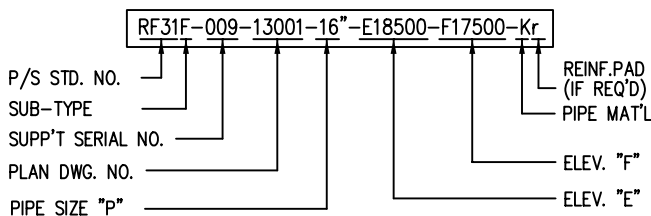
4. SEE DWG.NO.ST-A4-0006
FOR THE DETAIL OF LOCAL SUPPORT FOUNDATION. 2

2. MATERIAL

- TRUNNION Q1 : SAME AS RUN PIPE OR MAT'L TABLE.
- COLUMN Q2 : A53 GR.B OR EQ.
- PLATE : A36 OR EQ.

CODE	RUN PIPE	TRUNNION "Q1"
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ. 2

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



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DAELIM

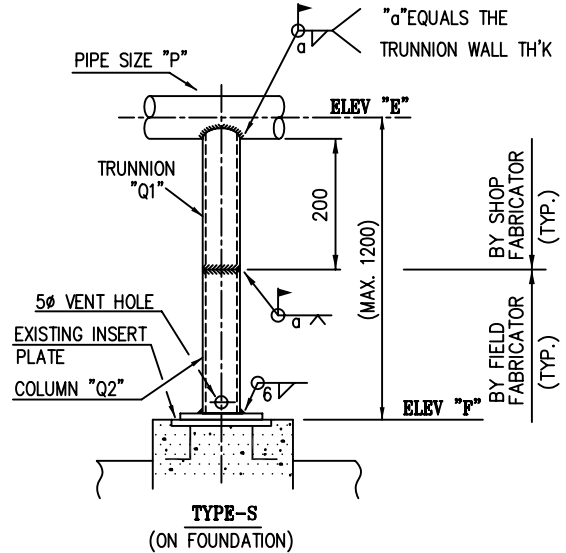
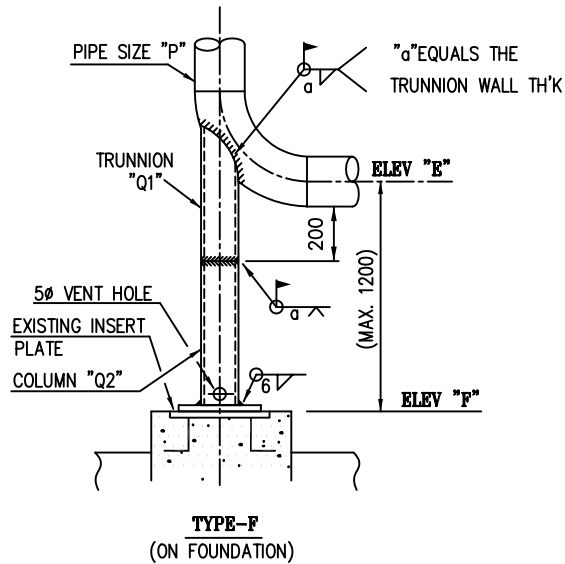
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1279

RESTING **RF-32**
(TRUNNION TYPE ON F/D)

REV.
2



NOTE

1. SEE DWG. NO. ST-A4-0004
FOR APPLICATION OF REINFORCING PAD AND
TRUNNION ALLOWABLE LOADS.

2. MATERIAL

- TRUNNION Q1 : SAME AS RUN PIPE OR MAT'L TABLE.
- COLUMN Q2 : A53 GR.B OR EQ.
- PLATE : A36 OR EQ.

CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

PIPE SIZE NPS "P"	NPS "Q1","Q2"	PIPE SIZE NPS "P"	NPS "Q1","Q2"
2"	1-1/2"	20"	12"
3"	2"	24"	12"
4"	2"	26"	14"
6"	4"	28"	14"
8"	4"	30"	16"
10"	6"	32"	16"
12"	8"	34"	18"
14"	8"	36"	18"
16"	10"	40"	20"
18"	10"	42"	20"

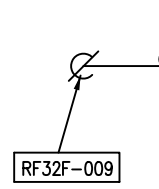
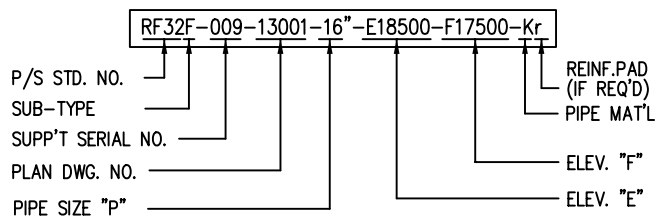
3. SEE DWG. NO. ST-A4-1032

FOR THE DETAIL OF EXPANSION ANCHOR BOLT AND BASE PLATE(BPLR)

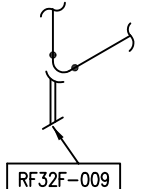
4. IF APPLICABLE ALL TRUNNION ON SHOP

FABRICATED PIPE CAN BE INSTALLED BY THE SHOP.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



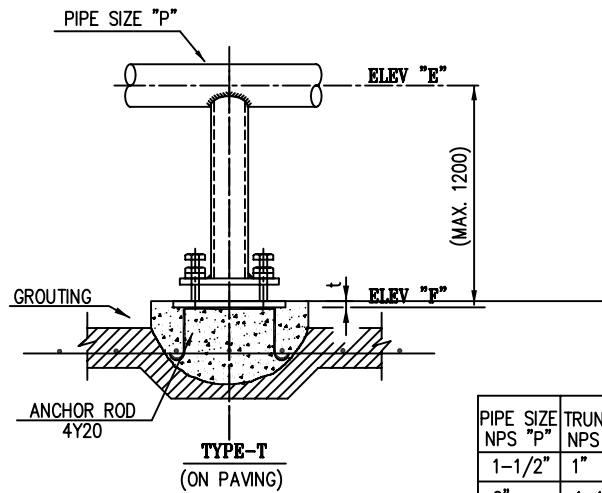
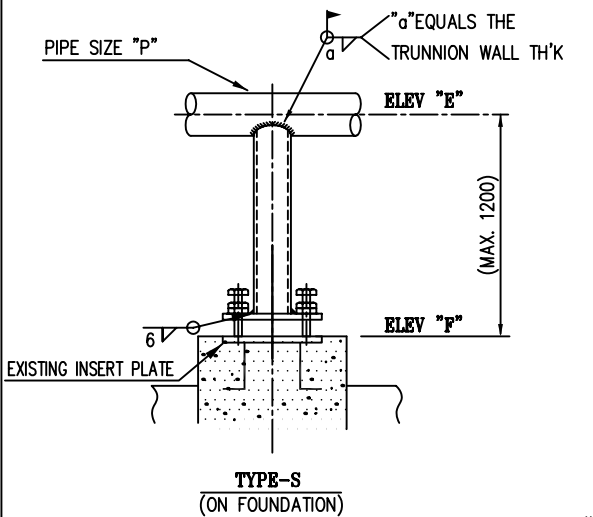
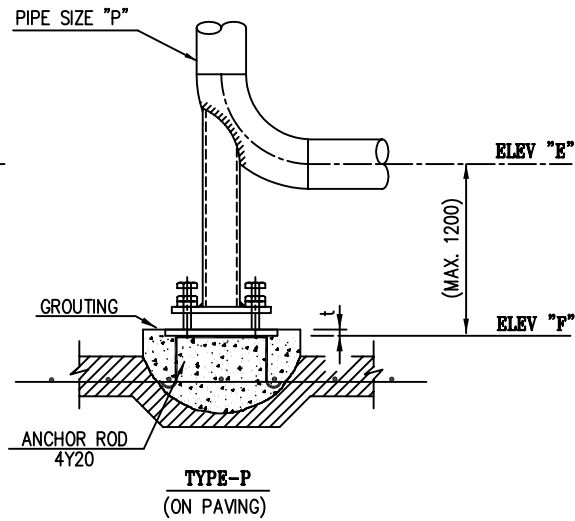
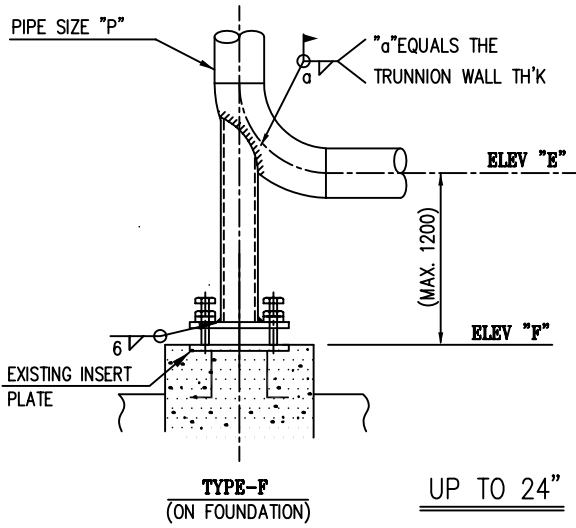
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1280

RESTING **RF-33**
(ADJUSTABLE; TRUNNION TYPE ON F/D)

REV.
2



NOTE

1. SEE DWG. NO. ST-A4-0004
FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

2. MATERIAL

- FOR SUPPORT PIPE : SAME AS RUN PIPE OR MAT'L TABLE.
- PLATE : A36 OR EQ.
- BOLT/NUT : A307 GR.B OR EQ.

CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ

3. SEE DWG. NO. ST-A4-1032 FOR THE DETAIL OF
BASE PLATE(BPLR)

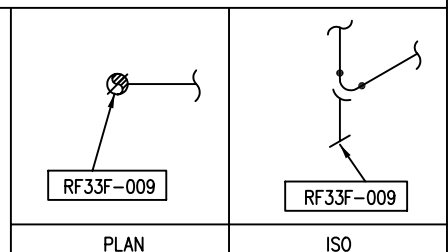
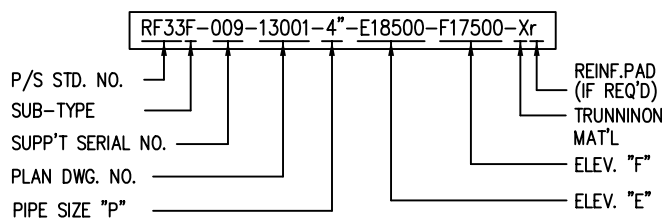
4. SEE DWG. NO. ST-A4-1023 (2/4)
FOR THE DETAIL OF ADJUSTABLE STANCHION(ADS)

5. SEE DWG.NO.ST-A4-0006
FOR THE DETAIL OF LOCAL SUPPORT FOUNDATION.

PIPE SIZE NPS "P"	TRUNNION NPS "Q1"	COLUMN NPS "Q2"
1-1/2"	1"	3"
2"	1-1/2"	3"
3"	2"	3"
4"	2"	3"
6"	4"	4"
8"	4"	4"
10"	6"	6"
12"	8"	8"
14"	8"	8"
16"	10"	10"
18"	10"	10"
20"	12"	12"
24"	12"	12"

GENERALLY REVISED.

SYMBOL & CODING





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CONSULTANTS



DAELIM

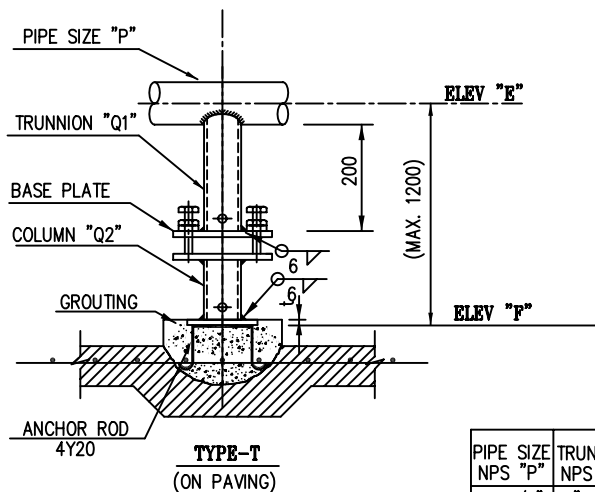
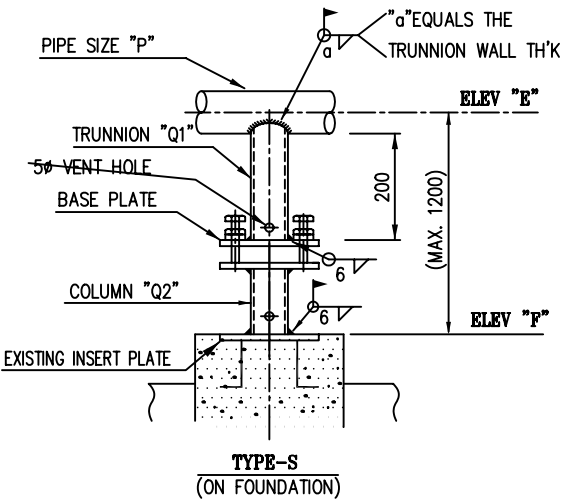
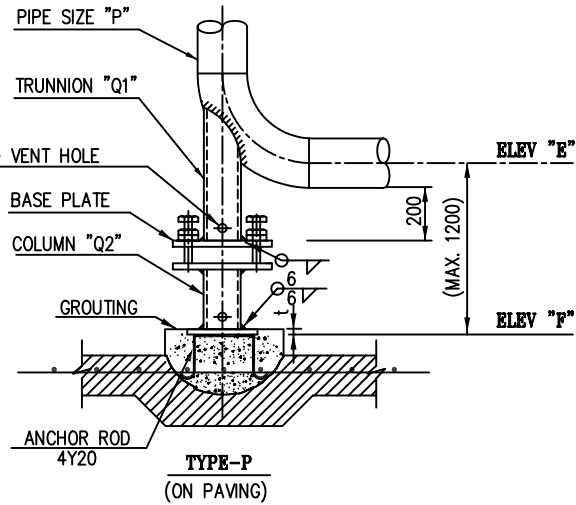
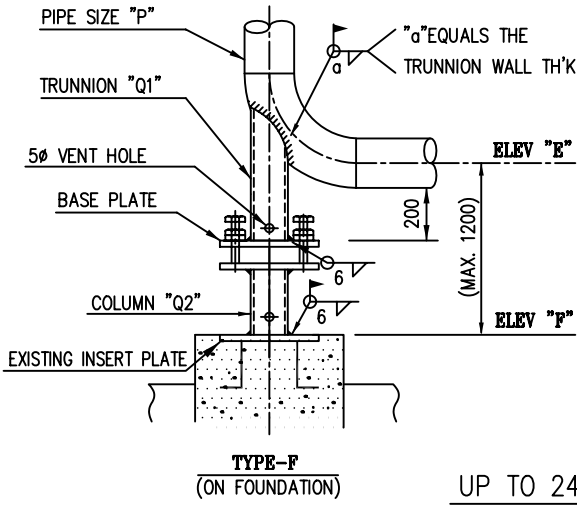
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1281

RESTING **RF-34**
(ADJUSTABLE; TRUNNION TYPE ON F/D)

REV.
2



NOTE

1. SEE DWG. NO. ST-A4-0004
FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

2. MATERIAL

- TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.
- COLUMN "Q2" : A53 Gr.B OR EQ.
- PLATE : A36 OR EQ.
- BOLT/NUT : A307 GR.B OR EQ.

CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ

3. SEE DWG. NO. ST-A4-1032 FOR THE DETAIL OF
BASE PLATE(BPLR)

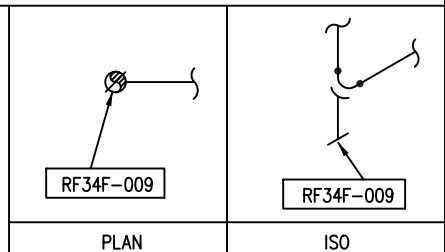
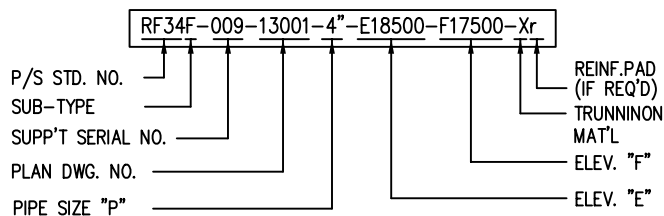
4. SEE DWG. NO. ST-A4-1023 (2/4)
FOR THE DETAIL OF ADJUSTABLE STANCHION(ADS)

5. SEE DWG.NO.ST-A4-0006
FOR THE DETAIL OF LOCAL SUPPORT FOUNDATION.

PIPE SIZE NPS "P"	TRUNNION NPS "Q1"	COLUMN NPS "Q2"
1-1/2"	1"	3"
2"	1-1/2"	3"
3"	2"	3"
4"	2"	3"
6"	4"	4"
8"	4"	4"
10"	6"	6"
12"	8"	8"
14"	8"	8"
16"	10"	10"
18"	10"	10"
20"	12"	12"
24"	12"	12"

GENERALLY REVISED.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL CO.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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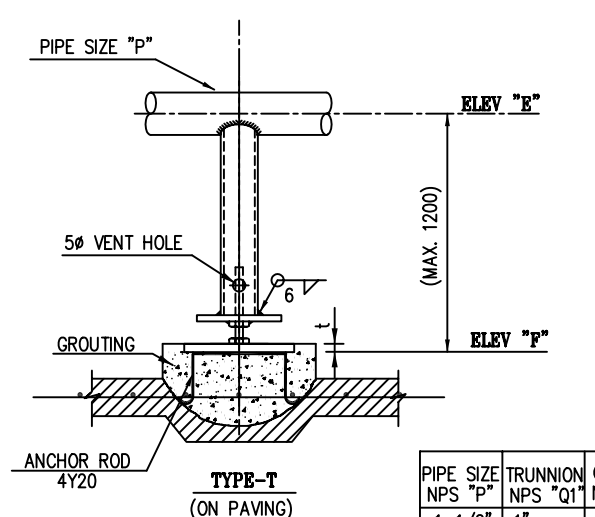
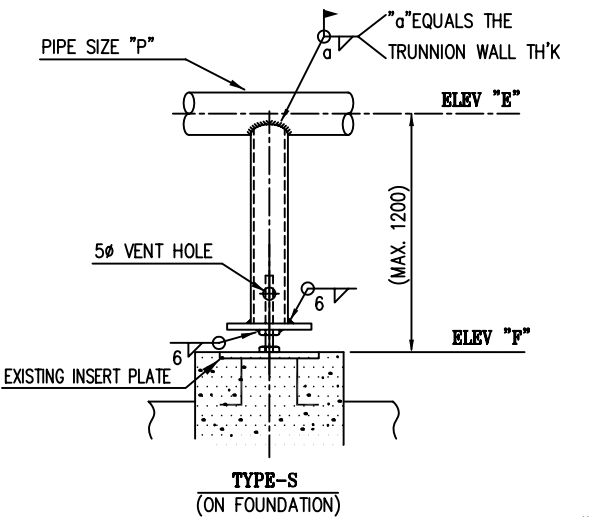
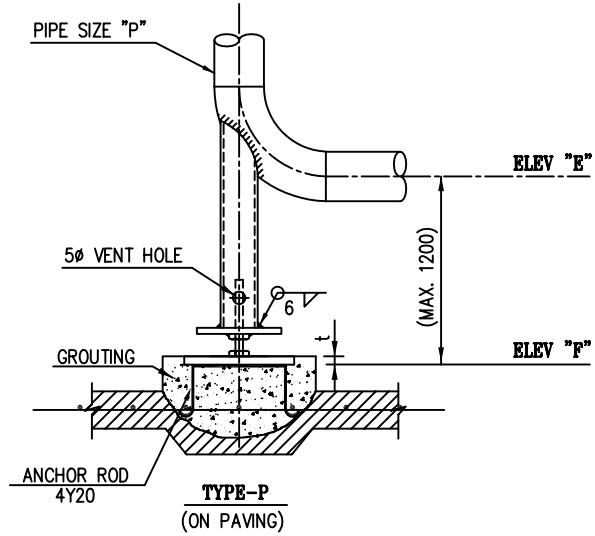
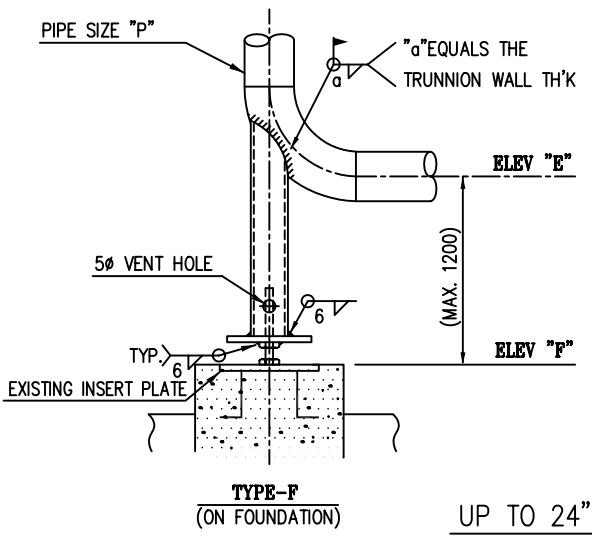
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1282

RESTING **RF-35**
(ADJUSTABLE; TRUNNION TYPE ON F/D)

REV.
2



NOTE

1. SEE DWG. NO. ST-A4-0004
FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

2. MATERIAL

- FOR SUPPORT PIPE : SAME AS RUN PIPE OR MAT'L TABLE.
- PLATE : A36 OR EQ.
- BOLT/NUT : A307 GR.B OR EQ.

CODE	RUN PIPE	TRUNNION "Q1"
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ

3. SEE DWG. NO. ST-A4-1032 FOR THE DETAIL OF
BASE PLATE(BPLR)

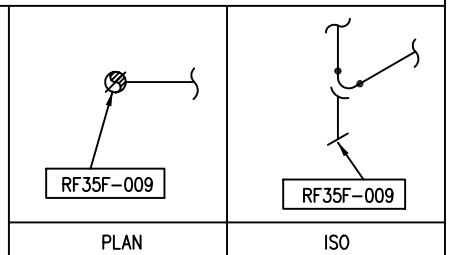
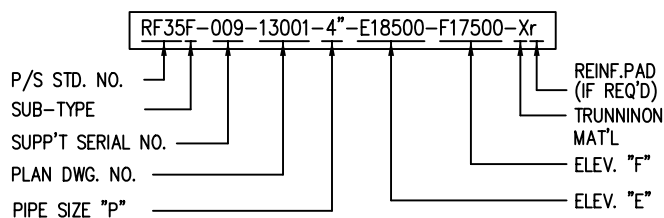
4. SEE DWG. NO. ST-A4-1023 (2/4)
FOR THE DETAIL OF ADJUSTABLE STANCHION(ADS)

5. SEE DWG.NO.ST-A4-0006
FOR THE DETAIL OF LOCAL SUPPORT FOUNDATION.

PIPE SIZE NPS "P"	TRUNNION NPS "Q1"	COLUMN NPS "Q2"
1-1/2"	1"	3"
2"	1-1/2"	3"
3"	2"	3"
4"	2"	3"
6"	4"	4"
8"	4"	4"
10"	6"	6"
12"	8"	8"
14"	8"	8"
16"	10"	10"
18"	10"	10"
20"	12"	12"
24"	12"	12"

GENERALLY REVISED.

SYMBOL & CODING





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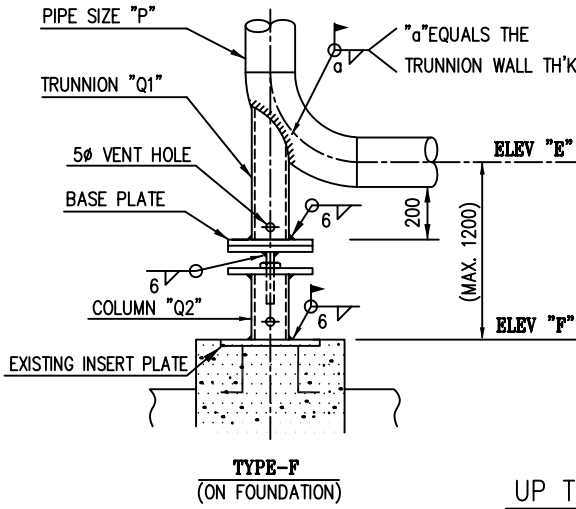
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

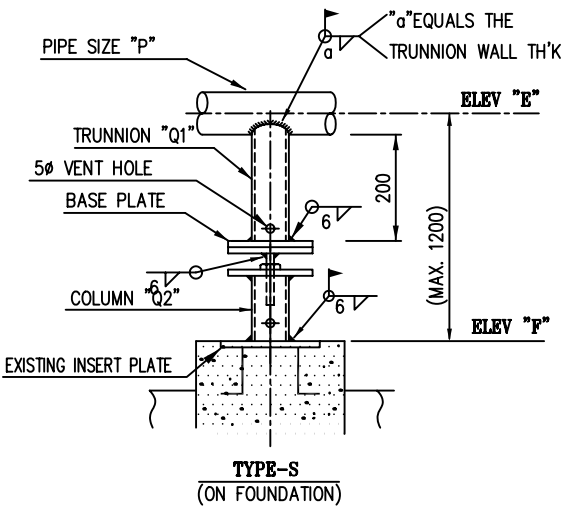
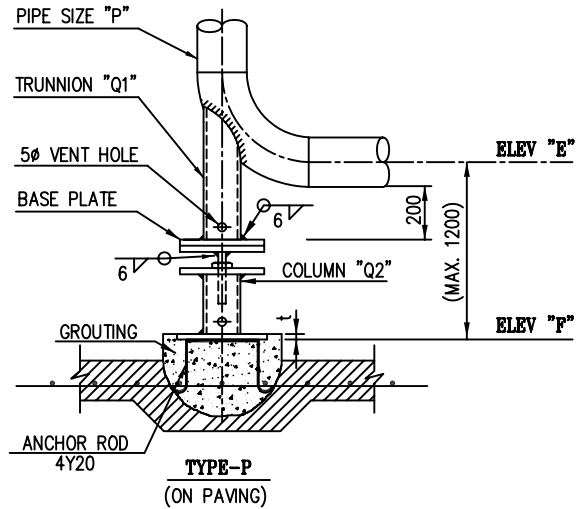
ST-A4-1283

RESTING **RF-36**
(ADJUSTABLE; TRUNNION TYPE ON F/D)

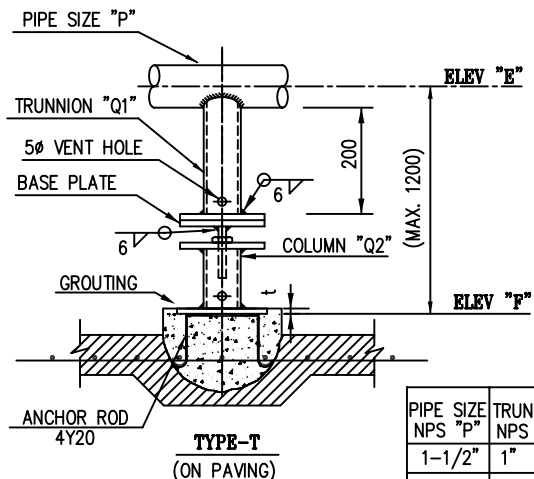
REV.
2



UP TO 24"



UP TO 24"



PIPE SIZE NPS "P"	TRUNNION NPS "Q1"	COLUMN NPS "Q2"
1-1/2"	1"	3"
2"	1-1/2"	3"
3"	2"	3"
4"	2"	3"
6"	4"	4"
8"	4"	4"
10"	6"	6"
12"	8"	8"
14"	8"	8"
16"	10"	10"
18"	10"	10"
20"	12"	12"
24"	12"	12"

NOTE

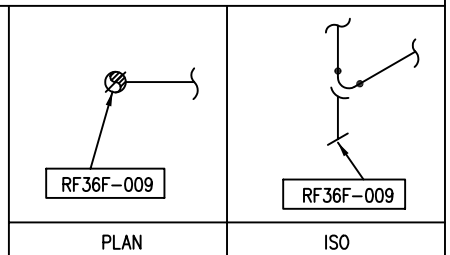
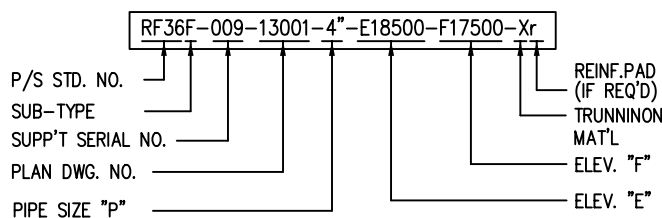
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- MATERIAL
 - TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.
 - COLUMN "Q2" : A53 Gr.B OR EQ.
 - PLATE : A36 OR EQ.

CODE	RUN PIPE	TRUNNION "Q1"
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ

- SEE DWG. NO. ST-A4-1032 FOR THE DETAIL OF BASE PLATE(BPLR)
- SEE DWG. NO. ST-A4-1023 (2/4) FOR THE DETAIL OF ADJUSTABLE STANCHION(ADS)
- SEE DWG.NO.ST-A4-0006 FOR THE DETAIL OF LOCAL SUPPORT FOUNDATION.

GENERALLY REVISED.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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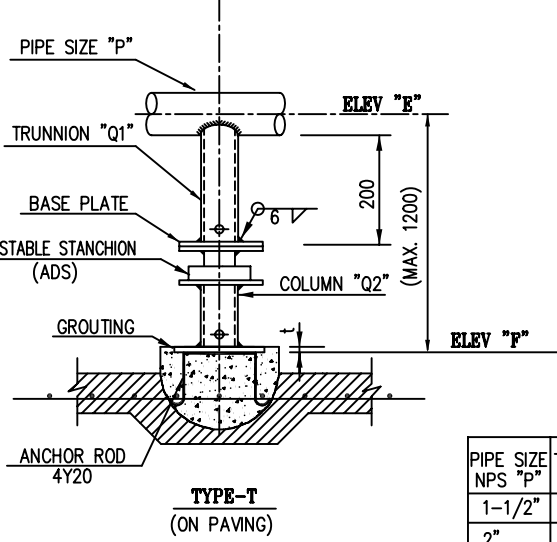
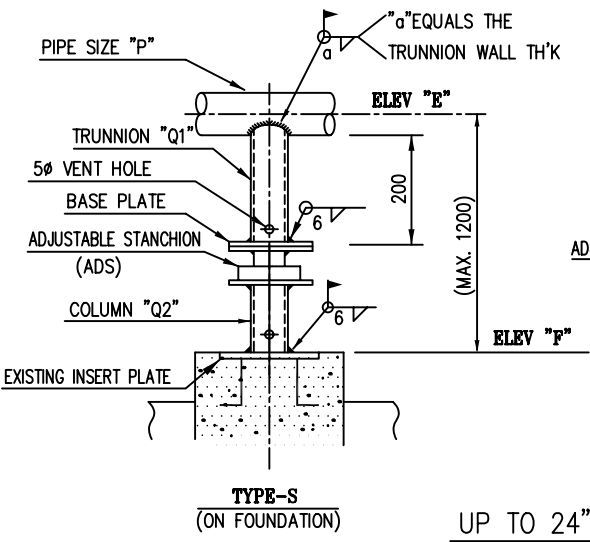
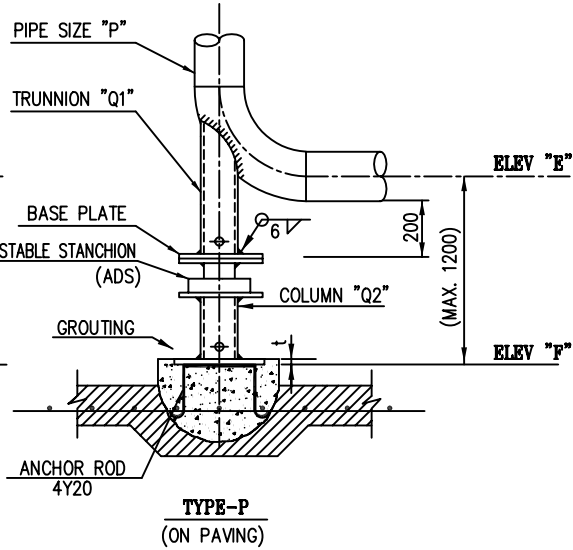
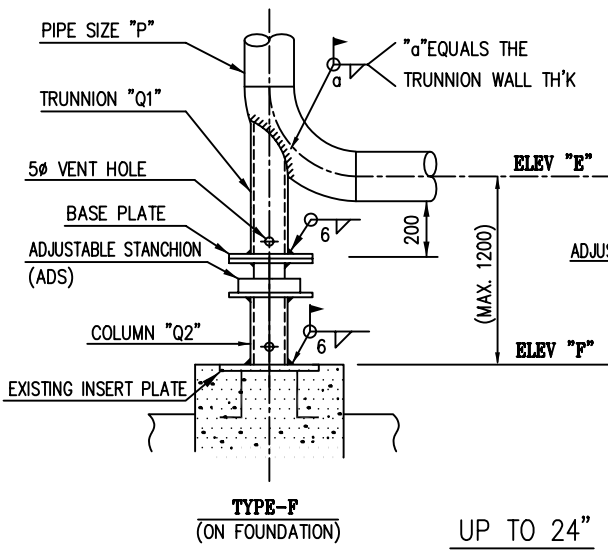
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1284

RESTING **RF-37**
(ADJUSTABLE; TRUNNION TYPE ON F/D)

REV.
2



PIPE SIZE NPS "P"	TRUNNION NPS "Q1"	COLUMN NPS "Q2"
1-1/2"	1"	3"
2"	1-1/2"	3"
3"	2"	3"
4"	2"	3"
6"	4"	4"
8"	4"	4"
10"	6"	6"
12"	8"	8"
14"	8"	8"
16"	10"	10"
18"	10"	10"
20"	12"	12"
24"	12"	12"

NOTE

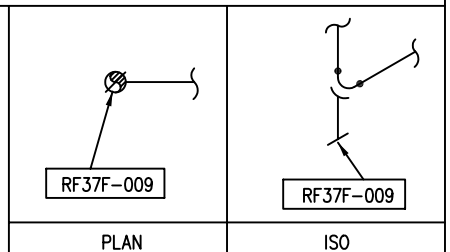
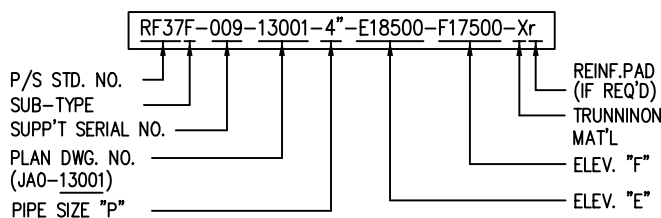
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- MATERIAL**
 - TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.
 - COLUMN "Q2" : A53 Gr.B OR EQ.
 - PLATE : A36 OR EQ.

CODE	RUN PIPE	TRUNNION "Q1"
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

- SEE DWG. NO. ST-A4-1032 FOR THE DETAIL OF BASE PLATE(BPLR)
- SEE DWG. NO. ST-A4-1023 (2/4) FOR THE DETAIL OF ADJUSTABLE STANCHION(ADS)
- SEE DWG.NO.ST-A4-0006 FOR THE DETAIL OF LOCAL SUPPORT FOUNDATION.

GENERALLY REVISED.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



SAZEH
CONSULTANTS



DAELIM

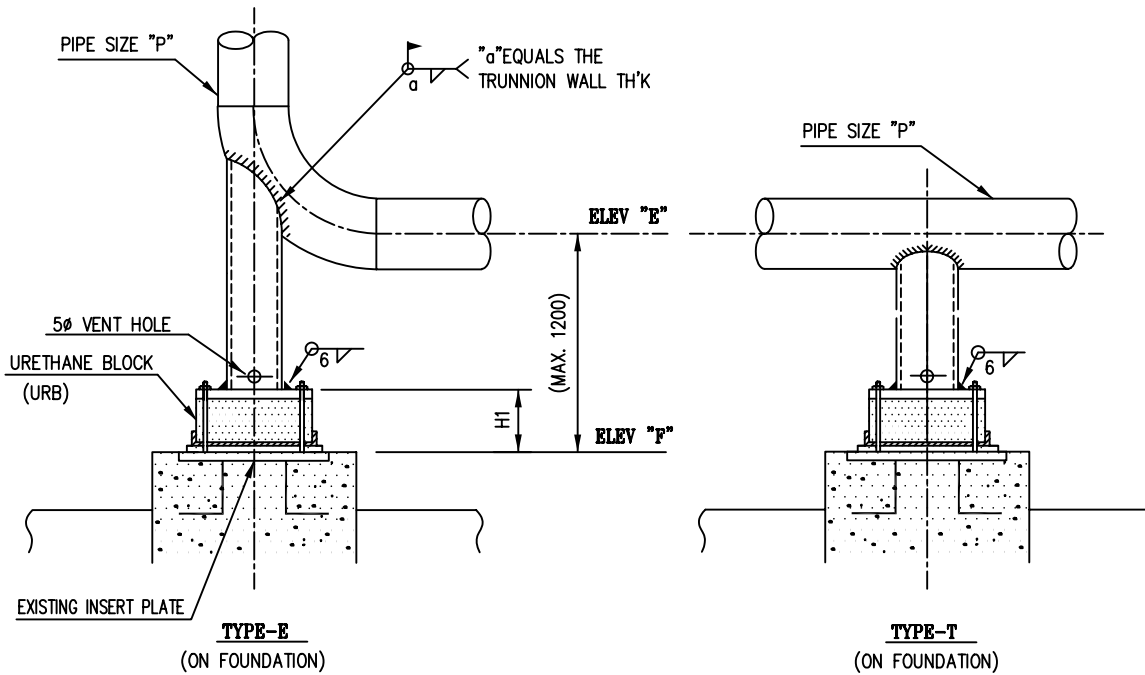
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1285

RESTING **RF-41**
(FOR COLD INSULATED PIPE;
TRUNNION TYPE ON F/D)

REV.
2



UNIT (mm)

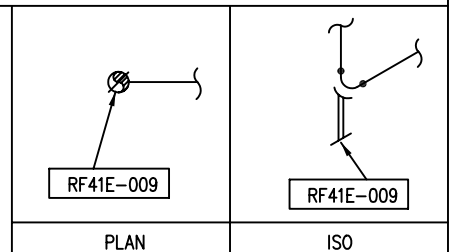
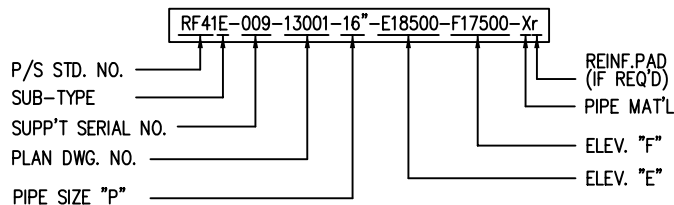
PIPE SIZE NPS "P"	NPS "Q1", "Q2"	U.BLOCK H1	PIPE SIZE NPS "P"	NPS "Q1", "Q2"	U.BLOCK H1
1-1/2"	1"	104	14"	8"	117
2"	1-1/2"	104	16"	10"	117
3"	2"	104	18"	10"	117
4"	2"	104	20"	12"	117
6"	4"	111	24"	12"	117
8"	4"	111	26"~28"	14"	117
10"	6"	117	30"	18"	124
12"	8"	117	36"	20"	133

NOTE

- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- MATERIAL
- TRUNNION : SAME AS RUN PIPE OR MAT'L TABLE.
- SEE DWG. NO. ST-A4-1020 FOR THE DETAIL OF URETHANE BLOCK ASSEMBLY(URB).

CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

SYMBOL & CODING





SAZEH
CONSULTANTS



DAELIM

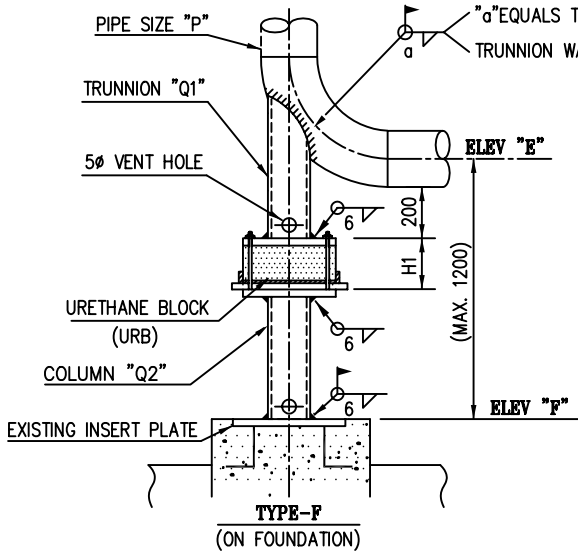
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

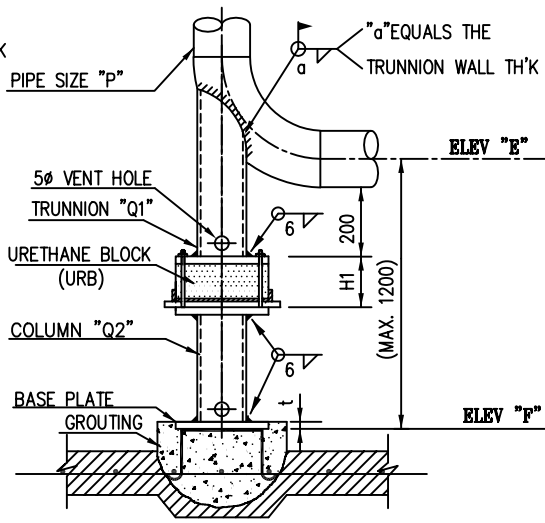
ST-A4-1286

RESTING **RF-42**
(FOR COLD INSULATED PIPE;
TRUNNION TYPE ON F/D)

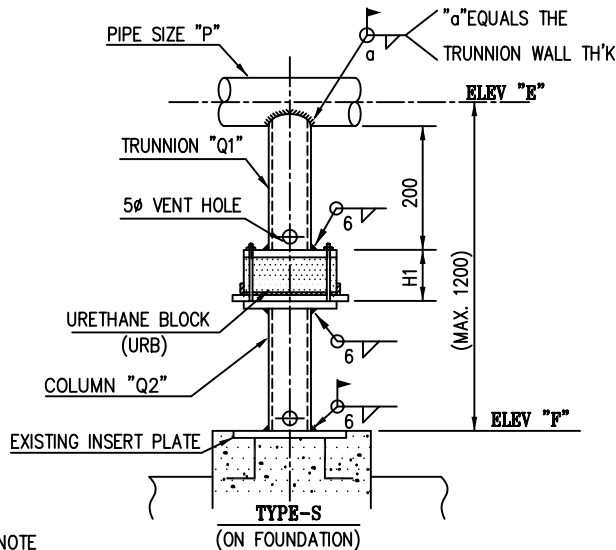
REV.
2



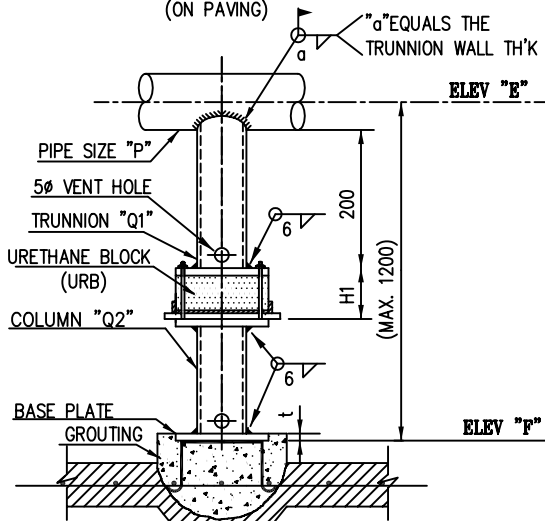
TYPE-F
(ON FOUNDATION)



TYPE-P
(ON PAVING)



TYPE-S
(ON FOUNDATION)



TYPE-T
(ON PAVING)

NOTE

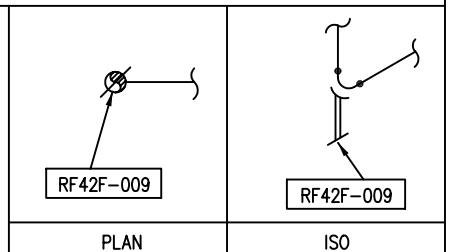
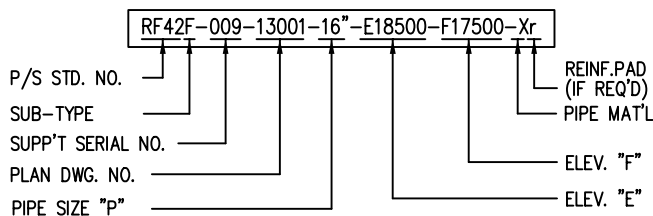
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- MATERIAL**
 - TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.
 - COLUMN "Q2" : A53 GR.B OR EQ.
 - PLATE : A36 OR EQ.
- SEE DWG. NO. ST-A4-1032 FOR THE DETAIL OF BASE PLATE(BPLR)
- SEE DWG. NO. ST-A4-1020 FOR THE DETAIL OF URETHANE BLOCK(URB)

CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

UNIT (mm)					
PIPE SIZE NPS "P"	NPS "Q1", "Q2"	U.BLOCK H1	PIPE SIZE NPS "P"	NPS "Q1", "Q2"	U.BLOCK H1
1-1/2"	1"	104	14"	8"	117
2"	1-1/2"	104	16"	10"	117
3"	2"	104	18"	10"	117
4"	2"	104	20"	12"	117
6"	4"	111	24"	12"	117
8"	4"	111	26"~28"	14"	117
10"	6"	117	30"	18"	124
12"	8"	117	36"	20"	133

GENERALLY REVISED.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



DAELIM

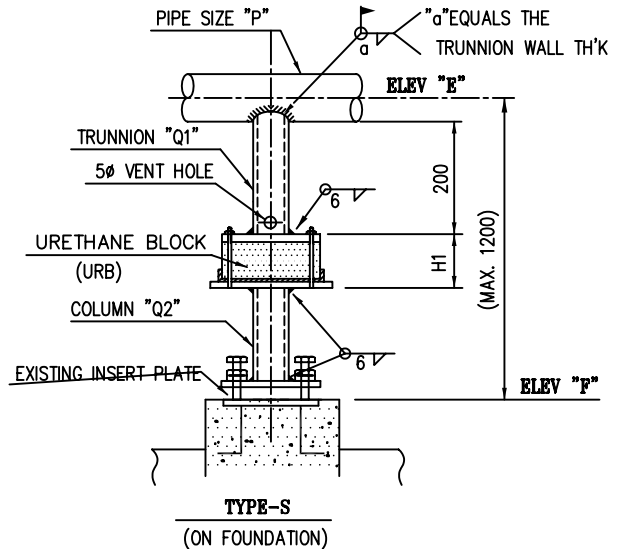
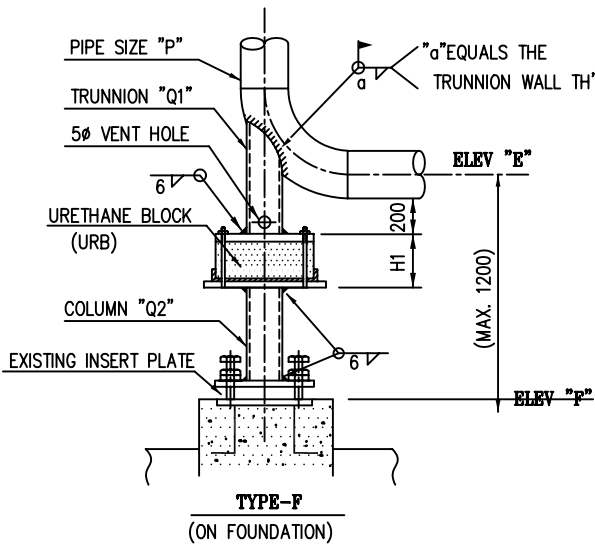
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1287

RESTING **RF-43**
(FOR COLD INSULATED PIPE;
ADJUSTABLE, TRUNNION TYPE ON F/D)

REV.
2



NOTE

1. SEE DWG. NO. ST-A4-0004
FOR APPLICATION OF REINFORCING PAD AND
TRUNNION ALLOWABLE LOADS.

2. MATERIAL

- TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.
- COLUMN "Q2" : A53 GR.B OR EQ.
- PLATE : A36 OR EQ.

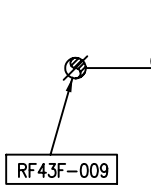
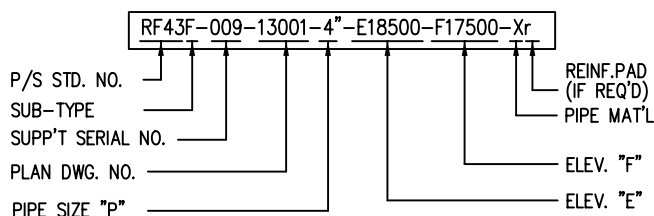
CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

3. SEE DWG. NO. ST-A4-1032 FOR THE DETAIL AND
ALLOWABLE LOADS OF EXPANSION ANCHOR BOLT AND
BASE PLATE(BPLR)

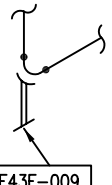
4. SEE DWG. NO. ST-A4-1023 (4/4)
FOR THE DETAIL OF ADJUSTABLE STANCHION(ADS).

PIPE SIZE NPS "P"	TRUNNION NPS "Q1"	COLUMN NPS "Q2"	U.BLOCK H1
1-1/2"	1"	3"	104
2"	1-1/2"	3"	104
3"	2"	3"	104
4"	2"	3"	104
6"	4"	4"	111
8"	4"	4"	111
10"	6"	6"	111
12"	8"	8"	117
14"	8"	8"	117
16"	10"	10"	117
18"	10"	10"	117
20"	12"	12"	117
24"	12"	12"	117

SYMBOL & CODING



PLAN



ISO



SAZEH
CONSULTANTS



DAELIM

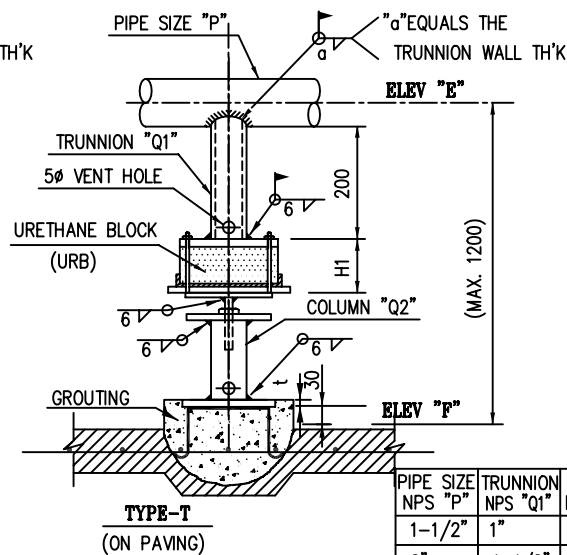
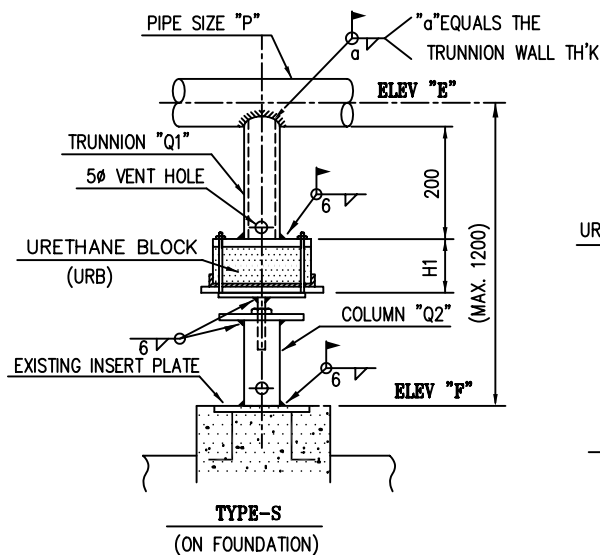
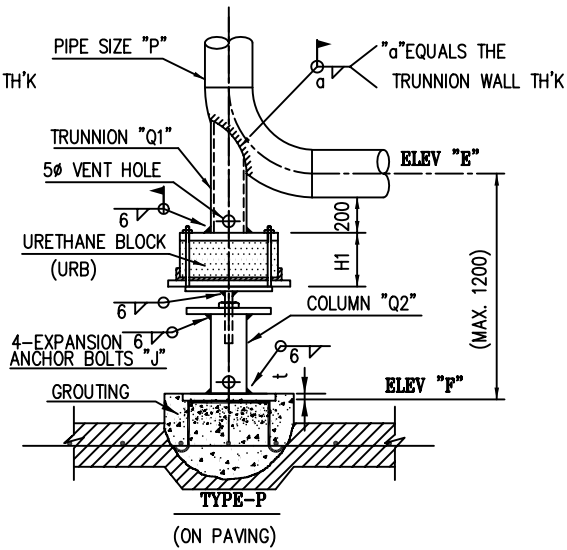
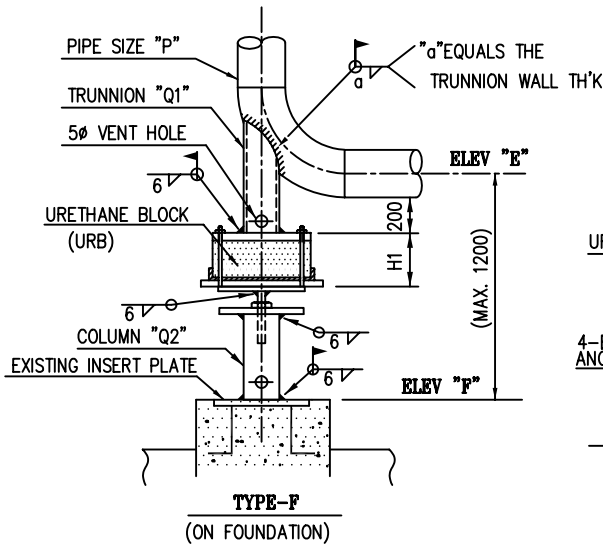
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1289

RESTING **RF-46**
(FOR COLD INSULATED PIPE;
ADJUSTABLE, TRUNNION TYPE ON F/D)

REV.
2



PIPE SIZE NPS "P"	TRUNNION NPS "Q1"	COLUMN NPS "Q2"	U.BLOCK H1
1-1/2"	1"	3"	104
2"	1-1/2"	3"	104
3"	2"	3"	104
4"	2"	3"	104
6"	4"	4"	110
8"	4"	4"	110
10"	6"	6"	110
12"	8"	8"	116
14"	8"	8"	116
16"	10"	10"	116
18"	10"	10"	116
20"	12"	12"	116
24"	12"	12"	116

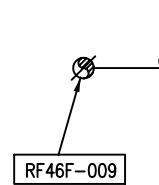
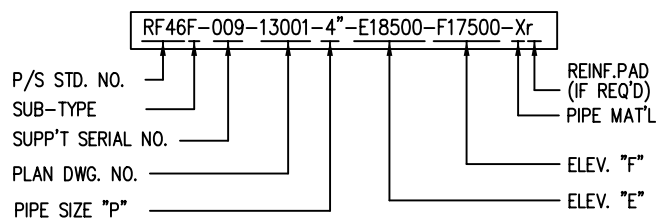
NOTE

- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- MATERIAL
 - TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.
 - COLUMN "Q2" : A53 Gr.B OR EQ.
 - PLATE : A36 OR EQ.
- SEE DWG. NO. ST-A4-1032 FOR THE DETAIL AND ALLOWABLE LOADS OF BASE PLATE(BPLR)
- SEE DWG. NO. ST-A4-1023 (3/4) FOR THE DETAIL OF ADJUSTABLE STANCHION(ADS).

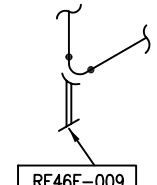
CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

GENERALLY REVISED.

SYMBOL & CODING



PLAN



ISO



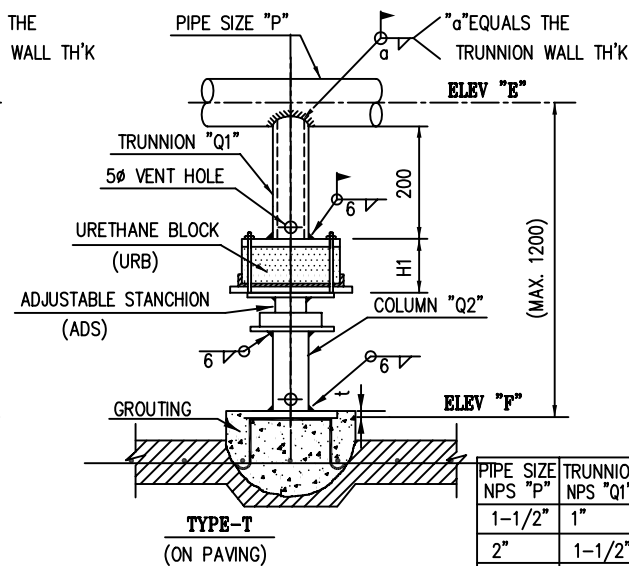
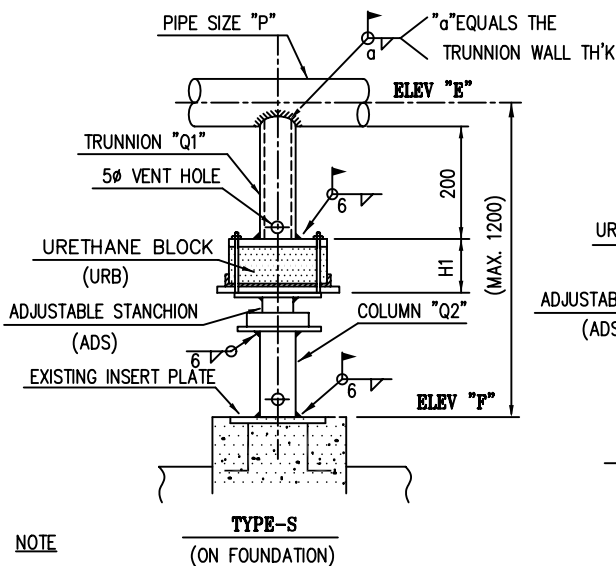
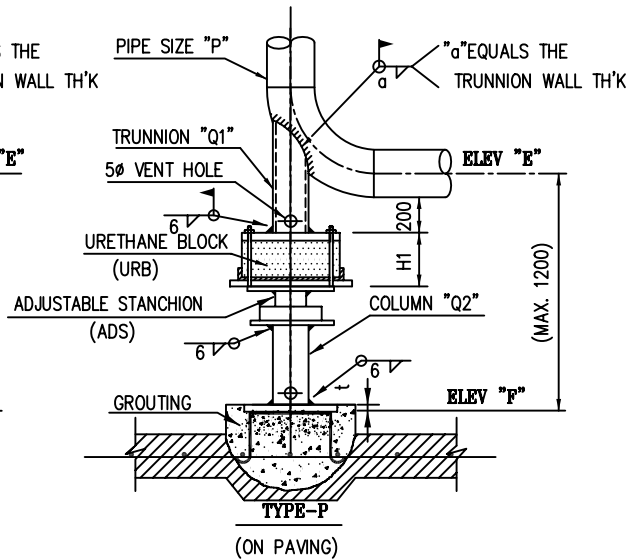
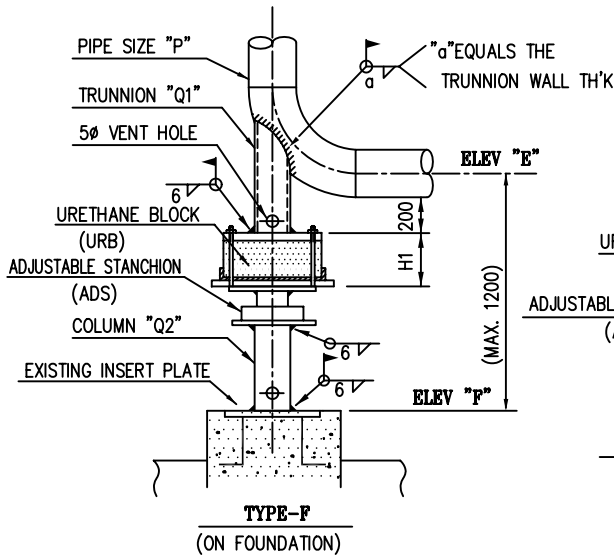
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1290

RESTING **RF-47**
(FOR COLD INSULATED PIPE;
ADJUSTABLE, TRUNNION TYPE ON F/D)

REV.
2



NOTE

1. SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

2. MATERIAL

- TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.
- COLUMN "Q2" : A53 Gr.B OR EQ.
- PLATE : A36 OR EQ.

3. SEE DWG NO. ST-A4-1032 FOR THE DETAIL AND ALLOWABLE LOADS OF BASE PLATE(BPLR)

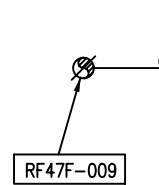
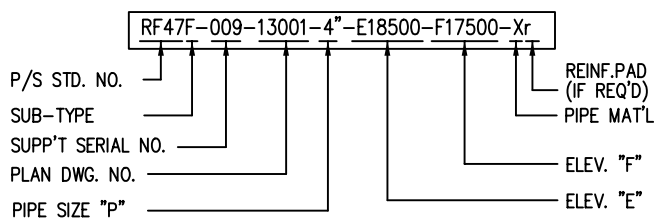
4. SEE DWG NO. ST-A4-1023 FOR THE DETAIL OF ADJUSTABLE STANCHION(ADS).

CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

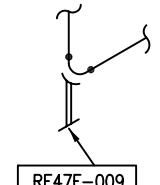
PIPE SIZE NPS "P"	TRUNNION NPS "Q1"	COLUMN NPS "Q2"	U.BLOCK H1
1-1/2"	1"	3"	104
2"	1-1/2"	3"	104
3"	2"	3"	104
4"	2"	3"	104
6"	4"	4"	110
8"	4"	4"	110
10"	6"	6"	110
12"	8"	8"	116
14"	8"	8"	116
16"	10"	10"	116
18"	10"	10"	116
20"	12"	12"	116
24"	12"	12"	116

GENERALLY REVISED.

SYMBOL & CODING



PLAN



ISO



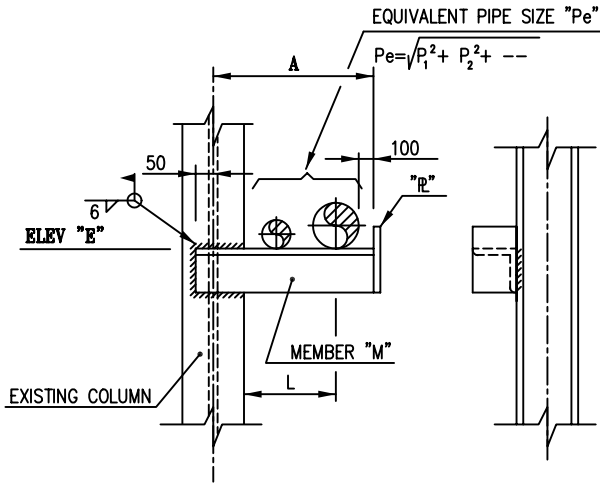
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

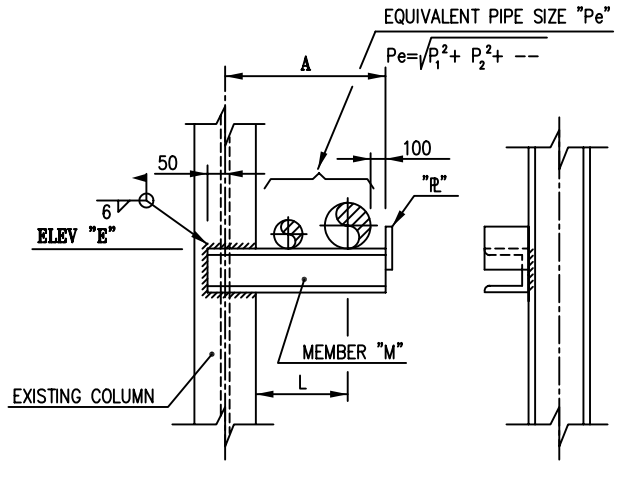
ST-A4-1291

RESTING **RS-1**
(FOR MULTI PIPES ON STRUCTURE)

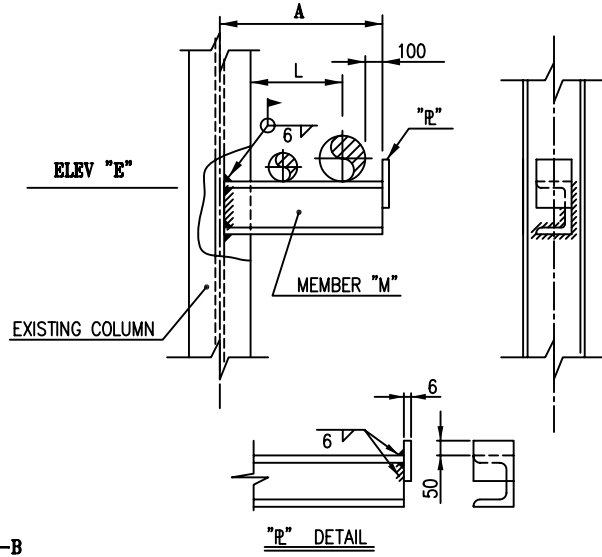
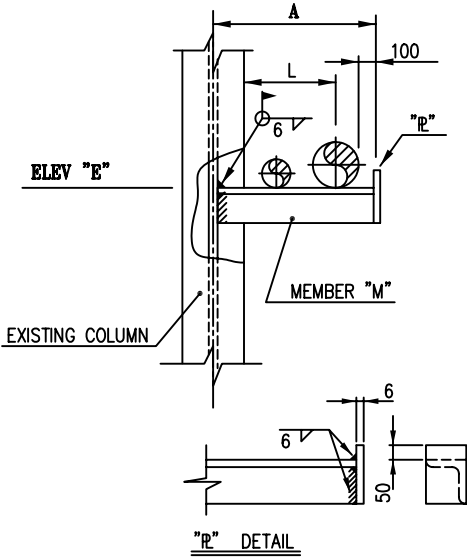
REV.
2



TYPE-A



TYPE-B



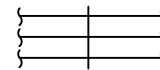
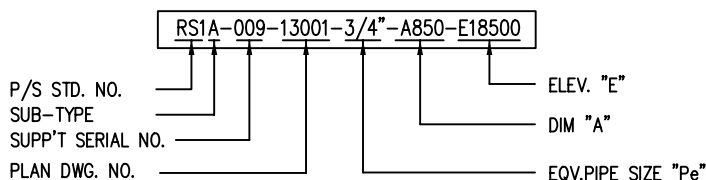
UNIT (mm)

EQV. PIPE SIZE "Pe"	L ≤ 500		500 < L ≤ 1000	
	MEMBER SIZE "M"	ALLOW. LOAD (KG)	MEMBER SIZE "M"	ALLOW. LOAD (KG)
3/4"	A5	80	A7	60
1"	A5	80	A7	60
1-1/2"	A5	80	A7	60
2"	A6	150	A10	140
3"	A7	280	C12	340
4"	A10	560	C12	340
6"	C10	880	C15	680
8"	C12	1600	C20	1900

NOTE

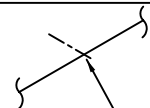
1. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RS1A-009

PLAN



RS1A-009

(INDICATE WITH LARGEST LINE)

ISO



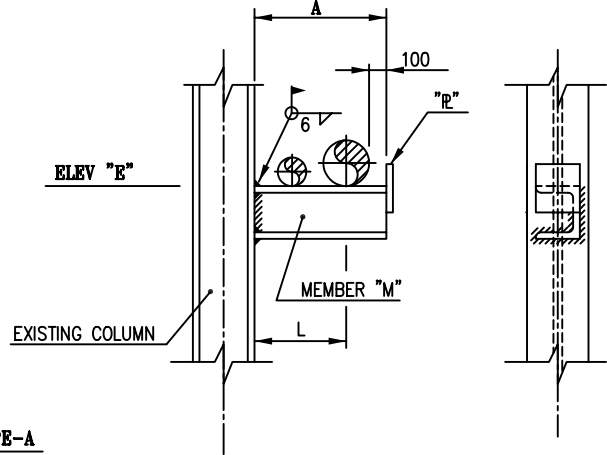
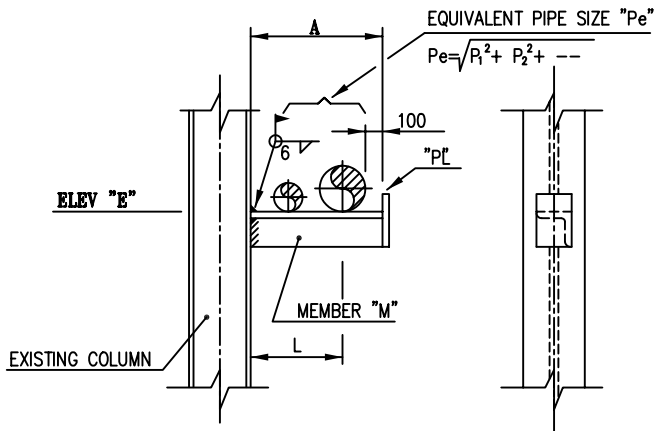
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

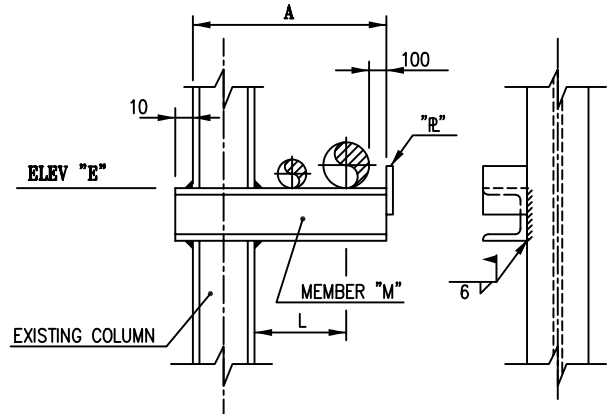
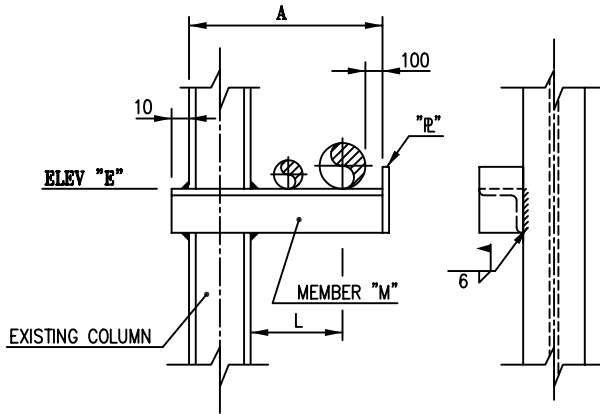
ST-A4-1292

RESTING **RS-3**
(FOR MULTI PIPES ON STRUCTURE)

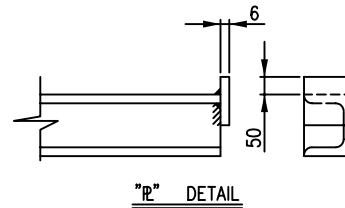
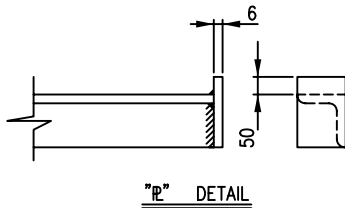
REV.
2



TYPE-A



TYPE-B



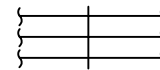
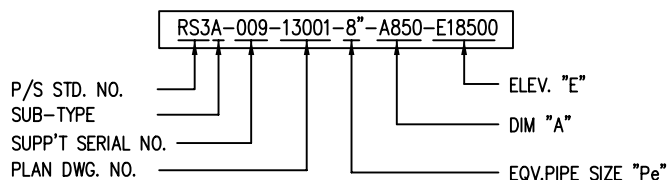
UNIT (mm)

EQV. PIPE SIZE "Pe"	L ≤ 500		500 < L ≤ 1000	
	MEMBER SIZE "M"	ALLOW. LOAD (KG)	MEMBER SIZE "M"	ALLOW. LOAD (KG)
3/4"	A5	80	A7	60
1"	A5	80	A7	60
1-1/2"	A5	80	A7	60
2"	A6	150	A10	140
3"	A7	280	C12	340
4"	A10	560	C12	340
6"	C10	880	C15	680
8"	C12	1600	C20	1900

NOTE

1. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RS3A-009

PLAN



RS3A-009

(INDICATE WITH LARGEST LINE)

ISO



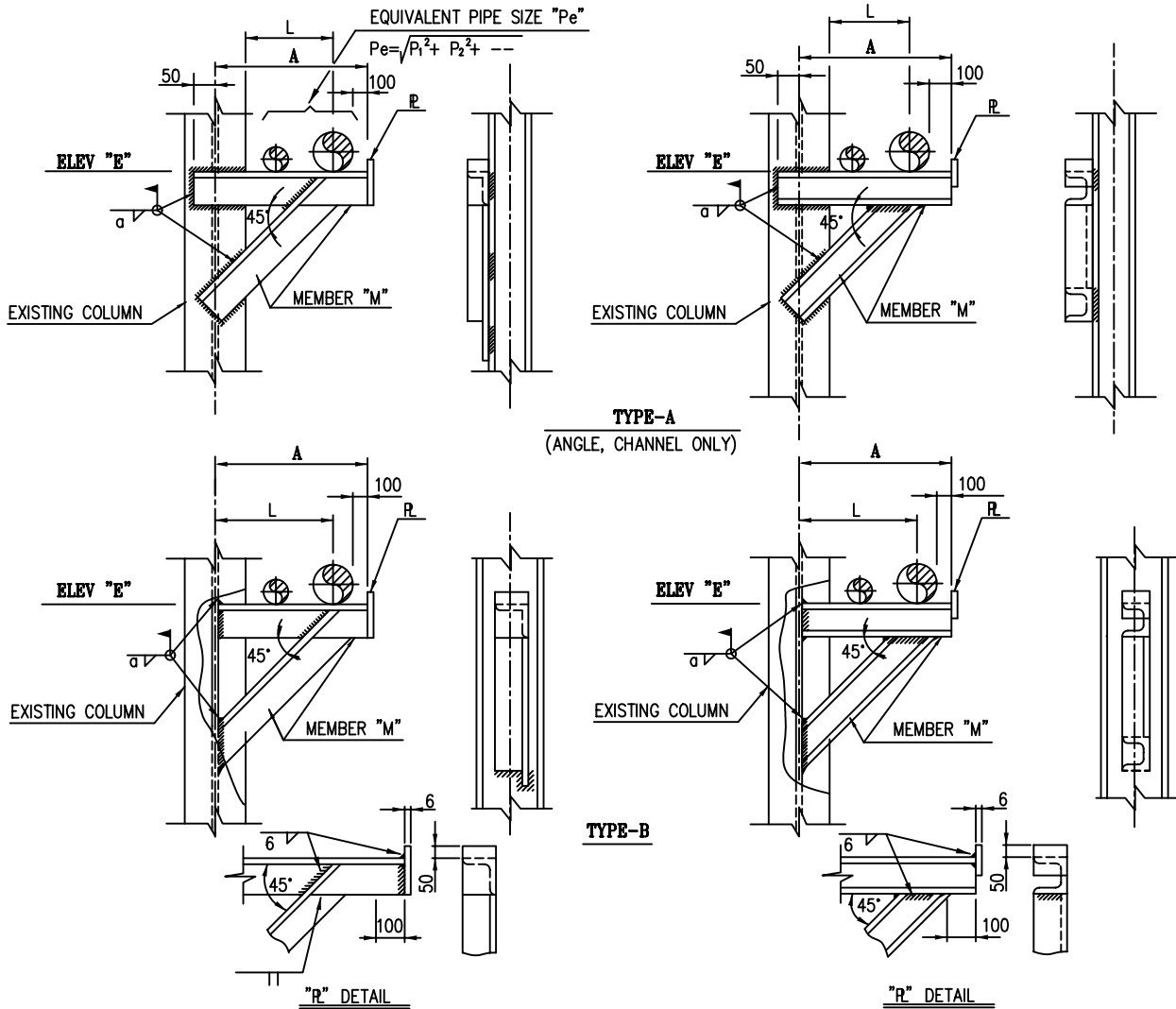
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1293

RESTING **RS-5**
(FOR MULTI PIPES ON STRUCTURE)

REV.
2



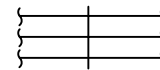
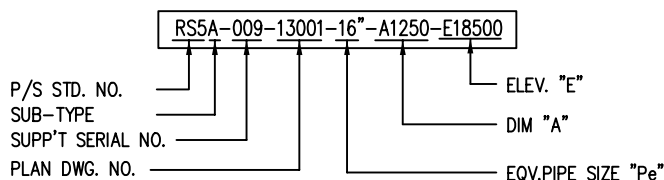
MEMBER SIZE "M" AND ALLOWABLE LOAD "W"

UNIT (mm)

EQUIV. PIPE SIZE "Pe"	α	L < 500		500 < L ≤ 1000		1000 < L ≤ 1500		EQUIV. PIPE SIZE "Pe"	α	L < 500		500 < L ≤ 1000		1000 < L ≤ 1500	
		"M"	W (kg)	"M"	W (kg)	"M"	W (kg)			"M"	W (kg)	"M"	W (kg)	"M"	W (kg)
3/4"	6	-	-	A6	200	A6	140	10"	6	C12	1700	C15	1500	H12	2300
1"	6	-	-	A6	200	A6	140	12"	6	C12	1700	C15	1500	H12	2300
1-1/2"	6	-	-	A6	200	A6	140	14"	6	C15	2800	H12	3300	H12	2300
2"	6	-	-	A7	400	A7	260	16"	6	C15	2800	H12	3300	H12	2300
3"	6	-	-	A7	400	C12	500	18"	9	C15	2800	H12	3300	H12	2300
4"	6	-	-	C10	500	C12	500	20"	9	H12	5700	H15	5100	H15	3500
6"	6	C10	950	C12	900	C15	1000	24"	9	H12	5700	H15	5100	H15	3500
8"	6	C10	950	C12	900	C15	1000								

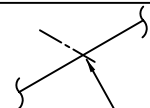
NOTE : SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RS5A-009

PLAN



RS5A-009

(INDICATE WITH LARGEST LINE)

ISO



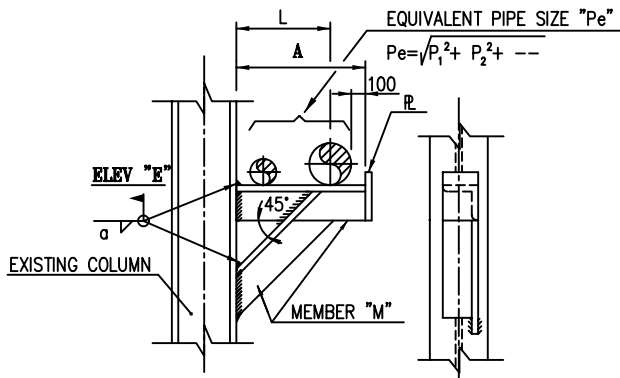
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

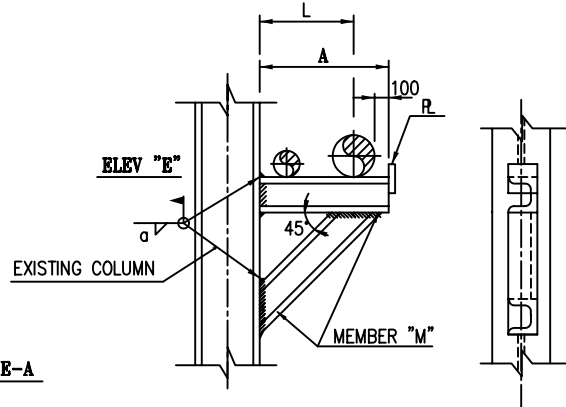
ST-A4-1294

RESTING **RS-7**
(FOR MULTI PIPES ON STRUCTURE)

