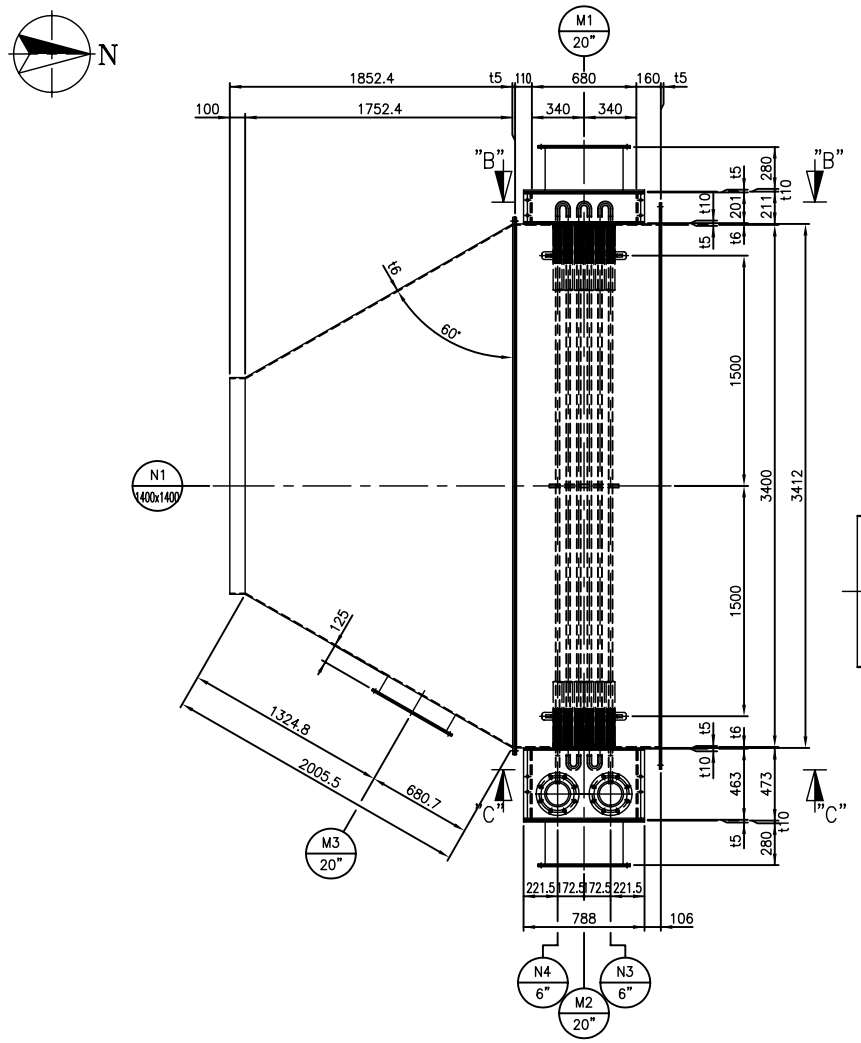
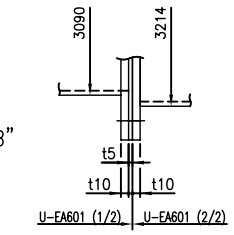
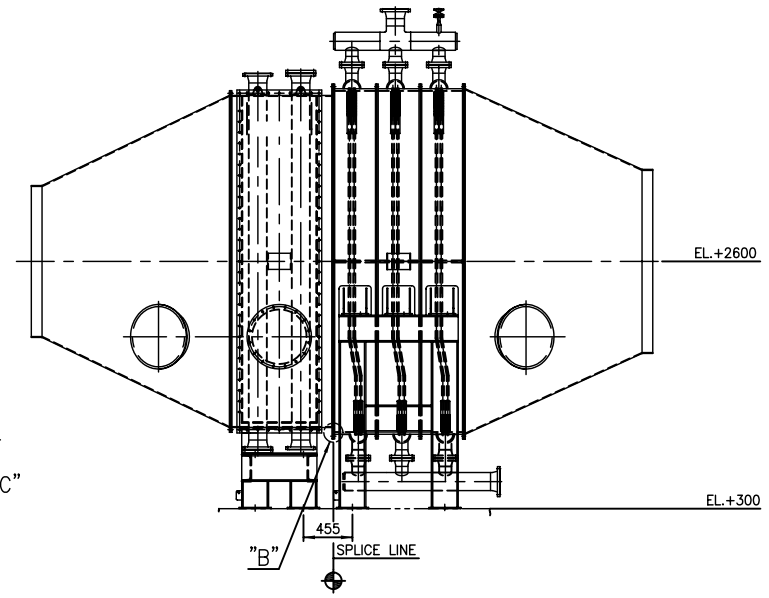


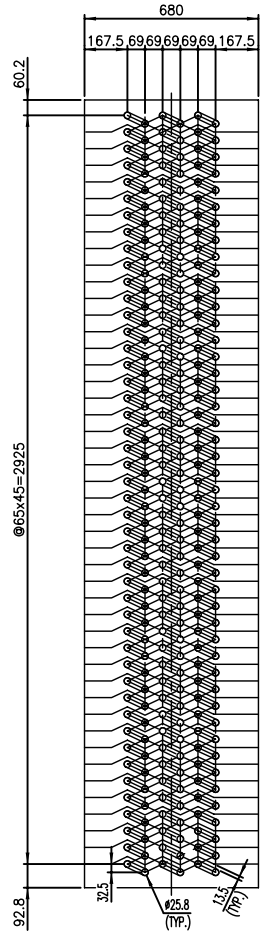
PLAN VIEW



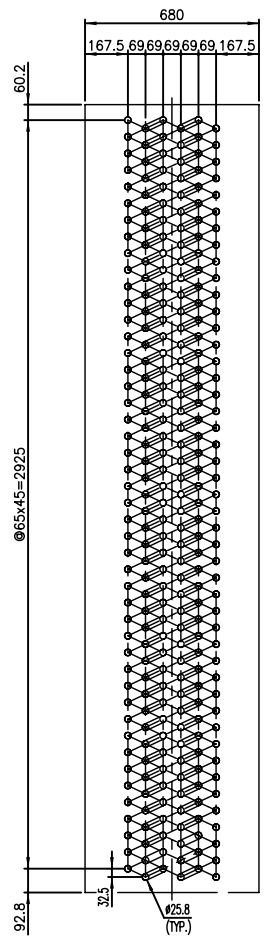
DETAIL OF "B"



U-EA601 ASSEMBLY



SECTION "B"-"B"



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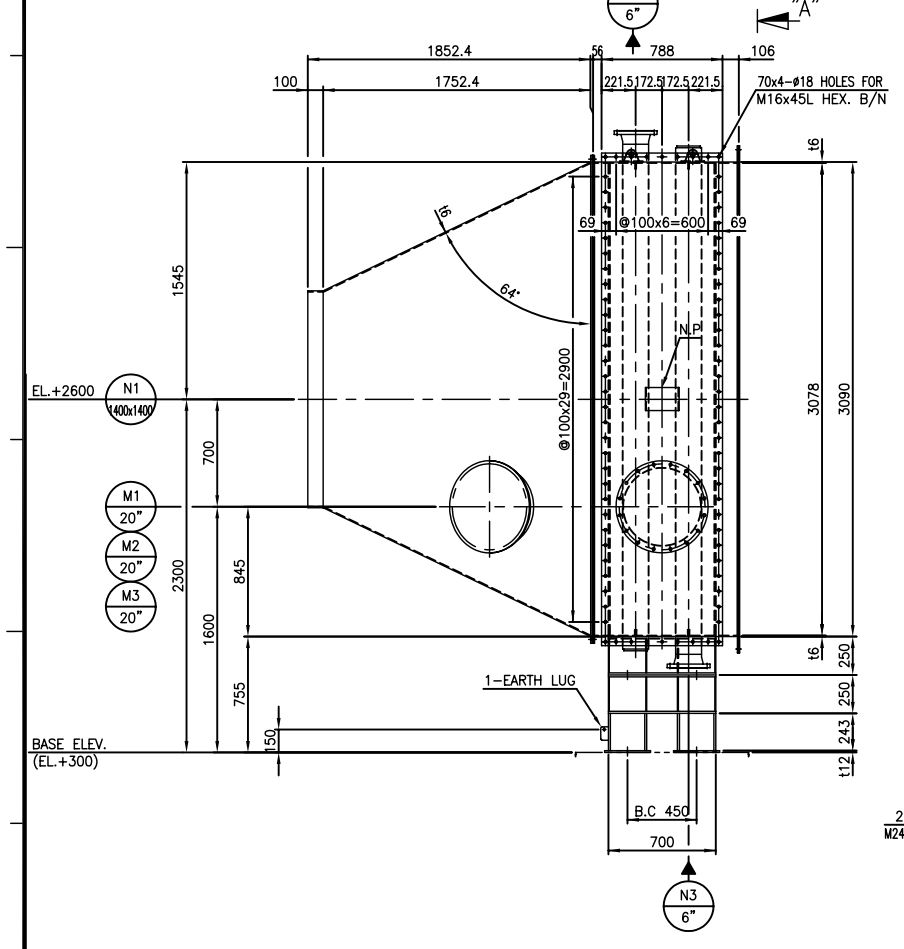
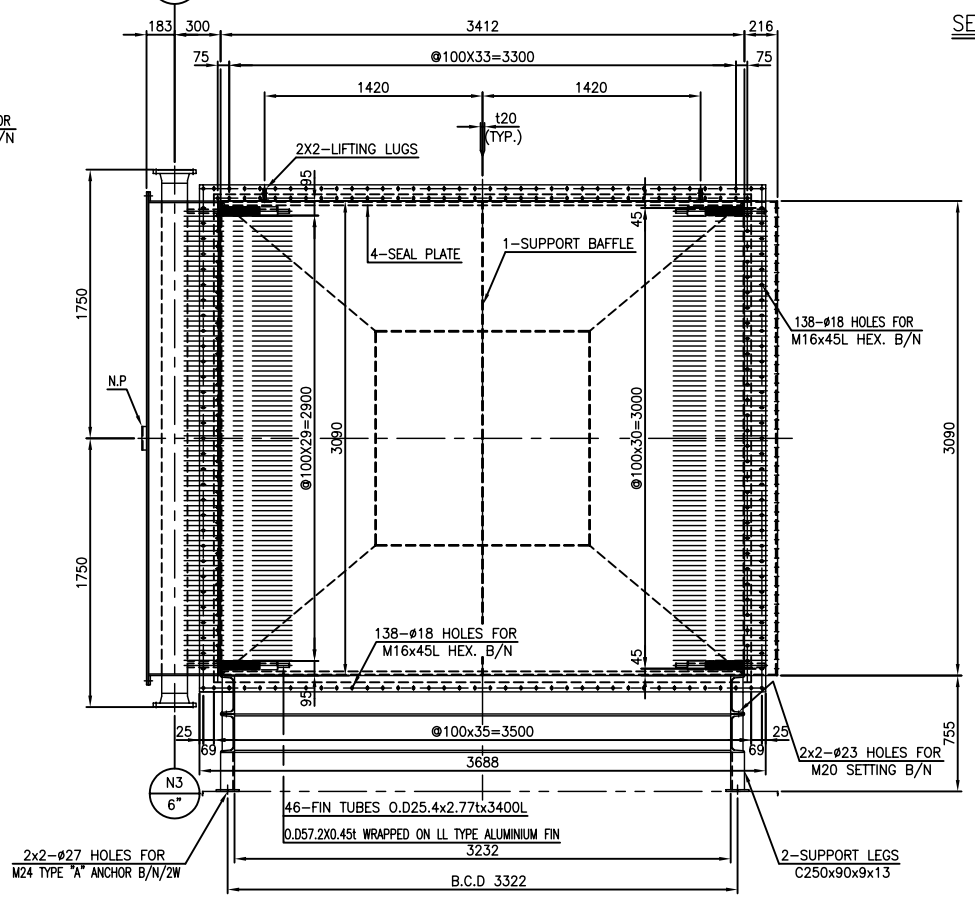
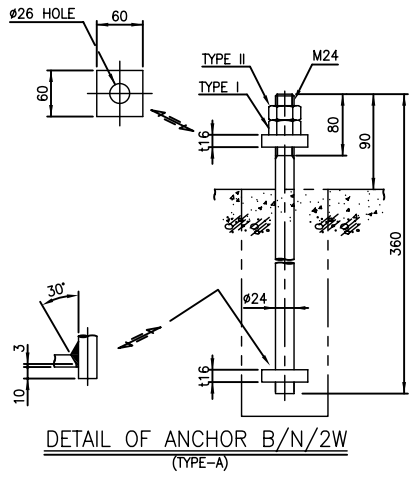


