



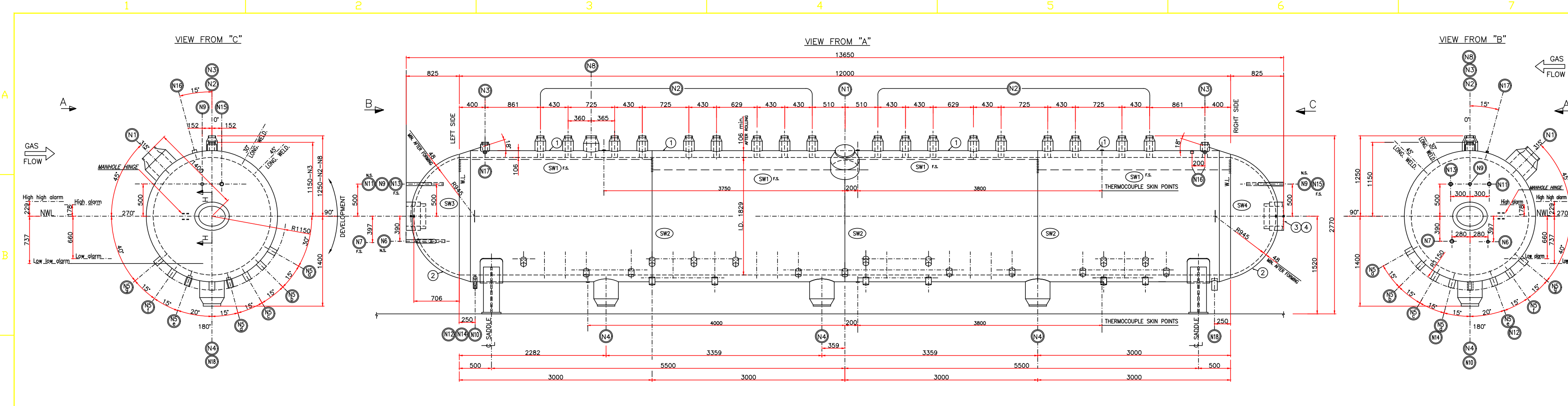
ΠΡΟΣΚΛΗΣΗ ΔΠΛΠ 1310700

ΣΥΜΠΛΗΡΩΜΑ Νο1

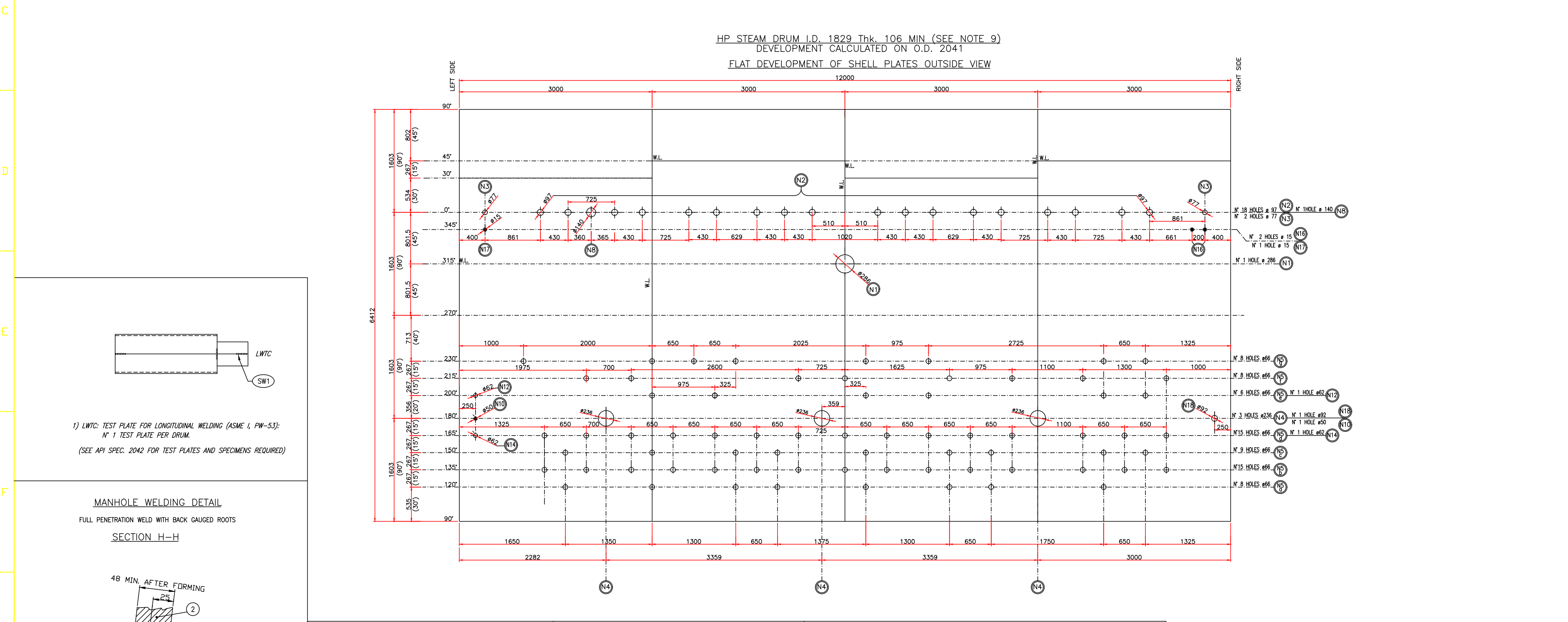
Αντικείμενο: «Επισκευή πακέτου σερπαντινών εναλλαγής θερμότητας και αποκατάσταση στεγανότητας module 1 Λέβητα Ανάκτησης θερμότητας (HRSG) Μονάδας V ΑΗΣ Κερατέας – Λαυρίου»

1. Το παρόν Συμπλήρωμα Νο1 της αρχικής Πρόσκλησης εκδίδεται προκειμένου:
 - α. Να παραταθεί η καταληκτική ημερομηνία υποβολής των προσφορών έως τις 20.06.2025 και ώρα 12:00.
 - β. Να προστεθούν τα συνημμένα στο Συμπλήρωμα Σχέδια στο Τεύχος της Τεχνικής Περιγραφής
2. Οι υπόλοιποι όροι της αρχικής Πρόσκλησης που δεν τροποποιούνται με το παρόν Συμπλήρωμα Νο1, παραμένουν ως έχουν.

Συνημμένα Σχέδια



- NOTES**
- 1) DRUM TO BE BUILT IN ACCORDANCE WITH A.S.M.E. SECTION 1, PLUS THE SPECIFICATION (OF API AND/OR OF THE CLIENT) CALLED BY IN THE PURCHASE ORDER
 - 2) DESIGN PRESSURE IS 124 BAR G AT 328°C (1798 PSIG AT 622 °F)
 - 3) THE QUANTITIES SPECIFIED ARE FOR ONE (1) UNIT ; (1) UNIT ON CONTRACT
 - 4) ALL DIMENSIONS ARE IN MILLIMETRES , EXCEPT WHERE OTHERWISE INDICATED
 - 5) ALL NON-PRESSURE PARTS TO BE WELDED ON PRESSURE PARTS ARE MADE BY WELDABLE MATERIAL (SA 36, OR EQUIVALENT).
 - 6) THICKNESS OF PLATES AND FORGINGS IS THE MINIMUM FINISHED THICKNESS REQUIRED, UNLESS OTHERWISE NOTED; THE NOMINAL THICKNESS OF PIPES HAS A TOLERANCE $\pm 12.5\%$
 - 7) TOLERANCES AS PER UNI-2768 m, EXCEPT WHERE OTHERWISE NOTED
 - 8) DRILLING TOLERANCES :
 - ON LONGITUDINAL PITCHES, ± 1 MM (NOT CUMULATIVE)
 - ON CIRCUMFERENTIAL PITCHES, ± 2 MM ON THE LENGTH MEASURED ON THE ACTUAL O.D. FOR THE ANGULAR SPACING INDICATED
 - 9) ALL THE CIRCUMFERENTIAL DIMENSIONS ARE BASED ON THE O.D. OF THE SHELL DUE TO THE MINIMUM PLATE THICKNESS . THE SUPPLIER MUST DETERMINE THEM IN ACCORDANCE WITH THE ANGULAR SPACING INDICATED TAKING INTO ACCOUNT THE ACTUAL O.D.
 - 10) MANHOLE COVER PLATES MUST BE PLACED INSIDE THE DRUM BEFORE ATTACHING THE HEADS
 - 11) FOR THE NOZZLES, THE SUPPLIER SHALL PROVIDE THE EXTRA LENGTH NECESSARY TO ACCOMMODATE THE TEMPORARY PLUGS FOR THE SHOP TEST, AND THE CONNECTIONS NECESSARY
 - 12) SHARP EDGE MUST BE REMOVED ON ALL NOZZLE PENETRATIONS.
 - 13) DRUM PLATES SHALL BE SUPPLIED BY ONE AND THE SAME MANUFACTURER.
 - 14) DRUM MATERIALS PROCUREMENTS AND FABRICATION SHALL BE IN FULL ACCORDANCE TO API M.R. 11680MDR02000 .
- ITEM NUMBER
ERECTION ITEM NUMBER
WELDING NUMBER



DESIGN AND TECHNICAL DATA

DESIGN PRESSURE	124 bar g
HYDROSTATIC TEST PRESSURE	186 bar g
DESIGN TEMPERATURE	328 °C
FLUID	WATER
PHYSICAL STATE OF FLUID	WATER+STEAM
CORROSION ALLOWANCE	mm
CAPACITY	34,000 l
VESSEL EMPTY (SHELL+HEADS+MANHOLE including SKID+INTERNALs excluded)	67,000 Kg
VESSEL FULL WATER	101,000 Kg
REFERENCE CODE	ASME SECT. I, VIII, 2001+ADD 2003 & E.C. DIRECTIVE 97/23 (P.E.D.)
AUTHORITY INSPECTION	BUREAU VERITAS
BUILT YEAR	2004
API SERIAL NUMBER	98/1
HOLE LIGAMENT EFFICIENCY %	LONGITUDINAL 89.8 CIRCUMFERENTIAL 100
CODE CASES USED	

COMPONENTS

Quantity	Item	Denominaz.	L.D. mm	Thk. mm	Material
1	4	SHELL	1829	106 min.	SA 516-70
2	2	HEADS	N.A.	48 min.	SA 516-70
3	2	MANHOLE RING	310x410	65 min.	SA 105

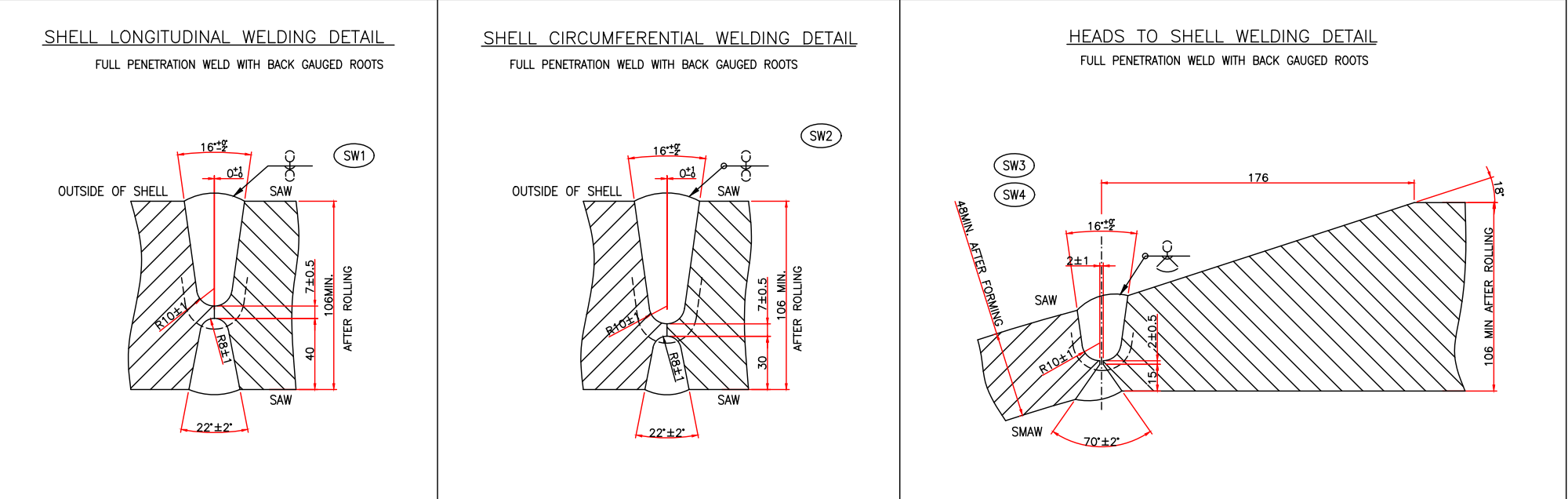
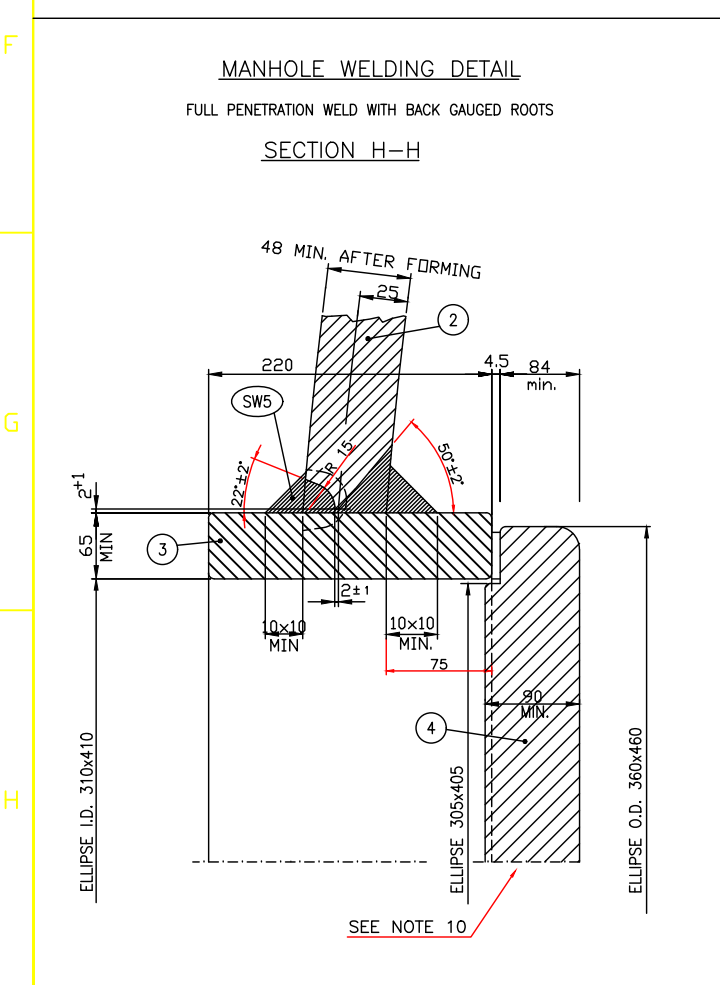
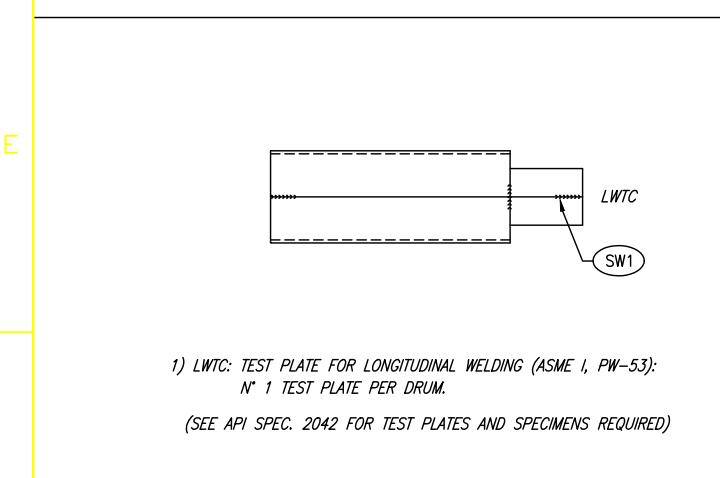
COVER PLATE