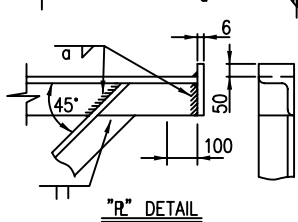
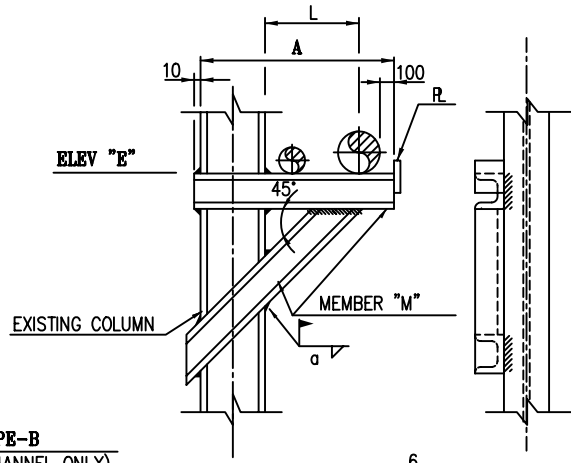
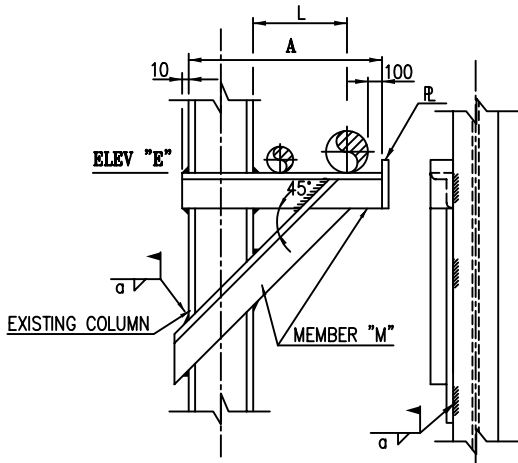
REV.
2



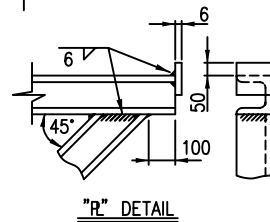
TYPE-A



TYPE-B
(ANGLE, CHANNEL ONLY)



"R" DETAIL



"R" DETAIL

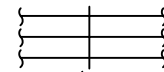
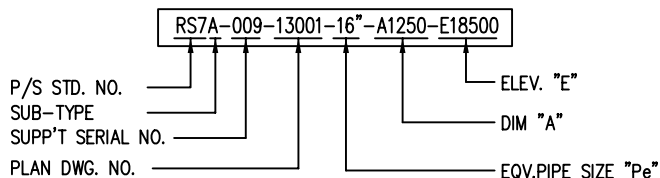
MEMBER SIZE "M" AND ALLOWABLE LOAD "W"

UNIT (mm)

EQUIV. PIPE SIZE "Pe"	a	L < 500		500 < L ≤ 1000		1000 < L ≤ 1500		EQUIV. PIPE SIZE "Pe"	a	L < 500		500 < L ≤ 1000		1000 < L ≤ 1500	
		"M"	W (kg)	"M"	W (kg)	"M"	W (kg)			"M"	W (kg)	"M"	W (kg)	"M"	W (kg)
3/4"	6	-	-	A6	200	A6	140	10"	6	C12	1700	C15	1500	H12	2300
1"	6	-	-	A6	200	A6	140	12"	6	C12	1700	C15	1500	H12	2300
1-1/2"	6	-	-	A6	200	A6	140	14"	6	C15	2800	H12	3300	H12	2300
2"	6	-	-	A7	400	A7	260	16"	6	C15	2800	H12	3300	H12	2300
3"	6	-	-	A7	400	C12	500	18"	9	C15	2800	H12	3300	H12	2300
4"	6	-	-	C10	500	C12	500	20"	9	H12	5700	H15	5100	H15	3500
6"	6	C10	950	C12	900	C15	1000	24"	9	H12	5700	H15	5100	H15	3500
8"	6	C10	950	C12	900	C15	1000								

NOTE : SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RS7A-009

PLAN



RS7A-009

(INDICATE WITH LARGEST LINE)

ISO



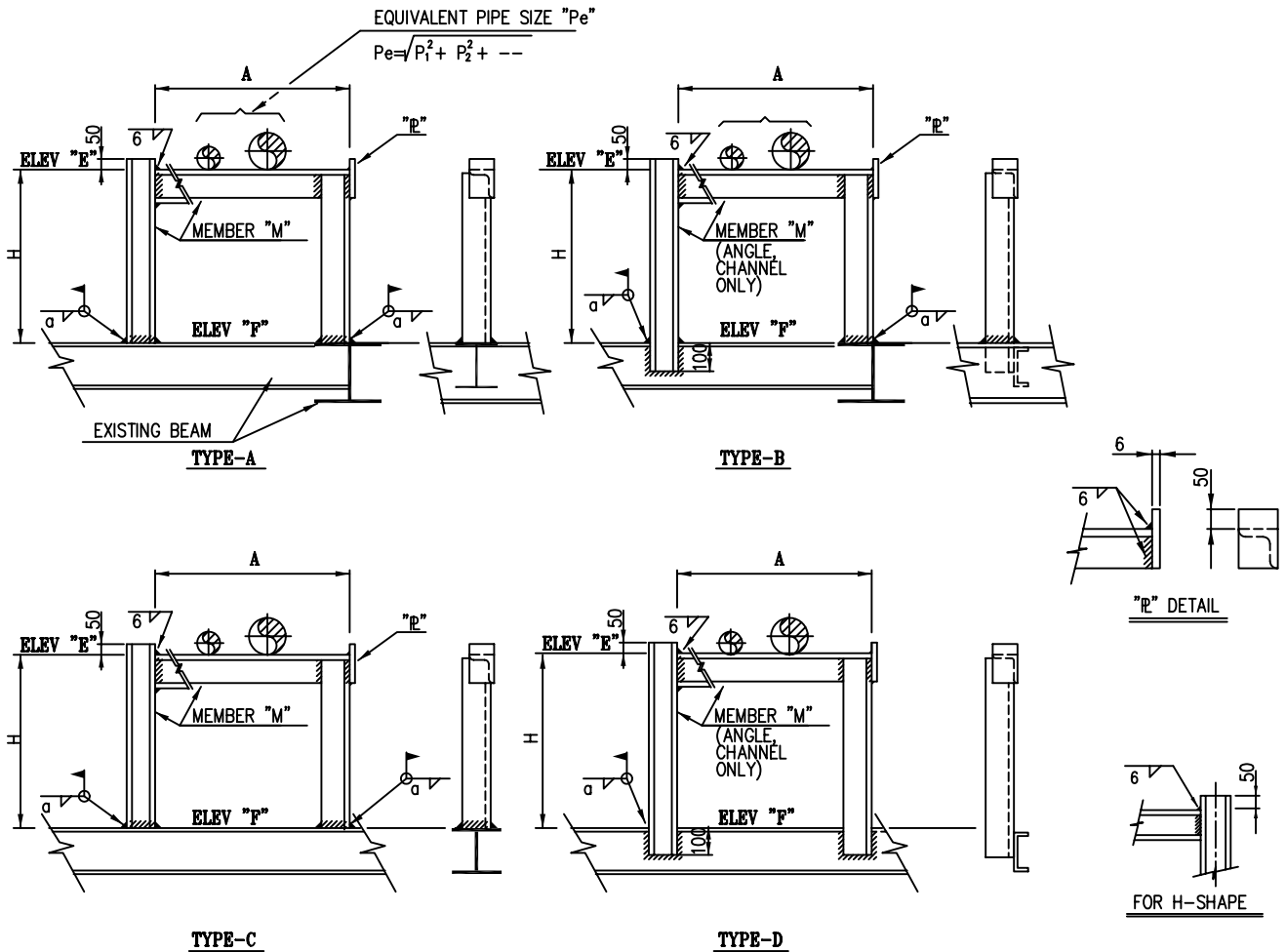
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1295

RESTING **RS-9**
(FOR MULTI PIPES ON STRUCTURE)

REV.
2



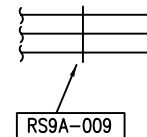
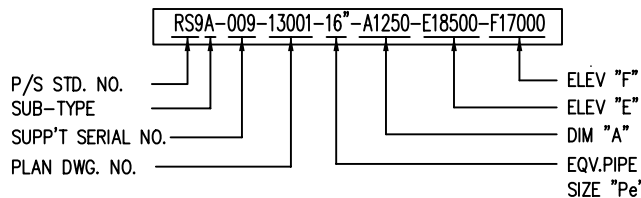
MEMBER SIZE "M" AND ALLOWABLE LOAD "W"

UNIT (mm)

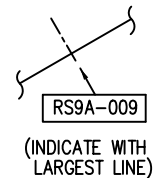
EQUIV. PIPE SIZE "Pe"	a	H (MAX.)	A < 500				500 < A ≤ 1000				1000 < A ≤ 1500				1500 < A ≤ 2000			
			"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)		
2"	6	1000	A5	180	A5	180	-	-	-	-	-	-	-	-	-	-	-	
		1500	A5	130	A5	130	-	-	-	-	-	-	-	-	-	-	-	
3"	6	1000	A6	330	A6	330	-	-	-	-	-	-	-	-	-	-	-	
		1500	A6	230	A6	230	-	-	-	-	-	-	-	-	-	-	-	
4"	6	1000	A7	630	A7	630	A7	550	A7	400	-	-	-	-	-	-	-	
		1500	A7	430	A7	430	A7	500	A7	400	-	-	-	-	-	-	-	
6"	6	1000	C10	700	C10	700	C12	1200	C12	1000	-	-	-	-	-	-	-	
		1500	C12	850	C12	830	C12	770	C12	650	-	-	-	-	-	-	-	
8"	6	1000	C12	1300	C12	1300	C12	1200	C12	1000	-	-	-	-	-	-	-	
		1500	C15	1500	C15	1500	C15	1400	C15	1250	-	-	-	-	-	-	-	
10"	6	1000	C15	2200	C15	2100	C15	2000	C15	1650	-	-	-	-	-	-	-	
		1500	C15	1500	C15	1500	H12	3100	H12	2900	-	-	-	-	-	-	-	
12"	6	1000	C15	2200	C15	2100	C15	2000	C15	1650	-	-	-	-	-	-	-	
		1500	H12	3800	H12	3300	H12	3100	H12	2900	-	-	-	-	-	-	-	
14"	6	1000	C15	2200	C15	2100	H12	3700	C15	3000	-	-	-	-	-	-	-	
		1500	H12	3800	H12	3300	H12	3100	H12	2900	-	-	-	-	-	-	-	
16"	6	1000	H12	5000	H12	4600	H12	3700	H12	3000	-	-	-	-	-	-	-	
		1500	H12	3800	H12	3300	H12	3100	H12	2900	-	-	-	-	-	-	-	
18"	9	1000	-	-	H12	4600	H12	3700	H12	3000	-	-	-	-	-	-	-	
		1500	-	-	H12	3300	H12	3100	H12	2900	-	-	-	-	-	-	-	
20"	9	1000	-	-	H12	4600	H12	3700	H12	3000	-	-	-	-	-	-	-	
		1500	-	-	H12	3300	H12	3100	H15	4700	-	-	-	-	-	-	-	
24"	9	1000	-	-	H15	7500	H15	6000	H15	4800	-	-	-	-	-	-	-	
		1500	-	-	H15	5300	H15	5000	H15	4700	-	-	-	-	-	-	-	

NOTE : SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



PLAN



(INDICATE WITH LARGEST LINE)

ISO



SAZEH
CONSULTANTS



DAELIM

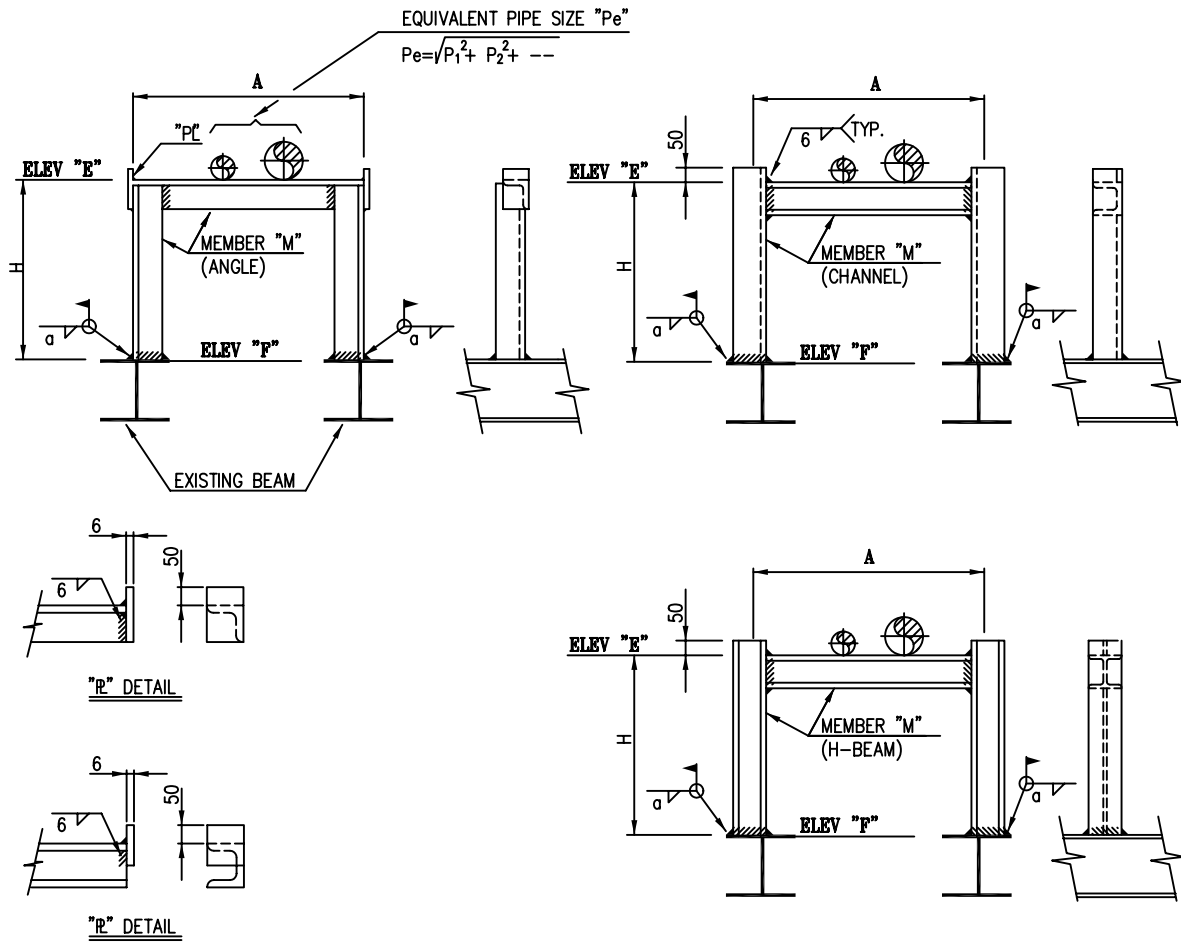
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1296

RESTING **RS-11**
(FOR MULTI PIPES ON STRUCTURE)

REV.
2



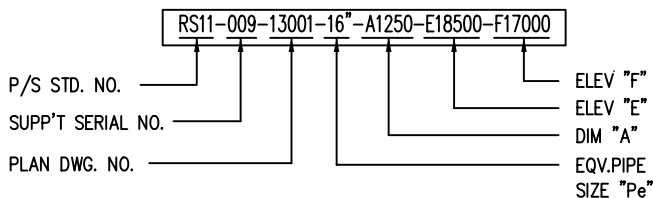
MEMBER SIZE "M" AND ALLOWABLE LOAD "W"

UNIT (mm)

EQUIV. PIPE SIZE "Pe"	a	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000		EQUIV. PIPE SIZE "Pe"	a	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000	
			"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)				"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)
2"	6	1000	A5	180	A5	180	-	-	-	-	12"	6	1000	C15	2200	C15	2100	C15	2000	C15	1650
		1500	A5	130	A5	130	-	-	-	-			1500	H12	3800	H12	3300	H12	3100	H12	2900
3"	6	1000	A6	330	A6	330	-	-	-	-	14"	6	1000	C15	2200	C15	2100	H12	3700	C15	3000
		1500	A6	230	A6	230	-	-	-	-			1500	H12	3800	H12	3300	H12	3100	H12	2900
4"	6	1000	A7	630	A7	630	A7	550	A7	400	16"	6	1000	H12	5000	H12	4600	H12	3700	H12	3000
		1500	A7	430	A7	430	A7	500	A7	400			1500	H12	3800	H12	3300	H12	3100	H12	2900
6"	6	1000	C10	700	C10	700	C12	1200	C12	1000	18"	9	1000	-	-	H12	4600	H12	3700	H12	3000
		1500	C12	850	C12	830	C12	770	C12	650			1500	-	-	H12	3300	H12	3100	H12	2900
8"	6	1000	C12	1300	C12	1300	C12	1200	C12	1000	20"	9	1000	-	-	H12	4600	H12	3700	H12	3000
		1500	C15	1500	C15	1500	C15	1400	C15	1250			1500	-	-	H12	3300	H12	3100	H15	4700
10"	6	1000	C15	2200	C15	2100	C15	2000	C15	1650	24"	9	1000	-	-	H15	7500	H15	6000	H15	4800
		1500	C15	1500	C15	1500	H12	3100	H12	2900			1500	-	-	H15	5300	H15	5000	H15	4700

NOTE : SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RS11-009

PLAN



RS11-009
(INDICATE WITH LARGEST LINE)

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



SAZEH
CONSULTANTS



DAELIM

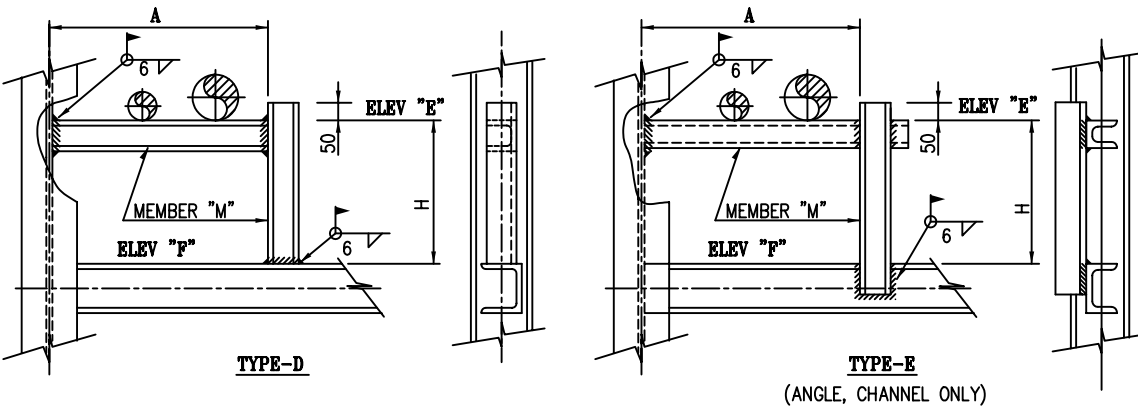
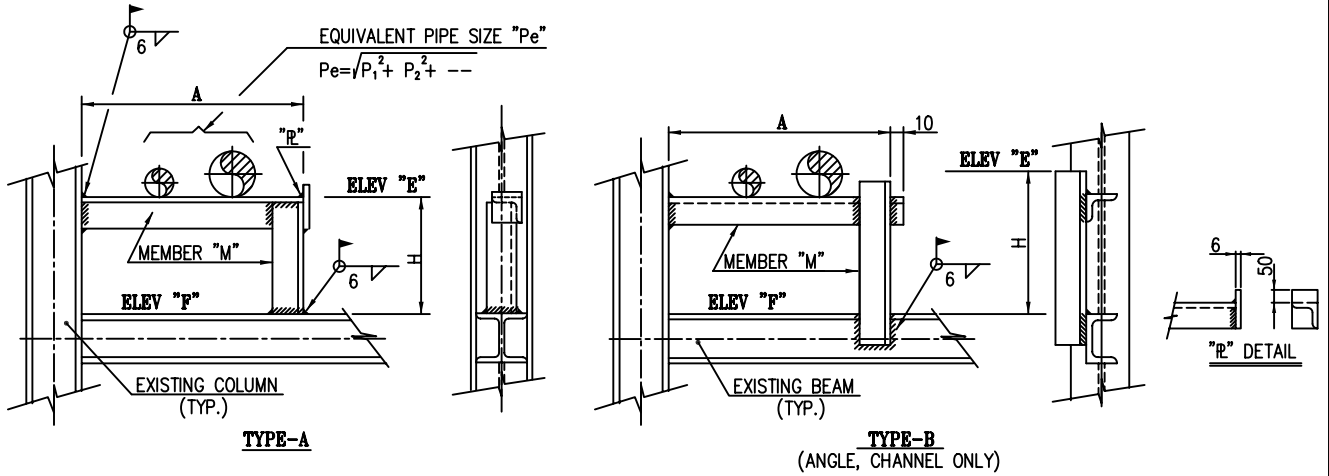
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1297

HANGER **RS-12**
(FOR MULTI PIPES ON STRUCTURE)

REV.
2



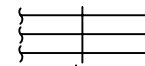
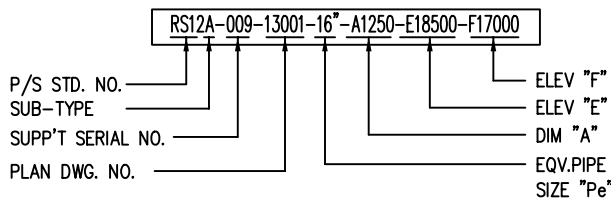
MEMBER SIZE "M" AND ALLOWABLE LOAD "W"

UNIT (mm)

EQUIV. PIPE SIZE "Pe"	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000		EQUIV. PIPE SIZE "Pe"	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000	
		"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)			"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)
1"~3"	1000	A5	340	A6	400	A6	280	A7	450	12"	1000	C12	2000	C15	2100	C15	1830	H12	3100
	1500	A5	330	A6	350	A6	250	A7	400		1500	C12	2000	C15	1820	C15	1450	H12	2700
4"	1000	A6	590	A7	650	C10	650	C10	520	14"	1000	C12	2000	C15	2100	H12	3800	H12	3100
	1500	A6	570	A7	590	C10	550	C10	400		1500	C12	2000	C15	1820	H12	3300	H12	2700
6"	1000	A7	1100	C12	1300	C12	1150	C12	950	16"	1000	C15	3500	H12	4670	H12	3800	H15	4800
	1500	A7	1080	C12	1130	C12	1000	C12	800		1500	C15	3120	H12	4050	H12	3300	H15	4250
8"	1000	C10	1150	C12	1300	C12	1150	C15	1610	18"	1000	C15	3500	H12	4670	H15	5800	H15	4800
	1500	C10	1000	C12	1130	C12	1000	C15	1200		1500	C15	3120	H12	4050	H15	5000	H15	4250
10"	1000	C12	2000	C15	2100	C15	1830	C15	1610	20"~24"	1000	-	-	H12	4670	H15	5800	H15	4800
	1500	C12	2000	C15	1820	C15	1450	C15	1200		1500	-	-	H12	4050	H15	5000	H15	4250

NOTE : SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RS12A-009

PLAN



RS12A-009
(INDICATE WITH LARGEST LINE)

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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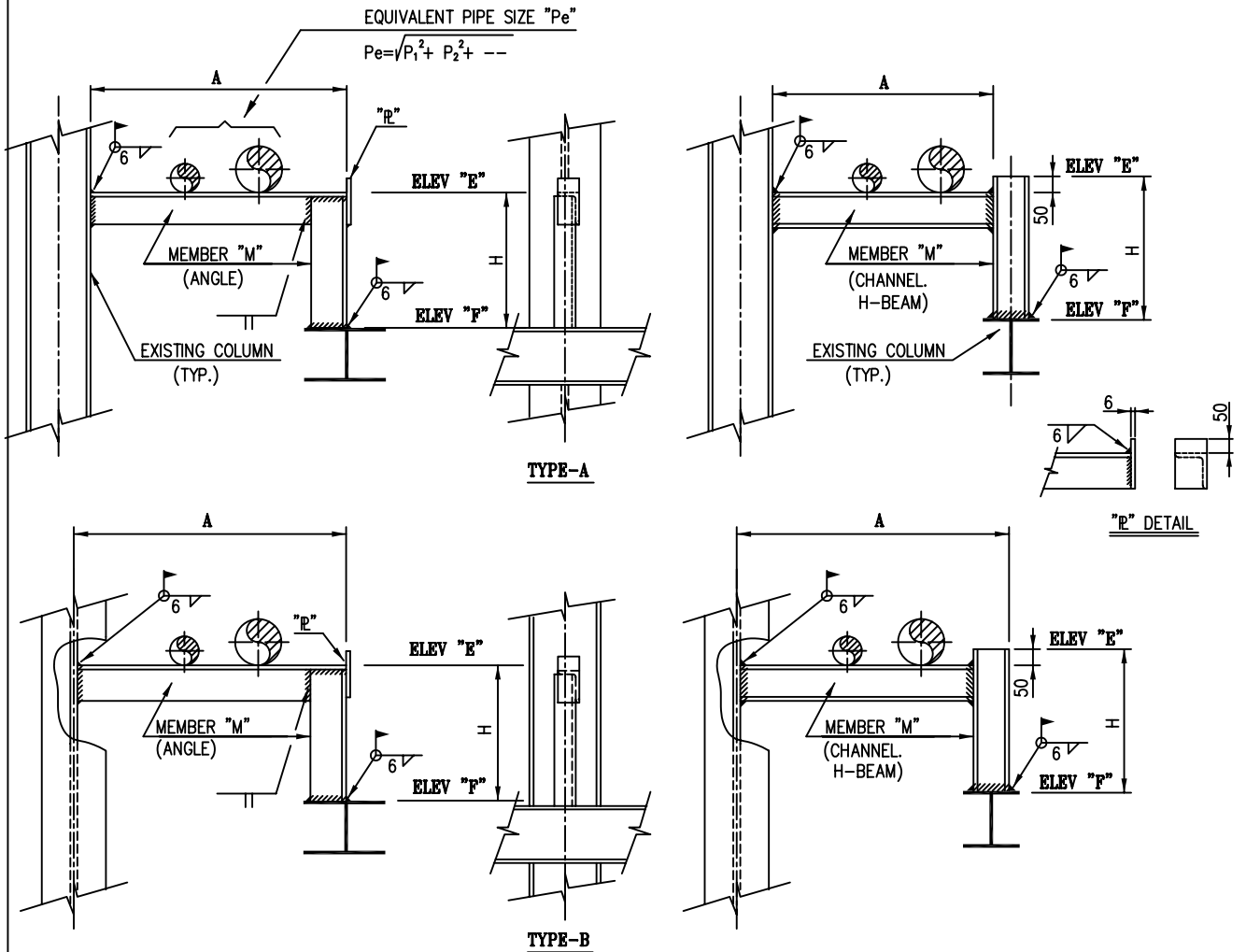
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1298

RESTING **RS-14**
(FOR MULTI PIPES ON STRUCTURE)

REV.
2



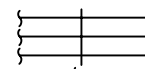
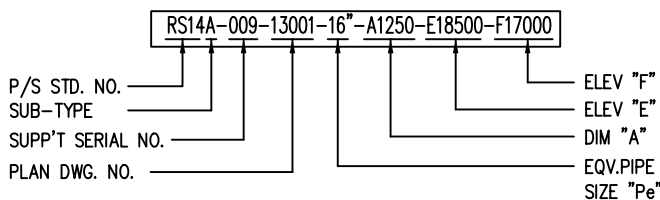
MEMBER SIZE "M" AND ALLOWABLE LOAD "W"

UNIT (mm)

EQUIV. PIPE SIZE "Pe"	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000		EQUIV. PIPE SIZE "Pe"	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000	
		"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)			"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)
1"~3"	1000	A5	340	A6	400	A6	280	A7	450	12"	1000	C12	2000	C15	2100	C15	1830	H12	3100
	1500	A5	330	A6	350	A6	250	A7	400		1500	C12	2000	C15	1820	C15	1450	H12	2700
4"	1000	A6	590	A7	650	C10	650	C10	520	14"	1000	C12	2000	C15	2100	H12	3800	H12	3100
	1500	A6	570	A7	590	C10	550	C10	400		1500	C12	2000	C15	1820	H12	3300	H12	2700
6"	1000	A7	1100	C12	1300	C12	1150	C12	950	16"	1000	C15	3500	H12	4670	H12	3800	H15	4800
	1500	A7	1080	C12	1130	C12	1000	C12	800		1500	C15	3120	H12	4050	H12	3300	H15	4250
8"	1000	C10	1150	C12	1300	C12	1150	C15	1610	18"	1000	C15	3500	H12	4670	H15	5800	H15	4800
	1500	C10	1000	C12	1130	C12	1000	C15	1200		1500	C15	3120	H12	4050	H15	5000	H15	4250
10"	1000	C12	2000	C15	2100	C15	1830	C15	1610	20"~24"	1000	-	-	H12	4670	H15	5800	H15	4800
	1500	C12	2000	C15	1820	C15	1450	C15	1200		1500	-	-	H12	4050	H15	5000	H15	4250

NOTE : SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RS14A-009
PLAN



RS14A-009
(INDICATE WITH LARGEST LINE)
ISO



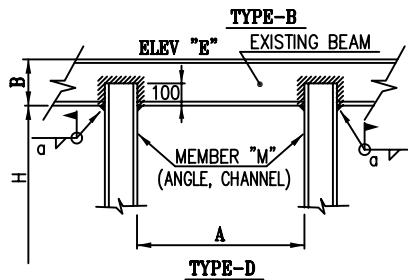
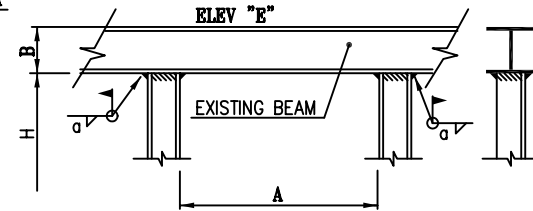
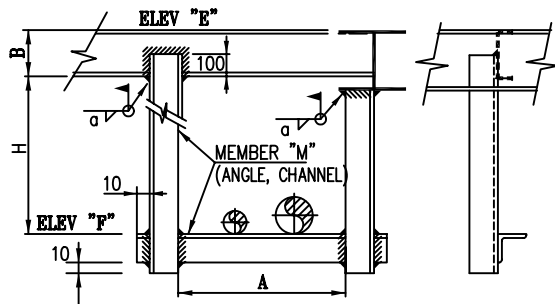
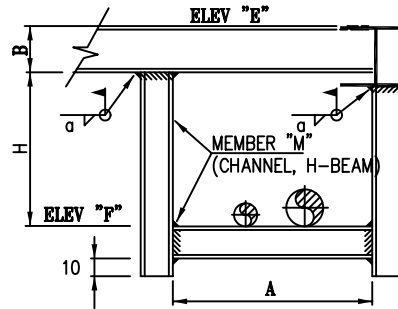
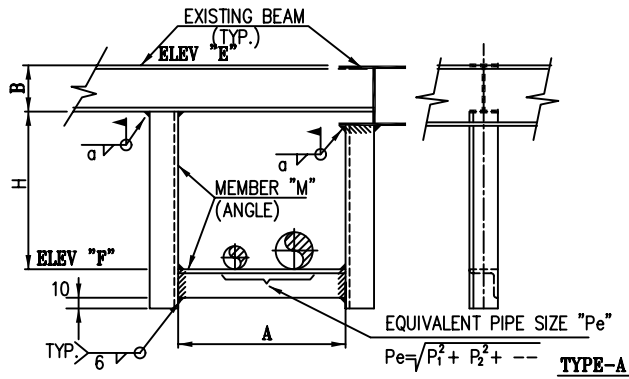
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1299

RESTING **RS-17**
(FOR MULTI PIPES ON STRUCTURE)

REV.
2



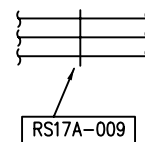
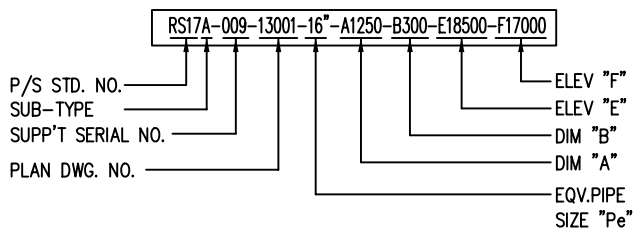
MEMBER SIZE "M" AND ALLOWABLE LOAD "W"

UNIT (mm)

EQUIV. PIPE SIZE "Pe"	a	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000		EQUIV. PIPE SIZE "Pe"	a	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000	
			"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)				"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)
2"	6	1000	A5	180	A5	180	-	-	-	-	12"	6	1000	C15	2200	C15	2100	C15	2000	C15	1650
		1500	A5	130	A5	130	-	-	-	-			1500	H12	3800	H12	3300	H12	3100	H12	2900
3"	6	1000	A6	330	A6	330	-	-	-	-	14"	6	1000	C15	2200	C15	2100	H12	3700	C15	3000
		1500	A6	230	A6	230	-	-	-	-			1500	H12	3800	H12	3300	H12	3100	H12	2900
4"	6	1000	A7	630	A7	630	A7	550	A7	400	16"	6	1000	H12	5000	H12	4600	H12	3700	H12	3000
		1500	A7	430	A7	430	A7	500	A7	400			1500	H12	3800	H12	3300	H12	3100	H12	2900
6"	6	1000	C10	700	C10	700	C12	1200	C12	1000	18"	9	1000	-	-	H12	4600	H12	3700	H12	3000
		1500	C12	850	C12	830	C12	770	C12	650			1500	-	-	H12	3300	H12	3100	H12	2900
8"	6	1000	C12	1300	C12	1300	C12	1200	C12	1000	20"	9	1000	-	-	H12	4600	H12	3700	H12	3000
		1500	C15	1500	C15	1500	C15	1400	C15	1250			1500	-	-	H12	3300	H12	3100	H15	4700
10"	6	1000	C15	2200	C15	2100	C15	2000	C15	1650	24"	9	1000	-	-	H15	7500	H15	6000	H15	4800
		1500	C15	1500	C15	1500	H12	3100	H12	2900			1500	-	-	H15	5300	H15	5000	H15	4700

NOTE : SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



PLAN

ISO

ISO



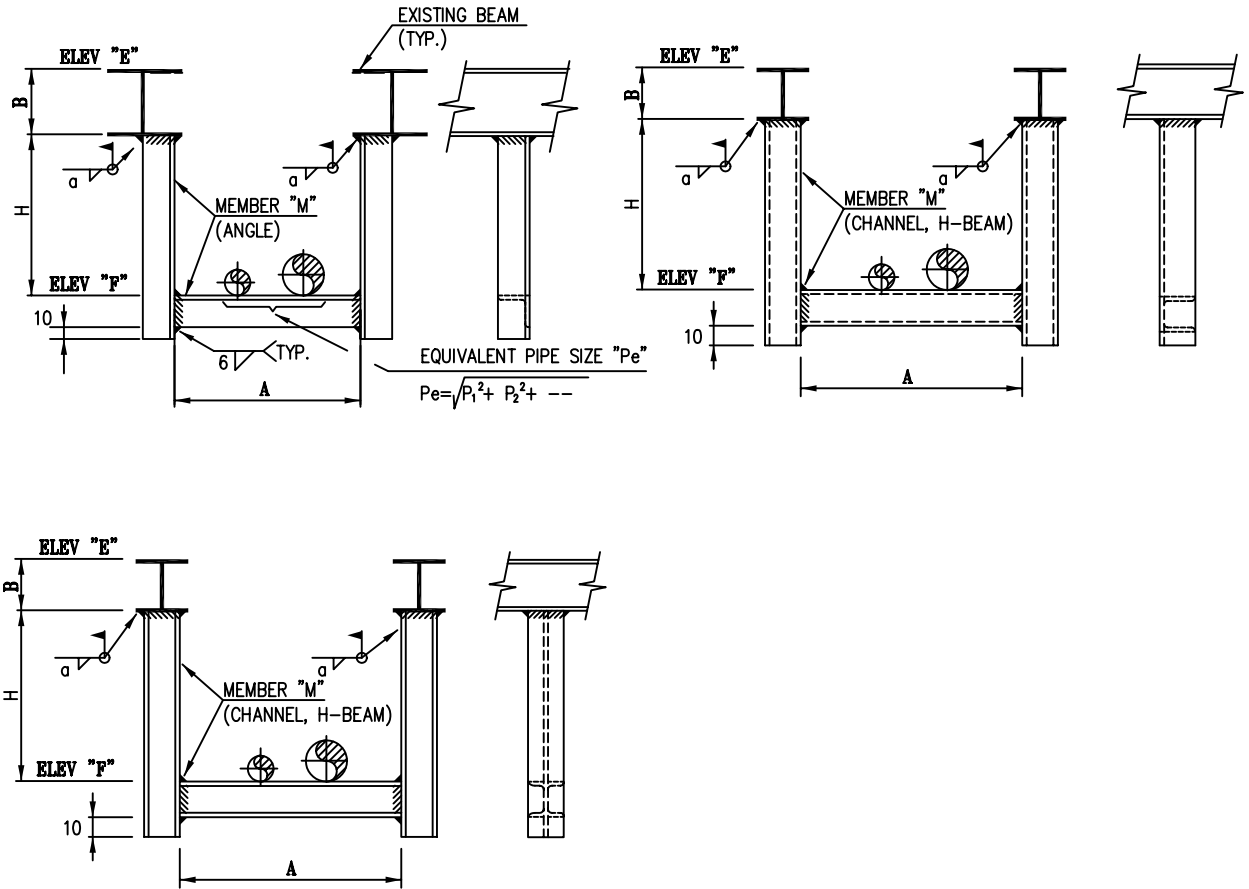
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1300

RESTING **RS-19**
(FOR MULTI PIPES ON STRUCTURE)

REV.
2



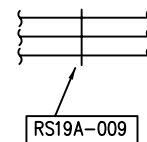
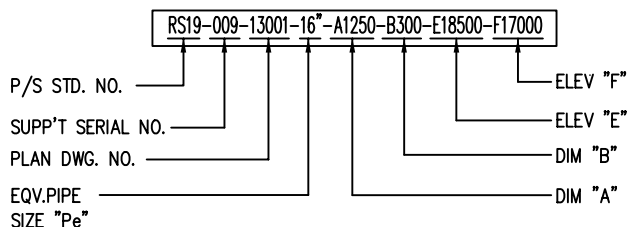
MEMBER SIZE "M" AND ALLOWABLE LOAD "W"

UNIT (mm)

EQUIV. PIPE SIZE "Pe"	a	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000		EQUIV. PIPE SIZE "Pe"	a	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000	
			"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)				"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)
2"	6	1000	A5	180	A5	180	-	-	-	-	12"	6	1000	C15	2200	C15	2100	C15	2000	C15	1650
		1500	A5	130	A5	130	-	-	-	-			1500	H12	3800	H12	3300	H12	3100	H12	2900
3"	6	1000	A6	330	A6	330	-	-	-	-	14"	6	1000	C15	2200	C15	2100	H12	3700	C15	3000
		1500	A6	230	A6	230	-	-	-	-			1500	H12	3800	H12	3300	H12	3100	H12	2900
4"	6	1000	A7	630	A7	630	A7	550	A7	400	16"	6	1000	H12	5000	H12	4600	H12	3700	H12	3000
		1500	A7	430	A7	430	A7	500	A7	400			1500	H12	3800	H12	3300	H12	3100	H12	2900
6"	6	1000	C10	700	C10	700	C12	1200	C12	1000	18"	9	1000	-	-	H12	4600	H12	3700	H12	3000
		1500	C12	850	C12	830	C12	770	C12	650			1500	-	-	H12	3300	H12	3100	H12	2900
8"	6	1000	C12	1300	C12	1300	C12	1200	C12	1000	20"	9	1000	-	-	H12	4600	H12	3700	H12	3000
		1500	C15	1500	C15	1500	C15	1400	C15	1250			1500	-	-	H12	3300	H12	3100	H15	4700
10"	6	1000	C15	2200	C15	2100	C15	2000	C15	1650	24"	9	1000	-	-	H15	7500	H15	6000	H15	4800
		1500	C15	1500	C15	1500	H12	3100	H12	2900			1500	-	-	H15	5300	H15	5000	H15	4700

NOTE : SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



PLAN



RS19A-009
(INDICATE WITH LARGEST LINE)

ISO



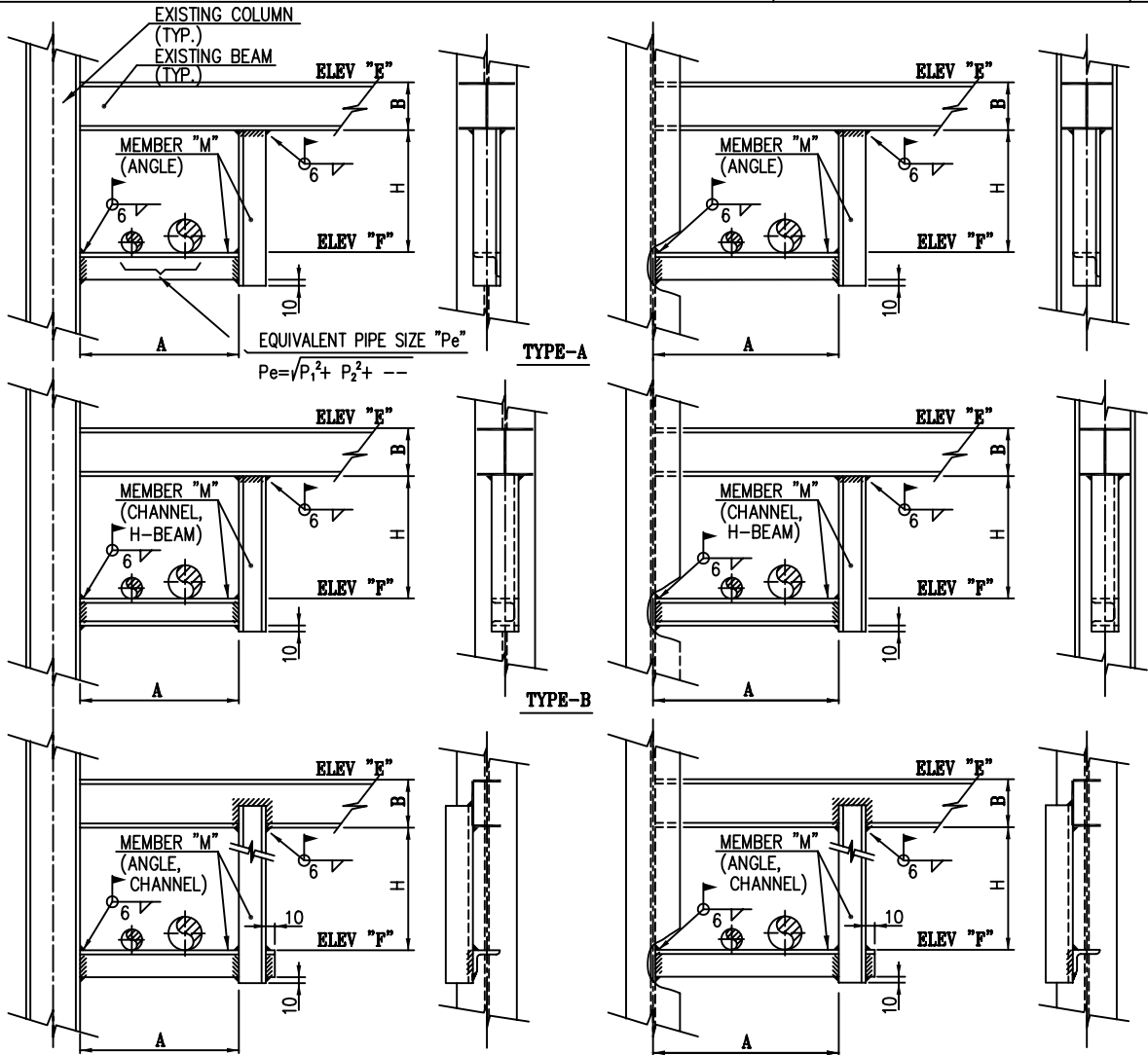
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1301

RESTING **RS-22**
(FOR MULTI PIPES ON STRUCTURE)

REV.
2



TYPE-C

MEMBER SIZE "M" AND ALLOWABLE LOAD "W"

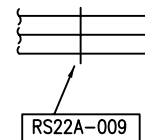
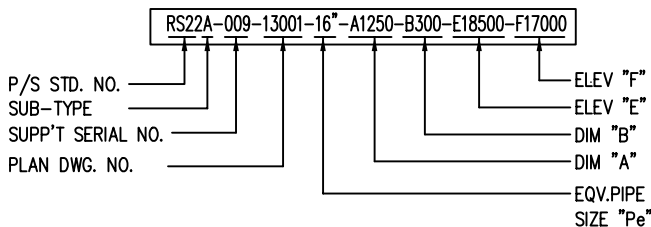
TYPE-D

UNIT (mm)

EQUIV. PIPE SIZE "Pe"	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000		EQUIV. PIPE SIZE "Pe"	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000	
		"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)			"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)
1"~3"	1000	A5	340	A6	400	A6	280	A7	450	12"	1000	C12	2000	C15	2100	C15	1830	H12	3100
	1500	A5	330	A6	350	A6	250	A7	400		1500	C12	2000	C15	1820	C15	1450	H12	2700
4"	1000	A6	590	A7	650	C10	650	C10	520	14"	1000	C12	2000	C15	2100	H12	3800	H12	3100
	1500	A6	570	A7	590	C10	550	C10	400		1500	C12	2000	C15	1820	H12	3300	H12	2700
6"	1000	A7	1100	C12	1300	C12	1150	C12	950	16"	1000	C15	3500	H12	4670	H12	3800	H15	4800
	1500	A7	1080	C12	1130	C12	1000	C12	800		1500	C15	3120	H12	4050	H12	3300	H15	4250
8"	1000	C10	1150	C12	1300	C12	1150	C15	1610	18"	1000	C15	3500	H12	4670	H15	5800	H15	4800
	1500	C10	1000	C12	1130	C12	1000	C15	1200		1500	C15	3120	H12	4050	H15	5000	H15	4250
10"	1000	C12	2000	C15	2100	C15	1830	C15	1610	20"~24"	1000	-	-	H12	4670	H15	5800	H15	4800
	1500	C12	2000	C15	1820	C15	1450	C15	1200		1500	-	-	H12	4050	H15	5000	H15	4250

NOTE : SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



PLAN



ISO



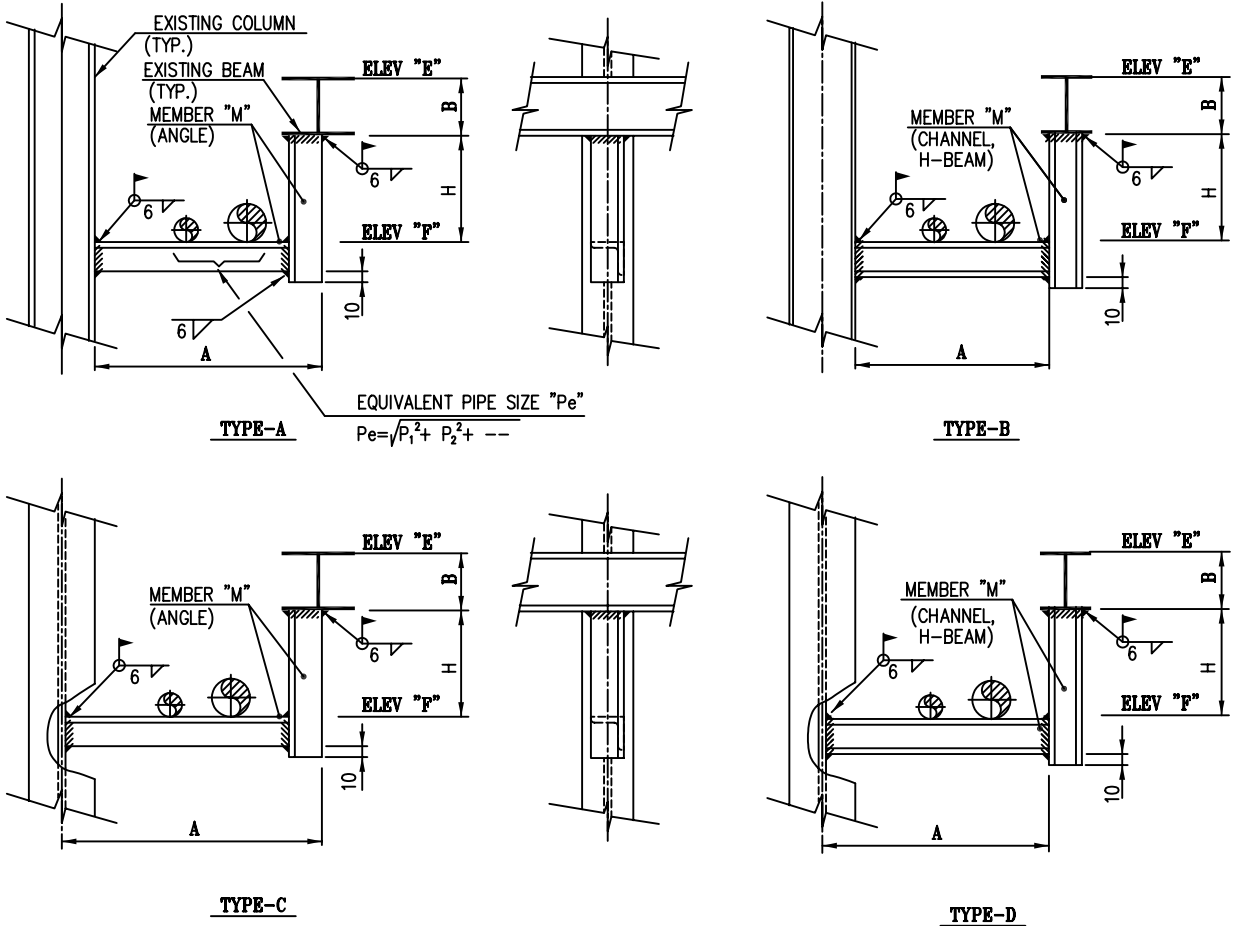
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1302

RESTING **RS-23**
(FOR MULTI PIPES ON STRUCTURE)

REV.
2



MEMBER SIZE "M" AND ALLOWABLE LOAD "W"

UNIT (mm)

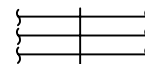
EQUIV. PIPE SIZE "Pe"	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000		EQUIV. PIPE SIZE "Pe"	H (MAX.)	A < 500		500 < A ≤ 1000		1000 < A ≤ 1500		1500 < A ≤ 2000	
		"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)			"M"	W (kg)	"M"	W (kg)	"M"	W (kg)	"M"	W (kg)
1"~3"	1000	A5	340	A6	400	A6	280	A7	450	12"	1000	C12	2000	C15	2100	C15	1830	H12	3100
	1500	A5	330	A6	350	A6	250	A7	400		1500	C12	2000	C15	1820	C15	1450	H12	2700
4"	1000	A6	590	A7	650	C10	650	C10	520	14"	1000	C12	2000	C15	2100	H12	3800	H12	3100
	1500	A6	570	A7	590	C10	550	C10	400		1500	C12	2000	C15	1820	H12	3300	H12	2700
6"	1000	A7	1100	C12	1300	C12	1150	C12	950	16"	1000	C15	3500	H12	4670	H12	3800	H15	4800
	1500	A7	1080	C12	1130	C12	1000	C12	800		1500	C15	3120	H12	4050	H12	3300	H15	4250
8"	1000	C10	1150	C12	1300	C12	1150	C15	1610	18"	1000	C15	3500	H12	4670	H15	5800	H15	4800
	1500	C10	1000	C12	1130	C12	1000	C15	1200		1500	C15	3120	H12	4050	H15	5000	H15	4250
10"	1000	C12	2000	C15	2100	C15	1830	C15	1610	20"~24"	1000	-	-	H12	4670	H15	5800	H15	4800
	1500	C12	2000	C15	1820	C15	1450	C15	1200		1500	-	-	H12	4050	H15	5000	H15	4250

NOTE : SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING

RS23A-009-13001-16"-A1250-B300-E18500-F17000

P/S STD. NO. _____ ELEV "F"
 SUB-TYPE _____ ELEV "E"
 SUPP'T SERIAL NO. _____ DIM "B"
 PLAN DWG. NO. _____ DIM "A"
 _____ EQV. PIPE SIZE "Pe"



RS23A-009

PLAN



RS23A-009

(INDICATE WITH LARGEST LINE)

ISO



SHAHID TONDGOIJAN
PETROCHEMICAL CO.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



DAELIM

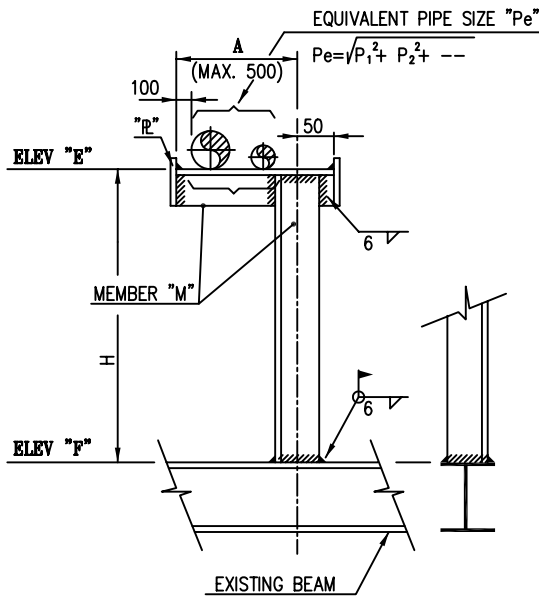
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

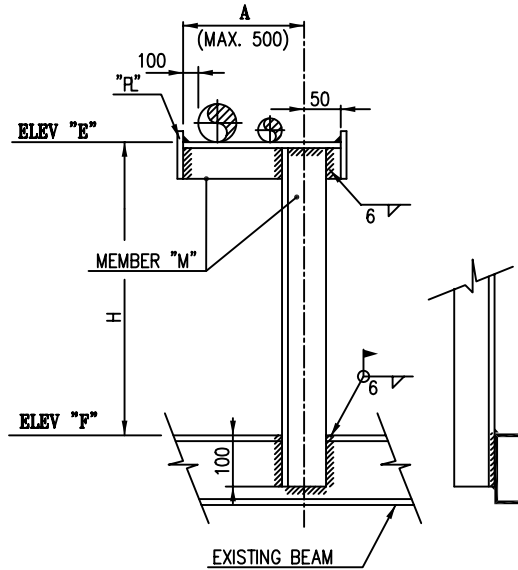
ST-A4-1303

RESTING **RS-25**
(FOR MULTI PIPES ON STRUCTURE)

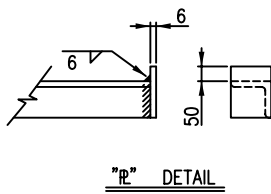
REV.
2



TYPE-A



TYPE-B



"R" DETAIL

EQUIV. PIPE SIZE "Pe"	H ≤ 500		500 < H ≤ 1000		1000 < H ≤ 1500	
	MEMEBER "M"	ALLOWABLE LOAD (Kg)	MEMEBER "M"	ALLOWABLE LOAD (Kg)	MEMEBER "M"	ALLOWABLE LOAD (Kg)
3/4"	A5	100	A6	100	A6	80
1"	A5	100	A6	100	A6	80
1-1/2"	A6	200	A7	180	A7	140
2"	A6	200	A7	180	A7	140
3"	C10	300	C10	270	C10	250
4"	C12	400	C12	330	C12	300

UNIT (mm)

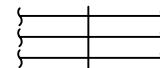
NOTE

1. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING

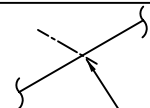
RS25A-009-13001-2"-A450-E18500-F17500

P/S STD. NO. _____ ELEV. "F"
 SUB-TYPE _____ ELEV. "E"
 SUPP'T SERIAL NO. _____ DIM "A"
 PLAN DWG. NO. _____ EQV.PIPE SIZE "Pe"



RS3A-009

PLAN



RS3A-009

(INDICATE WITH LARGEST LINE)

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL CO.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



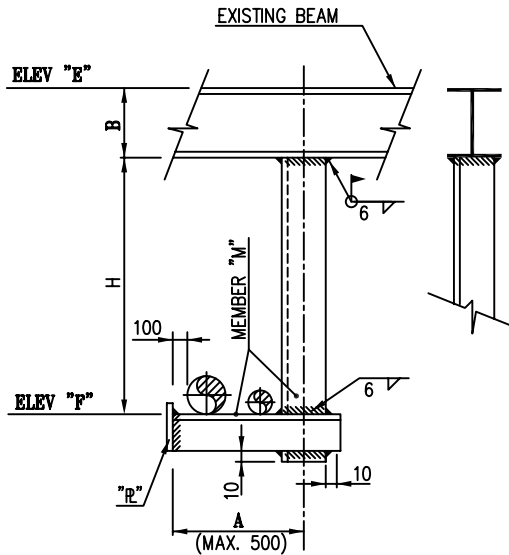
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

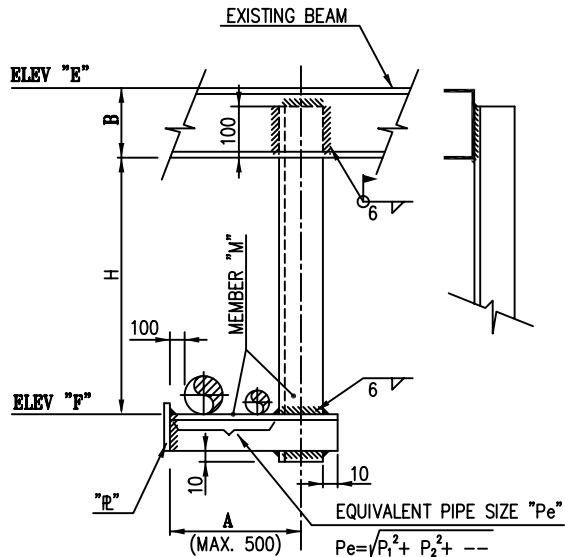
ST-A4-1304

RESTING **RS-26**
(FOR MULTI PIPES ON STRUCTURE)

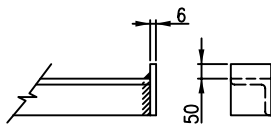
REV.
2



TYPE-A



TYPE-B



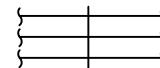
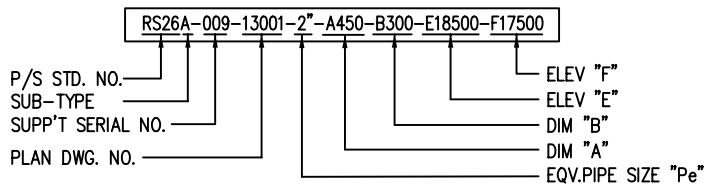
"Pe" DETAIL

EQUI. PIPE SIZE "Pe"	UNIT (mm)					
	H ≤ 500		500 < H ≤ 1000		1000 < H ≤ 1500	
	MEMEBER "M"	ALLOWABLE LOAD (Kg)	MEMEBER "M"	ALLOWABLE LOAD (Kg)	MEMEBER "M"	ALLOWABLE LOAD (Kg)
3/4"	A5	100	A6	100	A6	80
1"	A5	100	A6	100	A6	80
1-1/2"	A6	200	A7	180	A7	140
2"	A6	200	A7	180	A7	140
3"	C10	300	C10	270	C10	250
4"	C12	400	C12	330	C12	300

NOTE

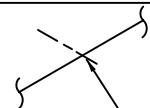
1. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RS26A-009

PLAN



RS26A-009

(INDICATE WITH LARGEST LINE)

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



DAELIM

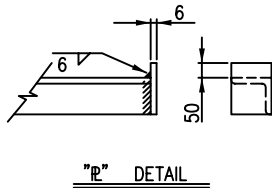
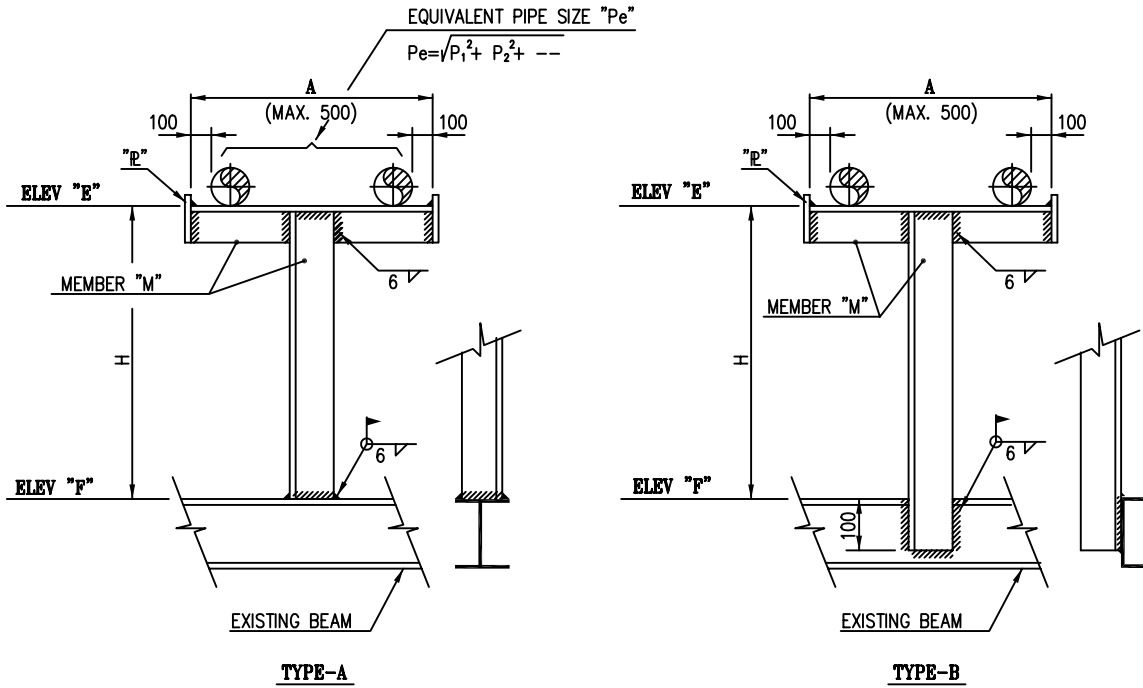
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1305

RESTING **RS-27**
(FOR MULTI PIPES ON STRUCTURE)

REV.
2



EQUI. PIPE SIZE "Pe"	UNIT (mm)			
	H ≤ 500		500 < H ≤ 1000	
	MEMBER "M"	ALLOWABLE LOAD (Kg)	MEMBER "M"	ALLOWABLE LOAD (Kg)
3/4"	A5	90	A6	80
1"	A5	90	A6	80
1-1/2"	A6	155	A7	150
2"	A6	155	A7	150
3"	C10	300	C10	270
4"	C12	400	C12	330

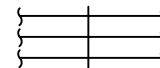
NOTE

1. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING

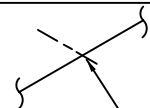
RS27A-009-13001-3/4"-A450-E18500-F17500

P/S STD. NO. _____ ELEV. "F"
 SUB-TYPE _____ ELEV "E"
 SUPP'T SERIAL NO. _____ DIM "A"
 PLAN DWG. NO. _____ EQV.PIPE SIZE "Pe"



RS27A-009

PLAN



RS27A-009

(INDICATE WITH LARGEST LINE)

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



DAELIM

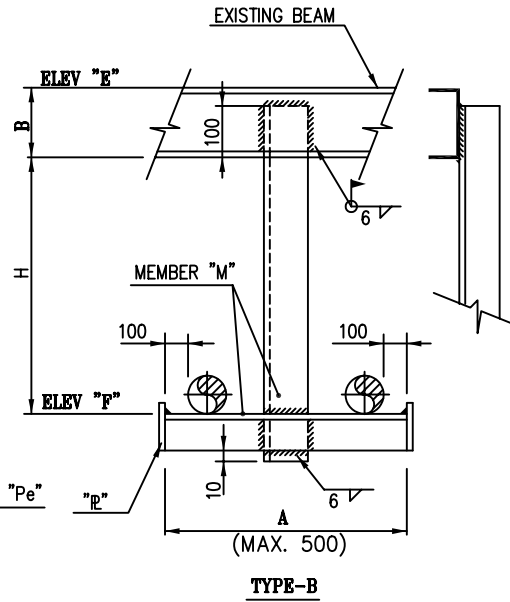
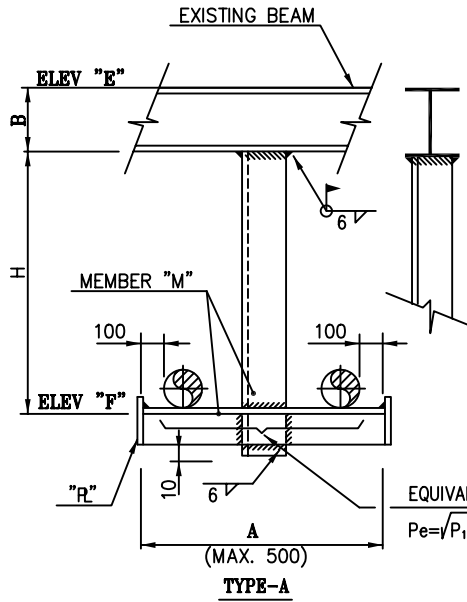
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

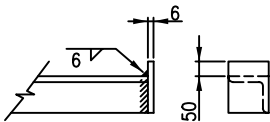
ST-A4-1306

RESTING **RS-28**
(FOR MULTI PIPES ON STRUCTURE)

REV.
2



EQUIVALENT PIPE SIZE "Pe"
 $Pe = \sqrt{P_1^2 + P_2^2}$ --



"R" DETAIL

EQUI. PIPE SIZE "Pe"	UNIT (mm)					
	H ≤ 500		500 < H ≤ 1000		1000 < H ≤ 1500	
	MEMEBER "M"	ALLOWABLE LOAD (Kg)	MEMEBER "M"	ALLOWABLE LOAD (Kg)	MEMEBER "M"	ALLOWABLE LOAD (Kg)
3/4"	A5	390	A6	135	A6	47
1"	A5	390	A6	135	A6	47
1-1/2"	A6	660	A7	290	A7	105
2"	A6	660	A7	290	A7	105
3"	C10	300	C10	270	C10	250
4"	C12	400	C12	330	C12	300

NOTE

1. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING

RS28A-009-13001-3/4"-A450-B300-E18500-F17500

P/S STD. NO. _____

SUB-TYPE _____

SUPP'T SERIAL NO. _____

PLAN DWG. NO. _____

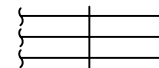
ELEV "F" _____

ELEV "E" _____

DIM "B" _____

DIM "A" _____

EQV.PIPE SIZE "Pe" _____



RS28A-009

PLAN



RS28A-009

(INDICATE WITH LARGEST LINE)

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



SAZEH
CONSULTANTS



DAELIM

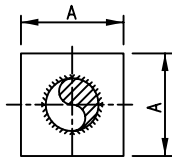
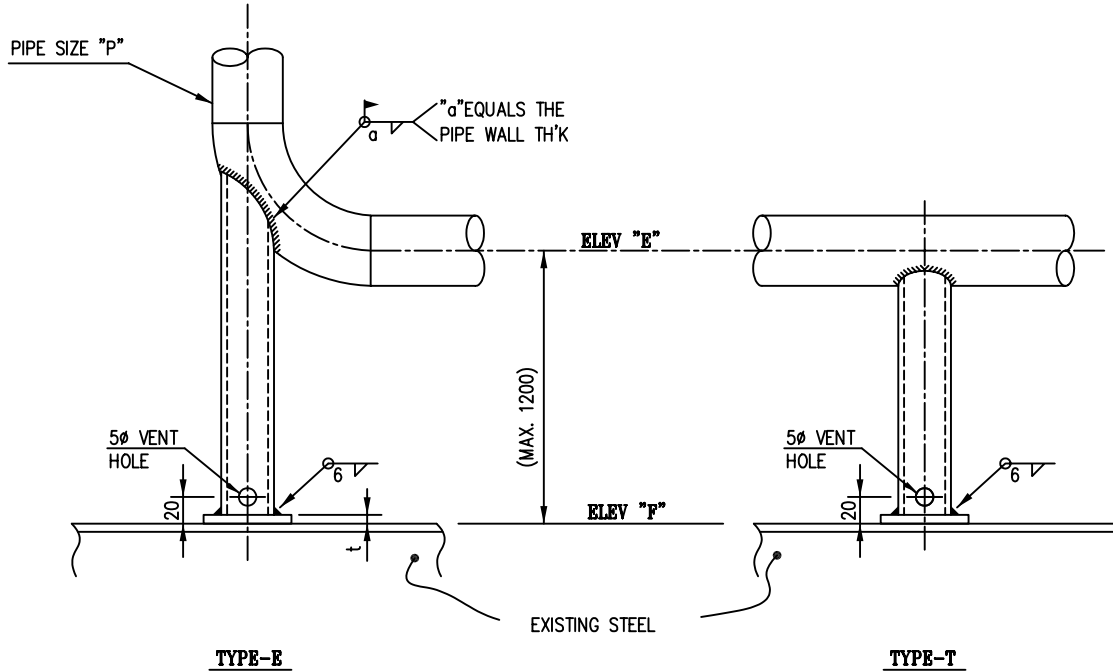
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1311

RESTING **RS-31**
(TRUNNION TYPE ON STRUCTURE)

REV.
2



BASE PLATE

NOTE

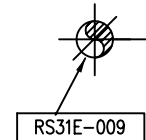
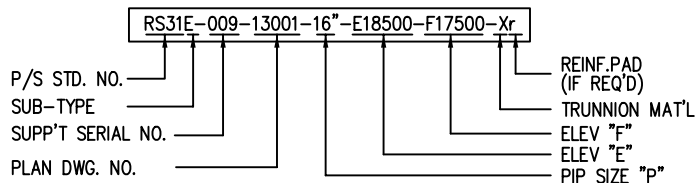
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- MATERIAL
 - FOR SUPPORT PIPE : SAME AS RUN PIPE OR MAT'L TABLE.
 - PLATE : A36 OR EQ.

CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

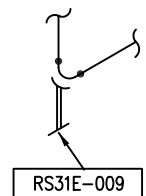
UNIT (mm)

PIPE SIZE NPS "P"	SUPPORT PIPE	BASE PLATE	
		A	t
1-1/2"	1"	140	6
2"	1-1/2"	140	6
3"	2"	140	6
4"	2"	140	6
6"	4"	160	6
8"	4"	160	6
10"	6"	210	9
12"	8"	260	9
14"	8"	260	12
16"	10"	320	16
18"	10"	320	16
20"	12"	350	16
24"	12"	350	16

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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DAELIM

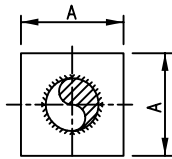
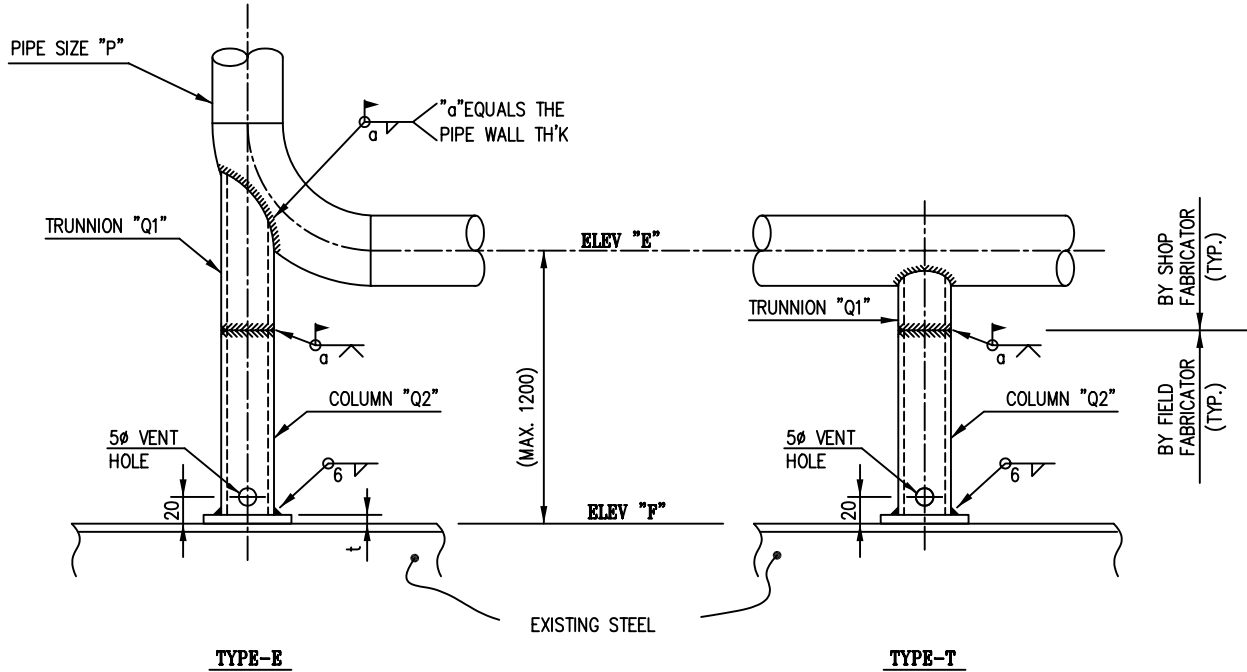
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1312

RESTING **RS-32**
(TRUNNION TYPE ON STRUCTURE)

REV.
2



BASE PLATE

NOTE

- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- MATERIAL
 - FOR SUPPORT PIPE : SAME AS RUN PIPE OR MAT'L TABLE.
 - COLUMN "Q2" : A53 GR.B OR EQ.
 - PLATE : A36 OR EQ.

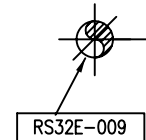
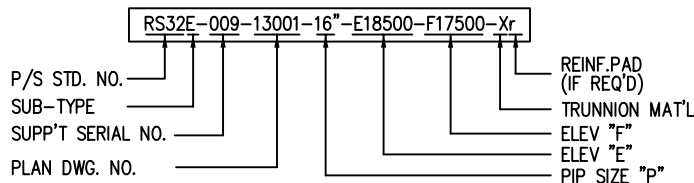
CODE	RUN PIPE	TRUNNION "Q1"
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

- IF APPLICABLE ALL TRUNNIONS ON SHOP FABRICATED PIPE CAN BE INSTALLED BY THE SHOP.

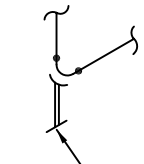
UNIT (mm)

PIPE SIZE NPS "P"	NPS "Q1", "Q2"	BASE PLATE	
		A	t
1-1/2"	1"	140	6
2"	1-1/2"	140	6
3"	2"	140	6
4"	2"	140	6
6"	4"	160	6
8"	4"	160	6
10"	6"	210	9
12"	8"	260	9
14"	8"	260	12
16"	10"	320	16
18"	10"	320	16
20"	12"	350	16
24"	12"	350	16
26"~28"	14"	450	16
30"	18"	500	16
36"	20"	570	22

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



DAELIM

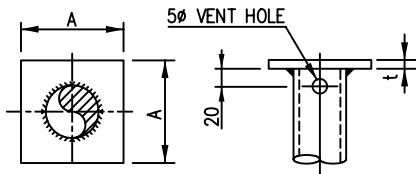
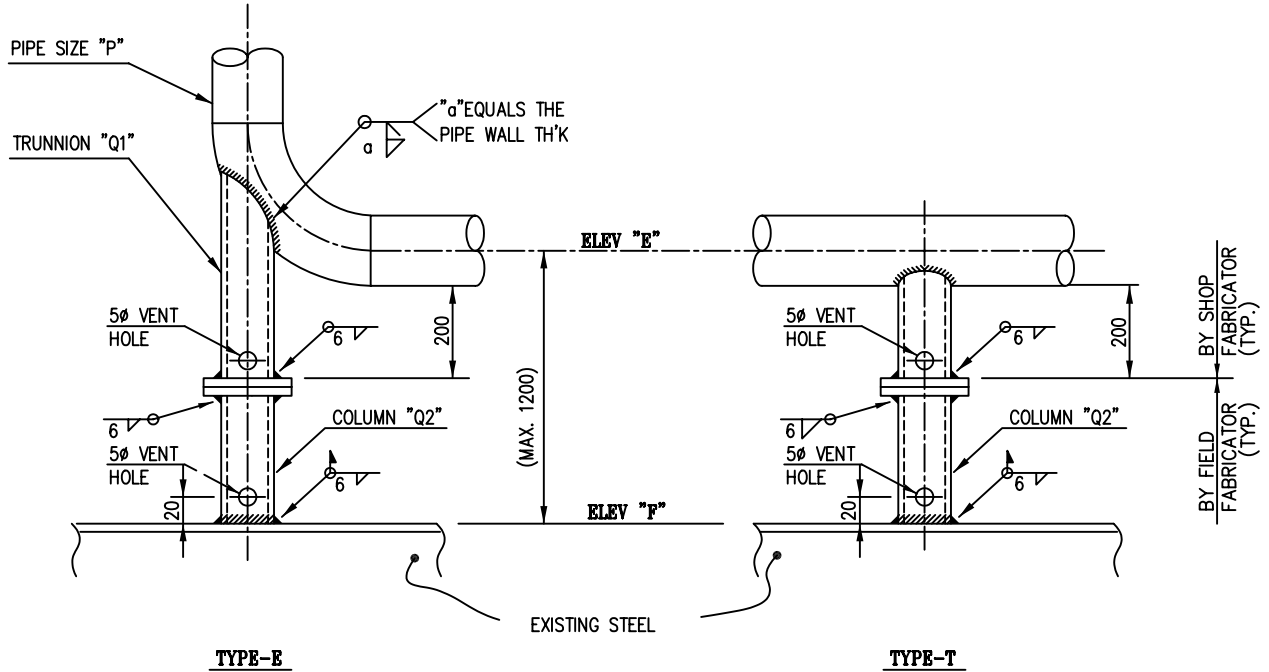
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1312

RESTING **RS-32A**
(TRUNNION TYPE ON STRUCTURE)

REV.
2



PIPE COLUMN

NOTE

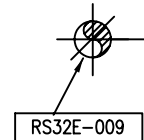
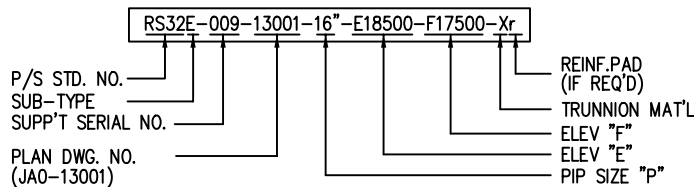
- SEE DWG. NO. ST-A4-0003 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- MATERIAL
 - TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.
 - COLUMN "Q2" : A53 Gr.B OR EQ.
 - PLATE : A36 OR EQ.