ELEVATION



VIEW "A"



DETAIL OF ANCHOR B/N/2W
(TYPE-A)

DESIGN DATA

CODE	ASME SEC.VIII DIV. 1 '04 ED.+'06 ADD.		TEMA CLASS	–	
SURFACE AREA	1683.9	M^2	TYPE	HORIZONTAL	
NO. OF REQ'D	1 (ONE)		CODE STAMP	NO	
	SHELL SIDE		TUBE SIDE		
KIND OF FLUID	AIR		PROCESS COND.		
FLOW RATE	113,176x1.1	Kg/h	40,097x1.1	Kg/h	
DESIGN PRESS.	700	mmH_2O	10	Kg/Cm^2G	
DESIGN TEMP.	160	°C	175	°C	
OPER. PRESS.	490	mmH_2O	7.5	Kg/Cm^2G	
OPER. TEMP. (IN/OUT)	37.8/105	°C	147/99	°C	
PRESSURE DROP	17	mmH_2O	0.2	Kg/Cm^2	
HYDRO. TEST PRESS.	N/A	mmH_2O	15	Kg/Cm^2G	
PNEUM. TEST PRESS.	N/A	mmH_2O	N/A	Kg/Cm^2G	
M.D.M.T	–	°C	–	°C	
P.W.H.T	–		–		
S.R AFTER COLD FORMING	–		–		
RADIOGRAPH (S/H)	N/A		SPOT		
JOINT EFFICIENCY (S/H)	70		85		
CORR. ARROW.	3	MM	0	MM	
NO. OF PASS	1 (ONE)		6 (SIX)		
INSULATION	75 (HOT)	MM	50 (HOT)	MM	
SEISCMIC ZONE	ZONE 3				
WIND VEOCITY	145km/h AT 10m HEIGHT FROM GROUND				
PAINTING	MTI-U-AXEA005-903 (PAINTING PROCEDURE)				
WEIGHT (KG) BUNDLE	3,110	KG			
WEIGHT (KG) ERECTION	5,795	KG	EMPTY	5,795	KG
WEIGHT (KG) OPERATING	6,480	KG	FULL OF WATER	6,515	KG
TUBE & HEADER JOINT	WELDED				

NOZZLE LIST

MARK NO.	REQ'D NO.	NECK SIZE	NECK SCH.	NECK MAT'L	FLANGE RATING	FLANGE TYPE	FLANGE FACING	FROM C.L	DESCRIPTION
N1	1	1400x1400	–	SS400	–	–	–	SEE DWG.	AIR INLET
N3	1	6"	80	A312-TP304	ASME 150#	W.N	R.F	SEE DWG.	PROCESS COND INLET
N4	1	6"	80	A312-TP304	ASME 150#	W.N	R.F	SEE DWG.	PROCESS COND OUTLET
M1	1	20"	t6	SS400	–	–	–	SEE DWG.	MANHOLE
M2	1	20"	t6	SS400	–	–	–	SEE DWG.	MANHOLE
M3	1	20"	t6	SS400	–	–	–	SEE DWG.	MANHOLE

NOTE

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE NOTED.
2. ALL FLANGE BOLT HOLES SHALL STRADDLE H/EX. NORMAL CENTERLINE.
3. NOZZLE PROJECTIONS ON SHELL ARE REFERRED FROM CENTER LINE OF HEX. TO GASKET CONTACT FACE OF FLANGE.
4. THE GASKET CONTACT SURFACE AS FOLLOWS.
   1) STANDARD FLANGE : 3.2~6.3 (125~250 AARH) (SMOOTH FINISH)
5. NOZZLE PROJECTIONS ARE FROM CENTER LINE OF H/EX. TO EXTREME FACE OF FLANGE.
6. GASKET MATERIAL : NON-ASBESTOS
   - MFR : TAEHWA KALPA SEAL CO.
   - SHEET NO : TH3000
   - FIBERS : ARAMID FIBER
   - BINDER : NBR

FINAL

MATERIAL SPEC.					
SHELL	: SS400	FLANGE	: A182-F304		
PLATE FLANGE & COVER	: SS400	GASKET	: NON-ASBESTOS		
TUBE	: A249-TP304	BOLT/NUT	: A193-B7/A194-2H		
FIN	: ALUMINIUM	ANCHOR B/N	: A193-B7/A194-2H		
HEADER	: A312-TP304	SUPPORT	: SS400		

REV.	DESCRIPTION	DATE	DWN	CH'D	CHIEF	APPR.
5						
4						
3	BY OWNER COMMENT	NOV.10.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
2	BY OWNER COMMENT	SEP.26.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
1	BY OWNER COMMENT	JUL.04.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
0	BY OWNER COMMENT	MAY.24.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
A	FOR APPROVAL	MAR.07.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE

Pequiven Petroquímica de Venezuela, S.A.

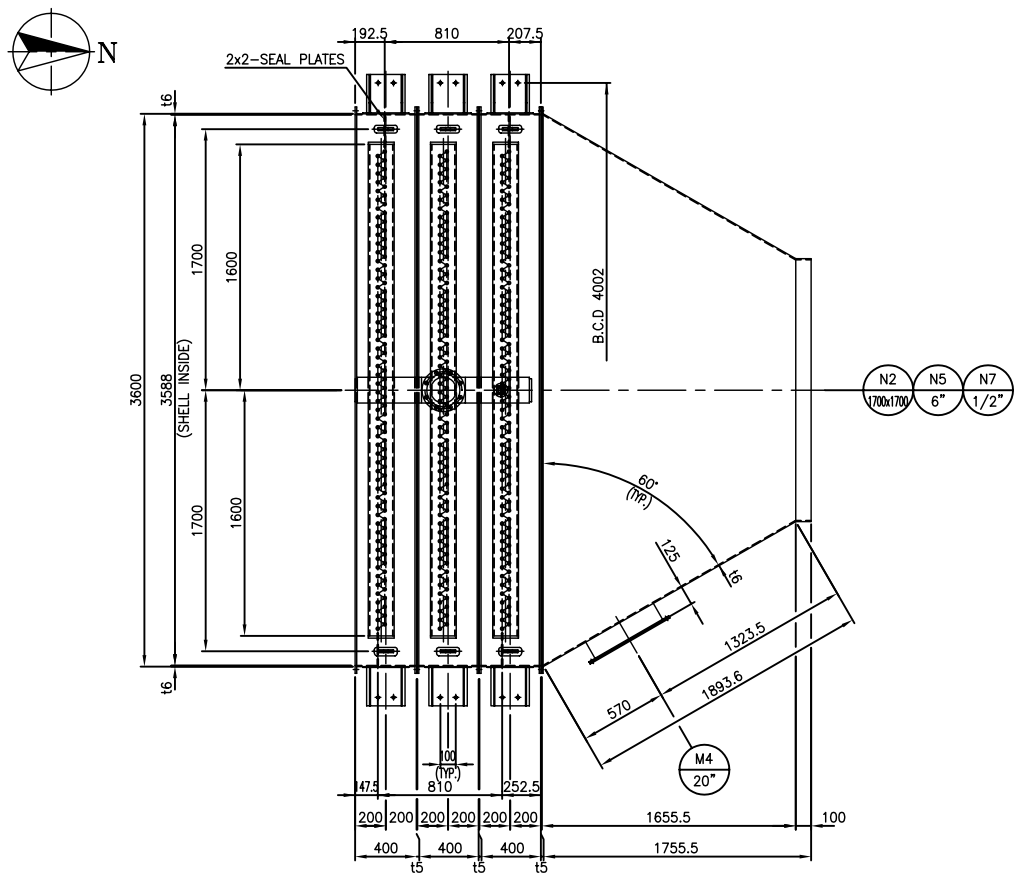
1800 MTPD AMMONIA/2200 MTPD UREA PLANT
PETROQUIMICA DE VENEZUELA, S.A.
MORON PETROCHEMICAL COMPLEX

TECNO FRONTIER CO., LTD. (T & F)
CHIBA, Japan

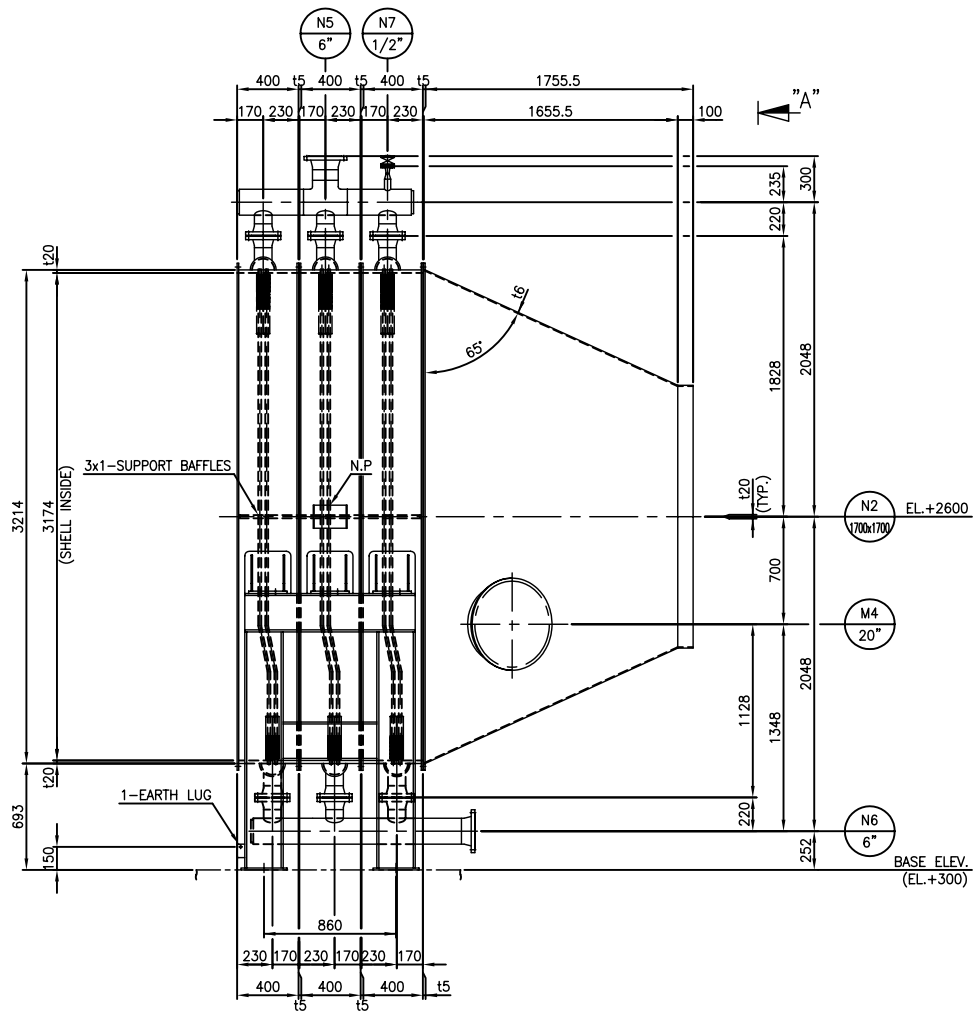
T&F WORK NO.	BA-0821
REQ. NO.	AXEA005
ITEM NO.	U-EA601
AWBS	U520
DOCUMENT NO.	MTI-U-AXEA005-501
SCALE	1/25
REV NO.	4

TITLE
GENERAL ASSEMBLY
HEATER FOR SPOUTING AIR (1/2)

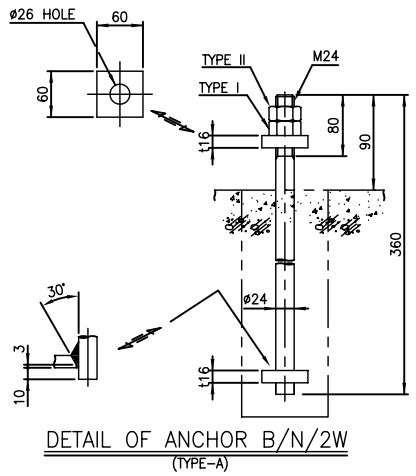
Power Hx Tech Co., Ltd.