Quantity	Item	O.D. mm	Thk. mm	Material
4	2	460	90 min.	SA 516-70

NOZZLES

Item	Qty	Service	O.D. mm	Thk. mm	Material	MIN. HOLE DIA. mm	Note
N1	1	FEEDWATER INLET (10")	254	78 MIN	SA 105	286	
N2	18	STEAM OUTLET (4")	101.6	40 MIN	SA 105	97	
N3	2	SAFETY VALVE (3"-900#)	152.4	36.5 MIN	SA 105	77	
N4	3	DOWNCOMERS (10")	254	70 MIN	SA 105	236	
N5	69	RISERS (3")	76.2	11.13	SA 106 B	66	
N6	1	CHEMICAL FEED (1")	25.4	10.16	SA 106 B	50	
N7	1	CONTINUOUS BLOWDOWN (2")	50.8	8.74	SA 106 B	62	
N8	1	PEGGING STEAM TO IP DRUM (6")	152.4	52 MIN	SA 105	140	
N9	2	LEVEL GAGE UPPER TAPS	25.4	7.14	SA 106 B	50	(LH)
N10	1	LEVEL GAGE LOWER TAPS	25.4	7.14	SA 106 B	50	(LH)
N11	1	L.L. LEVEL SWITCH UPPER TAPS	25.4	8.74	SA 106 B	62	(LH)
N12	1	L.L. LEVEL SWITCH LOWER TAPS	25.4	8.74	SA 106 B	62	(LH)
N13	1	H.H. LEVEL SWITCH UPPER TAPS	25.4	8.74	SA 106 B	62	(LH)
N14	1	H.H. LEVEL SWITCH LOWER TAPS	25.4	8.74	SA 106 B	62	(LH)
N15	1	HYDRAULIC COLUMN UPPER TAPS	25.4	8.74	SA 106 B	62	
N16	2	PRESSURE TRANSMITTER CONNECTIONS	25.4	12.5	SA 105	15	(P)
N17	1	PRESSURE INDICATOR CONNECTION	25.4	12.5	SA 105	15	(P)
N18	1	HYDRAULIC COLUMN LOWER TAPS	25.4	11.13	SA 106 B	92	(LH)

- DRAWINGS AND REFERENCE DOCUMENTS:**
- 11680MDR02000 H.P. STEAM DRUM-MATERIAL REQUISITION
 - 11680MDD02000 H.P. STEAM DRUM-SHIPING AND ERECTION LIST
 - 11680MDW02000 H.P. STEAM DRUM-WELDING TABLE
 - 11680MDD02005 H.P. STEAM DRUM-MANHOLE COVER DRAWING
 - 11680MDD02006 H.P. STEAM DRUM-MANHOLE COVER HANGER
 - 11680MDD02005 H.P. STEAM DRUM-NOZZLE DETAILS
 - 11680MDD02080 H.P. STEAM DRUM-EXTERNAL ATTACHMENT
 - 11680MDD02081 H.P. STEAM DRUM-NAME PLATES AND LEVEL PLATES
 - 11680MDD02082 H.P. STEAM DRUM-INTERNAL ATTACHMENT
 - 11680MDD02100 H.P. STEAM DRUM-INTERNALS ASSEMBLY DETAILS
 - 11680MDD02101 H.P. STEAM DRUM-INTERNALS ASSEMBLY DETAILS
 - 11680MDD02170 H.P. STEAM DRUM-SUPPORT ASSEMBLY
 - 11680MDD02171 H.P. STEAM DRUM-SLIDING PLATES ASSEMBLY



Rev. 4 and above are RELEASED FOR ERECTION

5 22-09-05 REVISED FOR LABELLING "AS BUILT" ONLY, NO OTHER CHANGES

4 21-09-04 REVISED CLIENT DRAWING NUMBER

3 28-05-04 REVISED WHERE INDICATED

2 20-05-04 REVISED WHERE INDICATED

1 07-05-04 REVISED WHERE INDICATED

REV. 1 DATA

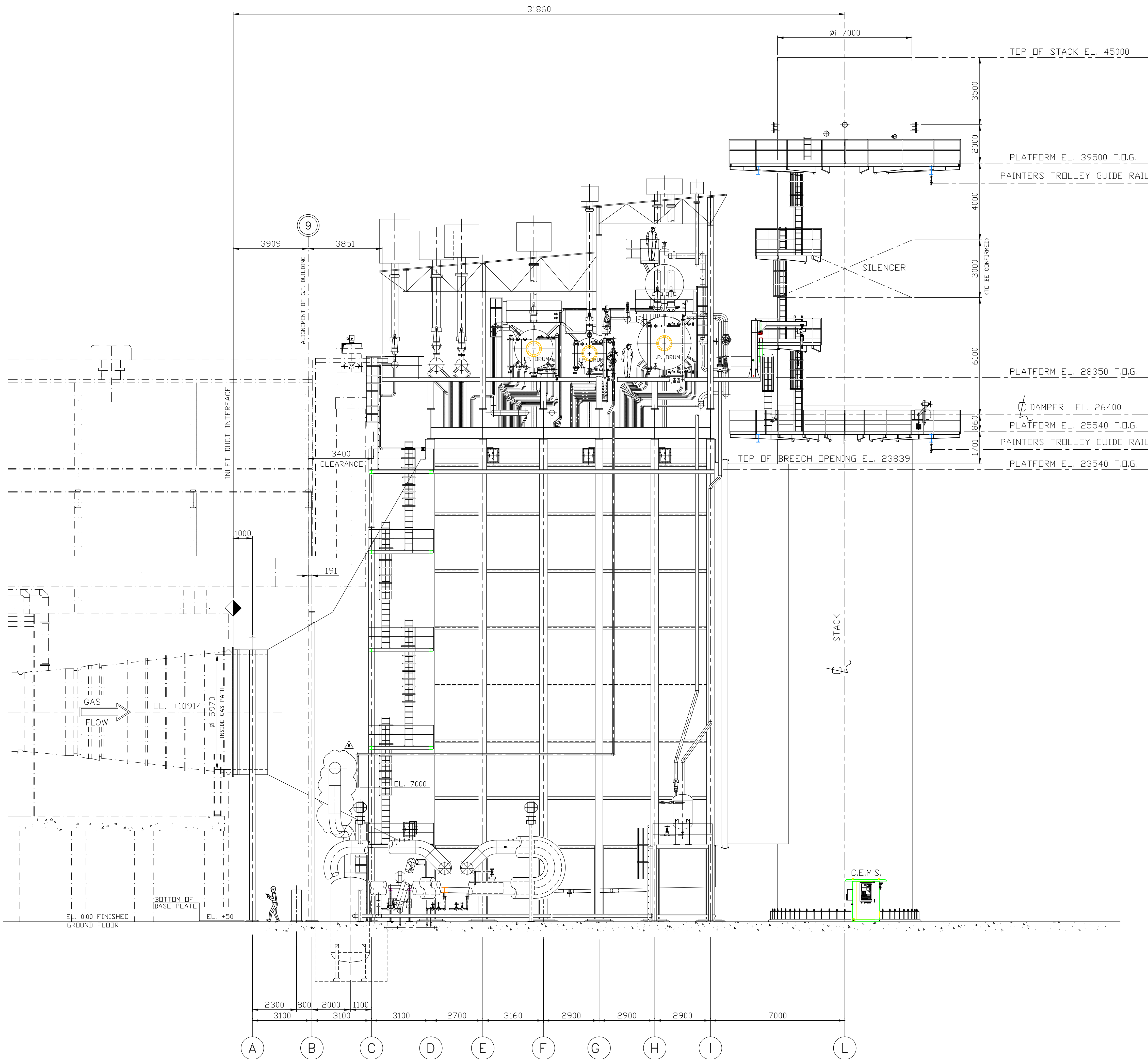
SCALE 1:25

H.R.S.G.
H.P. STEAM DRUM ASSEMBLY

ALSTOM
ALSTOM Power Italia S.p.A.

PUBLIC POWER CORPORATION
LAVRIN V CC PP
DMKT 11 21 302

METKA
METKA DWG No.
KKS DWG No. 5-HA-MDP-API-001



REFERENCE DRAWINGS :

GENERAL LAYOUT :

11680MDD03000 - RIGHT SIDE ELEVATION
11680MDD03001 - LEFT SIDE ELEVATION
11680MDD03002 - UPPER PLAN VIEW
11680MDD03003 - LOWER PLAN VIEW

11680MDD03200 - GENERAL ARRANGEMENT FOUNDATION PLAN
11680MDD03201 - GENERAL ARRANGEMENT FOUNDATION LOADS DIAGRAM

11680BTD03300 - WATER AND STEAM SYSTEM P.& I.D. - LP SECTION
11680BTD03301 - WATER AND STEAM SYSTEM P.& I.D. - IP SECTION
11680BTD03302 - WATER AND STEAM SYSTEM P.& I.D. - HP SECTION

GENERAL NOTES :

- 1- ALL DIMENSION ARE IN mm .
- 2- ALL ELEVATION REFER TO ± 0.00 PLANT FINISHED GROUND FLOOR
- 3- FOR PIPE RACK LOCATION & DIMENSIONS SEE CLIENT DRAWINGS
- 4- COORDINATES OF BATTERY LIMITS REFERENCED FROM STACK
CENTER AT EL. 00.00 = Y0,X0,Z0
- 5- ELEVATIONS FOR HORIZONTAL PIPE REFER TO CENTER LINE OF PIPE
- 6- BATTERY LIMITS DO NOT INCLUDE LINES WITH ND <2"
- 7- BATTERY LIMITS :

PHYSICAL BATTERY LIMITS

OTHERS  Alstom Power Italia S.p.A.

6	18-10-05	REVISED FOR LABELLING 'AS BUILT' ONLY. NO OTHER CHANGES	A.S.	A.R.	A.N.
5	15-09-04	REVISED UPDATED AND COMPLETED	C.F.	A.R.	A.N.
4	05-07-04	REVISED UPDATED AND COMPLETED	C.F.	A.R.	A.N.
3	05-04-04	REVISED AND COMPLETED SEE CLOUD ACCORDING TO MEETING 21-04-04	M.A.	A.R.	A.N.
2	14-04-04	REVISED AS SHOWN BY 2, AND COMPLETED	C.F.	A.R.	A.N.
1	24-03-04	REVISED UPDATE AS PER ODM AGREEMENT	C.F.	A.R.	A.N.

REV.	DATA Date	DESCRIZIONE/Description	DIS. Dwg.	CONTR. Checked	VISTO Approv.
QUESTO DISEGNO E' PROPRIETA' DELLA Alstom Power Italia SpA A TERMINE DI LEGGE NE E' VIETATA LA RIPRODUZIONE E LA COMUNICAZIONE A TERZI This Drawing is the Property of Alstom Power Italia SpA The reproduction for any use by a third party is forbidden by law.					
SCALA Scale		FIRME/Signature	DATA/Date		
1:100		DIS./Dwg. C.F.	18-02-04		
		CONTR./Check.A.R.	01-03-04		
		VISTO/Approv.A.N.	01-03-04		

GENERAL LAYOUT & PIPING AR'GT
RIGHT SIDE ELEVATION

ALSTOM

ALSTOM POWER ITALIA S.p.A.

11680MDD03000

REV. 1 2 3 4 5 6



PUBLIC POWER CORPORATION

LAVRION V CC PP
DMKT 11 21 302

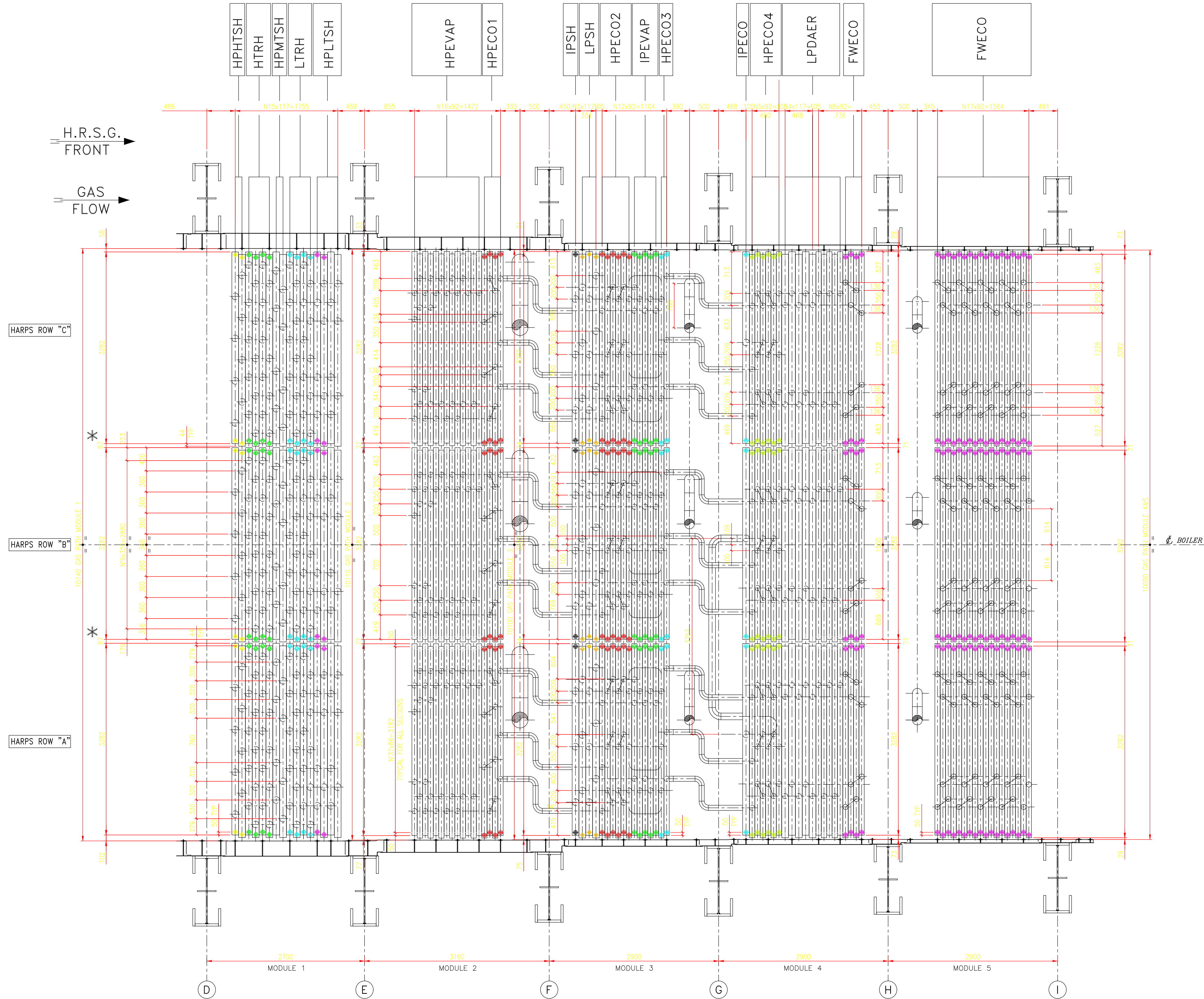
METKA

METKA DWG.No.