CODE	RUN PIPE	TRUNNION "Q1"
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 GR.P11 OR EQ.
X	A312 TP304, TP316	A312-TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)

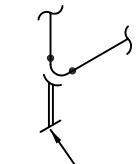
UNIT (mm)

PIPE SIZE NPS "P"	NPS "Q1", "Q2"	BASE PLATE	
		A	t
1-1/2"	1"	140	6
2"	1-1/2"	140	6
3"	2"	140	6
4"	2"	140	6
6"	4"	160	6
8"	4"	160	6
10"	6"	210	9
12"	8"	260	9
14"	8"	260	12
16"	10"	320	16
18"	10"	320	16
20"	12"	350	16
24"	12"	350	16

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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DAELIM

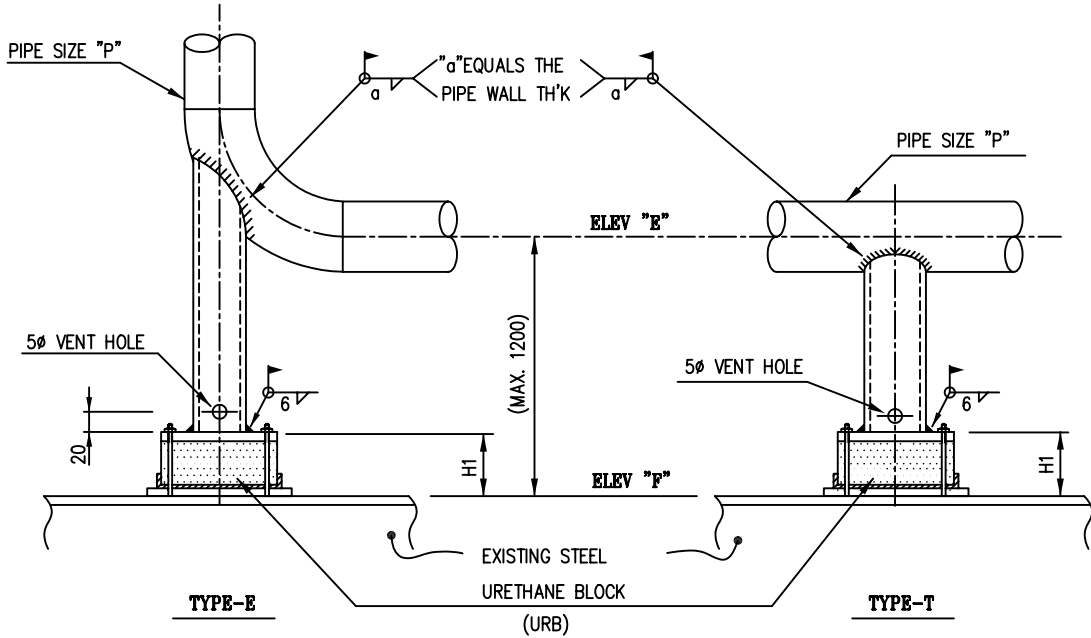
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1313

RESTING **RS-41**
(FOR COLD INSULATED PIPE,
TRUNNION TYPE ON STRUCTURE)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	SUPPORT PIPE	H1
1-1/2"	1"	104
2"	1-1/2"	104
3"	2"	104
4"	2"	104
6"	4"	111
8"	4"	111
10"	6"	111
12"	8"	117
14"	8"	117
16"	10"	117
18"	10"	117
20"	12"	117
24"	12"	117
26"~28"	14"	117
30"	18"	124
36"	20"	133

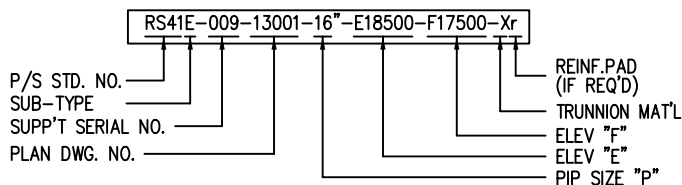
NOTE

- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- MATERIAL
- FOR SUPPORT PIPE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

- SEE DWG. NO. ST-A4-1020 FOR THE DETAIL OF URETHANE BLOCK ASSEMBLY(URB)

SYMBOL & CODING



RS41E-009

PLAN



RS41E-009

ISO



SAZEH
CONSULTANTS



DAELIM

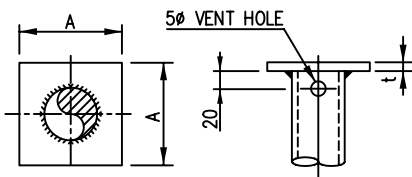
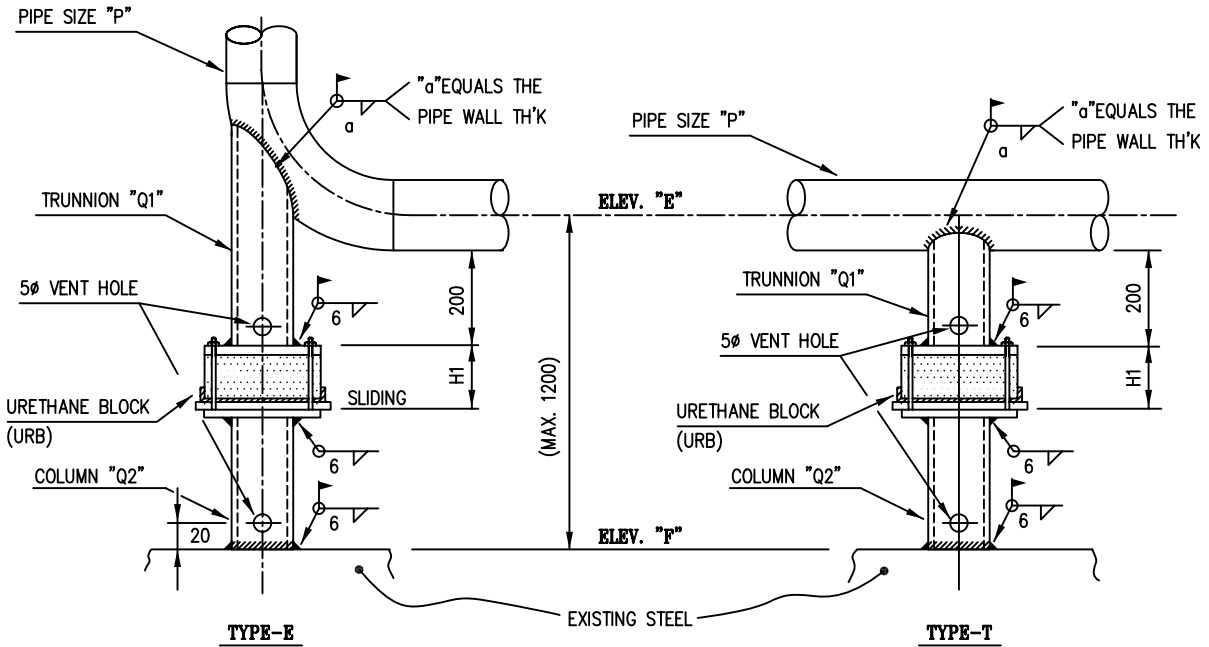
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1314

RESTING **RS-42**
(FOR COLD INSULATED PIPE,
TRUNNION TYPE ON STRUCTURE)

REV.
2



PIPE COLUMN "Q2"

UNIT (mm)

PIPE SIZE NPS "P"	NPS "Q1", "Q2"	BASE PLATE		U.BLOCK H1
		A	t	
1-1/2"	1"	140	6	104
2"	1-1/2"	140	6	104
3"	2"	140	6	104
4"	2"	140	6	104
6"	4"	160	9	111
8"	4"	160	9	111
10"	6"	210	9	111
12"	8"	260	12	117
14"	8"	260	12	117
16"	10"	320	16	117
18"	10"	320	16	117
20"	12"	350	16	117
24"	12"	350	16	117
26"~28"	14"	450	16	117
30"	18"	500	16	124
36"	20"	570	22	133

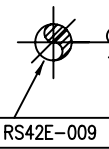
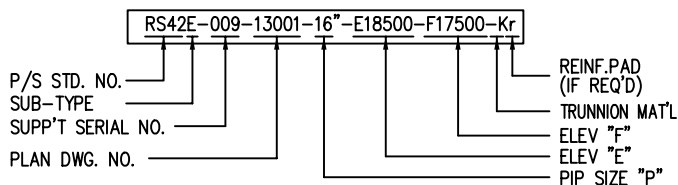
NOTE

- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- MATERIAL
 - TRUNNION "Q1" : SAME AS RUN PIPE OR MAT'L TABLE.
 - COLUMN "Q2" : A53 GR.B OR EQ.
 - PLATE : A36 OR EQ.

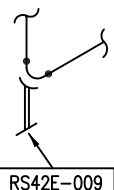
CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

- SEE DWG. NO. ST-A4-1020 FOR THE DETAIL AND ALLOWABLE LOAD OF URETHANE BLOCK ASSEMBLY(URB).

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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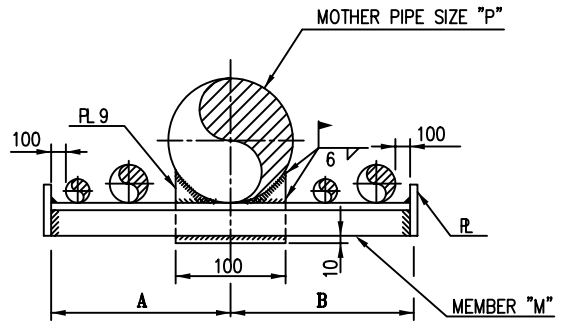
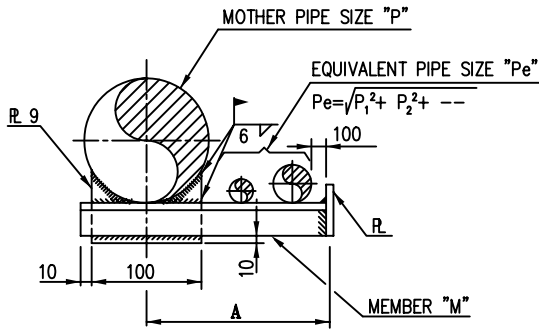
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

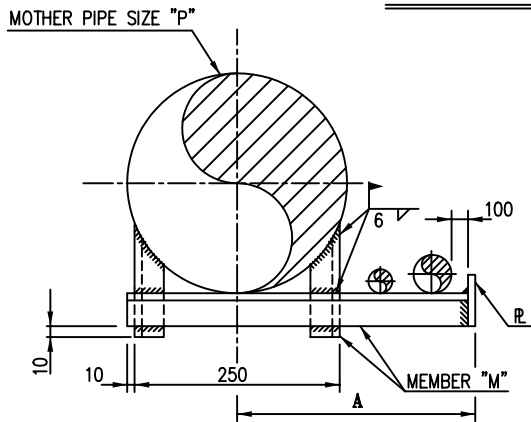
ST-A4-1315

RESTING
(W/MOTHER PIPE) **RS-61**

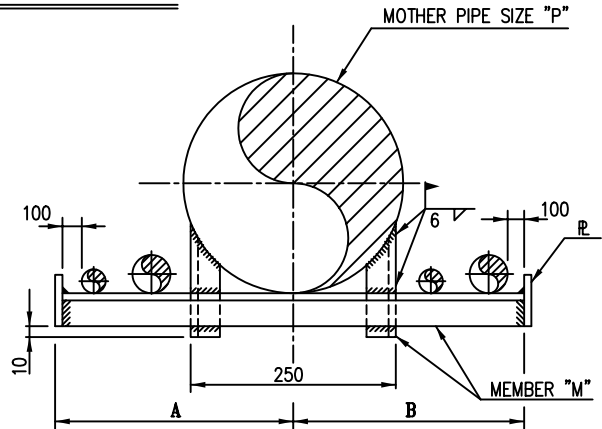
REV.
2



MOTHER PIPE SIZE "P" 4" TO 10"

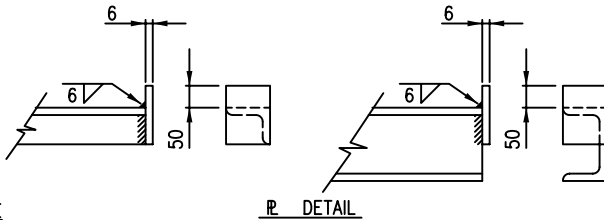


TYPE-A



TYPE-B

MOTHER PIPE SIZE "P" 12" TO 24"



NOTE

1. MATERIAL

- PARTS DIRECTLY WELDED TO PIPE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	PARTS DIRECTLY WELDED TO PIPE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803) OR EQ.

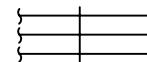
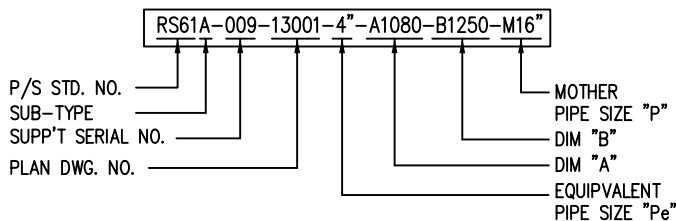
- OTHERS : A36 OR EQ.

2. MOTHER PIPE LINE SHALL BE UNINSULATED AND OPERATED AT 95°C AND BELOW.

3. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

MOTHER PIPE SIZE NPS "P"	DIM. A OR B	UNIT (mm)		
		500	1000	1500
4"	1-1/2" AND SMALLER	A6	A7	A10
6"	2" AND SMALLER			
8"				
10"				
12"	3" AND SMALLER			
14"				
16"				
18"				
20"				
24"				

SYMBOL & CODING



RS61A-009

PLAN



RS61A-009

(INDICATE WITH MOTHER PIPE)

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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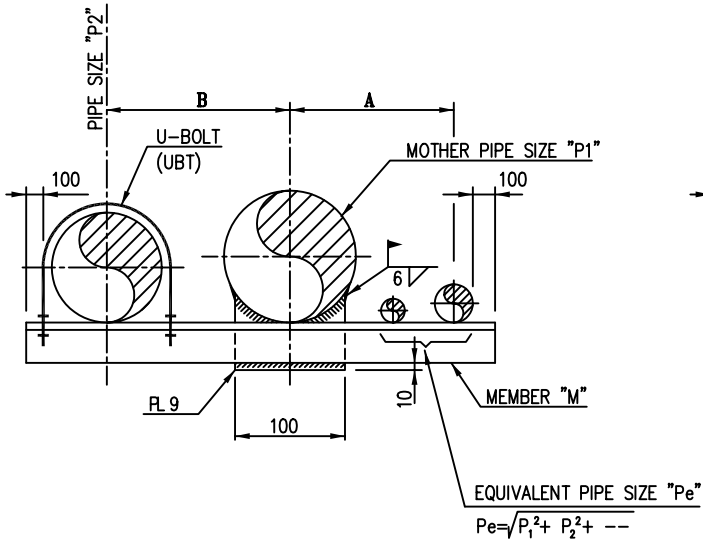
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

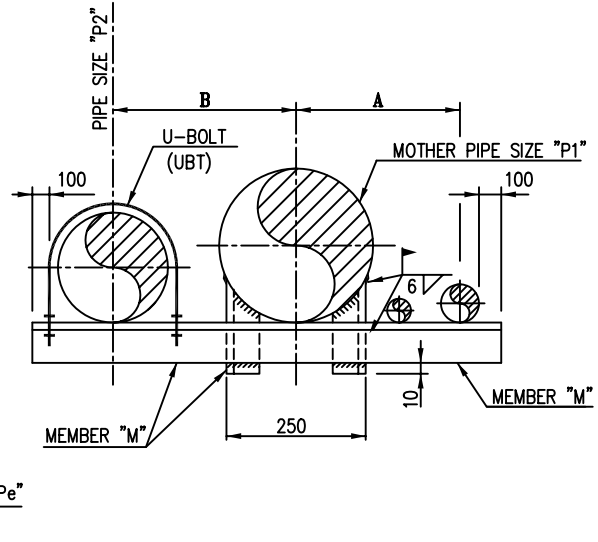
PIPING SUPPORT STANDARD DWG. ST-A4-1316

RESTING RS-62
(W/MOTHER PIPE)

REV.
2



MOTHER PIPE SIZE "P1" 4" TO 10"



MOTHER PIPE SIZE "P1" 12" TO 24"

NOTE

1. MATERIAL

- PARTS DIRECTLY WELDED TO PIPE

CODE	RUN PIPE	PARTS DIRECTLY WELDED TO PIPE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803) OR EQ.

- OTHERS : A36 OR EQ.

2. MOTHER PIPE LINE SHALL BE UNINSULATED AND OPERATED AT 95°C AND BELOW.

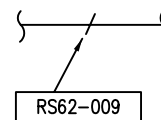
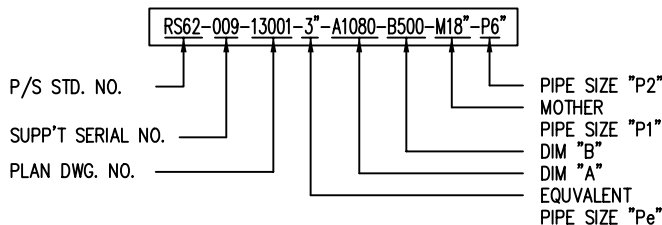
3. SEE DWG. NO. ST-A4-1001 FOR THE DETAIL OF U-BOLT(UBT)

4. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

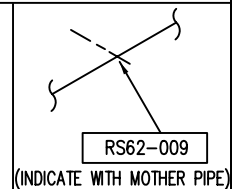
UNIT (mm)

MOTHER PIPE SIZE NPS "P"	DIM. A OR B	UNIT (mm)		
		500	1000	1500
	EQUIVALENT PIPE SIZE "Pe"	MEMBER SIZE "M"		
4"	1-1/2" AND SMALLER	A6	A7	A10
6"	2" AND SMALLER			
8"				
10"				
12"	3" AND SMALLER			
14"				
16"				
18"				
20"				
24"				

SYMBOL & CODING



PLAN



ISO



SAZEH
CONSULTANTS



DAELIM

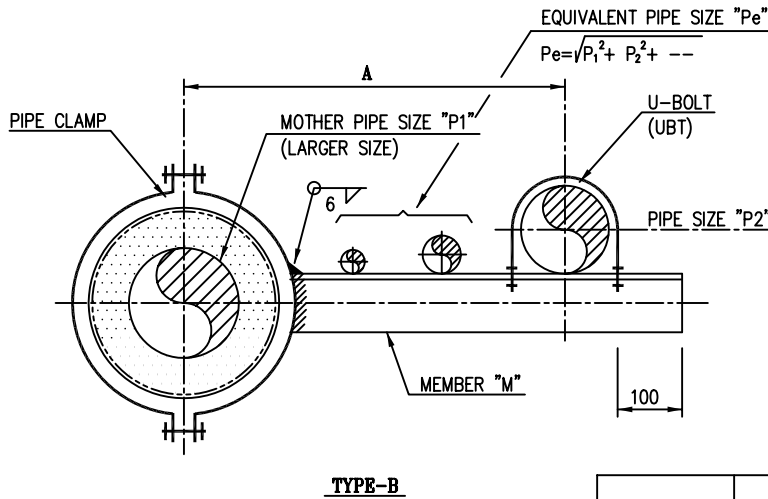
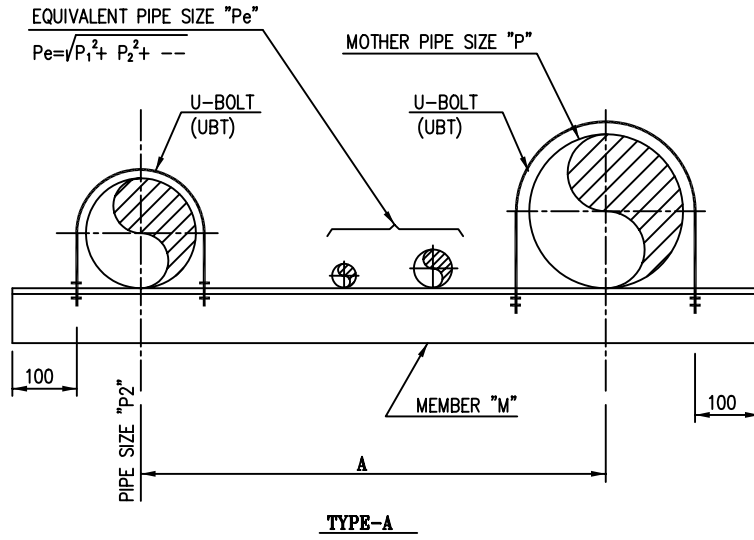
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1317

RESTING **RS-63**
(W/MOTHER PIPE)

REV.
2



UNIT (mm)

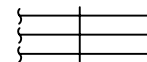
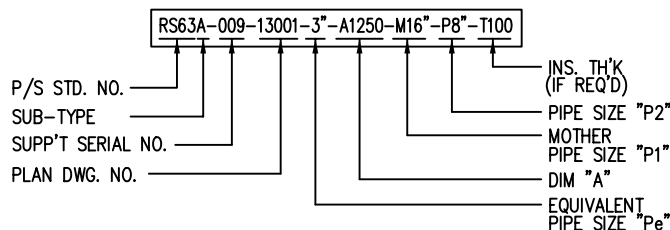
MOTHER PIPE SIZE NPS "P"	DIM. A	500	1000	1500
		MEMBER SIZE "M"		
4"	1-1/2" AND SMALLER	A6	A7	A10
6"	2" AND SMALLER			
8"				
10"				
12"	3" AND SMALLER			
14"				
16"				
18"				
20"				
24"				

NOTE

- MOTHER PIPE LINE SHALL BE UNINSULATED AND OPERATED AT 95°C AND BELOW.
- SEE DWG. NO. ST-A4-1001 FOR THE DETAIL OF U-BOLT(UBT)
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

4. ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

SYMBOL & CODING



RS63A-009

PLAN



RS63A-009

(INDICATE WITH MOTHER PIPE)

ISO

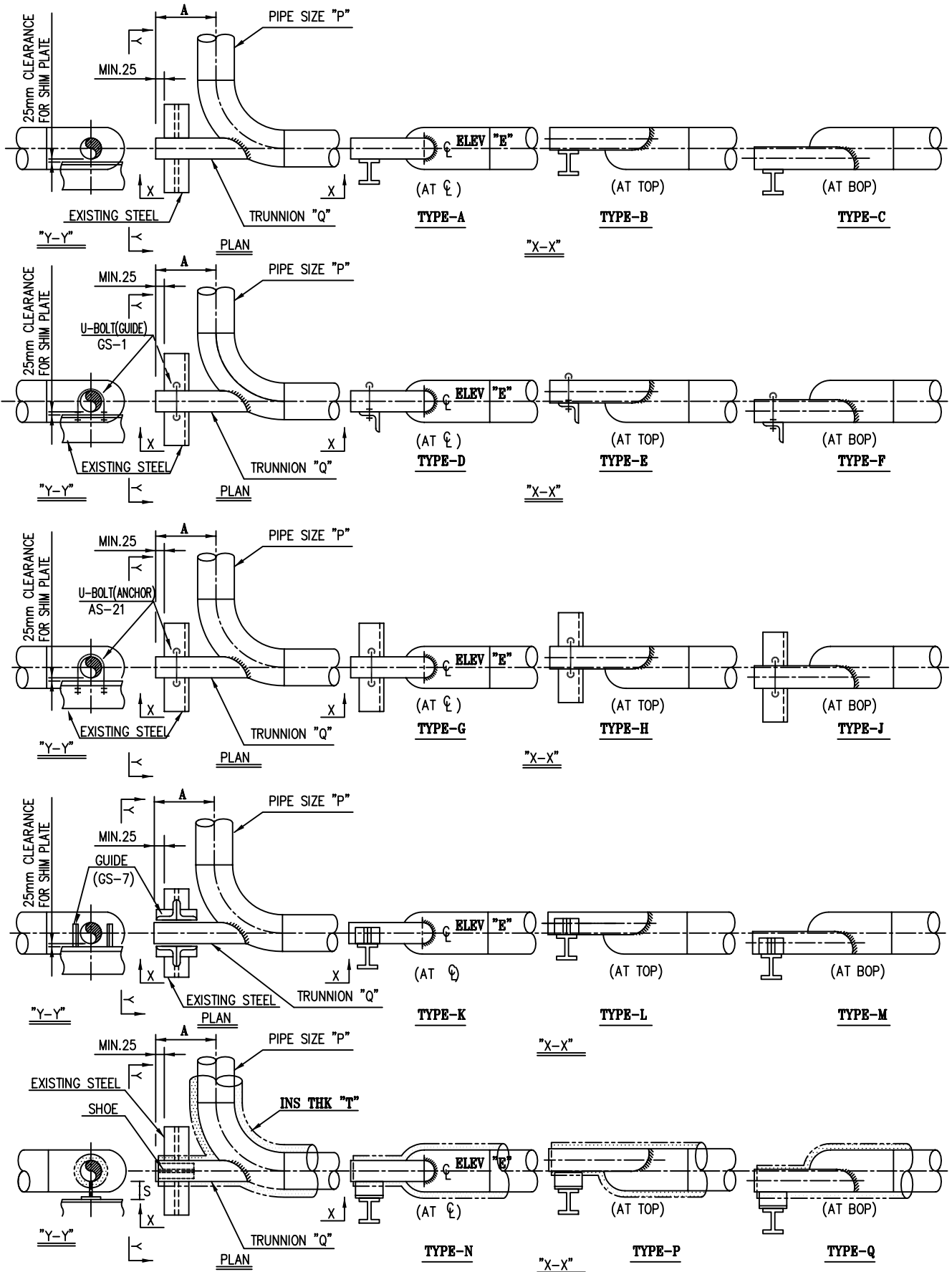


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1318 (1 OF 2)

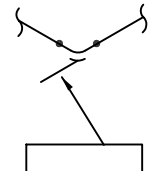
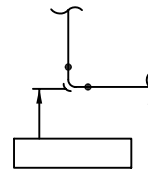
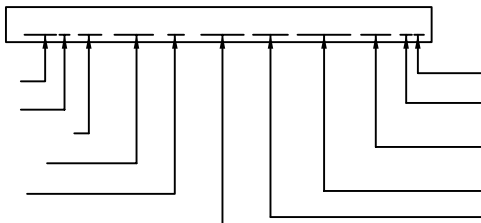
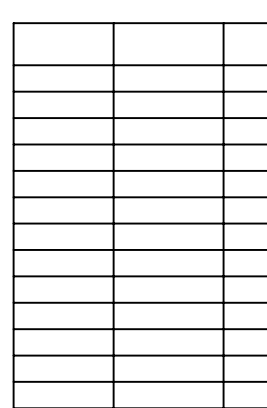
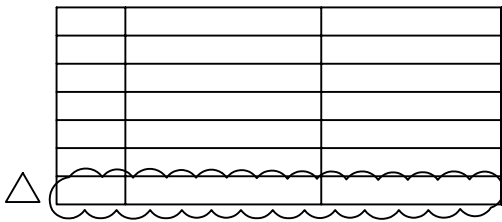
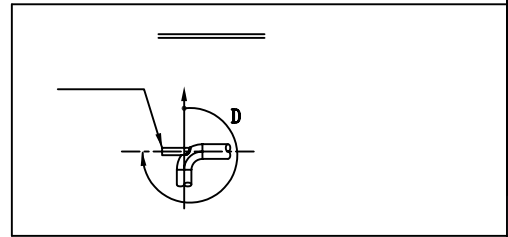
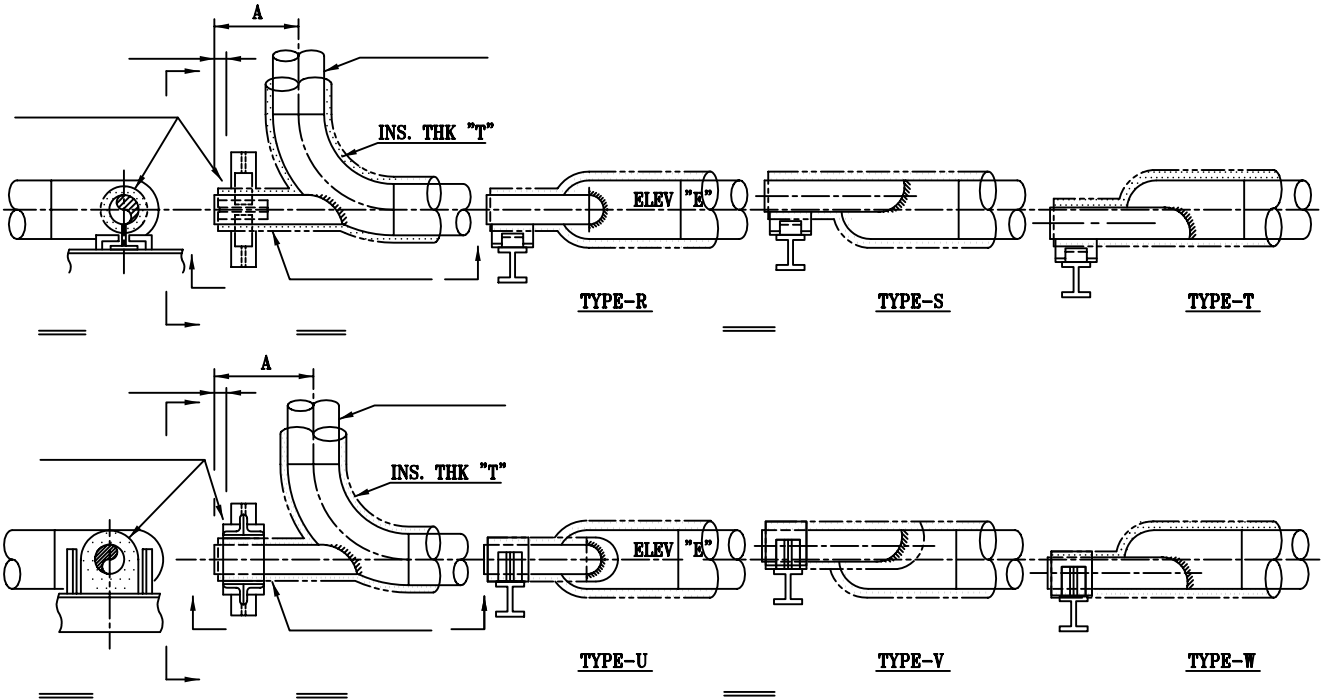
RESTING **RS-70**
(FOR HORIZONTAL BEND,
TRUNNION TYPE)

REV.
2





RS-70





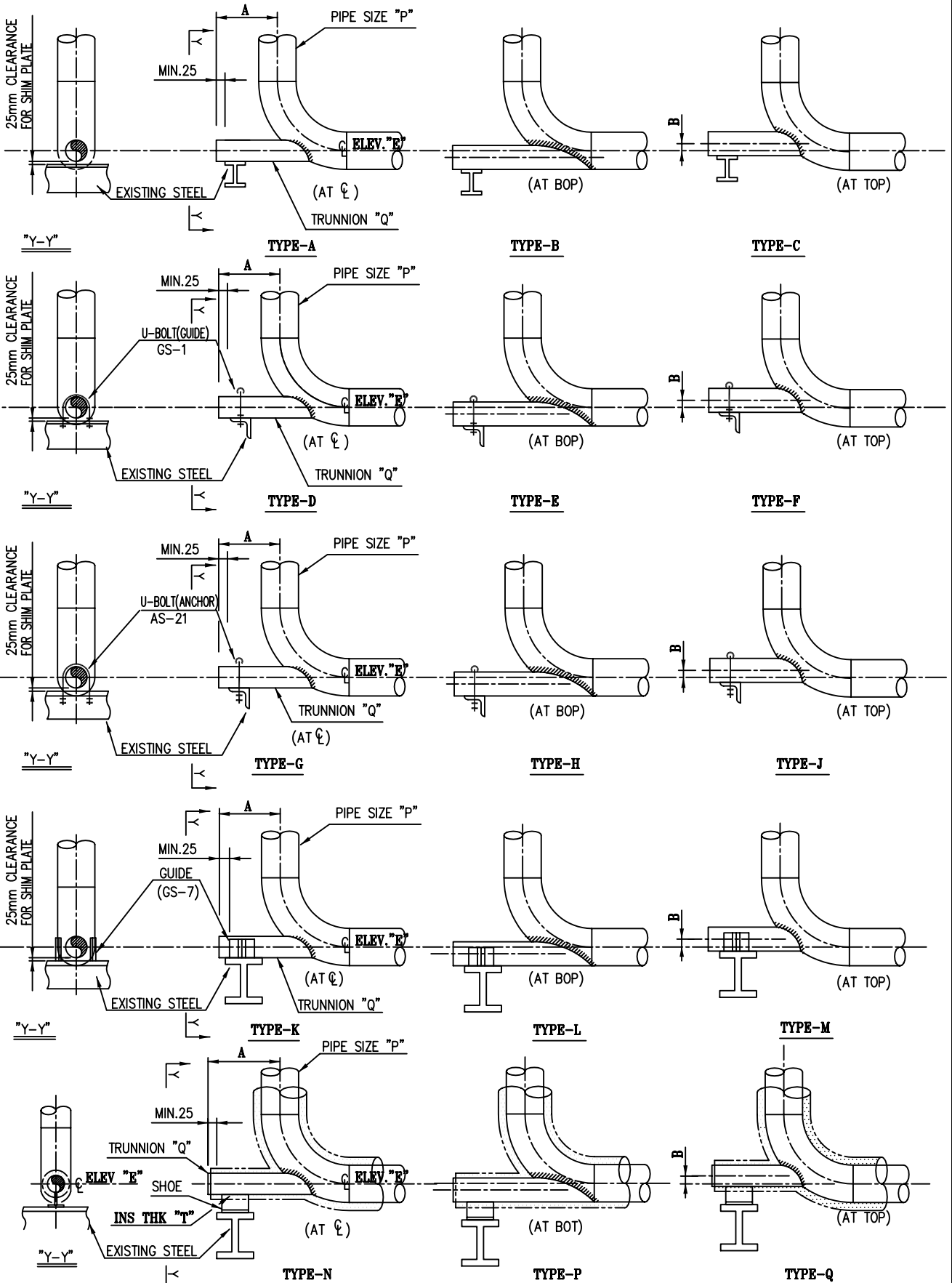
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1319 (1 OF 2)

RESTING **RS-71**
(FOR VERTICAL BEND, TRUNNION TYPE)

REV.
2



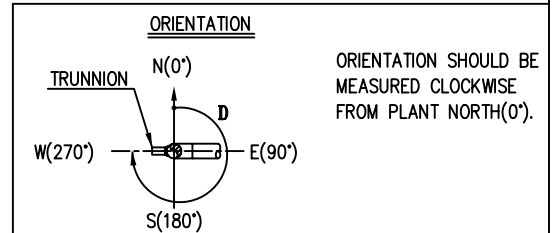
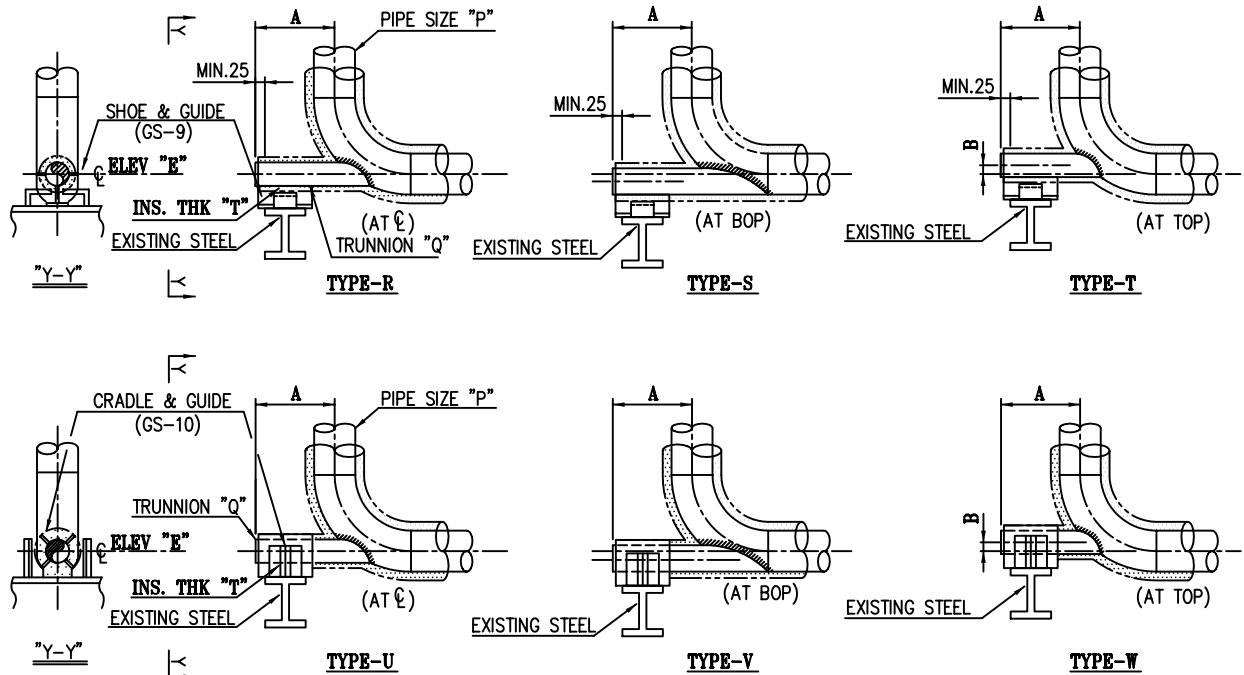


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1319 (2 OF 2)

RESTING **RS-71**
(FOR VERTICAL BEND, TRUNNION TYPE)

REV.
2



NOTE

1. MATERIAL

- TRUNNION & REINF. PAD : SAME AS RUN PIPE OR MAT'L TABLE.
- STIFFNER PLATE : A36 OR EQ.

CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

UNIT (mm)

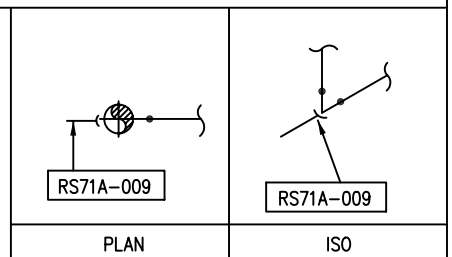
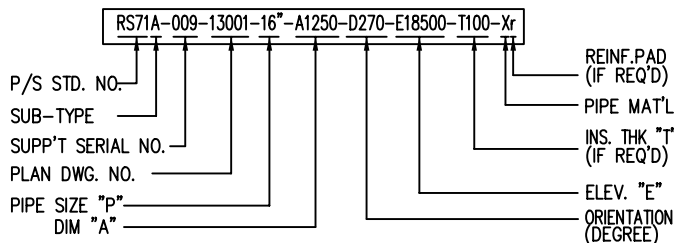
PIPE SIZE NPS "P"	TRUNNION NPS "Q"	W
1-1/2"	1"	50
2"	1-1/2"	50
3"	2"	50
4"	2"	50
6"	4"	50
8"	4"	50
10"	6"	90
12"	8"	90
14"	8"	90
16"	10"	90
18"	10"	90
20"	12"	90
24"	12"	90

2. PAD THICKNESS "T" : SAME AS RUN PIPE

3. THE SHIM PLATE SHOULD BE WELDED ON EXIST BEAM AFTER INSTALLATION.

4. SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL CO.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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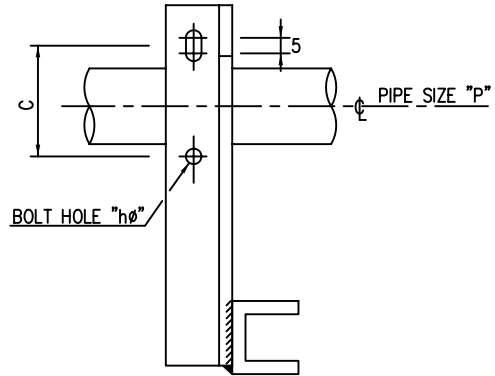
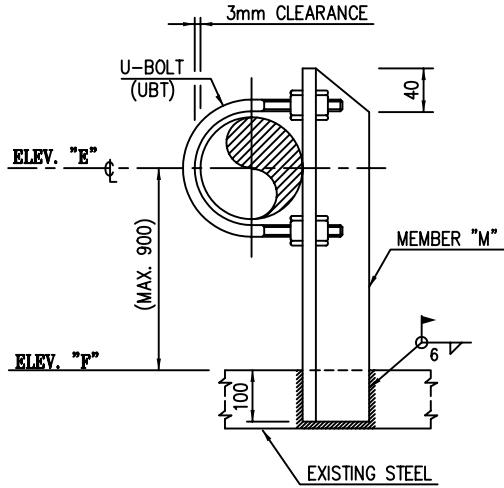
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

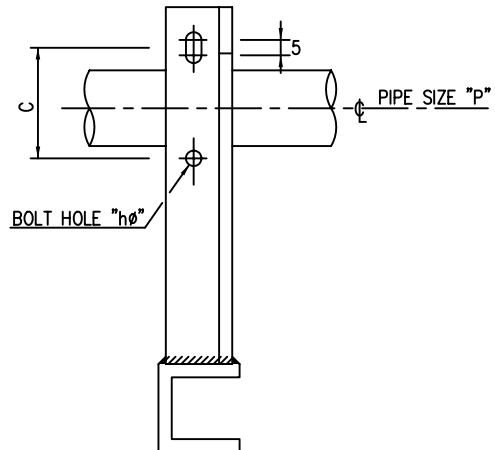
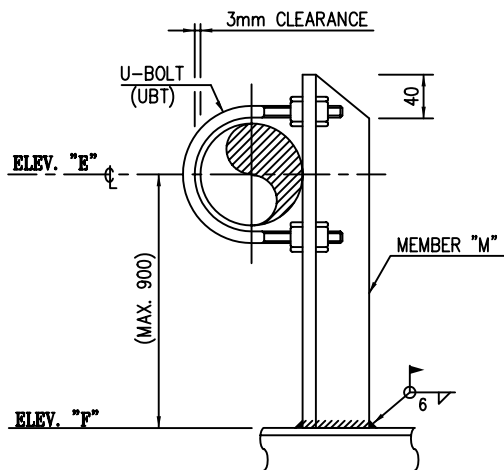
ST-A4-1320

RESTING **RS-84**
(U-BOLT TYPE ON STRUCTURE)

REV.
2



TYPE-A



TYPE-B

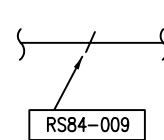
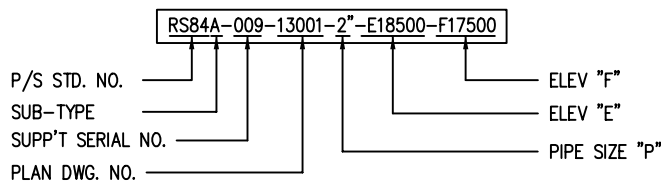
NOTE

1. USE THIS SUPPORT ON 2" AND SMALLER SOCKET WELD, SCREWED AND NON-WELDABLE PIPE.
2. SEE DWG. NO. ST-A4-1001 FOR THE DETAIL OF U-BOLT.
3. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

UNIT (mm)

PIPE SIZE NPS "P"	MEMBER SIZE "M"	C	øh	ALLOWABLE LOAD(Kg)
1/2"	A5	35	7	140
3/4"		40	7	140
1"		45	7	140
1-1/2"		60	11	330
2"		75	11	330

SYMBOL & CODING



PLAN



ISO



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SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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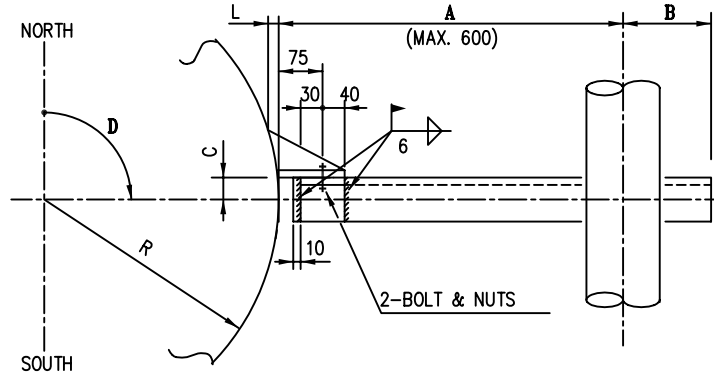
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

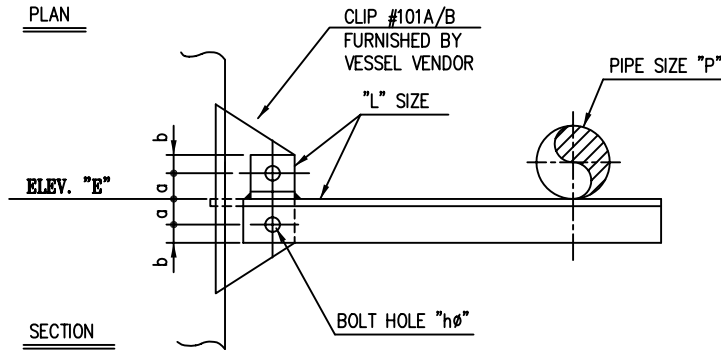
ST-A4-1321

RESTING **RV-2**
(FOR BARE AND INSULATED PIPE,
VESSEL CLIP)

REV.
2



PLAN



SECTION

PIPE SIZE NPS "P"	B
2" & SMALLER	160
3"	190
4"	210

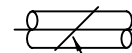
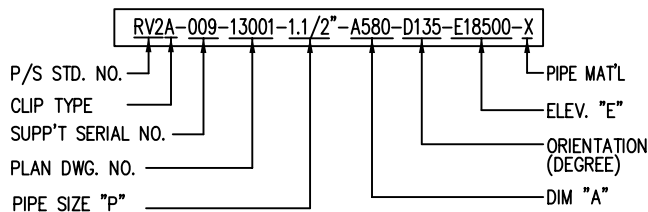
4" & SMALLER

CLIP TYPE	CLIP MARK	a	b	C	hø	BOLT SIZE	"L" SIZE	Wmax (kg)	
								A ≤ 400	400 < A ≤ 600
A	101 A	30	20	25	18	5/8"x40L	A5	75	50
B	101 B	40	35	38	21	3/4"x45L	A7	270	180

NOTE

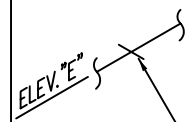
1. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RV2A-009

PLAN



RV2A-009

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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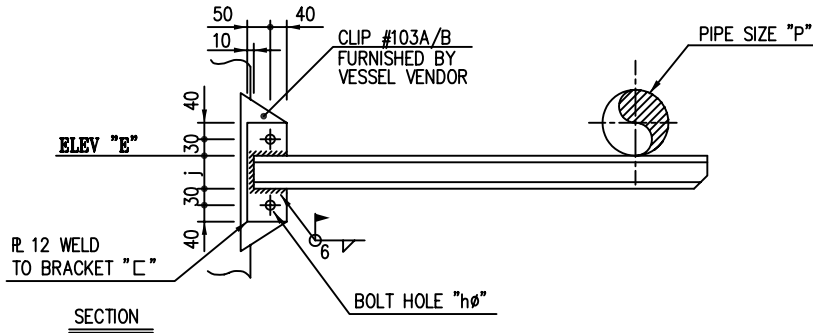
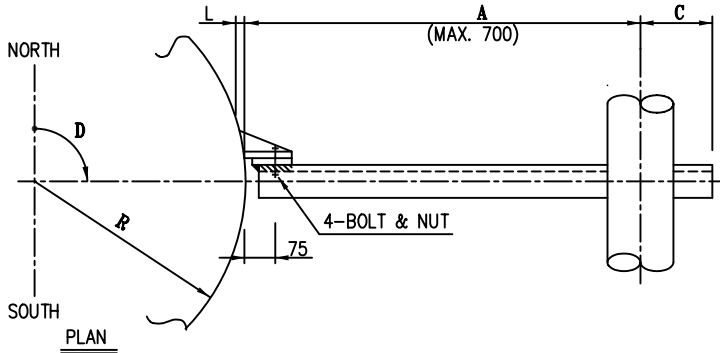
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1322

RESTING **RV-5**
(FOR BARE AND INSULATED PIPE,
VESSEL CLIP)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	C	G	
		TYPE-A	TYPE-B
3"	"T"+80	"T"+165	"T"+190
4"	"T"+90	"T"+175	"T"+200
5"	"T"+100	"T"+185	"T"+210
6"	"T"+110	"T"+195	"T"+220
8"	"T"+135	"T"+220	"T"+245
10"	"T"+165	"T"+250	"T"+275
12"	"T"+190	"T"+275	"T"+300

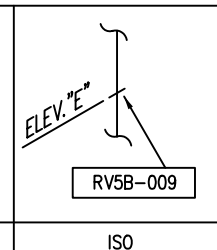
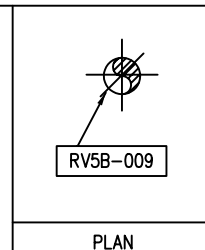
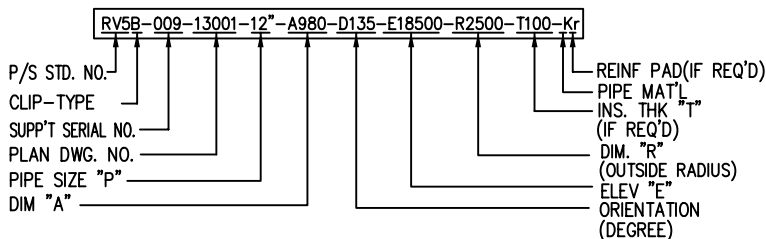
NOTE

- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

UNIT (mm)

CLIP TYPE	CLIP MARK	j	h φ	BOLT SIZE	"C" SIZE	"L" SIZE	Wmax (kg)	
							A ≤ 500	500 < A ≤ 700
A	103A	100	21	3/4"x50L	C10	A5	940	280
B	103B	150	21	3/4"x50L	C15	A6	1200	600

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

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SP 7702-00 11598-00	PD-09	003	2



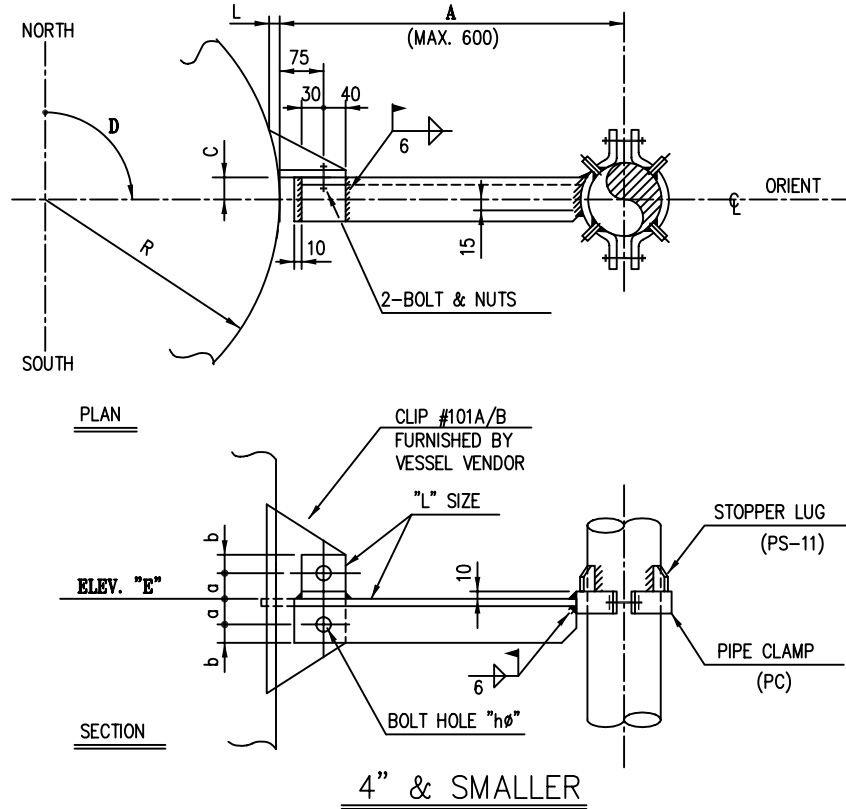
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1324

RESTING **RV-21**
(FOR BARE RISER PIPE, VESSEL CLIP)

REV.
2



CLIP TYPE	CLIP MARK	a	b	c	hø	BOLT SIZE	"L" SIZE	Wmax (kg)	
								A ≤ 400	400 < A ≤ 600
A	101 A	30	20	25	18	5/8"x40L	A5	75	50
B	101 B	40	35	38	21	3/4"x45L	A7	270	180

NOTE

1. MATERIAL

- LUG PLATE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	LUG PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803) OR EQ.

- SHAPE STEEL : A36 OR EQ.

- BOLT/NUT : A307 GR.B-GALV. OR EQ.

2. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

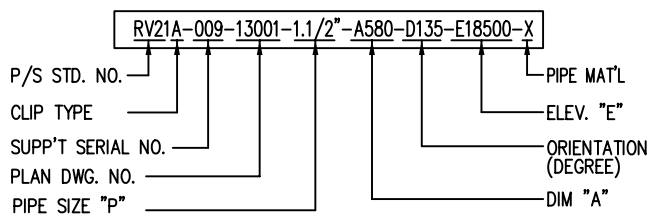
3. DIM. "L" = $R - \sqrt{R^2 - C^2}$

4. SEE DWG. NO. ST-A4-1014 FOR THE DETAIL OF PIPE CLAMP.

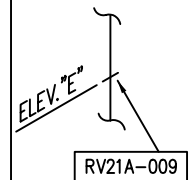
5. SEE DWG. NO. ST-A4-1255 FOR THE DETAIL OF STOPPER LUG.

6. ASBESTOS SHEET OR RUBER SHALL BE APPLID AS INTERMEDIATE MATERIAL FOR S.S PIPE.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



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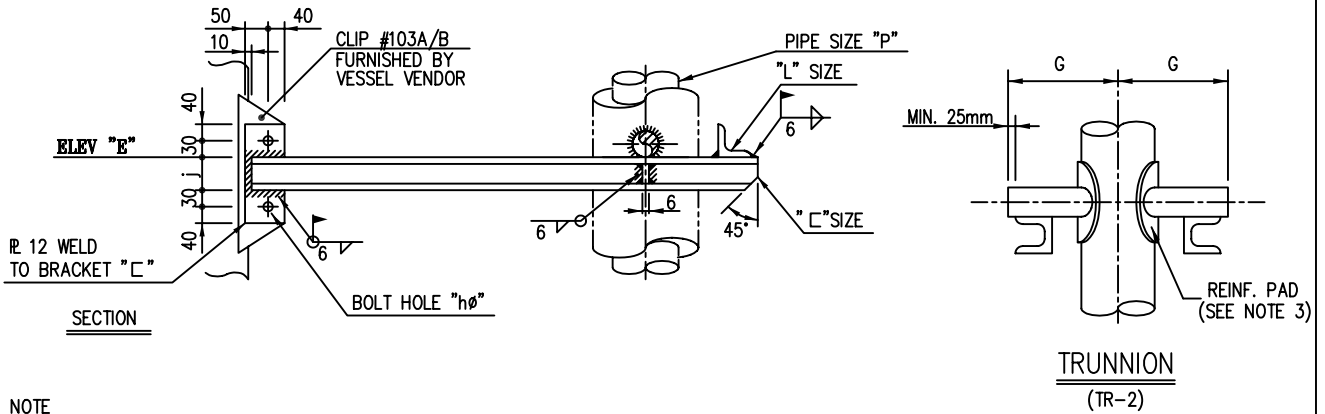
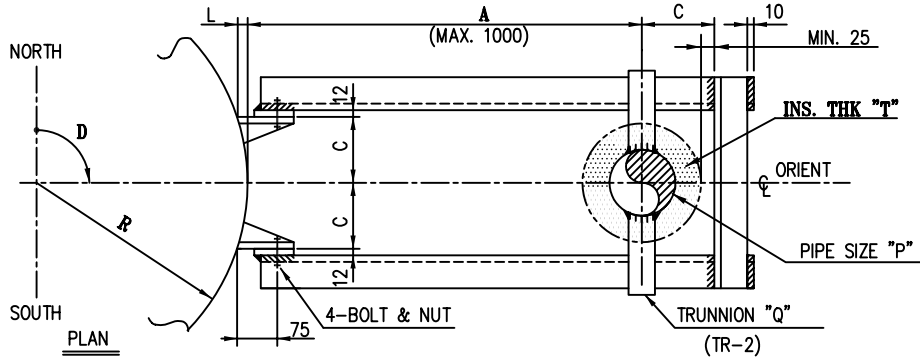
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1328

RESTING **RV-31**
(FOR HOT INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



NOTE

1. MATERIAL

- SHAPE STEEL : A36 OR EQ.
- BOLT/NUT : A307 GR.B-GALV. OR EQ.
- TRUNNION "Q" : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION "Q1"
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)

UNIT (mm)

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	C	G	
			TYPE-A	TYPE-B
3"	2"	"T"+80	"T"+165	"T"+190
4"	2"	"T"+90	"T"+175	"T"+200
5"	3"	"T"+100	"T"+185	"T"+210
6"	4"	"T"+110	"T"+195	"T"+220
8"	4"	"T"+135	"T"+220	"T"+245
10"	6"	"T"+165	"T"+250	"T"+275
12"	8"	"T"+190	"T"+275	"T"+300

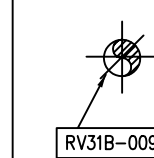
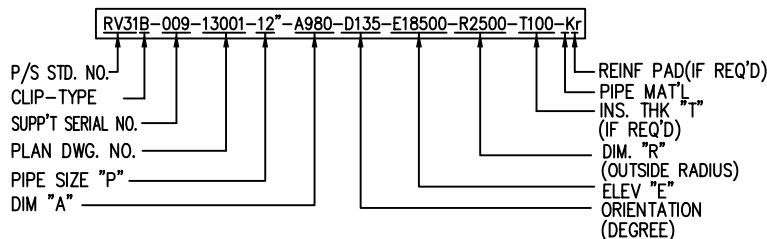
2. DIM. "L" = $R - \sqrt{R^2 - C^2}$

3. SEE DWG. NO. ST-A4-0004
FOR APPLICATION OF REINFORCING PAD AND
TRUNNION ALLOWABLE LOADS.

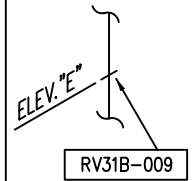
4. SEE DWG. NO. ST-A4-0001
FOR THE SIZE OF SHAPE STEEL.

CLIP TYPE	CLIP MARK	j	h φ	BOLT SIZE	"C" SIZE	"L" SIZE	Wmax (kg)	
							A ≤ 500	500 < A ≤ 1000
A	103A	100	21	3/4"x50L	C10	A5	940	280
B	103B	150	21	3/4"x50L	C15	A6	1200	600

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

Job No. - Unit Dept.-Code Serial No. Rev.
SP 7702-00 PD-09 003 2
11598-00



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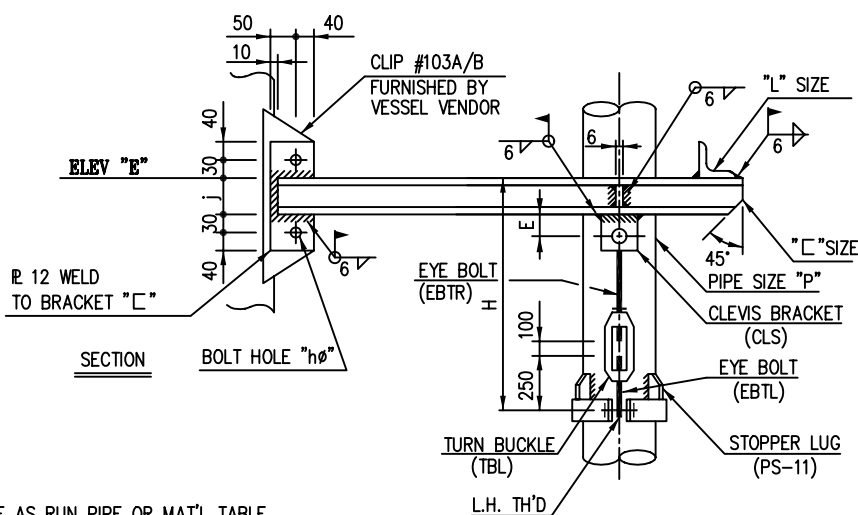
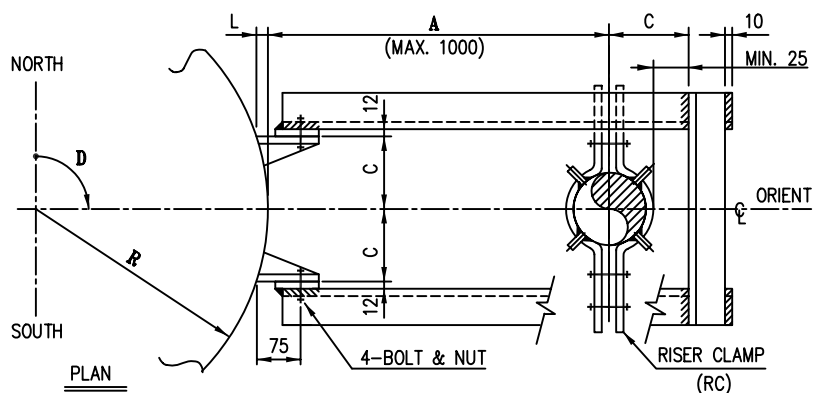
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1329

RESTING RV-32
(FOR BARE AND INSULATED PIPE,
VESSEL CLIP)

REV.
2



NOTE

1. MATERIAL

- LUG PLATE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	LUG PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803) OR EQ.

- SHAPE STEEL : A36 OR EQ.

- BOLT/NUT : A307 Gr.B W/GALV. OR EQ.

PIPE SIZE NPS "P"	ROD SIZE (inch)	UNIT (mm)		
		C		E
		TYPE A	TYPE B	
3"	1/2"	208	195	50
4"	5/8"	228	215	50
6"	3/4"	273	260	50
8"	1"	338	325	75
10"	1-1/4"	373	360	75
12"	1-1/4"	398	385	90

2. DIM. "L" = $R - \sqrt{R^2 - C^2}$

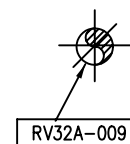
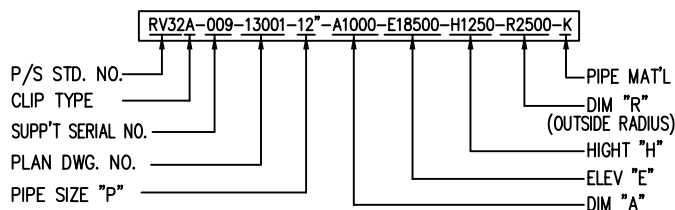
3. SEE DWG. NO. ST-A4-1006/1010/1013/1017 FOR THE DETAIL OF HANGER ASSEMBLY AND DWG. NO. ST-A4-1255 FOR STOPPER LUG DETAIL.

4. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

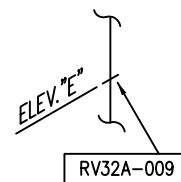
5. ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

CLIP TYPE	CLIP MARK	j	hφ	BOLT SIZE	"C" SIZE	"L" SIZE	UNIT (mm)	
							Wmax (kg)	
							A ≤ 500	500 < A ≤ 1000
A	103A	100	21	3/4"x50L	C10	A5	940	280
B	103B	150	21	3/4"x50L	C15	A6	1200	600

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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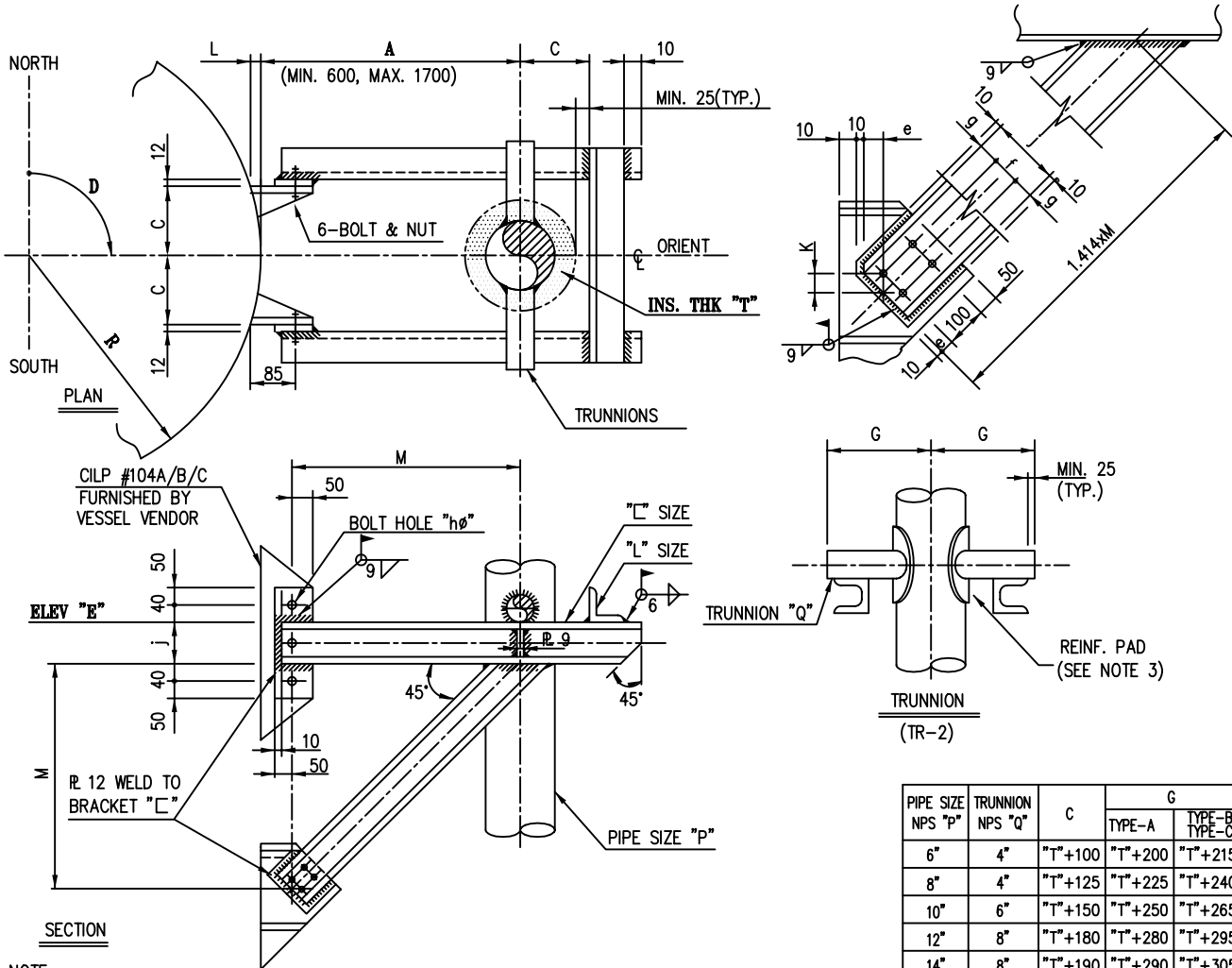
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1330

RESTING **RV-33**
(FOR BARE AND INSULATED PIPE,
VESSEL CLIP)

REV.
2



NOTE

1. MATERIAL

- TRUNNION "Q" : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ.

3. SEE DWG. NO. ST-A4-0004
FOR APPLICATION OF REINFORCING
PAD AND TRUNNION ALLOWABLE
LOADS.

4. SEE DWG. NO. ST-A4-0001
FOR THE SIZE OF SHAPE STEEL.

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	C	G	
			TYPE-A	TYPE-B TYPE-C
6"	4"	"T"+100	"T"+200	"T"+215
8"	4"	"T"+125	"T"+225	"T"+240
10"	6"	"T"+150	"T"+250	"T"+265
12"	8"	"T"+180	"T"+280	"T"+295
14"	8"	"T"+190	"T"+290	"T"+305
16"	10"	"T"+220	"T"+320	"T"+335
18"	10"	"T"+245	"T"+345	"T"+360
20"	12"	"T"+270	"T"+370	"T"+385
24"	12"	"T"+320	"T"+420	"T"+435
26"	14"	"T"+350	"T"+450	"T"+465
28"	14"	"T"+370	"T"+470	"T"+485
30"	16"	"T"+400	"T"+500	"T"+515
32"	16"	"T"+420	"T"+520	"T"+535

UNIT (mm)

- SHAPE STEEL : A36 OR EQ.

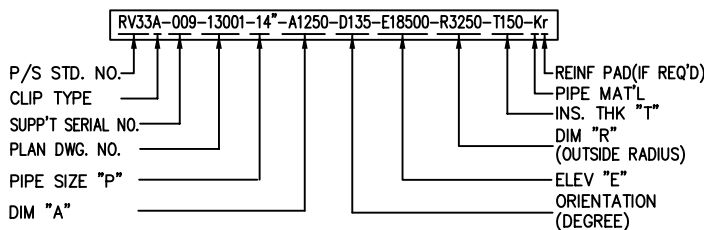
- BOLT/NUT : A307 GR.B-GALV. OR EQ.

CLIP TYPE	CLIP MARK	j	e	f	g	hφ	K	BOLT SIZE	"C" SIZE	"L" SIZE	Wmax (kg)	
											A ≤ 1200	1200 < A ≤ 1700
A	104A	150	30	60	45	18	42	5/8"x60L	C15	A7	4500	4000
B	104B	200	45	90	55	21	64	3/4"x60L	C20	A7	6500	6500
C	104C	300	75	150	75	28	106	1"x65L	C30	A7	10500	9000

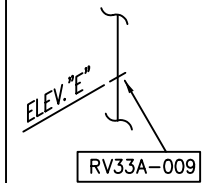
2. DIM "M"=(A+L)-85

DIM "L"= $R-\sqrt{R^2-C^2}$

SYMBOL & CODING



PLAN



ISO



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CONSULTANTS

DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

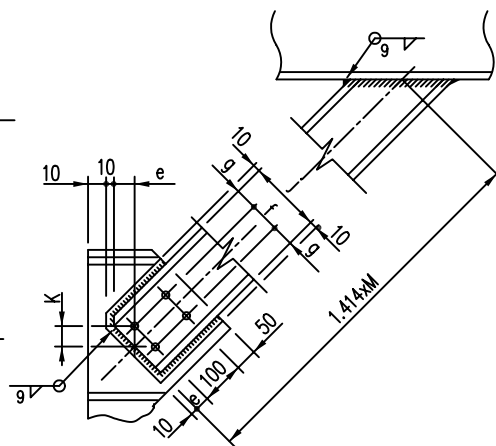
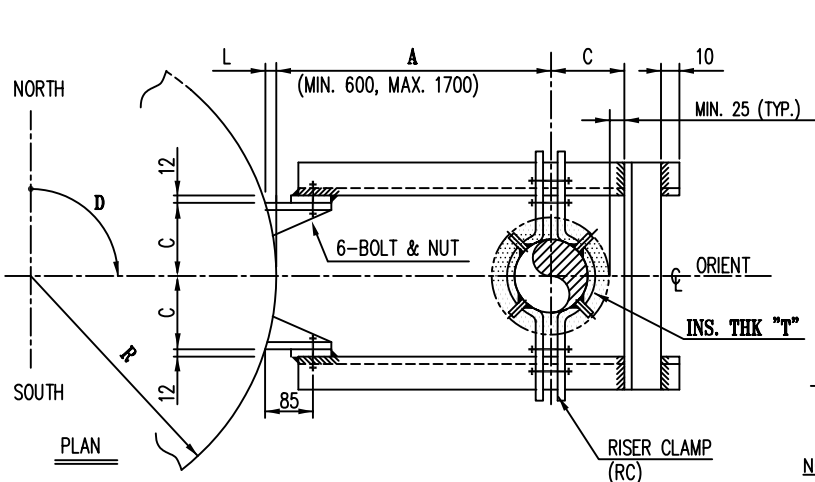
ST-A4-1331

RESTING
(FOR BARE AND INSULATED PIPE,
VESSEL CLIP)

RV-34

REV.

2



NOTE

1. MATERIAL

- LUG PLATE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	LUG PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803) OR EQ.

- SHAPE STEEL : A36 OR EQ.

- BOLT/NUT : A307 GR.B-GALV. OR EQ.

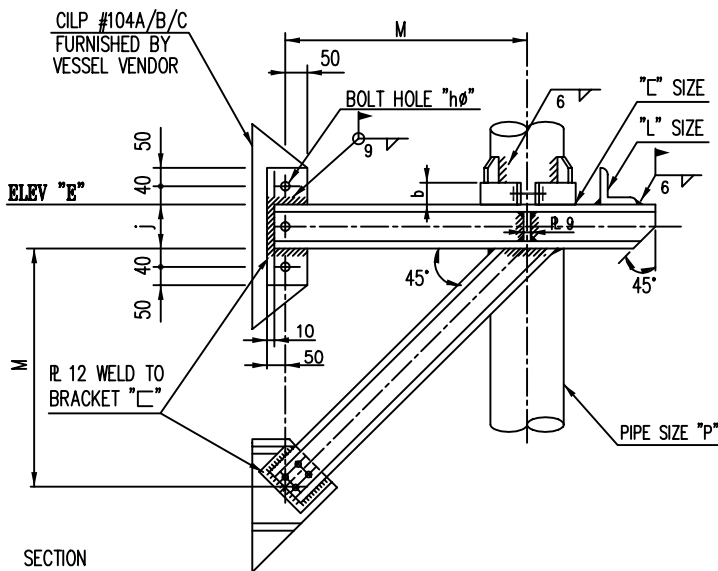
2. DIM "M"=(A+L)-85

$$\text{DIM "L"} = R - \sqrt{R^2 - C^2}$$

3. SEE DWG. NO. ST-A4-1255/1017 FOR THE DETAIL OF STOPPER LUG AND RISER CLAMP.

4. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

5. ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.



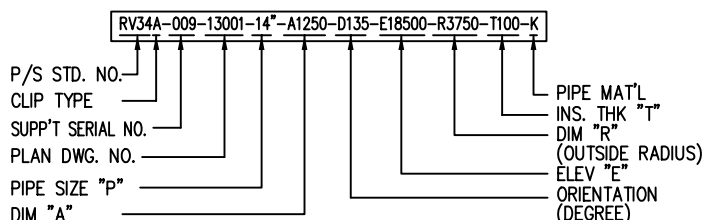
SECTION

UNIT (mm)

CLIP TYPE	CLIP MARK	j	e	f	g	hø	K	BOLT SIZE	"C" SIZE	"L" SIZE	Wmax (kg)	
											A ≤ 1200	1200 < A ≤ 1700
A	104A	150	30	60	45	18	42	5/8"x60L	C15	A7	4500	4000
B	104B	200	45	90	55	21	64	3/4"x60L	C20	A7	6500	5500
C	104C	300	75	150	75	28	106	1"x65L	C30	A7	10500	9000

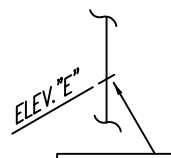
PIPE SIZE NPS "P"	c	b
6"	220	90
8"	285	90
10"	330	100
12"	355	100
14"	370	125
16"	410	125
18"	440	150
20"	465	150
24"	515	150
26"	540	150
28"	570	150
30"	600	150

SYMBOL & CODING



RV34A-009

PLAN



RV34A-009

ISO



**SHAHID TONGGOOIN
PETROCHEMICAL Co.**

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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DAELIM

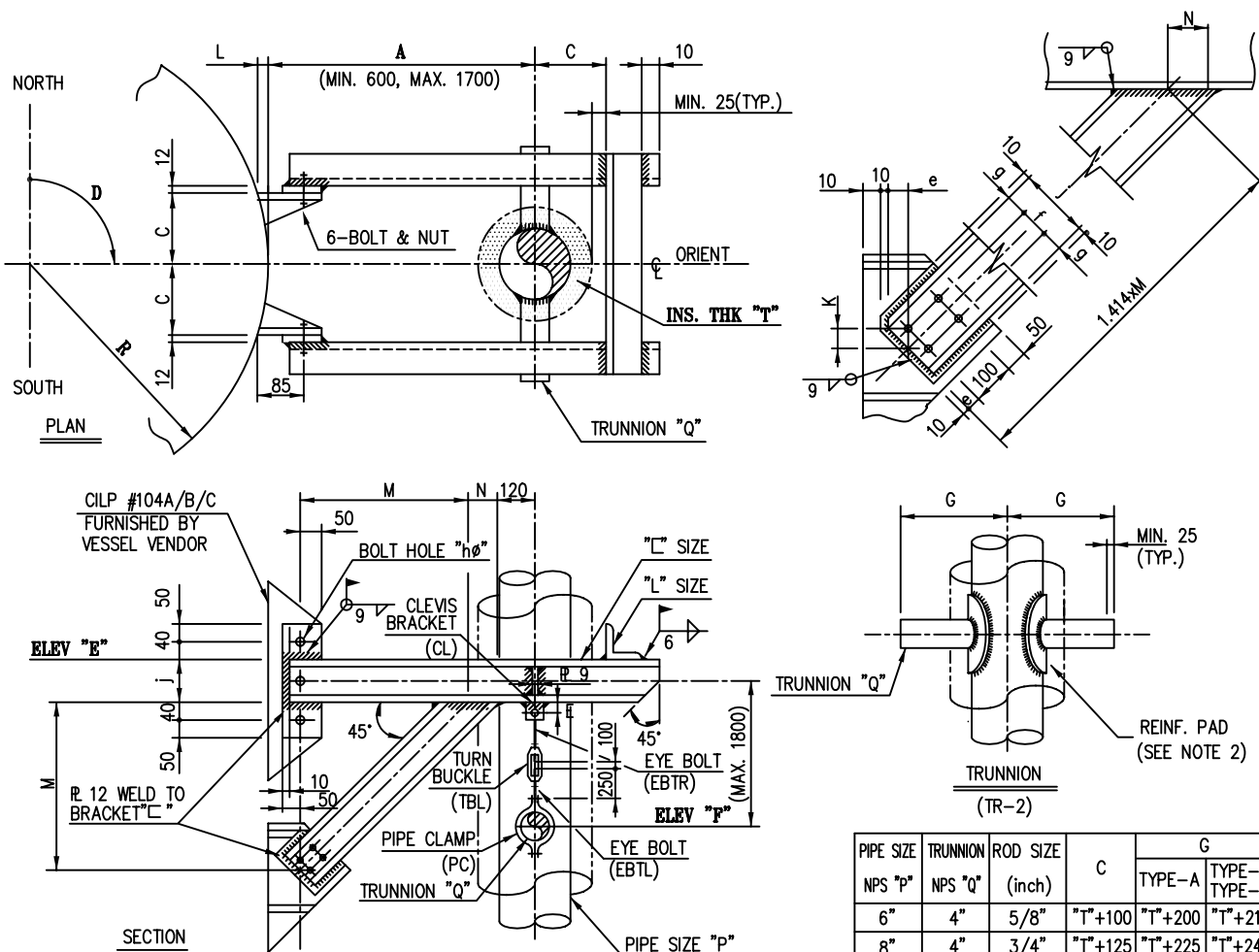
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1332

RESTING **RV-35**
(FOR BARE AND INSULATED PIPE,
VESSEL CLIP)

REV.
2



UNIT (mm)

CLIP TYPE	CLIP MARK	j	e	f	g	hφ	K	BOLT SIZE	"C" SIZE	"L" SIZE	W _{max} (kg)	
A	104A	150	30	60	45	18	42	5/8"x60L	C15	A7	4500	4000
B	104B	200	45	90	55	21	64	3/4"x60L	C20	A7	6500	5500
C	104C	300	75	150	75	28	106	1"x65L	C30	A7	10500	9000

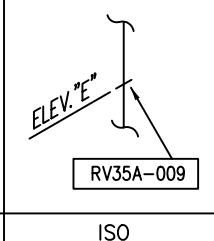
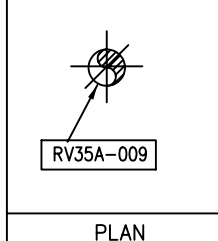
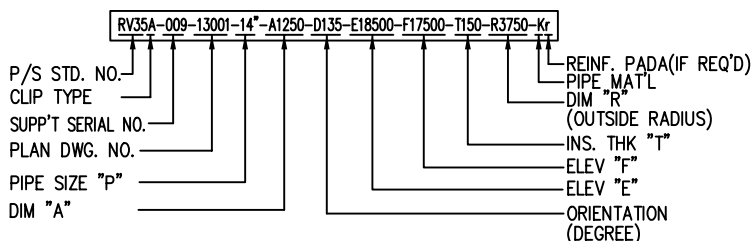
PIPE SIZE NPS "P"	TRUNNION NPS "Q"	ROD SIZE (inch)	C	G	
				TYPE-A	TYPE-B TYPE-C
6"	4"	5/8"	"T"+100	"T"+200	"T"+215
8"	4"	3/4"	"T"+125	"T"+225	"T"+240
10"	6"	3/4"	"T"+150	"T"+250	"T"+265
12"	8"	1"	"T"+180	"T"+280	"T"+295
14"	8"	1"	"T"+190	"T"+290	"T"+305
16"	10"	1-1/4"	"T"+220	"T"+320	"T"+335
18"	10"	1-1/4"	"T"+245	"T"+345	"T"+360
20"	12"	1-1/2"	"T"+270	"T"+370	"T"+385
24"	12"	1-1/2"	"T"+320	"T"+420	"T"+435
26"	14"	1-1/2"	"T"+350	"T"+450	"T"+465
28"	14"	1-1/2"	"T"+370	"T"+470	"T"+485
30"	16"	1-1/2"	"T"+400	"T"+500	"T"+515
32"	16"	1-1/2"	"T"+420	"T"+520	"T"+535

NOTE

- DIM "M"=(A+L)-85-120-N
DIM "L"=R-√R²-C²
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- SEE DWG. NO. ST-A4-1006/1010/1013/1014 FOR THE DETAIL OF HANGER ASSEMBLY.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.
- MATERIAL
- TRUNNION & REINF.PAD : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION & REINF. PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ.