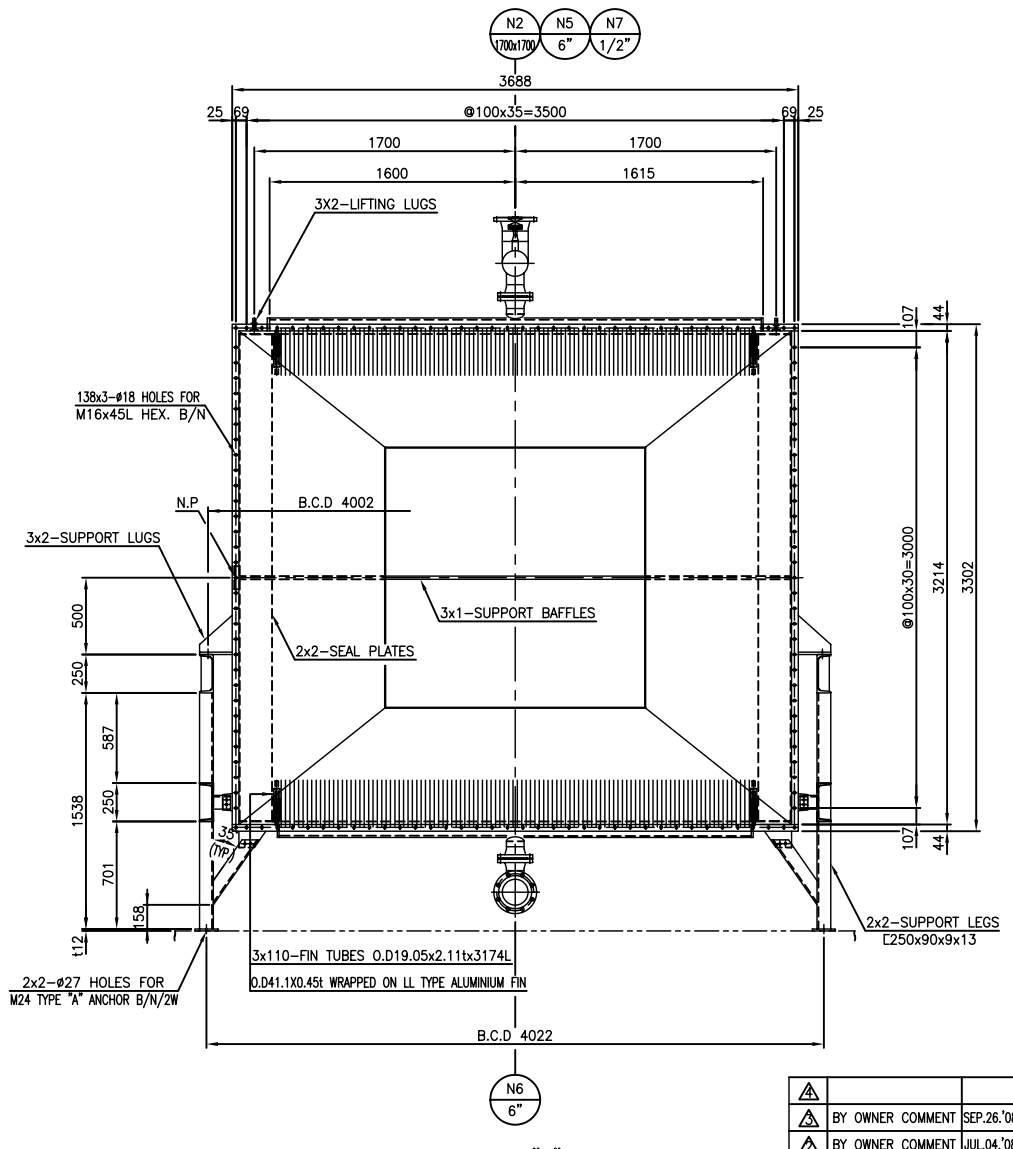
PLAN VIEW



E L E V A T I O N



DETAIL OF ANCHOR B/N/2W
(TYPE-A)



VIEW "A"

REV.	DESCRIPTION	DATE	DWN	CH'D	CHIEF	APPR.
4						
3	BY OWNER COMMENT	SEP.26.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
2	BY OWNER COMMENT	JUL.04.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
1	BY OWNER COMMENT	MAY.24.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
0	FOR APPROVAL	MAR.07.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE

DESIGN DATA

CODE	ASME SEC.VIII DIV. 1 '04 ED.+'06 ADD.		TEMA CLASS	–	
SURFACE AREA	947.4	M^2	TYPE	HORIZONTAL	
NO. OF REQ'D	1 (ONE)		CODE STAMP	NO	
	SHELL SIDE		TUBE SIDE		
KIND OF FLUID	AIR		STEAM		
FLOW RATE	113,176x1.1	Kg/h	2,085x1.1		Kg/h
DESIGN PRESS.	700	mmH_2O	8		Kg/Cm^2G
DESIGN TEMP.	160	°C	200		°C
OPER. PRESS.	490	mmH_2O	4		Kg/Cm^2G
OPER. TEMP. (IN/OUT)	105(NOR)/93(AMB.)	°C	151/151		°C
PRESSURE DROP	18	mmH_2O	0.01		Kg/Cm^2
HYDRO. TEST PRESS.	N/A	mmH_2O	12		Kg/Cm^2G
PNEUM. TEST PRESS.	N/A	mmH_2O	N/A		Kg/Cm^2G
M.D.M.T	–	°C	–		°C
P.W.H.T	–		–		
S.R AFTER COLD FORMING	–		–		
RADIOGRAPH (S/H)	N/A		SPOT		
JOINT EFFICIENCY (S/H)	70		85		
CORR. ARROW.	3	MM	3		MM
NO. OF PASS	1 (ONE)		1 (ONE)		
INSULATION	75 (HOT)	MM	50 (HOT)		MM
SEISCMIC ZONE	ZONE 3				
WIND VEOCITY	145km/h AT 10m HEIGHT FROM GROUND				
PAINTING	MTI-U-AXEA005-903 (PAINTING PROCEDURE)				
WEIGHT (KG) BUNDLE	2,505	KG			
WEIGHT (KG) ERECTION	5,590	KG	EMPTY	5,590	KG
WEIGHT (KG) OPERATING	6,040	KG	FULL OF WATER	6,390	KG
TUBE & TUBESHEET JOINT	STRENGTH WELD WITH LIGHT EXPANDED				

NOZZLE LIST

MARK NO.	REQ'D NO.	NECK SIZE	NECK SCH.	NECK MAT'L	FLANGE RATING	FLANGE TYPE	FLANGE FACING	FROM C.L	DESCRIPTION
N2	1	1700x1700	–	SS400	–	–	–	SEE DWG.	AIR OUTLET
N5	1	6"	80	A106-B	ASME 150#	W.N	R.F	SEE DWG.	STEAM INLET
N6	1	6"	80	A106-B	ASME 150#	W.N	R.F	SEE DWG.	CONDERSATE OUTLET
N7	1	1/2"	80	A106-B	ASME 150#	W.N	R.F	SEE DWG.	VENT (W/VALVE)
M4	1	20"	t6	SS400	–	–	–	SEE DWG.	MANHOLE

NOTE

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE NOTED.
2. ALL FLANGE BOLT HOLES SHALL STRADDLE H/EX. NORMAL CENTERLINE.
3. NOZZLE PROJECTIONS ON SHELL ARE REFERRED FROM CENTER LINE OF HEX. TO GASKET CONTACT FACE OF FLANGE.
4. THE GASKET CONTACT SURFACE AS FOLLOWS.
   1) STANDARD FLANGE : 3.2~6.3 (125~250 AARH) (SMOOTH FINISH)
5. NOZZLE PROJECTIONS ARE FROM CENTER LINE OF H/EX. TO EXTREME FACE OF FLANGE.
6. GASKET MATERIAL : NON-ASBESTOS
   - MFR : TAEHWA KALPA SEAL CO.
   - SHEET NO : TH3000
   - FIBERS : ARAMID FIBER
   - BINDER : NBR

FINAL

MATERIAL SPEC.			
SHELL	: SS400	FLANGE	: A105
PLATE FLANGE & COVER	: SS400	NOZZLE NECK	: A106-B
TUBE SHEET	: A516-70	GASKET	: NON-ASBESTOS
TUBE	: A179	BOLT/NUT	: A193-B7/A194-2H
FIN	: ALUMINIUM	ANCHOR B/N	: A193-B7/A194-2H
HALF PIPE HEADER	: A106-B	SUPPORT	: SS400

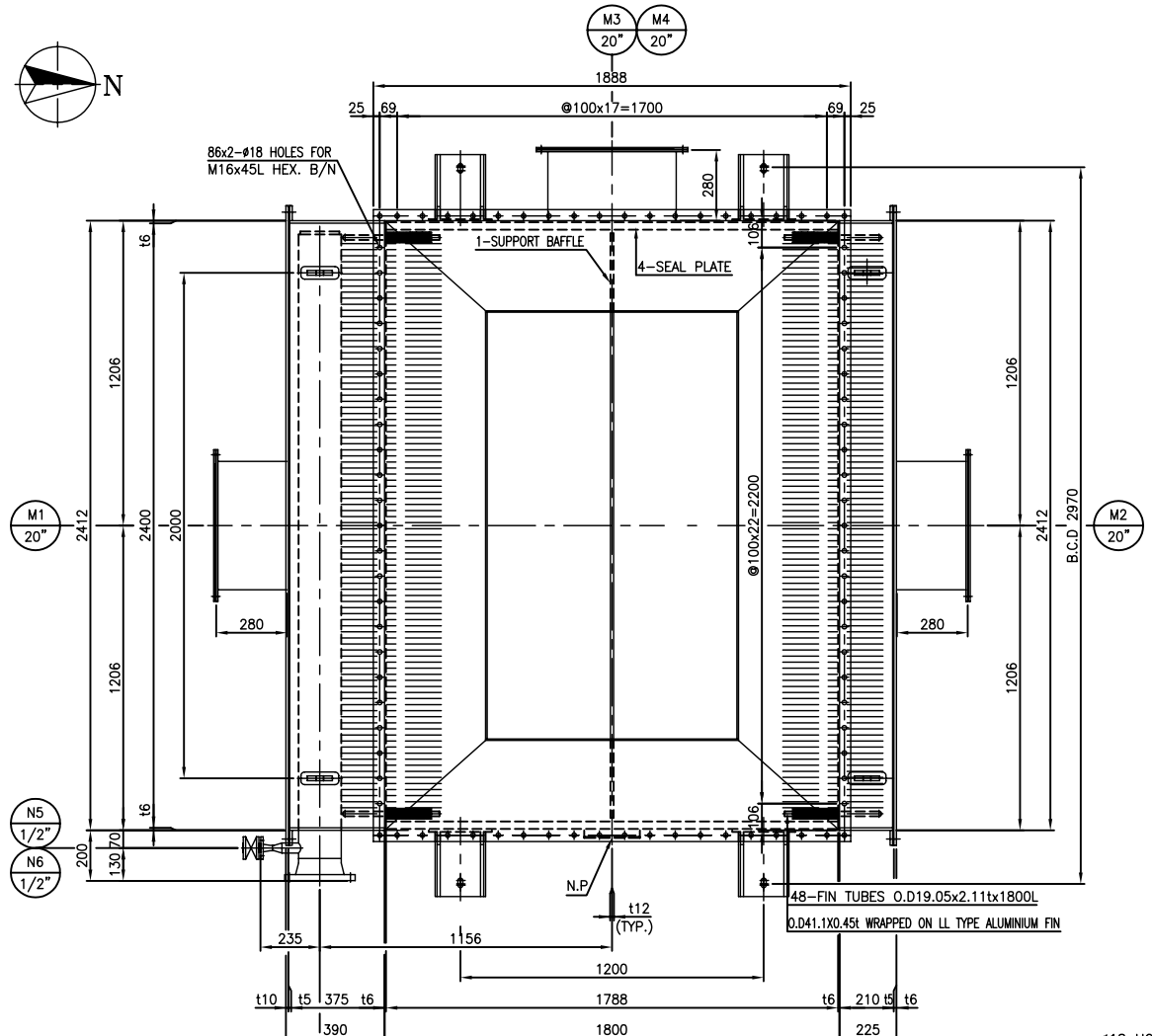
Pequiven
Petroquímica de Venezuela, S.A.