KKS DWG.No.

5-HA-MDA-API-001

SECTION: "B-B"
LOWER HEADERS



Rev. 1 and above are
RELEASED for ERECTION

KKS DWG.No. 5-HA-000-API-062

* PRESET APPLICABLE TO OUTER HARPS
OF THE FIRST MODULE ONLY.
(ROW "A" AND "C" ONLY)

- THIS DRAWING SHOWS THE FINAL POSITION OF HARPS
LOWER HEADERS AFTER SITE WELDING TO LOWER MANIFOLDS.
- NOZZLES OF LOWER HARPS HEADERS WILL HAVE A 20 mm
OFFSET TOWARDS CASING BEFORE THE SITE WELD
TO LOWER MANIFOLDS.

FOR GENERAL NOTES AND REFERENCE DRAWINGS REFER
TO DWG. 11680MDD03030

2	18-10-05	REVISED FOR LABELLING "AS BUILT" ONLY. NO OTHER CHANGES	A.S.	A.R.	A.N.
1	06-07-04	MODIFIED WHERE INDICATED WITH	P.M.	A.R.	A.N.
REV.	DATA	DESCRIZIONE/Description	DIS.	CONTR.	VISTO
	Date		Dwg.	Checked	Approv.
QUESTO DISEGNO E' PROPRIETA' DELLA ALSTOM Power Italia S.p.A. A TERMINE DI LEGGE NE E' VIETATA LA RIPRODUZIONE E LA COMUNICAZIONE A TERZI This Drawing is the Property of ALSTOM Power Italia S.p.A. The reproduction for any use by a third party is forbidden by law.			Scala Scale	FIRME/Signature	DATA/Date
LAVRION - METKA H.R.S.G. PRESSURE PARTS ASSEMBLY SECTION "B-B"			1:33	DIS./Dwg. P.M. CONTR./Check. A.R. VISTO/Approv. A.N.	28-03-04 19-04-04 19-04-04
RIFERIMENTO N. Reference N.			TAV. / DI Sh. / of		
N°. DISEGNO/Drawing No.			11680MDD03032		
ALSTOM ALSTOM Power Italia S.p.A.			REV.	2	

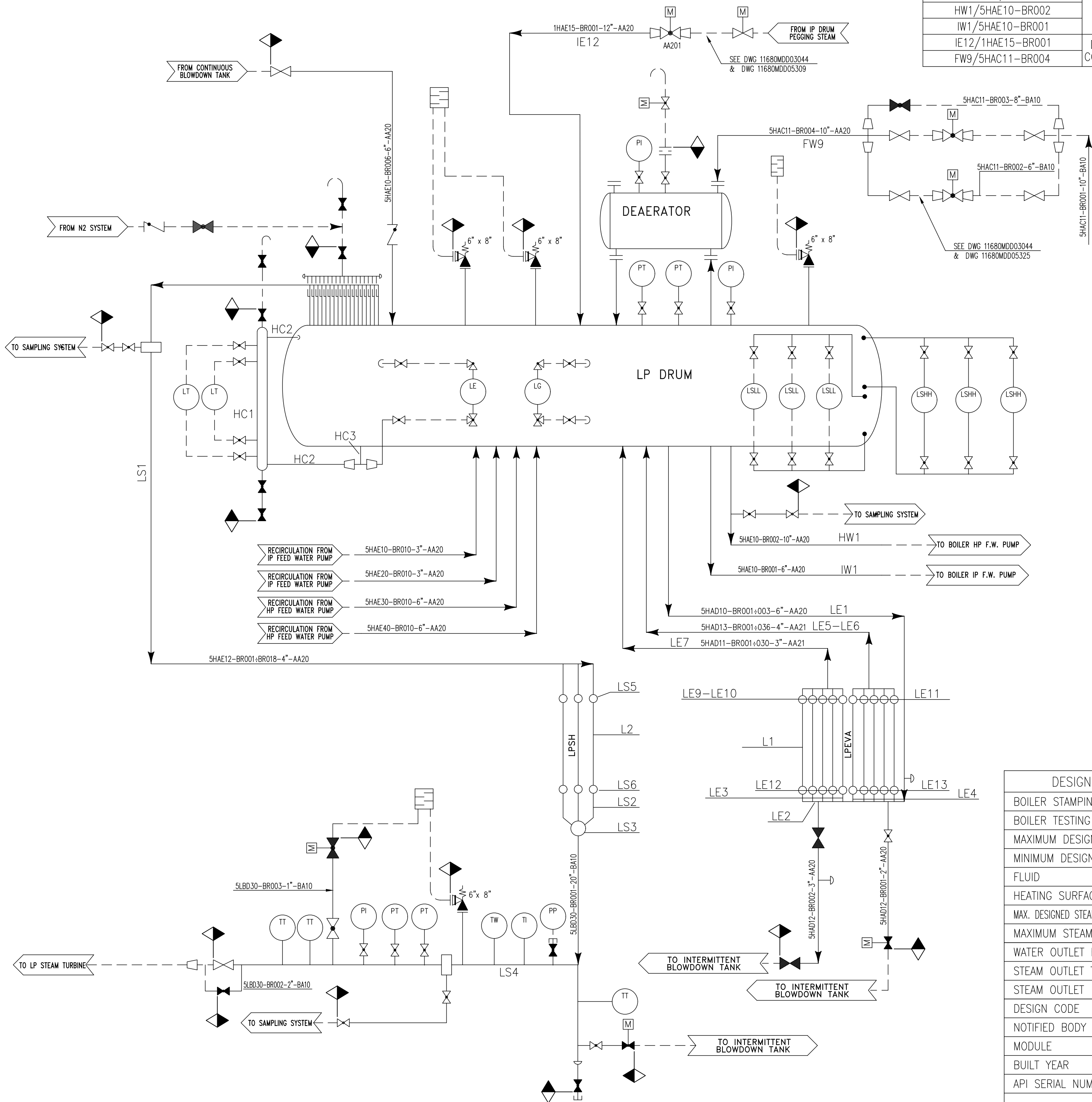
LOW PRESSURE SECTION (BOILER PROPER) – SERIAL N. 98/L

MARK	DESCRIPTION	QTY	MATERIAL	PED CATEGORY	NOMINAL SIZE (o.d./Sch.)	Actual Dimensions øe x Nom. Thk. (mm)	CORROSION ALLOWANCE	DESIGN Temp. °C	DATA Pres. bar g	N. DRAWINGS 11680-XXXXXX
LE9-10 (HU28+HU32)	TOP HEADER	15	SA 106 Gr.B	4	4"/80	114.3x8.56	0.0	195	10	11680-1AU039/40/41/42/43
LE11 (HU23+HU27)	TOP HEADER	15	SA 106 Gr.B	4	3"/160	88.9x11.13	0.0	195	10	11680-1AU044/45/46/47/48
LE12 (HL28+HL32)	BOTTOM HEADER	15	SA 106 Gr.B	4	4"/80	114.3x8.56	0.0	195	12	11680-1AL039/40
LE13 (HL23+HL27)	BOTTOM HEADER	15	SA 106 Gr.B	4	3"/80	88.9x7.62	0.0	195	12	11680-1AL041/42
L1	HARPS TUBES	1140	SA 210 A1	4	-/-	38.1 x 2.4	0.0	207	12	11680-1E0160/161
LS5 (HU53+HU55)	TOP HEADER	9	SA 106 Gr.B	4	4"/80	114.3x8.56	0.0	194	10	11680-1AU023/24/25/26
LS6 (HL53+HL55)	BOTTOM HEADER	9	SA 106 Gr.B	4	4"/80	114.3x8.56	0.0	325	10	11680-1AL023/24/25/26
L2	HARPS TUBES	342	SA 210 A1	4	-/-	38.1 x 2.4	0.0	328	10	11680-1E0161
5HAE10-BB001	LP DRUM	1	SA 516 Gr.70	4	-/-	øi 274x18 min	2.0*	184	10	11680MDD02020
5HAE10-BB002	DEAERATOR	1	SA 516 Gr.70	4	-/-	øi 2200x12 min	2.0	184	10	11680MAD23100

(* -ONLY TO PLATES)

LOW PRESSURE SECTION (BOILER PIPING) – SERIAL N. 98/L

MARK	DESCRIPTION	QTY	MATERIAL	PED CATEGORY	SEE NOTE	NOMINAL SIZE (o.d./Sch.)	Actual Dimensions øe x Nom. Thk. (mm)	CORROSION ALLOWANCE	DESIGN Temp. °C	DATA Pres. bar g	N. DRAWINGS 11680-XXXXXX
LE1/5HAD10-BR001+3	Downcomers	3	SA 106 Gr.B	1	BP	6"/STD	168.3x7.11	0.0	195	12	11680MDD02450
LE2	Manifolds	3	SA 106 Gr.B	4	BP	6"/STD	168.3x7.11	0.0	195	12	
LE3-LE4	Circulators	45	SA 106 Gr.B	none	BP	3"/STD	88.9x5.49	0.0	195	12	
LE7/5HAD11-BR001+030	Risers	36	SA 106 Gr.B	none	BP	3"/80	88.9x7.62	0.0	195	10	
LE5-LE6/5HAD13-BR001+036	Risers	30	SA 106 Gr.B	none	BP	4"/80	114.3x8.56	0.0	195	10	11680MDD02630
5HAD12-BR002	Lp evap drain	1	SA 106 Gr.B	none	BEP	3"/STD	88.9x5.49	1.6	195	12	11680MDD04407
5HAD12-BR001	Lp intermittent blowdown line	1	SA 106 Gr.B	none	BEP	2"/80	60.3x5.54	1.6	195	12	N.A.
LS1/5HAE12-BR001+BR018	Links to LPSH Top Header	18	SA 106 Gr.B	none	BP	4"/STD	114.3x6.02	0.0	195	10	11680MDD02645
LS2	Links to LPSH outlet manifold	27	SA 106 Gr.B	none	BP	4"/STD	114.3x6.02	0.0	325	10	11680MDD02432
LS3	LPSH outlet manifold	1	SA 106 Gr.B	4	BP	20"/STD	508x9.52	0.0	325	10	
LS4/5LBD30-BR001	LP superheated steam line	1	SA 106 Gr.B	2	BEP	20"/STD	508x9.52	1.6	320	10	11680MDD04340
5LBD30-BR002	By pass line	1	SA 106 Gr.B	none	BEP	2"/80	60.3x5.54	1.6	320	10	
5LBD30-BR003	Start vent line	1	SA 106 Gr.B	none	BEP	1"/80	33.4x4.55	1.6	320.	10	N.A.
5HAE10-BR006	Steam line from continuous blowdown tank	1	SA 106 Gr.B	1	BEP	6"/STD	168.3x7.11	1.6	195	10	11680MDD04347
HC1	Hydraulic column	1	SA 106 Gr.B	1	BEP	6"/STD	168.3x7.11	1.6	184	10	11680MDD02663
HC2	Hydraulic column connections	2	SA 106 Gr.B	none	BEP	2"/80	60.3x5.54	1.6	184	10	
HC3	Hydraulic column connections	1	SA 106 Gr.B	none	BEP	3"/STD	88.9x5.49	1.6	184	10	
5HAE10-BR010/5HAE20-BR010	Lp fw pump minimum flow recirculation line to lp drum	2	SA 106 Gr.B	none	BEP	3"/STD	88.9x5.49	1.6	195	10	11680MDD05351/52
5HAE30-BR010/5HAE40-BR010	Hp fw pump minimum flow recirculation line to lp drum	2	SA 106 Gr.B	1	BEP	6"/STD	168.3x7.11	1.6	195	10	11680MDD05346/47
HW1/5HAE10-BR002	Hp pump suction line	1	SA 106 Gr.B	1	BEP	10"/STD	273x9.27	1.6	195	12	11680MDD05345
IW1/5HAE10-BR001	Lp pump suction line	1	SA 106 Gr.B	1	BEP	6"/STD	168.3x7.11	1.6	195	12	11680MDD05350
IE12/1HAE15-BR001	Pegging steam from IP drum downstream valve AA201	1	SA 106 Gr.B	1	BEP	12"/STD	323.8x9.52	1.6	195	10	11680MDD05309
FW9/5HAC11-BR004	Line to lp deaerator after control valve	1	SA 106 Gr.B	1	BEP	10"/STD	273x9.27	1.6	184	13	11680MDD05325



Rev. 1 and above are
RELEASED for ERECTION

KKS DWG.No. 5-HA-MHP-API-040

NOTES:

- UNLESS OTHERWISE NOTED ON THE RELEVANT DRAWINGS:
 - THE THICKNESS OF PLATES, FORGING AND TUBES ON THIS DWG. IS THE MINIMUM THICKNESS.
 - THE THICKNESS OF PIPES, AND BUTTWELDED FITTINGS ON THIS DWG. IS THE NOMINAL THK. AND HAS A TOLERANCE $\pm 12.5\%$
- THE DESIGN PRESSURES INCLUDE WATER HEAD AND PRESSURE DROP
- CODE JURISDICTIONAL LIMITS FROM ASME I, FIG. PG-58.3.1:
 - B.P.: BOILER PROPER PIPING
 - B.E.P.: BOILER EXTERNAL PIPING
- CODE APPLICABLE TO B.E.P.: ASME B 31.1, Ed. 2001 + ADD.2002
- SEE DOC. 11680BTL03305 AND DWG. 11680BTD03300 FOR THE LINES NOT INCLUDED OR NOT SHOWN IN THIS DRAWING

Boiler Non boiler

2	22-09-05	REVISED FOR LABELLING "AS BUILT" ONLY. NO OTHER CHANGES	A.S.	A.R.	A.N.
1	12-10-04	REVISED AND COMPLETED	M.B.	A.R.	A.N.
REV.	DATA Date	DESCRIZIONE/Description	DIS. Dwg.	CONTR. Checked	VISTO/Approv.
QUESTO DISEGNO E' PROPRIETA' DELLA ALSTOM Power Italia S.p.A. A TERMINE DI LEGGE NE E' VIETATA LA RIPRODUZIONE E LA COMUNICAZIONE A TERZI. This Drawing is the Property of ALSTOM Power Italia S.p.A. The reproduction for any use by a third party is forbidden by law.			SCALA Scale	FIRME/Signature	DATA/Date
LAVRION - METKA N.1 H.R.S.G. LOW PRESSURE SECTION TECHNICAL DATA			/	DIS./Dwg. P.M.	29-04-04
RIFERIMENTO N. Reference N.			CONTR./Check. A.R.		
N°. DISEGNO/Drawing No.			TAV. / DI Sh. / of		
11680MDD03040			29-04-04		
ALSTOM Power Italia S.p.A.			30-04-04		
REV. / 2					