SYMBOL & CODING





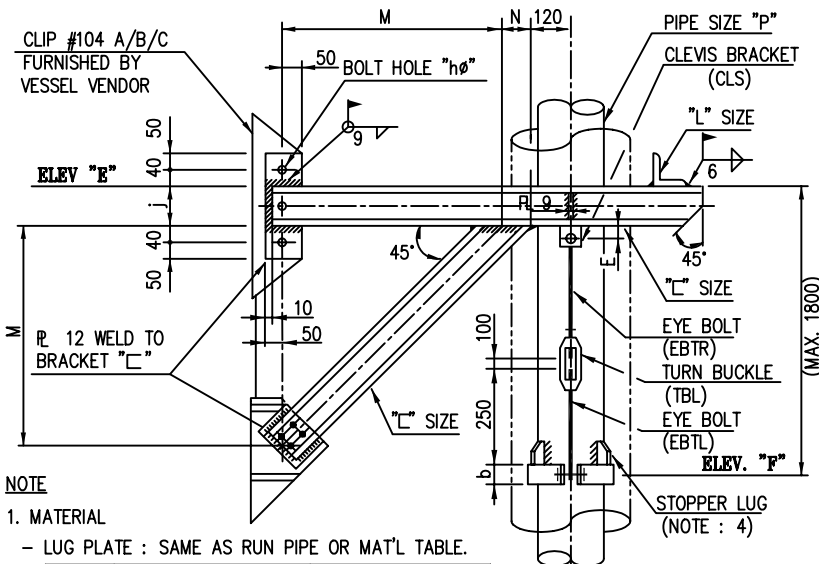
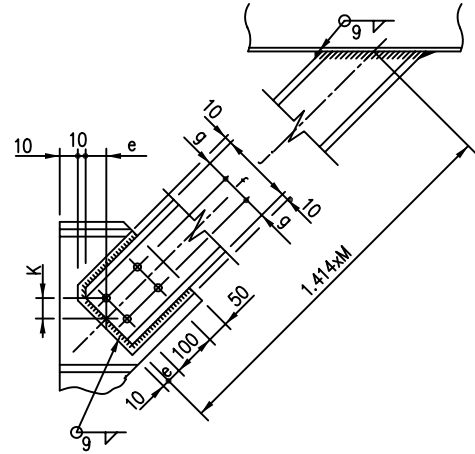
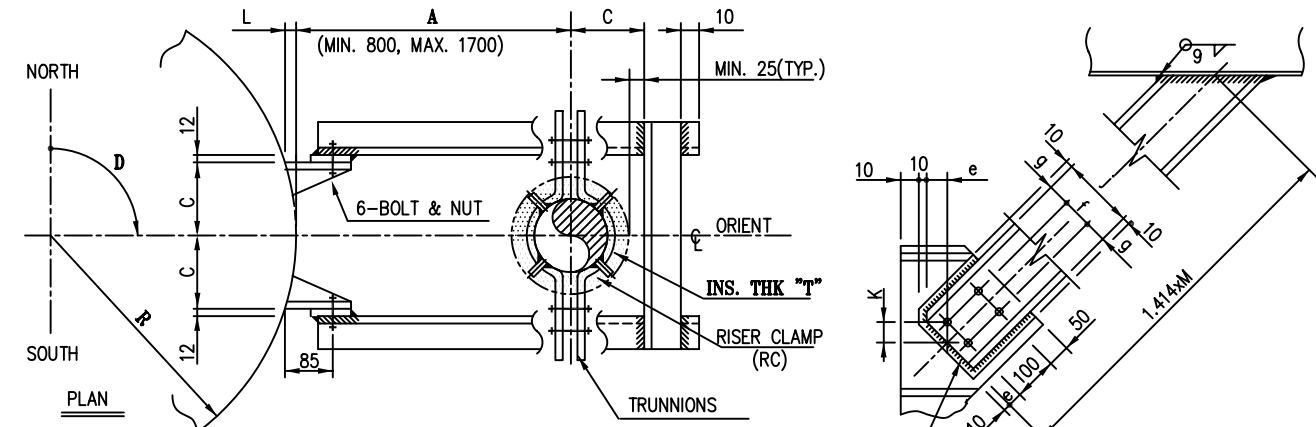
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1333

RESTING **RV-36**
(FOR BARE AND INSULATED PIPE,
VESSEL CLIP)

REV.
2



NOTE

- 1. MATERIAL
- LUG PLATE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	LUG PLATE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803)OR EQ.

- SHAPE STEEL : A36 OR EQ.
- BOLT/NUT : A307 GR.B-GALV. OR EQ.

- 2. DIM "M"=(A+L)-85-120-N
- DIM "L"= $R-\sqrt{R^2-C^2}$

- 3. SEE DWG. NO. ST-A4-1006/1010/1013/1017 FOR THE DETAIL OF HANGER ASSEMBLY.
- 4. SEE DWG. NO. ST-A4-1255 FOR THE DETAIL OF STOPPER LUG.
- 5. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

6. ASBESTOS SHEET OR RUBER SHALL BE APPLID AS INTERMEDIATE MATERIAL FOR S.S PIPE.

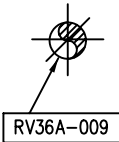
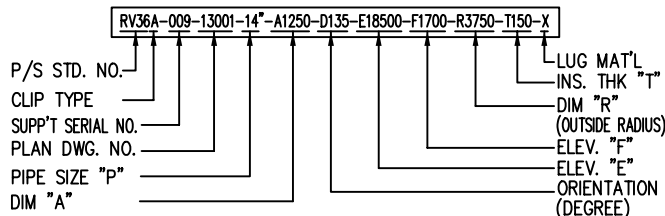
UNIT (mm)

PIPE SIZE NPS "p"	C		b	E	ROD SIZE (inch)
	TYPE-A	TYPE-B/C			
6"	260	253	90	50	3/4"
8"	325	318	90	75	1"
10"	360	353	100	90	1-1/4"
12"	385	378	100	90	1-1/4"
14"	400	393	125	90	1-1/2"
16"	440	433	125	90	1-1/2"
18"	465	458	150	90	1-1/2"
20"	490	483	150	90	1-1/2"
24"	540	533	150	90	1-3/4"
26"	565	558	150	90	1-3/4"
28"	595	588	150	90	1-3/4"
30"	620	613	150	90	1-3/4"

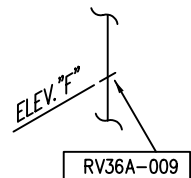
UNIT (mm)

CLIP TYPE	CLIP MARK	j	e	f	g	hφ	K	BOLT SIZE	"C" SIZE	"L" SIZE	Wmax (kg)	
											A ≤ 1200	1200 < A ≤ 1700
A	104A	150	30	60	45	18	42	5/8"x60L	C15	A7	4500	4000
B	104B	200	45	90	55	21	64	3/4"x60L	C20	A7	6500	5500
C	104C	300	75	150	75	28	106	1"x65L	C30	A7	10500	9000

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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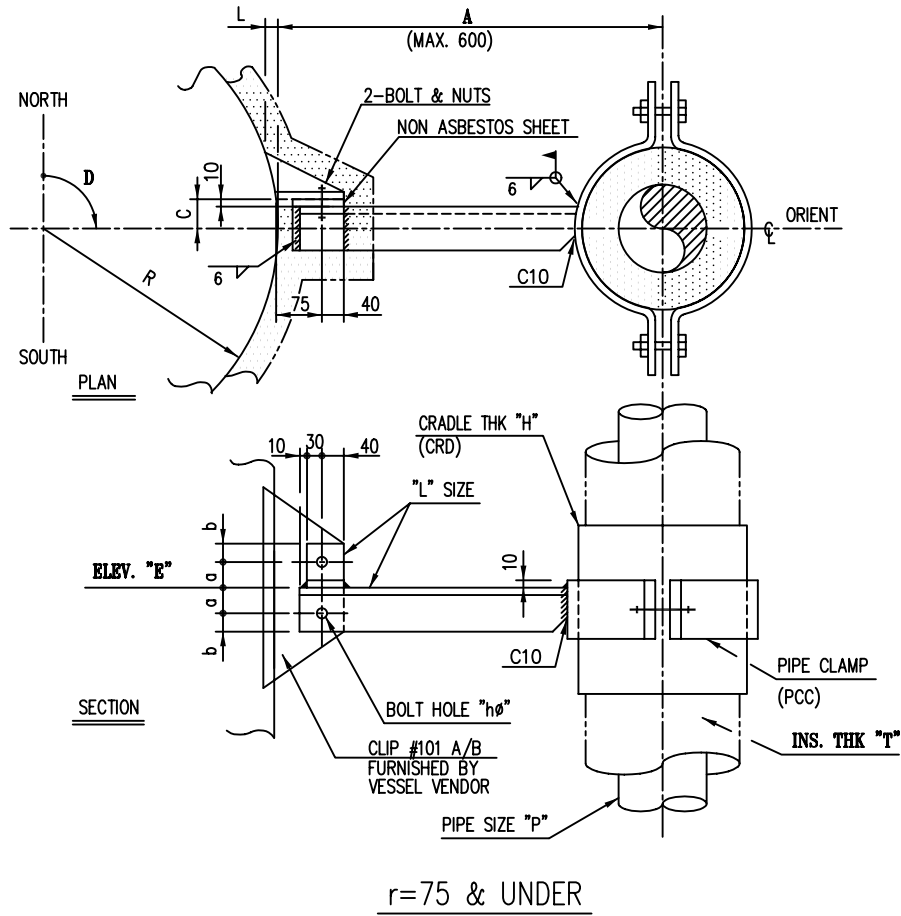
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1335

RESTING **RV-41**
(FOR COLD INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



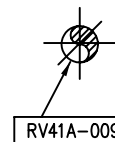
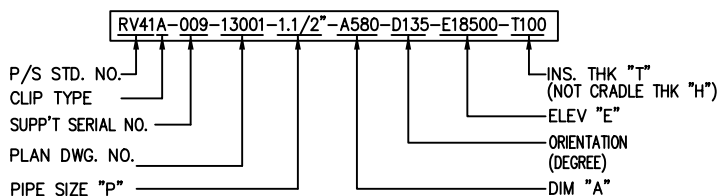
UNIT (mm)

CLIP TYPE	CLIP MARK	a	b	hφ	BOLT SIZE	"L" SIZE	DIM "C"	Wmax (kg)	
								A ≤ 400	400 < A ≤ 600
A	101 A	30	20	18	5/8"x50L	A5	35	75	50
B	101 B	40	35	21	3/4"x55L	A7	48	270	180

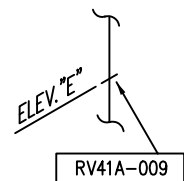
NOTE

- DIM "L" = $R - \sqrt{R^2 - C^2}$
- MATERIAL
 - SHAPE STEEL : A36 OR EQ.
 - BOLT/NUT : A307 GR.B-GALV. OR EQ.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.
- SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.
- SEE DWG. NO. ST-A4-1016 FOR THE DETAIL OF CLAMP.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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DAELIM

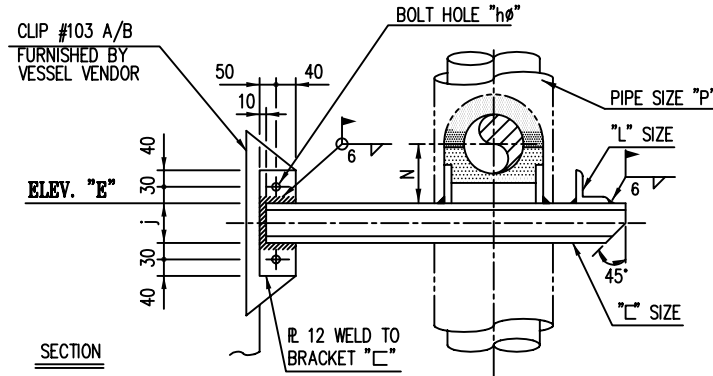
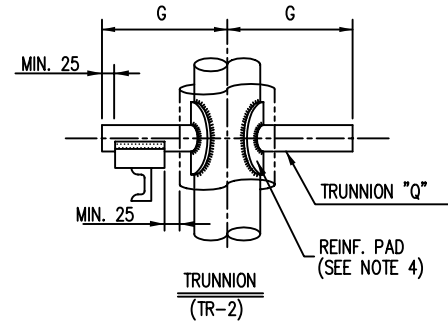
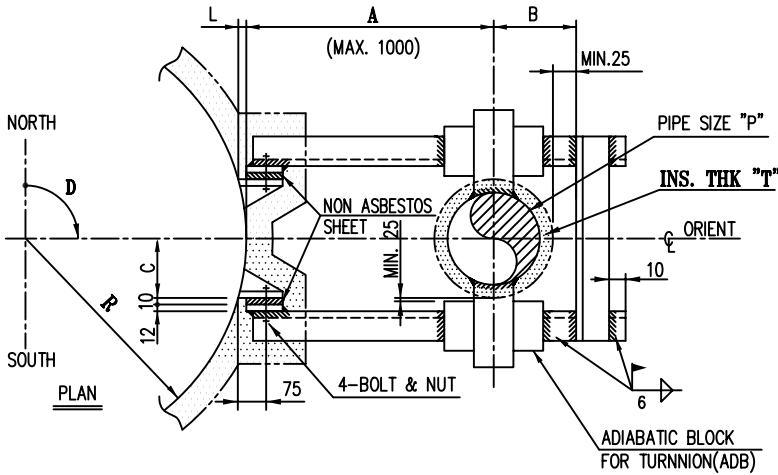
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1336

RESTING **RV-42**
(FOR COLD INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	B	C	G	N
3"	2"	"T"+70	"T"+85	"T"+235	100
4"	2"	"T"+85	"T"+95	"T"+250	100
5"	3"	"T"+100	"T"+110	"T"+260	130
6"	4"	"T"+110	"T"+125	"T"+275	130
8"	4"	"T"+135	"T"+150	"T"+300	130
10"	6"	"T"+165	"T"+225	"T"+410	155
12"	8"	"T"+190	"T"+250	"T"+435	180

CLIP TYPE	CLIP MARK	j	h	BOLT SIZE	"C" SIZE	"L" SIZE	Wmax (kg)	
							A ≤ 500	500 < A ≤ 1000
A	103A	100	21	3/4"x55L	C10	A5	940	280
B	103B	150	21	3/4"x60L	C15	A6	1200	600

NOTE

1. DIM "L" = $R - \sqrt{R^2 - C^2}$

2. MATERIAL

- TRUNNION & REINF. PAD : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION & REINF. PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

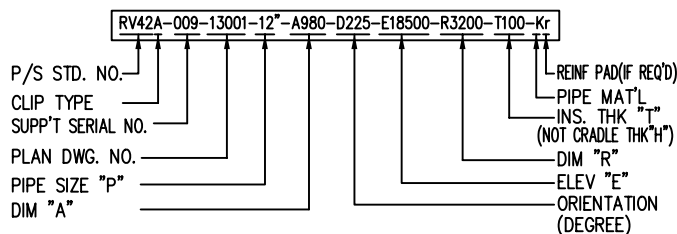
- SHAPE STEEL : A36 OR EQ.
- BOLT/NUT : A307 GR.B OR EQ.

3. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

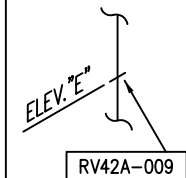
4. SEE DWG. NO. ST-A4-1000 FOR DETAIL OF ADIABATIC BLOCK.

5. SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

SYMBOL & CODING



PLAN



ISO



SAZEH
CONSULTANTS



DAELIM

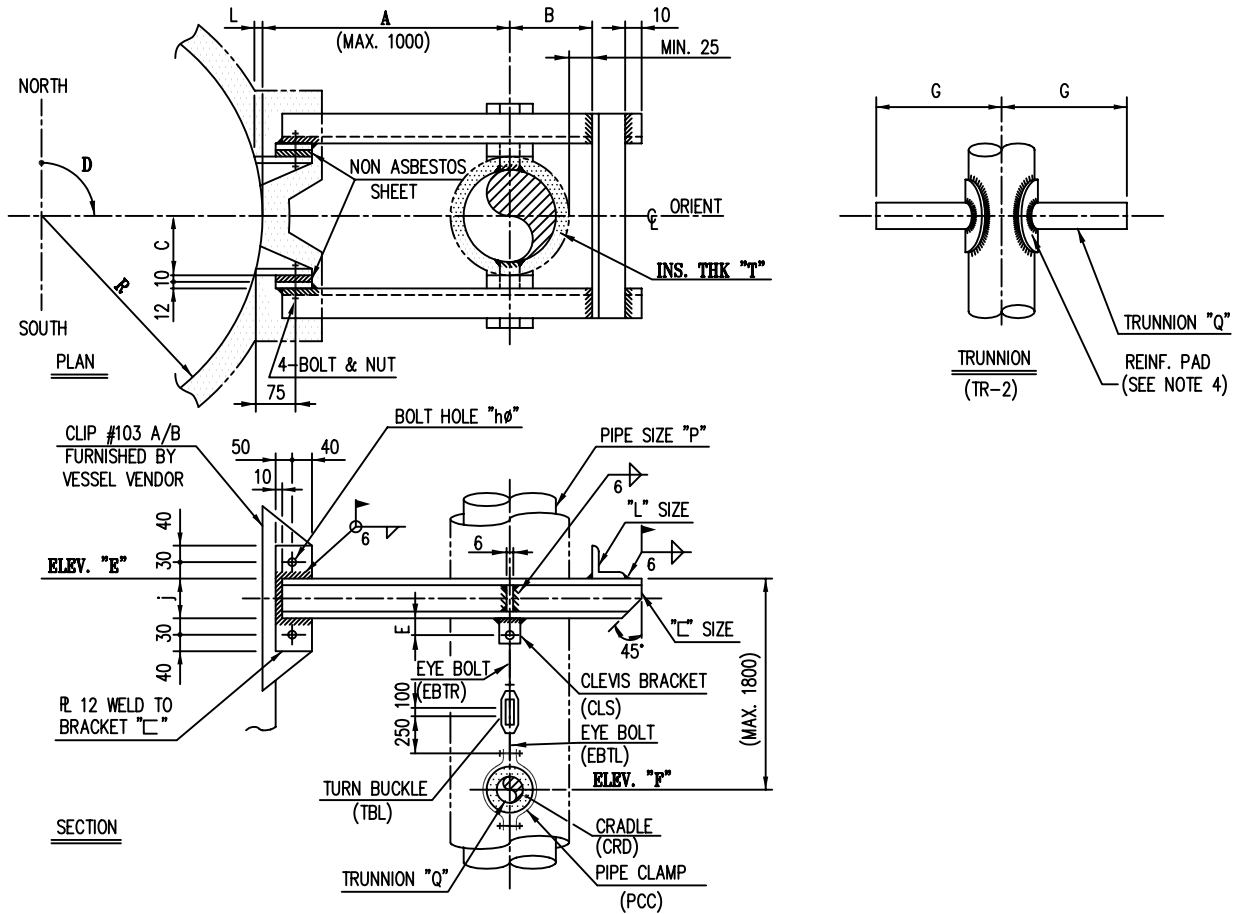
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1337

RESTING **RV-43**
(FOR COLD INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



UNIT (mm)

UNIT (mm)

CLIP TYPE	CLIP MARK	j	hø	BOLT SIZE	"C" SIZE	"L" SIZE	Wmax (kg)	
							A ≤ 1200	1200 < A ≤ 1700
A	103A	100	21	3/4"x5L	C10	A5	940	280
B	103B	150	21	3/4"x6L	C15	A6	1200	600

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	B	C	E	G	ROD SIZE (inch)
3"	2"	"T"+70	"T"+170	50	"T"+415	3/8"
4"	2"	"T"+85	"T"+185	50	"T"+430	1/2"
6"	4"	"T"+110	"T"+235	50	"T"+505	5/8"
8"	4"	"T"+135	"T"+260	50	"T"+530	3/4"
10"	6"	"T"+165	"T"+290	50	"T"+560	3/4"
12"	8"	"T"+190	"T"+315	75	"T"+585	1"

NOTE

1. DIM "L" = $R - \sqrt{R^2 - C^2}$

2. MATERIAL

- SHAPE STEEL : A36 OR EQ.
- BOLT/NUT : A307 GR.B-GALV. OR EQ.
- TRUNNION & REINF. PAD : SAME AS RUN PIPE OR MAT'L TABLE.

3. SEE DWG. NO. ST-A4-1006/1010/1013/1016 FOR THE DETAIL OF HANGER ASSEMBLY.

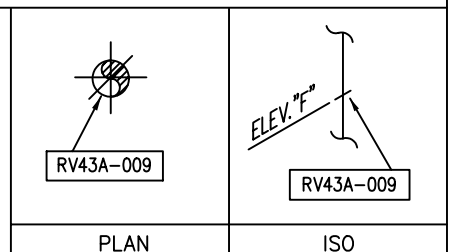
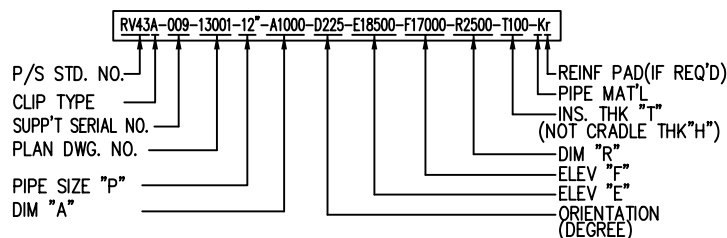
4. SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

5. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

6. SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.

CODE	RUN PIPE	TRUNNION & REINF. PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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CONSULTANTS



DAELIM

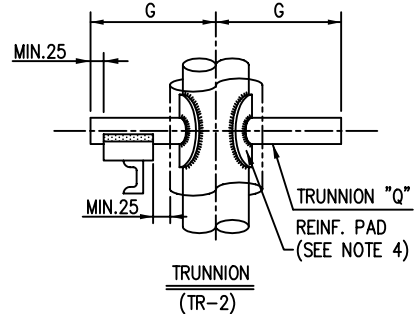
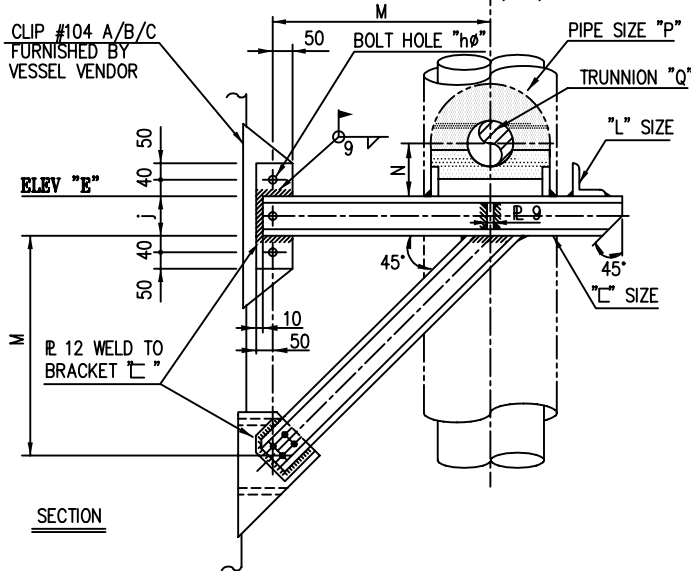
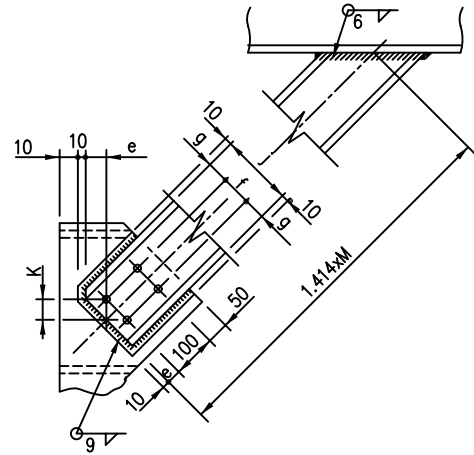
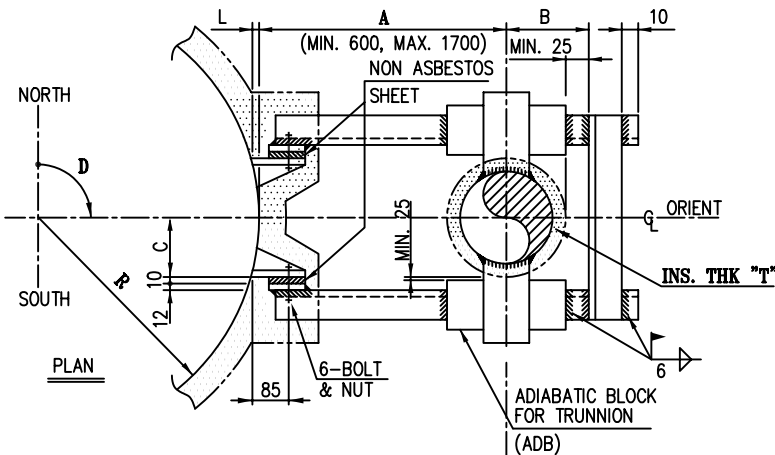
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1338

RESTING **RV-44**
(FOR COLD INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	B	C	G	N
6"	4"	"T"+110	"T"+125	"T"+275	130
8"	4"	"T"+135	"T"+150	"T"+300	130
10"	6"	"T"+165	"T"+225	"T"+410	155
12"	8"	"T"+190	"T"+250	"T"+435	180
14"	8"	"T"+205	"T"+265	"T"+450	180
16"	10"	"T"+230	"T"+295	"T"+480	210
18"	10"	"T"+255	"T"+315	"T"+500	210
20"	12"	"T"+280	"T"+340	"T"+525	235
24"	12"	"T"+330	"T"+390	"T"+575	235
26"	14"	"T"+355	"T"+415	"T"+600	250
28"	14"	"T"+385	"T"+445	"T"+630	250
30"	16"	"T"+410	"T"+460	"T"+645	250
32"	16"	"T"+435	"T"+495	"T"+680	250

CLIP TYPE	CLIP MARK	J	e	f	g	hø	K	BOLT SIZE	"C" SIZE	"L" SIZE	Wmax (kg)	
											A ≤ 1200	1200 < A ≤ 1700
A	104A	150	30	60	45	18	42	5/8"x65L	C15	A7	4500	4000
B	104B	200	45	90	55	21	64	3/4"x65L	C20	A7	6500	5500
C	104C	300	75	150	75	28	106	1"x70L	C30	A7	10500	9000

NOTE

- DIM "M" = (A+L)-85
DIM "L" = R-√R²-C²

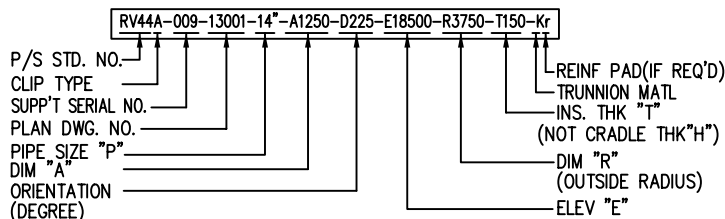
2. MATERIAL

- SHAPE STEEL : A36 OR EQ.
- BOLT/NUT : A307 GR.B-GALV. OR EQ.
- TRUNNION & REINF.PAD : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION & REINF. PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

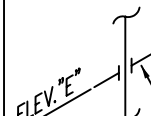
- SEE DWG. NO. ST-A4-1000 FOR DETAIL OF ADIABATIC BLOCK.
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



RV44A-009

PLAN



RV44A-009

ISO



SHAHID TONGGOIAN
PETROCHEMICAL CO.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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CONSULTANTS



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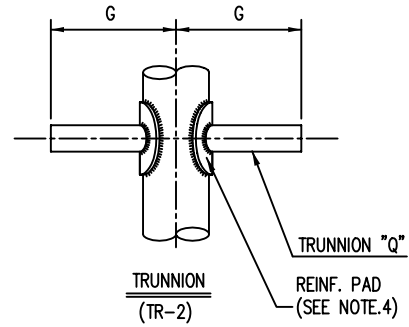
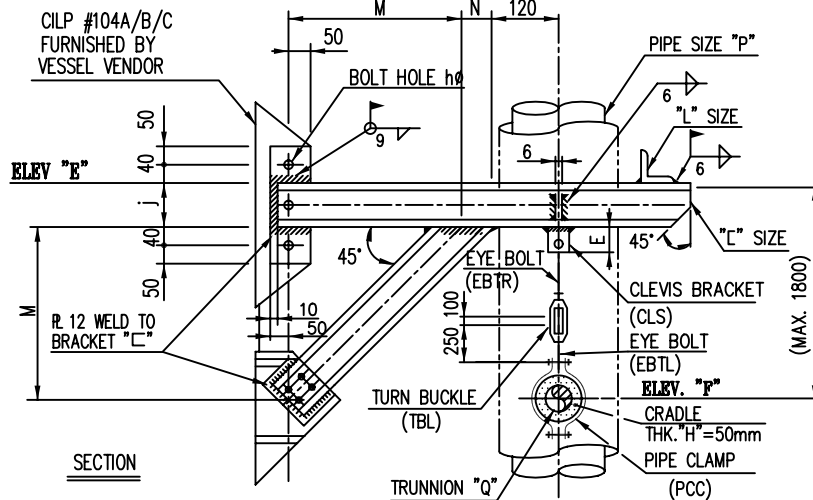
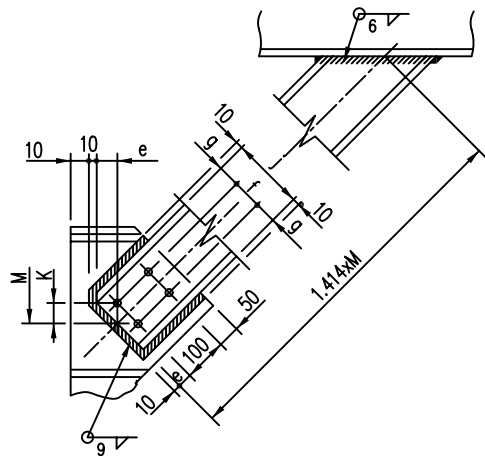
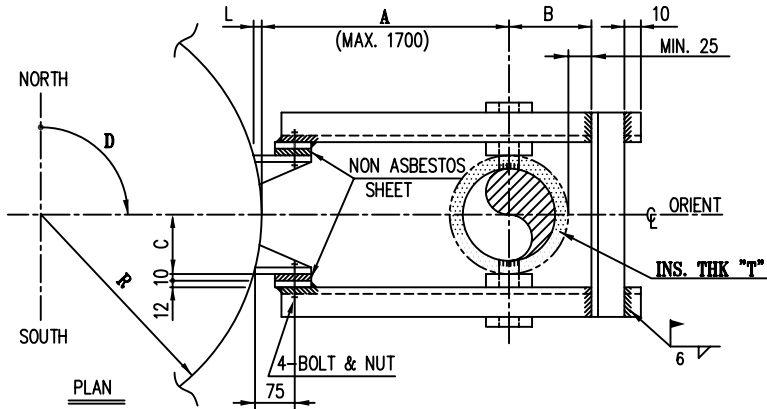
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1339

RESTING **RV-45**
(FOR COLD INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



UNIT (mm)

UNIT (mm)

CLIP TYPE	CLIP MARK	J	e	f	g	hφ	K	BOLT SIZE	"C" SIZE	"L" SIZE	Wmax (kg)	
											A ≤ 1200	1200 < A ≤ 1700
A	104A	150	30	60	45	18	42	5/8"x65L	C15	A7	4500	4000
B	104B	200	45	90	55	21	64	3/4"x65L	C20	A7	6500	5500
C	104C	300	75	150	75	28	106	1"x70L	C30	A7	10500	9000

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	ROD SIZE (Inch)	B	C	G	E
6"	4"	5/8"	"T"+110	"T"+235	"T"+505	50
8"	4"	3/4"	"T"+135	"T"+260	"T"+530	50
10"	6"	3/4"	"T"+165	"T"+290	"T"+560	50
12"	8"	1"	"T"+190	"T"+315	"T"+585	75
14"	8"	1"	"T"+205	"T"+330	"T"+600	75
16"	10"	1-1/4"	"T"+230	"T"+355	"T"+625	75
18"	10"	1-1/4"	"T"+255	"T"+380	"T"+650	75
20"	12"	1-1/2"	"T"+280	"T"+405	"T"+675	75
24"	12"	1-1/2"	"T"+320	"T"+455	"T"+725	75
26"	14"	1-1/2"	"T"+355	"T"+480	"T"+750	90
28"	14"	1-1/2"	"T"+385	"T"+505	"T"+775	90
30"	16"	1-1/2"	"T"+410	"T"+535	"T"+805	90
32"	16"	1-1/2"	"T"+435	"T"+560	"T"+830	90

NOTE

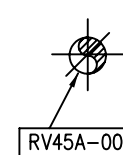
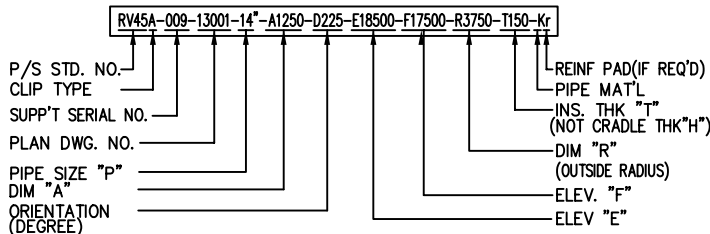
- DIM "M"=(A+L)-85-120-N
DIM "L"= $R-\sqrt{R^2-C^2}$
- SEE DWG. NO. ST-A4-1006/1010/1013/1016 FOR THE DETAIL AND ALLOWABLE LOAD OF HANGER ASSEMBLY.
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.
- SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.

2. MATERIAL

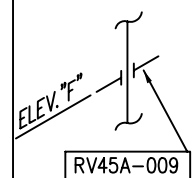
- SHAPE STEEL : A36 OR EQ.
- BOLT/NUT : A307 GR.B-GALV. OR EQ.
- TRUNNION & REINF.PAD : SAME AS RUN PIPE OR MATL TABLE.

CODE	RUN PIPE	TRUNNION & REINF. PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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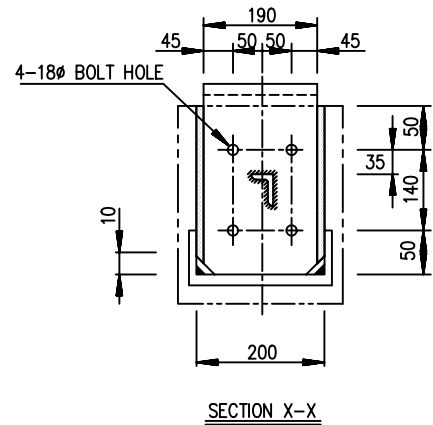
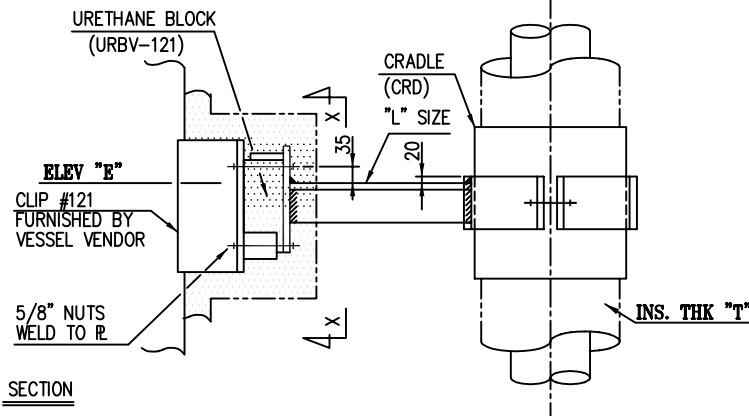
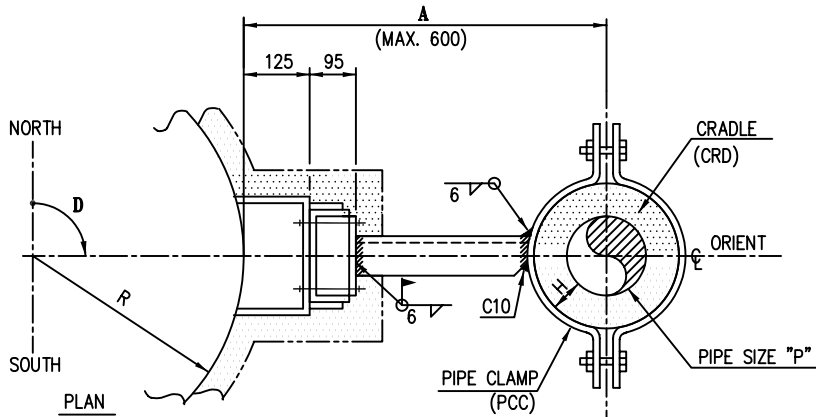
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1340

RESTING **RV-51**
(FOR COLD INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



r=75 & UNDER

UNIT (mm)

PIPE SIZE NPS "P"	CRADLE THK "H"	r
1/2"	50	61
3/4"	50	64
1"	50	67
1-1/2"	50	75

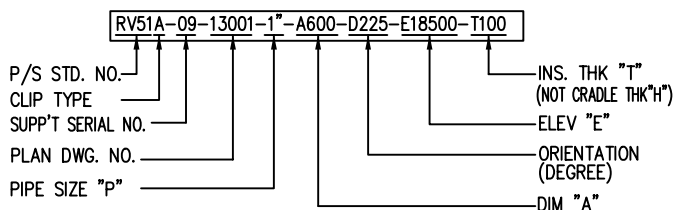
NOTE

- MATERIAL
- SHAPE STEEL : A36 OR EQ.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.
- SEE DWG. NO. ST-A4-1021 FOR THE DETAIL OF URETHANE BLOCK ASSEMBLY.
- SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.

UNIT (mm)

CLIP TYPE	CLIP MARK	"L" SIZE	Wmax (kg)	
			A ≤ 400	400 < A ≤ 600
A	121A	A5	60	40
B	121B	A7	210	140

SYMBOL & CODING



RV51-009

PLAN



RV51-009

ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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CONSULTANTS



DAELIM

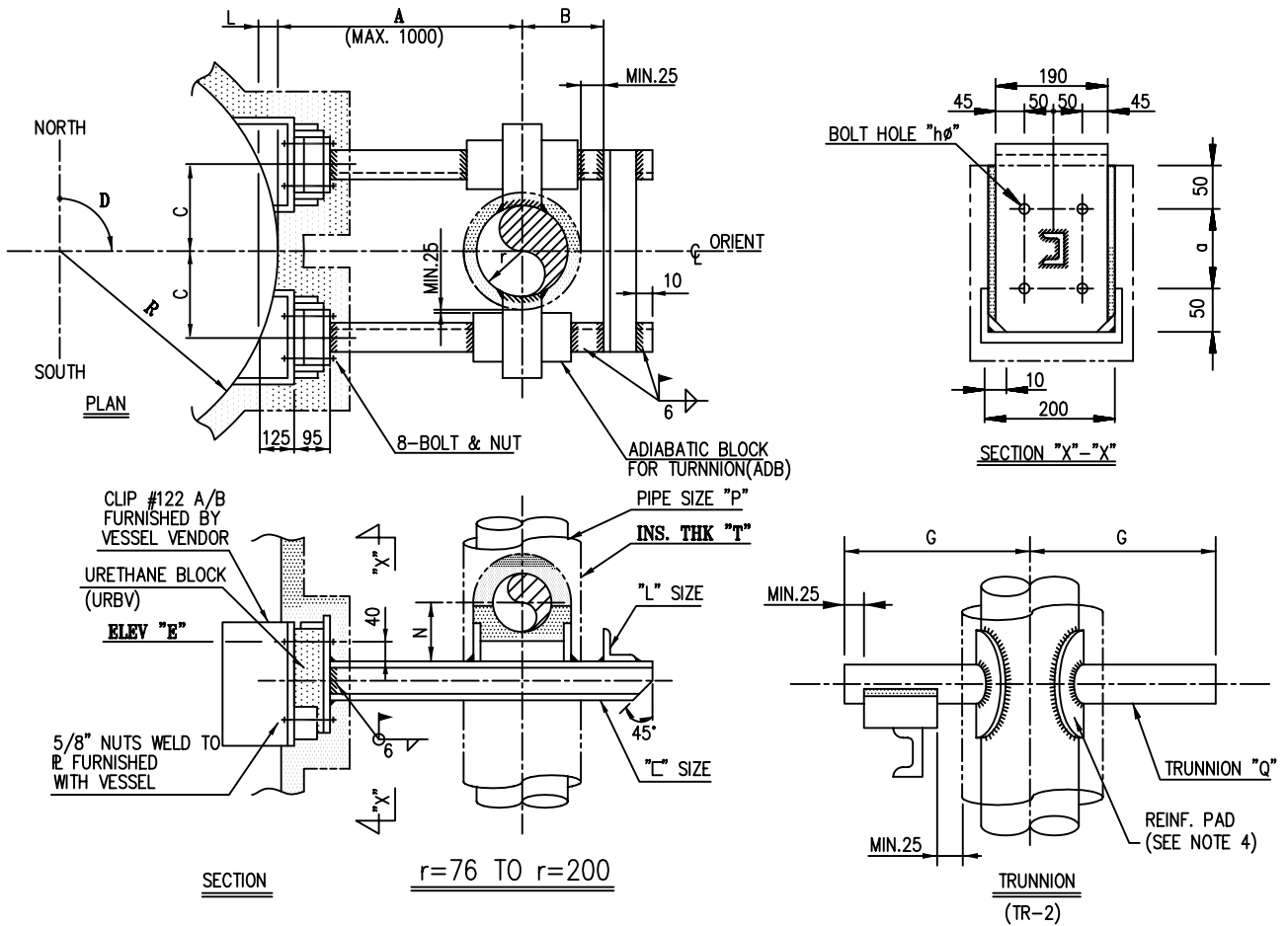
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1341

RESTING **RV-52**
(FOR COLD INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



UNIT (mm)

CLIP TYPE	CLIP MARK	hφ	a	"L" SIZE	"C" SIZE	Wmax (kg)	
						A ≤ 500	500 < A ≤ 1000
A	122A	18	180	C10	A5	750	220
B	122B	18	230	C15	A6	960	480

NOTE

- DIM "L" = $R - \sqrt{R^2 - C^2}$
- MATERIAL
 - SHAPE STEEL : A36 OR EQ.
 - TRUNNION & REINF.PAD : SAME AS RUN PIPE OR MAT'L TABLE.

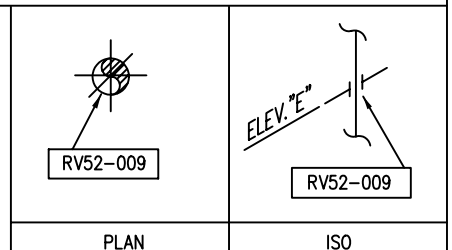
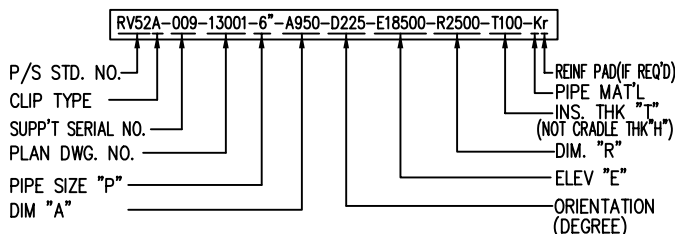
CODE	RUN PIPE	TRUNNION & REINF. PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

3. SEE DWG. NO. ST-A4-0000 FOR THE SIZE OF SHAPE STEEL.

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	B	C	G	N
3"	2"	"T"+70	"T"+120	"T"+195	100
4"	2"	"T"+85	"T"+135	"T"+210	100
5"	3"	"T"+100	"T"+150	"T"+225	130
6"	4"	"T"+110	"T"+160	"T"+235	130
8"	4"	"T"+135	"T"+185	"T"+260	130
10"	6"	"T"+165	"T"+265	"T"+390	155
12"	8"	"T"+190	"T"+290	"T"+415	180

- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- SEE DWG. NO. ST-A4-1021 FOR THE DETAIL OF URETHANE BLOCK ASSEMBLY.
- SEE DWG. NO. ST-A4-1000 FOR THE DETAIL OF ADIABATIC BLOCK.

SYMBOL & CODING





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CONSULTANTS



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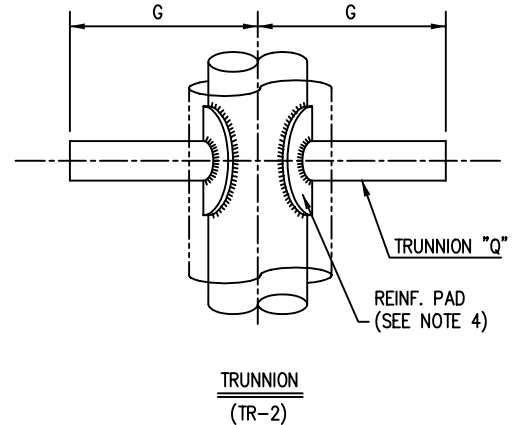
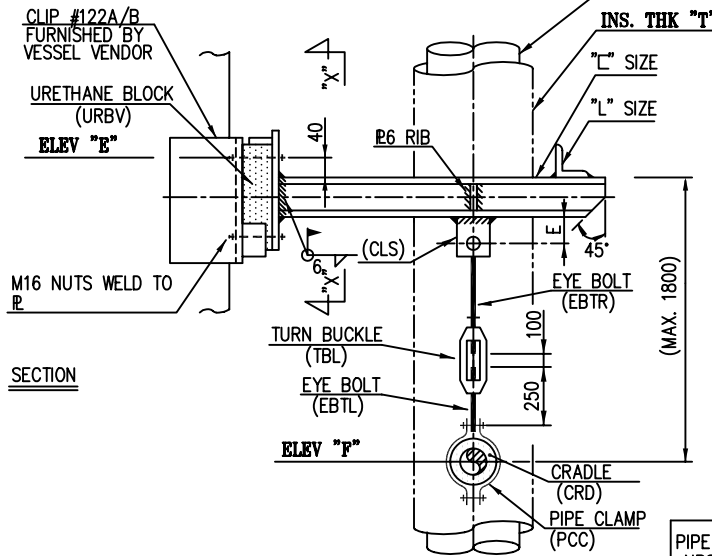
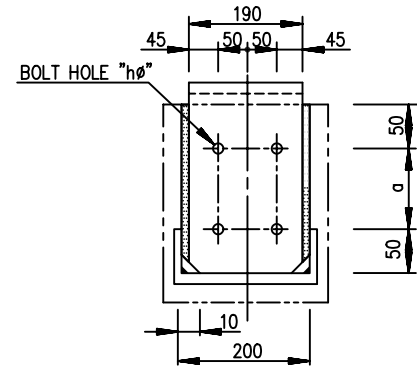
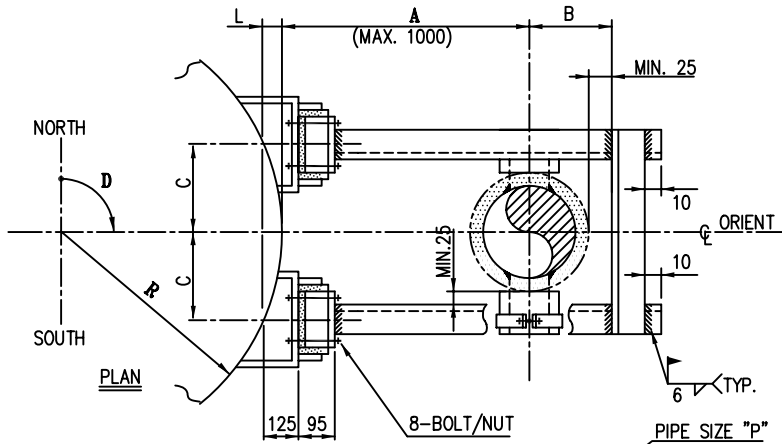
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1342

RESTING **RV-53**
(FOR COLD INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



UNIT (mm)

CLIP TYPE	CLIP MARK	hø	a	"L" SIZE	"L" SIZE	Wmax (kg)	
						A ≤ 500	500 < A ≤ 1000
A	122A	18	180	C10	A5	750	220
B	122B	18	230	C15	A6	960	480

PIPE SIZE NPS "D"	TRUNNION NPS "Q"	B	C	G	E	ROD SIZE (inch)
3"	2"	"T"+70	"T"+230	"T"+415	50	3/8"
4"	2"	"T"+85	"T"+245	"T"+430	50	3/8"
5"	3"	"T"+100	"T"+280	"T"+490	50	1/2"
6"	4"	"T"+110	"T"+295	"T"+505	50	5/8"
8"	4"	"T"+135	"T"+320	"T"+530	50	5/8"
10"	6"	"T"+165	"T"+345	"T"+555	50	3/4"
12"	8"	"T"+190	"T"+375	"T"+585	75	1"

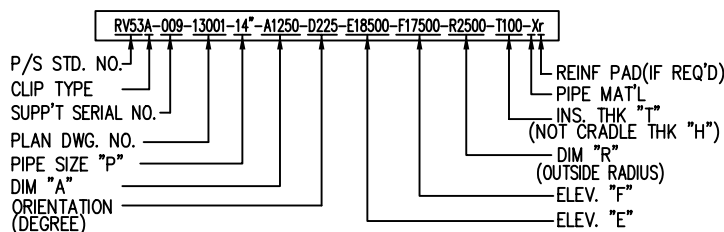
NOTE

- DIM "L" = $R - \sqrt{R^2 - C^2}$
- MATERIAL
 - SHAPE STEEL : A36 OR EQ.
 - TRUNNION & REINF. PAD : SAME AS RUN PIPE OR MAT'L TABLE.

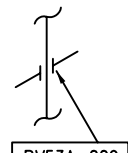
CODE	RUN PIPE	TRUNNION & REINF. PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

- SEE DWG. NO. ST-A4-1010/1013/1016/1019 AND ST-A4-1021 FOR THE DETAIL AND ALLOWABLE LOAD OF HANGER ASSEMBLY.
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.
- SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.
- SEE DWG. NO. ST-A4-1021 FOR THE DETAIL OF URETHANE BLOCK ASSEMBLY.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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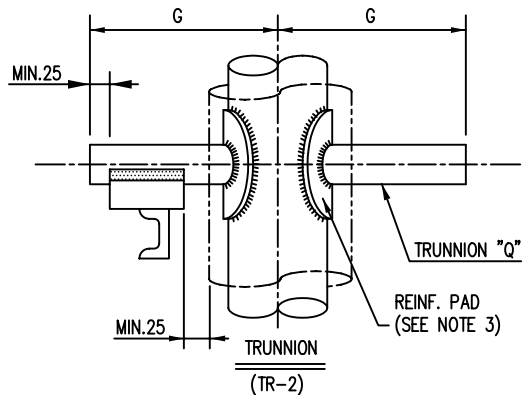
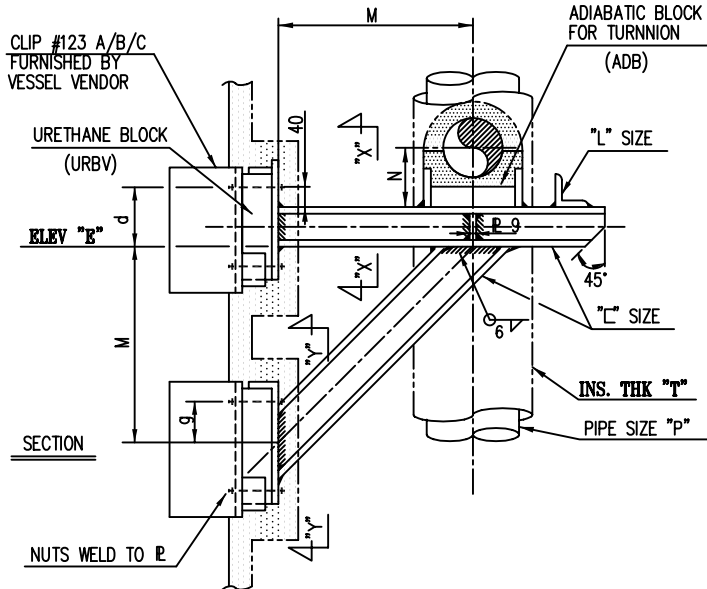
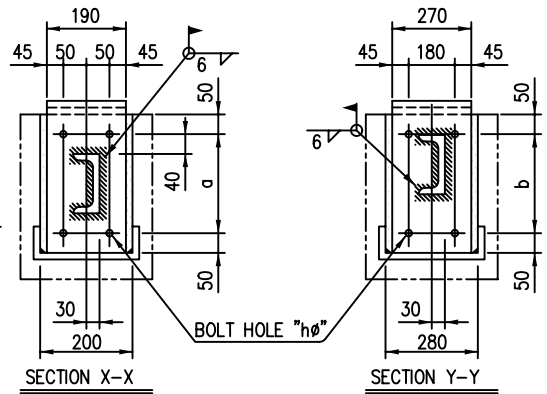
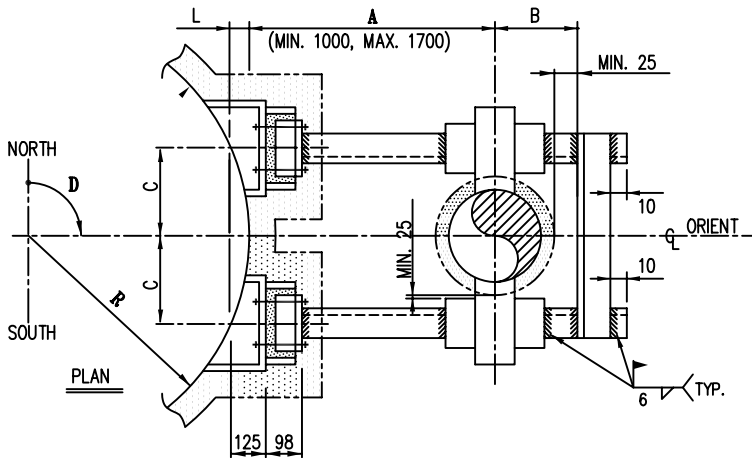
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1343

RESTING **RV-54**
(FOR COLD INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



PIPE SIZE NPS "P"	TRUNNION NPS "Q"	B	C	G	N
6"	4"	"T"+110	"T"+160	"T"+235	130
8"	4"	"T"+135	"T"+185	"T"+260	130
10"	6"	"T"+165	"T"+265	"T"+390	155
12"	8"	"T"+190	"T"+290	"T"+415	180
14"	8"	"T"+205	"T"+305	"T"+430	180
16"	10"	"T"+230	"T"+330	"T"+455	210
18"	10"	"T"+255	"T"+355	"T"+480	210
20"	12"	"T"+280	"T"+380	"T"+505	235
24"	12"	"T"+330	"T"+430	"T"+555	235
26"	14"	"T"+355	"T"+455	"T"+580	250
28"	14"	"T"+385	"T"+485	"T"+610	250
30"	16"	"T"+410	"T"+510	"T"+635	250
32"	16"	"T"+435	"T"+535	"T"+660	250

UNIT (mm)

CLIP TYPE	CLIP MARK	a	b	d	g	h ϕ	"C" SIZE	"L" SIZE	Wmax (kg)	
									A \leq 1200	1200 < A \leq 1700
A	123A	230	220	190	106	18	C15	A7	3600	3200
B	123B	280	290	240	141	21	C20	A7	5200	4400
C	123C	380	430	340	212	28	C30	A7	8400	7200

NOTE

- DIM "M"=(A+L)-125-98
DIM "L"=R- $\sqrt{R^2-C^2}$

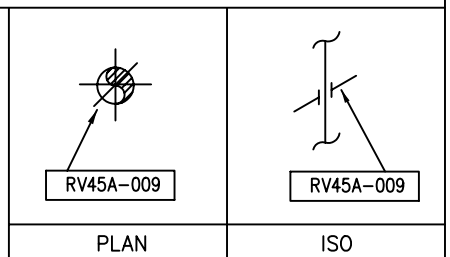
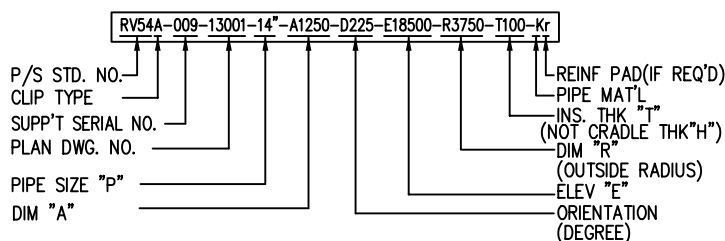
2. MATERIAL

- SHAPE STEEL : A36 OR EQ.
- TRUNNION & REINF. PAD : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION & REINF. PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- SEE DWG. NO. ST-A4-1021 FOR THE DETAIL OF URETHANE BLOCK ASSEMBLY.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.
- SEE DWG. NO. ST-A4-1000 FOR THE DETAIL OF ADIABATIC BLOCK.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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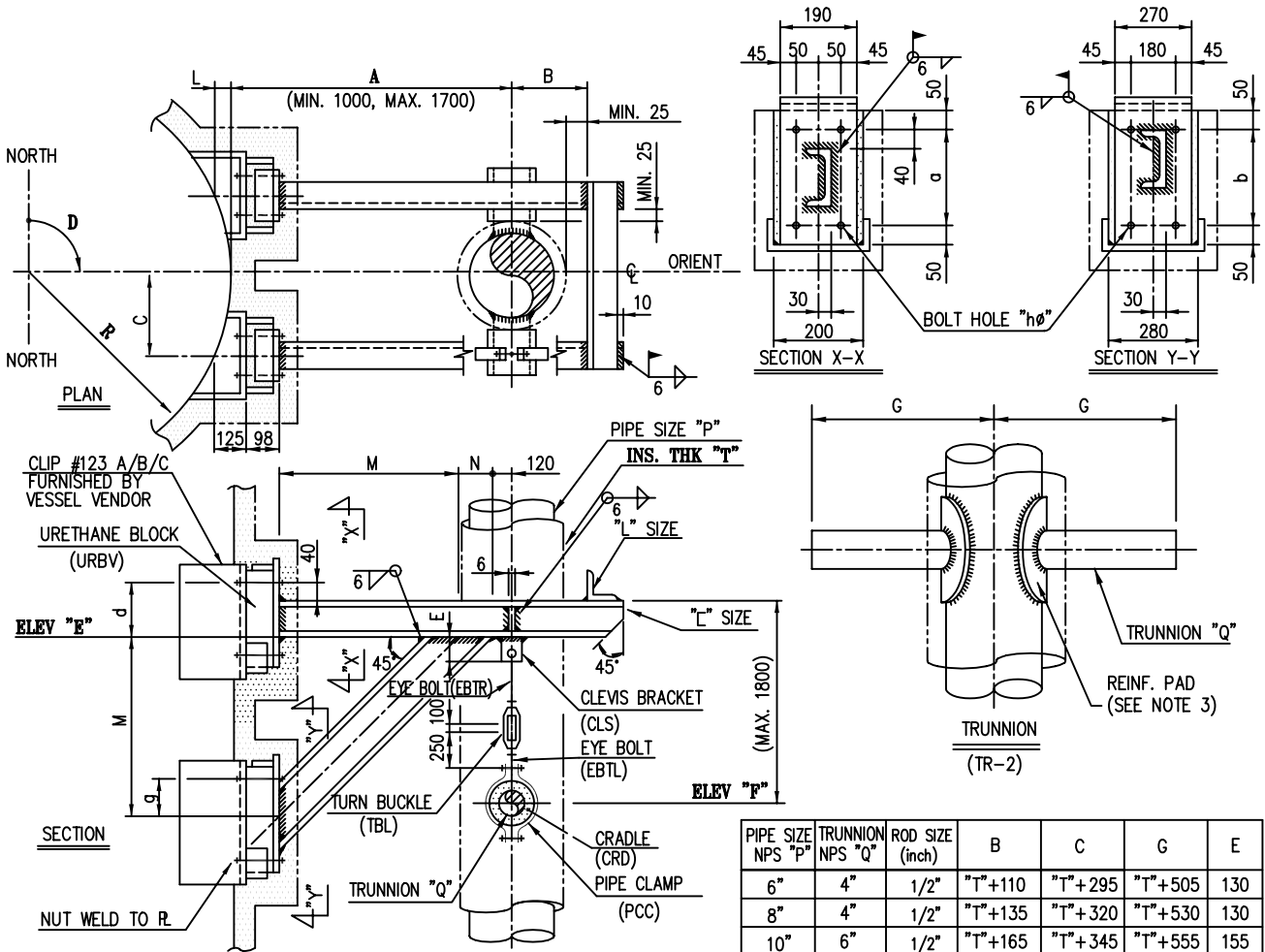
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1344

RESTING **RV-55**
(FOR COLD INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



PIPE SIZE NPS "P"	TRUNNION NPS "Q"	ROD SIZE (inch)	B	C	G	E
6"	4"	1/2"	"T"+110	"T"+295	"T"+505	130
8"	4"	1/2"	"T"+135	"T"+320	"T"+530	130
10"	6"	1/2"	"T"+165	"T"+345	"T"+555	155
12"	8"	3/4"	"T"+190	"T"+375	"T"+585	180
14"	8"	3/4"	"T"+205	"T"+390	"T"+600	180
16"	10"	3/4"	"T"+230	"T"+415	"T"+625	210
18"	10"	3/4"	"T"+255	"T"+440	"T"+650	210
20"	12"	3/4"	"T"+280	"T"+465	"T"+675	235
24"	12"	3/4"	"T"+330	"T"+515	"T"+725	235
26"	14"	1-1/4"	"T"+355	"T"+540	"T"+750	250
28"	14"	1-1/4"	"T"+385	"T"+565	"T"+775	250
30"	16"	1-1/4"	"T"+410	"T"+590	"T"+800	250
32"	16"	1-1/2"	"T"+435	"T"+615	"T"+825	250

UNIT (mm)

CLIP TYPE	CLIP MARK	a	b	d	g	hφ	"C" SIZE	"L" SIZE	Wmax (kg)	
									A ≤ 1200	1200 < A ≤ 1700
A	123A	230	220	190	106	18	C15	A7	3600	3200
B	123B	280	290	240	141	21	C20	A7	5200	4400
C	123C	380	430	340	212	28	C30	A7	8400	7200

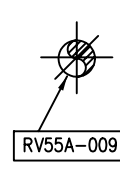
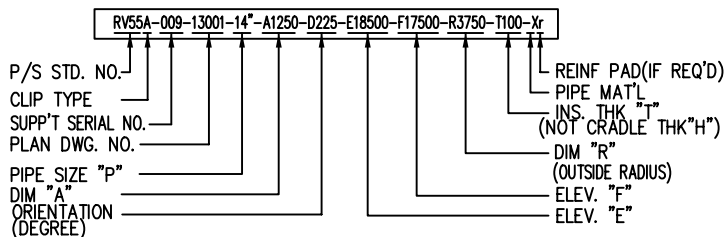
NOTE

- DIM "M"=(A+L)-125-98
DIM "L"=R-√R²-C²
- MATERIAL
- SHAPE STEEL : A36 OR EQ.
- TRUNNION & REINF. PAD : SAME AS RUN PIPE OR MAT'L TABLE.

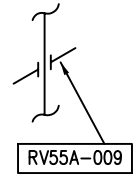
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- SEE DWG. NO. ST-A4-1006/1010/1013/1016 AND ST-A4-1021 FOR THE DETAIL AND ALLOWABLE LOAD OF HANGER ASSEMBLY.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.
- SEE DWG. NO. ST-A4-1021 FOR THE DETAIL OF URNTHANE BLOCK ASSEMBLY.
- SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.

CODE	RUN PIPE	TRUNNION & REINF. PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL CO.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

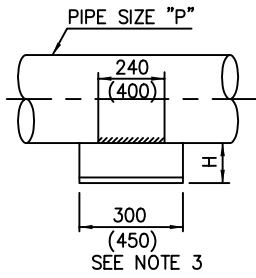
PIPING SUPPORT STANDARD DWG.

ST-A4-1101 (1 OF 2)

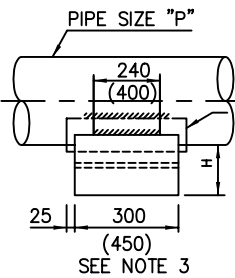
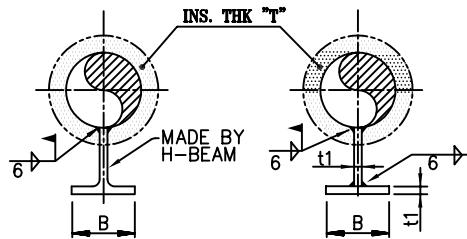
SHOE
(FOR HOT INSULATED PIPE; SLIDE TYPE)

S-1

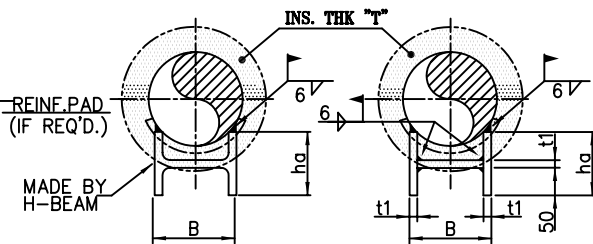
REV
2



2" ~ 8"



10" - 24"



UNIT (mm)

PIPE SIZE NPS "P"	H	STEEL R		*ALLOW. LOAD(Kg)
		B	t1	
2" ~ 2-1/2"	100	100		650
3" ~ 6"		150	9	1900
8"		150		7400
2" ~ 2-1/2"	150	100		600
3" ~ 6"		150	9	1750
8"		150		6300
2" ~ 2-1/2"	200	150		
3" ~ 6"		150	9	
8"		150		

UNIT (mm)

PIPE SIZE NPS "P"	H	ha	STEEL R		*ALLOW. LOAD (Kg)	
			B	t1		
10"	100	123	150	9	7600	
12"		126			6500	
14"		123	200	9	6000	
16"		120			5500	
18"		149			4500	
20"		143	300	12	4000	
22"		138			3500	
24"		135			3000	
10"		150	172	150	9	5500
12"			185			5000
14"	181		200	9	4500	
16"	176				4000	
18"	198				3500	
20"	191		300	12	3000	
22"	186				2500	
24"	182				2300	

UNIT (mm)

PIPE SIZE NPS "P"	H	ha	STEEL R		*ALLOW. LOAD (Kg)	
			B	t1		
10"	200		150	9		
12"						
14"			200	9		
16"						
18"						
20"			300	12		
22"						
24"						
10"		250		150	9	
12"						
14"			200	9		
16"						
18"						
20"			300	12		
22"						
24"						

NOTE

1. MATERIAL

- PARTS DIRECTLY WELDED TO PIPE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	PARTS DIRCTLY WELDED TO PIPE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ A815 (S31803)OR EQ

- OTHERS PART : A36 OR EQ.

2. SHOE HEIGHT

H	INS. TH'K "T"	CODE	H	INS. TH'K "T"	CODE
100	UP TO 75	b	200	126 TO 175	d
150	76 TO 125	c	250	176 TO 225	e

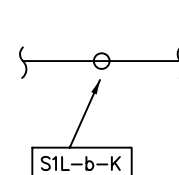
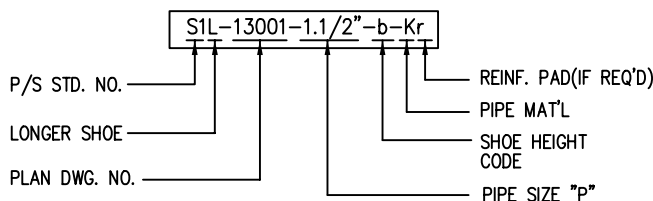
3. WHEN PIPE LONGITUDINAL EXPANSION EXCEEDS 100 mm, A LONGER SHOE WILL BE USED AND DESIGNATED BY ADDING AN "L" TO THE END OF SYMBOL.

4. REINF. PADS ARE REQUIRED FOR 10" & LARGER STAINLESS STEEL PIPE.

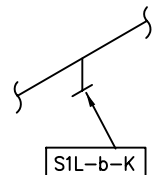
5. FOR LINES 20" & OVER CARBON STEEL PIPE AND THOSE WITH WALL THICKNESS LESS THAN STANDARD WEIGHT SHALL BE CHECKED TO DETERMINE THE NEED FOR REINFORCING PAD.

6. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

SYMBOL & CODING



PLAN



ISO



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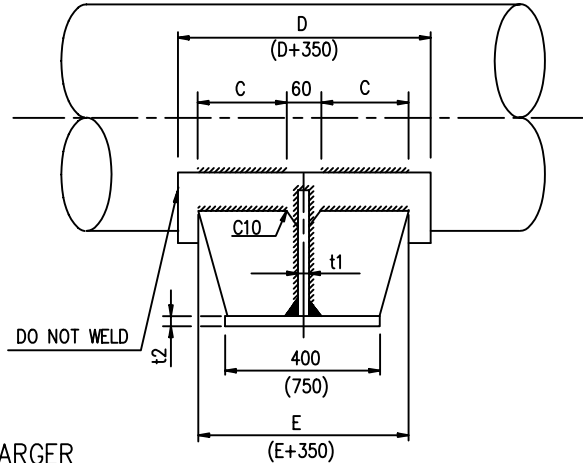
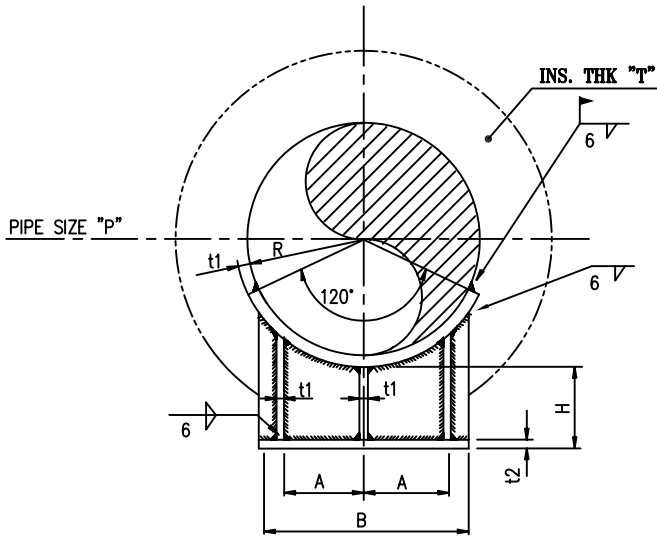
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1101 (2 OF 2)

SHOE **S-1**
(FOR 26" & LARGER HOT INSULATED PIPE;
SLIDE TYPE)

REV
2



26" & LARGER

SEE NOTE 3 FOR DIMENSIONS IN ()

UNIT (mm)

PIPE SIZE NPS "P"	B	A	H	E	C	D	R	t1	t2	WEIGHT (Kg)				* ALLOWABLE LOAD (Kg)			
										H=100	H=150	H=200	H=250	H=100	H=150	H=200	H=250
26"	500	200	H=100	450	220	500	330	9	12	61	67	74	80	17300	15900	14800	13800
28"	530	215		450	220	500	356	9	12	65	71	78	84				
30"	580	240		450	220	500	381	9	12	70	77	83	90				
32"	610	255		450	220	500	407	9	12	74	81	87	94				
34"	660	280	H=200	450	220	500	432	9	12	79	86	93	100				
36"	690	295		450	220	500	457	9	12	83	90	97	104				
40"	760	330	H=250	500	245	550	508	9	12	96	104	111	119				
42"	810	355		500	245	550	533	9	12	102	109	117	125				
44"	840	370	H=250	500	245	550	559	9	12	106	114	121	129				
48"	920	410		500	245	550	610	9	12	115	124	132	140				
52"	1000	450	H=250	500	245	550	660	12	16	166	177	189	200				
54"	1040	470		500	245	550	686	12	16	172	184	195	207				
60"	1150	525	H=250	550	270	600	762	12	16	200	213	225	238				
66"	1270	585		550	270	600	838	12	16	221	234	247	260				
72"	1390	645	H=250	550	270	600	914	12	16	243	256	270	283				
80"	1540	720		550	270	600	1016	12	16	270	284	298	312				

NOTE

1. MATERIAL

- PAD : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	PAD
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ.

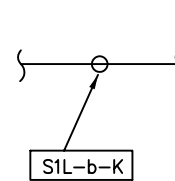
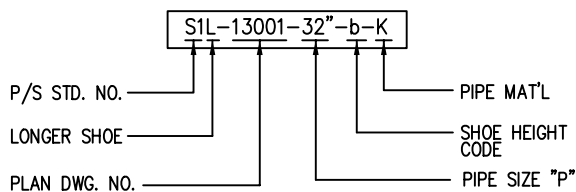
- OTHER PARTS : A36 OR EQ.

2. SHOE HEIGHT

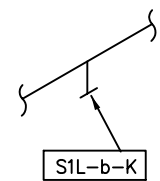
H	INS. TH'K	CODE	H	INS. TH'K	CODE
100	UP TO 75	b	200	126 TO 175	d
150	76 TO 125	c	250	176 TO 225	e

3. WHEN PIPE LONGITUDINAL EXPANSION EXCEEDS 150 mm,
A LONGER SHOE WILL BE USED AND DESIGNATED AN "L"
TO THE END OF SYMBOL.

SYMBOL & CODING



PLAN



ISO



PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

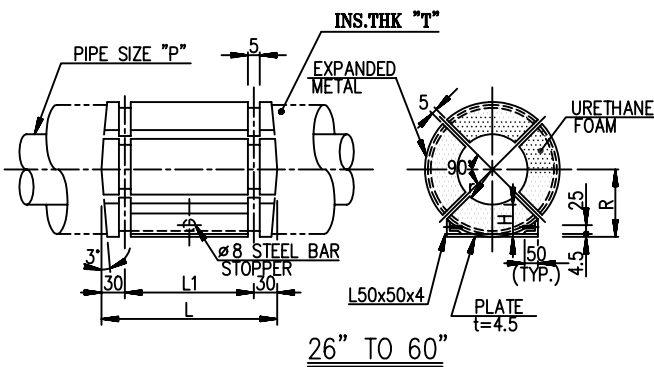
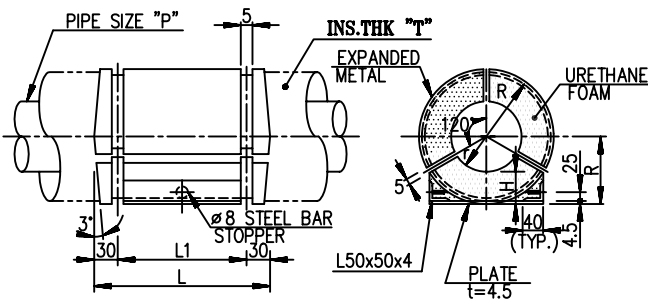
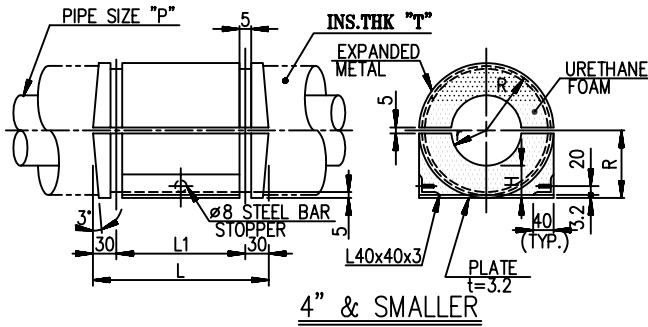
PIPING SUPPORT STANDARD DWG.

ST-A4-1104

CRADLE
(FOR COLD INSULATED PIPE, RESTING TYPE)

S-4

REV
2



UNIT (mm)

COLD INSULATION TH'K "T"	CRADLE TH'K								
	25-50	51-100	101-150	151-200	201-250	251-300			
SHOE HEIGHT CODE	H=50	H=100	H=150	H=200	H=250	H=300			
PIPE SIZE	r	L	L1	R					
1/2"	11	370	310	61	111	161	-	-	-
3/4"	14	370	310	64	114	164	-	-	-
1"	17	370	310	67	117	167	-	-	-
1-1/2"	25	370	310	75	125	175	225	-	-
2"	31	370	310	81	131	181	231	-	-
2-1/2"	37	370	310	87	137	187	237	-	-
3"	45	420	360	95	145	195	245	-	-
4"	58	420	360	108	158	208	258	-	-
5"	71	420	360	121	171	221	271	-	-
6"	85	420	360	135	185	235	285	-	-
8"	110	420	360	160	210	260	310	360	-
10"	137	420	360	187	237	287	337	387	-
12"	162	420	360	212	262	312	362	412	-
14"	178	420	360	228	278	328	378	428	-
16"	204	420	360	254	304	354	404	454	-
18"	229	420	360	279	329	379	429	479	-
20"	254	420	360	304	354	404	454	504	554
24"	305	420	360	355	405	455	505	555	605
26"	331	420	360	381	431	481	531	581	631
28"	356	420	360	406	456	506	556	606	656
30"	381	420	360	431	481	531	581	631	681
32"	407	420	360	457	507	557	607	657	707
34"	432	420	360	482	532	582	632	682	732
36"	458	420	360	508	558	608	658	708	758
40"	508	420	360	558	608	658	708	758	808
42"	534	420	360	584	634	684	734	784	834
44"	559	520	460	609	659	709	759	809	859
48"	610	520	460	660	710	760	810	860	910
52"	661	520	460	711	761	811	861	911	961
54"	686	520	460	736	786	836	886	936	986
60"	762	520	460	812	862	912	962	1012	1062

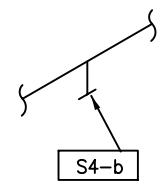
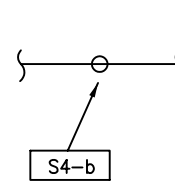
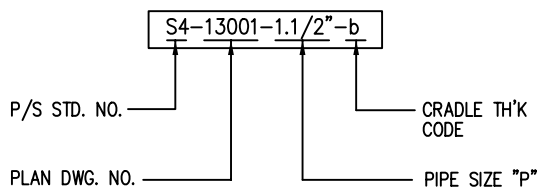
NOTE

1. MATERIAL

- URETHANE FOAM : SEE DWG.NO. ST-A4-1022
- OTHER STEEL PARTS : A36 OR EQ.
- TIE WIRE : GALVANIZED IRON WIRE

- ① UP TO 300mm O.D : BWG #16
- ② 300mm & OVER O.D : BWG #14

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL CO.