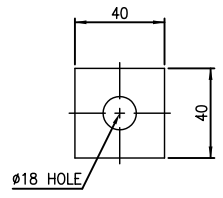
1800 MTPD AMMONIA/2200 MTPD UREA PLANT
PETROQUIMICA DE VENEZUELA, S.A.
MORON PETROCHEMICAL COMPLEX

TECNO FRONTIER CO., LTD. (T & F)
CHIBA, Japan

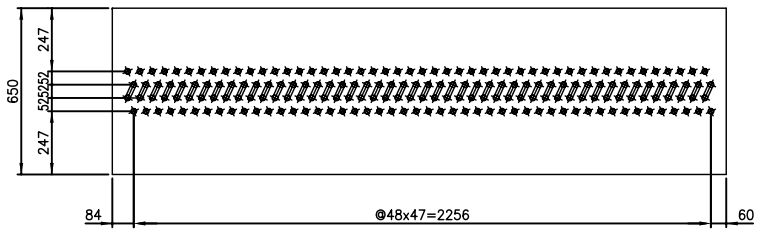
T&F WORK NO.	BA-0821
REQ. NO.	AXEA005
ITEM NO.	U-EA601
AWBS	U520
DOCUMENT NO.	MTI-U-AXEA005-511
SCALE 1/25	TITLE: GENERAL ASSEMBLY HEATER FOR SPOUTING AIR (2/2)
REV NO. 3	

Power Hx Tech Co., Ltd.

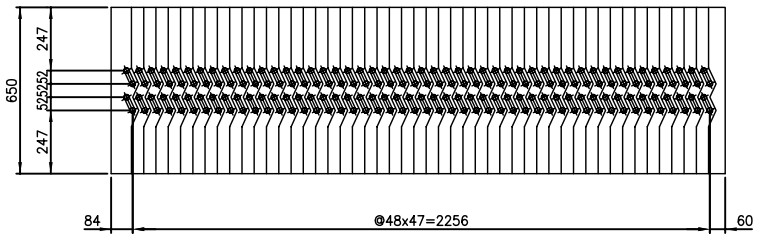




DETAIL OF SETTING B/2N/2W



SECTION "B"-"B"



SECTION "C"-"C"

VIEW "A"

REV.	DESCRIPTION	DATE	DWN	CH'D	CHIEF	APPR.
6						
5	BY OWNER COMMENT	NOV.26.'08	S.J.LEE	D.KANG	D.KANG	K.D.LEE
4	BY OWNER COMMENT	NOV.10.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
3	BY OWNER COMMENT	SEP.26.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
2	BY OWNER COMMENT	JUL.04.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
1	BY OWNER COMMENT	MAY.24.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
0	FOR APPROVAL	MAR.07.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE

DESIGN DATA

CODE	ASME SEC.VIII DIV. 1 '04 ED.+'06 ADD.		TEMA CLASS	–	
SURFACE AREA	312.6	M^2	TYPE	VERTICAL	
NO. OF REQ'D	1 (ONE)		CODE STAMP	NO	
	SHELL SIDE		TUBE SIDE		
KIND OF FLUID	AIR		STEAM		
FLOW RATE	85,445	Kg/h	2,300	Kg/h	
DESIGN PRESS.	700	mmH_2O	8	Kg/Cm^2G	
DESIGN TEMP.	110	°C	200	°C	
OPER. PRESS.	490	mmH_2O	4	Kg/Cm^2G	
OPER. TEMP. (IN/OUT)	26/80	°C	151/151	°C	
PRESSURE DROP	28	mmH_2O	0.2	Kg/Cm^2	
HYDRO. TEST PRESS.	N/A	mmH_2O	12	Kg/Cm^2G	
PNEUM. TEST PRESS.	N/A	mmH_2O	N/A	Kg/Cm^2G	
M.D.M.T	–	°C	–	°C	
P.W.H.T	–		–		
S.R AFTER COLD FORMING	–		–		
RADIOGRAPH (S/H)	N/A		SPOT		
JOINT EFFICIENCY (S/H)	70		85		
CORR. ARROW.	3	MM	3	MM	
NO. OF PASS	1 (ONE)		4 (FOUR)		
INSULATION	50 (HOT)	MM	90 (HOT)	MM	
SEISCMIC ZONE	ZONE 3				
WIND VEOCITY	145km/h AT 10m HEIGHT FROM GROUND				
PAINTING	MTI-U-AXEA005-903 (PAINTING PROCEDURE)				
WEIGHT (KG) BUNDLE	800	KG			
WEIGHT (KG) ERECTION	2,485	KG	EMPTY	2,485	KG
WEIGHT (KG) OPERATING	2,665	KG	FULL OF WATER	2,750	KG
TUBE & HEADER JOINT	WELDED				

NOZZLE LIST

MARK NO.	REQ'D NO.	NECK SIZE	NECK SCH.	NECK MAT'L	FLANGE RATING	FLANGE TYPE	FLANGE FACING	FROM C.L	DESCRIPTION
N1	1	1700x1000	–	SS400	–	–	–	SEE DWG.	AIR INLET
N2	1	1700x1000	–	SS400	–	–	–	SEE DWG.	AIR OUTLET
N3	1	6"	80	A106-B	ASME 150#	W.N	R.F	SEE DWG.	STEAM INLET
N4	1	6"	80	A106-B	ASME 150#	W.N	R.F	SEE DWG.	CONDERSATE OUTLET
N5	1	1/2"	80	A106-B	ASME 150#	W.N	R.F	SEE DWG.	VENT (W/VALVE)
N6	1	1/2"	80	A106-B	ASME 150#	W.N	R.F	SEE DWG.	VENT (W/VALVE)
M1	1	20"	t6	SS400	–	–	–	SEE DWG.	MANHOLE
M2	1	20"	t6	SS400	–	–	–	SEE DWG.	MANHOLE
M3	1	20"	t6	SS400	–	–	–	SEE DWG.	MANHOLE
M4	1	20"	t6	SS400	–	–	–	SEE DWG.	MANHOLE

NOTE

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE NOTED.
2. ALL FLANGE BOLT HOLES SHALL STRADDLE H/EX. NORMAL CENTERLINE.
3. NOZZLE PROJECTIONS ON SHELL ARE REFERRED FROM CENTER LINE OF HEX. TO GASKET CONTACT FACE OF FLANGE.
4. THE GASKET CONTACT SURFACE AS FOLLOWS.
   1) STANDARD FLANGE : 3.2~6.3 (125~250 AARH) (SMOOTH FINISH)
5. NOZZLE PROJECTIONS ARE FROM CENTER LINE OF H/EX. TO EXTREME FACE OF FLANGE.
6. GASKET MATERIAL : NON-ASBESTOS
   - MFR : TAEHWA KALPA SEAL CO.
   - SHEET NO : TH3000
   - FIBERS : ARAMID FIBER
   - BINDER : NBR

FINAL

MATERIAL SPEC.			
SHELL	: SS400	FLANGE	: A105
PLATE FLANGE & COVER	: SS400	GASKET	: NON-ASBESTOS
TUBE	: A179	BOLT/NUT	: A193-B7/A194-2H
FIN	: ALUMINIUM	SETTING B/N	: A193-B7/A194-2H
HEADER & NOZZLE NECK	: A106-B	SUPPORT	: SS400

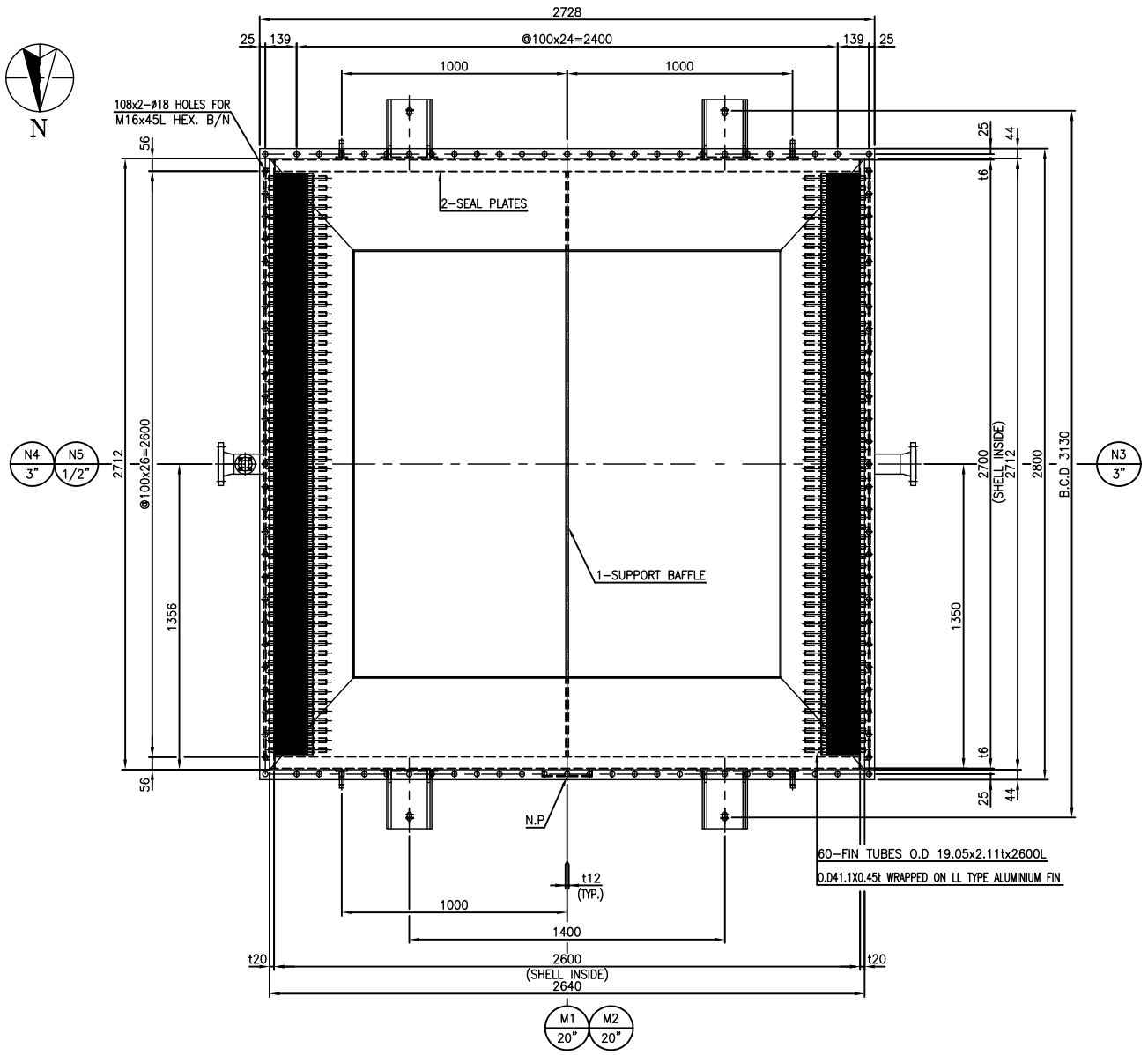
Pequiven Petroquímica de Venezuela, S.A.