INTERMEDIATE PRESSURE SECTION (BOILER PROPER) – SERIAL N. 98/I

MARK		DESCRIPTION	QTY	MATERIAL	PED CATEGORY	NOMINAL SIZE (o.d./Sch.)	Actual Dimensions øe x Nom. Thk. (mm)	CORROSION ALLOWANCE	DESIGN Temp. °C	DATA Pres. bar g	N. DRAWINGS 11680-XXXXXX
IW8 (HU39)	IPECO	TOP HEADER	3	SA 106 Gr.B	4	4"/80	114.3x8.56	0.0	291	72	11680-1AU036
IW9 (HL39)		BOTTOM HEADER	3	SA 106 Gr.B	4	4"/80	114.3x8.56	0.0	291	74	11680-1AL035
I1		HARPS TUBES	114	SA 210 A1	4	-/-	38.1 x 2.4	0.0	291	74	11680-1EO161
IE13+IE15 (HU42+HU46)	IPEVA	TOP HEADER	15	SA 106 Gr.B	4	3"/160	88.9x11.13	0.0	253	34	11680-1AU029+33
IE16+IE18 (HL42+HL46)		BOTTOM HEADER	15	SA 106 Gr.B	4	3"/80	88.9x7.62	0.0	253	36	11680-1AU029+32
I2		HARPS TUBES	570	SA 210 A1	4	-/-	38.1 x 2.4	0.0	264	36	11680-1EO160
IS9 (HU56)	IPSH	TOP HEADER	3	SA 106 Gr.B	4	4"/80	114.3x8.56	0.0	325	34	11680-1AU023
IS10 (HL56)		BOTTOM HEADER	3	SA 106 Gr.B	4	4"/80	114.3x8.56	0.0	254	34	11680-1AL022
I3		HARPS TUBES	114	SA 210 A1	4	-/-	38.1 x 2.4	0.0	329	34	11680-1EO161
5HAE20-BB001		IP DRUM	1	SA 516 Gr.70	4	-/-	øi 1524x24 min	2.0*	243	34	11680MDD02010

(* -ONLY TO PLATES)

INTERMEDIATE PRESSURE SECTION (BOILER PIPING) – SERIAL N. 98/I

MARK		DESCRIPTION	QTY	MATERIAL	PED CATEGORY	SEE NOTE 3	NOMINAL SIZE (o.d./Sch.)	Actual Dimensions øe x Nom. Thk. (mm)	CORROSION ALLOWANCE	DESIGN Temp. °C	DATA Pres. bar g	N. DRAWINGS 11680-XXXXXX
IW2/5HAC20-BR001	IPECO	IP pumps discharge line to IPECO after check valve	1	SA 106 Gr.B	1	BEP	4"/80	114.3x8.56	1.6	291	74	11680MDD05308
IW3		IPECO internal links	2	SA 106 Gr.B	1	BP	4"/80	114.3x8.56	0.0	291	74	11680MDD02436/2446
IW4/5HAC22-BR001		Line to IP DRUM	1	SA 106 Gr.B	1	BP	4"/80	114.3x8.56	0.0	291	72	11680MDD05320
IW5/5HAC22-BR002		Line to IP DRUM (downstream Control valve)	1	SA 106 Gr.B	1	BEP	4"/80	114.3x8.56	1.6	243	43	
5HAC22-BR004		Fw by-pass line before control valve	2	SA 106 Gr.B	1	BP	3"/80	88.9x7.62	0.0	291	72	
5HAC22-BR003	IPEVAP	Fw by-pass line after control valve	2	SA 106 Gr.B	1	BP	3"/80	88.9x7.62	0.0	291	72	11680MDD05323
5HAC23-BR001		Fw to fuel gas heater	1	SA 106 Gr.B	1	BEP	3"/80	88.9x7.62	1.6	291	72	
IE1/5HAD21-BR001+3		Downcomers	3	SA 106 Gr.B	2	BP	6"/STD	168.3x7.11	0.0	253	36	
IE2		Manifolds	3	SA 106 Gr.B	4	BP	6"/STD	168.3x7.11	0.0	253	36	11680MDD02434
IE3+IE5		Circulators	30	SA 106 Gr.B	1	BP	3"/STD	88.9x5.49	0.0	253	36	
IE6+IE8/5HAD22-BR001+030		Risers	30	SA 106 Gr.B	1	BP	3"/80	88.9x7.62	0.0	253	34	11680MDD02620
5HAD20-BR002	IPSH	IPEVA link drain line	1	SA 106 Gr.B	1	BEP	2"/80	60.3x5.54	1.6	253	36	N.A.
IE10/5HAD20-BR001		IP intermittent blowdown line	1	SA 106 Gr.B	1	BEP	2"/80	60.3x5.54	1.6	253	36	N.A.
IS1		Saturated steam links to IPSH manifold	2	SA 106 Gr.B	2	BP	8"/STD	219.1x8.18	0.0	253	34	11680MDD02640
IS2/5HAE24-BR001		IPSH saturated steam manifold	1	SA 106 Gr.B	2	BP	10"/STD	273x9.27	0.0	253	34	
IS3		IPSH saturated steam manifold internal	1	SA 106 Gr.B	4	BP	10"/STD	273x9.27	0.0	253	34	
IS4		Links to IPSH	9	SA 106 Gr.B	1	BP	4"/STD	114.3x6.02	0.0	253	34	11680MDD02430
IS5		Links to IPSH outlet manifold	9	SA 106 Gr.B	1	BP	4"/STD	114.3x6.02	0.0	325	34	
IS6		IPSH outlet manifold	1	SA 106 Gr.B	4	BP	10"/STD	273x9.27	0.0	320	34	
IS7/5HAH21-BR001		IPSH line upstream control valve	1	SA 106 Gr.B	2	BEP	10"/STD	273x9.27	1.6	320	34	11680MDD04430
5HAH21-BR004		IPSH start up vent line	1	SA 106 Gr.B	1	BEP	1"/80	33.4x4.55	1.6	320	34	11680MDD04336
5HAH21-BR006	IP DRUM CONNECTIONS	To IP by-pass to condenser	1	SA 106 Gr.B	2	BEP	8"/STD	219.1x8.18	1.6	320	34	11680MDD04353
5HAH21-BR002		IPSH steam line down stream valve 5HAH21-AA201	1	SA 106 Gr.B	2	BEP	10"/STD	273x9.27	1.6	320	34	
5HAH21-BR007		By-pass valve 5HAH21-AA302	1	SA 106 Gr.B	1	BEP	2"/80	60.3x5.54	1.6	320	34	
HE14/5HAE27-BR001		Pegging steam from 5HAE37-BR001 to IP drum	1	SA 106 Gr.B	2	BEP	6"/40	168.3x7.11	1.6	253	34	11680MDD05304
HC1		Hydraulic column	1	SA 106 Gr.B	2	BEP	6"/STD	168.3x7.11	1.6	243	34	11680MDD02663
HC2		Hydraulic column connections	2	SA 106 Gr.B	1	BEP	2"/80	60.3x5.54	1.6	243	34	
HC3		Hydraulic column connections	1	SA 106 Gr.B	1	BEP	3"/STD	88.9x5.49	1.6	243	34	
5HAE22-BR001		Chemical feed	1	SA 312 Tp 316	NONE	BEP	1"/40s	33.4x3.38	1.6	253	34	N.A.
IE9/5HAE23-BR001		Continuous blowdown	1	SA 106 Gr.B	1	BEP	2"/80	60.3x5.54	1.6	253	36	N.A.
IE11/5HAE25-BR003		Pegging steam to LP drum	1	SA 106 Gr.B	2	BEP	6"/40	168.3x7.11	1.6	253	34	11680MDD05309

DESIGN AND TECHNICAL DATA OF THE INTERMEDIATE PRESSURE STEAM GENERATOR		
BOILER STAMPING PRESSURE -PS	34 bar g	493 psi g
BOILER TESTING PRESSURE	51 bar g	740 psi g
MAXIMUM DESIGN TEMPERATURE -TS	329 °C	624 °F
MINIMUM DESIGN TEMPERATURE	21 °C	70 °F
FLUID	WATER AND STEAM	
HEATING SURFACE (EVA)	16249 mq	174904 sq. ft.
MAXIMUM DESIGNED STEAMING CAPACITY(FOR PSV ONLY)	35.3 kg/s	280162 lb/h
MAXIMUM STEAM PRODUCTION AT IPSH OUT	11.8 kg/s	93652 lb/h
STEAM OUTLET TEMPERATURE	303 °C	577 °F
STEAM OUTLET PRESSURE	25 bar g	334 psi g
ECO STAMPING PRESSURE	74 bar g	1073 psi g
ECO TESTING PRESSURE	111 bar g	1610 psi g (IF MEASURED AT PSV LEVEL)
HEATING SURFACE (ECO)	3250 mq	34983 sq. ft.
ECO MAXIMUM DESIGN OUTPUT	6.1 MW	20.8 x10 ⁶ Btu/h
DESIGN CODE	ASME SECT.I/ED.2001 + ADD.2003 & DIRECTIVE 97/23/EC (P.E.D)	
NOTIFIED BODY	BUREAU VERITAS (1370)	
MODULE	G	
BUILT YEAR	2004	
API SERIAL NUMBER	98/I	

Rev. 1 and above are
RELEASED FOR ERECTION

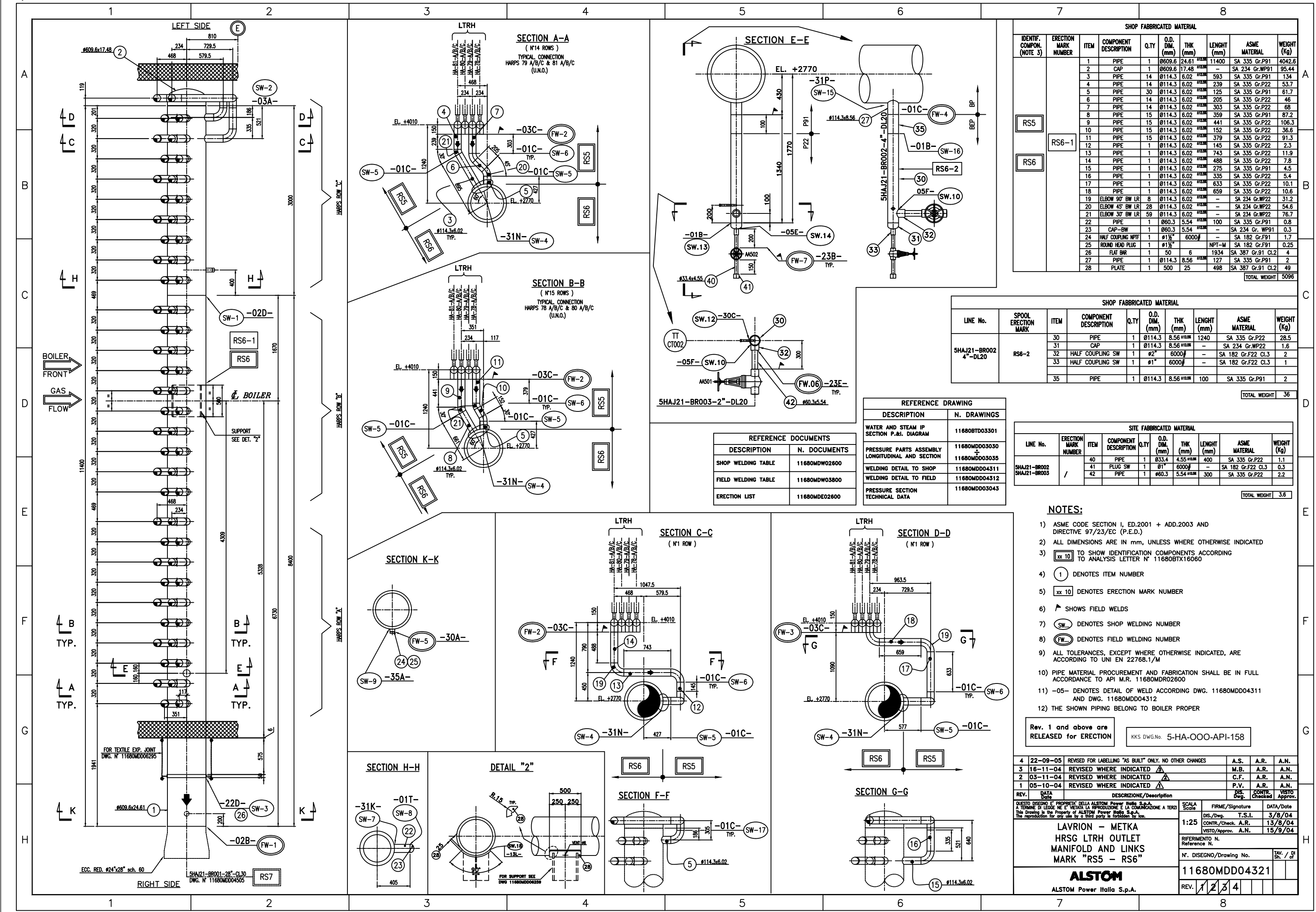
KKS DWG.No. 5-HA-MHP-API-041

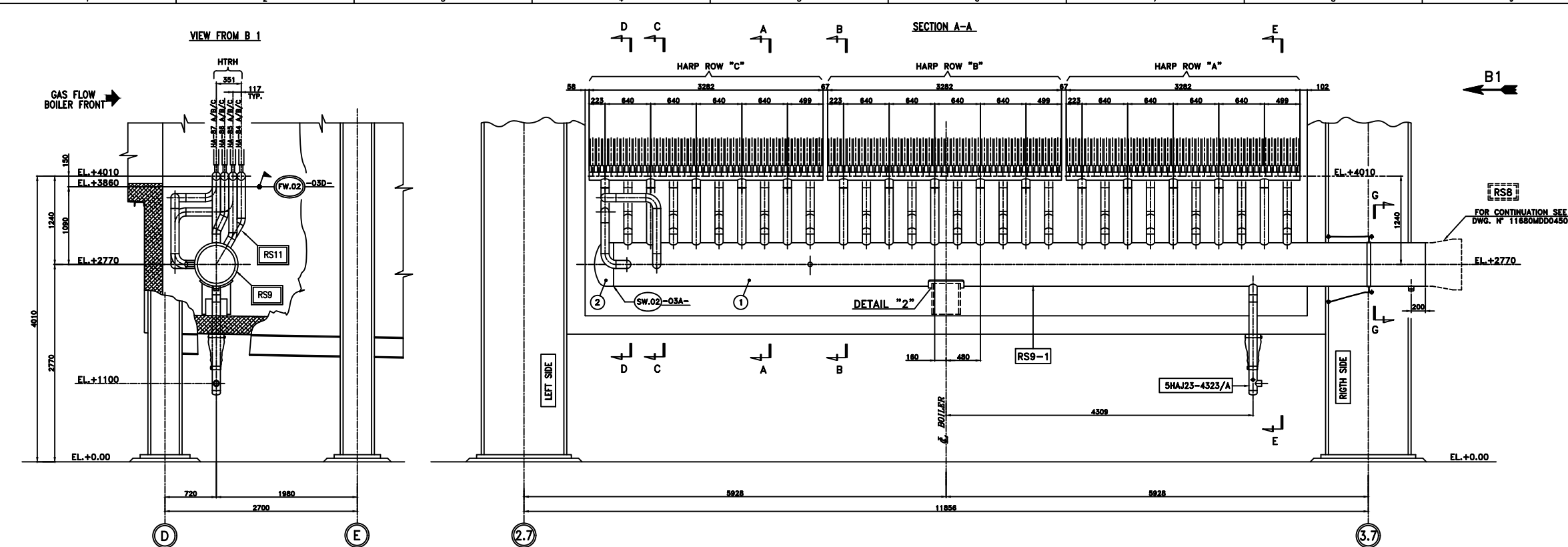
NOTES:

- UNLESS OTHERWISE NOTED ON THE RELEVANT DRAWINGS:
 - THE THICKNESS OF PLATES,FORGING AND TUBES ON THIS DWG. IS THE MINIMUM THICKNESS.
 - THE THICKNESS OF PIPES,AND BUTTWELD FITTINGS ON THIS DWG. IS THE NOMINAL THK. AND HAS A TOLERANCE ± 12.5%
- THE DESIGN PRESSURES INCLUDE WATER HEAD AND PRESSURE DROP
- CODE JURISDICTIONAL LIMITS FROM ASME I,FIG. PG-58.3.1:
 - B.P.: BOILER PROPER PIPING
 - B.E.P.: BOILER EXTERNAL PIPING
- CODE APPLICABLE TO B.E.P. : ASME B 31.1,Ed. 2001 + ADD.2002
- SEE DOC. 11680BTL03305 AND DWG. 11680BTD03301 FOR THE LINES NOT INCLUDED OR NOT SHOWN IN THIS DRAWING