OWNER NO.
00-4-pi-1403

Job No. - Unit	Dept.-Code	Serial No.	Rev.
SP 7702-00 11598-00	PD-09	003	2



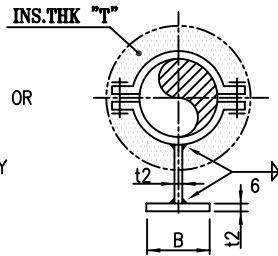
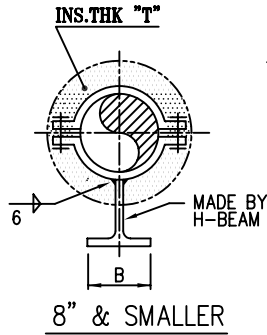
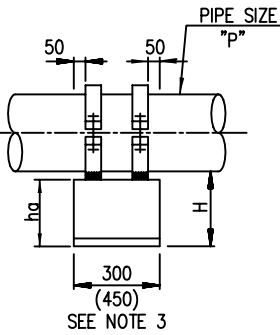
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1105

SHOE **S-5**
(FOR HEAT TREATED PIPE; SLIDE TYPE)

REV
2

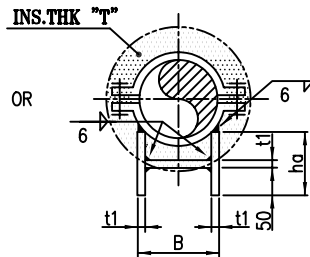
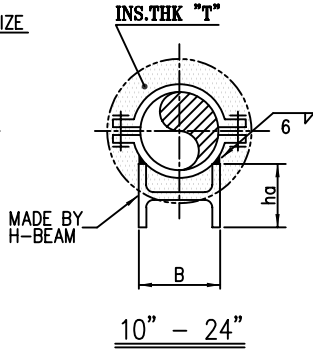
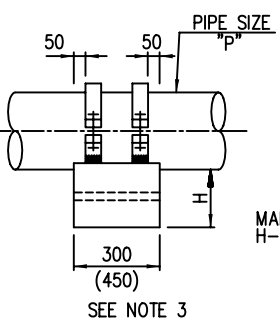


UNIT (mm)

NOM. PIPE SIZE	H	ha	STEEL R.		*ALLOW. LOAD (Kg)
			B	t1	
2"	100	94	100	9	650
3"		94	150		1900
4"		94			
6"		88			
8"	118				

NOM. PIPE SIZE	H	ha	STEEL R.		*ALLOW. LOAD (Kg)
			B	t1	
2"	150	144	100	9	600
3"		144	150		1750
4"		144			
6"		138			
8"	168				

NOM. PIPE SIZE	H	ha	STEEL R.		*ALLOW. LOAD (Kg)
			B	t1	
2"	200	194	100	9	550
3"		194	150		1600
4"		194			
6"		188			
8"	218				



UNIT (mm)

PIPE SIZE NPS "P"	H	ha	STEEL R.		* ALLOW. LOAD(Kg)
			B	t1	
10	100	107	150	9	7400
12"		110	200	9	
14"		104			
16"		101			
18"		130			
20"		121			
22"		116			
24"		113			
10	150	156			150
12"		169	200	9	
14"		162			
16"		157			
18"		179			
20"		169			
22"		164			
24"		160			

PIPE SIZE NPS "P"	H	ha	STEEL R.		ALLOW. LOAD(Kg)
			B	t1	
10"	200	207	150	9	5300
12"		235	200	9	
14"		220			
16"		214			
18"		210			
20"		204			
22"		201			
24"		199			
10"	250	257			150
12"		269	200	9	
14"		249			
16"		288			
18"		275			
20"		267			
22"		263			
24"		260			

2. SHOE HEIGHT

H	INS. TH'K	CODE	H	INS. TH'K	CODE
100	UP TO 75	b	200	126 TO 175	d
150	76 TO 125	c	250	176 TO 225	e

NOTE

1. MATERIAL

- CLAMP, BOLT/NUT

CODE	TEMP.	CLAMP	BOLT & NUT
K	~350°C	A283 GR.B OR EQ.	A307 GR.B
K1	~420°C	A516 GR.60 OR EQ.	A193 B7/A194 2H
Y	~640°C	A387 GR.11 OR EQ.	A193 B7/A194 2H

- SHOE : A36 OR EQ.

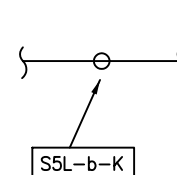
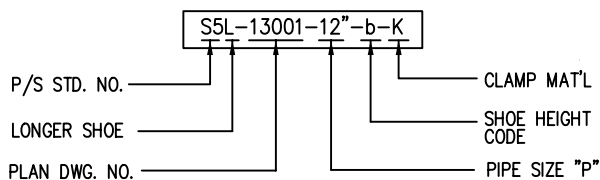
3. WHEN PIPE LONGITUDINAL EXPANSION EXCEEDS 100 mm, A LONGER SHOE WILL BE USED AND DESIGNATED BY ADDING AN "L" TO THE END OF SYMBOL.

4. SEE DWG. NO. ST-A4-1014 FOR THE DETAIL OF CLAMP.

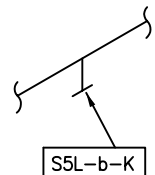
5. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

6. ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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DAELIM

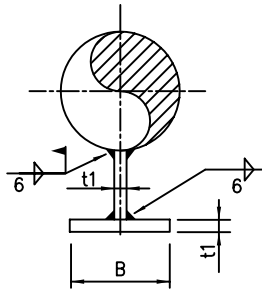
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

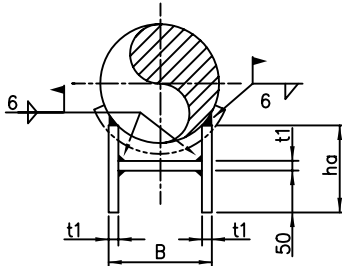
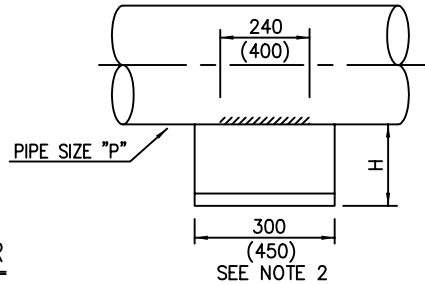
ST-A4-1107

SHOE **S-6**
(FOR BARE AND SLOPE LINE)

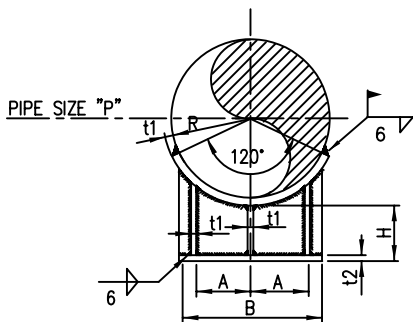
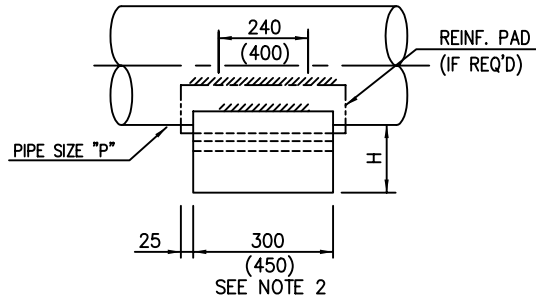
REV
2



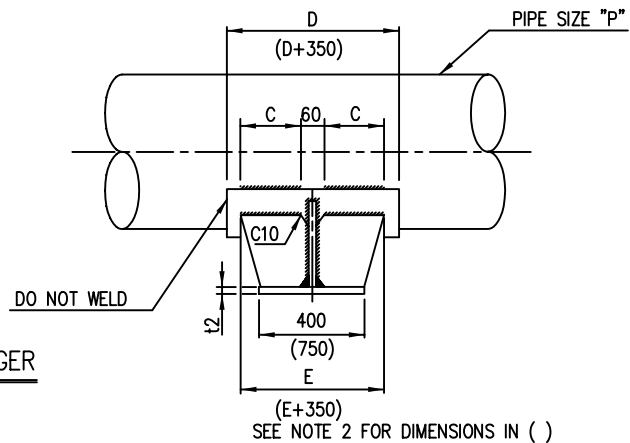
8" & SMALLER



10" - 24"



26" & LARGER



NOTE

1. MATERIAL

- PARTS DIRECTLY WELDED TO PIPE : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	PARTS DIRECTLY WELDED TO PIPE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ. A815 (S31803) OR EQ.

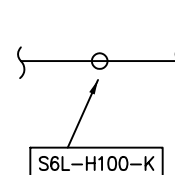
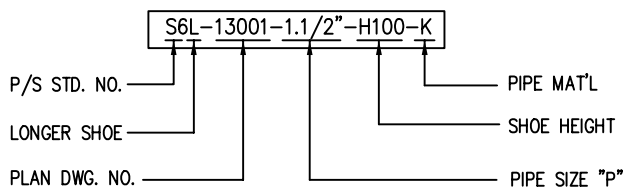
2. WHEN PIPE LONGITUDINAL EXPANSION EXCEEDS 100mm, A LONGER SHOE WILL BE USED AND DESIGNATED BY ADDING AN "L" TO THE END OF SYMBOL.

3. SEE DWG. NO. ST-A4-1101 FOR THE DETAIL OF SHOE.

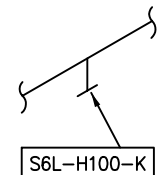
4. REINF. PADS ARE REQUIRED FOR 10" & LARGER STAINLESS STEEL PIPE.

5. FOR LINES 20" THRU 24" ARE CARBON STEEL AND THOSE WITH WALL THICKNESS LESS THAN STANDARD WEIGHT SHALL BE CHECKED TO DETERMINE THE NEED FOR REINFORCING PAD.

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL CO.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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DAELIM

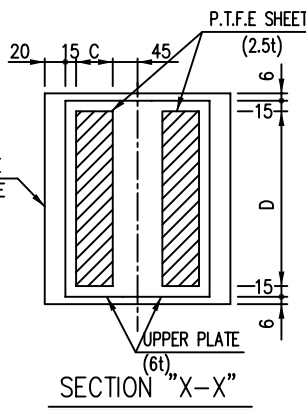
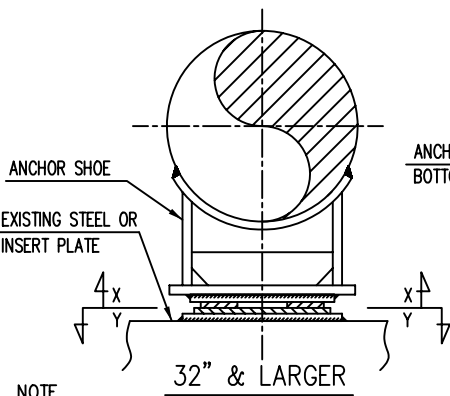
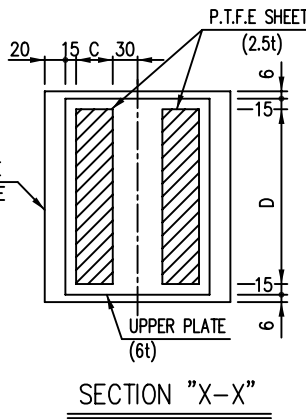
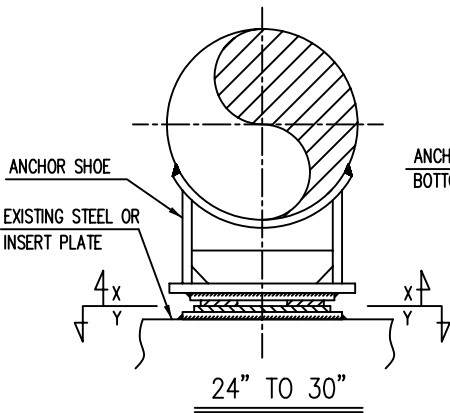
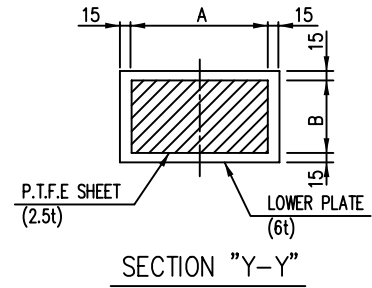
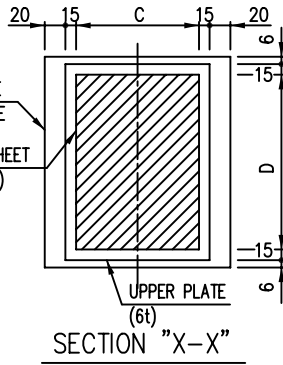
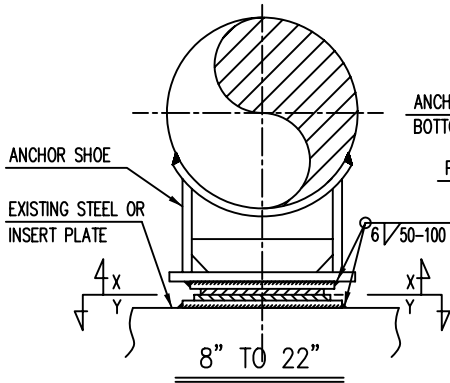
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1110

SLIDING PLATE SHOE S-10
(FOR LOW FRICTION)

REV.
2



PIPE SIZE NPS "P"	UNIT (mm)				
	A	B	C	D	D'
8"	100	70	80	358	558
10"	100	70	80	358	708
12"	150	70	130	358	708
14"	150	70	130	358	708
16"	250	70	230	358	708
18"	250	70	230	358	708
20"	250	70	230	358	708
24"	350	70	135	358	708
26"	450	70	185	358	708
28"	480	70	200	358	708
30"	530	100	225	358	708
32"	560	100	225	358	708
34"	610	100	250	358	708
36"	640	100	265	358	708
40"	710	100	300	358	708
42"	760	100	325	358	708

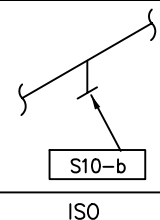
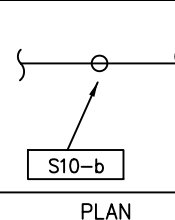
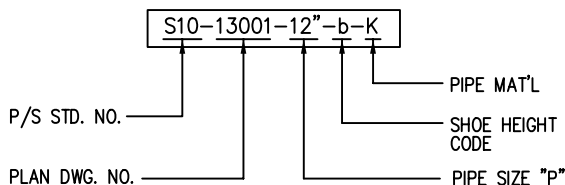
D' IS LONGITUDINAL LENGTH OF BOTTOM PTFE PAD WHEN LONG TYPE SHOE IS USED.

NOTE

- MATERIAL
 - UPPER & LOWER PLATE : A36 OR EQ.
 - SLIDING PAD : VIRGIN PTFE FOR GENERAL USE (BEARING PRESSURE < 70 kg/m), SUB TYPE = L
GLASS FILLED PTFE FOR HEAVY DUTY (BEARING PRESSURE < 140 kg/m₂), SUB TYPE = H
- PTFE PAD SHALL BE BONDED TO THE BACKING PLATE USING A HOT SETTING EPOXY RESIN ADHESIVE.
- PIPE OPERATING TEMPERATURE SHALL NOT EXCEED 200°C.
- SEE DWG. NO. ST-A4-1115 FOR THE DETAIL OF ANCHOR SHOE.
- PROVIDE WETTED CLOTH FOR COOLING TEFLON DURING WELDING.
- CONTINUOUS SPOT WEIDNG IS RECOMMENDED TO REDUCE THE TEMPERATURE OF TEFLON DURING WELDING.

GENERALLY REVISED.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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CONSULTANTS



DAELIM

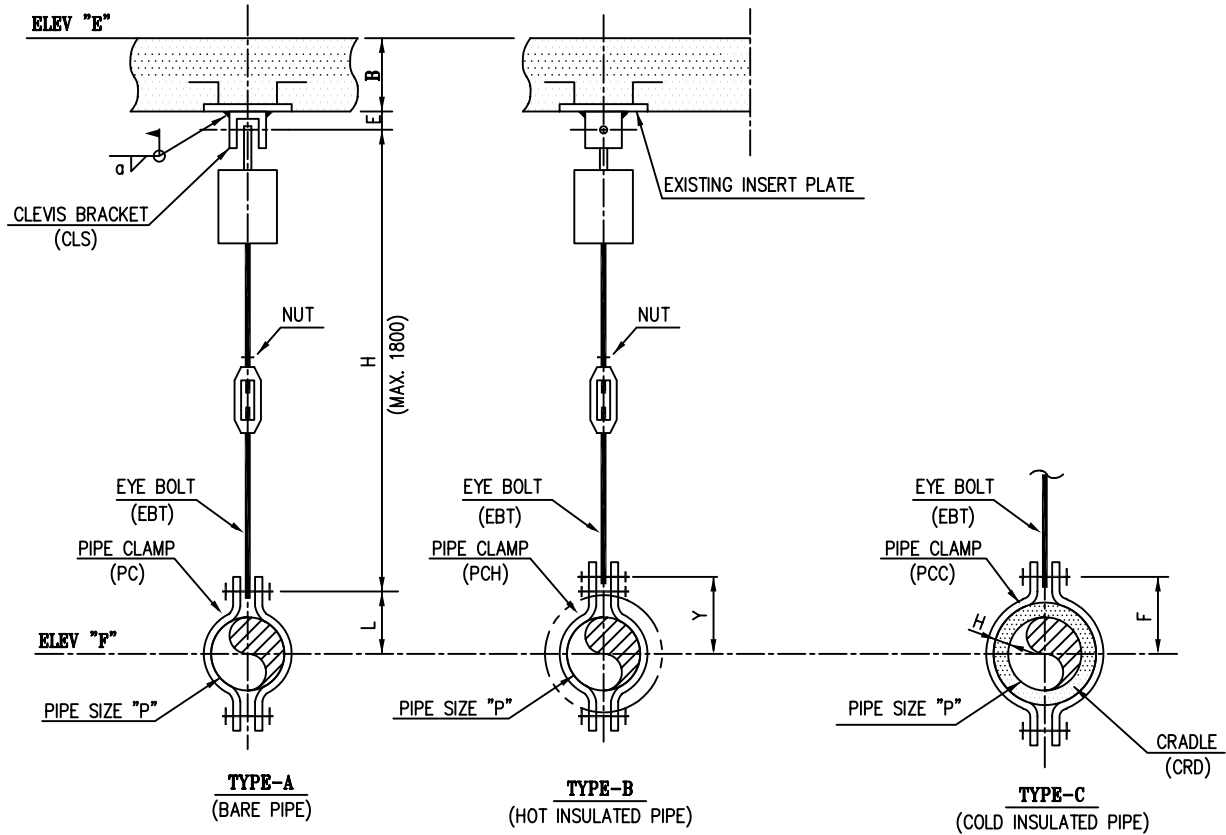
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1351

SPRING SC-21
(HANGER TYPE UNDER CONCRETE)

REV.
2



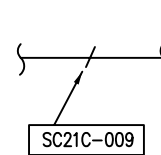
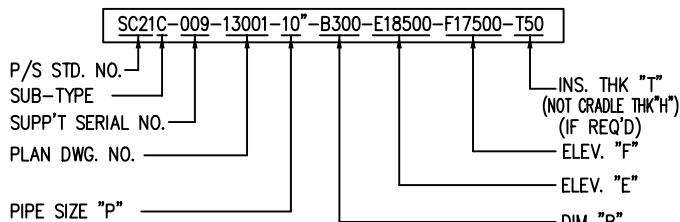
UNIT (mm)

PIPE SIZE NPS "D"	ROD SIZE (inch)	F	Y	L	a	ALLOW. LOAD (Kg)
1-1/2"	3/8"	SEE ST-A4-1016	135	50	6	275
2"	3/8"		145	55	6	275
3"	1/2"		165	75	6	515
4"	5/8"		195	95	6	820
6"	3/4"		260	140	6	1230
8"	1"		300	165	6	2250
10"	1-1/4"		345	205	6	3630
12"	1-1/4"		370	230	6	3630
14"	1-1/4"		420	260	6	3630
16"	1-1/2"		445	285	9	5280
18"	1-1/2"		470	310	9	5280
20"	1-3/4"		520	350	9	7120
24"	1-3/4"		580	400	9	7120

NOTE

- SEE DWG. NO. ST-A4-1006/1013/1010/1014/1015/1016 FOR THE DETAIL OF HANGER ASSEMBLY.
- SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.
- ALL ATTACHMENTS SHALL BE SUPPLIED BY SPRING MANUFACTURER.
- ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

SYMBOL & CODING



PLAN



ISO



SAZEH
CONSULTANTS



DAELIM

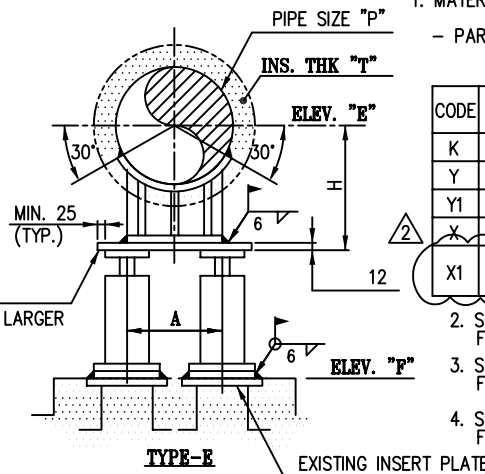
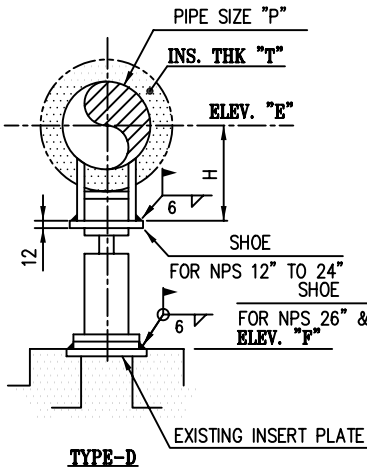
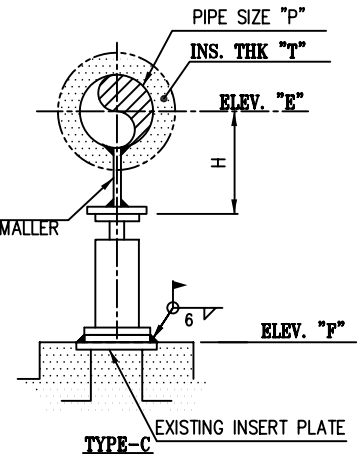
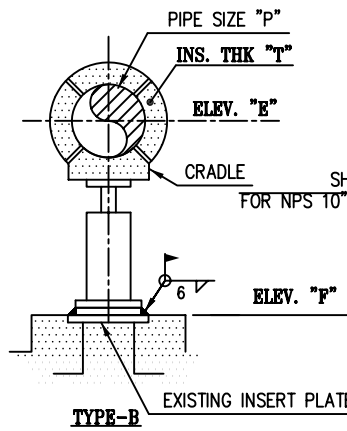
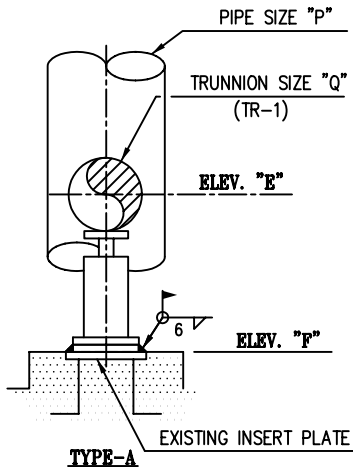
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1356

SPRING SF-61
(T-TYPE ON F/D)

REV.
2



NOTE

1. MATERIAL

- PARTS DIRECTLY WELDED TO PIPE :
SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	PARTS DIRECTLY WELDED TO PIPE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TR304, TR316	A240-304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ. A815 (S31803) OR EQ.

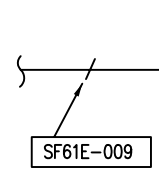
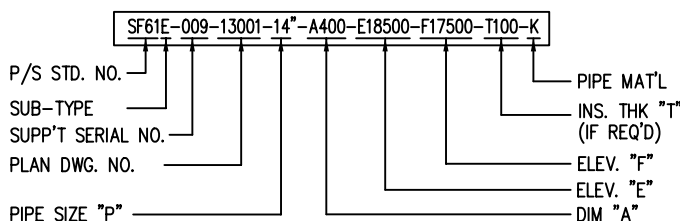
- SEE DWG. NO. ST-A4-1346 FOR THE DETAIL OF TRUNNION.
- SEE DWG. NO. ST-A4-1104 FOR THE DETAIL OF CRADLE (RESTING TYPE)
- SEE DWG. NO. ST-A4-1101 FOR THE DETAIL OF SHOES.

UNIT (mm)

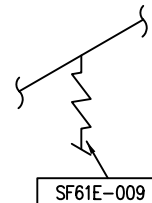
PIPE SIZE NPS "P"	INS. THK "T"	H	PIPE SIZE NPS "P"	INS. THK "T"	H	PIPE SIZE NPS "P"	INS. THK "T"	H
2"	UP TO 75	130	8"	UP TO 75	210	16"	UP TO 75	303
	76 TO 125	180		76 TO 125	260		76 TO 125	353
	125 TO 175	230		125 TO 175	310		125 TO 175	403
	175 TO 225	280		175 TO 225	360		175 TO 225	453
3"	UP TO 75	145	10"	UP TO 75	237	18"	UP TO 75	329
	76 TO 125	195		76 TO 125	287		76 TO 125	379
	125 TO 175	245		125 TO 175	337		125 TO 175	429
	175 TO 225	295		175 TO 225	387		175 TO 225	479
4"	UP TO 75	157	12"	UP TO 75	262	20"	UP TO 75	354
	76 TO 125	207		76 TO 125	312		76 TO 125	404
	125 TO 175	257		125 TO 175	362		125 TO 175	454
	175 TO 225	307		175 TO 225	412		175 TO 225	504
6"	UP TO 75	184	14"	UP TO 75	278	24"	UP TO 75	405
	76 TO 125	234		76 TO 125	328		76 TO 125	455
	125 TO 175	284		125 TO 175	378		125 TO 175	505
	175 TO 225	334		175 TO 225	428		175 TO 225	555

PIPE SIZE NPS "P"	TRUNNIONS NPS "Q"
1-1/2"	1"
2"	1-1/2"
3"	2"
4"	2"
6"	4"
8"	4"
10"	6"
12"	8"
14"	8"
16"	10"
18"	10"
20"	12"
24"	12"

SYMBOL & CODING



PLAN



ISO

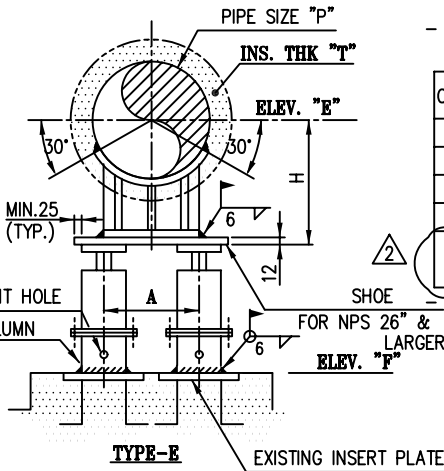
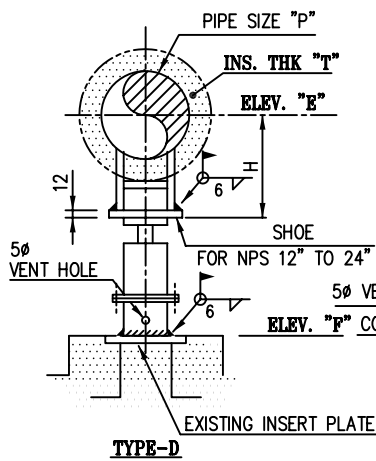
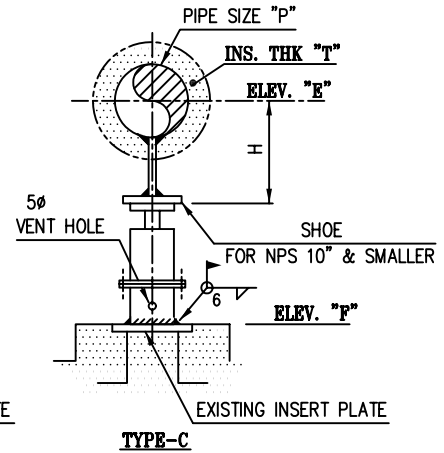
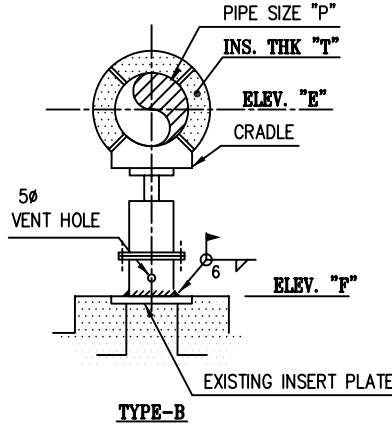
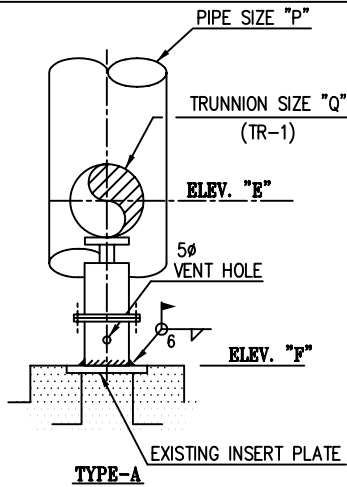


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1357

SPRING SF-62
(T-TYPE ON F/D)

REV.
2



NOTE

1. MATERIAL

- PARTS DIRECTLY WELDED TO PIPE :
SMAE AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	PARTS DIRECTLY WELDED TO PIPE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ. A815 (S31803) OR EQ.

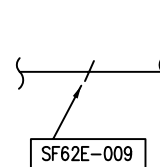
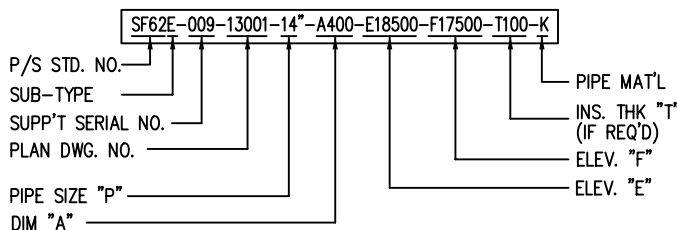


- OTHERS : A36 OR EQ.
- 2. SEE DWG. NO. ST-A4-1346 FOR THE DETAIL OF TRUNNION.
- 3. SEE DWG. NO. ST-A4-1104 FOR THE DETAIL OF CRADLE (RESTING TYPE)
- 4. SEE DWG. NO. ST-A4-1101 FOR THE DETAIL OF SHOES.

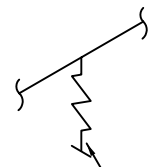
UNIT (mm)								
PIPE SIZE NPS "P"	INS. THK "T"	H	PIPE SIZE NPS "P"	INS. THK "T"	H	PIPE SIZE NPS "P"	INS. THK "T"	H
2"	UP TO 75	130	8"	UP TO 75	210	16"	UP TO 75	303
	76 TO 125	180		76 TO 125	260		76 TO 125	353
	125 TO 175	230		125 TO 175	310		125 TO 175	403
	175 TO 225	280		175 TO 225	360		175 TO 225	453
3"	UP TO 75	145	10"	UP TO 75	237	18"	UP TO 75	329
	76 TO 125	195		76 TO 125	287		76 TO 125	379
	125 TO 175	245		125 TO 175	337		125 TO 175	429
	175 TO 225	295		175 TO 225	387		175 TO 225	479
4"	UP TO 75	157	12"	UP TO 75	262	20"	UP TO 75	354
	76 TO 125	207		76 TO 125	312		76 TO 125	404
	125 TO 175	257		125 TO 175	362		125 TO 175	454
	175 TO 225	307		175 TO 225	412		175 TO 225	504
6"	UP TO 75	184	14"	UP TO 75	278	24"	UP TO 75	405
	76 TO 125	234		76 TO 125	328		76 TO 125	455
	125 TO 175	284		125 TO 175	378		125 TO 175	505
	175 TO 225	334		175 TO 225	428		175 TO 225	555

PIPE SIZE NPS "P"	TRUNNIONS NPS "Q"
1-1/2"	1"
2"	1-1/2"
3"	2"
4"	2"
6"	4"
8"	4"
10"	6"
12"	8"
14"	8"
16"	10"
18"	10"
20"	12"
24"	12"

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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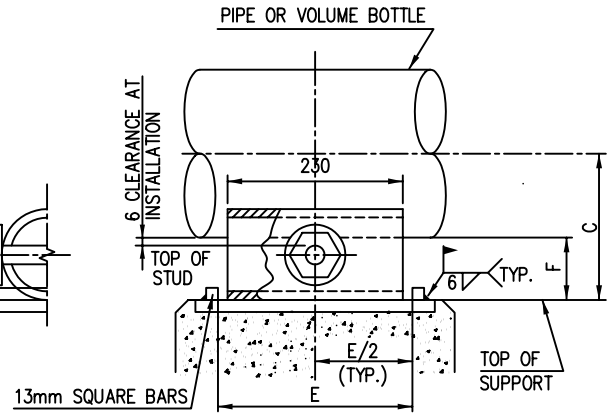
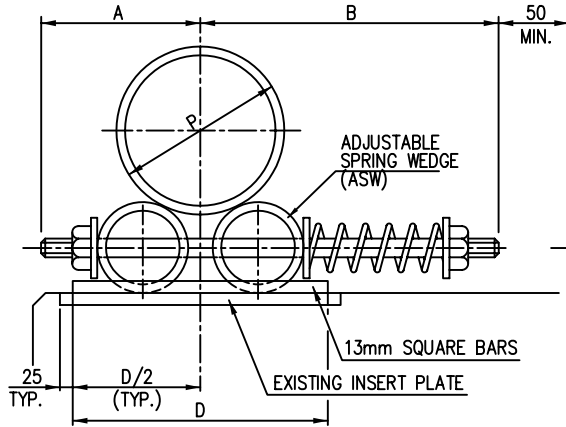
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1358

SPRING WEDGE SF-71
(FOR VIBRATION LINES)

REV.
2



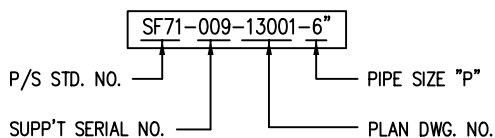
UNIT (mm)

PIPE SIZE	A	B	C	D	E	F	SPRING
							COMPRESS FOR INSTALLATION (NOTE 2)
2"	120	180	73	170	160	43	13
3"	120	180	87	170	160	43	
4"	120	180	100	170	160	43	
6"	140	210	130	200	160	46	13
8"	140	210	156	200	160	46	
10"	200	270	197	300	160	60	
12"	200	270	222	300	160	60	18
14"	200	270	238	300	160	60	
16"	220	290	264	330	235	60	
18"	220	290	289	330	235	60	
20"	220	290	314	330	235	60	
24"	240	370	368	380	235	64	25
26"	240	370	394	380	235	64	
28"	240	370	419	380	235	64	
30"	240	370	445	380	235	64	
32"	240	370	470	380	235	64	
34"	265	395	495	450	235	64	
36"	265	395	521	450	235	64	
38"	265	395	546	450	235	64	30
40"	265	395	572	450	235	64	
42"	265	395	597	450	235	64	
44"	265	395	622	450	235	64	
46"	265	395	648	450	235	64	
48"	290	420	673	500	235	64	
50"	290	420	699	500	235	64	
52"	290	420	724	500	235	64	
54"	290	420	749	500	235	64	
60"	290	420	826	500	235	64	

NOTE

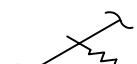
- VERTICAL MOVEMENTS OF PIPING DUE TO THERMAL EXPANSION SHALL NOT EXCEED 3mm.
- SPRING SHALL BE INSTALLED AS INITIALLY COMPRESSED.
- SEE DWG. NO. ST-A4-1028 FOR THE DETAIL OF ADJUSTABLE SPRING WEDGE.

SYMBOL & CODING



SF71-009

PLAN



SF71-009

ISO



SAZEH
CONSULTANTS



DAELIM

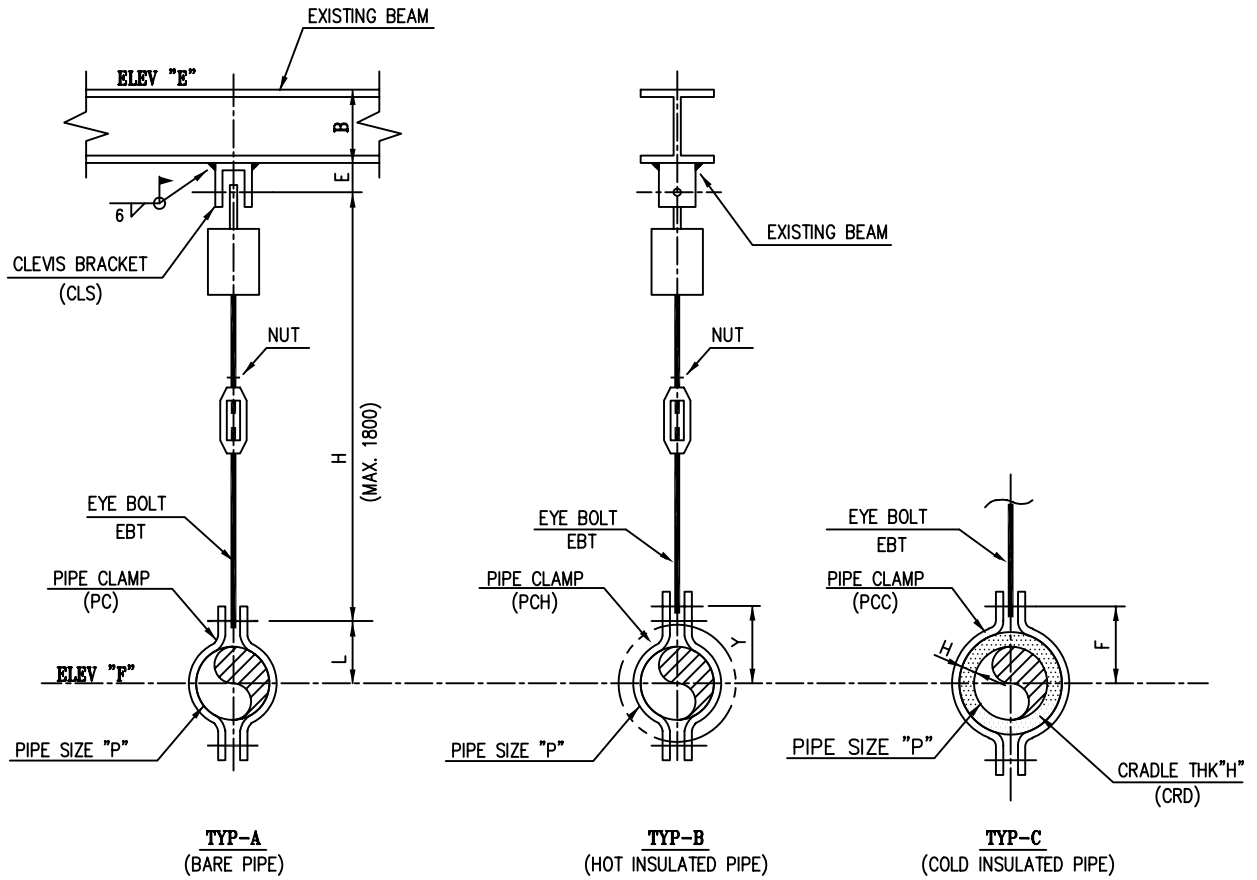
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1361

SPRING SS-21
(HANGER TYPE UNDER STRUCTURE)

REV.
2



NOTE

- MATERIAL
- CLAMP, BOLT/NUT

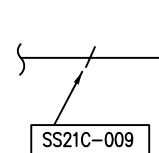
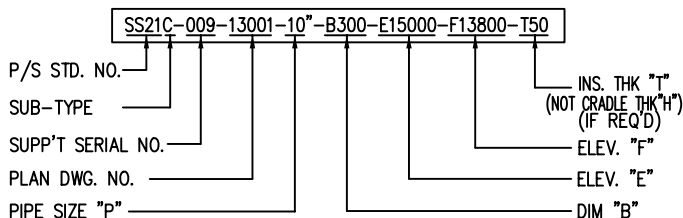
CODE	RUN PIPE	PARTS DIRECTLY WELDED TO PIPE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803) OR EQ. A790 (S31803) OR EQ.

- ALL ATTACHMENTS SHALL BE SUPPLIED BY SPRING MANUFACTURER.
- SEE DWG. NO. ST-A4-1006/1010/1013/1015/1016 FOR THE DETAIL AND ALLOWABLE LOAD OF HANGER ASSEMBLY.
- SEE DWG. NO. ST-A4-1019 FOR CRADLE (CRD)

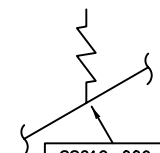
- ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

PIPE SIZE NPS "P"	ROD SIZE (inch)	UNIT (mm)					
		F	Y	L	E	a	ALLOW. LOAD (Kg)
1-1/2"	3/8"	SEE ST-A4-1016	135	50	50	6	275
2"	3/8"		145	55	50	6	275
3"	1/2"		165	75	50	6	515
4"	5/8"		195	95	50	6	820
6"	3/4"		260	140	50	6	1230
8"	1"		300	165	75	6	2250
10"	1-1/4"		345	205	75	6	3630
12"	1-1/4"		370	230	75	6	3630
14"	1-1/4"		420	260	90	6	3630
16"	1-1/2"		445	285	90	9	5280
18"	1-1/2"		470	310	90	9	5280
20"	1-3/4"		520	350	90	9	7120
24"	1-3/4"		580	400	90	9	7120

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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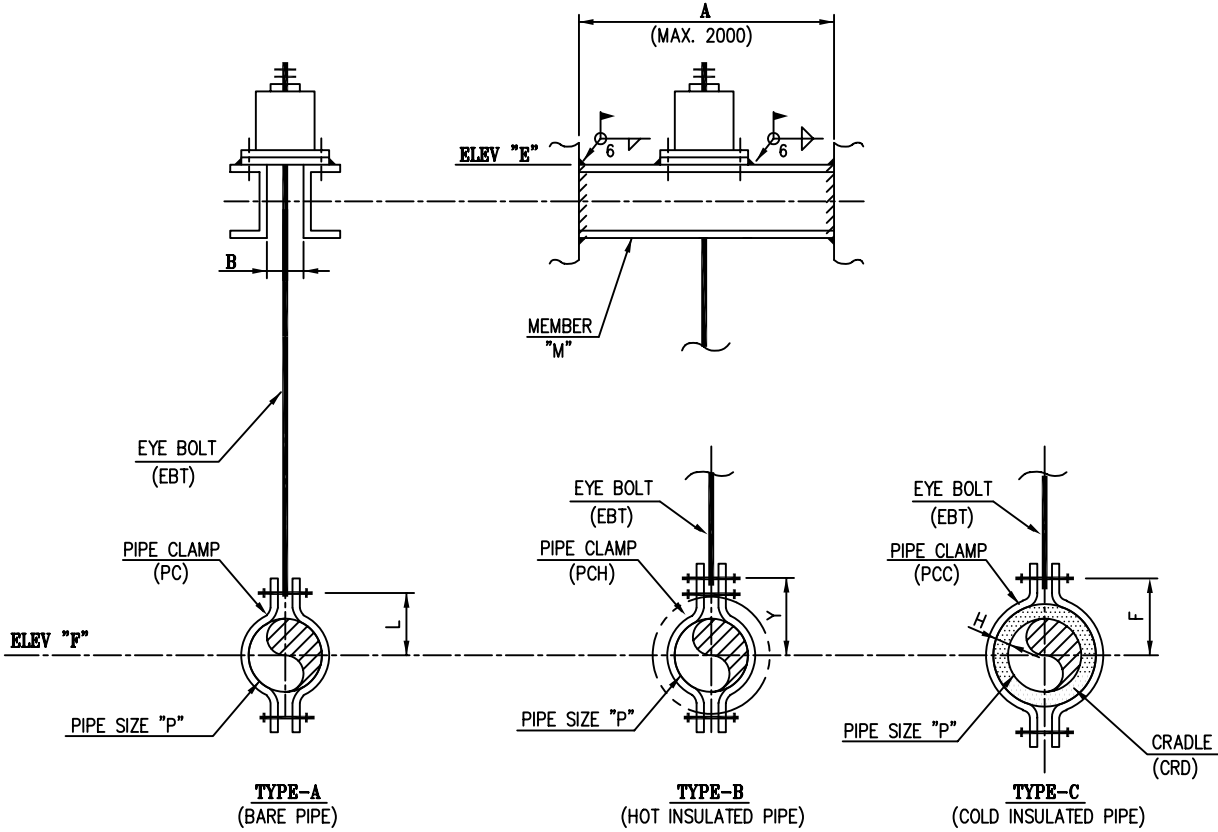
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1364

SPRING **SS-22**
(HANGER TYPE ON STRUCTURE)

REV.
2



NOTE

- MATERIAL
- CLAMP, BOLT/NUT

CODE	RUN PIPE	PARTS DIRECTLY WELDED TO PIPE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803) OR EQ A790 (S31803) OR EQ

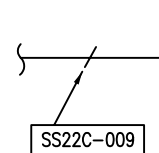
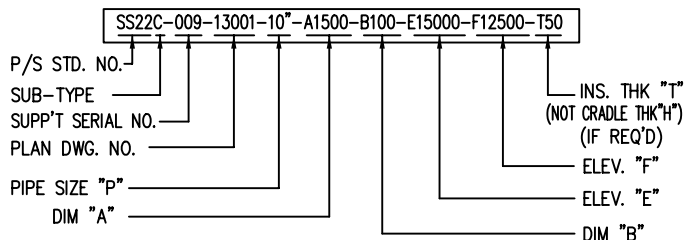
- ALL ATTACHMENTS SHALL BE SUPPLIED BY SPRING MANUFACTURER EXCEPT MEMBER "M".
- SEE DWG. NO. ST-A4-1010/1014/1015/1016 FOR THE DETAIL OF HANGER ASSEMBLY.
- SEE DWG. NO. ST-A4-1019 FOR CRADLE.

- ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

UNIT (mm)

PIPE SIZE NPS "P"	ROD SIZE (inch)	F	Y	L	MEMBER SIZE "M"	ALLOW. LOAD (Kg)
1-1/2"	3/8"	SEE ST-A4-1016	135	50	A6	275
2"	3/8"		145	55	A6	275
3"	1/2"		165	75	A7	515
4"	5/8"		195	95	A10	820
6"	3/4"		260	140	A10	1230
8"	1"		300	165	C10	2250
10"	1-1/4"		345	205	C12	3630
12"	1-1/4"		370	230	C12	3630
14"	1-1/4"		420	260	C12	3630
16"	1-1/2"		445	285	C15	5280
18"	1-1/2"		470	310	C15	5280
20"	1-3/4"		520	350	C20	7120
24"	1-3/4"		580	400	C20	7120

SYMBOL & CODING



PLAN



ISO



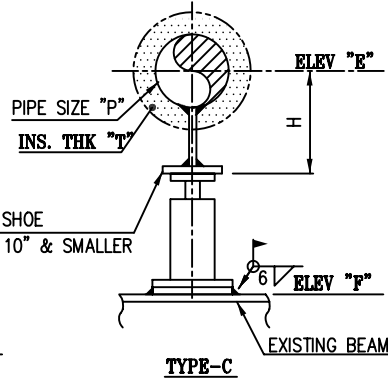
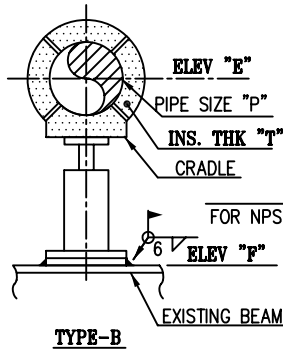
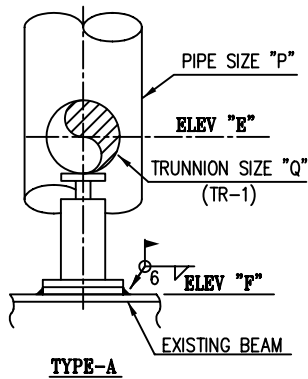
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1362

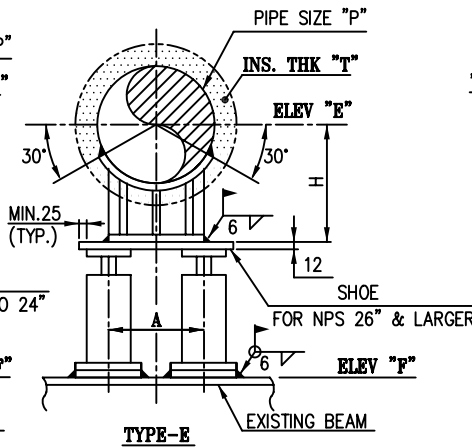
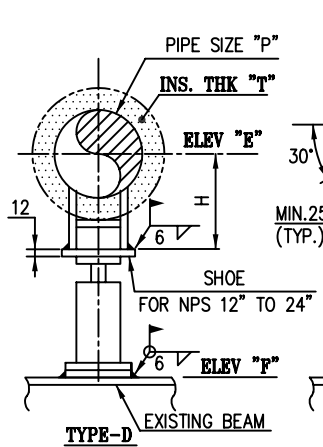
SPRING **SS-61**
(T-TYPE ON STRUCTURE)

REV.
2

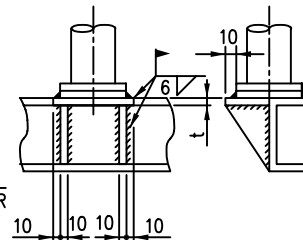


TRUNNION SIZE "Q"

PIPE SIZE NPS "P"	TRUNNIONS NPS "Q"
1-1/2"	1"
2"	1-1/2"
3"	2"
4"	2"
6"	4"
8"	4"
10"	6"
12"	8"
14"	8"
16"	10"
18"	10"
20"	12"
24"	12"



IN CASE OF EXISTING BEAM ARE
"L" STEEL INSTALL RIB PLATE AS BELOW



NOTE

UNIT (mm)

PIPE SIZE NPS "P"	INS. THK "T"	H	PIPE SIZE NPS "P"	INS. THK "T"	H	PIPE SIZE NPS "P"	INS. THK "T"	H
2"	UP TO 75	130	8"	UP TO 75	210	16"	UP TO 75	303
	76 TO 125	180		76 TO 125	260		76 TO 125	353
	125 TO 175	230		125 TO 175	310		125 TO 175	403
	175 TO 225	280		175 TO 225	360		175 TO 225	453
3"	UP TO 75	145	10"	UP TO 75	237	18"	UP TO 75	329
	76 TO 125	195		76 TO 125	287		76 TO 125	379
	125 TO 175	245		125 TO 175	337		125 TO 175	429
	175 TO 225	295		175 TO 225	387		175 TO 225	479
4"	UP TO 75	157	12"	UP TO 75	262	20"	UP TO 75	354
	76 TO 125	207		76 TO 125	312		76 TO 125	404
	125 TO 175	257		125 TO 175	362		125 TO 175	454
	175 TO 225	307		175 TO 225	412		175 TO 225	504
6"	UP TO 75	184	14"	UP TO 75	278	24"	UP TO 75	405
	76 TO 125	234		76 TO 125	328		76 TO 125	455
	125 TO 175	284		125 TO 175	378		125 TO 175	505
	175 TO 225	334		175 TO 225	428		175 TO 225	555

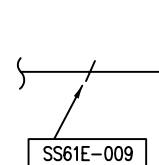
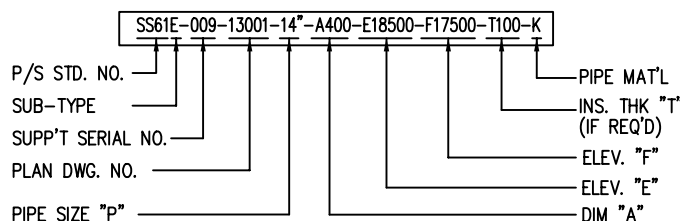
1. MATERIAL

- PARTS DIRECTLY WELDED TO PIPE :
SAME AS RUN PIPE OR MAT'L TABLE.

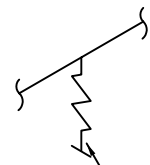
CODE	RUN PIPE	PARTS DIRECTLY WELDED TO PIPE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A815 (S31803) OR EQ.
		A790 (S31803) OR EQ.

- SEE DWG. NO. ST-A4-1346 FOR THE DETAIL OF TRUNNION.
- SEE DWG. NO. ST-A4-1104 FOR THE DETAIL OF CRADLE (RESTING TYPE)
- SEE DWG. NO. ST-A4-1101 FOR THE DETAIL OF SHOES.

SYMBOL & CODING



PLAN



ISO



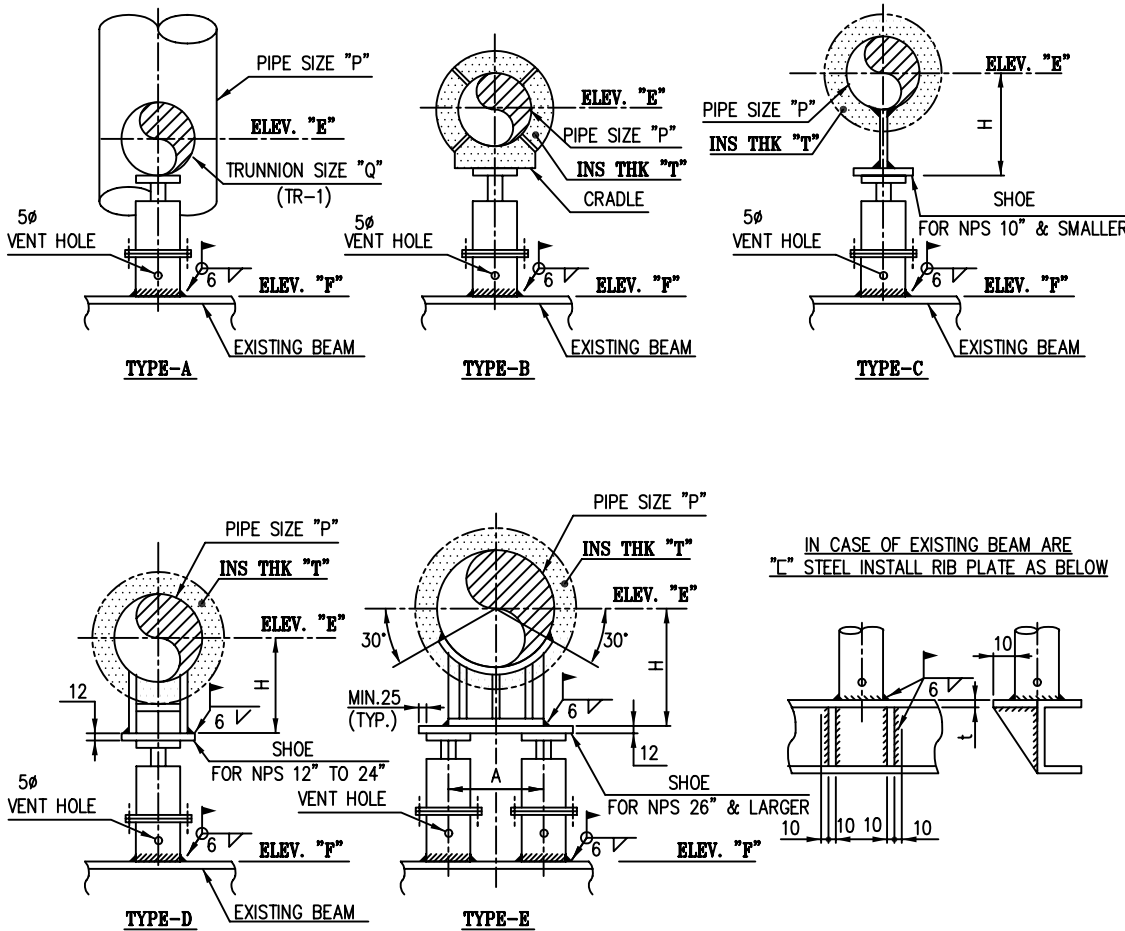
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1363

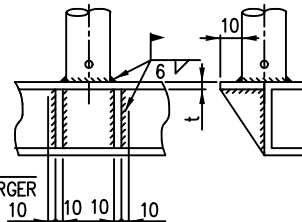
SPRING **SS-62**
(T-TYPE ON STRUCTURE)

REV.
2



TRUNNION SIZE "Q"	
PIPE SIZE NPS "P"	TRUNNIONS NPS "Q"
1-1/2"	1"
2"	1-1/2"
3"	2"
4"	2"
6"	4"
8"	4"
10"	6"
12"	8"
14"	8"
16"	10"
18"	10"
20"	12"
24"	12"

IN CASE OF EXISTING BEAM ARE
"L" STEEL INSTALL RIB PLATE AS BELOW



UNIT (mm) NOTE

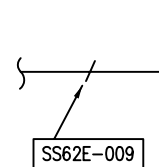
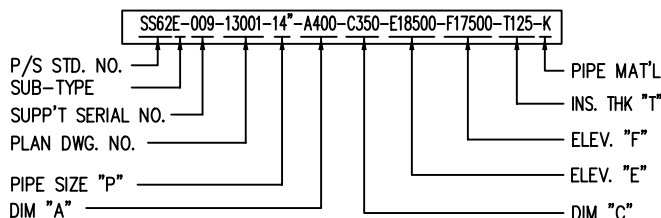
PIPE SIZE NPS "P"	INS. THK "T"	H	PIPE SIZE NPS "P"	INS. THK "T"	H	PIPE SIZE NPS "P"	INS. THK "T"	H
2"	UP TO 75	130	8"	UP TO 75	210	16"	UP TO 75	303
	76 TO 125	180		76 TO 125	260		76 TO 125	353
	125 TO 175	230		125 TO 175	310		125 TO 175	403
	175 TO 225	280		175 TO 225	360		175 TO 225	453
3"	UP TO 75	145	10"	UP TO 75	237	18"	UP TO 75	329
	76 TO 125	195		76 TO 125	287		76 TO 125	379
	125 TO 175	245		125 TO 175	337		125 TO 175	429
	175 TO 225	295		175 TO 225	387		175 TO 225	479
4"	UP TO 75	157	12"	UP TO 75	262	20"	UP TO 75	354
	76 TO 125	207		76 TO 125	312		76 TO 125	404
	125 TO 175	257		125 TO 175	362		125 TO 175	454
	175 TO 225	307		175 TO 225	412		175 TO 225	504
6"	UP TO 75	184	14"	UP TO 75	278	24"	UP TO 75	405
	76 TO 125	234		76 TO 125	328		76 TO 125	455
	125 TO 175	284		125 TO 175	378		125 TO 175	505
	175 TO 225	334		175 TO 225	428		175 TO 225	555

- MATERIAL
- PARTS DIRECTLY WELDED TO PIPE :
SAME AS RUN PIPE OR MAT'L TABLE.

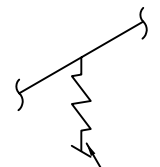
CODE	RUN PIPE	PARTS DIRECTLY WELDED TO PIPE
K	A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
Y	A335 P11	A387 GR.11 OR EQ.
Y1	A335 P22	A387 GR.22 OR EQ.
X	A312 TP304, TP316	A240-304 OR EQ.
X1	A790 (S31803)	A790 (S31803) OR EQ. A815 (S31803) OR EQ.

- SEE DWG. NO. ST-A4-1346 FOR THE DETAIL OF TRUNNION. 2
- SEE DWG. NO. ST-A4-1104 FOR THE DETAIL OF CRADLE (RESTING TYPE)
- SEE DWG. NO. ST-A4-1101 FOR THE DETAIL OF SHOES.

SYMBOL & CODING



PLAN



ISO



PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

GENERAL NOTES

ST-A4-0001

REV

2

1. THESE STANDARD DRAWINGS COVER THE FIGURE, MATERIAL, LIMIT OF LOCATION & LOADING AND DIMENSIONAL DATA TO BE USED IN THE DESIGN AND FABRICATION OF SUPPORT SYSTEM. IT CONSISTS OF THE FOLLOWING SECTION.

- ST-A4-0000 : STANDARD DWG. LIST
- ST-A4-0001 : GENERAL NOTES
- ST-A4-0002 ~ 0005 : ALLOWABLE LOAD TABLE
- ST-A4-0006 : LOCAL SUPPORT FOUNDATION LOAD TABLE.
- ST-A4-1000 ~ 1032 : PIPING SUPPORT ATTACHMENT DWG.
- ST-A4-1100 ~ 1291 : PIPING SUPPORT STANDARD DWG.
- ST-A4-2001 ~ 2005 : PIPING SUPPORT CLIP DWG.

FOR THE DETAIL APPLICATION IN THE DESIGN AND FABRICATION OF SUPPORT SYSTEM, REFER TO PIPING SUPPORT SPECIFICATION APPLIED IN EACH PROJECT.

2. SUPPORT TYPE SHALL BE SELECTED ACCORDING TO THE APPLICABLE LOCATION LIMIT AND ALLOWABLE LOADS FOR EACH SUPPORT UNDER THE SUPERVISION OF STRESS ENGINEER.
3. UNITS USED HERE FOLLOWS THE METRIC AND KILOGRAM UNITS. HOWEVER, NOMINAL SIZE OF RUN PIPE AND ROD ARE IN ACCORDANCE WITH INCH SYSTEM.
4. MATERIAL AND SIZE OF COMPONENT SHOWN ON DRAWING ARE NOT MANDATORY OPTION. THE EQUIVALENT ONES FROM OTHER CODES AND STANDARDS MAY BE USED PER PROJECT REQUIREMENTS IF THEIR STRENGTH AND MECHANICAL PROPERTIES ARE CONFIRMED TO BE SAME AS THOSE OF EXISTING COMPONENT SPECIFICATION.
5. WELDING SYMBOLS ARE IN ACCORDANCE WITH AWS(AMERICAN WELDING SOCIETY) A2.4-79.
6. SIZE SYMBOL OF MEMBER SHOWN ON DRAWINGS ARE USED FOR FOLLOWING MEMBER SIZE.

MEMBER	SIZE SYMBOL	SIZE DESIGNATION	ALTERNATIVE DESIGNATION	REMARKS
ANGLE	A3	30 x 30 x 3	————	
	A5	50 x 50 x 6	————	
	A6	65 x 65 x 6	60 x 60 x 6	
	A7	75 x 75 x 9	70 x 70 x 7	
	A9	90 x 90 x 10	100 x 100 x 10	
	A10	100 x 100 x 10	————	
CHANNEL	C10	100 x 50 x 5 x 7.5	————	
	C12	125 x 65 x 6 x 8	————	
	C15	150 x 75 x 6.5 x 10	————	
	C20	200 x 90 x 8 x 13.5	————	
	C25	250 x 90 x 9 x 13	————	
	C30	300 x 90 x 9 x 13	————	
H-BEAM	H10	100 x 100 x 6 x 8	100 x 100 x 10 x 10	
	H12	125 x 125 x 6.5 x 9	120 x 120 x 12 x 12	
	H15	150 x 150 x 7 x 10	150 x 150 x 13 x 13	
	H17	175 x 175 x 7.5 x 11	180 x 180 x 24 x 14	
	H20	200 x 200 x 8 x 12	200 x 200 x 17 x 17	
	H25	250 x 250 x 9 x 14	250 x 250 x 20 x 20	
	H30	300 x 200 x 9 x 14	300 x 300 x 20 x 20	

7. UNLESS OTHERWISE SPECIFIED, BOLTS AND NUTS SHALL BE OF HEXAGON TYPE CONFORMING TO ANSI B18.2.1 AND B18.2.2 RESPECTIVELY. AND THEIR THREADS SHALL BE IN CONFORMANCE WITH ANSI B1.1, UNC 2A/2B FOR THE COARSE THREAD SERIES.
8. THE MAXIMUM OPERATING TEMPERATURE FOR SUPPORT IS BASED ON THE APPLIED MATERIAL. THE TEMPERATURE LIMIT FOR MATERIAL IS AS FOLLOWS.

DESCRIPTION	PIPING MATERIAL	SUPPORT MATERIAL		TEMPERATURE RANGE
		PIPE	OTHERS	
CARBON STEEL	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.	A283 GR.C OR EQ.	-29°C ~ 350°C
			A515 GR.60 OR EQ.	-29°C ~ 530°C
	A333 GR.1 OR GR.6	A333 GR.6 OR EQ.	A662 GR.C OR EQ.	-45°C ~ 350°C
ALLOY STEEL	A335 P11	A335 P11 OR EQ.	A387 GR.11 OR EQ.	-29°C ~ 555°C
	A335 P22	A335 P22 OR EQ.	A387 GR.22 OR EQ.	-29°C ~ 595°C
STAINLESS STEEL	A312 TP304 OR TP316	A312 TP304 OR EQ.	A240-304 OR EQ.	-198°C ~ 530°C
	A790 (S31803)	A790 (S31803) OR EQ.	A815 (S31803) OR EQ.	-254°C ~ 530°C



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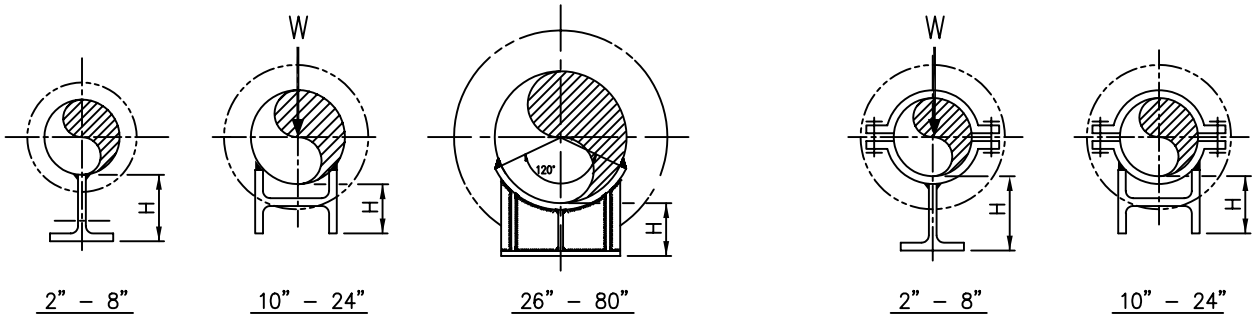
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

ALLOWABLE LOAD TABLE

ST-A4-0002

RESTING TYPE SHOE

REV
2



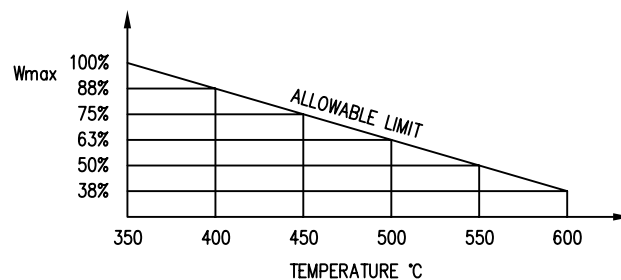
WELDING TYPE

CLAMP TYPE

PIPE		WELDING TYPE SHOE				CLAMP TYPE SHOE				REMARK
		W _{max} (KG) PER SHOE HEIGHT				W _{max} (KG) PER SHOE HEIGHT				
SIZE	THICK.	H=100	H=150	H=200	H=250	H=100	H=150	H=200	H=250	
2"~2-1/2"	STD	650	600	-	-	650	600	550	500	
3"~6"	STD	1900	1750	-	-	1900	1750	1600	1450	
8"	STD	7400	6300	-	-	7400	6300	5300	4500	NOTE 2, 3
10"	STD	7600	5500	-	-					
12"	STD	6500	5000	-	-					
14"	STD	6000	4500	-	-					
16"	STD	5500	4000	-	-					
18"	STD	4500	3500	-	-					
20"	STD	4000	3000	-	-					
22"	STD	3500	2500	-	-					
24"	STD	3000	2300	-	-					
26"~48"	-	17300	15900	14800	13800	17300	15900	14800	13800	NOTE 3
52"~80"	-	19300	18100	17000	16100	19300	18100	17000	16100	

NOTE

- CALCULATION BASIS FOR ALLOWABLE LOADS
 - MAT'L : CARBON STEEL (MAX. TEMP.= 350°C)
 - DYNAMIC LOAD FACTOR = 1.5
 - FRICTION FACTOR = 0.3
 - RUN PIPE THICKNESS = STD. WT.
- FOR 10"-24" CARBON STEEL WELDING TYPE SHOE, THE ALLOWABLE LOADS ARE DEPEND ON THE LOCAL STRESS OF RUN PIPE. THE FOLLOWING CASES MAY INCREASE ALLOWABLE LOADS.
 - IF OPERATING TEMPERATURE IS LOWER THAN 200°C, W_{max} CAN BE INCREASED BY 15%
 - IF RUN PIPE IS THICKER THAN "STD", W_{max} CAN BE INCREASED BY 10%
 - IF CODE STRESS ON PIPE DUE TO BENDING AND PRESSURE IS LOWER THAN 0.2Sh, W_{max} CAN BE INCREASED BY 15%
- IF ACTUAL LOADS EXCEED ALLOWABLE LOADS, CONFIRM TO STRESS ENGINEER OR PERFORM THE DETAIL "LOCAL STRESS ANALYSIS "
- ALLOWABLE LOADS FOR ALLOY/STAINLESS STEEL SUPPORT SHALL BE REDUCED IN PROPORTION TO THE INCREASE OF OPERATING TEMPERATURE AS FOLLOWS.





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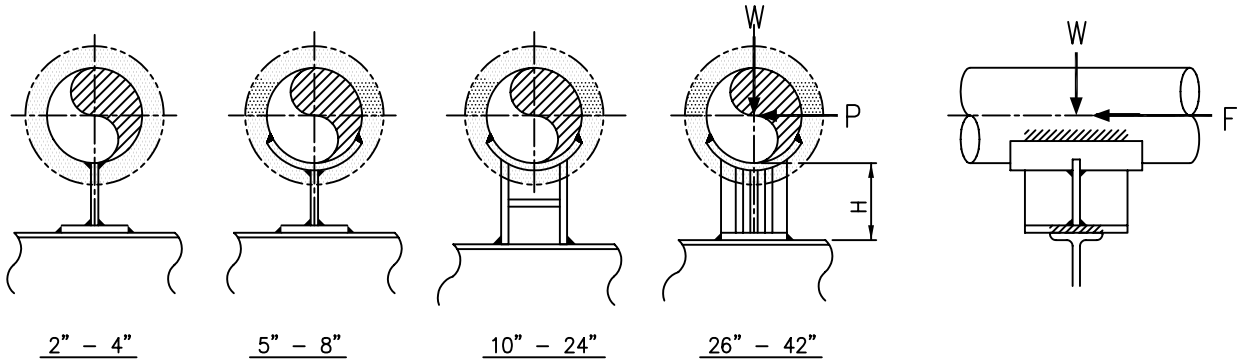
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

ALLOWABLE LOAD TABLE

ST-A4-0003

ANCHOR TYPE SHOE

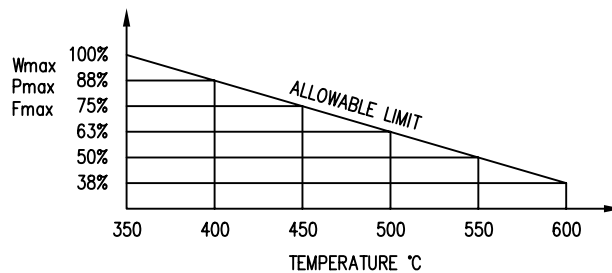
REV
2



PIPE SIZE	Wmax, Pmax, Fmax PER SHOE HEIGHT (KG)											
	H=100			H=150			H=200			H=250		
	Wmax	Pmax	Fmax	Wmax	Pmax	Fmax	Wmax	Pmax	Fmax	Wmax	Pmax	Fmax
2"	400	130	4100	270	80	3000	200	60	2400	170	50	1900
2-1/2"	500	170	4100	350	110	3000	270	80	2300	220	70	1900
3"	700	200	4100	470	150	3000	350	110	2300	270	90	1900
4"	1100	360	4100	750	240	3000	570	180	2300	670	120	1900
5"~6"	1570	530	4000	1100	360	2900	820	270	2300	670	220	1900
8"	2900	1000	3800	2000	760	2800	1500	590	2200	1200	480	1800
10"	12800	5500	8700	10600	4800	7300	9000	4200	6300	7800	3700	5500
12"	13000	6000	8600	10800	5300	7200	9200	4700	6200	8000	4200	5400
14"	13200	6300	8500	11000	5600	7100	9400	5100	6100	8200	4500	5400
16"	13300	6600	8400	11100	6100	7100	9500	5500	6100	8300	5000	5300
18"	13500	6900	8300	11300	6500	7000	9700	5900	6000	8500	5400	5300
20"~22"	13600	5700	8200	11400	3900	6900	9800	3000	6000	8600	2400	5200
24"~26"	13800	7700	8150	11600	7400	6850	10000	7000	5900	8800	6000	5200
28"~34"	13900	8100	8000	11700	7800	6800	10100	7500	5900	9000	7100	5100
36"~42"	14000	8300	7900	11900	8400	6700	10300	8300	5800	9100	8000	5100

NOTE

- CALCULATION BASIS FOR ALLOWABLE LOADS
 - MAT'L : CARBON STEEL (MAX. TEMP.= 350°C)
 - DYNAMIC LOAD FACTOR = 1.5
- EACH Wmax, Pmax, AND Fmax ARE THE MAXIMUM LOADS WHICH ARE APPLIED CONCURRENTLY.
- IF ACTUAL LOADS EXCEED ALLOWABLE LOADS, CONFIRM TO STRESS ENGINEER OR PERFORM THE DETAIL "LOCAL STRESS ANALYSIS"
- ALLOWABLE LOADS FOR ALLOY/STAINLESS STEEL SUPPORT SHALL BE REDUCED IN PROPORTION TO THE INCREASE OF OPERATING TEMPERATURE AS FOLLOWS.





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PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

ALLOWABLE LOAD TABLE

ST-A4-0004 (1 OF 7)

TRUNNION

REV

2

GENERAL NOTES FOR TRUNNION TYPE SUPPORT

1. CALCULATION BASIS FOR ALLOWABLE LOAD TABLE

- MATERIAL

BASE MATERIAL	PIPE/TRUNNION	MAX. OPE. TEMP.(°C)	PIPE/TRUNNION THK.	MAX. CODE STRESS	REINFORCED PAD THK.
CARBON STEEL	A53 GR.B, A106 GR.B	350	SEE TABLE (A~F)	0.6Sh	SAME AS RUN PIPE THK.
	A333 GR.1 OR GR.6	350			
ALLOY STEEL	A335 P11	555			
	A335 P22	595			
STAINLESS STEEL	A312 TP304 OR TP316	530			
	A312 TP321	530			

- IF REINF. PAD IS USED, REINF. PAD MATERIAL SHALL BE SAME AS RUN PIPE AND TRUNNION MATERIAL SHALL BE CARBON STEEL.

- FRICTION FACTOR : 0.3

- WELDING : FILLET WELDING, WELD THICKNESS EQUALS TO TRUNNION THICK. (FULL PENETRATION WELDING MAY INCREASE 10% OF THERMAL EXPANSION LOAD.)

- APPLICABLE CODE : ASME B31.1/31.3, ASME III, CLASS 2&3 FOR RUN PIPE
AISC, ASME III NF FOR TRUNNION AND BASE WELDING TO STRUCTURE

- MAXIMUM ALLOWED DEFLECTION OF TRUNNION TO RESTRAINT DIRECTION < 1.6 (mm)

- STRESS CHECK METHOD : CODE STRESS + LOCAL STRESS < ALLOWABLE STRESS

- DYNAMIC LOAD FACTOR : 1.5

2. IF ACTUAL LOAD EXCEED ALLOWABLE LOADS OR DESIGN CONDITION IS NOT WITHIN THE LIMITATIONS, CONFIRM TO STRESS ENGINEER OR PERFORM THE DETAIL "LOCAL STRESS ANALYSIS"

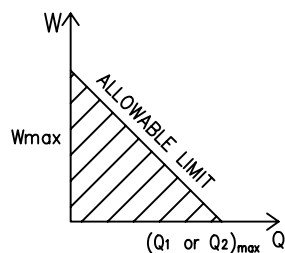
3. THE FOLLOWING CASES MAY INCREASE ALLOWABLE LOADS.

- IF OPERATING TEMPERATURE IS LOWER THAN 200°C FOR CARBON STEEL, 150°C FOR ALLOY STEEL AND STAINLESS STEEL, 150°C FOR ALLOY STEEL AND STAINLESS STEEL, ALLOWABLE LOAD CAN BE INCREASED TO 15% MORE.

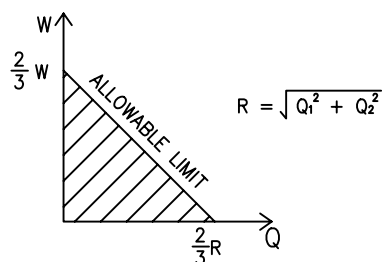
- IF CODE STRESS DUE TO BENDING AND PRESSURE IS LOWER THAN 0.2Sh, ALLOWABLE LOAD CAN BE INCREASED TO 15% MORE.

- IF RUN PIPE IS THICKER THAN TABLE, ALLOWABLE LOAD CAN BE INCREASED TO 10% MORE.

4. FOR GUIDE/ANCHOR TYPE TRUNNION SUPPORT(TABLE-D/E/F), EACH W,Q1,Q2 ARE THE MAXIMUM LOADS WHICH ARE APPLIED INDEPENDENTLY WITHOUT MOMENT LOADS. THE FOLLOWING LIMITATIONS SHALL BE USED WHEN TWO OR THREE DIRECTION LOADS ARE APPLIED CONCURRENTLY.



GUIDE (2-WAY)



ANCHOR/GUIDE (3-WAY)

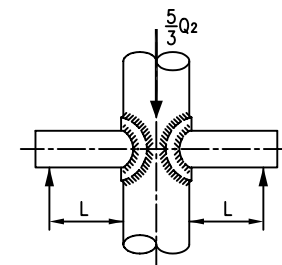


FIG-1

5. FOR THE RISER PIPING SUPPORT, TOTAL LASTING LOADS MAY BE INCREASED TO $\frac{5}{3}Q_2$ AS SHOWN ON FIG-1. Q_2 IS THE VALUE OF EACH TABLE(A~F).