1800 MTPD AMMONIA/2200 MTPD UREA PLANT
PETROQUIMICA DE VENEZUELA, S.A.
MORON PETROCHEMICAL COMPLEX

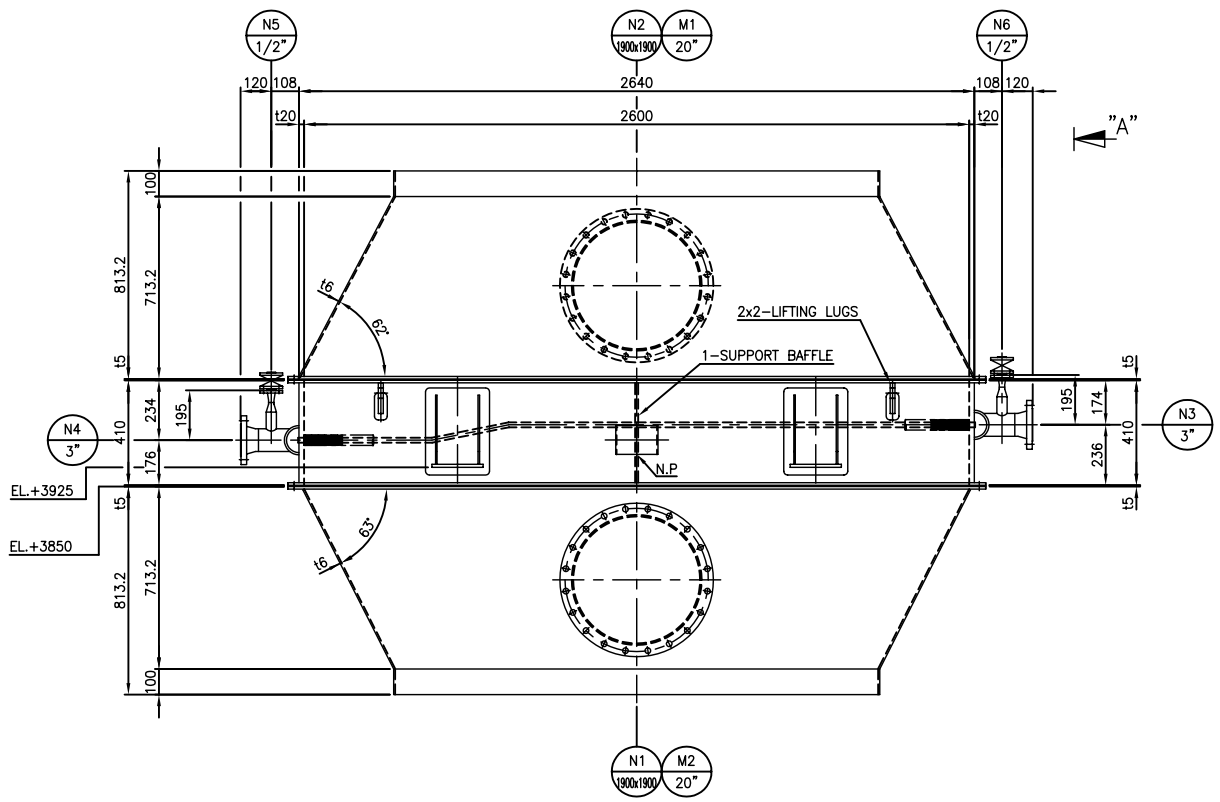
TECNO FRONTIER CO., LTD. (T & F)
CHIBA, Japan

T&F WORK NO.	BA-0821
REQ. NO.	AXEA005
ITEM NO.	U-EA602
AWBS	U520
DOCUMENT NO.	MTI-U-AXEA005-521
SCALE	1/15
REV NO.	5
TITLE	GENERAL ASSEMBLY NO.1 HEATER FOR FLUIDIZING AIR

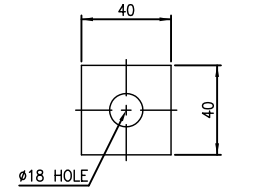
Power Hx Tech Co., Ltd.

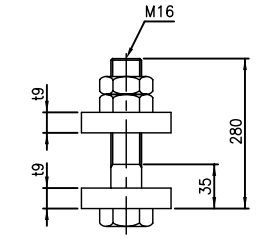


PLAN VIEW

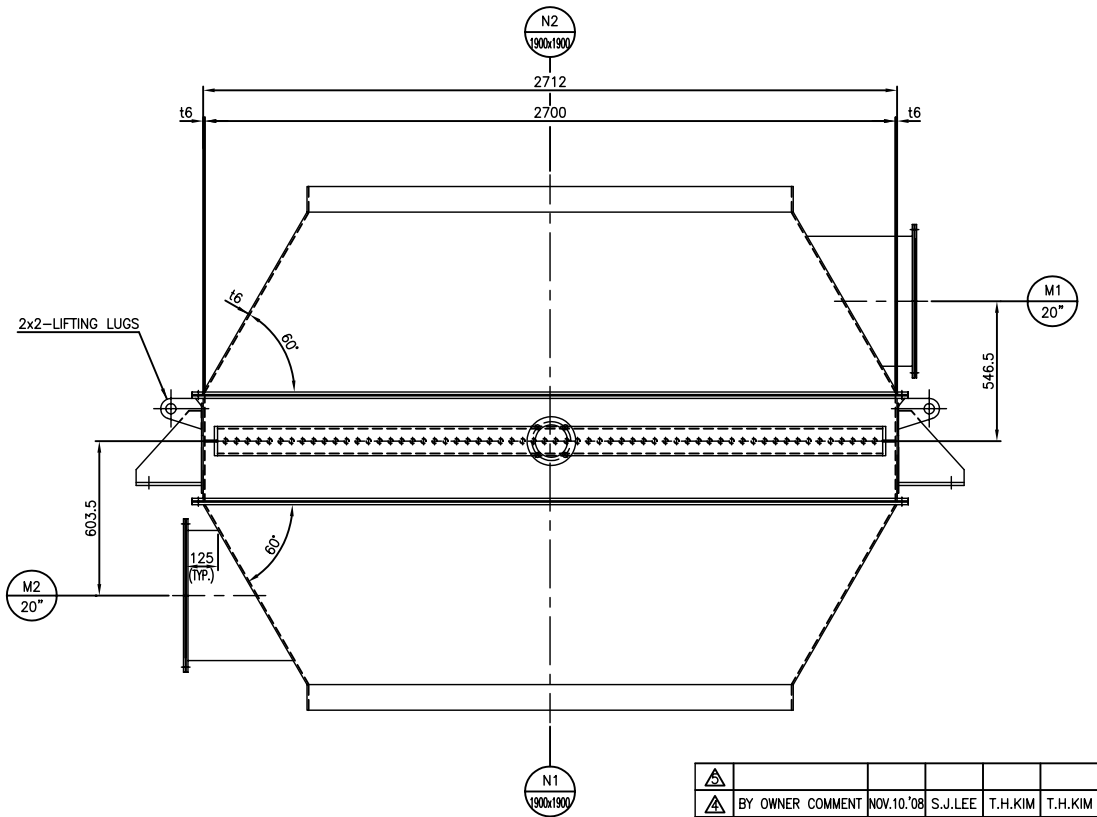


ELEVATION





DETAIL OF SETTING B/2N/2W



VIEW "A"

DESIGN DATA

CODE	ASME SEC.VIII DIV. 1 '04 ED.+'06 ADD.		TEMA CLASS	–	
SURFACE AREA	141.1	M^2	TYPE	VERTICAL	
NO. OF REQ'D	1 (ONE)		CODE STAMP	NO	
	SHELL SIDE		TUBE SIDE		
KIND OF FLUID	AIR		STEAM		
FLOW RATE	158,314	Kg/h	946	Kg/h	
DESIGN PRESS.	700	mmH_2O	8	Kg/Cm G	
DESIGN TEMP.	70	°C	200	°C	
OPER. PRESS.	490	mmH_2O	4	Kg/Cm^2G	
OPER. TEMP. (IN/OUT)	26/38	°C	151/151	°C	
PRESSURE DROP	9	mmH_2O	0.01	Kg/Cm^2	
HYDRO. TEST PRESS.	N/A	mmH_2O	10.4	Kg/Cm^2G	
PNEUM. TEST PRESS.	N/A	mmH_2O	N/A	Kg/Cm^2G	
M.D.M.T	–	°C	–	°C	
P.W.H.T	–		–		
S.R AFTER COLD FORMING	–		–		
RADIOGRAPH (S/H)	N/A		SPOT		
JOINT EFFICIENCY (S/H)	70		85		
CORR. ARROW.	3	MM	3	MM	
NO. OF PASS	1 (ONE)		1 (ONE)		
INSULATION	50 (HOT)	MM	90 (HOT)	MM	
SEISCMIC ZONE	ZONE 3				
WIND VEOCITY	145km/h AT 10m HEIGHT FROM GROUND				
PAINTING	MTI-U-AXEA005-903 (PAINTING PROCEDURE)				
WEIGHT (KG) BUNDLE	500	KG			
WEIGHT (KG) ERECTION	1,875	KG	EMPTY	1,875	KG
WEIGHT (KG) OPERATING	1,995	KG	FULL OF WATER	2,045	KG
TUBE & TUBESHEET JOINT	–				

NOZZLE LIST

MARK NO.	REQ'D NO.	NECK SIZE	NECK SCH.	NECK MAT'L	FLANGE RATING	FLANGE TYPE	FLANGE FACING	FROM C.L	DESCRIPTION
N1	1	1900x1900	–	SS400	–	–	–	SEE DWG.	AIR INLET
N2	1	1900x1900	–	SS400	–	–	–	SEE DWG.	AIR OUTLET
N3	1	3"	80	A106-B	ASME 150#	W.N	R.F	1548	STEAM INLET
N4	1	3"	80	A106-B	ASME 150#	W.N	R.F	1548	CONDERSATE OUTLET
N5	1	1/2"	80	A106-B	ASME 150#	W.N	R.F	SEE DWG.	VENT (W/VALVE)
N6	1	1/2"	80	A106-B	ASME 150#	W.N	R.F	SEE DWG.	VENT (W/VALVE)
M1	1	20"	t6	SS400	–	–	–	SEE DWG.	MANHOLE
M2	1	20"	t6	SS400	–	–	–	SEE DWG.	MANHOLE

NOTE

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE NOTED.
2. ALL FLANGE BOLT HOLES SHALL STRADDLE H/EX. NORMAL CENTERLINE.
3. NOZZLE PROJECTIONS ON SHELL ARE REFERRED FROM CENTER LINE OF HEX. TO GASKET CONTACT FACE OF FLANGE.
4. THE GASKET CONTACT SURFACE AS FOLLOWS.
   1) STANDARD FLANGE : 3.2~6.3 (125~250 AARH) (SMOOTH FINISH)
5. NOZZLE PROJECTIONS ARE FROM CENTER LINE OF H/EX. TO EXTREME FACE OF FLANGE.
6. GASKET MATERIAL : NON-ASBESTOS
   - MFR : TAEHWA KALPA SEAL CO.
   - SHEET NO : TH3000
   - FIBERS : ARAMID FIBER
   - BINDER : NBR

FINAL

MATERIAL SPEC.			
SHELL	: SS400	FLANGE	: A105
PLATE FLANGE & COVER	: SS400	NOZZLE NECK	: A106-B
TUBE SHEET	: A516-70	GASKET	: NON-ASBESTOS
TUBE	: A179	BOLT/NUT	: A193-B7/A194-2H
FIN	: ALUMINIUM	ANCHOR B/N	: A193-B7/A194-2H
HALF PIPE HEADER	: A106-B	SUPPORT	: SS400

Pequiven Petroquímica de Venezuela, S.A.