Boiler Non boiler

2	22-09-05	REVISED FOR LABELLING "AS BUILT" ONLY. NO OTHER CHANGES	A.S.	A.R.	A.N.
1	12-10-04	REVISED AND COMPLETED	M.B.	A.R.	A.N.
REV.	DATA	DESCRIZIONE/Description	CONTR. Dwg.	CONTR. Checked	APPROV.
QUESTO DISEGNO E' PROPRIETA' DELLA ALSTOM Power Italia S.p.A. A TERMINE DI LEGGE NE E' VIETATA LA RIPRODUZIONE E LA COMUNICAZIONE A TERZI This Drawing is the Property of ALSTOM Power Italia S.p.A. The reproduction for any use by a third party is forbidden by law.			SCALE	FIRME/Signature	DATA/Date
LAVRION - METKA N.1 H.R.S.G. INTERMEDIATE PRESSURE SECTION TECHNICAL DATA ALSTOM ALSTOM Power Italia S.p.A.			/	DIS./Dwg. P.M.	29-04-04
				CONTR./Check. A.R.	29-04-04
				VISTO/Approv. A.N.	07-05-04
RIFERIMENTO N. Reference N.			TAV. / DI Sh. / of		
			11680MDD03041		
REV.			2		

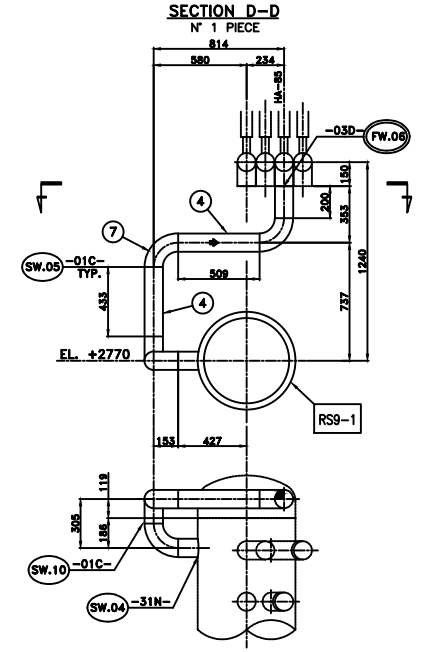
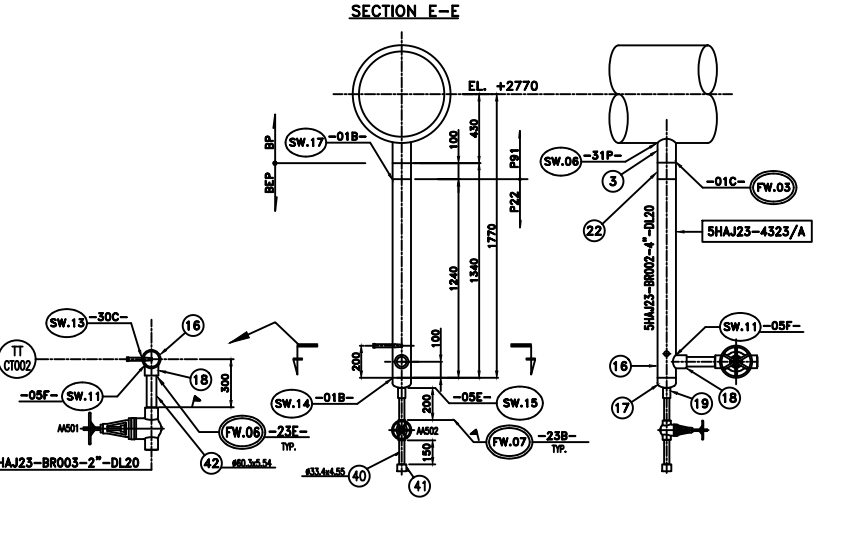
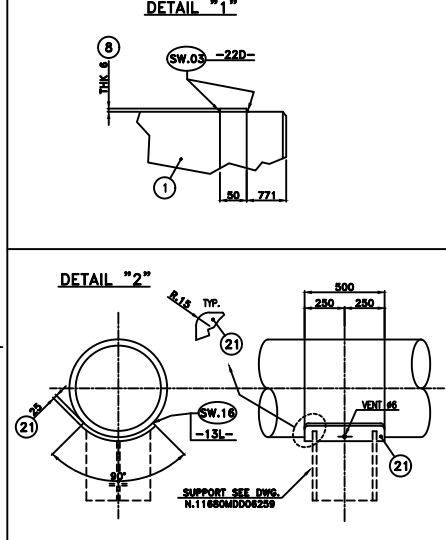
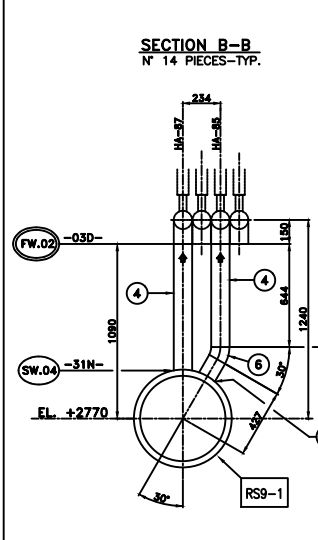
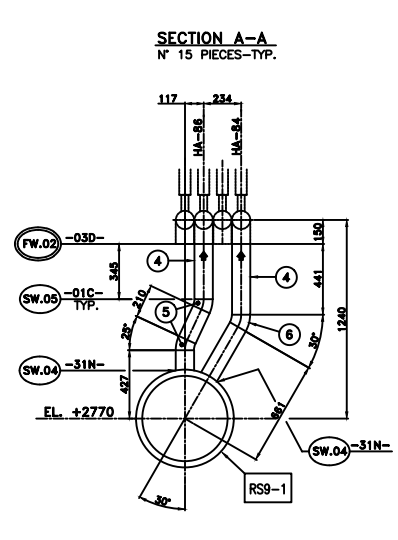
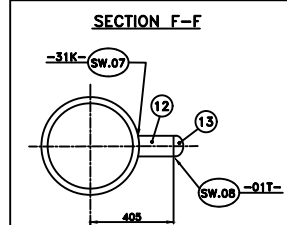
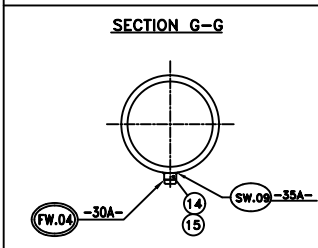
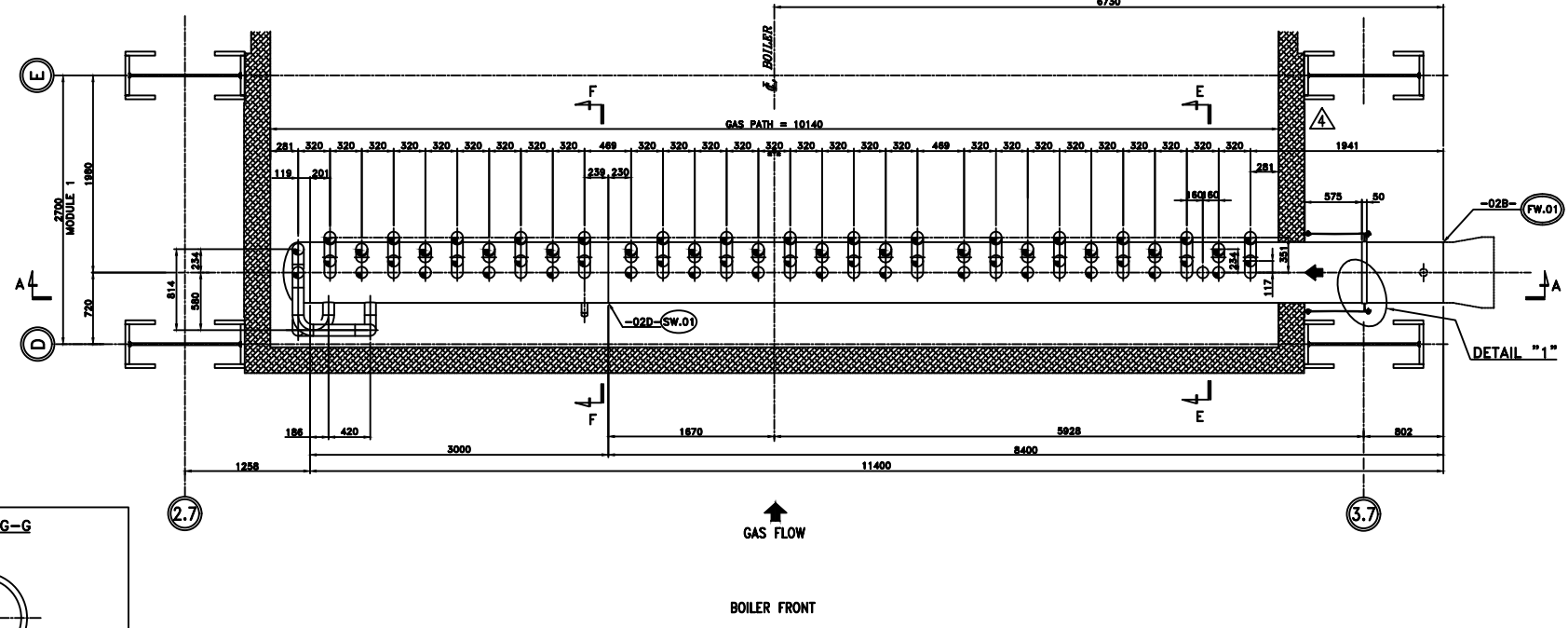
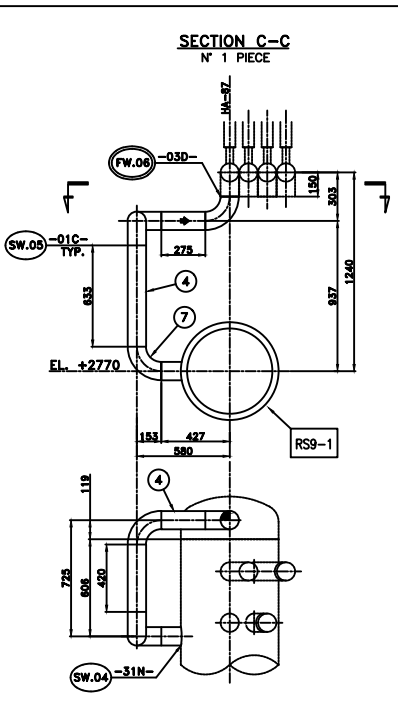




SHOP FABRICATED MATERIAL									
IDENTIF. COMPON. (NOTE 3)	ERECTION MARK NUMBER	ITEM	COMPONENT DESCRIPTION	Q.TY	O.D. DIM. (mm)	THK (mm)	LENGHT (mm)	ASME MATERIAL	WEIGHT (Kg)
		1	PIPE	1	Ø609.6	24.61	11400	SA 335 Gr.P91	4042.6
		2	CAP	1	Ø609.6	17.48	—	SA 234 Gr.WP91	95.44
		3	PIPE	1	Ø114.3	8.56	129	SA 335 Gr.P91	2.9
		4	PIPE	1	Ø114.3	6.02	—	SA 335 Gr.P91	755.3
		5	ELBOW 25° BW LR	30	Ø114.3	6.02	—	SA 234 Gr.WP91	32.5
		6	ELBOW 30° BW LR	29	Ø114.3	6.02	—	SA 234 Gr.WP91	37.7
		7	ELBOW 90° BW LR	8	Ø114.3	6.02	—	SA 234 Gr.WP91	31.2
		8	PLATE	1	50	6	1935	SA 387 Gr.91 CL.2	4.5
		12	PIPE	1	Ø60.3	5.54	100	SA 335 Gr.P91	0.8
		13	CAP-BW	1	Ø60.3	5.54	—	SA 234 Gr.WP91	0.3
		14	HALF COUPLING NPTF	1	Ø1 1/2	6000#	—	SA 182 Gr.F91	1.7
		15	ROUND HEAD PLUG	1	Ø1 1/2	—	NPT-M	SA 182 Gr.F91	0.25
		21	PLATE	1	500	25	498	SA 387 Gr.91 CL.2	49
TOTAL WEIGHT									5054

SHOP FABRICATED MATERIAL									
LINE No.	SPOOL ERECTION MARK	ITEM	COMPONENT DESCRIPTION	Q.TY	O.D. DIM. (mm)	THK (mm)	LENGHT (mm)	ASME MATERIAL	WEIGHT (Kg)
		16	PIPE	1	Ø114.3	8.56	1240	SA 335 Gr.P22	28.6
		17	CAP	1	Ø114.3	8.56	—	SA 234 Gr.WP22	1.6
		18	HALF COUPLING SW	1	Ø2	6000#	—	SA 182 Gr.F22 CL.3	2
		19	HALF COUPLING SW	1	Ø1	6000#	—	SA 182 Gr.F22 CL.3	1
		22	PIPE	1	Ø114.3	8.56	100	SA 335 Gr.P91	2
TOTAL WEIGHT									35

SITE FABRICATED MATERIAL									
LINE No.	ERECTION MARK NUMBER	ITEM	COMPONENT DESCRIPTION	Q.TY	O.D. DIM. (mm)	THK (mm)	LENGHT (mm)	ASME MATERIAL	WEIGHT (Kg)
		40	PIPE	1	Ø33.4	4.55	400	SA 335 Gr.P22	1.1
		41	PLUG SW	1	Ø1	6000#	—	SA 182 Gr.F22 CL.3	0.3
		42	PIPE	1	Ø60.3	5.54	300	SA 335 Gr.P22	2.2
TOTAL WEIGHT									3.6



REFERENCE DRAWING		REFERENCE DOCUMENTS	
DESCRIPTION	N. DRAWINGS	DESCRIPTION	N. DOCUMENTS
WATER AND STEAM IP SECTION P.A.S. DIAGRAM	11680MDD0301	SHOP WELDING TABLE	11680MDD02800
PRESSURE PARTS ASSEMBLY LONGITUDINAL AND SECTION	11680MDD03030	FIELD WELDING TABLE	11680MDD03800
WELDING DETAIL TO SHOP	11680MDD04311	ERECTION LIST	11680MDD02800
WELDING DETAIL TO FIELD	11680MDD04312		
PRESSURE SECTION TECHNICAL DATA	11680MDD03043		

NOTES:

- ASME CODE SECTION I, ED.2001 + ADD.2003 AND DIRECTIVE 97/23/EC (P.E.D.)
- ALL DIMENSIONS ARE IN mm, UNLESS WHERE OTHERWISE INDICATED
- TO SHOW IDENTIFICATION COMPONENTS ACCORDING TO ANALYSIS LETTER N° 11680TX16060
- 1 DENOTE ITEM NUMBER
- RS 10 DENOTE ERECTION MARK NUMBER
- SHOWS FIELD WELDS
- DENOTES SHOP WELDING NUMBER
- FW DENOTES FIELD WELDING NUMBER
- ALL TOLERANCES, EXCEPT WHERE OTHERWISE INDICATED, ARE ACCORDING TO UNI EN 22768.1/M
- PIPE MATERIAL PROCUREMENT AND FABRICATION SHALL BE IN FULL ACCORDANCE TO API M.R. 11680MDD02800
- 05- DENOTE DETAIL OF WELD ACCORDING DWG. 11680MDD04311 AND DWG. 11680MDD04312
- THE SHOWN PIPING BELONG TO BOILER PROPER