ALLOWABLE LOAD TABLE

ST-A4-0004 (2 OF 7)

RESTING TYPE TRUNNION
(CARBON STEEL)

REV

2

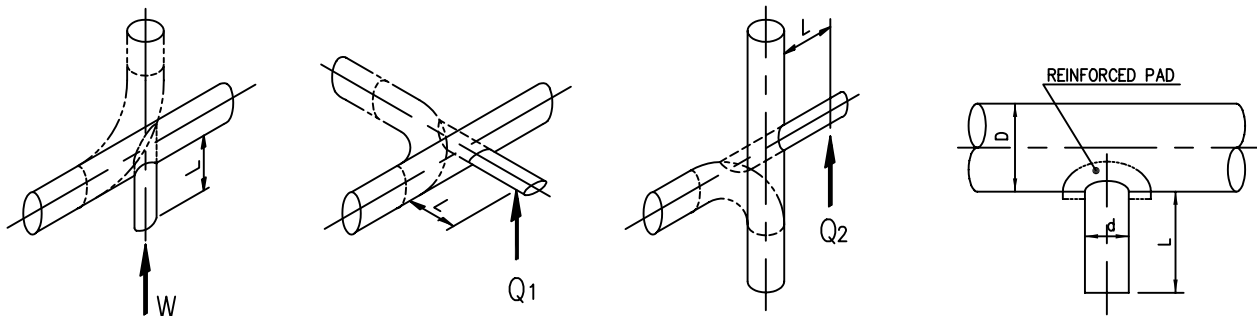


TABLE-A: CARBON STEEL RESTING (A53-B, MAX. OPE.TEMP. : 350°C)

WITHOUT PAD/WITH PAD

RUN PIPE (D)	TRUNNION (d)		MAX. ALLOWABLE LOADS (Kg)															
			L = 300 mm				L = 500 mm				L = 700 mm				L = 1000 mm			
			W	Q ₁	Q ₂		W	Q ₁	Q ₂		W	Q ₁	Q ₂		W	Q ₁	Q ₂	
1-1/2"	80	1"	80	150 250	30 70	50 80	100 160	10 40	30 50	70 90	10 20	20 20	30 30	-	10 10	10 10		
2"	40	1-1/2"	STD	240 440	40 100	100 160	170 290	20 60	60 90	130 220	20 40	40 70	90 100	10 30	30 30	30 30		
	80	1-1/2"	STD	340 510	70 150	130 170	230 320	40 90	80 100	170 230	30 70	50 70	100 100	20 30	30 30	30 30		
3"	40	2"	STD	400 720	80 180	180 270	290 490	50 110	110 170	220 370	30 80	80 120	170 210	20 60	60 60	60 60		
	80	2"	STD	540 860	120 260	220 300	370 540	70 170	140 180	290 390	50 120	100 120	210 210	30 60	60 60	60 60		
4"	40	2"	STD	350 640	70 170	170 250	250 440	40 100	100 150	200 330	30 70	70 110	150 210	20 50	50 60	60 60		
	80	2"	STD	480 840	110 250	210 300	340 540	70 150	130 180	260 390	50 110	90 120	190 210	30 60	60 60	60 60		
6"	40	4"	STD	1250 2600	310 720	820 1270	980 1940	190 450	510 820	810 1550	140 330	370 600	640 1190	90 230	260 430	430 430		
	80	4"	STD	2030 3750	540 1130	1110 1570	1550 2730	330 740	710 1030	1250 2140	240 550	520 740	970 1560	170 390	370 510	510 510		
8"	40	4"	STD	1140 2350	300 690	820 1190	920 1770	180 430	520 760	770 1410	130 310	380 560	610 1090	90 220	270 400	400 400		
	80	4"	STD	1840 3450	510 1090	1040 1480	1410 2520	320 710	660 970	1140 1980	230 520	480 720	890 1500	160 380	340 510	510 510		
10"	40	6"	STD	2300 5080	710 1590	1960 2970	1920 4020	440 1020	1250 1960	1650 3330	310 750	920 1460	1360 2650	220 540	660 1060	1060 1060		
	80	6"	STD	4110 7940	1270 2590	2690 3700	3310 6080	800 1730	1760 2510	2770 4930	590 1300	1310 1900	2230 3840	420 950	940 1370	1370 1370		
12"	STD	8"	STD	3350 7930	1190 2680	3200 5330	2850 6530	730 1730	2050 3590	2480 5540	530 1280	1510 2710	2080 4520	370 920	1080 1980	1980 1980		
	40	8"	STD	3760 8620	1320 2910	3520 5510	3200 7050	820 1890	2280 3730	2790 5960	590 1400	1680 2820	2330 4840	420 1010	1210 2060	2060 2060		
14"	STD	8"	STD	2970 7140	1040 2470	3040 5110	2550 5920	640 1580	1950 3430	2230 5060	460 1170	1430 2580	1880 4150	330 830	1020 1880	1880 1880		
	40	8"	STD	3720 8430	1320 2910	3670 5470	3200 6910	820 1890	2390 3700	2800 5850	590 1400	1770 2800	2360 4760	420 1010	1270 2050	2050 2050		
16"	STD	10"	STD	3940 10000	1530 3750	4470 8250	3430 8550	940 2420	2870 5630	3040 7470	680 1790	2110 4270	2600 6270	480 1280	1510 3130	3130 3130		
	40	10"	STD	5980 13700	2350 5030	6280 9300	5220 11460	1480 3340	4140 6450	4620 9860	1080 2500	3090 4940	3950 8140	760 1810	2240 3660	3660 3660		
18"	STD	10"	STD	3370 8690	1290 3380	4200 7830	2970 7500	790 2160	2680 5310	2650 6600	570 1590	1970 4020	2280 5590	400 1140	1410 2940	2940 2940		
	40	10"	STD	6080 13640	2430 5130	6740 9290	5350 11430	1530 3410	4490 6450	4780 9830	1110 2550	3360 4940	4120 8130	790 1850	2440 3650	3650 3650		
20"	20	12"	STD	4060 10880	1720 4500	5570 10800	3620 9570	1060 2900	3580 7440	3270 8550	760 2140	2630 5670	2850 7360	540 1530	1890 4180	4180 4180		
24"	20	12"	STD	3190 8920	1430 3920	5050 10000	2880 7920	880 2510	3220 6810	2620 7130	630 1840	2360 5170	3200 6200	440 1310	1690 3790	3790 3790		
26"	STD	14"	STD	3370 9710	1590 4420	5800 11690	3070 8720	980 2830	3720 8030	2820 7910	700 2080	2730 6120	2510 6950	490 1480	1950 4500	4500 4500		
28"	STD	14"	STD	3090 9050	1570 4390	5580 11330	2830 8140	960 2810	3560 7740	2600 7410	690 2060	2610 5890	2320 6520	490 1470	1870 4330	4330 4330		
30"	STD	16"	STD	3520 10610	1840 5210	6970 14370	3250 9670	1130 3340	4470 9980	3010 8870	810 2460	3290 7640	2720 7910	570 1760	2360 5650	5650 5650		
32"	STD	16"	STD	3260 9970	1810 5180	6730 13990	3020 9110	1110 3320	4310 9680	2800 8380	800 2440	3170 7400	2540 7480	560 1750	2270 5460	5460 5460		
34"	STD	18"	STD	3650 11440	2090 6020	8170 17200	3400 10540	1280 3860	5270 12060	3180 9770	920 2840	3880 9280	2900 8810	650 2040	2780 6900	6900 6900		
36"	STD	18"	STD	3410 10820	2060 5990	7930 16820	3180 9980	1260 3850	5100 11750	2980 9270	910 2830	3750 9030	2730 8380	640 2030	2690 6690	6690 6690		

NOTE : SEE GENERAL NOTES FOR APPLICATION OF THIS TABLE.



PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

ALLOWABLE LOAD TABLE

ST-A4-0004 (3 OF 7)

RESTING TYPE TRUNNION
(ALLOY STEEL)

REV
2

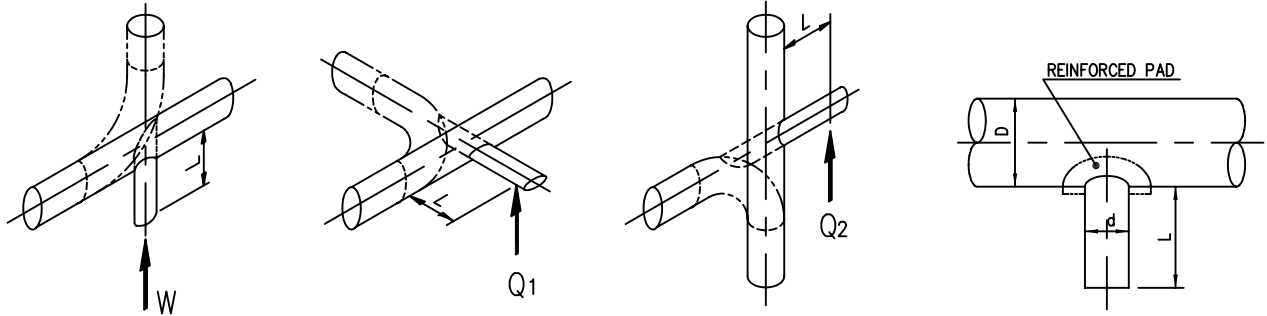


TABLE-B: LOW ALLOY STEEL RESTING (A335-P11, MAX. OPE.TEMP. : 450°C)

WITHOUT PAD/WITH PAD

RUN PIPE (D)	TRUNNION (d)		MAX. ALLOWABLE LOADS (Kg)																								
			L = 300 mm					L = 500 mm					L = 700 mm					L = 1000 mm									
			W	Q ₁	Q ₂	W	Q ₁	Q ₂	W	Q ₁	Q ₂	W	Q ₁	Q ₂	W	Q ₁	Q ₂										
1-1/2"	80	1"	80	130	220	20	60	50	70	80	130	10	30	30	40	60	90	10	20	20	20	30	30	-	-	-	
2"	40	1-1/2"	STD	210	380	30	90	90	130	140	250	20	50	50	80	110	190	10	40	40	60	80	90	10	20	20	20
		80	1-1/2"	STD	290	440	60	130	110	150	190	270	30	80	70	90	150	190	20	60	50	60	90	90	10	20	20
3"	40	2"	STD	350	620	70	160	160	230	250	420	40	100	100	150	190	320	30	70	70	100	140	200	20	50	50	60
		80	2"	STD	460	740	100	230	190	250	320	460	60	140	120	150	250	340	40	100	80	110	180	200	30	60	60
4"	40	2"	STD	300	550	60	140	140	220	220	380	30	90	90	130	170	290	20	60	60	100	130	200	20	40	40	60
		80	2"	STD	420	720	90	210	180	250	290	460	60	130	110	150	220	340	40	100	80	110	160	200	30	60	50
6"	40	4"	STD	1080	2240	270	620	700	1090	850	1680	160	390	440	700	700	1340	120	280	320	520	550	1030	80	200	230	370
		80	4"	STD	1750	3240	460	980	960	1350	1340	2360	290	640	610	880	1080	1850	210	470	450	630	840	1340	150	340	320
8"	40	4"	STD	990	2030	260	590	710	1030	790	1520	160	370	450	660	660	1220	110	270	320	480	530	940	80	190	230	340
		80	4"	STD	1580	2980	440	940	900	1280	1220	2170	270	610	570	830	990	1710	200	450	420	620	770	1300	140	320	300
10"	40	6"	STD	1990	4390	610	1370	1690	2560	1660	3480	380	880	1080	1690	1420	2880	270	650	790	1270	1170	2290	190	460	570	920
		80	6"	STD	3550	6850	1100	2230	2330	3200	2860	5250	690	1500	1520	2170	2390	4260	500	1120	1130	1640	1920	3320	360	820	810
12"	STD	8"	STD	2900	6850	1020	2310	2760	4600	2470	5640	630	1490	1770	3100	2150	4780	460	1100	1310	2340	1800	3900	320	790	930	1710
				40	8"	STD	3250	7450	1140	2510	3040	4760	2770	6090	700	1630	1970	3230	2410	5150	510	1210	1450	2440	2020	4180	360
14"	STD	8"	STD	2560	6170	900	2130	2630	4410	2200	5110	550	1370	1680	2960	1930	4370	400	1010	1240	2230	1630	3580	280	720	880	1620
				40	8"	STD	3210	7280	1140	2510	3170	4720	2760	5960	710	1630	2060	3200	2420	5050	510	1210	1520	2410	2040	4110	360
16"	STD	10"	STD	3400	8630	1320	3240	3860	7120	2970	7380	810	2090	2480	4860	2630	6450	590	1540	1820	3690	2240	5420	410	1110	1300	2710
				40	10"	STD	5170	11830	2030	4350	5420	8030	4510	9900	1280	2880	3580	5570	3990	8520	930	2160	2670	4270	3410	7040	660
18"	STD	10"	STD	2910	7510	1110	2920	3620	6770	2560	6480	680	1870	2320	4590	2290	5700	490	1370	1700	3470	1970	4830	350	980	1210	2540
				40	10"	STD	5250	11790	2100	4430	5820	8020	4620	9870	1320	2940	3880	5570	4130	8490	960	2200	2900	4260	3560	7020	680
20"	20	12"	STD	3510	9400	1490	3890	4810	9330	3130	8260	910	2510	3090	6420	2820	7380	660	1850	2280	4900	2460	6360	460	1330	1630	3610
				STD	2750	7700	1240	3390	4360	8630	2480	6840	760	2160	2780	5880	2260	6160	540	1590	2040	4460	2000	5360	380	1130	1460
26"	STD	14"	STD	2920	8380	1380	3810	5010	10090	2650	7530	840	2440	3210	6930	2440	6830	610	1790	2360	5280	2170	6000	430	1280	1690	3890
				STD	2670	7810	1350	3790	4820	9780	2440	7040	830	2420	3070	6690	2250	6400	600	1780	2260	5080	2010	5630	420	1270	1610
30"	STD	16"	STD	3040	9160	1590	4500	6020	12410	2810	8350	970	2880	3860	8620	2600	7670	700	2120	2840	6600	2350	6830	490	1520	2040	4880
				STD	2820	8610	1560	4470	5810	12090	2600	7860	960	2870	3720	8360	2420	7230	690	2110	2740	6390	2190	6460	480	1510	1960
34"	STD	18"	STD	3150	9880	1800	5200	7060	14860	2940	9100	1100	3340	4550	10410	2750	8440	800	2460	3350	8020	2500	7610	560	1760	2400	5960
				STD	2940	9350	1780	5170	6850	14530	2750	8630	1090	3320	4400	10150	2580	8010	780	2440	3240	7800	2350	7240	550	1750	2320

NOTE : SEE GENERAL NOTES FOR APPLICATION OF THIS TABLE.



PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

ALLOWABLE LOAD TABLE

ST-A4-0004 (4 OF 7)

RESTING TYPE TRUNNION
(STAINLESS STEEL)

REV
2

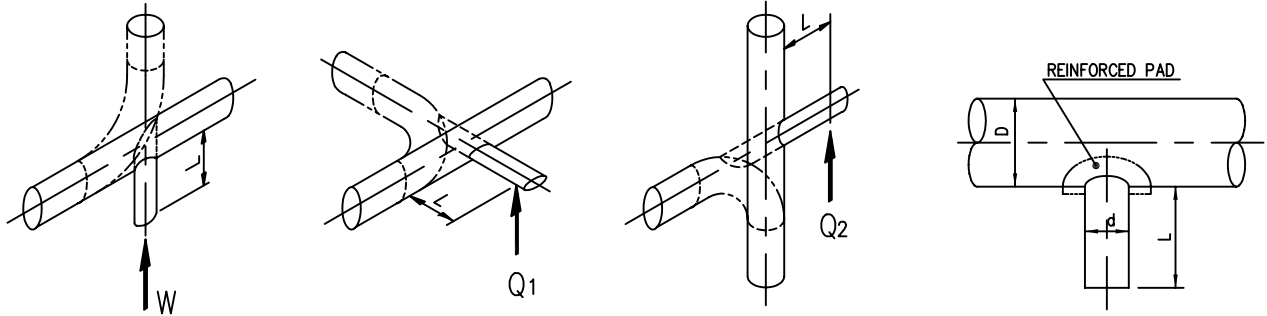


TABLE-C: STAINLESS STEEL RESTING (A312-TP304, MAX. OPE.TEMP. : 350°C)

WITHOUT PAD/WITH PAD

RUN PIPE (D)	TRUNNION (d)		MAX. ALLOWABLE LOADS (Kg)																							
			L = 300 mm					L = 500 mm					L = 700 mm					L = 1000 mm								
			W	Q ₁	Q ₂	W	Q ₁	Q ₂	W	Q ₁	Q ₂	W	Q ₁	Q ₂	W	Q ₁	Q ₂									
1-1/2"	80S	1"	80S	120	180	20	50	40	60	80	110	10	30	20	30	60	80	10	20	20	20	30	30	-	-	-
2"	40S	1-1/2"	40S	200	350	30	80	80	120	130	230	20	50	50	70	100	160	10	30	30	50	70	90	10	20	20
	80S	1-1/2"	40S	270	370	50	110	100	120	180	230	30	70	60	70	140	160	20	50	40	50	90	90	10	20	20
3"	40S	2"	40S	320	580	60	150	150	210	230	390	40	90	90	120	180	280	20	60	60	90	130	200	20	40	60
	80S	2"	40S	430	610	100	200	180	210	300	390	60	120	110	120	230	280	40	80	80	90	170	200	30	60	50
4"	40S	2"	40S	280	520	60	130	130	200	200	350	30	80	80	120	160	270	20	60	60	90	120	200	10	40	60
	80S	2"	40S	390	610	90	200	170	210	270	390	50	120	100	120	210	280	40	80	70	90	150	200	20	60	50
6"	40S	4"	40S	1010	2100	250	580	660	1020	790	1570	150	370	410	660	650	1250	110	270	300	480	510	960	80	190	210
	80S	4"	40S	1640	3030	430	910	900	1230	1250	2100	270	600	570	740	1010	1550	190	440	420	520	790	1120	140	320	370
8"	40S	4"	40S	920	1900	240	560	670	960	740	1430	150	350	420	620	620	1140	100	250	300	450	500	880	70	180	210
	80S	4"	40S	1480	2790	420	880	840	1200	1140	2030	260	570	530	740	920	1550	190	420	390	520	720	1120	130	300	280
10"	40S	6"	40S	1860	4110	570	1290	1590	2400	1550	3250	350	820	1010	1590	1330	2690	250	610	740	1180	1100	2140	180	430	530
	15.09	6"	40S	3320	6420	1030	2090	2180	2990	2680	4920	650	1400	1420	1950	2240	3930	470	1050	1060	1390	1800	2850	340	770	760
12"	40S	8"	40S	2710	6420	960	2170	2590	4300	2310	5280	590	1400	1660	2900	2010	4480	430	1030	1220	2190	1680	3650	300	740	870
	10.31	8"	40S	3040	6970	1060	2350	2850	4460	2590	5700	660	1530	1840	3020	2250	4820	480	1130	1360	2280	1890	3910	340	820	980
14"	9.52	8"	40S	2400	5770	840	1990	2460	4130	2060	4790	520	1280	1570	2770	1800	4090	370	940	1160	2080	1520	3360	260	670	830
	11.13	8"	40S	3010	6820	1070	2350	2970	4430	2590	5590	660	1530	1930	2990	2260	4730	480	1130	1430	2260	1910	3850	340	810	1030
16"	9.52	10"	40S	3190	8080	1240	3030	3620	6670	2780	6910	760	1960	2320	4550	2460	6040	550	1440	1710	3450	2100	5070	390	1040	1220
	12.7	10"	40S	4840	11080	1900	4070	5070	7510	4220	9270	1190	2700	3350	5220	3740	7970	870	2020	2500	3990	3190	6590	620	1460	1810
18"	9.52	10"	40S	2730	7030	1040	2730	3390	6340	2400	6070	640	1750	2170	4290	2140	5340	460	1290	1590	3250	1850	4520	320	920	1140
	14.27	10"	40S	4920	11040	1960	4150	5460	7510	4330	9240	1230	2760	3630	5220	3870	7950	900	2060	2720	3990	3330	6570	640	1500	1980
20"	9.52	12"	40S	3280	8800	1390	3640	4500	8730	2930	7740	860	2350	2890	6020	2640	6910	620	1730	2130	4590	2300	5950	430	1240	1530
	24"	9.52	12"	40S	2580	7210	1160	3170	4080	8090	2330	6410	710	2030	2610	5510	2120	5760	510	1490	1910	4180	1870	5010	360	1060
26"	9.52	14"	9.52	2730	7850	1290	3570	4700	9450	2480	7050	790	2280	3000	6490	2280	6400	570	1680	2210	4940	2030	5620	400	1200	1580
	28"	9.52	14"	9.52	2500	7320	1270	3550	4510	9160	2280	6590	770	2270	2880	6270	2100	5990	560	1670	2110	4760	1880	5270	390	1190
30"	9.52	16"	9.52	2850	8580	1490	4210	5630	11620	2630	7810	910	2700	3620	8070	2440	7180	660	1980	2660	6180	2200	6390	460	1420	1910
	32"	9.52	16"	9.52	2640	8070	1460	4190	5440	11320	2440	7360	900	2680	3490	7830	2270	6770	650	1970	2560	5980	2050	6050	450	1410
34"	9.52	18"	9.52	2950	9240	1690	4870	6610	13910	2750	8520	1030	3120	4260	9750	2570	7900	740	2300	3140	7500	2340	7130	520	1650	2250
	36"	9.52	18"	9.52	2760	8750	1660	4840	6410	13600	2570	8080	1020	3110	4120	9490	2410	7500	730	2290	3030	7300	2200	6770	520	1640

NOTE : SEE GENERAL NOTES FOR APPLICATION OF THIS TABLE.



**PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT**

ALLOWABLE LOAD TABLE

ST-A4-0004 (5 OF 7)

GUIDE/ANCHOR TYPE
TRUNNION
(CARBON STEEL)

REV
2

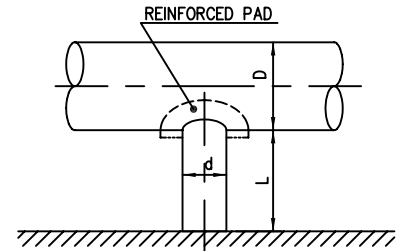
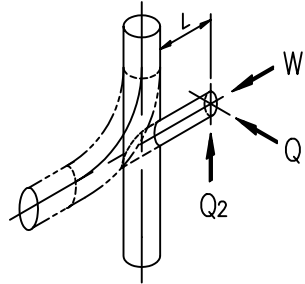
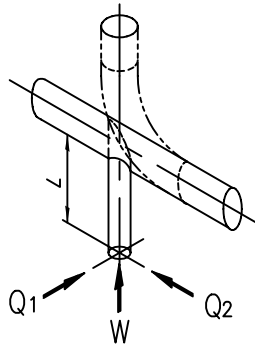


TABLE-D: CARBON STEEL GUIDE/ANCHOR (A53-B, MAX. OPE.TEMP. : 350°C) WITHOUT PAD/WITH PAD

RUN PIPE (D)		TRUNNION (d)		MAX. ALLOWABLE LOADS (Kg)															
				L = 300 mm				L = 500 mm				L = 700 mm				L = 1000 mm			
				W	Q1	Q2		W	Q1	Q2		W	Q1	Q2		W	Q1	Q2	
1-1/2"	80	1"	80	550 1630	20 60	40 60	550 1630	10 30	20 30	550 950	10 20	20 20	460 460	-	-	-			
2"	40	1-1/2"	STD	640 1890	30 90	70 120	640 1890	20 60	40 70	640 1890	10 40	30 50	640 1370	10 20	20 20	20			
	80	1-1/2"	STD	1110 3250	60 130	90 130	1110 2900	30 70	60 70	1110 2350	20 50	40 50	1110 1370	10 20	20 20	20			
3"	40	2"	STD	850 2500	70 170	140 200	850 2500	40 110	80 130	850 2500	30 80	60 90	850 2500	20 40	40 40	40			
	80	2"	STD	1420 4160	110 220	170 220	1420 4160	60 130	100 130	1420 3720	40 90	70 90	1420 2780	30 40	40 40	40			
4"	40	2"	STD	680 2010	60 160	120 190	680 2010	30 90	80 110	680 2010	20 70	50 80	680 2010	10 40	40 40	40			
	80	2"	STD	1180 3470	100 220	150 220	1180 3470	60 130	90 130	1180 3470	40 90	70 90	1180 2780	30 40	40 40	40			
6"	40	4"	STD	1720 5060	270 650	610 950	1720 5060	160 410	380 610	1720 5060	110 300	280 450	1720 5060	80 210	200 320	320			
	80	4"	STD	3380 9910	470 1080	830 1180	3380 9910	290 700	530 770	3380 9910	210 520	390 550	3380 9910	150 370	280 380	380			
8"	40	4"	STD	1470 4310	250 620	620 890	1470 4310	150 390	390 570	1470 4310	110 280	280 420	1470 4310	80 200	200 300	300			
	80	4"	STD	2910 8540	450 1050	780 1110	2910 8540	280 680	500 720	2910 8540	200 500	360 540	2910 8540	140 360	260 380	380			
10"	40	6"	STD	2670 7830	600 1420	1470 2230	2670 7830	360 910	940 1470	2670 7830	260 660	690 1100	2670 7830	180 470	490 790	790			
	80	6"	STD	5690 16660	1110 2450	2020 2780	5690 16660	700 1640	1320 1880	5690 16660	510 1230	980 1420	5690 16660	360 890	710 1020	1020			
12"	STD	8"	STD	3670 10760	1000 2370	2400 3990	3670 10760	620 1520	1540 2690	3670 10760	440 1120	1130 2030	3670 10760	310 800	810 1480	1480			
	40	8"	STD	4160 12180	1110 2590	2640 4130	4160 12180	690 1680	1710 2800	4160 12180	500 1240	1260 2120	4160 12180	350 890	910 1550	1550			
14"	STD	8"	STD	3150 9230	870 2160	2280 3830	3150 9230	530 1380	1460 2570	3150 9230	380 1010	1070 1930	3150 9230	270 720	770 1410	1410			
	40	8"	STD	4010 11750	1110 2600	2750 4100	4010 11750	690 1680	1790 2780	4010 11750	500 1240	1320 2100	4010 11750	350 890	950 1530	1530			
16"	STD	10"	STD	4020 11780	1280 3260	3350 6180	4020 11780	780 2090	2150 4220	4020 11780	570 1530	1580 3200	4020 11780	400 1100	1130 2350	2350			
	40	10"	STD	6290 18410	1990 4510	4710 6970	6290 18410	1240 2970	3110 4840	6290 18410	900 2210	2320 3700	6290 18410	640 1600	1680 2740	2740			
18"	STD	10"	STD	3330 9770	1070 2910	3150 5880	3330 9770	650 1850	2010 3980	3330 9770	470 1350	1470 3010	3330 9770	330 970	1050 2200	2200			
	40	10"	STD	6250 18300	2040 4610	5060 6970	6250 18300	1270 3040	3360 4840	6250 18300	930 2270	2520 3700	6250 18300	660 1640	1830 2740	2740			
20"	20	12"	STD	3900 11700	1420 3860	4170 8100	3900 11700	870 2460	2680 5580	3900 11700	630 1810	1970 4250	3900 11700	440 1290	1410 3140	3140			
24"	20	12"	STD	2950 9130	1170 3340	3780 7500	2950 9130	720 2110	2420 5110	2950 9130	510 1540	1770 3870	2950 9130	360 1100	1270 2840	2840			
26"	STD	14"	STD	3070 9690	1300 3740	4350 8760	3070 9690	790 2370	2790 6020	3070 9690	570 1730	2050 4580	3070 9690	400 1240	1460 3380	3380			
28"	STD	14"	STD	2780 8930	1280 3730	4180 8490	2780 8930	780 2360	2670 5810	2780 8930	560 1730	1960 4410	2780 8930	390 1230	1400 3240	3240			
30"	STD	16"	STD	3120 10220	1500 4380	5220 10770	3120 10220	910 2780	3350 7480	3120 10220	660 2040	2470 5730	3120 10220	460 1450	1770 4240	4240			
32"	STD	16"	STD	2860 9510	1480 4370	5050 10500	2860 9510	900 2770	3230 7260	2860 9510	650 2030	2380 5550	2860 9510	460 1450	1700 4100	4100			
34"	STD	18"	STD	3160 10710	1690 5040	6130 12900	3160 10710	1030 3210	3950 9040	3160 10710	740 2350	2910 6960	3160 10710	520 1680	2090 5180	5180			
36"	STD	18"	STD	2930 10060	1670 5030	5950 12610	2930 10060	1020 3200	3820 8800	2930 10060	730 2340	2810 6770	2930 10060	520 1670	2020 5020	5020			

NOTE : SEE GENERAL NOTES FOR APPLICATION OF THIS TABLE.



SHAHID TONDGOIAN
PETROCHEMICAL CO.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

ALLOWABLE LOAD TABLE

ST-A4-0004 (6 OF 7)

GUIDE/ANCHOR TYPE
TRUNNION
(ALLOY STEEL)

REV
2

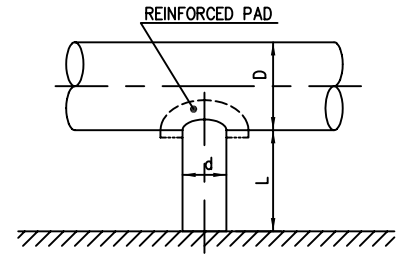
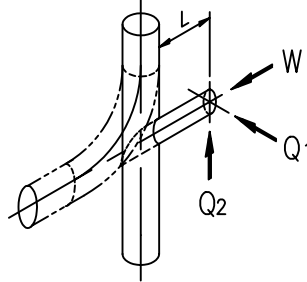
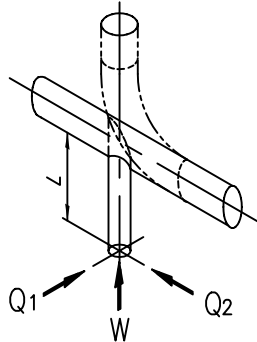


TABLE-E: LOW ALLOY STEEL GUIDE/ANCHOR (A335-P11, MAX. OPE.TEMP. : 450°C)

WITHOUT PAD/WITH PAD

RUN PIPE (D)	TRUNNION (d)		MAX. ALLOWABLE LOADS (Kg)															
			L = 300 mm				L = 500 mm				L = 700 mm				L = 1000 mm			
			W	Q1	Q2	W	Q1	Q2	W	Q1	Q2	W	Q1	Q2				
1-1/2"	80	1"	80	480	20	30	480	10	20	30	480	10	20	30	450	-	-	-
2"	40	1-1/2"	STD	550	30	60	550	20	40	60	550	10	30	40	550	10	20	20
	80	1-1/2"	STD	960	50	80	960	30	60	60	960	20	40	40	960	10	20	20
3"	40	2"	STD	730	60	120	730	30	90	70	730	20	60	50	730	10	40	40
	80	2"	STD	1220	90	140	1220	50	110	90	1220	40	80	60	1220	30	40	40
4"	40	2"	STD	590	50	110	590	30	80	60	590	20	60	50	590	10	40	40
	80	2"	STD	1020	80	130	1020	50	110	80	1020	30	80	60	1020	20	40	40
6"	40	4"	STD	1490	230	530	1490	140	350	330	1490	100	260	240	1490	70	180	170
	80	4"	STD	2920	400	720	2920	250	610	460	2920	180	330	330	2920	130	320	330
8"	40	4"	STD	1270	220	530	1270	130	340	330	1270	90	240	240	1270	60	170	170
	80	4"	STD	2510	390	670	2510	240	590	430	2510	170	430	310	2510	120	310	330
10"	40	6"	STD	2310	510	1270	2310	310	780	810	2310	230	570	590	2310	160	410	690
	80	6"	STD	4910	960	2120	4910	600	1410	1140	4910	440	1060	850	1230	4910	310	770
12"	STD	8"	STD	3170	860	2070	3170	530	1330	1330	3170	380	960	980	3170	270	690	700
	40	8"	STD	3590	960	2280	3590	590	1470	1470	3590	430	1090	1090	3590	300	770	780
14"	STD	8"	STD	2720	750	1870	2720	460	1190	1260	2720	330	870	930	2720	230	620	660
	40	8"	STD	3460	960	2380	3460	590	1450	1540	3460	430	1070	1140	3460	300	770	820
16"	STD	10"	STD	3470	1100	2890	3470	680	1800	1860	3470	490	1320	1370	3470	340	950	980
	40	10"	STD	5430	1720	4060	5430	1070	2680	2680	5430	780	2000	2000	5430	550	1380	1450
18"	STD	10"	STD	2880	920	2720	2880	560	1600	1740	2880	400	1170	1270	2880	280	830	910
	40	10"	STD	5400	1760	4370	5400	1100	2620	2910	5400	800	1960	2180	5400	570	1410	1580
20"	20	12"	STD	3370	1230	3610	3370	750	2130	2320	3370	540	1560	1710	3370	380	1120	1220
	STD	12"	STD	7880	1010	2880	7880	620	1820	2090	7880	440	1330	1530	7880	310	950	1090
24"	STD	14"	STD	2650	1120	3760	2650	690	2040	2410	2650	490	1500	1770	2650	350	1070	1260
	STD	14"	STD	8380	1110	3220	8380	670	2040	2300	8380	480	1490	1690	8380	340	1060	1210
28"	STD	16"	STD	2690	1290	4510	2690	790	2400	2890	2690	570	1760	2130	2690	400	1250	1530
	STD	16"	STD	8820	1280	3780	8820	780	2400	2790	8820	560	1750	2050	8820	390	1250	1470
32"	STD	18"	STD	2470	1460	5290	2470	890	2770	3410	2470	640	2030	2510	2470	450	1450	1800
	STD	18"	STD	9250	1450	4340	9250	880	2760	3300	9250	630	2020	2430	9250	440	1440	1740
36"	STD	18"	STD	2530	1450	5140	2530	880	2760	3300	2530	630	2020	2430	2530	440	1440	1740
	STD	18"	STD	8690	1450	4340	8690	880	2760	3300	8690	630	2020	2430	8690	440	1440	1740

NOTE : SEE GENERAL NOTES FOR APPLICATION OF THIS TABLE.



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PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

ALLOWABLE LOAD TABLE

ST-A4-0004 (7 OF 7)

GUIDE/ANCHOR TYPE
TRUNNION
(STAINLESS STEEL)

REV
2

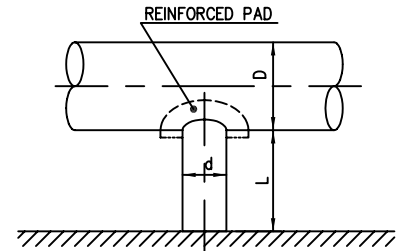
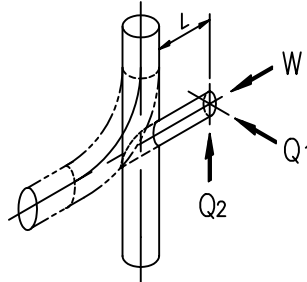
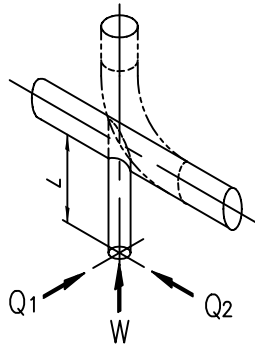


TABLE-F: STAINLESS STEEL GUIDE/ANCHOR (A312-TP304, MAX. OPE.TEMP. : 350°C)

WITHOUT PAD/WITH PAD

RUN PIPE (D)	TRUNNION (d)		MAX. ALLOWABLE LOADS (Kg)																								
			L = 300 mm				L = 500 mm				L = 700 mm				L = 1000 mm												
			W	Q ₁	Q ₂		W	Q ₁	Q ₂		W	Q ₁	Q ₂		W	Q ₁	Q ₂										
1-1/2"	80S	1"	80S	450	1310	20	40	30	40	450	1310	10	20	20	20	450	920	10	10	10	10	450	450	-	-	-	-
2"	40S	1-1/2"	40S	520	1530	30	80	60	90	520	1530	10	40	30	50	520	1530	10	30	20	40	520	1300	-	20	10	20
	80S	1-1/2"	40S	890	2450	50	90	80	90	890	2190	30	50	40	50	890	1880	20	40	30	40	890	1300	10	20	20	20
3"	40S	2"	40S	690	2020	50	140	110	160	690	2020	30	80	70	90	690	2020	20	60	50	60	690	2020	10	40	30	40
	80S	2"	40S	1150	3370	90	160	130	160	1150	3140	50	90	80	90	1150	2840	30	60	60	60	1150	2310	20	40	40	40
4"	40S	2"	40S	550	1620	50	120	100	150	550	1620	30	80	60	90	550	1620	20	50	40	60	550	1620	10	40	30	40
	80S	2"	40S	960	2810	80	160	120	160	960	2810	50	90	70	90	960	2810	30	60	50	60	960	2310	20	40	40	40
6"	40S	4"	40S	1390	4090	210	520	490	770	1390	4090	130	330	310	490	1390	4090	90	240	220	360	1390	4090	60	170	160	260
	80S	4"	40S	2730	8020	380	880	670	920	2730	8020	230	550	430	550	2730	8020	170	390	310	390	2730	8020	120	270	220	270
8"	40S	4"	40S	1190	3490	200	500	500	720	1190	3490	120	310	310	460	1190	3490	90	230	230	340	1190	3490	60	160	160	240
	80S	4"	40S	2350	6900	370	850	630	900	2350	6900	220	550	400	550	2350	6900	160	390	290	390	2350	6900	110	270	210	270
10"	40S	6"	40S	2160	6330	480	1150	1190	1800	2160	6330	290	730	760	1190	2160	6330	210	540	560	890	2160	6330	150	380	400	640
	15.09	6"	40S	4600	13470	900	1980	1630	2240	4600	13470	560	1320	1070	1460	4600	13470	410	990	790	1040	4600	13470	290	720	570	730
12"	40S	8"	40S	2970	8700	810	1910	1940	3230	2970	8700	500	1230	1240	2180	2970	8700	360	900	920	1640	2970	8700	250	640	650	1200
	10.31	8"	40S	3360	9850	900	2100	2130	3340	3360	9850	550	1350	1380	2260	3360	9850	400	1000	1020	1710	3360	9850	280	720	730	1250
14"	9.52	8"	40S	2540	7460	700	1750	1840	3100	2540	7460	430	1110	1180	2080	2540	7460	310	820	870	1560	2540	7460	220	580	620	1140
	11.13	8"	40S	3240	9510	900	2100	2230	3320	3240	9510	550	1350	1440	2240	3240	9510	400	1000	1070	1690	3240	9510	280	720	770	1240
16"	9.52	10"	40S	3250	9520	1030	2630	2710	5000	3250	9520	630	1680	1740	3410	3250	9520	460	1240	1280	2590	3250	9520	320	890	920	1900
	12.7	10"	40S	5080	14890	1610	3650	3800	5630	5080	14890	1000	2400	2510	3910	5080	14890	730	1790	1870	2990	5080	14890	510	1290	1360	2210
18"	9.52	10"	40S	2700	7900	860	2350	2540	4750	2700	7900	530	1490	1620	3220	2700	7900	380	1090	1190	2430	2700	7900	260	780	850	1780
	14.27	10"	40S	5050	14800	1650	3730	4090	5630	5050	14800	1030	2460	2720	3910	5050	14800	750	1830	2040	2990	5050	14800	530	1320	1480	2210
20"	9.52	12"	40S	3150	9460	1150	3120	3380	6550	3150	9460	700	1990	2170	4510	3150	9460	510	1460	1600	3440	3150	9460	360	1050	1140	2530
	24"	9.52	12"	40S	2380	7380	950	2700	3060	6060	2380	7380	580	1710	1950	4130	2380	7380	410	1250	1430	3130	2380	7380	290	890	1020
26"	9.52	14"	9.52	2480	7840	1050	3020	3520	7090	2480	7840	640	1910	2250	4870	2480	7840	460	1400	1660	3710	2480	7840	320	1000	1180	2730
	28"	9.52	14"	9.52	2250	7220	1040	3010	3380	6870	2250	7220	630	1910	2160	4700	2250	7220	450	1400	1580	3570	2250	7220	320	990	1130
30"	9.52	16"	9.52	2520	8270	1210	3550	4220	8710	2520	8270	740	2250	2710	6050	2520	8270	530	1650	2000	4630	2520	8270	370	1170	1430	3430
	32"	9.52	16"	9.52	2310	7690	1190	3540	4080	8490	2310	7690	730	2240	2610	5870	2310	7690	520	1640	1920	4490	2310	7690	370	1170	1370
34"	9.52	18"	9.52	2560	8660	1370	4080	4960	10430	2560	8660	840	2590	3190	7310	2560	8660	600	1900	2350	5630	2560	8660	420	1350	1690	4180
	36"	9.52	18"	9.52	2370	8130	1350	4070	4810	10200	2370	8130	830	2580	3090	7120	2370	8130	590	1890	2270	5470	2370	8130	420	1350	1630

NOTE : SEE GENERAL NOTES FOR APPLICATION OF THIS TABLE.



DAELIM

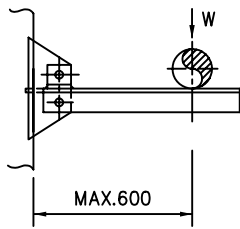
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

ALLOWABLE LOAD TABLE

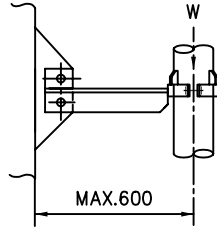
ST-A4-0005 (1 OF 4)

VESSEL CLIP SUPPORT
(RESTING TYPE)

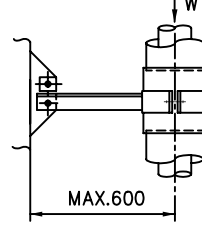
REV
2



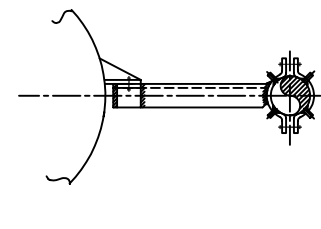
RV-2



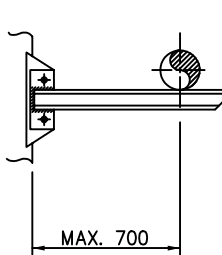
RV-21



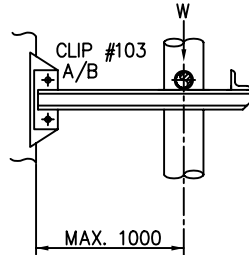
RV-41



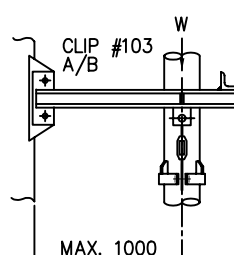
TYPE	CLIP NO.	MEMBER	Wmax (Kg)	
			A ≤ 400	400 < A ≤ 600
RV-2	101A/102A	A5	75	50
RV-21				
RV-41	101B/102B	A7	270	180



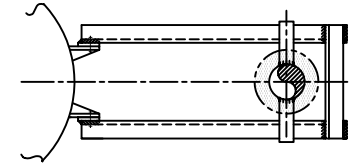
RV-5



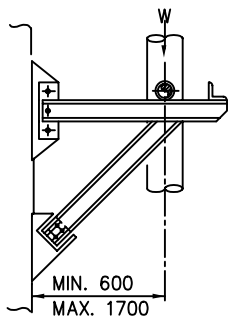
RV-31/RV-42



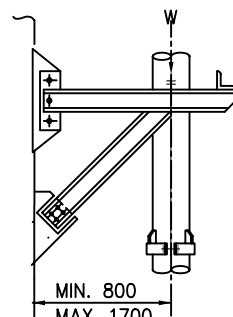
RV-32/RV-43



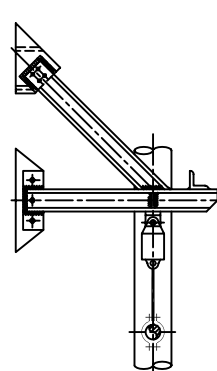
TYPE	CLIP NO.	MEMBER	Wmax (Kg)	
			A ≤ 400	400 < A ≤ 600
RV-5	103A	C10	940	280
RV-31/RV-32				
RV-42/RV-43	103B	C15	1200	600



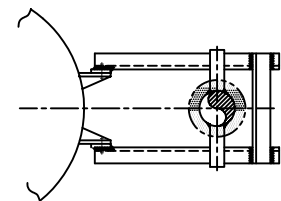
RV-33/RV-34/RV-44



RV-35/RV-36/RV-45/SV-33



SV-34



TYPE	CLIP NO.	MEMBER	Wmax (Kg)	
			A ≤ 1200	1200 < A ≤ 1700
RV-33/RV-34	104A/105A	C15	4500	4000
RV-35/RV-36				
RV-44/RV-45	104B/105B	C20	6500	5500
RV-33/SV-34	104C/105C	C30	10500	9000



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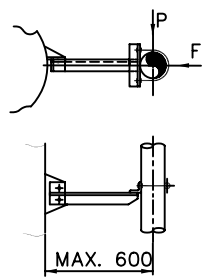
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

ALLOWABLE LOAD TABLE

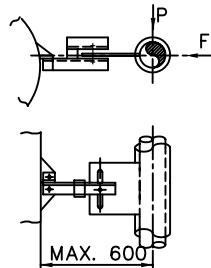
ST-A4-0005 (2 OF 4)

VESSEL CLIP SUPPORT
(GUIDE TYPE)

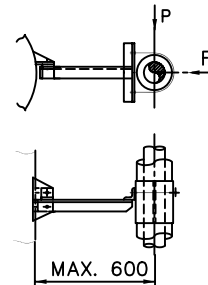
REV
2



GV-21

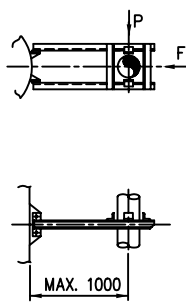


GV-31

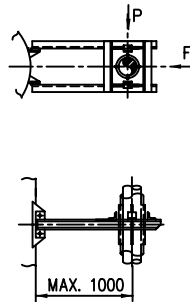


GV-41

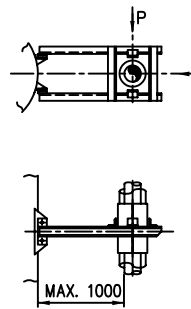
TYPE	CLIP NO.	MEMBER	A ≤ 400		400 < A ≤ 600	
			Pmax (Kg)	Fmax (Kg)	Pmax (Kg)	Fmax (Kg)
GV-21/GV-31	101A/102A	A5	75	250	50	170
GV-41	101B/102B	A7	270	900	180	600



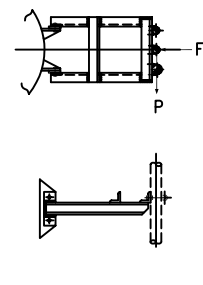
GV-22



GV-32

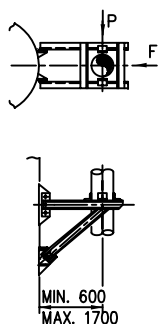


GV-42

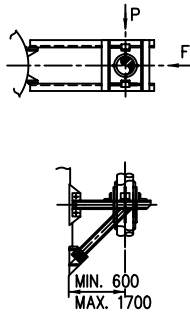


GV-24

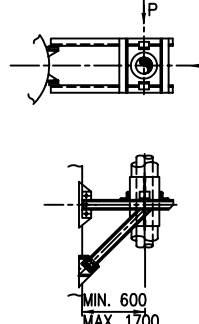
TYPE	CLIP NO.	MEMBER	A ≤ 500		500 < A ≤ 1000	
			Pmax (Kg)	Fmax (Kg)	Pmax (Kg)	Fmax (Kg)
GV-22/GV-24	103A	C10	170	270	110	260
GV-32/GV-42	103B	C15	390	490	270	480



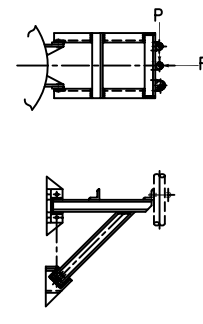
GV-25



GV-33



GV-43



GV-26

TYPE	CLIP NO.	MEMBER	A ≤ 1200		1200 < A ≤ 1700	
			Pmax (Kg)	Fmax (Kg)	Pmax (Kg)	Fmax (Kg)
GV-25/GV-26	104A/105A	C15	650	2000	250	1580
GV-33/GV-43	104B/105B	C20	1100	2000	450	1700
	104C/105C	C30	1160	2000	490	1700



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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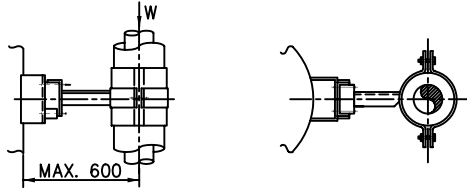
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

ALLOWABLE LOAD TABLE

ST-A4-0005 (3 OF 4)

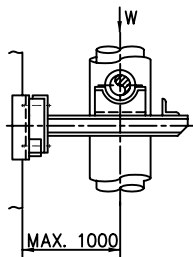
VESSEL CLIP SUPPORT
(RESTING, COLD INS.)

REV
2

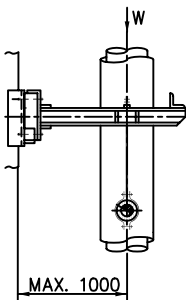


RV-51

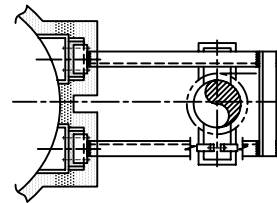
TYPE	CLIP NO.	MEMBER	Wmax (Kg)	
			A ≤ 400	400 < A ≤ 600
RV-51	121A	A5	60	40
	121B	A7	210	140



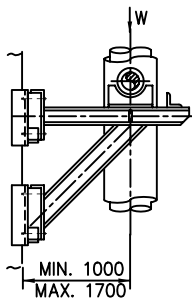
RV-52



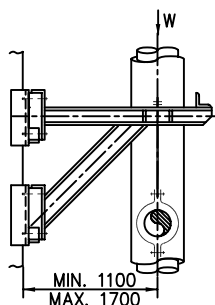
RV-53



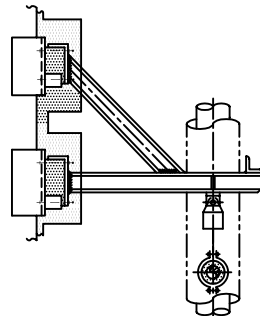
TYPE	CLIP NO.	MEMBER	Wmax (Kg)	
			A ≤ 500	500 < A ≤ 1000
RV-52	122A	C10	750	220
RV-53	122B	C15	960	480



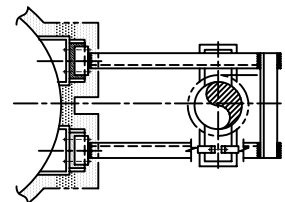
RV-54



RV-55/SV-51



SV-52



TYPE	CLIP NO.	MEMBER	Wmax (Kg)	
			A ≤ 1200	1200 < A ≤ 1700
RV-54/RV-55 SV-51/SV-52	123A/124A	C15	3600	3200
	123B/124B	C20	5200	4400
	123C/124C	C30	8400	7200



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

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00-4-pi-1403

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DAELIM

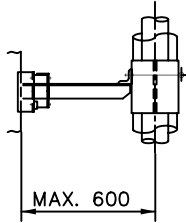
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

ALLOWABLE LOAD TABLE

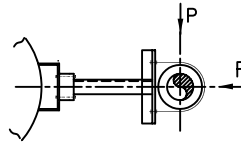
ST-A4-0005 (4 OF 4)

VESSEL CLIP SUPPORT
(GUIDE, COLD INS.)

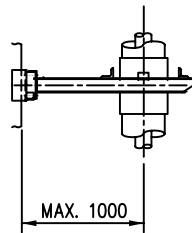
REV
2



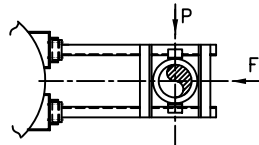
GV-51



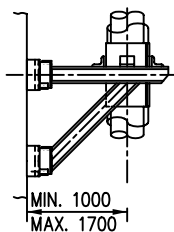
TYPE	CLIP NO.	MEMBER	A ≤ 400		400 < A ≤ 600	
			Pmax (Kg)	Fmax (Kg)	Pmax (Kg)	Fmax (Kg)
GV-51	121A	A5	60	200	40	130
	121B	A7	210	720	140	480



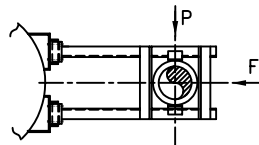
GV-52



TYPE	CLIP NO.	MEMBER	A ≤ 500		500 < A ≤ 1000	
			Pmax (Kg)	Fmax (Kg)	Pmax (Kg)	Fmax (Kg)
GV-52	122A	C10	170	270	110	260
	122B	C15	390	490	270	480



GV-53



TYPE	CLIP NO.	MEMBER	A ≤ 1200		1200 < A ≤ 1700	
			Pmax (Kg)	Fmax (Kg)	Pmax (Kg)	Fmax (Kg)
GV-53	123A/124A	C15	520	1600	200	1260
	123B/124B	C20	880	1600	360	1360
	123C/123B	C30	920	1600	390	1360



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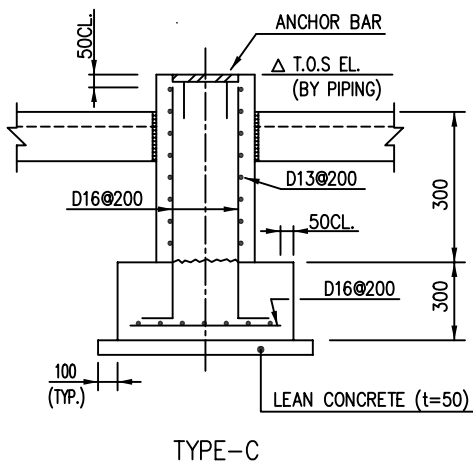
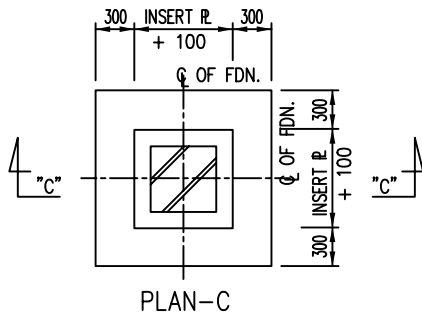
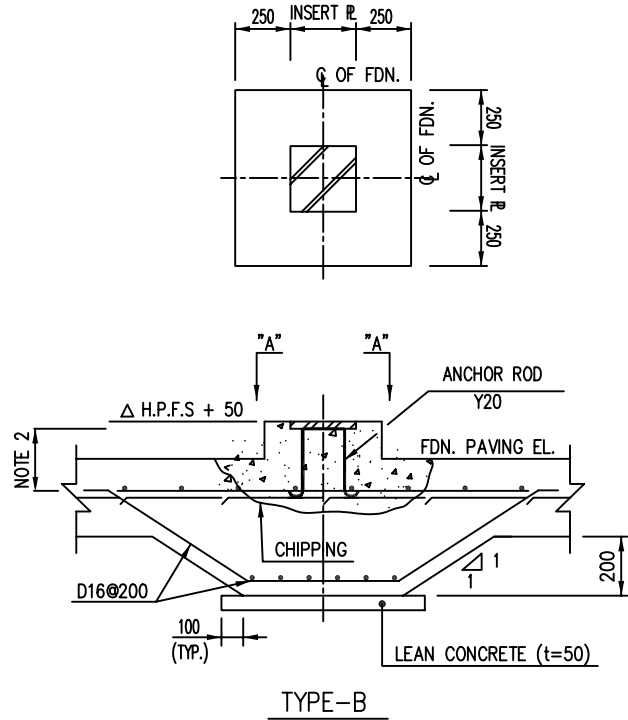
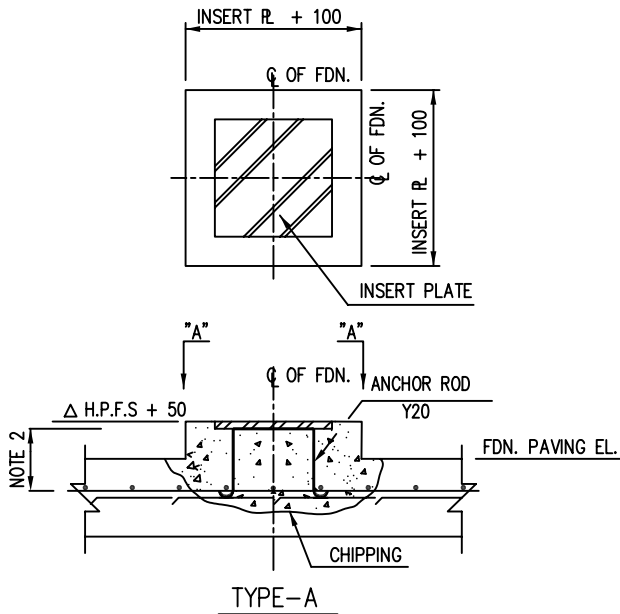
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

ALLOWABLE LOAD TABLE

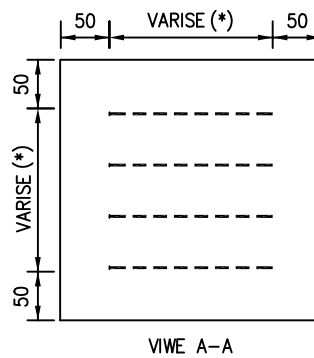
ST-A4-0006 (1 OF 2)

LOCAL SUPPORT FOUNDATION
(PAVING AREA)

REV
2



TYPE	ALLOWABLE LOAD (KG)
A	0 ~ 1000
B	1000 ~ 2000
C	2000 & ABOVE



NOTE

1. SEE GENERAL NOTES FOR APPLICATION OF THIS TABLE.
 2. SHALL BE ADJUST ACCORDING TO PAVING THICKNESS
- (* SHALL BE ADJUST WITH DIMENSION OF BASE PLATE.



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DAELIM

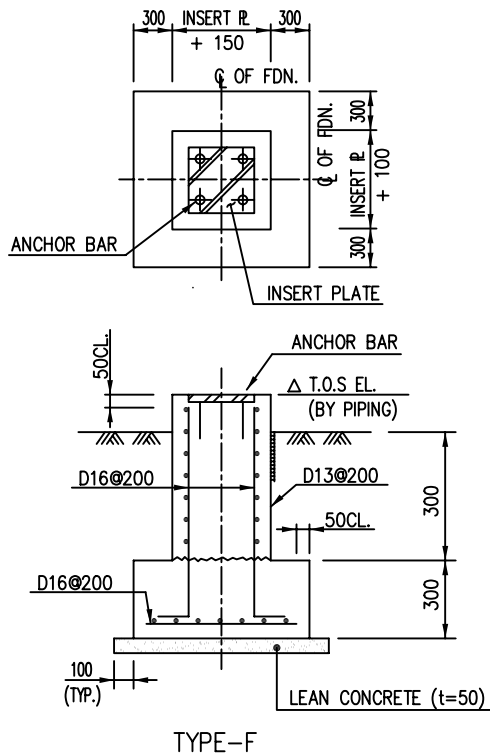
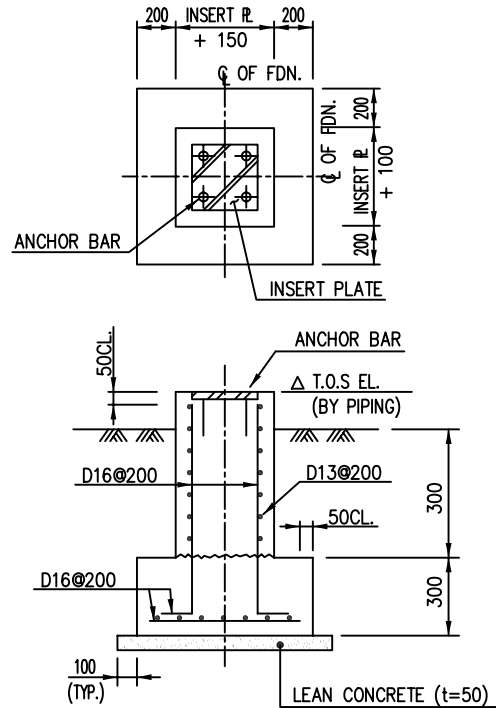
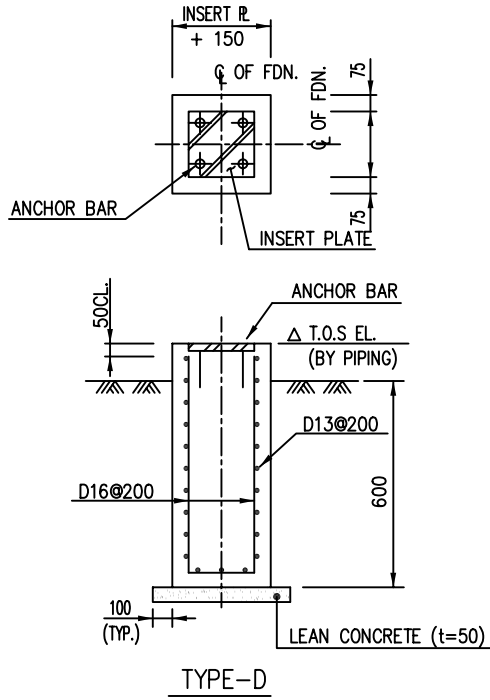
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

ALLOWABLE LOAD TABLE

ST-A4-0006 (2 OF 2)

LOCAL SUPPORT FOUNDATION
(NON-PAVING AREA)

REV
2



TYPE	ALLOWABLE LOAD (KG)
D	0 ~ 1000
E	1000 ~ 2000
F	2000 & ABOVE

NOTE

1. SEE GENERAL NOTES FOR APPLICATION OF THIS TABLE.



SHAHID TONGGOOIAN
PETROCHEMICAL CO.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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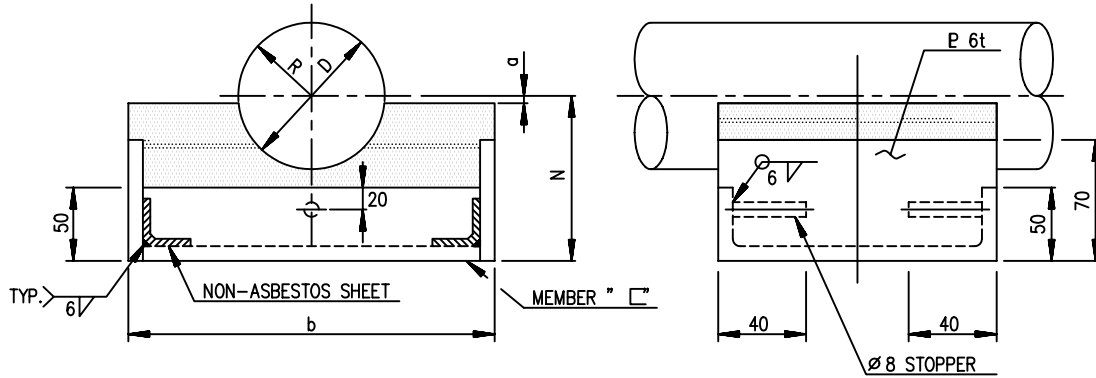


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1000

ADIABATIC BLOCK **ADB**
(FOR COLD PIPING TRUNNION)

REV.
2



UNIT (mm)

NOM. SIZE OF RUN PIPE	TRUNNION (D)	a	b	N	R	MEMBER	WEIGHT (kg)
2"	1-1/2"	3	165	100	31	C100x50x5	2.3
2-1/2"	2"	3	165	100	31	C100x50x5	2.3
3"	2"	3	165	100	31	C100x50x5	2.3
4"	2"	3	165	100	31	C100x50x5	2.3
5"	3"	3	190	115	45	C100x50x5	2.6
6"	4"	3	220	130	58	C100x50x5	2.9
8"	4"	3	220	130	58	C100x50x5	2.9
10"	6"	45	245	155	85	C200x80x7.5	5.8
12"	8"	55	290	180	110	C200x80x7.5	7.0
14"	8"	55	290	180	110	C200x80x7.5	7.0
16"	10"	70	340	210	137	C200x80x7.5	7.9
18"	10"	70	340	210	137	C200x80x7.5	7.9
20"	12"	80	380	235	162	C200x80x7.5	9.3
24"	12"	80	380	235	162	C200x80x7.5	9.3
26"	14"			250	178		
28"	14"			250	178		
30"	18"			310	229		
36"	20"			335	254		

NOTE

1. MATERIAL

- URETHANE FOAM : SEE DWG. NO. ST-A4-1022
- STOPPER & MEMBER : A36 OR EQ.
- PLATE : A36 OR EQ.



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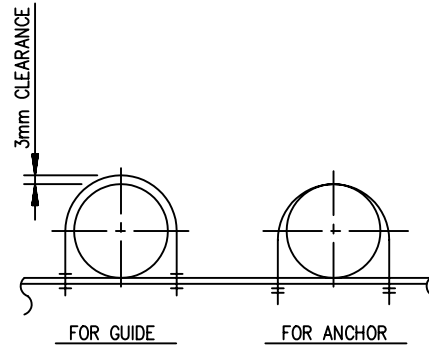
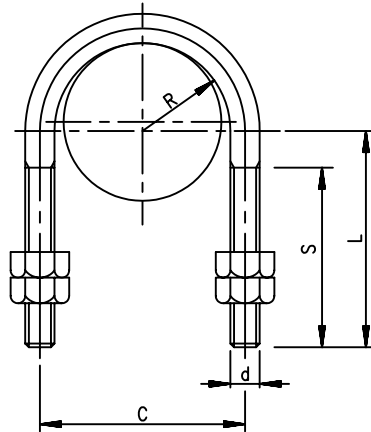
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1001

U - BOLT UBT

REV.
3



3

UNIT (mm)

NOM. PIPE SIZE (INCH)	PIPE O.D.	R	d (UNC)	C	L	S	WEIGHT (kg)
1/2"	21.3	12.0	1/4"	32	55	35	0.1
3/4"	26.7	14.0	1/4"	35	56	35	0.1
1"	33.4	18.0	1/4"	40	55	35	0.1
1-1/2"	48.3	25.0	3/8"	52	60	42	0.2
2"	60.3	32.5	3/8"	75	65	50	0.2
2-1/2"	73.0	39.0	1/2"	90	75	55	0.4
3"	88.9	46.5	1/2"	105	85	55	0.4
4"	114.3	59.5	5/8"	135	100	60	0.5
5"	141.3	72.0	5/8"	160	120	70	0.95
6"	168.3	87.0	5/8"	190	130	70	1.0
8"	219.1	112.5	3/4"	245	165	80	2.1
10"	273.1	140.0	3/4"	300	195	90	2.4
12"	323.9	165.5	1"	355	240	120	4.3
14"	355.6	183.0	1"	390	260	120	4.7
16"	406.4	208.0	1"	440	280	120	5.1
18"	457.2	235.5	1"	495	310	120	5.6
20"	508.0	257.5	1-1/4"	545	330	140	9.6
24"	609.6	310.0	1-1/4"	650	390	140	11.1

NOTE

1. MATERIAL

- U-BOLT : A36-GALV. OR EQ.
- NUTS : A307 GR.B-GALV. OR EQ.



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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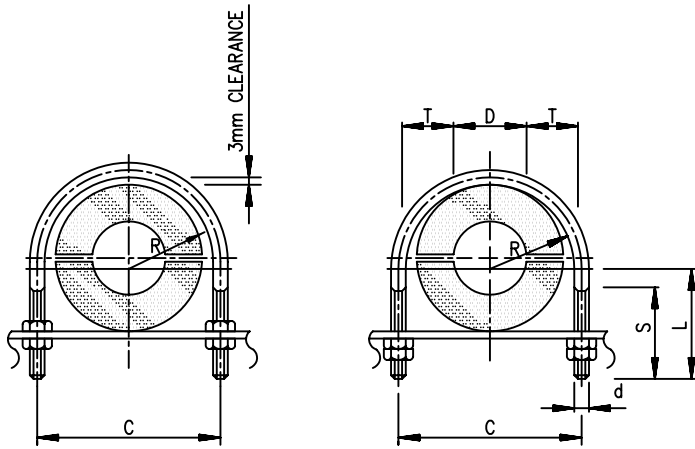
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1002

U-BOLT UBTC
(FOR COLD INSULATED PIPE)

REV.
2



FOR GUIDE

FOR ANCHOR

UNIT (mm)

R	d (UNC)	C	L	S	WEIGHT (kg)
68	1/2"	148	110	70	0.5
82	1/2"	176	120	70	0.6
96	1/2"	204	135	70	0.6
112	1/2"	236	150	70	0.7
118	1/2"	248	160	70	0.7
126	5/8"	268	170	80	1.4
135	5/8"	286	180	80	1.5
140	5/8"	296	185	80	1.5
146	5/8"	308	190	80	1.6
162	5/8"	340	210	80	1.7
168	5/8"	352	215	80	1.8
176	3/4"	372	230	100	2.9
187	3/4"	394	240	100	3.1
196	3/4"	412	250	100	3.2
212	3/4"	444	265	100	3.4
226	1"	476	295	120	5.3
237	1"	498	305	120	5.5
246	1"	516	315	120	5.7
262	1"	548	330	120	6.0
274	1"	572	340	120	6.1
289	1-1/4"	608	370	150	10.5
315	1-1/4"	660	395	150	11.2
339	1-1/4"	708	420	150	11.9
365	1-1/4"	760	445	150	12.6
389	1-1/4"	808	470	150	13.3
415	1-1/4"	860	495	150	14.1

UNIT (mm)

INS. THK CRADLE THK PIPE SIZE (D)	R				
	25-50	51-100	101-150	151-200	201-250
	T=50	T=100	T=150	T=200	T=250
1/2"	68	112	162	-	-
3/4"	68	118	168	-	-
1"	68	118	168	-	-
1-1/2"	82	126	176	226	-
2"	82	135	187	237	-
2-1/2"	96	140	196	246	-
3"	96	146	196	246	-
4"	112	162	212	262	-
5"	126	176	226	274	-
6"	140	187	237	289	-
8"	162	212	262	315	365
10"	196	246	289	339	389
12"	226	274	315	365	415

NOTE

1. MATERIAL

- U-BOLT : A36-GALV. OR EQ.
- NUTS : A307 GR.B-GALV. OR EQ.



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PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

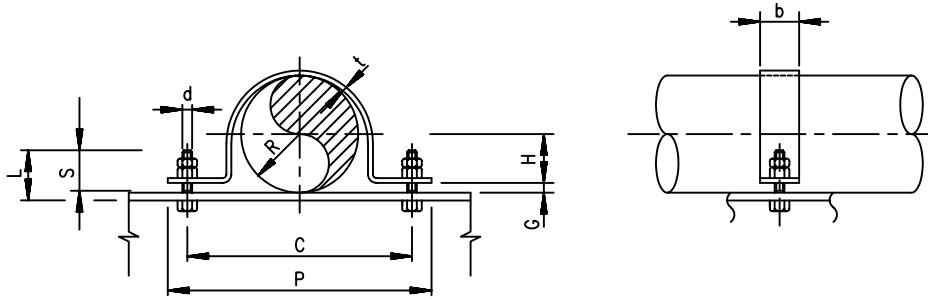
ST-A4-1003

U-BAND

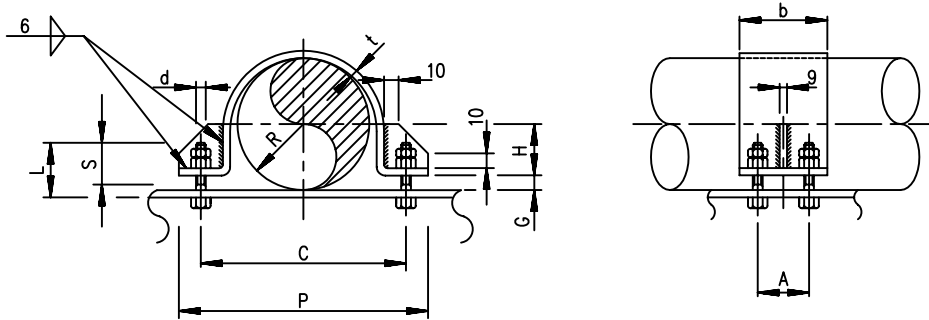
UBD

REV.

2



1" TO 5"



6" TO 16"

UNIT (mm)

NOM. PIPE SIZE (INCH)	C	G	H	P	R	b x t	A	BOLT/NUT(UNC) d x L x s	WEIGHT (Kg)
1"	95	5	12	135	18	50x6	-	5/8"x60x50	0.8
1-1/2"	110	5	19.5	150	25.5	50x6	-	5/8"x60x50	0.9
2"	120	5	25.5	160	31.5	50x6	-	5/8"x60x50	1.0
2-1/2"	155	5	31.5	195	38	75x9	-	3/4"x70x55	2.3
3"	170	5	39.5	210	46	75x9	-	3/4"x70x55	2.5
4"	195	5	52	235	58.5	75x9	-	3/4"x70x55	2.8
5"	220	5	66	260	72	75x9	-	3/4"x70x55	3.2
6"	250	10	74	290	86	125x9	80	3/4"x75x55	6.2
8"	300	10	100	340	112	125x9	80	3/4"x75x55	7.3
10"	355	10	126	390	140	150x9	80	3/4"x75x55	10.4
12"	405	10	152	445	165	150x9	80	3/4"x75x55	11.8
14"	445	10	168	495	180	150x9	90	1"x85x65	13.4
16"	495	10	193	545	205.5	150x9	90	1"x85x65	14.9

NOTE

1. MATERIAL

- PLATE : A36 OR EQ.
- BOLT & NUT : A307 GR.B-GALV. OR EQ.

2. 2-NUTS ARE REQUIRED PER EACH BOLT

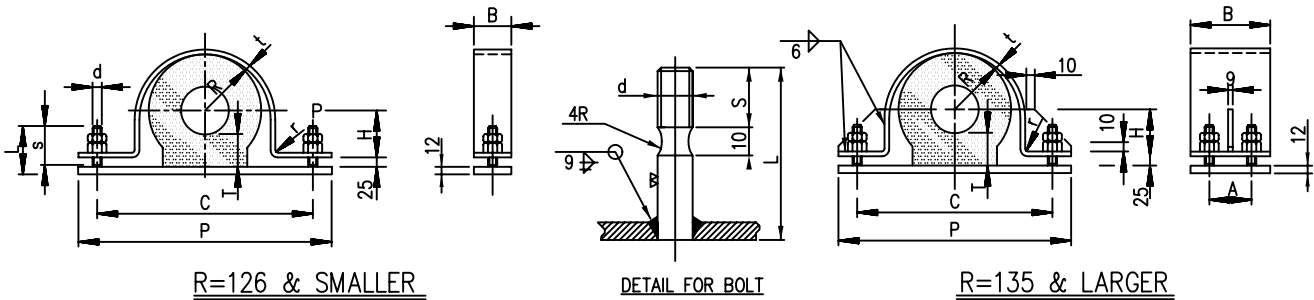


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1004

U-BAND UBDC
(FOR COLD INSULATED PIPE)

REV.
2



R=126 & SMALLER

DETAIL FOR BOLT

R=135 & LARGER

UNIT (mm)

INS. THK	CRADLE THK (T)	R													
		1"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	
25 - 50	50	68	82	82	96	96	112	126	135	162	196	212	237	262	
51 - 100	100	118	126	135	135	146	162	176	187	212	237	262	289	315	
101 - 150	150	168	176	187	187	196	212	226	237	262	289	315	339	365	
151 - 200	200	-	226	237	237	246	262	274	289	315	339	365	389	415	
201 - 250	250	-	-	-	-	-	-	-	-	365	389	415	435	460	

UNIT (mm)

R	A	C	H	P	r	B x t	d(UNC) x L x S	WEIGHT (kg)
68	-	195	40	235	6	FB-50x6	5/8"x80x55	1.3
82	-	220	55	260	6	FB-50x6	5/8"x80x55	1.4
96	-	250	70	290	6	FB-50x6	5/8"x80x55	1.6
112	-	300	80	340	9	FB-75x9	3/4"x90x65	3.9
118	-	315	90	355	9	FB-75x9	3/4"x90x65	4.1
126	-	330	100	370	9	FB-75x9	3/4"x90x65	4.3
135	80	345	110	385	9	FB-125x9	3/4"x90x65	8.2
146	80	370	120	410	9	FB-125x9	3/4"x90x65	8.8
162	80	400	135	440	9	FB-125x9	3/4"x90x65	9.6
168	80	420	145	460	9	FB-125x9	3/4"x90x65	9.8
176	80	430	150	470	9	FB-125x9	3/4"x90x65	10.3
187	80	450	160	490	9	FB-125x9	3/4"x90x65	10.8
196	80	470	170	510	9	FB-125x9	3/4"x90x65	11.3
212	80	500	185	540	9	FB-125x9	3/4"x90x65	12.0
226	90	535	200	585	9	FB-150x9	1"x95x70	16.0
237	90	560	210	610	9	FB-150x9	1"x95x70	16.7
246	90	575	220	625	9	FB-150x9	1"x95x70	17.1
262	90	610	230	660	9	FB-150x9	1"x95x70	18.1
274	90	635	245	685	9	FB-150x9	1"x95x70	18.7
289	90	665	260	715	9	FB-150x9	1"x95x70	19.6
315	90	715	280	765	9	FB-150x9	1"x95x70	21.1
339	90	765	305	815	9	FB-150x9	1"x95x70	22.6
365	90	815	330	865	9	FB-150x9	1"x95x70	24.1
389	90	865	355	915	9	FB-150x9	1"x95x70	25.6
415	90	915	380	965	9	FB-150x9	1"x95x70	27.0
435	90	955	400	1005	9	FB-150x9	1"x95x70	28.4
460	90	1005	425	1055	9	FB-150x9	1"x95x70	29.9

NOTE

- MATERIAL
 - PLATE : A36 OR EQ.
 - BOLT & NUT : A307 GR.B-GALV. OR EQ.
- 2-NUTS ARE REQUIRED PER EACH BOLT.



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



DAELIM

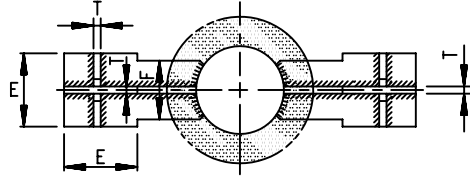
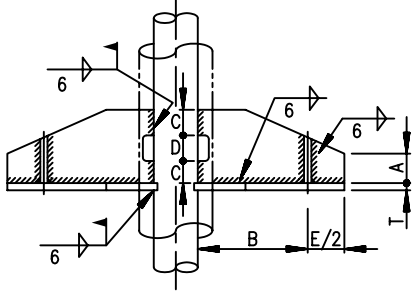
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

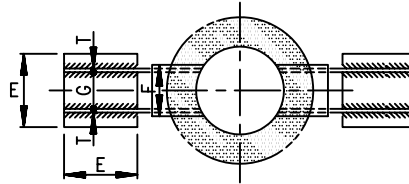
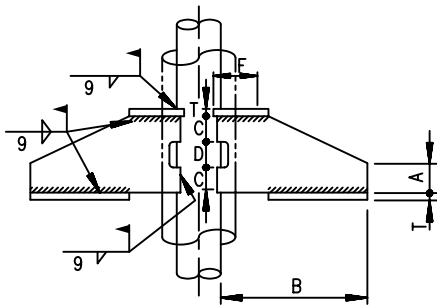
ST-A4-1005

RISER LUG **RLS**
(FOR SPRING SUP'T)

REV.
2



6" & SMALLER



8" TO 24"

UNIT (mm)

PIPE SIZE (INCH)	A	B	C	D	E	F	G	T	ALLOW.LOAD (Kg)	WEIGHT (Kg)
3"	60	250	70	50	250	100	-	9	2150	
4"	60	250	70	60	250	100	-	9	2200	
5"	60	250	70	60	250	125	-	12	2750	
6"	60	250	70	60	250	125	-	12	2750	
8"	90	420	75	70	250	150	110	12	4000	
10"	90	470	85	80	300	190	150	12	4650	
12"	90	470	85	80	300	190	150	12	4400	
14"	90	470	85	80	300	190	150	12	4300	
16"	110	520	100	100	300	200	150	16	6000	
18"	110	520	100	100	300	200	150	16	6000	
20"	110	520	100	100	300	200	150	16	6000	
24"	110	600	110	105	350	250	200	16	6700	

NOTE

1. MATERIAL

- LUG PLATE : SAME AS RUN PIPE OR MAT'L TABLE.