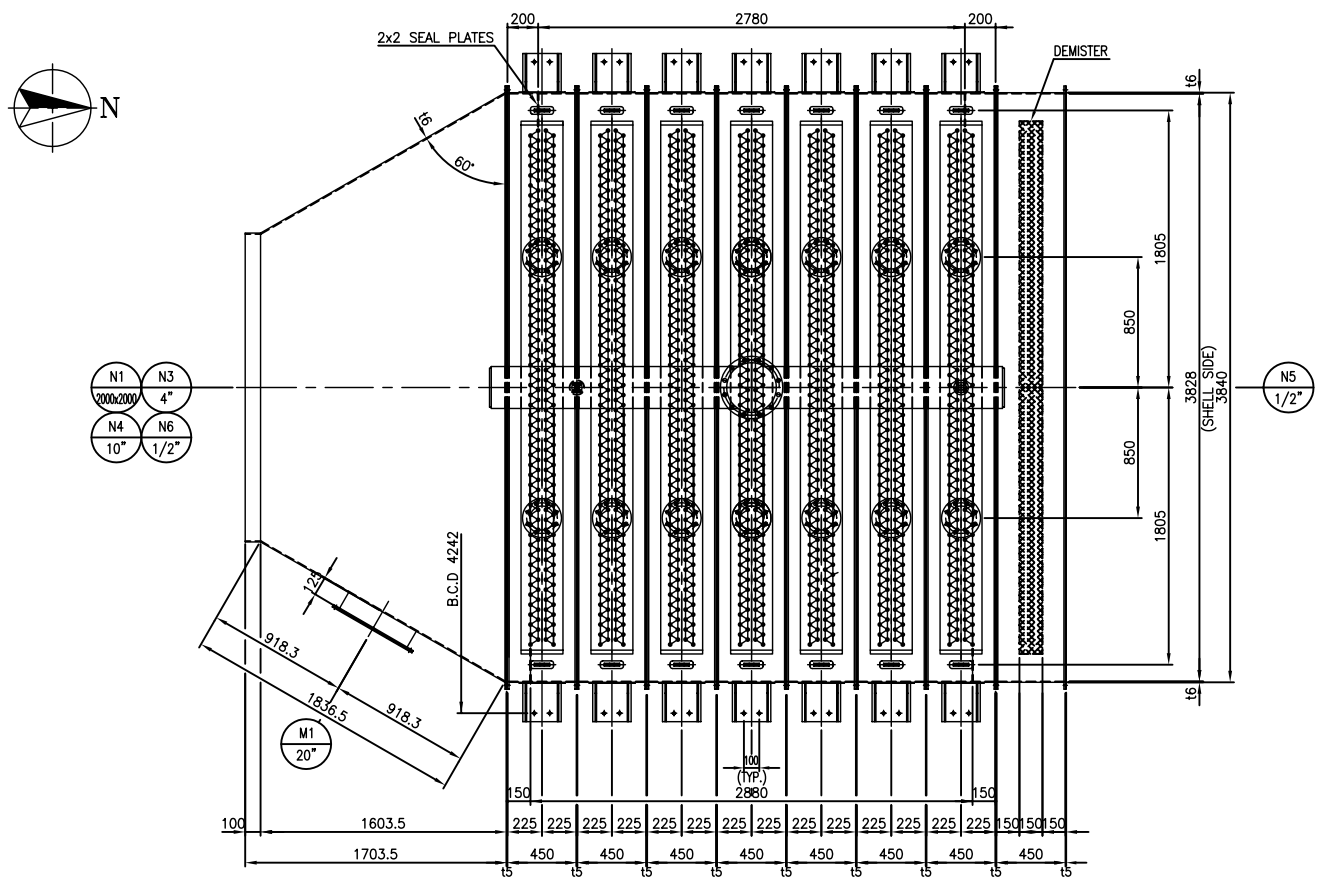
1800 MTPD AMMONIA/2200 MTPD UREA PLANT
PETROQUIMICA DE VENEZUELA, S.A.
MORON PETROCHEMICAL COMPLEX

TECNO FRONTIER CO., LTD. (T & F)
CHIBA, Japan

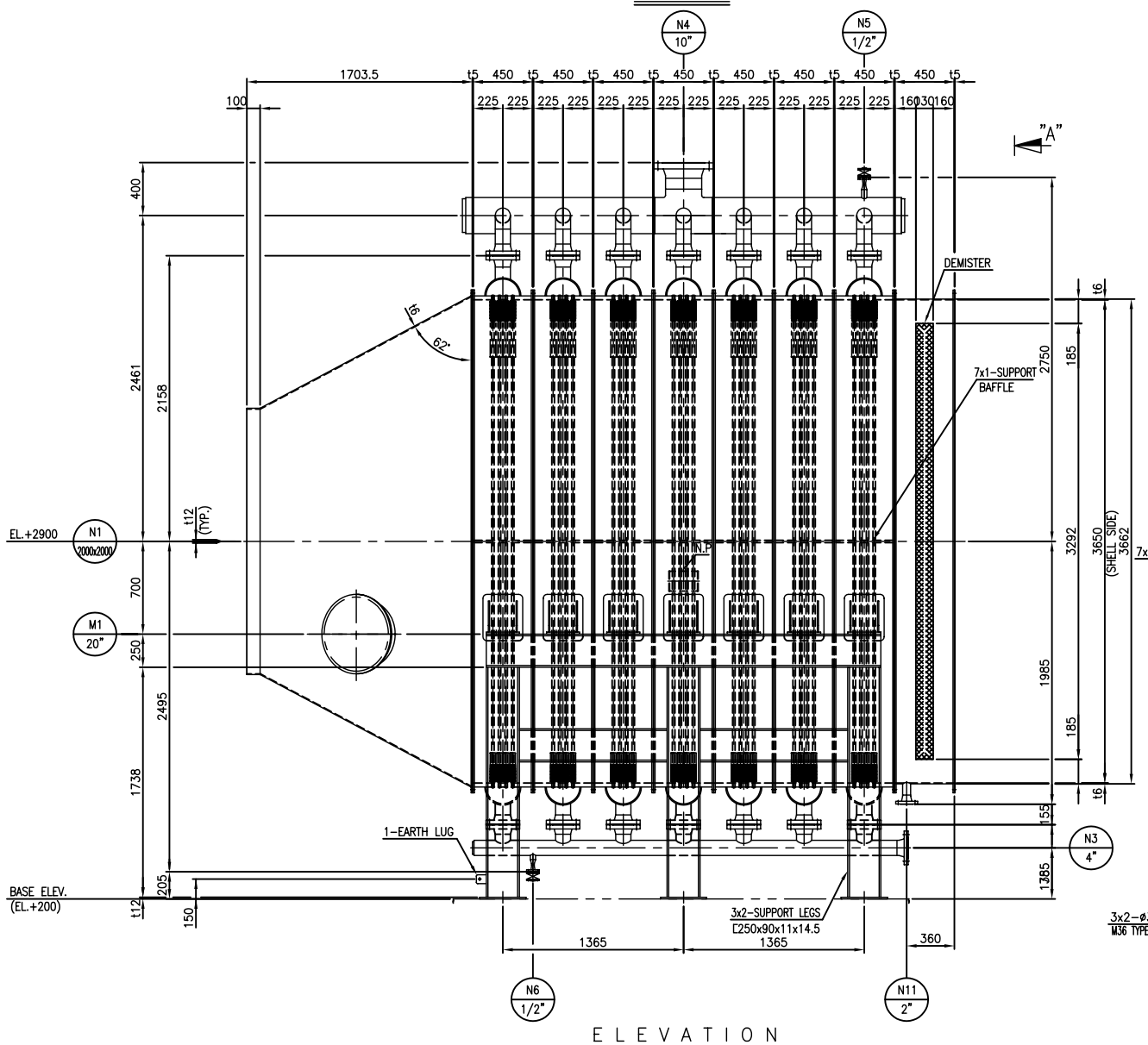
T&F WORK NO.	BA-0821
REQ. NO.	AXEA005
ITEM NO.	U-EA603
AWBS	U520
DOCUMENT NO.	MTI-U-AXEA005-531
SCALE 1/15	TITLE: GENERAL ASSEMBLY NO.2 HEATER FOR FLUIDIZING AIR
REV NO. 4	

Power Hx Tech Co., Ltd.

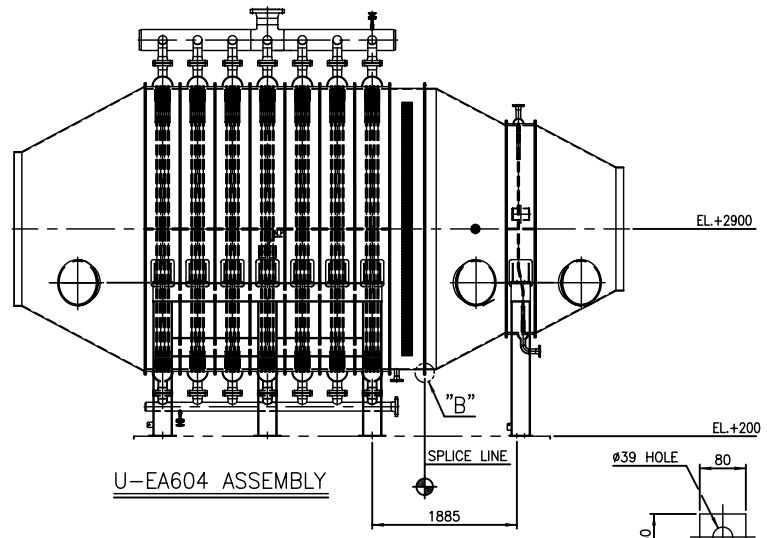
REV.	DESCRIPTION	DATE	DWN	CH'D	CHIEF	APPR.
5						
4	BY OWNER COMMENT	NOV.10.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
3	BY OWNER COMMENT	SEP.26.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
2	BY OWNER COMMENT	JUL.04.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
1	BY OWNER COMMENT	MAY.24.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
0	FOR APPROVAL	MAR.07.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE



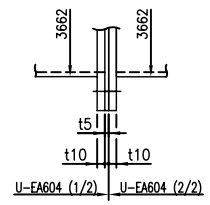
PLAN VIEW



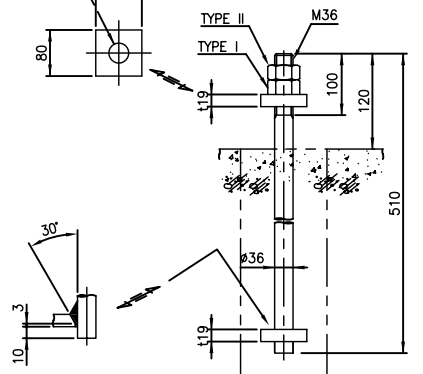
ELEVATION



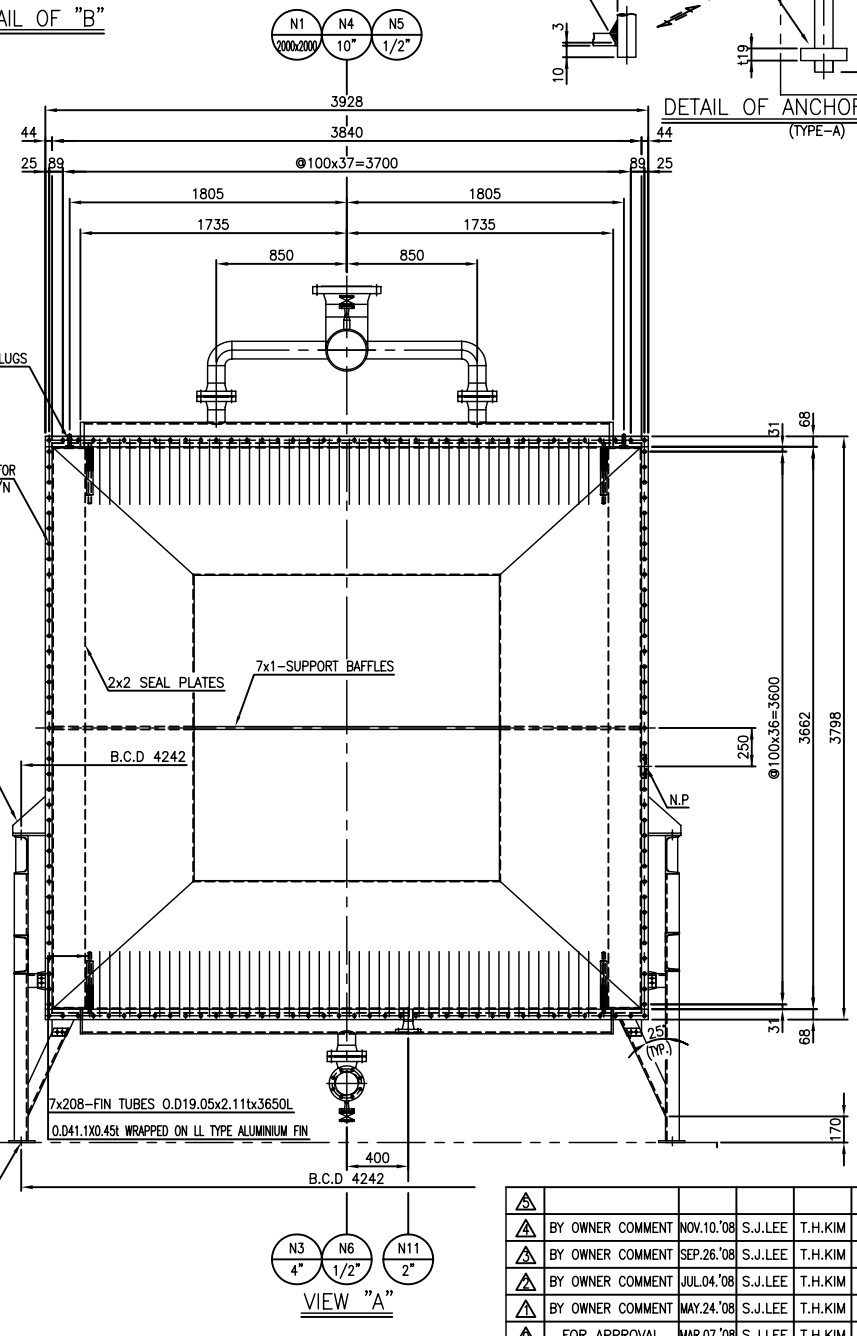
U-EA604 ASSEMBLY



DETAIL OF "B"



DETAIL OF ANCHOR B/N/2W
(TYPE-A)



VIEW "A"

DESIGN DATA

CODE	ASME SEC.VIII DIV. 1 '04 ED.+'06 ADD.		TEMA CLASS	–	
SURFACE AREA	5054.1	M^2	TYPE	HORIZONTAL	
NO. OF REQ'D	1 (ONE)		CODE STAMP	NO	
	SHELL SIDE		TUBE SIDE		
KIND OF FLUID	AIR		NH3		
FLOW RATE	124,426	Kg/㎡	7,516	Kg/㎡	
DESIGN PRESS.	450	mmH_2O	20/F.V	Kg/Cm^2G	
DESIGN TEMP.	70	℃	−12/70	℃	
OPER. PRESS.	350	mmH_2O	3.7	Kg/Cm^2G	
OPER. TEMP. (IN/OUT)	37.8/7	℃	2.0/2.0	℃	
PRESSURE DROP	25 + 6(DEMISTER)	mmH_2O	0.01	Kg/Cm^2	
HYDRO. TEST PRESS.	N/A	mmH_2O	30	Kg/Cm^2G	
PNEUM. TEST PRESS.	N/A	mmH_2O	N/A	Kg/Cm^2G	
M.D.M.T	–	℃	–	℃	
P.W.H.T	–		YES		
S.R AFTER COLD FORMING	–		–		
RADIOGRAPH (S/H)	N/A		FULL		
JOINT EFFICIENCY (S/H)	70		100		
CORR. ARROW.	3	MM	3	MM	
NO. OF PASS	1 (ONE)		1 (ONE)		
INSULATION	–	MM	70 (COLD)	MM	
SEISCMIC ZONE	ZONE 3				
WIND VEOCITY	145km/h AT 10m HEIGHT FROM GROUND				
PAINTING	MTI-U-AXEA005-903 (PAINTING PROCEDURE)				
WEIGHT (KG) BUNDLE	12,320	KG			
WEIGHT (KG) ERECTION	18,980	KG	EMPTY	18,980	KG
WEIGHT (KG) OPERATING	20.395	KG	FULL OF WATER	21,680	KG
TUBE & TUBESHEET JOINT	STRENGTH WELD WITH LIGHT EXPANDED				

NOZZLE LIST

MARK NO.	REQ'D NO.	NECK SIZE	NECK SCH.	NECK MAT'L	FLANGE RATING	FLANGE TYPE	FLANGE FACING	FROM C.L	DESCRIPTION
N1	1	2000x2000	–	SS400	–	–	–	SEE DWG.	AIR INLET
N3	1	4"	80	A106-B	ASME 300#	W.N	R.F	SEE DWG.	NH3 LIQUID INLET
N4	1	10"	80	A106-B	ASME 300#	W.N	R.F	SEE DWG.	NH3 VAPOR OUTLET
N5	1	1/2"	80	A106-B	ASME 300#	W.N	R.F	2750	VENT (W/VALVE)
N6	1	1/2"	80	A106-B	ASME 300#	W.N	R.F	2495	DRAIN (W/VALVE)
N11	1	2"	80	A106-B	ASME 300#	W.N	R.F	1985	WATER DRAIN
M1	1	20"	t6	SS400	–	–	–	SEE DWG.	MANHOLE

NOTE

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE NOTED.
2. ALL FLANGE BOLT HOLES SHALL STRADDLE H/EX. NORMAL CENTERLINE.
3. NOZZLE PROJECTIONS ON SHELL ARE REFERRED FROM CENTER LINE OF HEX. TO GASKET CONTACT FACE OF FLANGE.
4. THE GASKET CONTACT SURFACE AS FOLLOWS.
   1) STANDARD FLANGE : 3.2~6.3 (125~250 AARH) (SMOOTH FINISH)
5. NOZZLE PROJECTIONS ARE FROM CENTER LINE OF H/EX. TO EXTREME FACE OF FLANGE.
6. GASKET MATERIAL : NON-ASBESTOS
   - MFR : TAEHWA KALPA SEAL CO.
   - SHEET NO : TH3000
   - FIBERS : ARAMID FIBER
   - BINDER : NBR

FINAL

MATERIAL SPEC.			
SHELL	: SS400	FLANGE	: A105
PLATE FLANGE & COVER	: SS400	NOZZLE NECK	: A106-B
TUBE SHEET	: A516-70	GASKET	: NON-ASBESTOS
TUBE	: A179	BOLT/NUT	: A193-B7/A194-2H
FIN	: ALUMINIUM	ANCHOR B/N	: A193-B7/A194-2H
HALF PIPE HEADER	: A106-B	SUPPORT	: SS400

Pequiven Petroquímica de Venezuela, S.A.

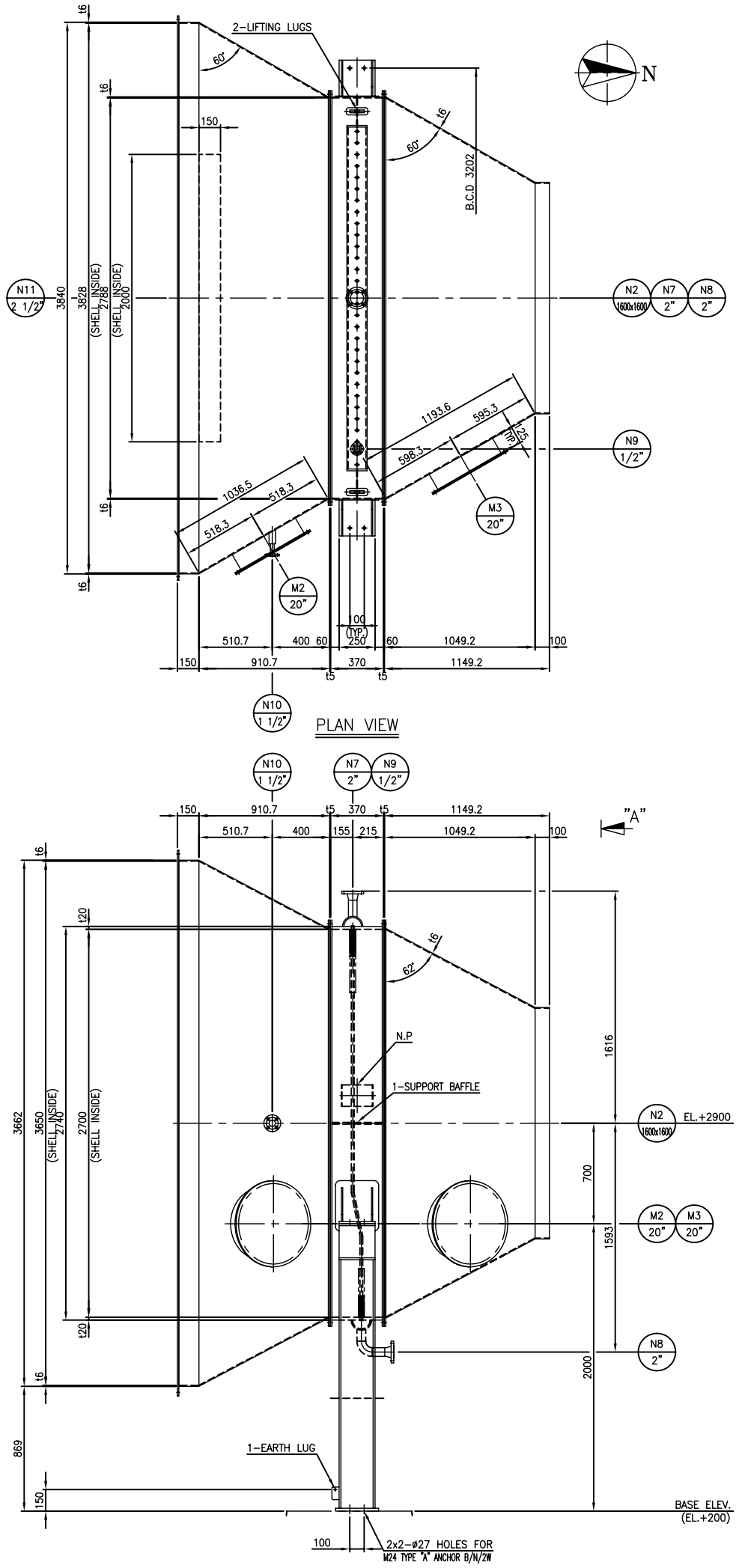
1800 MTPD AMMONIA/2200 MTPD UREA PLANT
PETROQUIMICA DE VENEZUELA, S.A.
MORON PETROCHEMICAL COMPLEX