Rev. 1 and above are RELEASED FOR ERECTION

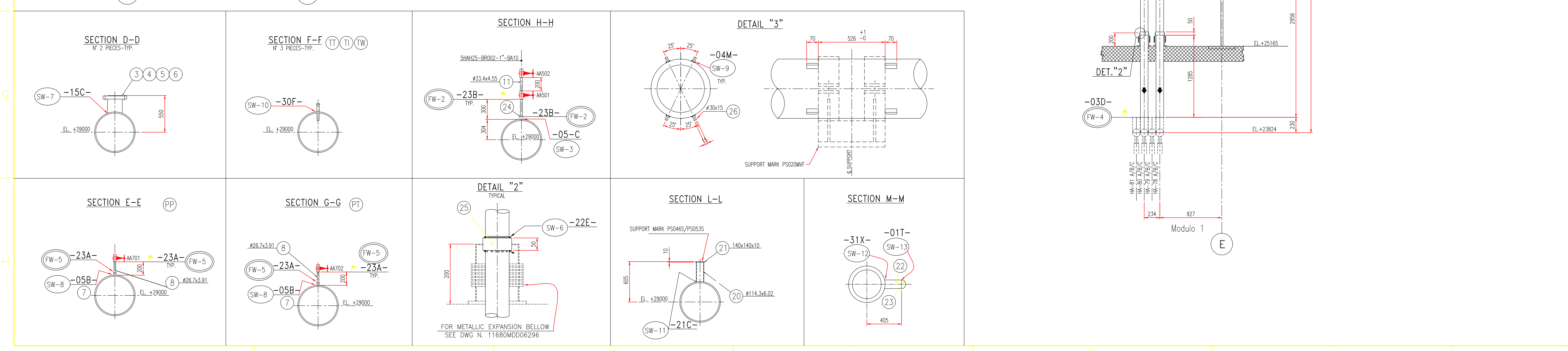
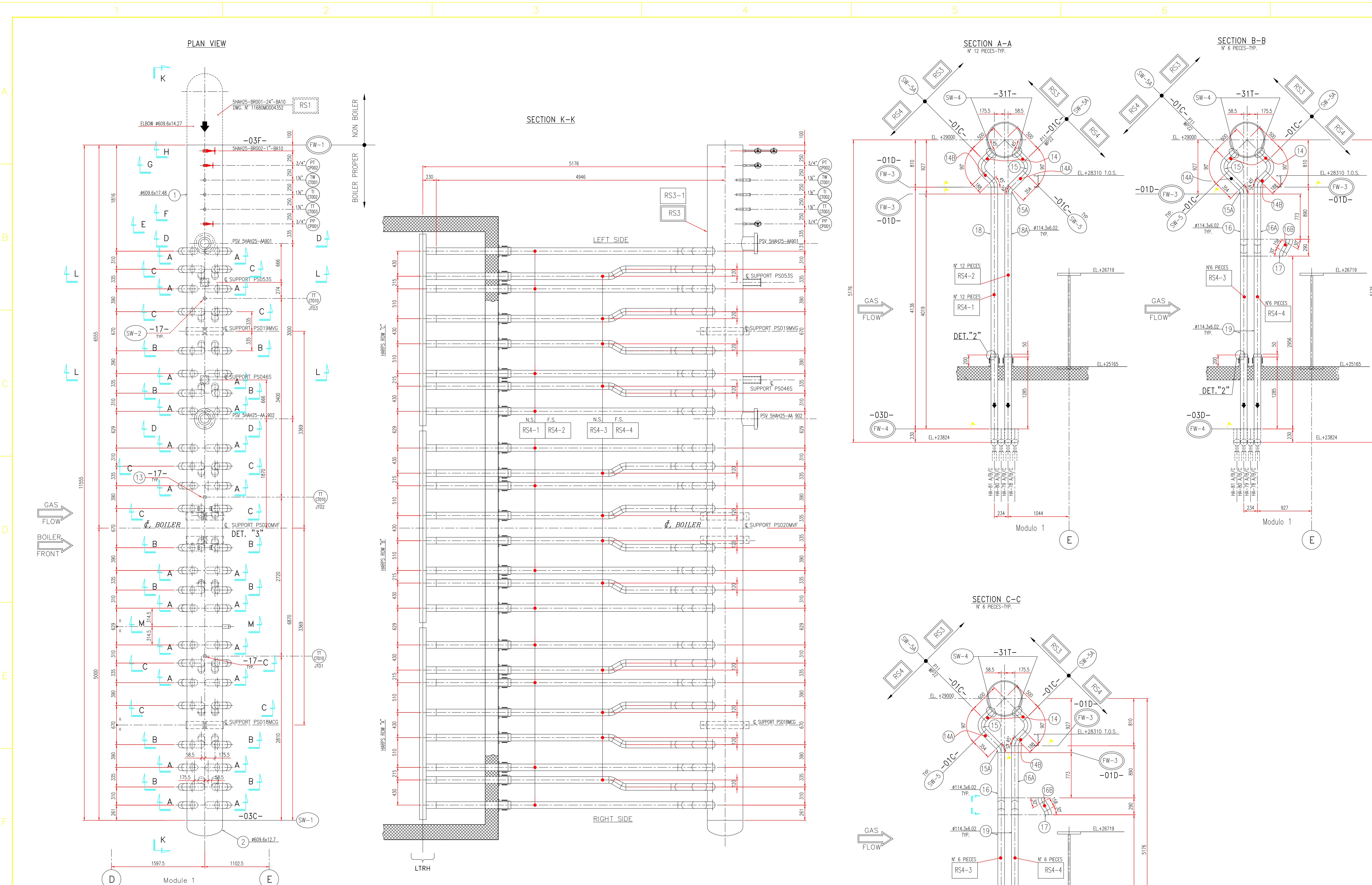
KKS DWG. No. 5-HA-000-API-159

REV.	DATE	DESCRIPTION/Drawn/Checked	SCALE	FIRME/Signature	DATA/Date
5	22-09-05	REVISED FOR LABELLING "S ONLY" NO OTHER CHANGES		A.S.	A.R.
4	30-11-04	REVISED WHERE INDICATED		M.B.	A.R.
3	18-11-04	REVISED WHERE INDICATED		M.B.	A.R.
2	08-10-04	REVISED WHERE INDICATED		M.A.	A.R.
1	05-10-04	REVISED WHERE INDICATED		L.R.	A.R.

APPROVED FOR ERECTION: LAVORIO - METKA H.S.G. MANIFOLD RS9 AND LINKS RS11 ASSEMBLY AND DETAILS

11680MDD04323

ALSTON Power Italia S.p.A.



SHOP FABRICATED MATERIAL										
IDENTIF. COMPON. (NOTE 3)	ERECTION MARK NUMBER	ITEM	COMPONENT DESCRIPTION	Q.TY	O.D. DIM. (mm)	THK (mm)	LENGHT (mm)	ASME MATERIAL	WEIGHT (kg)	
RS3	RS3-1	1	PIPE	1	Ø609.6	17.48	11555	SA 106 Gr.B	2943.5	
		2	CAP	1	Ø609.6	12.7	378	SA 234 Gr.WPB	69.34	
		3	FLANGE LWN-RF	2	Ø609.6	6.02	253	SA 105	143.4	
		7	HALF COUPLING SW	2	Ø374	3000#	-	SA 105	0.9	
		13	PLATE	3	50	3	50	SA 516 Gr.70	0.17	
		14	PIPE	48	Ø114.3	6.02	197	SA 335 Gr.P11	154.2	
		14A	PIPE	24	Ø114.3	6.02	184	SA 335 Gr.P22	136.5	
		14B	PIPE	24	Ø114.3	6.02	188	SA 335 Gr.P22	72.5	
		15	ELBOW 90° BW LR	48	Ø114.3	6.02	-	SA 234 Gr.WP22	187.2	
		15A	ELBOW 45° BW LR	48	Ø114.3	6.02	-	SA 234 Gr.WP22	93.6	
		20	PIPE	2	Ø114.3	6.02	298	SA 106 Gr.B	9.5	
		21	PLATE	2	140	10	140	S 275 JR	3	
		22	PIPE	1	Ø60.3	5.54	100	SA 106 Gr.B	0.8	
		23	CAP-BW	1	Ø60.3	5.54	-	SA 234 Gr.WPB	0.3	
		24	HALF COUPLING SW	1	Ø114.3	3000#	-	SA 105	0.35	
		26	PLATE	8	30	15	70	SA 516 Gr.70	1	
RS4	RS4-1	18	PIPE	12	Ø114.3	6.02	4136	SA 335 Gr.P22	797.5	
		25	PLATE	12	50	6	378	SA 387 Gr.22	3	
		18A	PIPE	12	Ø114.3	6.02	4019	SA 335 Gr.P22	775	
		25	PLATE	12	50	6	378	SA 387 Gr.22	3	
	RS4-2	19	PIPE	12	Ø114.3	6.02	2956	SA 335 Gr.P22	720	
		25	PLATE	12	50	6	378	SA 387 Gr.22	11.15	
		16	PIPE	12	Ø114.3	6.02	773	SA 335 Gr.P22	149	
		16B	PIPE	12	Ø114.3	6.02	158	SA 335 Gr.P22	60.9	
	RS4-3	17	ELBOW 30° BW LR	24	Ø114.3	6.02	-	SA 234 Gr.WP22	31.2	
		19	PIPE	12	Ø114.3	6.02	2956	SA 335 Gr.P22	720	
		25	PLATE	12	50	6	378	SA 387 Gr.22	11.15	
		16A	PIPE	12	Ø114.3	6.02	890	SA 335 Gr.P22	172	
	RS4-4	16B	PIPE	12	Ø114.3	6.02	158	SA 335 Gr.P22	60.9	
		17	ELBOW 30° BW LR	24	Ø114.3	6.02	-	SA 234 Gr.WP22	31.2	
		TOTAL WEIGHT								7300

SITE FABRICATED MATERIAL									
IDENTIF. COMPON. (NOTE 3)	ERECTION MARK NUMBER	ITEM	COMPONENT DESCRIPTION	Q.TY	O.D. DIM. (mm)	THK (mm)	LENGHT (mm)	ASME MATERIAL	WEIGHT (Kg)
SHAH25-BR002 1"	/	8	PIPE	2	Ø267.6	3.91	200	SA 106 Gr.B	0.57
		11	PIPE	1	Ø334.4	4.55	1000	SA 106 Gr.B	3.23
TOTAL WEIGHT									3.80

ERECTION BOLTS LIST AND GASKET									
LINE No.	ITEM	COMPONENT DESCRIPTION	Q.TY	O.D. DIM. (mm)	THK (mm)	LENGHT (mm)	MATERIAL	WEIGHT (Kg)	
SHAH25-BR001	4	GASKET 600#	2	Ø609.6	4.5	-	AS 304+GRAPH.	-	-
	5	STUD BOLT	24	Ø1"	-	-	SA 193 B7	18	-
	6	NUT	48	Ø1"	-	-	SA 194 2H	6	-
TOTAL WEIGHT									24

REFERENCE DRAWING	
DESCRIPTION	N. DRAWINGS
WATER AND STEAM IP SECTION P&I DIAGRAM	11680BTD03501
PRESSURE PARTS ASSEMBLY LONGITUDINAL AND SECTION	11680MDD03030
WELDING DETAIL TO SHOP	11680MDD04311
WELDING DETAIL TO FIELD	11680MDD04312
PRESSURE SECTION TECHNICAL DATA	11680MDD05043
REFERENCE DOCUMENTS	
DESCRIPTION	N. DOCUMENTS
SHOP WELDING TABLE	11680MDD02600
FIELD WELDING TABLE	11680MDD03800
ERECTION LIST	11680MDD02600

- NOTES:
- 1) ASME CODE SECTION I, ED.2001 + ADD.2003 AND DIRECTIVE 97/23/EC (P.E.D.)
 - 2) ALL DIMENSIONS ARE IN mm, UNLESS WHERE OTHERWISE INDICATED
 - 3) TO SHOW IDENTIFICATION COMPONENTS ACCORDING TO ANALYSIS LETTER N° 11680BT16060
 - 4) 1 DENOTE ITEM NUMBER
 - 5) xx 10 DENOTE ERECTION MARK NUMBER
 - 6) SHOWS FIELD WELDS
 - 7) SW DENOTES SHOP WELDING NUMBER
 - 8) FW DENOTES FIELD WELDING NUMBER
 - 9) ALL TOLERANCES, EXCEPT WHERE OTHERWISE INDICATED, ARE ACCORDING TO UNI EN 22768.1/M
 - 10) PIPE MATERIAL PROCUREMENT AND FABRICATION SHALL BE IN FULL ACCORDANCE TO API M.R. 11680MDD02600
 - 11) -05- DENOTE DETAIL OF WELD ACCORDING DWG. 11680MDD04311 AND DWG. 11680MDD04312
 - 12) THE SHOWN PIPING BELONG TO BOILER PROPER

Rev. 1 and above are RELEASED for ERECTION

KKS DWGNO: 5-HA-000-API-167

2	22-09-05	REVISED FOR LABELLING "AS BUILT" ONLY. NO OTHER CHANGES	A.S.	A.R.	A.N.
1	11-10-04	GENERAL REVISION	A.R.	A.N.	A.N.
REV.	DATA	DESCRIPTION/Description	DES.	CONT.	AVISTO
1	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
2	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
3	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
4	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
5	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
6	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
7	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
8	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
9	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
10	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
11	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
12	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
13	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
14	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
15	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
16	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
17	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
18	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
19	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
20	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
21	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
22	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
23	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
24	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
25	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
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31	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
32	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
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34	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
35	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
36	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
37	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
38	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
39	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
40	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
41	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
42	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
43	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
44	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
45	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
46	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
47	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
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91	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
92	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
93	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
94	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
95	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
96	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
97	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
98	11/10/04	GENERAL REVISION	A.R.	A.N.	A.N.
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A