RUN PIPE	LUG PLATE
A53 GR.B, A106 GR.B	A283 GR.C OR EQ.
A335 P11	A387 GR.11 OR EQ.
A335 P22	A387 GR.22 OR EQ.
A312 TP304, TP316	A240-304 OR EQ.
A790 (S31803)	A815 (S31803)

2



SAZEH
CONSULTANTS



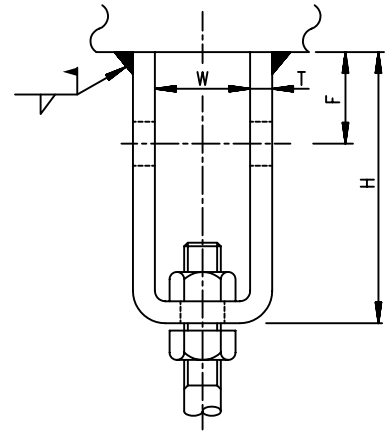
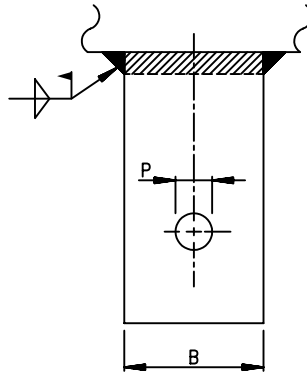
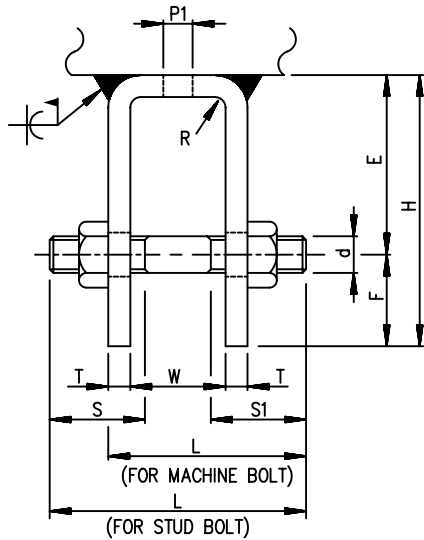
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1006

CLEVIS CLS

REV.
2



ROD SIZE 1" & SMALLER

UNIT (mm)

ROD SIZE (inch)	B	E	F	H	P	P1	R	W	T	BOLT SIZE d(UNC)xLxSxS1	ALLOW. LOAD (Kg)	WEIGHT (Kg)
3/8"	50	50	25	75	14	12	6	40	6	-	275	0.5
1/2"	50	50	25	75	18	14	6	45	6	-	515	0.5
5/8"	50	50	25	75	22	18	9	55	6	-	820	0.6
3/4"	65	50	30	80	26	22	9	65	9	-	1230	1.2
1"	75	75	45	120	33	26	9	65	9	1-1/4"x120x50	2250	1.9
1-1/4"	75	75	45	120	39	33	9	65	9	1-1/2"x160x55x45	3630	2.3
1-1/2"	100	90	55	145	46	39	12	75	12	1-3/4"x180x60x60	5280	4.5
1-3/4"	100	90	55	145	52	46	12	95	12	2"x210x70x70	7120	5.9
2"	125	110	60	170	62	52	16	95	16	2-1/4"x235x80x80	9390	10.7
2-1/4"	150	125	75	200	70	62	16	100	16	2-1/2"x235x80x80	12350	15.2
2-1/2"	180	150	90	240	78	70	19	115	19	3"x280x100x100	15200	24.1

NOTE

1. MATERIAL

- CLEVIS : A283 GR.C OR EQ.
- WHEN WELDED TO PIPE, MAT'L SHALL BE SAME AS RUN PIPE OR MAT'L TABLE.

2. BOLT/NUT FOR 1" & SMALLER ROD SIZE ARE NOT INCLUDED IN THE SCOPE OF THIS ATTACHMENT.

RUN PIPE	CLEVIS	BOLT/NUT
A53 GR.B, A106 GR.B	A283 GR.C OR EQ.	A307 GR.B OR EQ.
A335 P11	A387 GR.11 OR EQ.	A193-B7/A194-2H OR EQ.
A335 P22	A387 GR.22 OR EQ.	A193-B7/A194-2H OR EQ.
A312 TP304, TP316	A240-304 OR EQ.	A193-B7/A194-2H OR EQ.
A790 (S31803)	A240-321 OR EQ.	A193-B7/A194-2H OR EQ.



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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CONSULTANTS



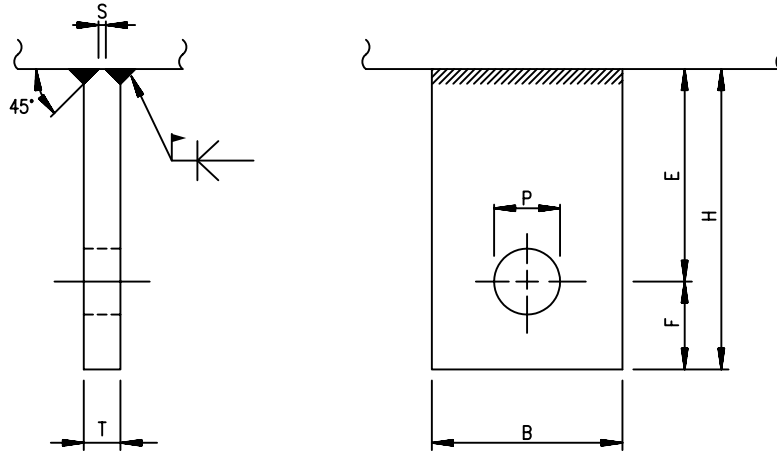
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1007

LUG PLATE LPT

REV.
2



UNIT (mm)

ROD SIZE (inch)	B	E	F	H	T	S	P	BOLT SIZE (UNC)	ALLOW. LOAD (kg)
1/2"	50	50	25	75	9	3	18	5/8"	515
5/8"	50	50	25	75	9	3	22	3/4"	820
3/4"	65	50	30	80	12	5	26	1"	1230
1"	75	75	45	120	16	5	33	1-1/4"	2250
1-1/4"	75	75	45	120	16	5	39	1-1/2"	3630
1-1/2"	100	90	55	145	19	8	46	1-3/4"	5280
1-3/4"	100	90	55	145	19	8	52	2"	7120
2"	125	110	60	170	22	8	62	2-1/4"	9390
2-1/4"	150	125	75	200	25	8	70	2-1/2"	12350
2-1/2"	180	150	80	240	25	8	78	3"	15200

NOTE

1. MATERIAL

- LUG PLATE : A283 GR.C OR EQ.
- WHEN WELDED TO PIPE, LUG MAT'L SHALL BE SAME AS RUN PIPE OR MAT'L TABLE.

RUN PIPE	LUG	BOLT/NUT
A53 GR.B, A106 GR.B	A283 GR.C OR EQ.	A307 GR.B OR EQ.
A335 P11	A387 GR.11 OR EQ.	A193-B7/A194-2H OR EQ.
A335 P22	A387 GR.22 OR EQ.	A193-B7/A194-2H OR EQ.
A312 IP304, IP316	A240-304 OR EQ.	A193-B7/A194-2H OR EQ.
A790 (S31803)	A240-321 OR EQ.	A193-B7/A194-2H OR EQ.

2



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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CONSULTANTS



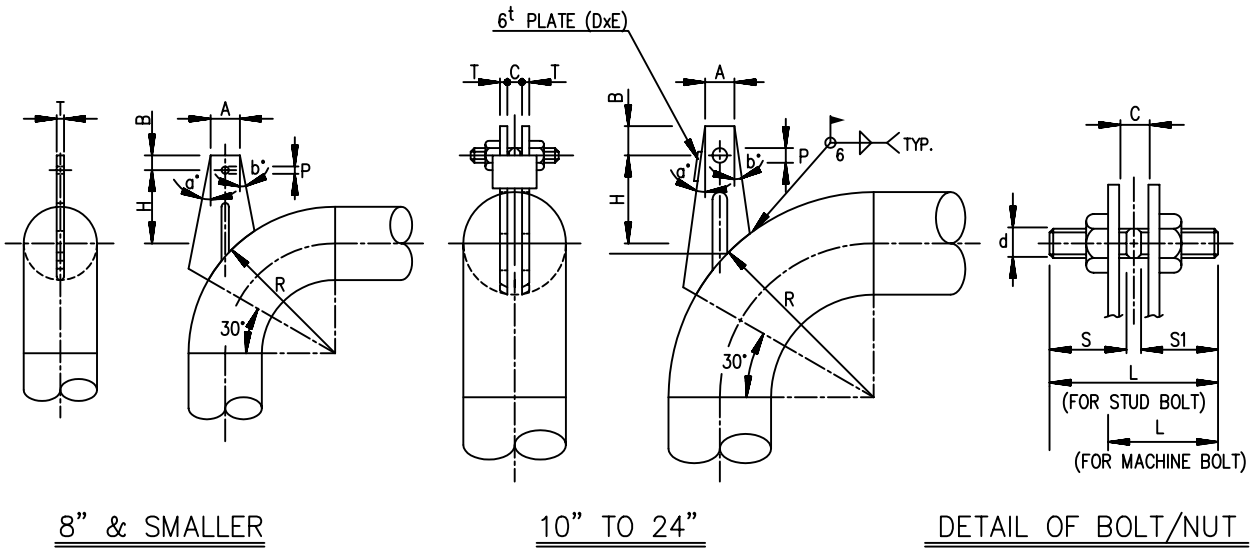
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1008

ELBOW LUG EL

REV.
2



NOM. PIPE SIZE (INCH)	A	B	C	D x E	H	P	R	T	α	b*	UNIT (mm)		
											HEX BOLT d(UNC) x L x S x S1	WEIGHT (kg)	ALLOW. LOAD (Kg)
3"	80	30	-	-	175	26	159	12	0	5	-	0.8	1250
4"	80	30	-	-	200	26	210	12	5	5	-	1.5	1450
5"	80	45	-	-	200	33	262	16	5	10	-	3.5	1650
6"	80	45	-	-	250	33	313	16	5	10	-	3.7	1650
8"	90	45	-	-	250	39	415	16	5	10	-	4.2	2450
10"	100	45	48	80 x 50	300	45	518	12	5	15	1-3/4"x130x65	16.5	5000
12"	100	45	48	80 x 50	300	45	619	12	5	15	1-3/4"x130x65	17.0	5000
14"	100	45	48	80 x 50	300	45	711	12	5	15	1-3/4"x130x65	18.6	5000
16"	120	55	48	85 x 50	300	52	813	16	10	20	2"x195x65x65	45.1	6000
18"	120	55	48	85 x 50	300	52	915	16	10	20	2"x195x65x65	48.9	6000
20"	120	55	48	85 x 50	300	52	1016	16	10	20	2"x195x65x65	52.7	5500
24"	150	60	60	100 x 60	300	62	1220	16	10	20	2-1/4"x235x75x75	91.3	5000

NOTE

1. MATERIAL

SAME AS RUN PIPE OR MAT'L TABLE.

RUN PIPE	LUG	BOLT/NUT
A53 GR.B, A106 GR.B	A283 GR.C OR EQ.	A307 GR.B OR EQ.
A335 P11	A387 GR.11 OR EQ.	A193-B7/A194-2H OR EQ.
A335 P22	A387 GR.22 OR EQ.	A193-B7/A194-2H OR EQ.
A312 TP304, TP316	A240-304 OR EQ.	A193-B7/A194-2H OR EQ.
A790(S31803)	A815 (S31803)	A193-B7/A194-2H OR EQ.

2. BOLT/NUT FOR 8" & SMALLER PIPE ARE NOT INCLUDED IN THE SCOPE OF THIS ATTACHMENT.



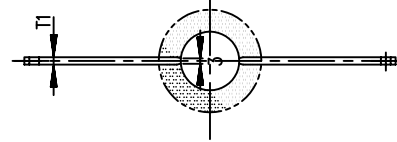
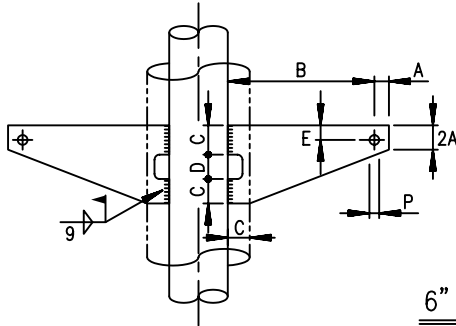
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

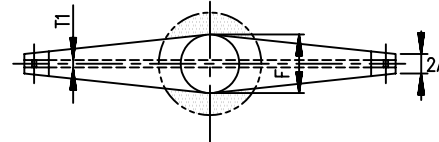
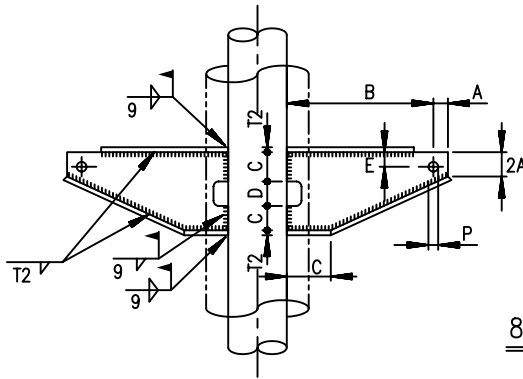
ST-A4-1009

RISER LUG **RLH**
(FOR HANGER SUP'T)

REV.
2



6" & SMALLER



8" TO 24"

UNIT (mm)

PIPE SIZE (INCH)	A	B	C	D	E	F	P	T1	T2	ALLOW. LOAD (CS, Kg)	WEIGHT (Kg)
3"	30	250	70	50	30	-	22	12	-	220	
4"	30	250	70	50	30	-	22	12	-	210	
5"	30	275	70	60	30	-	26	16	-	200	
6"	30	275	70	60	30	-	26	16	-	200	
8"	45	370	95	80	45	160	33	12	9	9500	
10"	45	390	100	90	45	170	39	16	12	11000	
12"	45	390	100	90	45	170	39	16	12	9500	
14"	45	390	100	90	45	170	39	16	12	9000	
16"	55	410	115	100	55	200	46	19	12	10500	
18"	55	410	115	100	55	200	46	19	12	9700	
20"	55	410	115	100	55	200	46	19	12	8800	
24"	55	450	125	100	55	210	52	19	16	10500	

NOTE

1. MATERIAL

- LUG : SAME AS RUN PIPE OR MAT'L TABLE.

RUN PIPE	CLEVIS & LUG	BOLT/NUT
A53 GR.B, A106 GR.B	A283 GR.C OR EQ.	A307 GR.B OR EQ.
A335 P11	A387 GR.11 OR EQ.	A193-B7/A194-2H OR EQ.
A335 P22	A387 GR.22 OR EQ.	A193-B7/A194-2H OR EQ.
A312 TP304, TP316	A240-304 OR EQ.	A193-B7/A194-2H OR EQ.
A790 (S31803)	A815 (S31803)	A193-B7/A194-2H OR EQ.

2



SHAHID TONGGOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

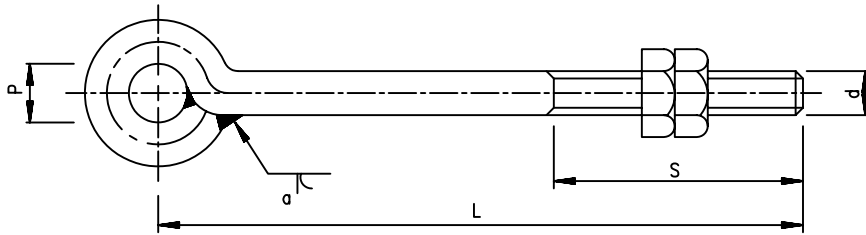
ST-A4-1010

EYE BOLT

EBT

REV.

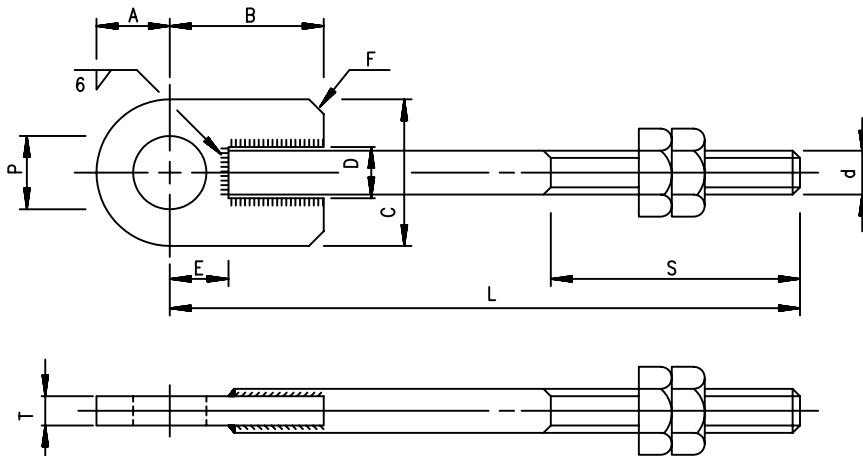
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1-1/2" & SMALLER ROD

(UNIT : mm)

ROD SIZE (d, inch)	P	BOLT SIZE (UNC)	S		a	ALLOWABLE LOAD(Kg)
			R-HT	L-HT		
3/8"	14	3/8"	170	110	3	275
1/2"	18	1/2"	170	110	3	515
5/8"	22	5/8"	220	140	3	820
3/4"	28	3/4"	220	140	3	1230
1"	34	1"	270	170	4	2250
1-1/4"	40	1-1/4"	280	180	5	3630
1-1/2"	46	1-1/2"	300	200	6	5280



ROD SIZE 1-3/4" TO 2-1/2"

UNIT (mm)

ROD SIZE (d, inch)	P	A	B	C	D	E	F	T	BOLT SIZE (UNC)	S		ALLOWABLE LOAD (Kg)
										R-HT	L-HT	
1-3/4"	52	60	120	120	43	65	15	22	1-3/4"	320	220	7120
2"	62	70	140	140	51	75	15	25	2"	320	220	9390
2-1/4"	70	75	160	150	61	80	20	28	2-1/4"	340	240	12350
2-1/2"	78	80	180	160	66	85	20	32	2-1/2"	360	260	15200

NOTE

1. MATERIAL

- EYE BOLT : A36-GALV. OR EQ.
- NUTS : A307 GR.B-GALV. OR EQ.

2. THREAD TYPE

- R-HT : RIGHT HAND THREADED (EBTR)
- L-HT : LEFT HAND THREADED (EBTL)

3. 2-NUTS ARE REQUIRED FOR EACH EYE BOLT

4. DIMENSION "L" IS DESIGNATED ON THE STANDARD DWG. FOR EACH ASSEMBLY.



SHAHID TONGGOOIN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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CONSULTANTS



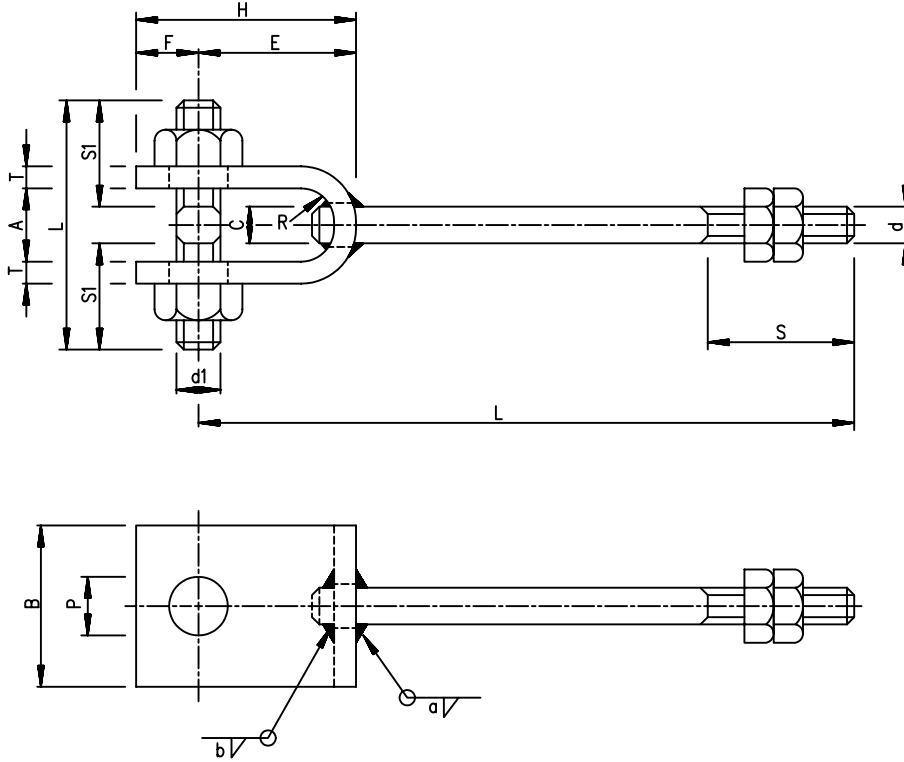
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1011

CLEVIS BOLT CLB

REV.
2



UNIT (mm)

ROD SIZE (d, inch)	A	B	E	F	H	P	R	T	a	b	S		C	BOLT/NUT d1(UNC)xLxS1	ALLOW LOAD(KG)
											R-HT	L-HT			
3/8"	27	50	50	25	75	14	6	6	4	3	170	110	10.5	1/2"x60x30	275
1/2"	27	50	50	25	75	18	6	6	4	3	170	110	12.5	5/8"x60x30	515
5/8"	27	50	50	25	75	22	6	6	5	3	220	140	16.5	3/4"x70x35	820
3/4"	32	55	50	30	80	26	9	9	6	4	220	140	20.5	1"x80x40	1230
1"	32	75	75	45	120	33	9	9	7	5	270	170	24.5	1-1/4"x90x50	2250
1-1/4"	35	75	75	45	120	39	9	9	8	5	280	180	30.5	1-1/2"x160x55	3630
1-1/2"	48	100	90	55	145	45	12	12	9	6	300	200	36.5	1-3/4"x80x60	5280
1-3/4"	48	100	90	55	145	52	12	12	11	6	320	220	42.5	2"x195x70	7120
2"	60	125	110	60	170	62	16	16	15	7	320	220	48.5	2-1/4"x235x75	9390
2-1/4"	65	150	125	75	200	70	16	16	17	8	340	240	56.5	2-1/2"x250x85	12350
2-1/2"	75	180	150	90	240	78	19	19	19	10	360	260	64.5	3"x280x100	15200

NOTE

- MATERIAL
 - CLEVIS BOLT : A36-GALV. OR EQ.
 - BOLT/NUT : A307 GR.B-GALV. OR EQ.
- THREAD TYPE
 - R-HT : RIGHT HAND THREAD (CLBR)
 - L-HT : LEFT HAND THREAD (CLBL)
- 2-NUTS ARE REQUIRED FOR EACH CLEVIS BOLT
- DIMENSION "L" IS DESIGNATED ON THE STANDARD DWG. FOR EACH ASSEMBLY.



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



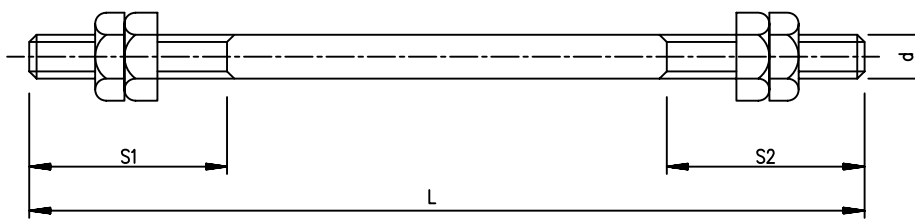
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1012

STRAIGHT BOLT STB

REV.
2



UNIT (mm)

ROD SIZE (d, inch)	BOLT SIZE (UNC)	S1		S2	ALLOW. LOAD (KG)
		R-HT	L-HT	R-HT	
3/8"	3/8"	170	110	50	275
1/2"	1/2"	170	110	50	515
5/8"	5/8"	220	140	50	820
3/4"	3/4"	220	140	50	1230
1"	1"	270	170	75	2250
1-1/4"	1-1/4"	280	180	75	3630
1-1/2"	1-1/2"	300	200	100	5280
1-3/4"	1-3/4"	320	220	100	7120
2"	2"	320	220	150	9390
2-1/4"	2-1/4"	340	240	150	12350
2-1/2"	2-1/2"	360	240	150	15200

NOTE

- MATERIAL
 - STRAIGHT BOLT : A36-GALV. OR EQ.
 - NUTS : A307 GR.B-GALV. OR EQ.

4. DIMENSION "L" IS DESIGNATED ON THE STANDARD DWG. FOR EACH ASSEMBLY.

- THREAD TYPE
 - R-HT : RIGHT HAND THREAD (STBR)
 - L-HT : LEFT HAND THREAD (STBL)

3. 4-NUTS ARE REQUIRED FOR EACH BOLT.



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
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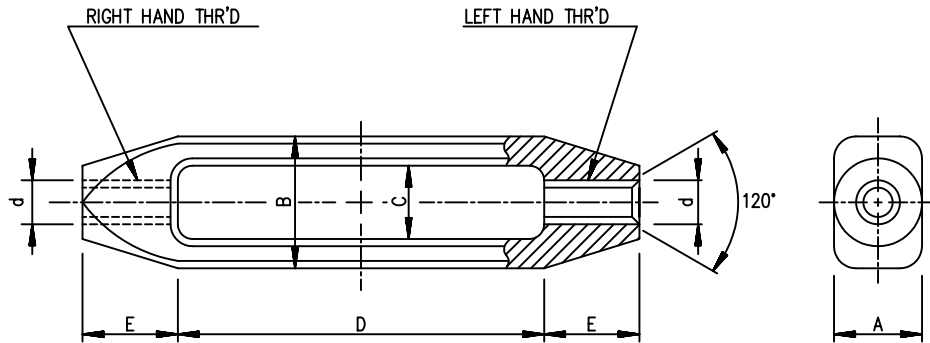
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1013

TURN BUCKLE TBL

REV.
2



ROD SIZE (d, inch)	UNIT (mm)					ALLOW LOAD (Kg)
	A	B	C	D	E	
3/8"	21	40	22	160	25	275
1/2"	21	40	22	160	25	515
5/8"	32	55	30	160	30	820
3/4"	32	55	30	160	30	1230
1"	41	65	35	200	35	2250
1-1/4"	50	80	42	200	40	3630
1-1/2"	58	90	50	200	50	5280
1-3/4"	67	105	60	200	60	7120
2"	77	120	65	200	60	9390
2-1/4"	85	130	75	200	70	12350
2-1/2"	95	140	85	200	80	15200

NOTE

- MATERIAL : A105-GALV. OR EQ
- THREAD TYPE
R-HT : RIGHT HAND THREAD
L-HT : LEFT HAND THREAD

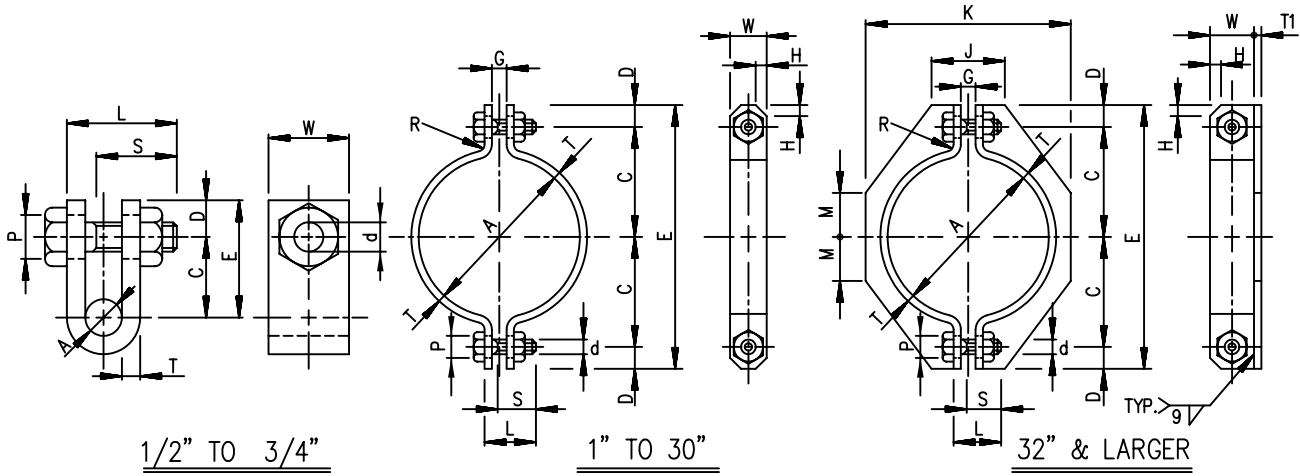


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1014

PIPE CLAMP PC

REV.
2



UNIT (MM)

NOM. PIPE SIZE (INCH)	CLAMP BODY														HEX BOLT d(UNC)xLxs	ALLOW LOAD (Kg)	WEIGHT (Kg)
	A	C	D	E	G	H	J	K	P	R	W	T	T1	M			
1/2"	25	35	15	50	-	-	-	-	14	-	32	6	-	-	1/2"x45x30	335	0.4
3/4"	30	35	15	50	-	-	-	-	14	-	32	6	-	-	1/2"x45x30	335	0.4
1"	36	35	15	100	18	5	-	-	14	10	32	6	-	-	1/2"x45x30	460	0.5
1 1/2"	51	50	15	130	18	5	-	-	14	10	32	6	-	-	1/2"x45x30	740	0.6
2"	63	55	15	140	18	5	-	-	14	10	32	6	-	-	1/2"x45x30	740	0.6
2 1/2"	76	65	15	160	18	5	-	-	14	10	32	6	-	-	1/2"x45x30	720	0.7
3"	92	75	15	180	18	5	-	-	14	10	32	6	-	-	1/2"x45x30	690	0.8
4"	118	95	25	240	25	10	-	-	22	10	50	9	-	-	3/4"x70x35	1220	2.5
5"	146	115	25	280	25	10	-	-	22	10	50	9	-	-	3/4"x70x35	1220	2.9
6"	173	140	35	350	32	10	-	-	26	15	75	12	-	-	1"x90x45	1300	6.5
8"	225	165	35	400	32	10	-	-	26	15	75	12	-	-	1"x90x45	1300	7.8
10"	280	205	40	490	38	10	-	-	33	20	90	16	-	-	1-1/4"x110x55	1580	15.0
12"	330	230	40	540	38	10	-	-	33	20	90	16	-	-	1-1/4"x110x55	1600	16.9
14"	362	260	50	620	45	15	-	-	39	25	100	19	-	-	1-1/2"x130x70	1700	25.7
16"	414	285	50	670	45	15	-	-	39	25	100	19	-	-	1-1/2"x130x70	2290	28.0
18"	464	310	50	720	45	15	-	-	39	25	100	19	-	-	1-1/2"x130x70	2950	30.3
20"	514	350	50	800	45	15	-	-	39	30	125	22	-	-	1-1/2"x130x70	2950	46.9
22"	566	375	50	850	45	15	-	-	39	30	125	22	-	-	1-1/2"x130x70	2950	50.3
24"	616	400	50	900	45	15	-	-	39	30	125	22	-	-	1-1/2"x130x70	2950	53.6
26"	668	440	55	990	50	20	-	-	46	35	150	28	-	-	1-3/4"x150x75	3560	89.1
28"	720	465	55	1040	50	20	-	-	46	35	150	28	-	-	1-3/4"x150x75	3310	94.3
30"	770	490	55	1090	50	20	-	-	46	35	150	28	-	-	1-3/4"x150x75	3090	99.4
32"	824	515	55	1140	50	20	240	955	46	40	150	16	16	180	1-3/4"x150x75	3630	95.8
34"	876	540	55	1190	50	20	240	1010	46	40	150	16	16	200	1-3/4"x150x75	4400	103.2
36"	928	570	55	1250	50	20	240	1055	46	40	150	16	16	220	1-3/4"x150x75	5000	110.2
40"	1030	620	55	1350	50	20	240	1160	46	40	150	16	16	240	1-3/4"x150x75	4500	117.2
42"	1080	645	55	1400	50	20	240	1210	46	40	150	16	16	260	1-3/4"x150x75	4500	122.8

NOTE

1. MATERIAL

CLAMP	BOLT/NUT	TEMP.
A283 GR.C OR EQ.	A307 GR.B OR EQ.	350°C
A515 GR.60 OR EQ.	A193-B7/A194-2H OR EQ.	420°C
A387 GR.11 OR EQ.	A193-B7/A194-2H OR EQ.	640°C

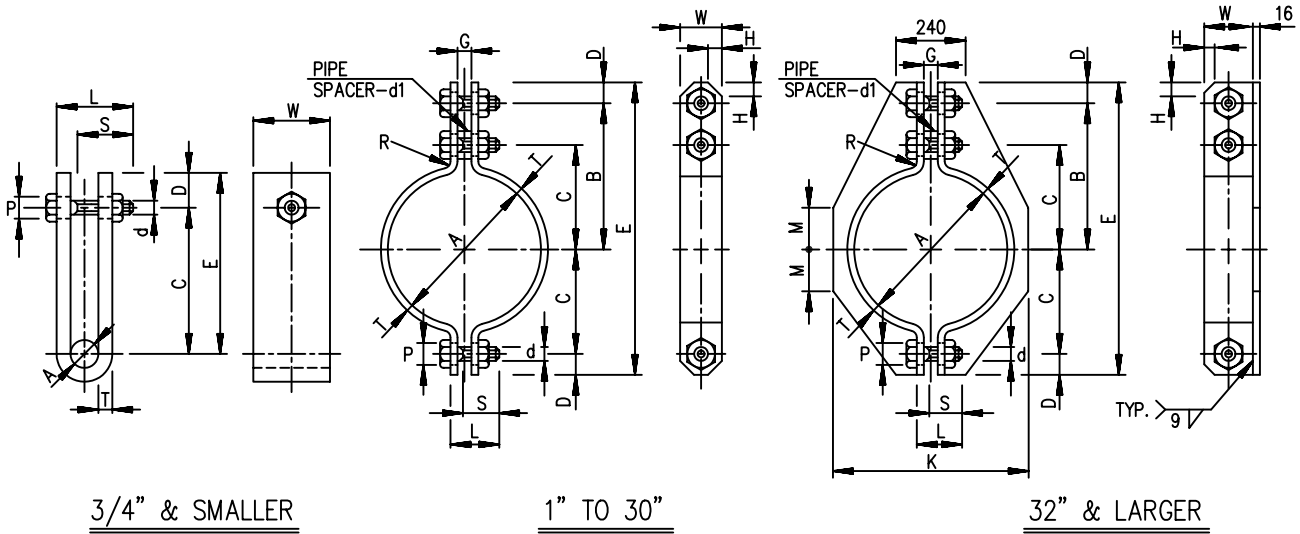


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1015

PIPE CLAMP PCH
(FOR HOT INSULATED PIPE)

REV.
2



3/4" & SMALLER

1" TO 30"

32" & LARGER

NOM. PIPE SIZE (INCH)	CLAMP BODY													HEX BOLT d2 x L x s	WEIGHT (Kg)	ALLOW. LOAD(Kg)	
	A	B	C	D	E	G	H	K	P	R	W	T	d1				M
1/2"	25	-	100	15	115	-	5	-	14	-	32	6	1/2"	-	1/2"x45x30	0.6	220
3/4"	30	-	100	15	115	-	5	-	14	-	32	6	1/2"	-	1/2"x45x30	0.6	460
1"	36	110	35	15	175	18	5	-	14	10	32	6	1/2"	-	1/2"x45x30	0.7	460
1-1/2"	51	135	50	15	215	18	5	-	14	10	32	6	1/2"	-	1/2"x45x30	0.9	740
2"	63	145	55	15	230	18	5	-	14	10	32	6	1/2"	-	1/2"x45x30	0.9	740
2-1/2"	76	155	65	15	250	18	5	-	14	10	32	6	1/2"	-	1/2"x45x30	1.0	720
3"	92	165	75	15	270	18	5	-	14	10	32	6	1/2"	-	1/2"x45x30	1.1	700
4"	118	195	95	25	340	25	10	-	22	10	50	9	3/4"	-	3/4"x70x35	3.3	1220
5"	146	215	115	25	380	25	10	-	22	10	50	9	3/4"	-	3/4"x70x35	3.7	1220
6"	173	260	140	35	470	32	10	-	26	15	75	9	1"	-	1"x90x45	8.2	1610
8"	225	300	165	35	535	32	10	-	26	15	75	12	1"	-	1"x90x45	9.6	1610
10"	289	345	205	40	630	38	10	-	33	20	90	12	1 1/2"	-	1-1/4"x110x55	18.0	2490
12"	330	370	230	40	680	38	10	-	33	20	90	16	1 1/2"	-	1-1/4"x110x55	20.1	2490
14"	362	420	260	50	780	45	15	-	39	25	100	16	1 1/2"	-	1-1/2"x130x70	30.5	2490
16"	414	445	285	50	830	45	15	-	39	25	100	19	1 1/2"	-	1-1/2"x130x70	33.2	2490
18"	464	470	310	50	880	45	15	-	39	25	100	19	1 1/2"	-	1-1/2"x130x70	35.6	3060
20"	514	520	350	50	970	45	15	-	39	30	125	19	1 1/2"	-	1-1/2"x130x70	53.7	4500
22"	566	550	375	50	1025	45	15	-	39	30	125	22	1 1/2"	-	1-1/2"x130x70	57.1	4500
24"	616	580	400	50	1080	45	15	-	39	30	125	22	1 1/2"	-	1-1/2"x130x70	60.5	4500
26"	668	630	440	55	1180	50	20	-	46	35	150	28	2"	-	1-3/4"x150x75	101.6	6400
28"	720	660	465	55	1235	50	20	-	46	35	150	28	2"	-	1-3/4"x150x75	107.1	6400
30"	770	690	490	55	1290	50	20	-	46	35	150	28	2"	-	1-3/4"x150x75	112.5	6400
32"	818	715	515	55	1340	50	20	955	46	40	150	16	2"	180	1-3/4"x150x75	123.1	6400
34"	876	740	540	55	1390	50	20	1010	46	40	150	16	2"	200	1-3/4"x150x75	129.1	6400
38"	928	770	570	55	1450	50	20	1055	46	40	150	16	2"	220	1-3/4"x150x75	135.7	6400
40"	1030	820	620	55	1550	50	20	1160	46	40	150	16	2"	240	1-3/4"x150x75	144.9	6400
42"	1082	845	645	55	1600	50	20	1210	46	40	150	16	2"	260	1-3/4"x150x75	151.1	6400

NOTE

1. MATERIAL

CLAMP	BOLT/NUT	TEMP.
A283 GR.C OR EQ.	A307 GR.B OR EQ.	350°C
A515 GR.60 OR EQ.	A193-B7/A194-2H OR EQ.	420°C
A387 GR.11 OR EQ.	A193-B7/A194-2H OR EQ.	640°C

- SPACER : A53 GR.B OR EQ.



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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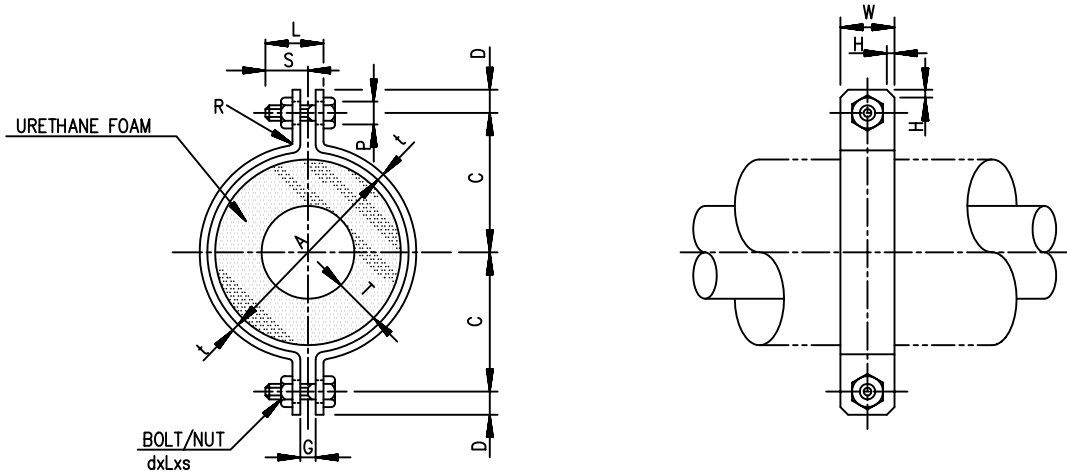
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1016

PIPE CLAMP PCC
(FOR COLD INSULATED PIPE)

REV.
2



UNIT (mm)

INS. THK	CRADLE THK	A (FOR EACH PIPE SIZE)																											
		1/2	3/4	1	1-1/2	2	2-1/2	3	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30						
25-50	T=50	136	136	136	163	163	192	192	224	251	274	324	392	430	474	530	578	630	678	730	778	830	870						
51-100	T=100	224	236	236	251	274	279	292	324	351	374	430	492	530	578	630	678	730	778	830	870	920	970						
101-150	T=150	324	336	336	351	374	392	392	430	451	474	530	578	630	678	730	778	830	870	920	970	1020	1070						
151-200	T=200	-	-	-	451	474	492	492	530	548	578	630	678	730	778	830	870	920	970	1020	1070	1120	1170						
201-250	T=250	-	-	-	-	-	-	-	-	-	-	730	778	830	870	920	970	1020	1070	1120	1170	1220	1270						
251-300	T=300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1120	1170	1220	1270	1320	1370						

UNIT (mm)

A	C	D	G	R	W	H	P	t	d(UNC)xLxS	ALLOW. LOAD(Kg)	WEIGHT (Kg)	A	C	D	G	R	W	H	P	t	d(UNC)xLxS	ALLOW. LOAD(Kg)	WEIGHT (kg)
136	105	25	32	10	50	10	22	6	3/4"x75x55	780	0.6	678	440	60	60	30	150	20	52	22	2"x215x105	8000	31.4
163	120	25	32	10	50	10	22	6	3/4"x75x55	780	0.8	730	465	60	60	30	150	20	52	22	2"x215x105	8000	33.4
192	130	25	32	10	75	10	22	6	3/4"x75x55	780	0.8	778	495	60	60	30	150	20	52	25	2"x215x105	8000	40.2
224	150	25	32	10	75	10	22	6	3/4"x75x55	780	1.5	830	520	60	60	30	150	20	52	25	2"x215x105	8000	41.5
236	155	25	32	10	75	15	22	9	3/4"x75x55	780	2.3	870	540	60	60	30	150	20	52	25	2"x215x105	8000	44.8
251	160	25	32	10	75	15	22	9	3/4"x75x55	780	2.4	920	565	60	60	30	150	20	52	25	2"x215x105	8000	47.0
274	190	40	38	15	90	15	33	12	1-1/4"x100x55	3100	4.4	970	595	60	60	35	150	20	52	28	2"x240x125	8000	55.4
279	195	40	38	15	90	15	33	12	1-1/4"x100x55	3100	4.6	1020	620	60	60	35	150	20	52	28	2"x240x125	8000	58.0
292	200	40	38	15	90	15	33	12	1-1/4"x100x55	3100	4.7	1070	645	60	60	35	150	20	52	28	2"x240x125	8000	60.6
324	220	40	38	15	90	15	33	12	1-1/4"x100x55	3100	5.2	1120	670	60	60	35	150	20	52	28	2"x240x125	8000	63.1
336	230	40	38	15	90	15	33	12	1-1/4"x100x55	3100	5.5	1170	700	60	60	40	150	20	52	32	2"x240x125	8000	75.3
351	250	50	45	20	100	15	39	16	1-1/2"x120x65	4500	8.6	1220	725	60	60	40	150	20	52	32	2"x240x125	8000	78.2
374	260	50	45	20	100	15	39	16	1-1/2"x120x65	4500	9.0	1270	750	60	60	40	150	20	52	32	2"x240x125	8000	81.2
392	270	50	45	20	100	15	39	16	1-1/2"x120x65	4500	9.3	1320	775	60	60	40	150	20	52	32	2"x240x125	8000	84.1
430	290	50	45	20	100	20	39	16	1-1/2"x120x65	4500	9.9	1370	800	60	60	40	150	20	52	32	2"x240x125	8000	87.0
451	310	55	55	25	125	20	46	19	1-3/4"x150x85	5800	15.9												
474	320	55	55	25	125	20	46	19	1-3/4"x150x85	5800	16.5												
492	330	55	55	25	125	20	46	19	1-3/4"x150x85	5800	17.1												
530	350	55	55	25	125	20	46	19	1-3/4"x150x85	5800	17.9												
548	360	55	55	25	125	20	46	19	1-3/4"x150x85	5800	18.5												
578	390	60	60	30	150	20	52	22	2"x215x105	8000	27.4												
630	415	60	60	30	150	20	52	22	2"x215x105	8000	29.4												

NOTE

1. MATERIAL

CLAMP	BOLT/NUT	TEMP.
A283 GR.C OR EQ.	A307 GR.B OR EQ.	350°C
A515 GR.60 OR EQ.	A193-B7/A194-2H OR EQ.	420°C
A387 GR.11 OR EQ.	A193-B7/A194-2H OR EQ.	640°C



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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CONSULTANTS



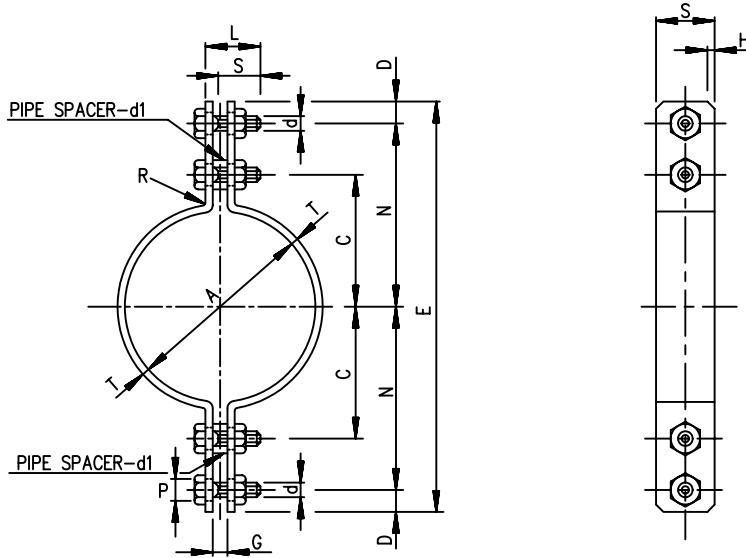
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1017

RISER PIPE CLAMP RC
(FOR LIGHT WEIGHT)

REV.
2



UNIT (mm)

NOM. PIPE SIZE (INCH)	CLAMP BODY											BOLT d(UNC)xLxs	WEIGHT (Kg)	ALLOW. LOAD (Kg)	
	A	C	D	E	G	H	N	P	R	S	T				d1
3"	92	85	25	540	25	10	245	22	10	50	9	3/4"	3/4"x70x35	5.1	350
4"	118	105	35	600	32	10	265	26	15	75	12	1"	1"x90x45	10.9	600
5"	146	125	35	660	32	10	295	26	15	75	12	1"	1"x90x45	11.8	600
6"	173	155	40	700	38	10	310	33	20	90	16	1 1/2"	1-1/4"x110x55	20.5	1100
8"	225	180	40	830	38	10	375	33	20	90	16	1 1/2"	1-1/4"x110x55	24.1	1290
10"	280	220	50	920	45	15	410	39	25	100	19	1 1/2"	1-1/2"x130x70	36.4	1590
12"	330	245	50	970	45	15	435	39	25	100	19	1 1/2"	1-1/2"x130x70	38.7	2010
14"	362	270	50	1000	45	15	450	39	30	125	22	1 1/2"	1-1/2"x130x70	55.3	2010
16"	414	295	50	1080	45	15	490	39	30	125	22	1 1/2"	1-1/2"x130x70	60.0	2500
18"	464	335	55	1140	50	20	515	46	35	150	28	2"	1-3/4"x155x75	96.9	2310
20"	514	360	55	1190	50	20	540	46	35	150	28	2"	1-3/4"x155x75	101.9	2500
24"	616	430	55	1290	60	20	590	52	40	150	32	2"	2"x175x75	134.6	3610
26"	668	460	55	1340	60	20	615	52	40	150	32	2"	2"x175x75	140.5	3610
28"	720	490	55	1400	60	20	645	52	40	150	32	2"	2"x175x75	147.2	4950
30"	770	515	55	1450	60	20	670	52	40	150	32	2"	2"x175x75	153.0	4950

NOTE

1. MATERIAL

CLAMP	BOLT/NUT	TEMP.
A283 GR.C OR EQ.	A307 GR.B OR EQ.	350°C
A515 GR.60 OR EQ.	A193-B7/A194-2H OR EQ.	420°C
A387 GR.11 OR EQ.	A193-B7/A194-2H OR EQ.	640°C

- SPACER : A53 GR.B OR EQ.

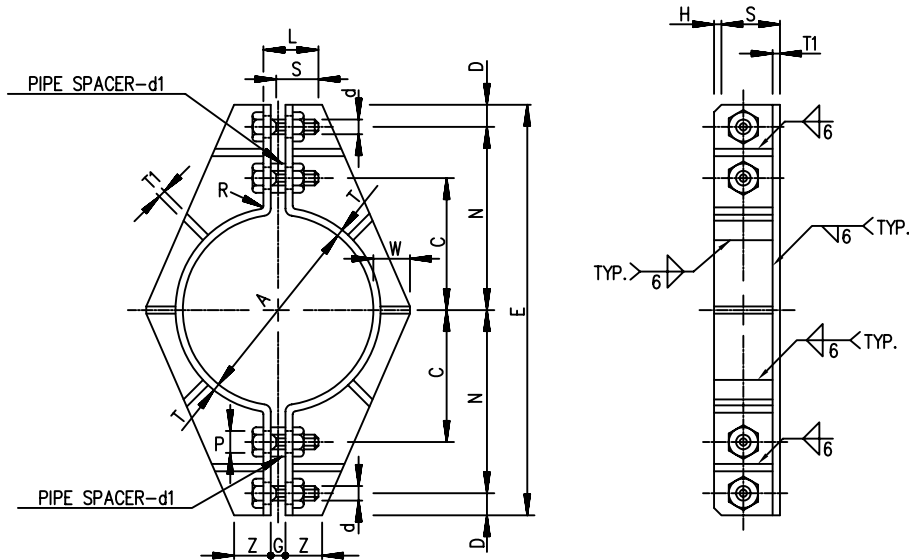


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1018

RISER PIPE CLAMP RCH
(FOR HEAVY WEIGHT)

REV.
2



UNIT (mm)

NOM. PIPE SIZE (INCH)	CLAMP BODY															HEX.BOLT d(UNC)xLxs	WEIGHT (Kg)	ALLOW. LOAD (Kg)	
	A	C	D	E	G	H	N	P	R	S	T	T1	W	Z	d1			C.S	A.S
3"	92	85	25	600	25	10	275	22	10	75	9	6	25	30	3/4"	3/4"x70x35	10.9	550	370
4"	118	105	35	660	32	10	295	26	15	100	12	6	35	40	1"	1"x90x45	20.2	600	410
5"	146	125	35	700	32	10	315	26	15	100	12	6	35	40	1"	1"x90x45	21.4	600	410
6"	173	155	40	760	38	10	340	33	20	125	16	9	45	55	1 1/2"	1-1/4"x110x55	41.0	1100	750
8"	225	180	40	890	38	10	405	33	20	125	16	9	45	55	1 1/2"	1-1/4"x110x55	48.3	2400	1650
10"	280	220	50	980	45	15	440	39	25	150	19	12	55	70	1 1/2"	1-1/2"x130x70	80.0	3200	2200
12"	330	245	50	1030	45	15	465	39	25	150	19	12	55	70	1 1/2"	1-1/2"x130x70	84.9	3200	2200
14"	362	270	50	1060	45	15	480	39	30	175	22	16	65	80	1 1/2"	1-1/2"x130x70	123.9	3700	2550
16"	414	295	50	1120	45	15	510	39	30	175	22	16	65	80	1 1/2"	1-1/2"x130x70	131.5	3700	2550
18"	464	335	55	1200	50	20	545	46	35	200	28	19	75	95	2"	1-3/4"x155x75	200.2	4120	3030
20"	514	360	55	1250	50	20	570	46	35	200	28	19	75	95	2"	1-3/4"x155x75	208.9	4450	3790
24"	616	430	60	1360	60	20	620	52	40	250	32	22	100	120	2"	2"x180x85	333.7	7260	3790
26"	668	460	60	1410	60	20	645	52	40	250	32	22	100	120	2"	2"x180x85	344.8	7390	7460
28"	720	490	60	1470	60	20	675	52	40	250	32	22	100	120	2"	2"x180x85	358.2	9300	9390
30"	770	515	60	1520	60	20	700	52	40	250	32	22	100	120	2"	2"x180x85	368.9	9300	9390

NOTE

1. MATERIAL

CLAMP	BOLT/NUT	TEMP.
A283 GR.C OR EQ.	A307 GR.B OR EQ.	350°C
A515 GR.60 OR EQ.	A193-B7/A194-2H OR EQ.	420°C
A387 GR.11 OR EQ.	A193-B7/A194-2H OR EQ.	640°C

- SPACER : A53 GR.B OR EQ.



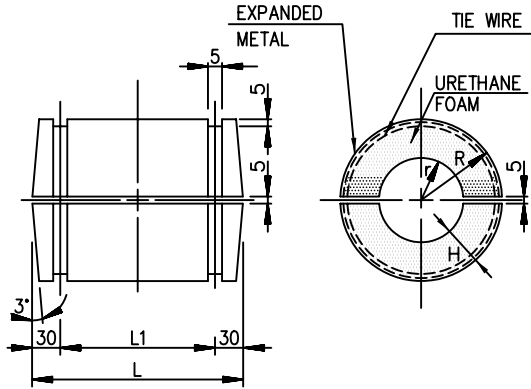
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

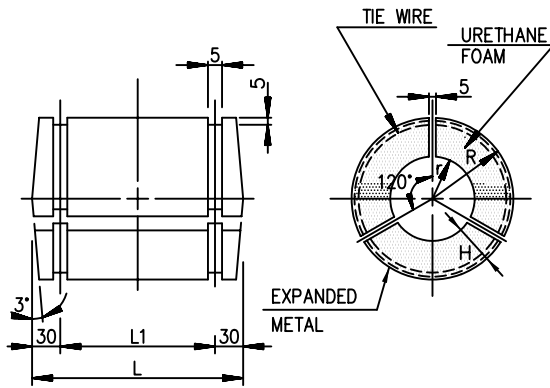
ST-A4-1019

CRADLE **CRD**
(FOR COLD INSULATED PIPE)

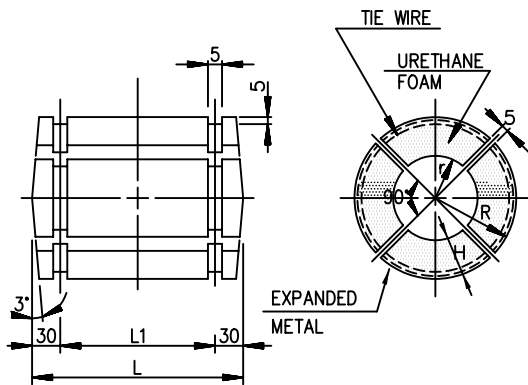
REV.
2



4" & SMALLER



5" TO 24"



26" TO LARGER

UNIT (mm)

PIPE SIZE	CRADLE TH'K			COLD INSULATION TH'K					
	r	L	L1	H=50	H=100	H=150	H=200	H=250	H=300
1/2"	11	370	310	61	111	161	-	-	-
3/4"	14	370	310	64	114	164	-	-	-
1"	17	370	310	67	117	167	-	-	-
1-1/2"	25	370	310	75	125	175	225	-	-
2"	31	370	310	81	131	181	231	-	-
2-1/2"	37	370	310	87	137	187	237	-	-
3"	45	420	360	95	145	195	245	-	-
4"	58	420	360	108	158	208	258	-	-
5"	72	420	360	122	172	222	272	-	-
6"	85	420	360	135	185	235	285	-	-
8"	110	420	360	160	210	260	310	360	-
10"	137	420	360	187	237	287	337	387	-
12"	162	420	360	212	262	312	362	412	-
14"	178	420	360	228	278	328	378	428	-
16"	204	420	360	254	304	354	404	454	-
18"	229	420	360	279	329	379	429	479	-
20"	254	420	360	304	354	404	454	504	554
22"	280	420	360	330	380	430	480	530	580
24"	305	420	360	355	405	455	505	555	605
26"	331	420	360	381	431	481	531	581	631
28"	356	420	360	406	456	506	556	606	656
30"	381	420	360	431	481	531	581	631	681
32"	407	420	360	457	507	557	607	657	707
34"	432	420	360	482	532	582	632	682	732
36"	458	420	360	508	558	608	658	708	758
40"	508	420	360	558	608	658	708	758	808
42"	534	420	360	584	634	684	734	784	834
44"	559	520	460	609	659	709	759	809	859
48"	610	520	460	660	710	760	810	860	910
52"	661	520	460	711	761	811	861	911	961
54"	686	520	460	736	786	836	886	936	986
60"	762	520	460	812	862	912	962	1012	1062

NOTE

- MATERIAL
 - URETHANE FOAM : SEE DWG.NO. ST-A4-1022
 - TIE WIRE : GALVANIZED IRON WIRE
 - ① UP TO 300mm O.D : BWG #16
 - ② 300mm & OVER O.D : BWG #14
 - EXPANDED METAL : A283 GR.C OR EQ.



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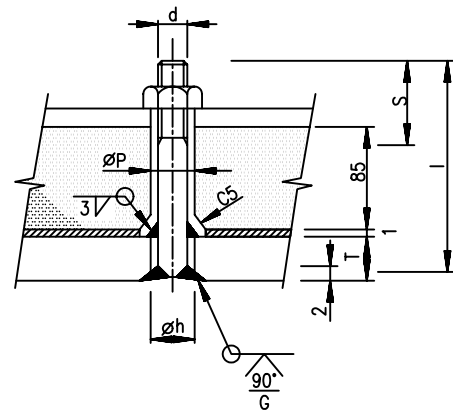
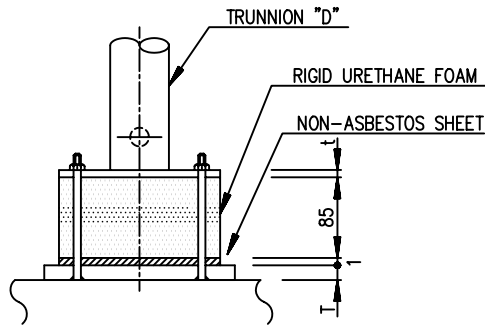
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

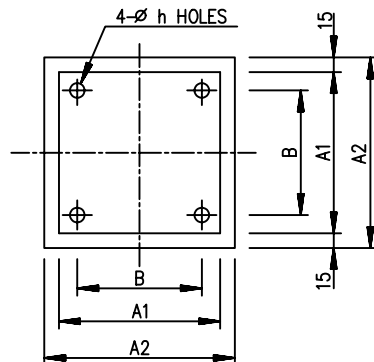
ST-A4-1020

URETHANE BLOCK URB
(FOR COLD INS.)

REV.
2



DETAIL FOR BOLT/NUT



BASE PLATE

UNIT (mm)

NOM. PIPE SIZE (INCH)	TRUNNION (D)	A1	A2	B	T	t	h	P	BOLT/NUT			WEIGHT (kg)	ALLOW. LOAD (kg)
									d(UNC)	I	S		
1-1/2"	1"	140	170	90	12	6	12.5	14	1/2"	120	30	5.0	980
2"	1-1/2"	140	170	90	12	6	12.5	14	1/2"	120	30	5.0	980
3" - 4"	2"	140	170	90	12	6	12.5	14	1/2"	120	30	5.0	980
5" - 8"	4"	160	190	120	16	9	16.5	18	5/8"	130	44	8.4	1920
10"	6"	210	240	160	16	9	16.5	18	5/8"	130	44	13.3	1920
12"-14"	8"	260	290	200	19	12	20.5	22	3/4"	140	52	23.6	3340
16"-18"	10"	320	350	250	19	12	20.5	22	3/4"	140	52	34.1	3340
20"-24"	12"	350	380	280	19	12	20.5	22	3/4"	140	52	40.2	3340
26"-28"	14"	400	430	320	19	12	20.5	22	3/4"	140	52	51.4	3340
30"	18"	500	530	400	22	16	24.5	26	1"	140	66		
36"	20"	570	600	450	25	22	30.5	32	1-1/8"	160	84		

NOTE

1. MATERIAL

- URETHANE FOAM : SEE DWG. NO. ST-A4-1022
- DENSITY OF U/F FOR ANCHOR : 500 Kg/m³ (URBA)
- DENSITY OF U/F FOR RESTING : 320 Kg/m³ (URBR)
- BASE PLATE : A36 OR EQ.
- BOLT/NUT : A320 B8/A194 Gr.4
- UPPER PLATE : A240-304 OR EQ.



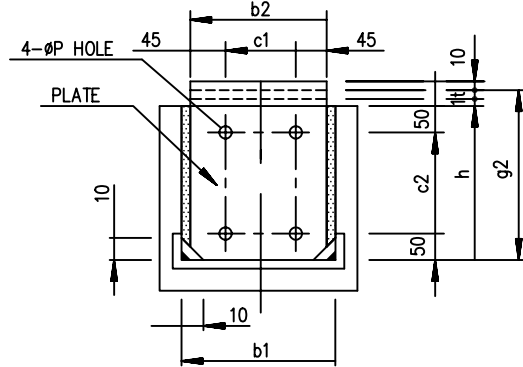
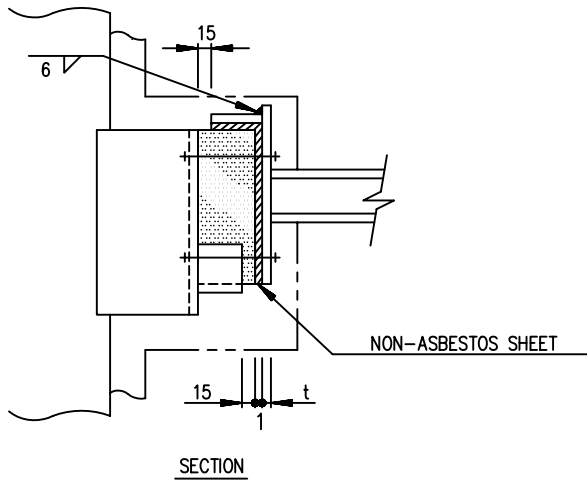
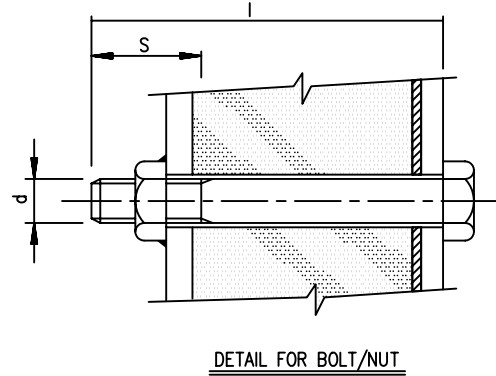
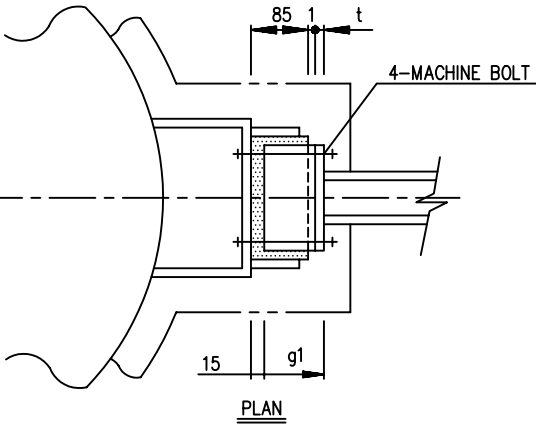
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

ST-A4-1021

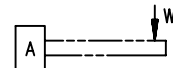
URETHANE BLOCK URBV
(FOR SUPPORT CLIP)

REV.
2

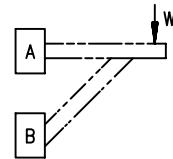


UNIT (mm)

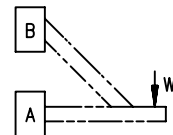
CLIP MARK	LOADING POINT	U/F		PLATE			BOLT/NUT			c1	c2	P	Q'TY (package)		
		b1	h	b2	g1	g2	t	d(UNC)	S					l	
#121	A	200	240	190	80	250	9	5/8"	50	140	100	140	18	1	SET
#122A	A	200	280	190	80	290	9	5/8"	50	140	100	180	18		
#122B	A	200	330	190	80	340	9	5/8"	50	140	100	230	18		
#123A	A	200	330	190	83	343	12	5/8"	50	140	100	230	18	2	SET
	B	280	320	270	83	373	12	5/8"	50	140	180	220	18		
#123B	A	200	380	190	83	393	12	3/4"	50	140	100	280	21		
	B	280	390	270	83	403	12	3/4"	50	140	180	290	21		
#123C	A	200	400	190	83	493	12	1"	60	145	100	380	26		
	B	280	530	270	83	543	12	1"	60	145	180	430	26		
#124A	A	200	330	190	83	343	12	5/8"	50	140	100	230	18		
	B	280	320	270	83	333	12	5/8"	50	140	180	220	18		
#124B	A	200	380	190	83	393	12	3/4"	50	140	100	280	21		
	B	280	390	270	83	403	12	3/4"	50	140	180	290	21		
#124C	A	200	480	190	83	493	12	1"	60	145	100	380	26		
	B	280	530	270	83	543	12	1"	60	145	180	430	26		



CLIP #121, #122A/B



CLIP #123A/B/C



CLIP #124A/B/C

LOADING

NOTE

1. MATERIAL

- URETHANE FOAM : SEE DWG. NO. ST-A4-1022
- DENSITY OF U/F : 500 Kg³/m
- PLATE : A240-304 OR EQ.
- BOLT/NUT : A320 B8/A194 GR.4 OR EQ.



SHAHID TONDGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

ST-A4-1022

U/F PROPERTY

REV.

2

MECHANICAL/PHYSICAL PROPERTY OF POLYURETHANE FOAM

ITEM	UNIT	DENSITY (Kg/M ³)		REMARKS
		320	500	
ULTIMATE COMPRESSIVE STRENGTH	Kg/CM ²	70.4	170	
COMPRESSIVE STRENGTH AT 1% DEFLECTION	Kg/CM ²	14.2	33	
BENDING STRENGTH	Kg/CM ²	90	200	
THERMAL CONDUCTIVITY	Kcal/Mhr°C	0.065	0.084	
COEFFICIENT OF THERMAL CONTRACTION	cm/cm°C	50x10 ⁻⁶	50x10 ⁻⁶	
NON-INFLAMMABILITY		SE	SE	
CLOSED CELL CONTENT BY VOLUME	%	90	90	
APPLICATION	-	CRADLE SUPPORT	FIXED SUPPORT	

SE - SELF EXTINGUISH



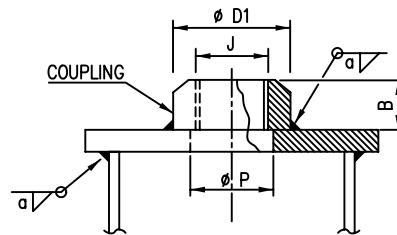
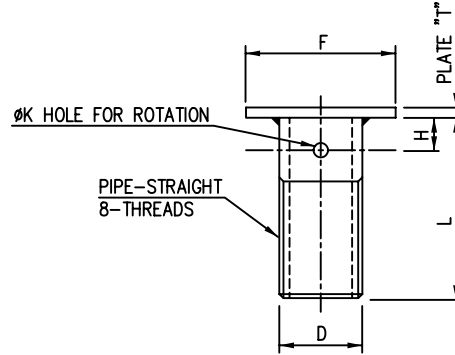
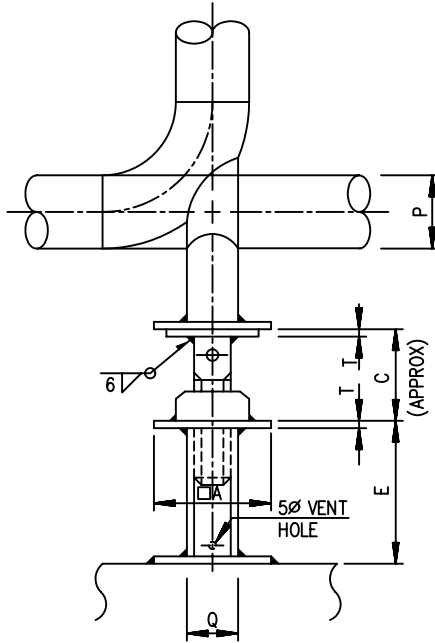
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

ST-A4-1023(1/4)

ADJUST STANCHION ADS
(ONE BOLT WITH THREAD COUPLING TYPE)

REV.
2



UNIT (mm)

NOM. PIPE SIZE (P)	SUPPORT COLUMN "Q"	A	B	C	D	D1	F	H	J x n *	ØK	L	T	Ø P	a	ALLOW. LOAD (Kg)
1-1/2"	3"	140	35	100	1" SCH.160	90	100	25	1-1/4"x8	16	140	12	38	6	500
2"	3"	140	35	100	1" SCH.160	90	100	25	1-1/4"x8	16	140	12	38	6	500
3"	3"	140	35	100	1" SCH.160	90	100	25	1-1/4"x8	16	140	12	38	6	500
4"	3"	140	60	140	2" SCH.160	120	140	30	2-1/4"x8	30	180	14	64	6	1000
6"	4"	160	60	140	2" SCH.160	120	140	30	2-1/4"x8	30	180	14	64	6	1800
8"	4"	160	60	140	2" SCH.160	120	140	30	2-1/4"x8	30	180	14	64	6	1800
10"	6"	210	90	180	3" SCH.160	150	180	40	3-3/8"x8	36	220	16	94	9	4000
12"	8"	260	90	180	3" SCH.160	150	180	40	3-3/8"x8	36	220	16	94	9	4500
14"	8"	260	90	180	3" SCH.160	150	180	40	3-3/8"x8	36	220	16	94	9	4500
16"	10"	320	115	215	4" SCH.160	180	200	40	4-3/8"x8	50	250	20	118	9	5000
18"	10"	320	115	215	4" SCH.160	180	200	40	4-3/8"x8	50	250	20	118	9	5000
20"	12"	350	115	215	4" SCH.160	180	200	40	4-3/8"x8	50	250	20	118	9	5000
24"	12"	350	115	215	4" SCH.160	180	200	40	4-3/8"x8	50	250	20	118	9	5000

NOTE

- USE THIS SUPPORT ON PUMP SUCTION AND DISCHARGE LINE.
- MATERIAL
 - TRUNNION : SAME AS RUN PIPE MATERIAL OR EQ.
 - COLUMN : A53 GR.B OR EQ.
 - COUPLING : A36 OR EQ.
 - PLATE : A283 GR.C OR EQ.



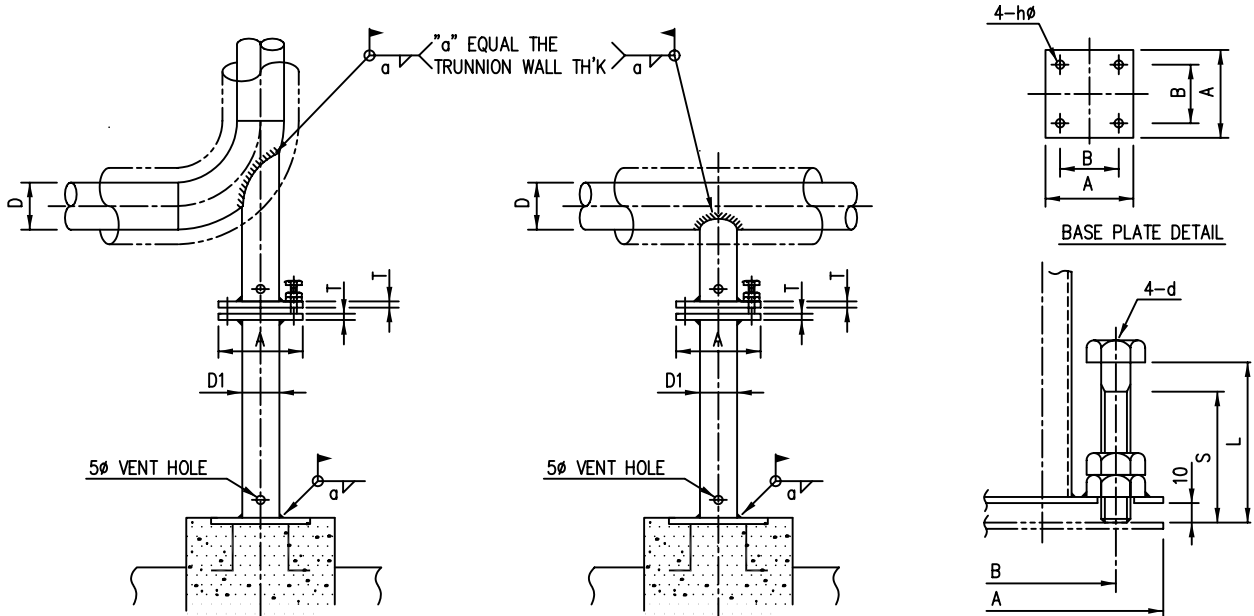
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

ST-A4-1023(2/4)

ADJUST STANCHION ADS
(FOUR BOLT TYPE)

REV.
2



(UNIT : MM)

PIPE SIZE (D)	ALLOW. LOAD (KG)	D1	A	B	h	T	d	L	S	WEIGHT (KG)	REMARK
1-1/2"	2000	1-1/2"	140	90	18	6	M16	75	65	5.5	
2"	2000	2"	140	90	18	6	M16	75	65	5.9	
2-1/2"	2000	2"	140	90	18	6	M16	75	65	6.2	
3"	2000	2"	140	90	18	6	M16	75	65	6.24	
3-1/2"	2000	3"	140	90	18	6	M16	75	65	8.59	
4"	2000	3"	140	90	18	6	M16	75	65	8.63	
5"	2000	4"	160	120	18	6	M16	75	65	13.2	
6"	2000	4"	160	120	18	6	M16	75	65	13.4	
8"	2000	6"	210	160	18	6	M16	75	65	23.99	
10"	2000	8"	260	200	18	12	M20	75	65	41.3	
12"	3000	10"	320	250	22	12	M20	85	75	71.0	
14"	3000	10"	320	250	22	12	M20	85	75	72.7	
16"	3000	12"	350	280	22	12	M20	85	75	86.4	
18"	3000	14"	400	320	22	12	M20	85	75	117.4	
20"	3000	14"	400	320	22	12	M20	85	75	118.7	
22"	3000	14"	400	320	22	12	M20	85	75	120.8	
24"	3000	14"	400	320	22	12	M20	85	75	122.3	

NOTE

- USE THIS SUPPORT ON PUMP SUCTION AND DISCHARGE LINE.
- MATERIAL
 - TRUNNION : SAME AS RUN PIPE MATERIAL OR EQ.
 - COLUMN : A53 GR.B OR EQ.
 - PLATE : A283 GR.C OR EQ.
 - BOLT/NUT : A307 GR.B OR EQ.



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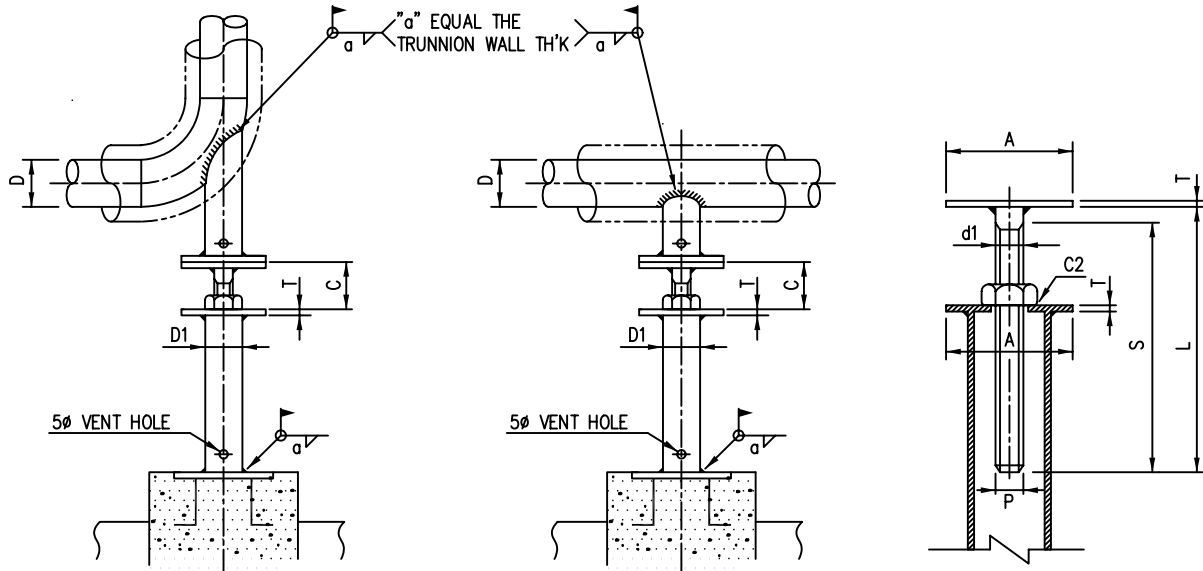
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

ST-A4-1023(3/4)

ADJUST STANCHION ADS
(ONE BOLT TYPE)

REV.
2



(UNIT : MM)

PIPE SIZE (D)	ALLOW. LOAD (KG)	D1	A	C	P	T	d	L	S	WEIGHT (KG)	REMARK
1-1/2"	722.7	1-1/2"	140	70	26	6	M24	140	120	5.2	
2"	722.7	2"	140	70	26	6	M24	140	120	5.5	
2-1/2"	722.7	2"	140	70	26	6	M24	140	120	5.8	
3"	722.7	2"	140	70	26	6	M24	140	120	5.84	
3-1/2"	1147.2	3"	140	85	33	6	M30	165	135	7.8	
4"	1147.2	3"	140	85	33	6	M30	165	135	7.83	
5"	1147.2	4"	160	85	33	9	M30	165	135	12.1	
6"	1147.2	4"	160	85	33	9	M30	165	135	12.42	
8"	2923.9	6"	210	100	52	9	M48	180	150	22.2	
10"	2923.9	8"	260	100	52	12	M48	180	150	38.3	
12"	5156.7	10"	320	120	70	12	M64	210	175	66.8	
14"	5156.7	10"	320	120	70	12	M64	210	175	67.6	
16"	5156.7	12"	350	120	70	12	M64	210	175	80.1	
18"	6424.2	14"	400	140	78	12	M72	240	200	107.9	
20"	6424.2	14"	400	140	78	12	M72	240	200	109.2	
22"	6424.2	14"	400	140	78	12	M72	240	200	113.3	
24"	6424.2	14"	400	140	78	12	M72	240	200	112.8	

NOTE

- USE THIS SUPPORT ON PUMP SUCTION AND DISCHARGE LINE.
- MATERIAL
 - TRUNNION : SAME AS RUN PIPE MATERIAL OR EQ.
 - COLUMN : A53 GR.B OR EQ.
 - PLATE : A283 GR.C OR EQ.
 - BOLT/NUT : A307 GR.B OR EQ.