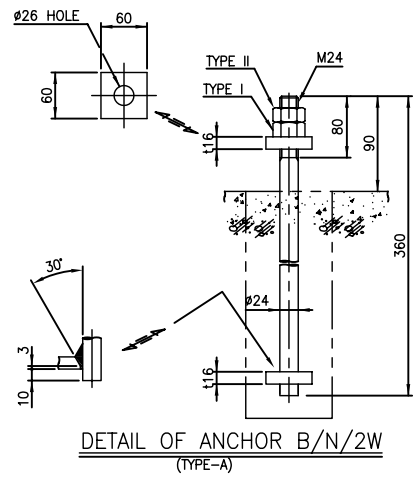
TECNO FRONTIER CO., LTD. (T & F)
CHIBA, Japan

T&F WORK NO.	BA-0821
REQ. NO.	AXEA005
ITEM NO.	U-EA604
AWBS	U520
DOCUMENT NO.	MTI-U-AXEA005-541
SCALE 1/22	TITLE: GENERAL ASSEMBLY CHILLER FOR PRODUCT COOLER (1/2)
REV NO. 4	

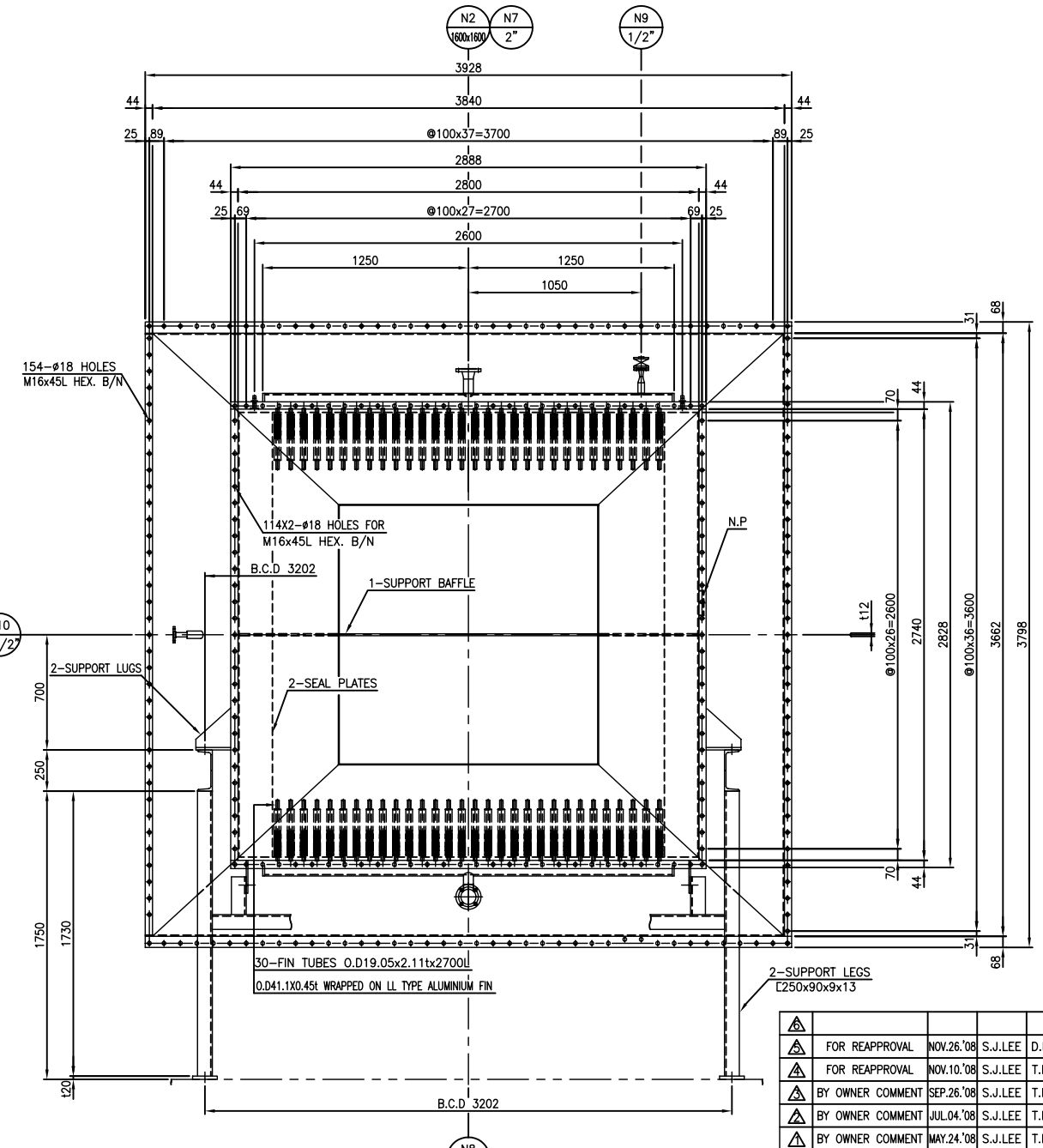
Power Hx Tech Co., Ltd.

REV.	DESCRIPTION	DATE	DWN	CH'D	CHIEF	APPR.
5						
4	BY OWNER COMMENT	NOV.10.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
3	BY OWNER COMMENT	SEP.26.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
2	BY OWNER COMMENT	JUL.04.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
1	BY OWNER COMMENT	MAY.24.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
0	FOR APPROVAL	MAR.07.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE





DETAIL OF ANCHOR B/N/2W
(TYPE-A)



DESIGN DATA

CODE	ASME SEC.VIII DIV. 1 '04 ED.+'06 ADD.		TEMA CLASS	–	
SURFACE AREA	73.3	M^2	TYPE	HORIZONTAL	
NO. OF REQ'D	1 (ONE)		CODE STAMP	NO	
	SHELL SIDE		TUBE SIDE		
KIND OF FLUID	AIR		STEAM		
FLOW RATE	122,250	Kg/h	284	Kg/h	
DESIGN PRESS.	450	mmH_2O	5	Kg/Cm^2G	
DESIGN TEMP.	70	°C	200	°C	
OPER. PRESS.	350	mmH_2O	2	Kg/Cm^2G	
OPER. TEMP. (IN/OUT)	7/12	°C	133/133	°C	
PRESSURE DROP	3	mmH_2O	0.01	Kg/Cm^2	
HYDRO. TEST PRESS.	N/A	mmH_2O	7.5	Kg/Cm^2G	
PNEUM. TEST PRESS.	N/A	mmH_2O	N/A	Kg/Cm^2G	
M.D.M.T	–	°C	–	°C	
P.W.H.T	–		–		
S.R AFTER COLD FORMING	–		–		
RADIOGRAPH (S/H)	N/A		SPOT		
JOINT EFFICIENCY (S/H)	70		85		
CORR. ARROW.	3	MM	3	MM	
NO. OF PASS	1 (ONE)		1 (ONE)		
INSULATION	–	MM	–	MM	
SEISCMIC ZONE	ZONE 3				
WIND VEOCITY	145km/h AT 10m HEIGHT FROM GROUND				
PAINTING	MTI-U-AXEA005-903 (VENDOR DOCUMEAT)				

WEIGHT (KG)					
BUNDLE	345	KG			
ERECTION	2,520	KG	EMPTY	2,520	KG
OPERATING	2,550	KG	FULL OF WATER	2,590	KG

TUBE & TUBESHEET JOINT	STRENGTH WELD WITH LIGHT EXPANDED

NOZZLE LIST

MARK NO.	REQ'D NO.	NECK			FLANGE			FROM C.L	DESCRIPTION
		SIZE	SCH.	MAT'L	RATING	TYPE	FACING		
N2	1	1600x1600	–	SS400	–	–	–	SEE DWG.	AIR OUTLET
N7	1	2"	80	A106-B	ASME 150#	W.N	R.F	SEE DWG.	STEAM INLET
N8	1	2"	80	A106-B	ASME 150#	W.N	R.F	SEE DWG.	CONDENSATE OUTLET
N9	1	1/2"	80	A106-B	ASME 150#	W.N	R.F	SEE DWG.	VENT (W/VALVE)
N10	1	1 1/2"	80	A106-B	ASME 150#	W.N	R.F	SEE DWG.	TI CONN.
M2	1	20"	t6	SS400	–	–	–	SEE DWG.	MANHOLE
M3	1	20"	t6	SS400	–	–	–	SEE DWG.	MANHOLE

NOTE

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE NOTED.
2. ALL FLANGE BOLT HOLES SHALL STRADDLE H/EX. NORMAL CENTERLINE.
3. NOZZLE PROJECTIONS ON SHELL ARE REFERRED FROM CENTER LINE OF HEX. TO GASKET CONTACT FACE OF FLANGE.
4. THE GASKET CONTACT SURFACE AS FOLLOWS.
   1) STANDARD FLANGE : 3.2~6.3 (125~250 AARH) (SMOOTH FINISH)
5. NOZZLE PROJECTIONS ARE FROM CENTER LINE OF H/EX. TO EXTREME FACE OF FLANGE.
6. GASKET MATERIAL : NON-ASBESTOS
   - MFR : TAEHWA KALPA SEAL CO.
   - SHEET NO : TH3000
   - FIBERS : ARAMID FIBER
   - BINDER : NBR

FINAL

MATERIAL SPEC.			
SHELL : SS400		FLANGE : A105	
PLATE FLANGE & COVER : SS400		NOZZLE NECK : A106-B	
TUBE SHEET : A516-70		GASKET : NON-ASBESTOS	
TUBE : A179		BOLT/NUT : A193-B7/A194-2H	
FIN : ALUMINIUM		ANCHOR B/N : A193-B7/A194-2H	
HALF PIPE HEADER : A106-B		SUPPORT : SS400	

REV.	DESCRIPTION	DATE	DWN	CH'D	CHIEF	APPR.
6						
5	FOR REAPPROVAL	NOV.26.'08	S.J.LEE	D.KANG	D.KANG	K.D.LEE
4	FOR REAPPROVAL	NOV.10.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
3	BY OWNER COMMENT	SEP.26.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
2	BY OWNER COMMENT	JUL.04.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
1	BY OWNER COMMENT	MAY.24.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE
0	FOR APPROVAL	MAR.07.'08	S.J.LEE	T.H.KIM	T.H.KIM	K.D.LEE

Pequiven
Petroquímica de Venezuela, S.A.

1800 MTPD AMMONIA/2200 MTPD UREA PLANT
PETROQUIMICA DE VENEZUELA, S.A.
MORON PETROCHEMICAL COMPLEX

TECNO FRONTIER CO., LTD. (T & F)
CHIBA, Japan

T&F WORK NO.	BA-0821
REQ. NO.	AXEA005
ITEM NO.	U-EA604
AWBS	U520
DOCUMENT NO.	MTI-U-AXEA005-551
SCALE 1/20	TITLE: GENERAL ASSEMBLY CHILLER FOR PRODUCT COOLER (2/2)
REV NO. 5	

Power Hx Tech Co., Ltd.