B

C

D

E

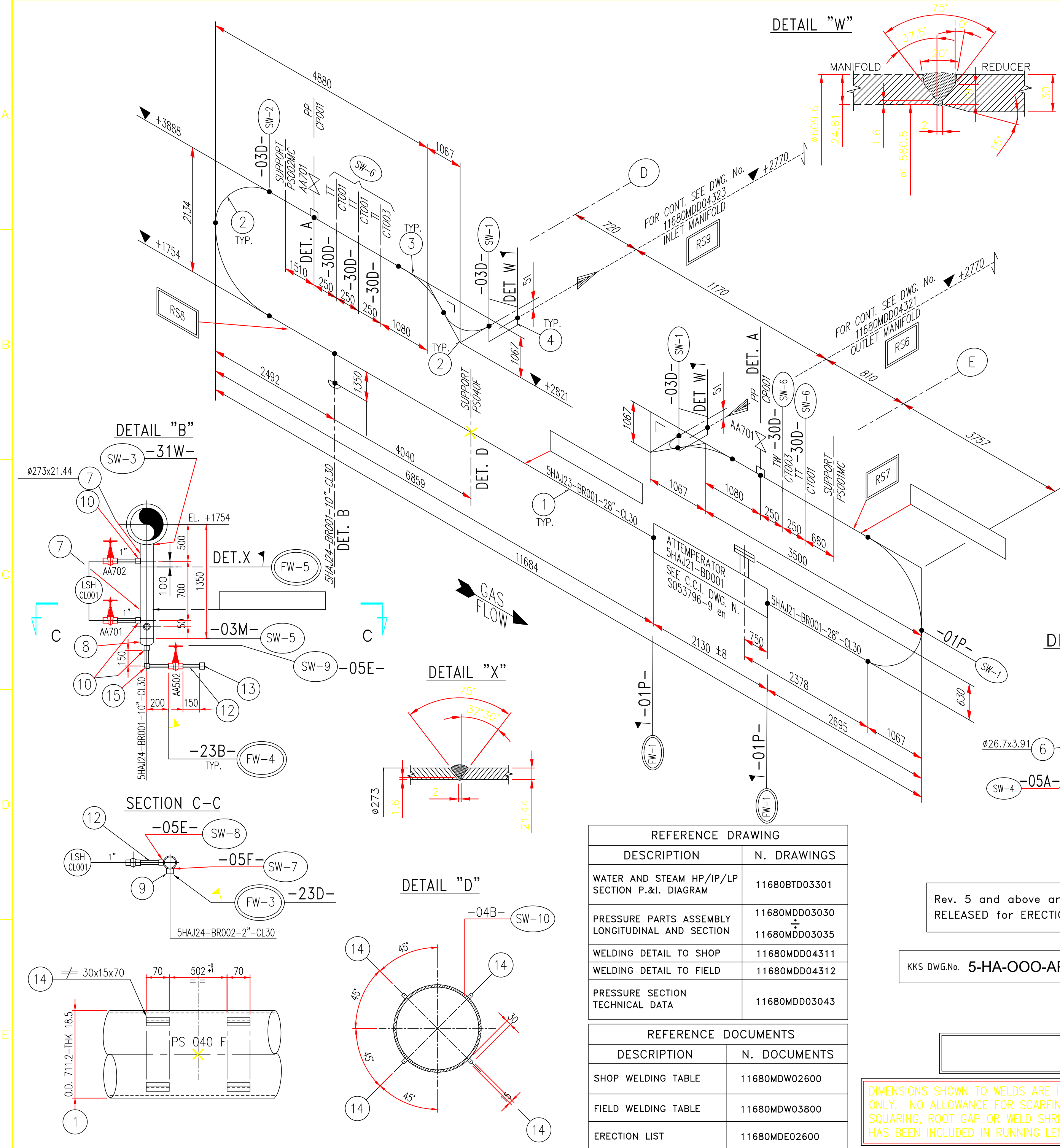
A

B

C

D

E



SHOP FABRICATED MATERIAL											
IDENTIF. COMPON. (NOTE 3)	LINE No.	SPOOL	ITEM	COMPONENT DESCRIPTION	Q.TY	O.D. DIM. (mm)	THK (mm)	LENGHT (mm)	ASME MATERIAL	WEIGHT (Kg)	
RS 7	5HAJ21-BR001-28"-CL30	5HAJ21-4505/A	1	PIPE	1	711.2	18.5 Min.	3620	SA 335 Gr. P91	1143.6	
			2	ELBOW 90°-LR	3	711.2	17 ±12.5%	-	SA 234 Gr. WP91	1606.5	
			3	ELBOW 45°-LR	1	711.2	17 ±12.5%	-	SA 234 Gr. WP91	268.6	
			4	ECCENTRIC REDUCING-BW	1	28"x24"	18.5xsch. 60	-	SA 234 Gr. WP91	185	
			5	HALF COUPLING-SW	1	Ø3/4"	6000#	-	SA 182 Gr. F91	1.4	
RS 8	5HAJ23-BR001-28"-CL30	5HAJ23-4505/A	1	PIPE	1	711.2	18.5 Min.	8705	SA 335 Gr. P91	2750	
			2	ELBOW 90°-LR	3	711.2	17 ±12.5%	-	SA 234 Gr. WP91	1606.5	
			3	ELBOW 45°-LR	1	711.2	17 ±12.5%	-	SA 234 Gr. WP91	268.6	
			4	ECCENTRIC REDUCING-BW	1	28"x24"	18.5xsch. 60	-	SA 234 Gr. WP91	185	
			5	HALF COUPLING-SW	1	Ø3/4"	6000#	-	SA 182 Gr. F91	1.4	
	5HAJ24-BR001-10"-CL30	5HAJ24-4505/A	7	PIPE	1	273	21.44 ±12.5%	300	SA 335 Gr. P91	39.9	
			10	HALF COUPLING-SW	1	Ø1"	6000#	70	SA 387 Gr.91 CL.2	0.5	
			7	PIPE	1	273	21.44 ±12.5%	850	SA 335 Gr. P91	112.9	
			8	CAP	1	273	15.09 ±12.5%	-	SA 182 Gr. F91	2.9	
			9	HALF COUPLING-SW	1	Ø2"	6000#	-	SA 182 Gr. F91	1	
			10	HALF COUPLING-SW	2	Ø1"	6000#	70	SA 387 Gr.91 CL.2	1	
			14	PLATE 30x15x70	8	-	-	70	SA 387 Gr.91 CL.2	1	

TOTAL WEIGHT 8188

WEIGHT OF ATTEMPERATOR 3001

SITE FABRICATED MATERIAL						
LINE No.	ITEM	COMPONENT DESCRIPTION	Q.TY	O.D. DIM. (mm)	THK (mm)	WEIGHT (Kg)
5HAJ21-BR001-28"-CL30	6	PIPE	1	26.7	3.91 ±12.5%	0.4
5HAJ24-BR001-10"-CL30	6	PIPE	1	26.7	3.91 ±12.5%	0.4
	12	PIPE	1	33.4	4.55 ±12.5%	3.5
	13	CAP-SW	1	Ø1"	6000#	0.5
	15	ELBOW 90°-SW	1	Ø1"	6000#	0.5
TOTAL WEIGHT						5.5

NOTES:

- ASME CODE SECTION I, ED.2001 + ADD.2003 AND DIRECTIVE 97/23/EC (P.E.D.)
- ALL DIMENSIONS ARE IN mm, UNLESS WHERE OTHERWISE INDICATED
- xx 10 TO SHOW IDENTIFICATION COMPONENTS ACCORDING TO ANALYSIS LETTER N° 11680BTX16060
- ① DENOTE ITEM NUMBER
- XXXXXX-YYYY/Z = SPOOL MK. No.
- ▲ SHOWS FIELD WELDS
- SW... DENOTES SHOP WELDING NUMBER
- FW... DENOTES FIELD WELDING NUMBER
- ALL TOLERANCES, EXCEPT WHERE OTHERWISE INDICATED, ARE ACCORDING TO UNI EN 22768.1/M
- PIPE MATERIAL PROCUREMENT AND FABRICATION SHALL BE IN FULL ACCORDANCE TO API M.R. 11680MDR02600
- 05- DENOTES DETAIL OF WELD ACCORDING DWG. 11680MDD04311 AND DWG. 11680MDD04312

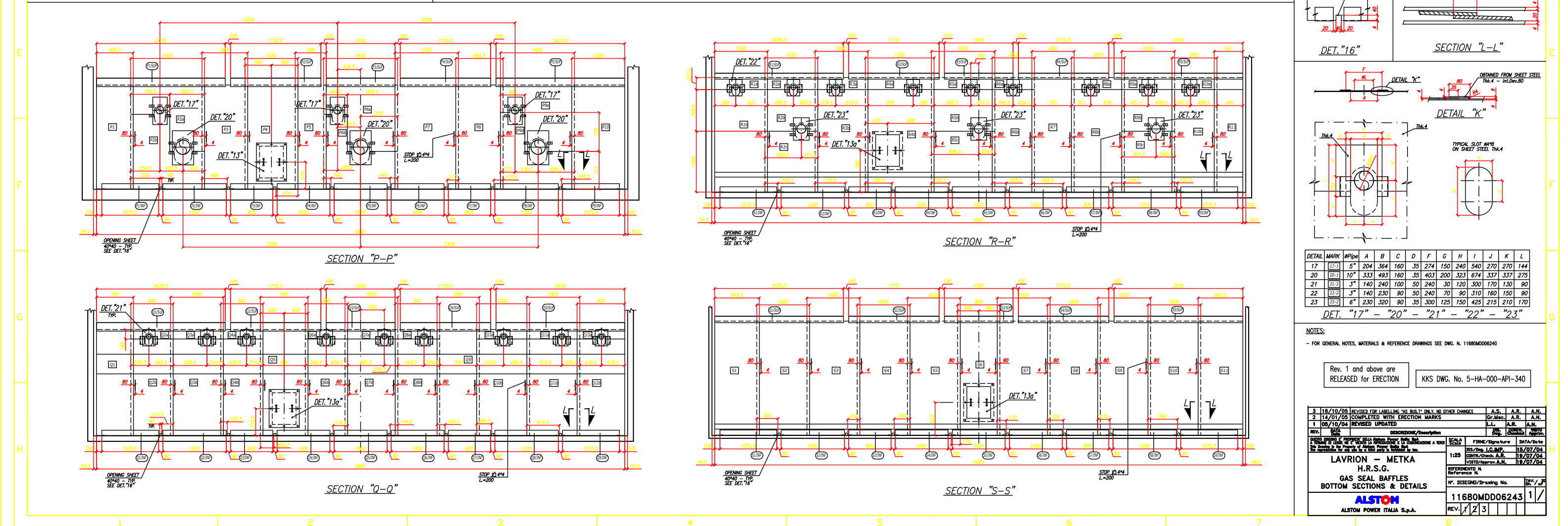
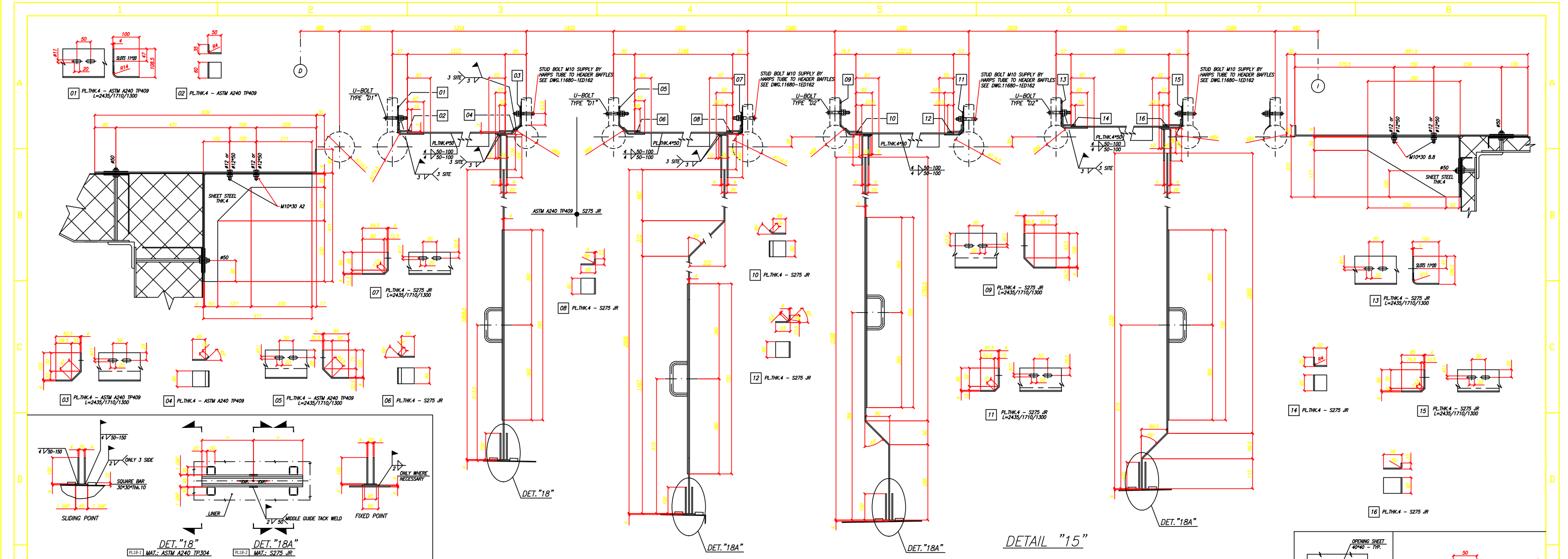
8	22-09-05	REVISED FOR LABELLING "AS BUILT" ONLY. NO OTHER CHANGES	A.S.	A.R.	A.N.
7	04-02-05	ADDED SPOOL MK. 5HAJ24-4505/A	A.S.	A.R.	A.N.
6	23-12-04	REVISED WHERE INDICATED	P.M.	A.R.	A.N.
5	23-11-04	REVISED WHERE INDICATED	P.M.	A.R.	A.N.
4	08-11-04	REVISED WHERE INDICATED	A.S.	A.R.	A.N.
3	25-10-04	REVISED WHERE INDICATED	M.B.	A.R.	A.N.
2	20-10-04	REMOVED HOLD AND REVISED WHERE INDICATED	M.B.	A.R.	A.N.
1	05-10-04	REVISED WHERE INDICATED	P.V.	A.R.	A.N.
REV.	DATA Date	DESCRIZIONE/Description	DIS. Dwg.	CONTR. Checked	VISTO Approv.

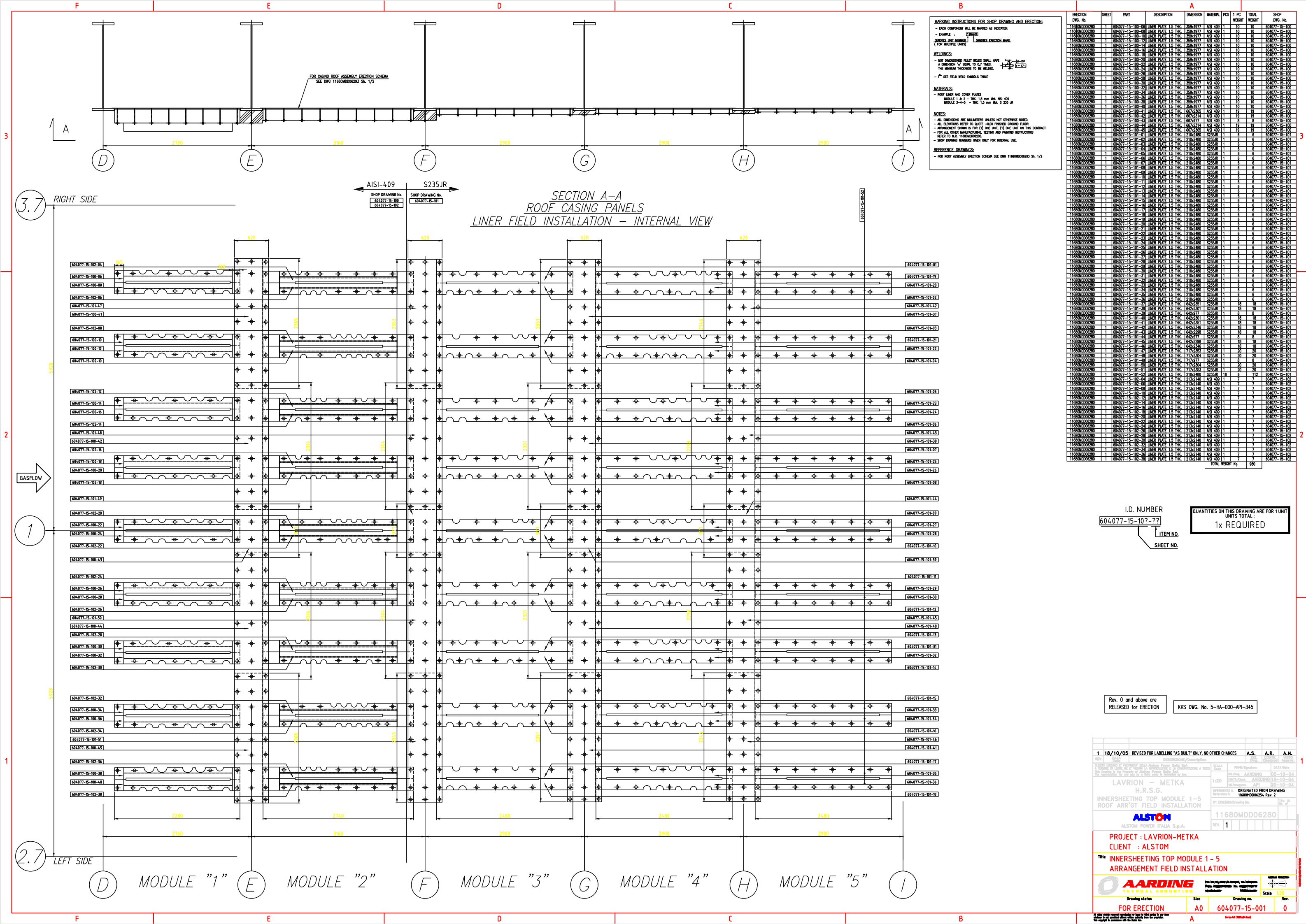
QUESTO DISEGNO E' PROPRIETA' DELLA ALSTOM Power Italia S.p.A. A TERMINE DI LEGGE NE E' VIETATA LA RIPRODUZIONE E LA COMUNICAZIONE A TERZI. This Drawing is the Property of ALSTOM Power Italia S.p.A. The reproduction for any use by a third party is forbidden by law.