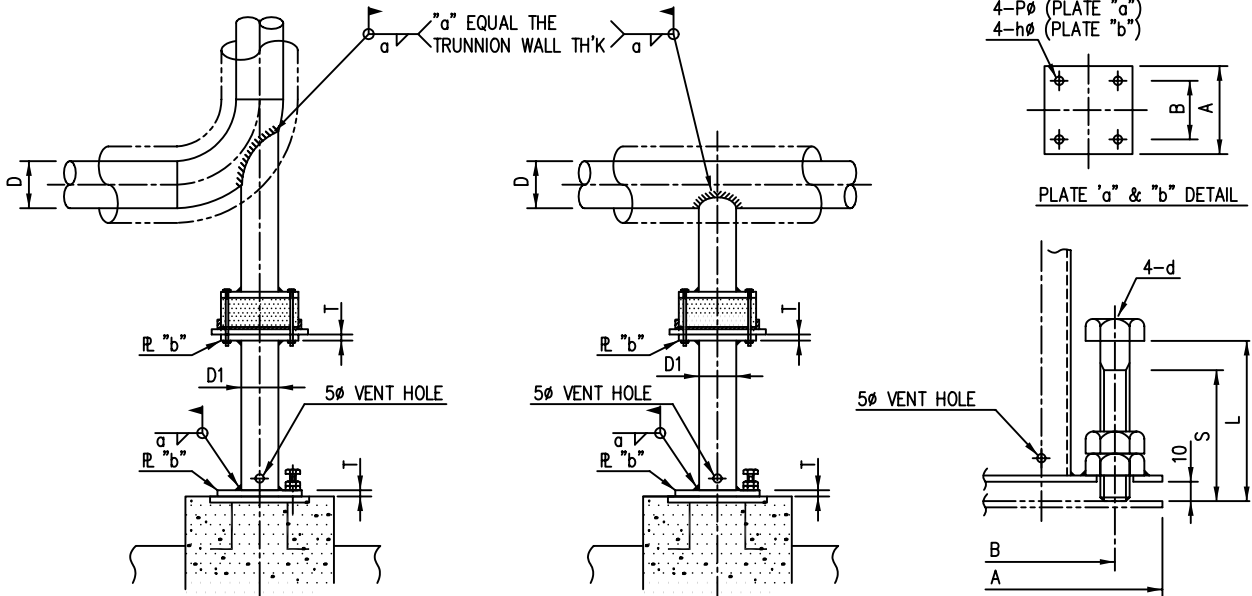
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

ST-A4-1023(4/4)

ADJUST STANCHION **ADS**
(FOUR BOLT TYPE WITH URETHANE FOAM)

REV.
2



(UNIT : MM)

PIPE SIZE (D)	ALLOW. LOAD (KG)	D1	A	B	T	h	d	L	S	WEIGHT (KG)	REMARK
AJA-1-1/2"	2000	1-1/2"	140	90	6	18	M16	75	65	2.65	
2"	2000	2"	140	90	6	18	M16	75	65	3.05	
2-1/2"	2000	2"	140	90	6	18	M16	75	65	3.67	
3"	2000	2"	140	90	6	18	M16	75	65	4.05	
3-1/2"	2000	3"	140	90	6	18	M16	75	65	4.43	
4"	2000	3"	140	90	6	18	M16	75	65	5.03	
5"	2000	4"	160	120	9	18	M16	75	65	6.15	
6"	2000	4"	160	120	9	18	M16	75	65	7.5	
8"	2000	6"	210	160	9	18	M16	75	65	13.1	
10"	2000	8"	260	200	12	18	M16	75	65	18.7	
12"	3000	10"	320	250	12	22	M20	85	75	25.1	
14"	3000	10"	320	250	12	22	M20	85	75	29.2	
16"	3000	12"	350	280	12	22	M20	85	75	34.8	
18"	3000	14"	400	320	12	22	M20	85	75	39.7	
20"	3000	14"	400	320	12	22	M20	85	75	42.1	
22"	3000	14"	400	320	12	22	M20	85	75	44.8	
24"	3000	14"	400	320	12	22	M20	85	75	47.5	

NOTE

- USE THIS SUPPORT ON PUMP SUCTION AND DISCHARGE LINE.
- MATERIAL
 - TRUNNION : SAME AS RUN PIPE MATERIAL OR EQ.
 - COLUMN : A53 GR.B OR EQ.
 - PLATE : A283 GR.C OR EQ.
 - BOLT/NUT : A307 GR.B OR EQ.



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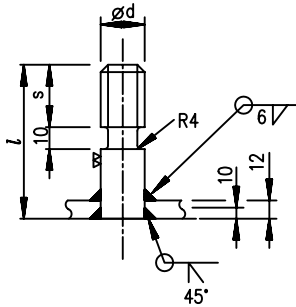
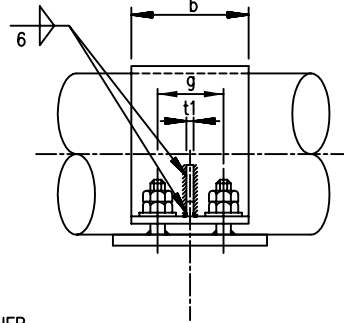
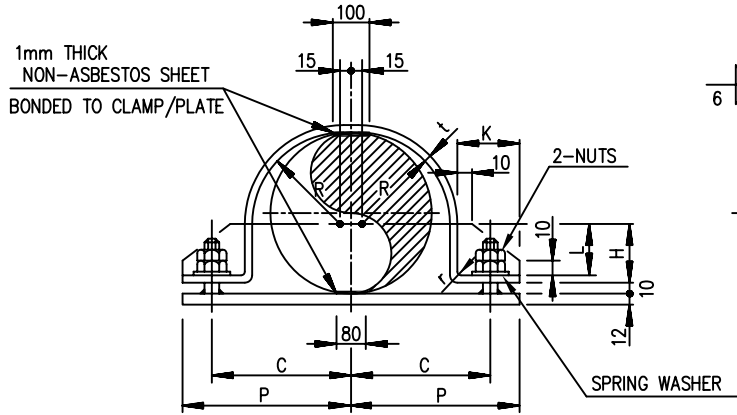
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1024

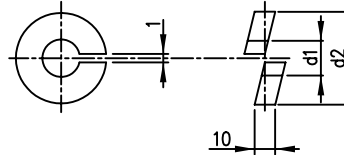
FIXED BAND
(FOR VIBRATION LINE)

FBD

REV.
2



DETAIL FOR BOLT



SPRING WASHER

BOLT SIZE	d1	d2
5/8"	18	30
3/4"	22	37
1"	26	44

UNIT (mm)

NOM. PIPE SIZE	O.D OF PIPE	R	C	P	H	b x t	g	L	K	t1	r	BOLT/NUTS d(UNC)xLxs	WEIGHT (kg)
1-1/2"	48.3	25.5	62	87	13	100x6	60	-	-	-	6	5/8"x80x50	3.5
2"	60.3	31.5	68	93	19	100x6	60	-	-	-	6	5/8"x80x50	5.0
2-1/2"	73.0	38	82	107	25	125x9	80	-	-	-	9	3/4"x90x55	6.9
3"	88.9	45.5	89	114	33.5	125x9	80	24	58	9	9	3/4"x90x55	7.3
4"	114.3	58.5	101	126	46	125x9	80	37	57	9	9	3/4"x90x55	8.3
6"	168.3	85.5	132	157	73	125x12	80	61	58	12	9	3/4"x90x55	11.5
8"	219.1	111	155	180	98.5	125x12	80	86	55	12	9	3/4"x90x55	13.8
10"	273.1	138	185	210	125.5	150x12	85	113	58	12	9	3/4"x90x55	19.0
12"	323.9	164	210	235	150	150x12	85	138	57	12	9	3/4"x90x55	21.7
14"	355.6	180	235	260	166	150x12	85	154	66	12	9	1"x100x65	25.4
16"	406.4	205.5	260	285	191	150x12	85	179	66	12	9	1"x100x65	28.1

NOTE

1. MATERIAL

- FIXED BAND : A36 OR EQ.
- BASE PLATE : A36 OR EQ.
- WASHER : A36 OR EQ.
- BOLT/NUT : A307 GR.B-GALV. OR EQ.
- BUFFER : NON-ASBESTOS SHEET



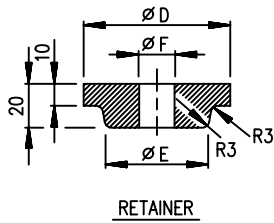
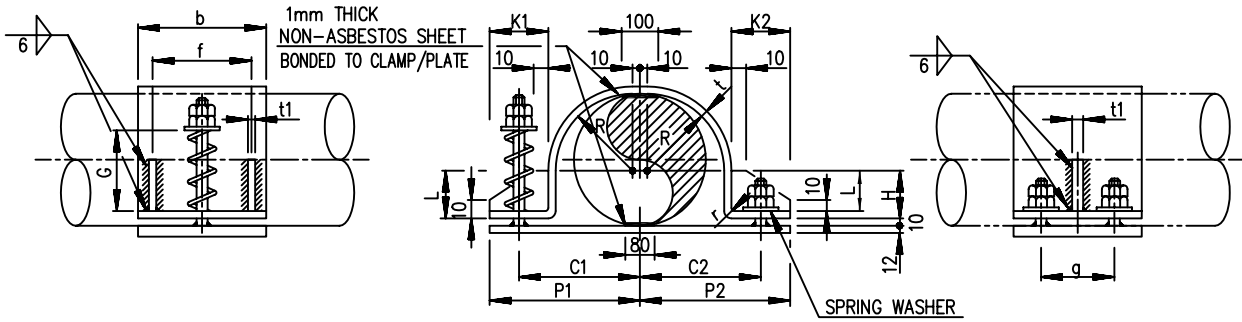
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

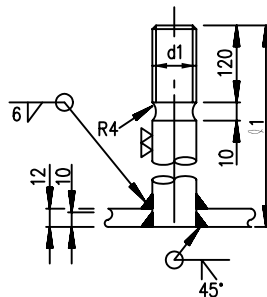
ST-A4-1025

FIXED BAND **FBDS**
(FOR VIBRATION LINES)

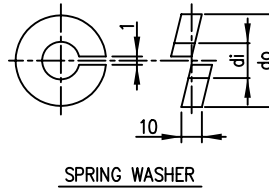
REV.
2



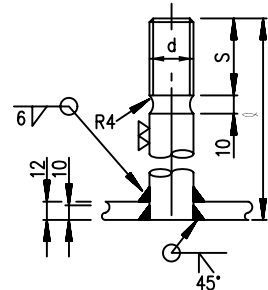
RETAINER



BOLT FOR SPRING



SPRING WASHER



DETAIL FOR BOLT

BOLT SIZE "d"	D	E	F
1"	70	48	26
1-1/4"	120	80	33

BOLT SIZE "d"	di	do
5/8"	18	30
3/4"	22	37
1"	26	44

UNIT (mm)

NOM. PIPE SIZE	O.D OF PIPE	R	C1	C2	P1	P2	H	b x t	g	f	L	K1	K2	t1	r	BOLT/NUTS		WEIGHT (kg)
																d1(UNC)xL1	d(UNC)xLxs	
1-1/2"	48.3	25.5	95	75	135	100	13	120x9	65	85	-	-	-	9	9	1"x220	5/8"x80x50	5.5
2"	60.3	31.5	100	80	140	105	19	120x9	65	85	-	-	-	9	9	1"x220	5/8"x80x50	9.2
2-1/2"	73.0	38	105	90	145	115	25	120x9	65	85	-	-	-	9	9	1"x220	3/4"x90x55	11.7
3"	88.9	45.5	115	95	155	120	33.5	120x9	65	85	24	90	55	9	9	1"x220	3/4"x90x55	12.6
4"	114.3	58.5	125	110	165	135	46	120x9	65	85	37	87	57	9	9	1"x220	3/4"x90x55	13.5
6"	168.3	85.5	180	140	240	165	73	180x12	100	150	61	132	57	12	9	1-1/4"x250	3/4"x90x55	35.3
8"	219.1	111	205	165	265	190	98.5	180x12	100	150	86	132	57	12	9	1-1/4"x250	3/4"x90x55	38.8
10"	273.1	138	230	195	290	220	125.5	180x12	100	150	113	130	60	12	9	1-1/4"x250	3/4"x90x55	42.3
12"	323.9	164	255	220	315	245	150	180x12	100	150	138	129	59	12	9	1-1/4"x250	3/4"x90x55	45.9
14"	355.6	180	275	235	335	260	166	180x12	100	150	154	133	58	12	9	1-1/4"x250	1"x100x65	49.2
16"	406.4	205.5	300	265	360	290	191	180x12	100	150	179	133	62	12	9	1-1/4"x250	1"x100x65	52.5
18"	457.2	231	325	290	385	315	216.5	180x12	100	150	204	134	62	12	9	1-1/4"x250	1"x100x65	56.3
20"	508.0	257	350	315	410	340	241	180x12	100	150	229	134	61	12	9	1-1/4"x250	1"x100x65	60.0
22"	558.8	282.5	375	340	435	365	261.5	180x12	100	150	254	133	63	12	9	1-1/4"x250	1"x100x65	63.4
24"	609.6	308	400	365	460	390	292	180x12	100	150	280	133	60	12	9	1-1/4"x250	1"x100x65	65.5

NOTE

1. MATERIAL

- FIXED BAND : A36 OR EQ.
- BASE PLATE : A36 OR EQ.
- RETAINER : A36 OR EQ.
- WASHER : A36 OR EQ.
- SPRING : A229 CL.1 OR EQ.
- BOLT/NUT : A307 GR.B-GALV. OR EQ.
- BUFFER : NON-ASBESTOS SHEET

2. SPECIFICATION OF SPRING

UNIT (mm)

PIPE SIZE	SPRING RATE (kg/mm)	COIL O.D	WIRE O.D	FREE HEIGHT	MAX. DEFLECTION
1"~4"	8	60	10	135	40
6"~12"	24	100	18	158	40
14"~18"	24	100	18	158	40
20"~24"	24	100	18	158	40



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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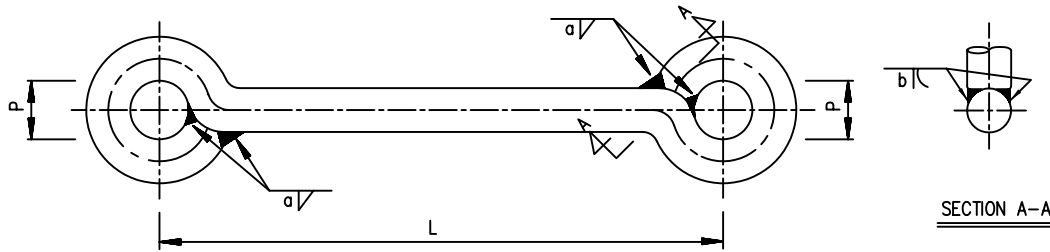


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1026

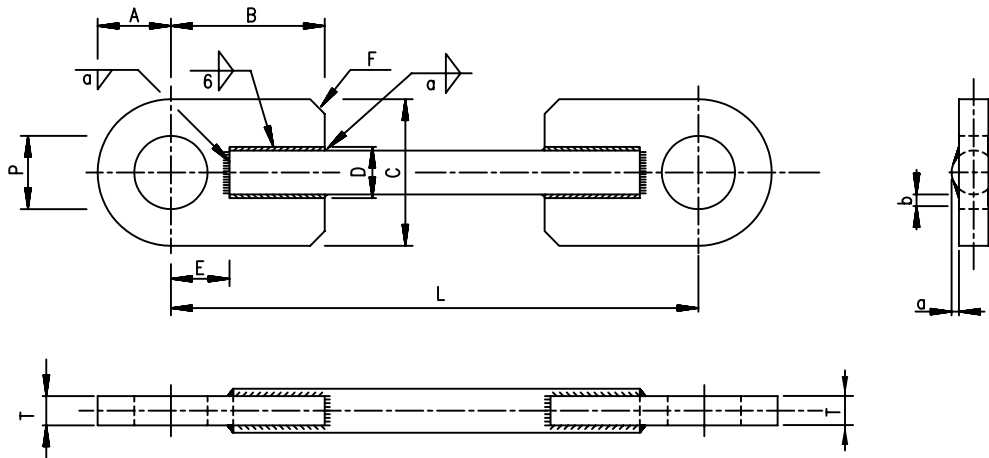
EYE ROD ERD

REV.
2



ROD SIZE 1-1/2" & SMALLER

ROD SIZE (d, inch)	UNIT (mm)			
	P	a	b	ALLOWABLE LOAD (Kg)
3/8"	14	3	3.5	275
1/2"	18	3	3.5	515
5/8"	22	3	4.5	820
3/4"	28	3	5.5	1230
1"	34	4	7	2250
1-1/4"	40	5	9	3630
1-1/2"	46	6	10	5280



ROD SIZE 1-3/4" TO 2-1/2"

ROD SIZE (d, inch)	UNIT (mm)										
	P	A	B	C	D	E	F	T	a	b	ALLOWABLE LOAD (Kg)
1-3/4"	52	60	120	120	45	65	15	22	7	8	7120
2"	62	70	140	140	51	75	15	25	9	10	9390
2-1/4"	70	75	160	150	61	80	20	28	10	11	12350
2-1/2"	78	80	180	160	66	85	20	32	11	12	15200

NOTE

- MATERIAL
- EYE ROD : A36-GALV. OR EQ.
- DIMENSION "L" IS DESIGNATED ON THE STANDARD DWG. FOR EACH ASSEMBLY.



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

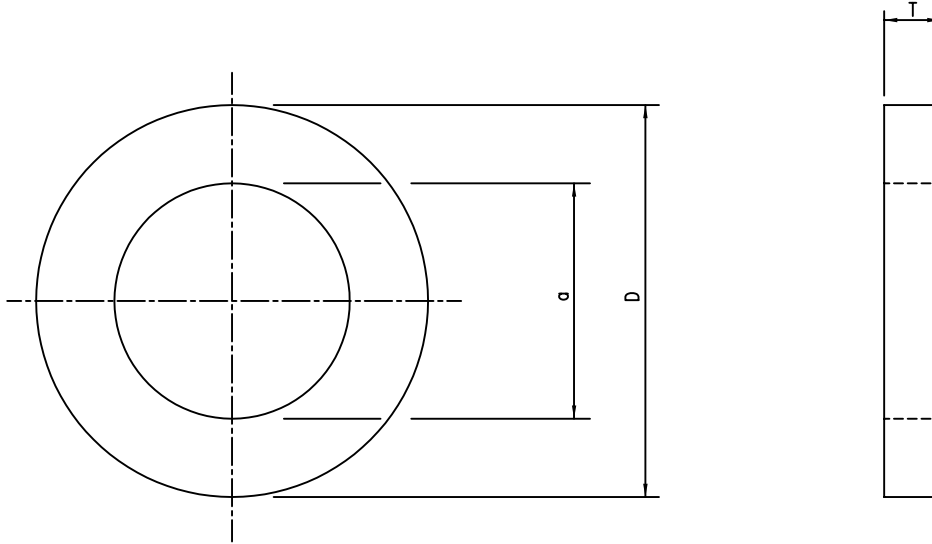
ST-A4-1027

PLAIN WASHER

PW

REV.

2



UNIT (MM)

ROD SIZE (inch)	d	D	T	WEIGHT (kg)
3/8"	11	21	2.0	0.004
1/2"	14	24	2.3	0.006
5/8"	18	30	3.2	0.012
3/4"	22	37	3.2	0.018
1"	25	44	4.5	0.035
1-1/4"	33	56	4.5	0.057
1-1/2"	39	66	6.0	0.105
1-3/4"	45	78	7.0	0.175
2"	52	92	8.0	0.234
2-1/4"	62	105	9.0	0.399
2-1/2"	70	115	9.0	0.463

NOTE

1. MATERIAL

- PLAIN WASHER : A36-GALV. OR EQ.



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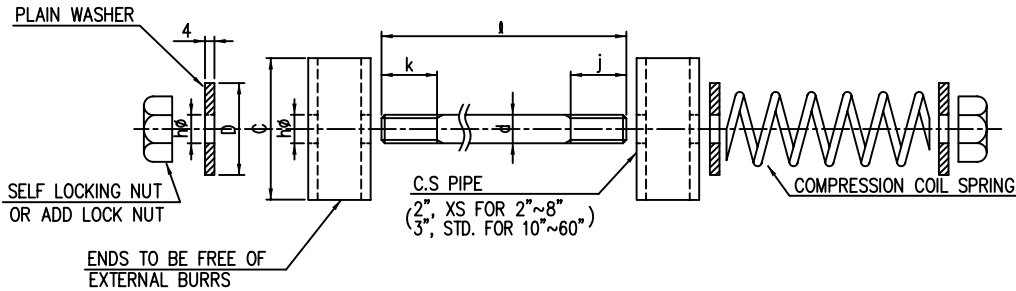
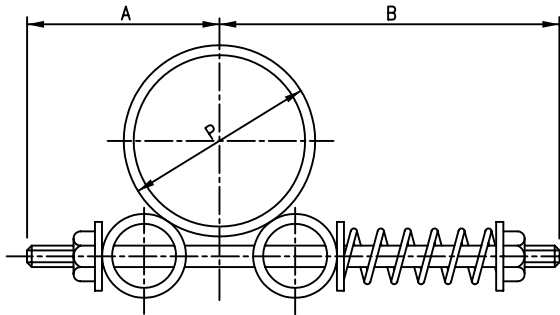
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

ST-A4-1028

ADJUSTABLE SPRING WEDGE **ASW**
(FOR VIBRATION LINE)

REV.
2



UNIT (mm)

PIPE SIZE NPS "P"	A	B	C	hø	BOLT/NUTS		D	PIPE SIZE NPS "P"	A	B	C	hø	BOLT/NUTS		
					d(UNC)	l x j x k							d(UNC)	l x j x k	D
2"	120	180	150	14	1/2"	x300x100x60	35	30"	240	370	230	27	1"	x610x190x80	64
3"	120	180						32"	240	370					
4"	120	180						34"	265	395					
6"	140	210						36"	265	395					
8"	140	210	22	3/4"	x350x130x60	51	38"	265	395						
10"	200	270					40"	265	395						
12"	200	270					42"	265	395						
14"	200	270					44"	265	395						
16"	220	290	27	3/4"	x510x130x70	64	46"	265	395						
18"	220	290					48"	290	420						
20"	220	290					50"	290	420						
24"	240	370					52"	290	420						
26"	240	370	27	1"	x610x190x80	64	54"	290	420						
28"	240	370					60"	290	420	1"	x710x190x80				

SPECIFICATION OF COIL SPRING

UNIT (mm)

PIPE SIZE	MIN. DEFLECTION TO SOLID HEIGHT	LOAD FULLY COMPRESSED (Kg)	SPRING			
			SPRING RATE (kg/mm)	MAX. O.D	MIN I.D	MAX. FREE HEIGHT
2" ~ 4"	25	205	8.2	27	13	64
6" ~ 20"	50	730	29.2	76	40	152
24" ~ 60"	102	1230	24	102	52	254

NOTE

1. MATERIAL

- BOLT/NUT : A307 Gr.B-GALV. OR EQ., WITH SELF LOCKING NUT
- PIPE : A53 Gr.B OR EQ.
- PLAIN WASHER : A36 OR EQ.



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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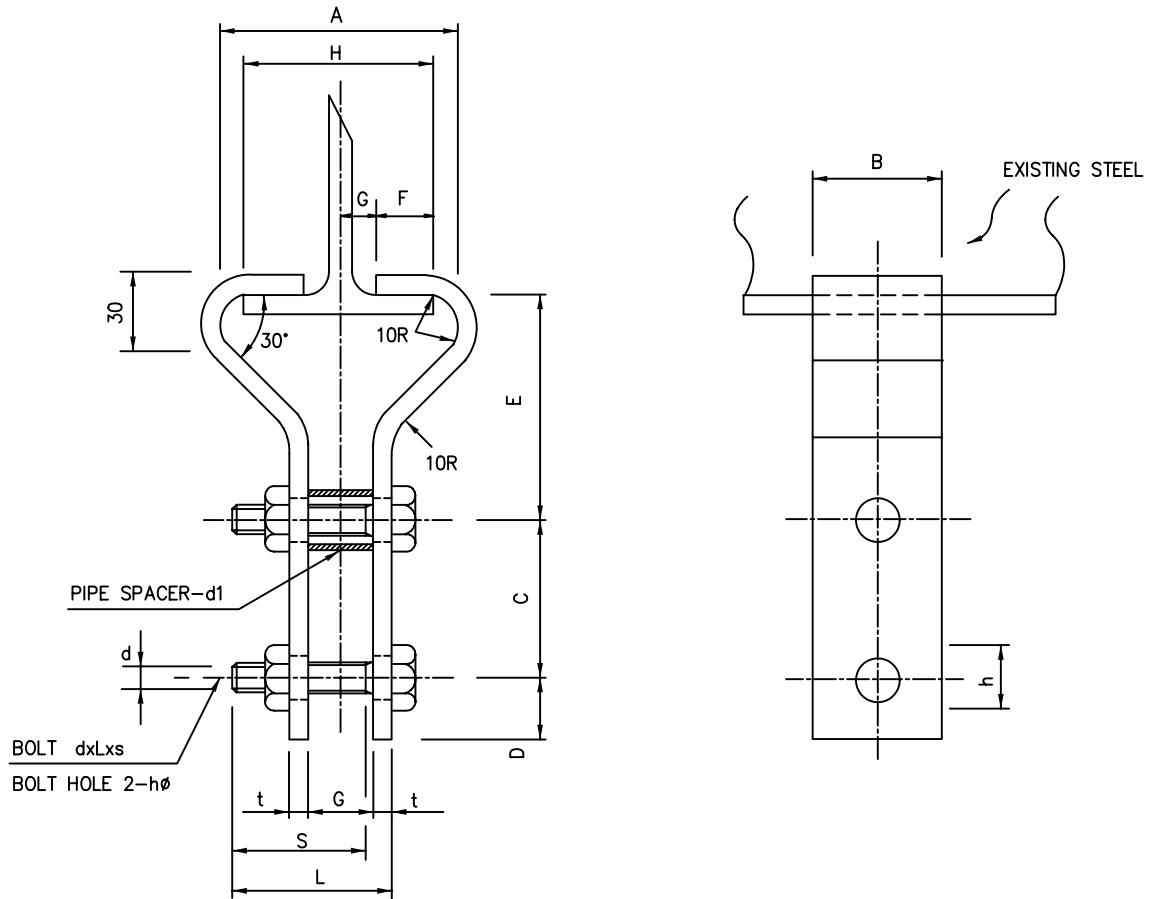
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

ST-A4-1030

BEAM CLAMP BC

REV.
2



UNIT (mm)

EXIST BEAM SIZE (H)	A		B	C	D	E	F	G	g	h	t	BOLT & NUT d x L x s	ALLOW. LOAD (Kg)	d1
	MIN	MAX												
BC-100	110	125	50	70	25	100	35	25	15	21	6	3/4"x70x50	820	3/4"
125	135	150	60	70	25	100	45	25	18	21	6	3/4"x70x50	820	3/4"
150	160	175	60	80	25	110	55	25	20	21	9	3/4"x80x50	820	3/4"
175	185	200	70	90	35	120	65	32	23	21	9	1"x90x60	1230	1"
200	220	235	80	110	40	130	75	38	25	28	9	1-1/2"x100x70	2250	1-1/2"
250	270	285	100	130	50	150	95	45	30	41	12	1-1/2"x120x70	3630	1-1/2"
300	320	335	110	150	55	170	115	50	35	54	12	2"x130x80	7120	2"
400	420	435	110	160	55	200	155	50	45	54	12	2"x130x80	7120	2"

NOTE

1. MATERIAL

- PLATE : A36 OR EQ.
- BOLT/NUT : A307 GR.B-GALV. OR EQ.
- SPACER : A53 GR.B OR EQ.

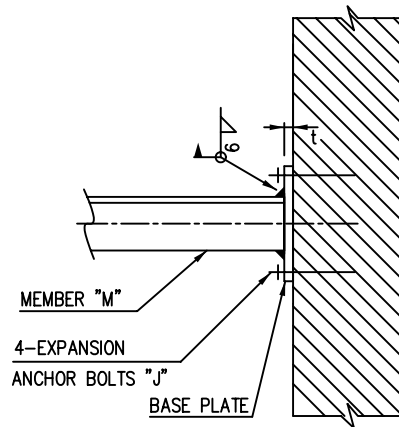
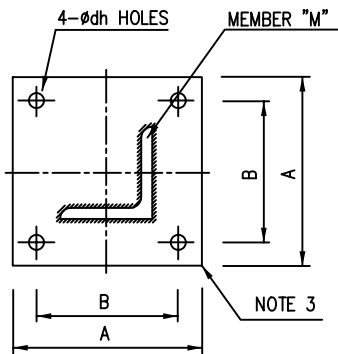
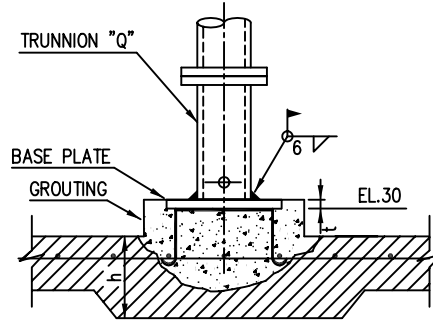
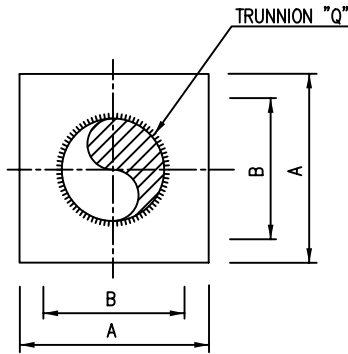


PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1031 (1 OF 2)

BASE PLATE AND
EXPANSION ANCHOR BOLT **BPLA**
(ANCHOR TYPE)

REV.
2



BASE PLATE DETAIL

UNIT (mm)

PIPE SIZE	TRUNNION NPS "Q"	BASE PLATE		
		A	B	t
1-1/2"	1"	140	90	9
2"	1-1/2"	140	90	9
3"	2"	140	90	9
4"	2"	160	120	9
6"	3"	160	120	9
8"	4"	160	120	9
10"	6"	210	160	12
12"	8"	260	200	12

UNIT (mm)

MEMBER "M"	BASE PLATE				
	A	B	t	ϕ dh	J
A5	180	120	9	20	1/2"
A6	180	120	9	20	1/2"
A7	180	120	9	20	1/2"
A10	260	180	9	26	5/8"
C10	260	180	12	31	3/4"
C12	260	180	12	31	3/4"
C15	300	230	12	31	3/4"

GENERALLY REVISED

NOTE

- MATERIAL
 - PLATE : A36 OR EQ.
 - EXPANSION ANCHOR BOLT : A325-GALV. OR EQ.
- REQUIRED MIN. BASE CONCRETE TH'K(h) SHOULD BE INFORMED TO CIVIL ENGINEER FOR PAVING DESIGN.
- USED FOR CONCRETE COLUMN OR WALL.



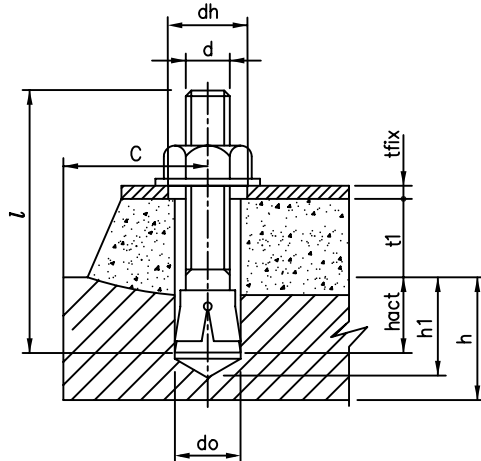
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG.

ST-A4-1031 (2 OF 2)

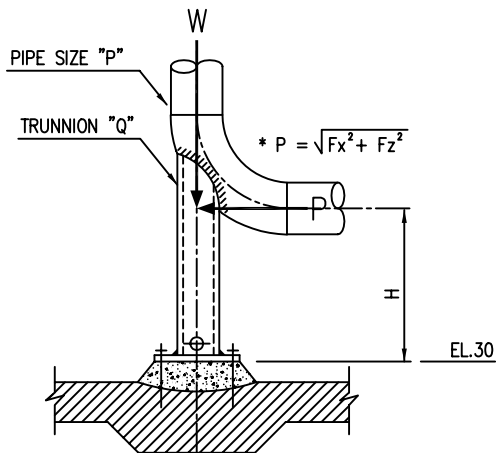
BASE PLATE AND
EXPANSION ANCHOR BOLT **BPLA**
(ANCHOR TYPE)

REV.
2



DESIGN APPLICATION OF ANCHOR BOLT

	Anchor Bolt Size (J)	Anchor Bolt Size (J)		
		1/2"	5/8"	3/4"
Shear stress area (mm ²)	A _b	84	157	245
Min. spacing between anchors (mm)	S _{min}	85	102	129
Min. base concrete th'k (mm)	h _{min}	160	180	220
Min. edge distance (mm)	C _{min}	250	300	390
Min. depth of embedment (mm)	h _{nom}	94	113	143
Drill bit size (mm)	d _o	14	24	28
Plate hole size (mm)	d _h	20	26	31
Anchor Length (mm)	l	155	177	220
Actual Depth of Embedment (mm)	h _{act}	108	124	161
Depth of Drill(mm)	h ₁	120	135	172
Min. Tensile Strength of Bolt(kg/cm ²)	T _u	7381	7381	7381
Strength of Concrete(kg/cm ²)		210	210	210
Base plate Th'k(mm)	t _{fix}	9	12	16
Grouting Th'k(mm)	t ₁	30	30	30
Anchor Bolt Type	HILTI(HSL-TZ) or EQ.			



ALLOWABLE LOADS FOR EXPANSION ANCHOR BOLT
(ANCHOR TYPE)

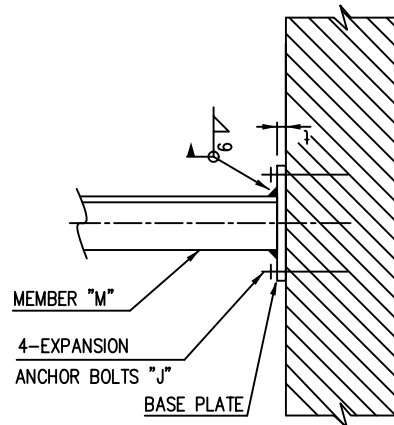
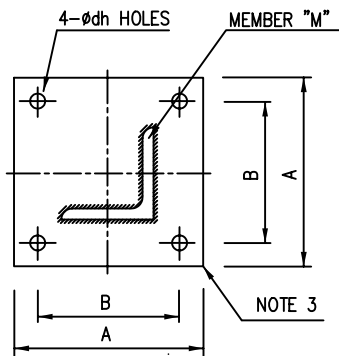
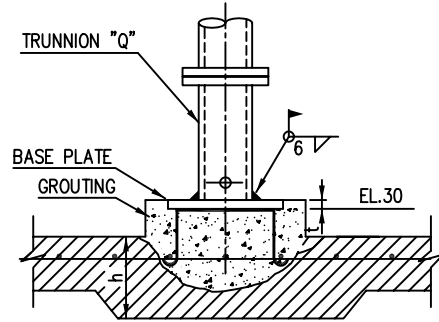
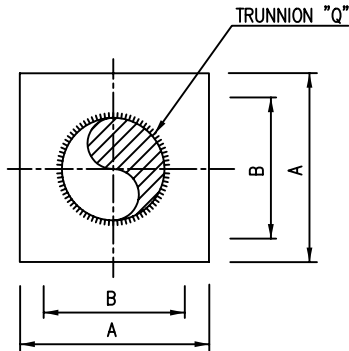
PIPE SIZE (P)	TRUNNION NPS "Q"	MEMBER "M"	W (Kg)	UNIT (mm)			
				* P(Kg)			
				H=300	H=500	H=700	H=1000
1-1/2"	1"	A5	400	80	50	-	-
2"	1-1/2"	A6	500	100	65	40	20
3"~4"	2"	A7	800	160	95	65	50
5"	3"	A10	1000	290	170	120	95
6"~8"	4"	C10	1500	330	190	130	100
10"	6"	C12	2000	720	420	290	230
12"~14"	8"	C15	2500	830	480	330	260



PIPING SUPPORT ATTACHMENT DWG. ST-A4-1032 (1 OF 2)

BASE PLATE AND
EXPANSION ANCHOR BOLT
(RESTING TYPE) **BPLR**

REV.
2



BASE PLATE DETAIL

UNIT (mm)

TRUNNION NPS "Q"	BASE PLATE				
	A	B	t	ϕ dh	J
1"	140	90	9	11	3/8"
1-1/2"	140	90	9	11	3/8"
2"	140	90	9	11	3/8"
3"	140	90	9	11	3/8"
4"	160	120	9	11	3/8"
6"	210	160	12	13.5	1/2"
8"	260	200	12	13.5	1/2"
10"	320	250	12	17.5	5/8"
12"	350	280	12	17.5	5/8"

MEMBER "M"	BASE PLATE		
	A	B	t
A5	180	120	9
A6	180	120	9
A7	180	120	9
A10	260	180	9
C10	260	180	12
C12	260	180	12
C15	300	230	12
C20	300	230	12
H10	260	180	12
H12	300	230	12
H15	300	230	12
H17	300	230	12
H20	350	280	12

NOTE

1. MATERIAL

- PLATE : A36 OR EQ.
- EXPANSION ANCHOR BOLT : A307-B OR EQ.

2. REQUIRED MIN. BASE CONCRETE TH'K(h) SHOULD BE INFORMED TO CIVIL ENGINEER FOR PAVING DESIGN.

3. USED FOR CONCRETE COLUMN OR WALL.



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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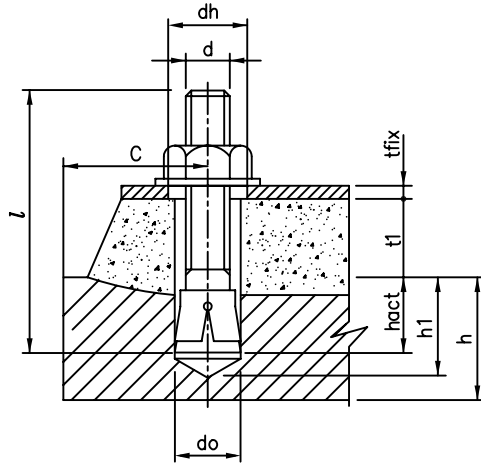
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT ATTACHMENT DWG. ST-A4-1032 (2 OF 2)

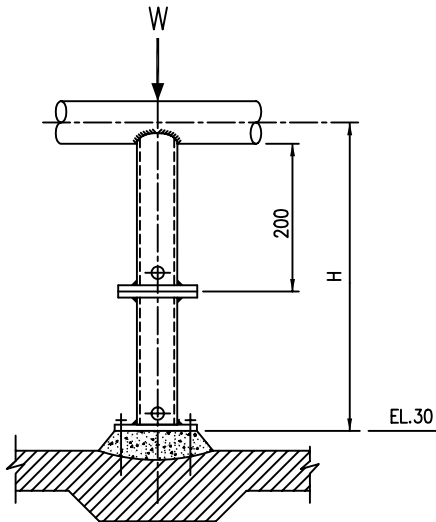
BASE PLATE AND
EXPANSION ANCHOR BOLT **BPLR**
(RESTING TYPE)

REV.
2



DESIGN APPLICATION OF ANCHOR BOLT

		Anchor Bolt Size(J)		
		3/8"	1/2"	5/8"
Shear stress area (mm ²)	A _b	58	84	157
Min. spacing between anchors (mm)	S _{min}	46	54	68
Min. base concrete th'k (mm)	h _{min}	100	100	120
Min. edge distance (mm)	C _{min}	130	150	175
Min. depth of embedment (mm)	h _{nom}	51	60	75
Drill bit size (mm)	d _o	10	12	16
Plate hole size (mm)	d _h	11	13.5	17.5
Anchor Length (mm)	l	110	125	150
Actual Depth of Embedment (mm)	h _{act}	51	60	75
Depth of Drill(mm)	h ₁	60	70	90
Min. Tensile Strength of Bolt(kg/cm ²)	T _u	4218	4218	4218
Strength of Concrete(kg/cm ²)		210	210	210
Base plate Th'k(mm)	t _{fix}	9	12	16
Grouting Th'k(mm)	t ₁	30	30	30



ALLOWABLE LOADS FOR EXPANSION ANCHOR BOLT
(RESTING TYPE)

PIPE SIZE (P)	TRUNNION NPS "Q"	MEMBER "M"	UNIT (mm)			
			W (Kg)			
			H=500	H=700	H=900	H=1200
1-1/2"	1"	A5	300	200	150	100
2"	1-1/2"	A6	520	300	210	140
3"~4"	2"	A7	540	300	210	140
5"	3"	A10	600	320	220	150
6"~8"	4"	C10	780	410	280	190
10"	6"	C12	1900	900	590	390
12"~14"	8"	C15~C20	2650	1190	750	500
16"~18"	10"	H10~H17	6000	2450	1500	990
20"~24"	12"	H20	7300	3100	1850	1150



SHAHID TONDGOOIN
PETROCHEMICAL CO.

OWNER NO.
00-4-pi-1403

Job No. - Unit
SP | 7702-00
11598-00

Dept.-Code
PD-09

Serial No.
003

Rev.
2



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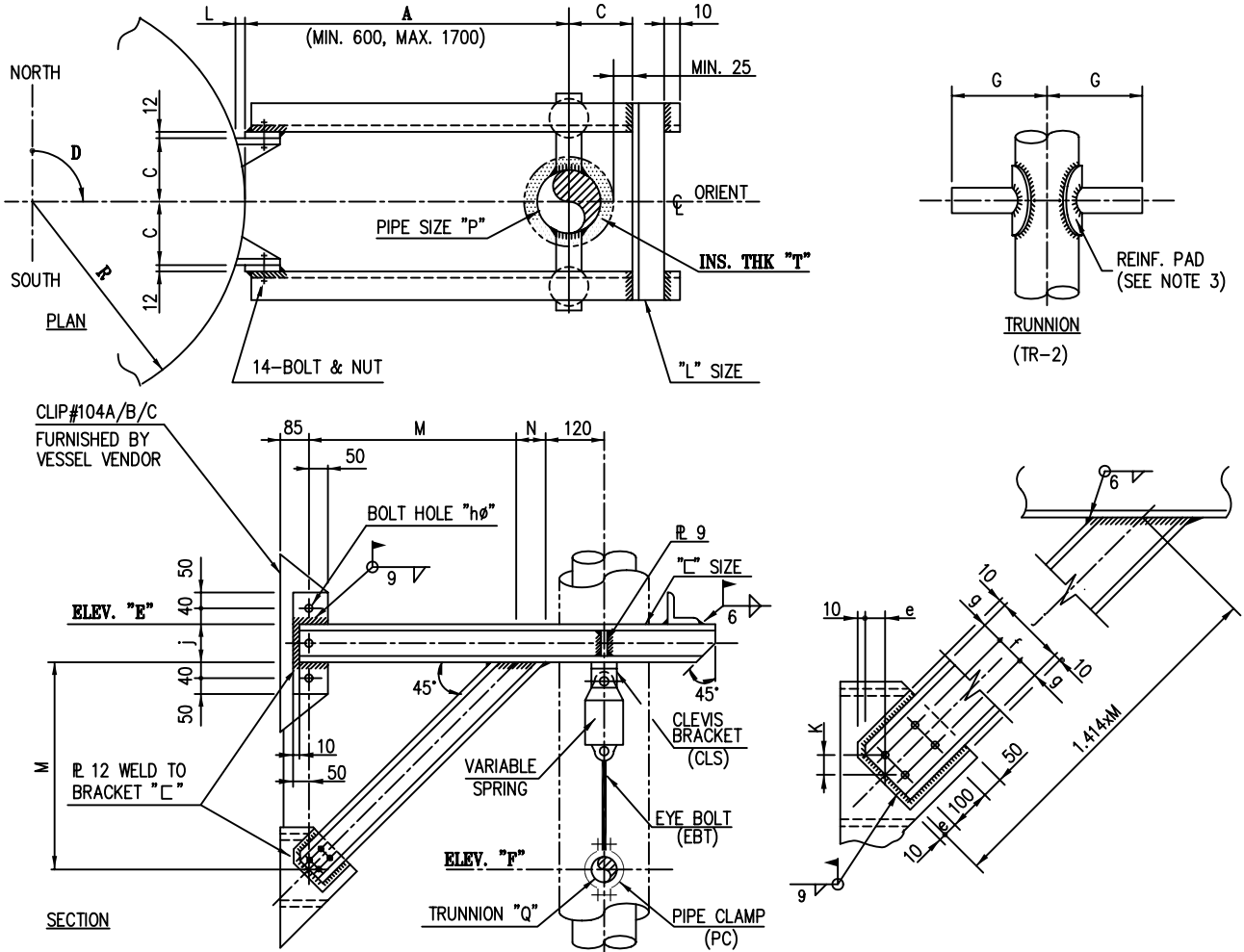
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1374

SPRING SV-33
(FOR HOT INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



CLIP TYPE	CLIP MARK	j	e	f	g	hø	N	K	BOLT SIZE	"C" SIZE	"L" SIZE	Wmax (kg)	
												A ≤ 1200	1200 < A ≤ 1700
A	104A	150	30	60	45	18	106	42	5/8"x60L	C15	A7	4500	4000
B	104B	200	45	90	55	21	141	64	3/4"x65L	C20	A7	6500	5500
C	104C	300	75	150	75	28	212	106	1"x65L	C30	A7	10500	9000

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	ROD SIZE (inch)	C	G
6"	4"	5/8"	"T"+100	"T"+215
8"	4"	3/4"	"T"+125	"T"+240
10"	6"	3/4"	"T"+150	"T"+270
12"	8"	1"	"T"+180	"T"+300
14"	8"	1"	"T"+190	"T"+310
16"	10"	1-1/4"	"T"+220	"T"+350
18"	10"	1-1/4"	"T"+245	"T"+375
20"	12"	1-1/2"	"T"+270	"T"+400
24"	12"	1-1/2"	"T"+320	"T"+450
26"	14"	1-1/2"	"T"+350	"T"+480
28"	14"	1-1/2"	"T"+370	"T"+500
30"	16"	1-1/2"	"T"+400	"T"+530
32"	16"	1-1/2"	"T"+420	"T"+550

NOTE

1. MATERIAL

- TRUNNION & REINF. PAD : SAME AS RUN PIPE OR
MAT'L TABLE.

- SHAPE STEEL : A36 OR EQ.

CODE	RUN PIPE	TRUNNION & REINF.PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ.

2. DIM "M"=(A+L)-85-120-N

DIM "L"= $R-\sqrt{R^2-C^2}$

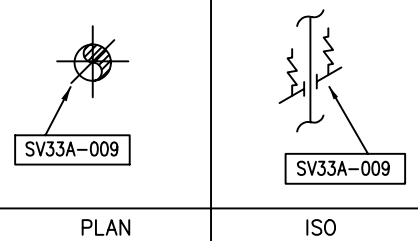
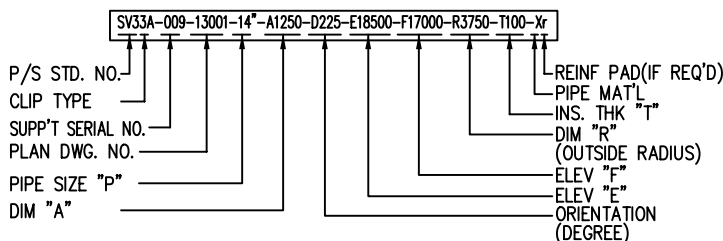
3. SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF
REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

4. SEE DWG. NO. ST-A4-1006/1010/1013/1014
FOR THE DETAIL OF HANGER ASSEMBLY.

5. SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

6. ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS
INTERMEDIATE MATERIAL FOR S.S PIPE.

SYMBOL & CODING





SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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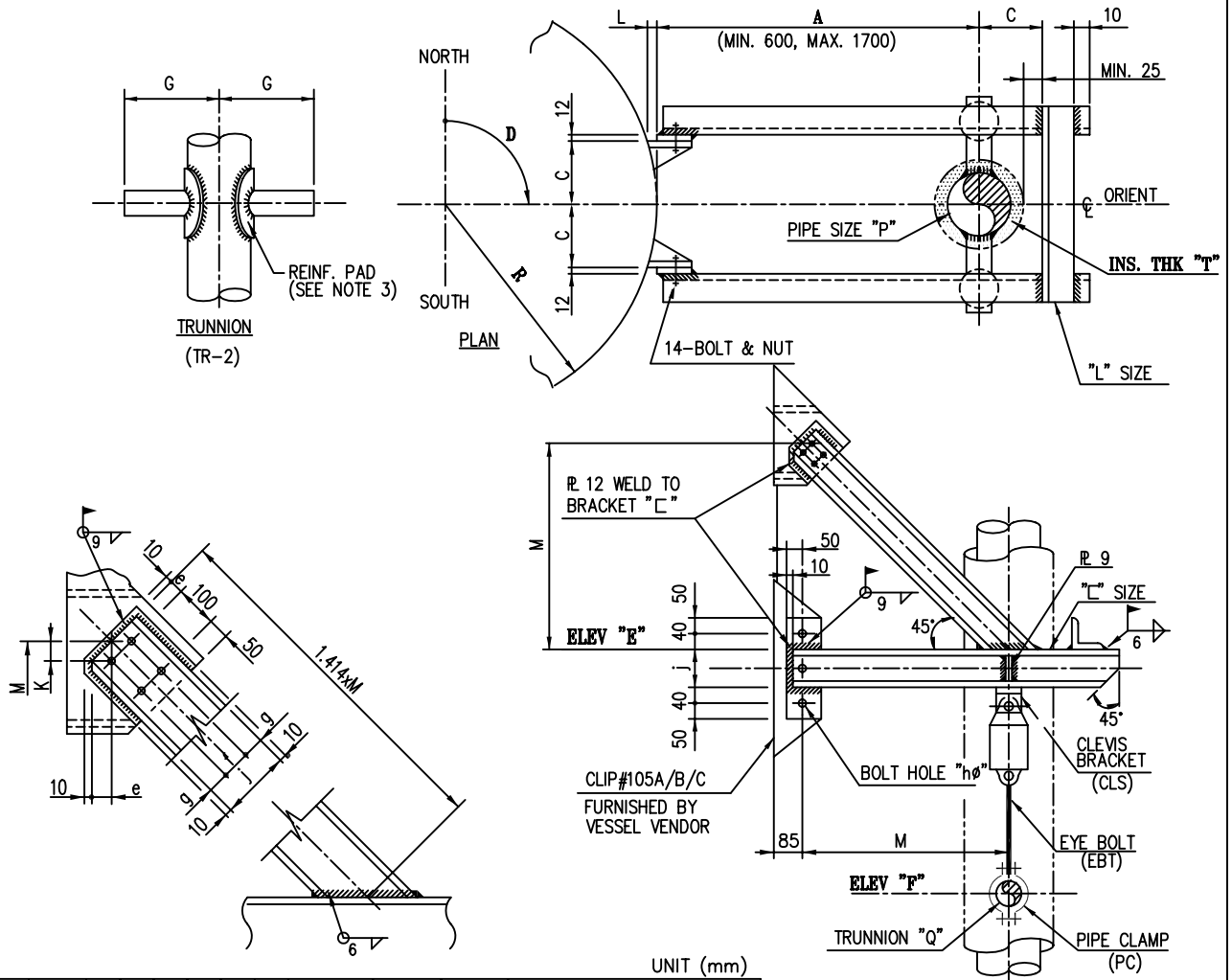
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1375

SPRING SV-34
(FOR HOT INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



UNIT (mm)

CLIP TYPE	CLIP MARK	j	e	f	g	hφ	K	BOLT SIZE	"C" SIZE	"L" SIZE	Wmax (kg)	
											A ≤ 1200	1200 < A ≤ 1700
A	105A	150	30	60	45	18	42	5/8"x60L	C15	A7	4500	4000
B	105B	200	45	90	55	21	64	3/4"x65L	C20	A7	6200	5500
C	105C	300	75	150	75	28	106	1"x65L	C30	A7	10500	9000

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	ROD SIZE (inch)	C	G
6"	4"	5/8"	"T"+100	"T"+215
8"	4"	3/4"	"T"+125	"T"+240
10"	6"	3/4"	"T"+150	"T"+270
12"	8"	1"	"T"+180	"T"+300
14"	8"	1"	"T"+190	"T"+310
16"	10"	1-1/4"	"T"+220	"T"+350
18"	10"	1-1/4"	"T"+245	"T"+375
20"	12"	1-1/2"	"T"+270	"T"+400
24"	12"	1-1/2"	"T"+320	"T"+450
26"	14"	1-1/2"	"T"+350	"T"+480
28"	14"	1-1/2"	"T"+370	"T"+500
30"	16"	1-1/2"	"T"+400	"T"+530
32"	16"	1-1/2"	"T"+420	"T"+550

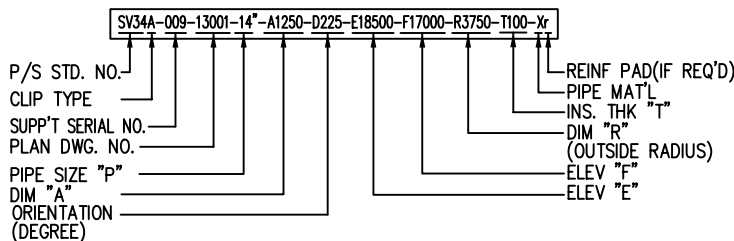
NOTE

- MATERIAL
- TRUNNION & REINF.PAD : SAME AS RUN PIPE OR MAT'L TABLE.
- SHAPE STEEL : A36 OR EQ.
- DIM "M"=(A+L)-85-120-N
DIM "L"=R- R -C
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- SEE DWG. NO. ST-A4-1006/1010/1013/1014 FOR THE DETAIL OF HANGER ASSEMBLY.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.
- ASBESTOS SHEET OR RUBER SHALL BE APPLIED AS INTERMEDIATE MATERIAL FOR S.S PIPE.

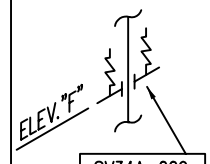
CODE	RUN PIPE	TRUNNION & REINF.PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ.



SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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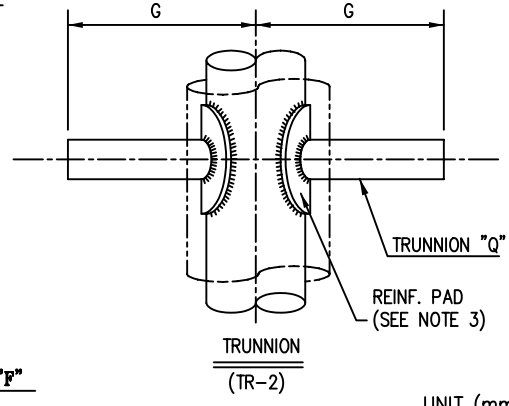
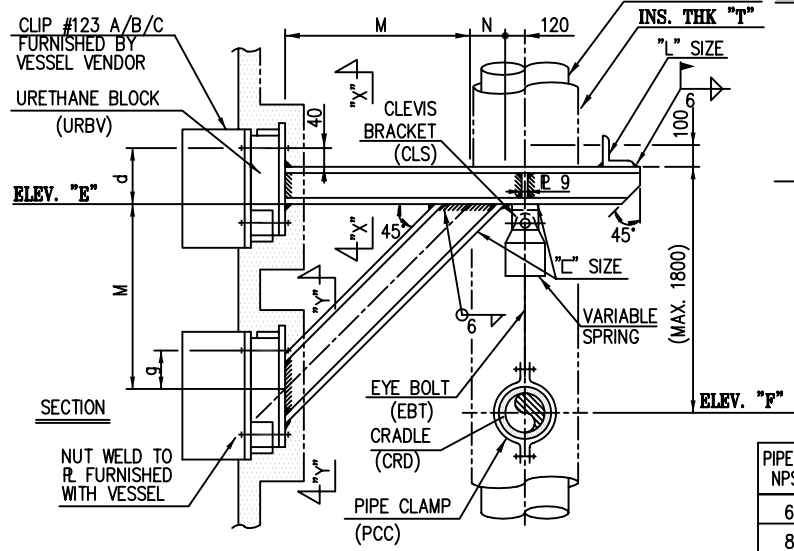
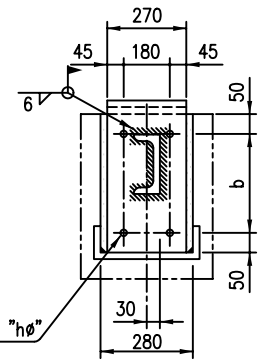
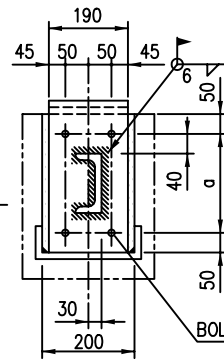
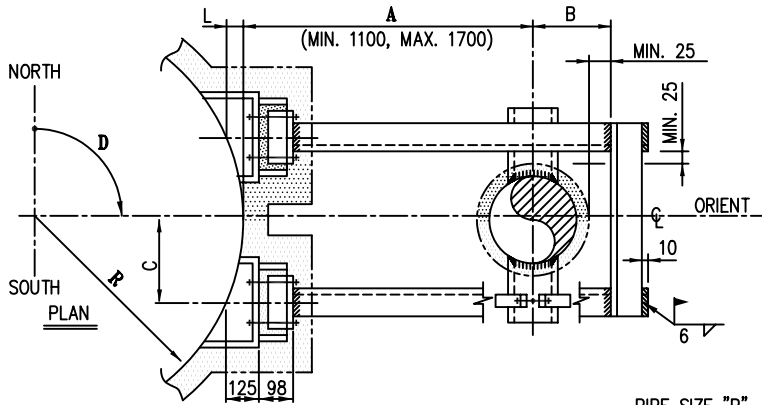
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1376

SPRING SV-51
(FOR COLD INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



NOTE

- DIM "M" = (A+L) - 125 - 98
DIM "L" = R - √(R² - C²)
- MATERIAL
 - SHAPE STEEL : A36 OR EQ.
 - TRUNNION & REINF.PAD : SAME AS RUN PIPE OR MAT'L TABLE.

CODE	RUN PIPE	TRUNNION & REINF. PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

PIPE SIZE NPS "P"	TRUNNION NPS "Q"	ROD SIZE (inch)	B	C	G	E
6"	4"	1/2"	"T"+110	"T"+295	"T"+505	130
8"	4"	1/2"	"T"+135	"T"+320	"T"+530	130
10"	6"	1/2"	"T"+165	"T"+345	"T"+555	155
12"	8"	3/4"	"T"+190	"T"+370	"T"+585	180
14"	8"	3/4"	"T"+205	"T"+390	"T"+600	180
16"	10"	3/4"	"T"+230	"T"+415	"T"+625	210
18"	10"	3/4"	"T"+255	"T"+440	"T"+650	210
20"	12"	3/4"	"T"+280	"T"+465	"T"+675	235
24"	12"	3/4"	"T"+330	"T"+515	"T"+725	235
26"	14"	1-1/4"	"T"+355	"T"+540	"T"+750	250
28"	14"	1-1/4"	"T"+385	"T"+565	"T"+775	250
30"	16"	1-1/4"	"T"+410	"T"+590	"T"+800	250
32"	16"	1-1/2"	"T"+435	"T"+615	"T"+825	250

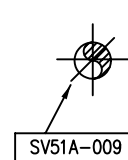
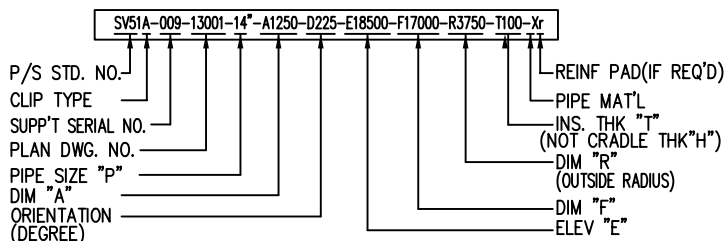
- SEE DWG. NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

- SEE DWG. NO. ST-A4-1006/1010/1013/1016 AND ST-A4-1021 FOR THE DETAIL AND ALLOWABLE LOAD OF HANGER ASSEMBLY AND URETHANE BLOCK ASSEMBLY.

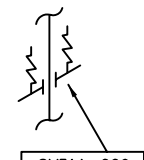
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.

CLIP TYPE	CLIP MARK	a	b	d	g	hø	"C" SIZE	"L" SIZE	Wmax (kg)	
									A ≤ 1200	1200 < A ≤ 1700
A	123A	230	220	190	106	18	C15	A7	3600	3200
B	123B	280	290	240	141	21	C20	A7	5200	4400
C	123C	380	430	340	212	28	C30	A7	8400	7200

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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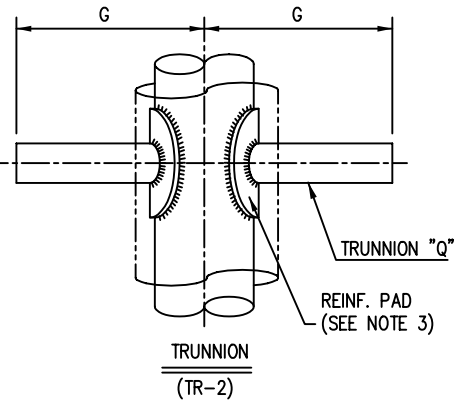
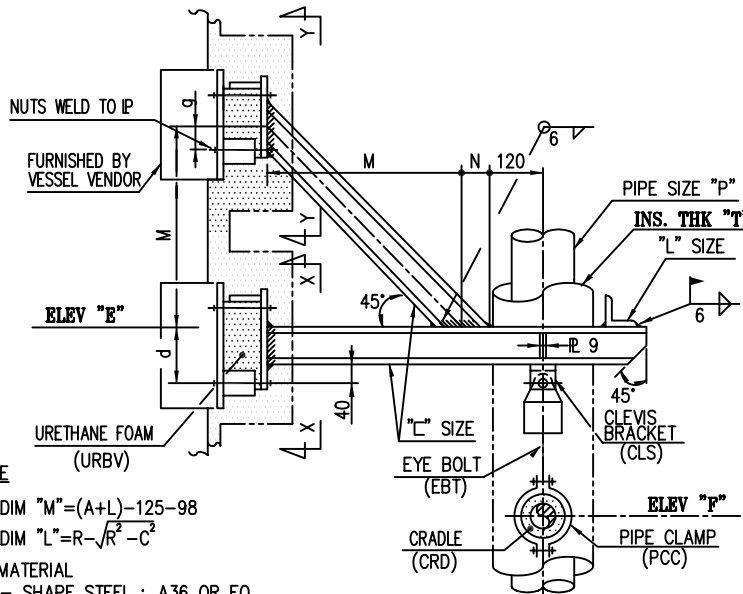
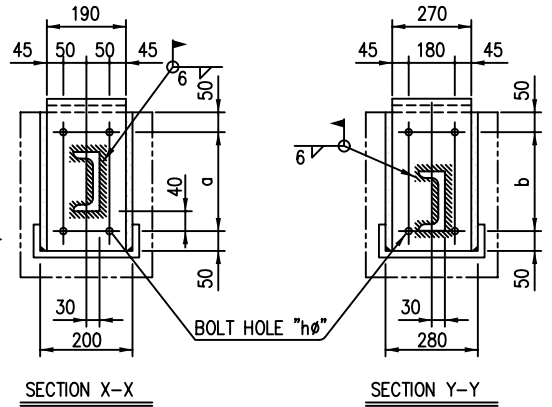
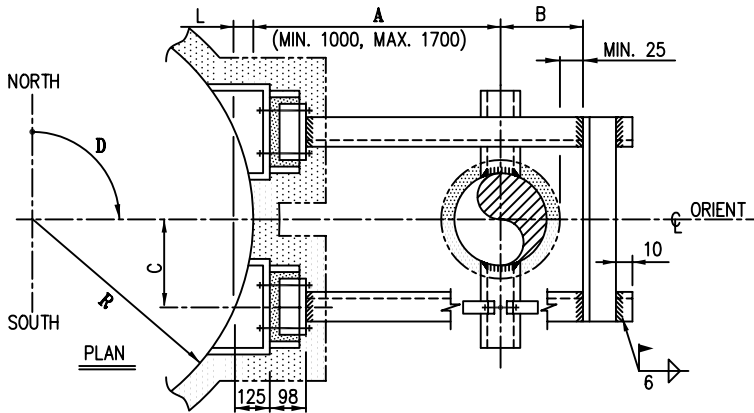
PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG.

ST-A4-1377

SPRING SV-52
(FOR COLD INSULATED RISER PIPE,
VESSEL CLIP)

REV.
2



NOTE

- DIM "M" = (A+L) - 125 - 98
DIM "L" = $R - \sqrt{R^2 - C^2}$
- MATERIAL
- SHAPE STEEL : A36 OR EQ.
- TRUNNION & REINF.PAD : SAME AS RUN PIPE OR TABLE.

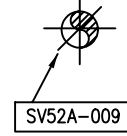
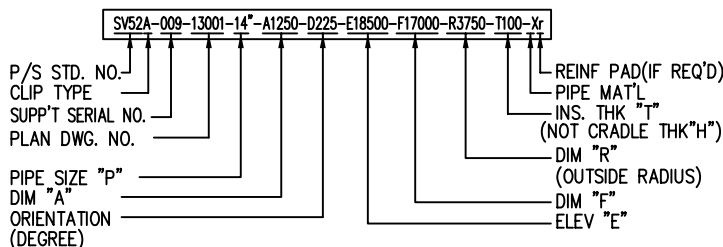
CODE	RUN PIPE	TRUNNION & REINF. PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
K1	A333 GR.1 OR 6	A333 GR.6 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.

- SEE DWG. NO. ST-A4-0003 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.
- SEE DWG. NO. ST-A4-1006/1010/1013/1016 FOR THE DETAIL AND ALLOWABLE LOAD OF HANGER ASSEMBLY.
- SEE DWG. NO. ST-A4-0001 FOR THE SIZE OF SHAPE STEEL.
- SEE DWG. NO. ST-A4-1021 FOR THE DETAIL OF URETHANE BLOCK ASSEMBLY.
- SEE DWG. NO. ST-A4-1019 FOR THE DETAIL OF CRADLE.

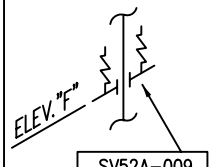
UNIT (mm)						
PIPE SIZE NPS "P"	TRUNNION NPS "Q"	ROD SIZE (inch)	B	C	G	E
6"	4"	1/2"	"T"+110	"T"+295	"T"+505	130
8"	4"	1/2"	"T"+135	"T"+320	"T"+530	130
10"	6"	1/2"	"T"+165	"T"+345	"T"+555	155
12"	8"	3/4"	"T"+190	"T"+375	"T"+585	180
14"	8"	3/4"	"T"+205	"T"+390	"T"+600	180
16"	10"	3/4"	"T"+230	"T"+415	"T"+625	210
18"	10"	3/4"	"T"+255	"T"+440	"T"+650	210
20"	12"	3/4"	"T"+280	"T"+465	"T"+675	235
24"	12"	3/4"	"T"+330	"T"+515	"T"+725	235
26"	14"	1-1/4"	"T"+355	"T"+540	"T"+750	250
28"	14"	1-1/4"	"T"+385	"T"+565	"T"+775	250
30"	16"	1-1/4"	"T"+410	"T"+590	"T"+800	250
32"	16"	1-1/2"	"T"+435	"T"+615	"T"+825	250

UNIT (mm)											
CLIP TYPE	CLIP MARK	a	b	d	e	g	hφ	"C" SIZE	"L" SIZE	Wmax (kg)	
										A ≤ 1200	1200 < A ≤ 1700
A	124A	230	220	190	9	106	18	C15	A7	3600	3200
B	124B	280	290	240	9	141	21	C20	A7	5200	4400
C	124C	380	430	340	9	212	28	C30	A7	8400	7200

SYMBOL & CODING



PLAN



ISO



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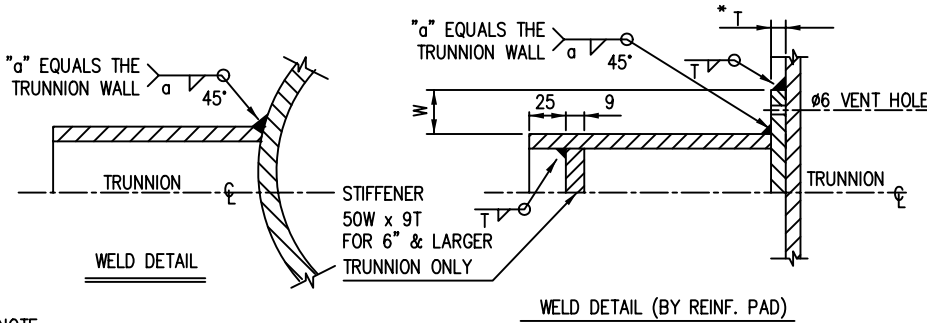
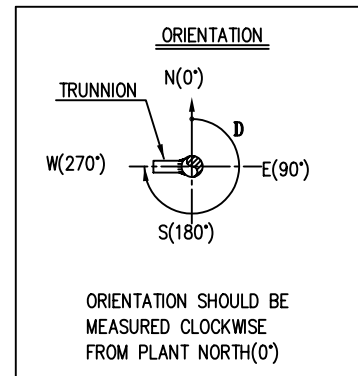
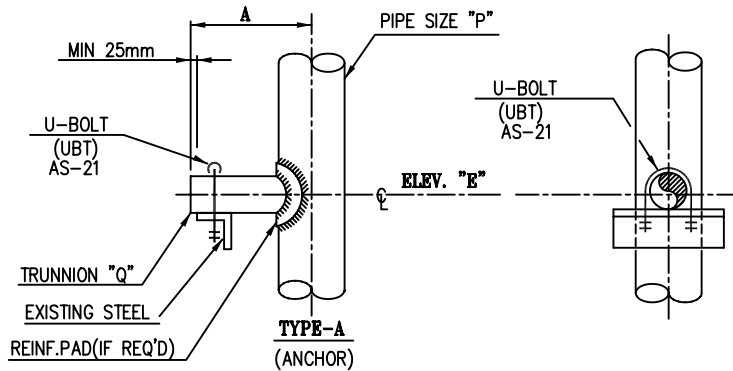
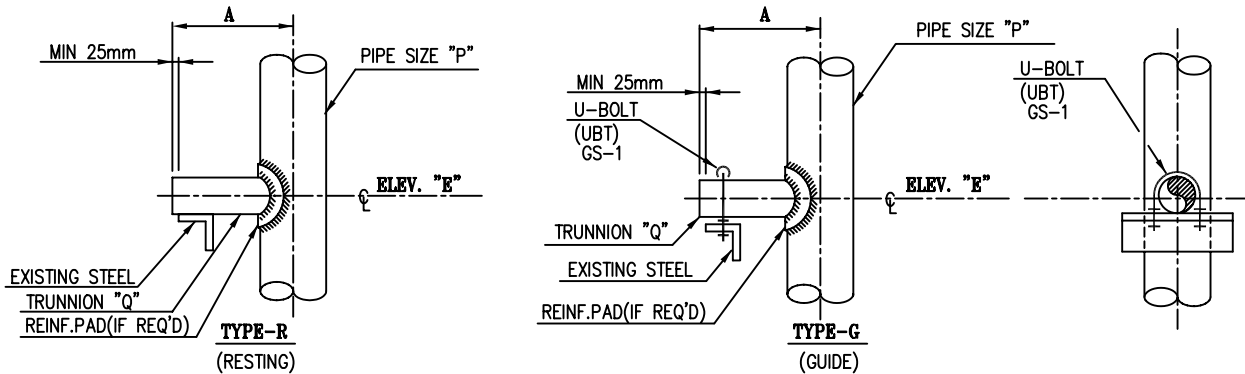
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1346

RESTING **TR-1**
(FOR RISER PIPE, TRUNNION TYPE)

REV.
2



NOTE

- MATERIAL
 - TRUNNION & REINF. PAD : SAME AS RUN PIPE OR MAT'L TABLE.
 - STIFFENER PLATE : A36 OR EQ.

CODE	RUN PIPE	TRUNNION & REINF.PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S13803)OR EQ

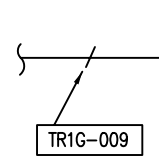
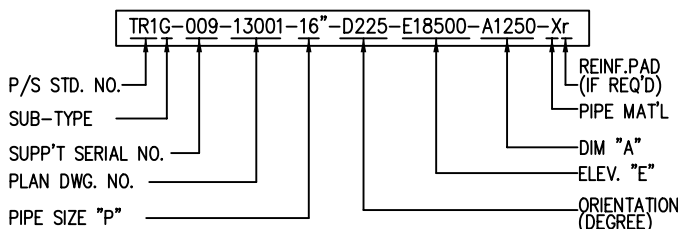
- PAD THICKNESS "T" : SAME AS RUN PIPE

- SEE DWG NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

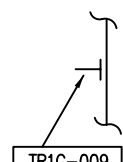
- SEE DWG. NO. ST-A4-1001 FOR THE DETAIL OF U-BOLT.

PIPE SIZE NPS "P"	TRUNNIONS NPS "Q"	W
1-1/2"	1"	50
2"	1-1/2"	
3"	2"	
4"	2"	
6"	4"	
8"	4"	90
10"	6"	
12"	8"	
14"	8"	100
16"	10"	
18"	10"	
20"	12"	
24"	12"	
26"	14"	
28"	14"	
30"	16"	120
32"	16"	

SYMBOL & CODING



PLAN



ISO



SHAHID TONGGOOIAN
PETROCHEMICAL Co.

OWNER NO.
00-4-pi-1403

SP	Job No. - Unit 7702-00 11598-00	Dept.-Code PD-09	Serial No. 003	Rev. 2
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SAZEH
CONSULTANTS



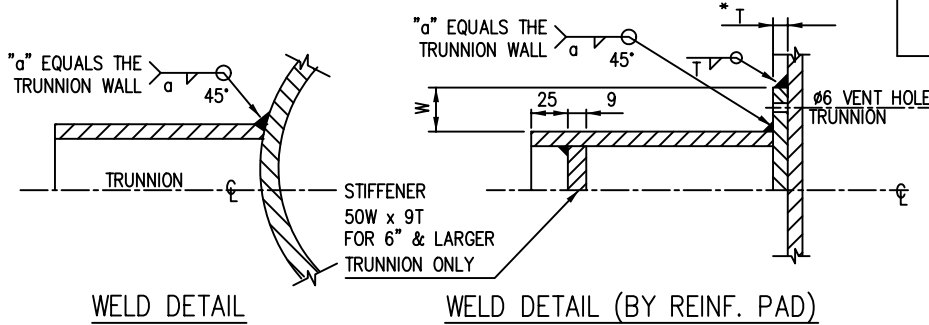
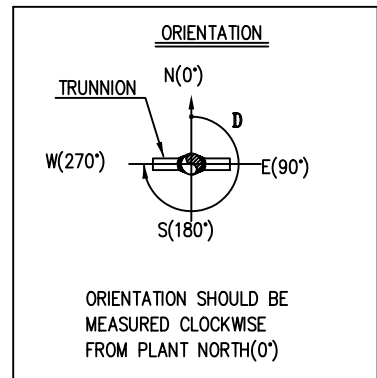
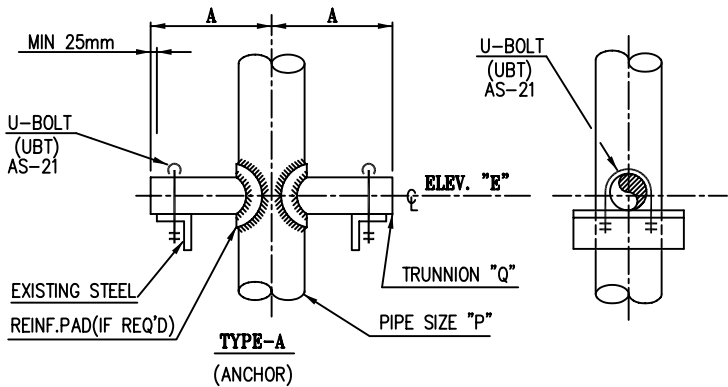
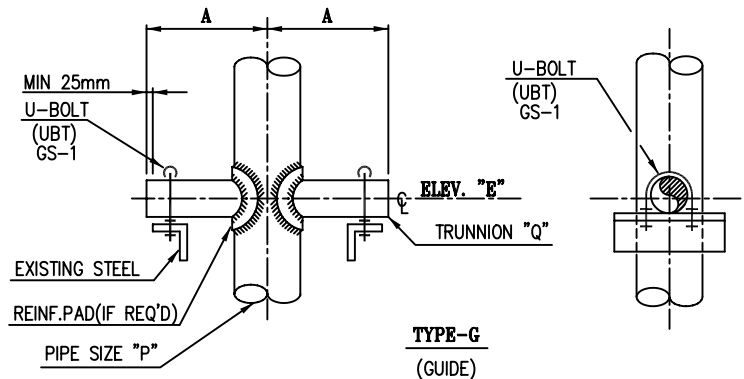
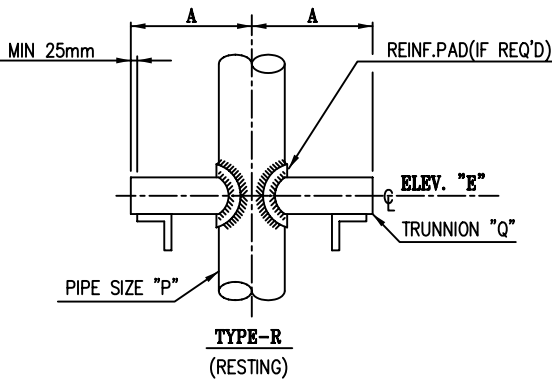
DAELIM

PTA-1 PRODUCTION PLANT IN BANDAR IMAM
SPECIFICATION FOR
PIPING HANGING & SUPPORT

PIPING SUPPORT STANDARD DWG. ST-A4-1347

RESTING **TR-2**
(FOR RISER PIPE, TRUNNION TYPE)

REV.
2



PIPE SIZE NPS "P"	TRUNNIONS NPS "Q"	W
1-1/2"	1"	50
2"	1-1/2"	
3"	2"	
4"	2"	
6"	4"	
8"	4"	90
10"	6"	
12"	8"	
14"	8"	
16"	10"	100
18"	10"	
20"	12"	
24"	12"	
26"	14"	
28"	14"	
30"	16"	120
32"	16"	

NOTE

1. MATERIALS

- TRUNNION & REINF. PAD : SAME AS RUN PIPE OR MAT'L TABLE.
- STIFFENER PLATE : A36 OR EQ.

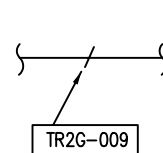
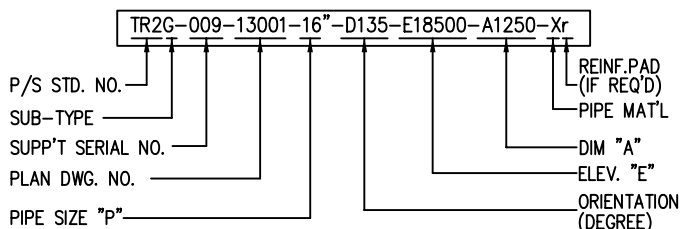
CODE	RUN PIPE	TRUNNION & REINF.PAD
K	A53 GR.B, A106 GR.B	A53 GR.B OR EQ.
Y	A335 P11	A335 P11 OR EQ.
Y1	A335 P22	A335 P22 OR EQ.
X	A312 TP304, TP316	A312 TP304 OR EQ.
X1	A790 (S31803)	A790 (S31803)OR EQ.

- 3. SEE DWG NO. ST-A4-0004 FOR APPLICATION OF REINFORCING PAD AND TRUNNION ALLOWABLE LOADS.

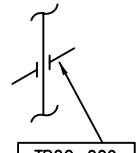
- 4. SEE DWG. NO. ST-A4-1001 FOR THE DETAIL OF U-BOLT.

2. PAD THICKNESS "T" : SAME AS RUN PIPE

SYMBOL & CODING



PLAN



ISO