LAVRION - METKA
RH STEAM DESUPERHEATER
5HAJ21-BR001-28"-CL30
5HAJ23-BR001-28"-CL30

ALSTOM
ALSTOM Power Italia S.p.A.

SCALE	FIRME/Signature	DATA/Date
//	DIS./Dwg. T.S.I.	3/9/04
	CONTR./Check. A.R.	24/9/04
	VISTO/Approv. A.N.	30/9/04
RIFERIMENTO N. Reference N.		
N°. DISEGNO/Drawing No.		TAV. / DI
11680MDD04505		
REV.	1 2 3 4 5 6 7 8	





INTERNAL VIEW RIGHT SIDE

(04)PH-C-S-24 (04)PH-C-S-28 (04)PH-C-S-32 (04)PH-C-S-36 (04)PH-C-S-40 (04)PH-C-S-44 (04)PH-C-S-48 (04)PH-C-S-52 (04)PH-C-S-56

EL. 25119
EXT. CASING

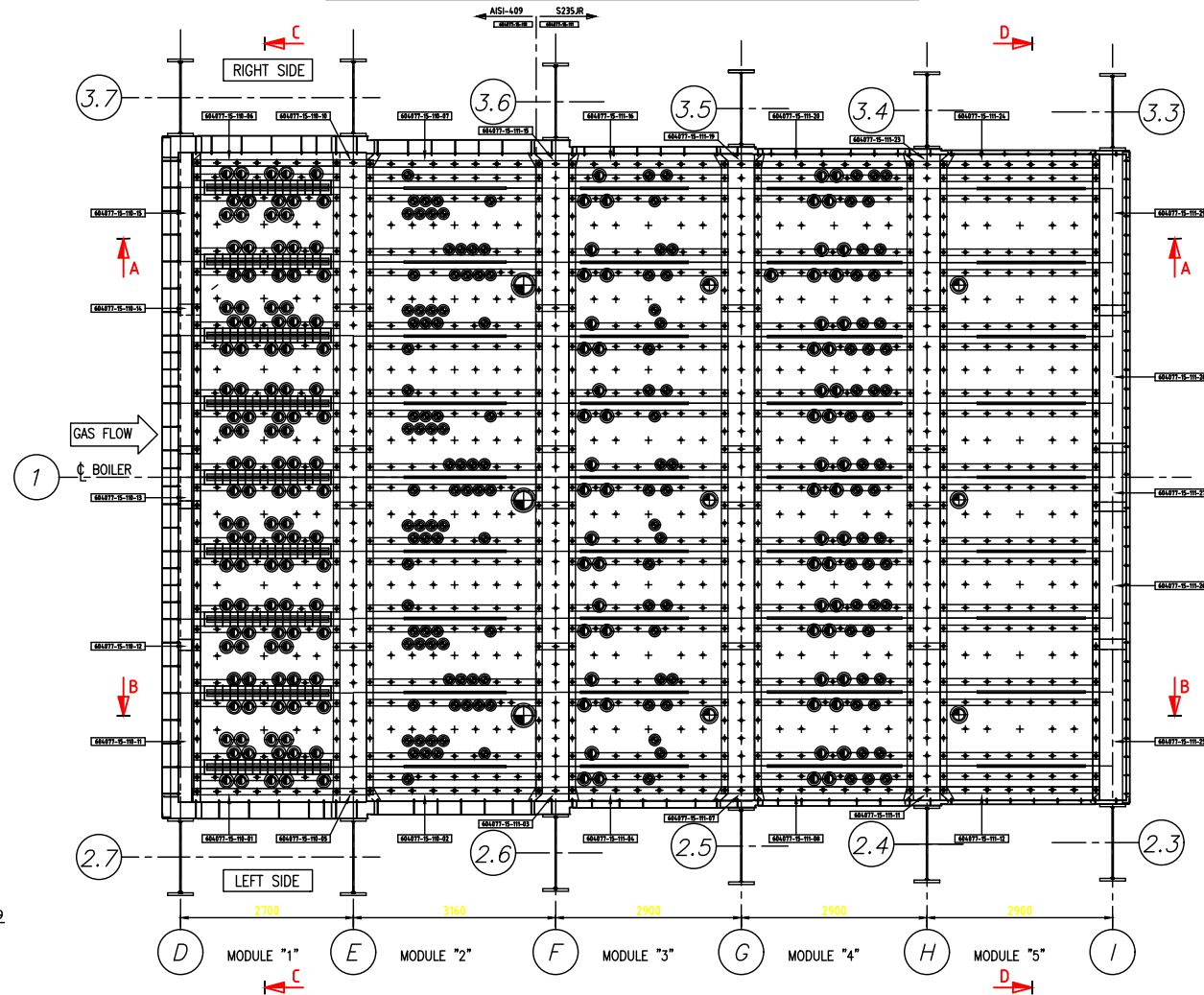
EL. 26719
T.O.S.

SECTION C-C
FRONT SIDE INTERNAL VIEW

RIGHT SIDE

LEFT SIDE

EL. 25119
EXT. CASING



EL. 26119
T.O.S.

FOR CASING ROOF ASSEMBLY
IMMEDIATELY DIR. VZ

EL. 25119
EXT. CASING

SECTION B-B
INTERNAL VIEW LEFT SIDE

MARKING INSTRUCTIONS FOR SHIP DRAWING AND FABRICATION:

- EACH COMPONENT WILL BE MARKED AS INDICATED.
- **EXAMPLE:** 
- IDENTIFY EACH NUMBER** **IDENTIFY FABRICATION MARKS.**
(FOR EACH DRAWING)

WELDINGS:

- NOT DIMENSIONED FILLET WELDS SHALL HAVE A DIMENSION "S" EQUAL TO 6.7 TIMES THE MINIMUM THICKNESS TO BE WELDED.
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MATERIALS:

- ROOF/SIDE WALLS AND COVER PLATES
- MODULES 1.0 x 2.1 x 2.1 mm, 1.5 mm thick and 409
- MODULE 3/4 - 0.75 mm thick and 250 x 91

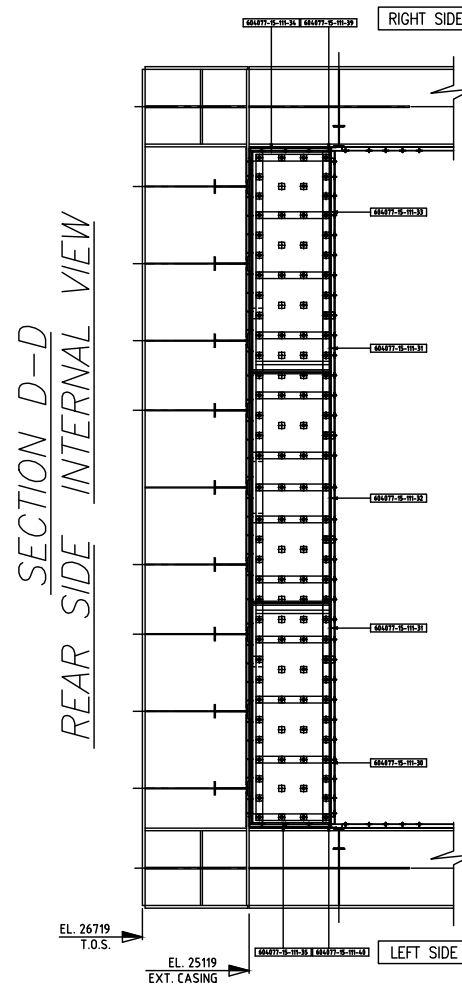
NOTES:

- ALL DIMENSIONS ARE MILLIMETERS UNLESS NOT OTHERWISE NOTED.
- ALL ELEVATIONS REFER TO QUOTE 4450 HIGHEST FINISHED GROUND LEVEL.
- DIMENSIONS OF ROOF FOR (1) ONE UNIT, (1) ONE UNIT OR TWO CONTAINERS.
- FOR ALL OTHER MANUFACTURING, TESTING AND FINISHING INSTRUCTIONS REFER TO 4450 HIGHEST FINISHED GROUND LEVEL.
- SHIP DRAWING MARKINGS GIVEN ONLY FOR INTERNAL USE.

REFERENCE DRAWINGS:

- FOR ROOF ASSEMBLY DESIGN SCHEMA SEE DWG 1160000000020323 SH 1/2

ERECTION DWG. No.	SHEET	PART	DESCRIPTION	DIMENSION	MATERIAL	PCS	1 PC WEIGHT	TOTAL WEIGHT	SWG. No.
1188RM0000280	2	64007-15-10-01	INNER PLATE 1.5 THK	230x242	ASS 409	12	12	64007-15-10	
1188RM0000280	2	64007-15-10-02	INNER PLATE 1.5 THK	274x242	ASS 409	14	14	64007-15-10	
1188RM0000280	2	64007-15-10-03	INNER PLATE 1.5 THK	274x242	ASS 409	14	14	64007-15-10	
1188RM0000280	2	64007-15-10-04	INNER PLATE 1.5 THK	230x242	ASS 409	12	12	64007-15-10	
1188RM0000280	2	64007-15-10-07	INNER PLATE 1.5 THK	230x242	ASS 409	14	14	64007-15-10	
1188RM0000280	2	64007-15-10-08	INNER PLATE 1.5 THK	274x242	ASS 409	14	14	64007-15-10	
1188RM0000280	2	64007-15-10-11	INNER PLATE 1.5 THK	25x367	ASS 409	11	15	64007-15-10	
1188RM0000280	2	64007-15-10-11	INNER PLATE 1.5 THK	230x242	ASS 409	14	14	64007-15-10	
1188RM0000280	2	64007-15-10-11	INNER PLATE 1.5 THK	99x478	ASS 409	1	1	64007-15-10	
1188RM0000280	2	64007-15-10-14	INNER PLATE 1.5 THK	230x248	ASS 409	14	14	64007-15-10	
1188RM0000280	2	64007-15-10-15	INNER PLATE 1.5 THK	25x367	ASS 409	11	15	64007-15-10	
1188RM0000280	2	64007-15-10-16	INNER PLATE 1.5 THK	25x367	ASS 409	11	15	64007-15-10	
1188RM0000280	2	64007-15-10-17	INNER PLATE 1.5 THK	201x2845	ASS 409	21	21	64007-15-10	
1188RM0000280	2	64007-15-10-18	INNER PLATE 1.5 THK	190x2845	ASS 409	20	20	64007-15-10	
1188RM0000280	2	64007-15-10-19	INNER PLATE 1.5 THK	25x2845	ASS 409	11	15	64007-15-10	
1188RM0000280	2	64007-15-10-20	INNER PLATE 1.5 THK	25x367	ASS 409	11	26	64007-15-10	
1188RM0000280	2	64007-15-10-24	INNER PLATE 1.5 THK	115x7810	ASS 409	18	18	64007-15-10	
1188RM0000280	2	64007-15-10-24	INNER PLATE 1.5 THK	107x7810	ASS 409	1	2	64007-15-10	
1188RM0000280	2	64007-15-11-03	INNER PLATE 1.5 THK	790x315	SS 304	6	6	64007-15-11	
1188RM0000280	2	64007-15-11-04	INNER PLATE 1.5 THK	2460x424	SS 304	13	13	64007-15-11	
1188RM0000280	2	64007-15-11-04	INNER PLATE 1.5 THK	2460x242	SS 304	13	13	64007-15-11	
1188RM0000280	2	64007-15-11-08	INNER PLATE 1.5 THK	2460x424	SS 304	13	13	64007-15-11	
1188RM0000280	2	64007-15-11-11	INNER PLATE 1.5 THK	800x240	SS 304	5	5	64007-15-11	
1188RM0000280	2	64007-15-11-11	INNER PLATE 1.5 THK	790x240	SS 304	5	5	64007-15-11	
1188RM0000280	2	64007-15-11-16	INNER PLATE 1.5 THK	790x315	SS 304	6	6	64007-15-11	
1188RM0000280	2	64007-15-11-16	INNER PLATE 1.5 THK	2460x424	SS 304	13	13	64007-15-11	
1188RM0000280	2	64007-15-11-16	INNER PLATE 1.5 THK	2460x242	SS 304	13	13	64007-15-11	
1188RM0000280	2	64007-15-11-20	INNER PLATE 1.5 THK	2460x424	SS 304	13	13	64007-15-11	
1188RM0000280	2	64007-15-11-20	INNER PLATE 1.5 THK	800x240	SS 304	4	4	64007-15-11	
1188RM0000280	2	64007-15-11-25	INNER PLATE 1.5 THK	800x240	SS 304	4	4	64007-15-11	
1188RM0000280	2	64007-15-11-25	INNER PLATE 1.5 THK	751x5681	SS 304	21	21	64007-15-11	
1188RM0000280	2	64007-15-11-26	INNER PLATE 1.5 THK	2226x681	SS 304	20	20	64007-15-11	
1188RM0000280	2	64007-15-11-26	INNER PLATE 1.5 THK	2226x681	SS 304	20	20	64007-15-11	
1188RM0000280	2	64007-15-11-29	INNER PLATE 1.5 THK	2460x681	SS 304	21	21	64007-15-11	
1188RM0000280	2	64007-15-11-29	INNER PLATE 1.5 THK	2460x681	SS 304	21	21	64007-15-11	
1188RM0000280	2	64007-15-11-31	INNER PLATE 1.5 THK	190x2840	SS 304	2	9	64007-15-11	
1188RM0000280	2	64007-15-11-32	INNER PLATE 1.5 THK	165x3280	SS 304	8	8	64007-15-11	
1188RM0000280	2	64007-15-11-32	INNER PLATE 1.5 THK	165x3280	SS 304	11	11	64007-15-11	
1188RM0000280	2	64007-15-11-34	INNER PLATE 1.5 THK	171x7335	SS 304	11	11	64007-15-11	
1188RM0000280	2	64007-15-11-35	INNER PLATE 1.5 THK	171x7335	SS 304	11	11	64007-15-11	
1188RM0000280	2	64007-15-11-39	INNER PLATE 1.5 THK	410x391	SS 304	1	3	64007-15-11	
1188RM0000280	2	64007-15-11-40	INNER PLATE 1.5 THK	410x391	SS 304	1	3	64007-15-11	
TOTAL WEIGHT Kg.							554		



I.D. NUMBER
604077-15-11?-??
ITEM NO.
SHEET NO.

QUANTITIES ON THIS DRAWING ARE FOR 1 UNIT
UNITS TOTAL :
1x REQUIRED

Rev. 0 and above are
RELEASED for ERECTION

KKS DWG.No. 5-HA-000-API-344

[illegible]

PROJECT : LAVRION-METKA				
CLIENT : ALSTOM				
Title: INNERSHEETING CORNER PLATES TOP MODULE 1 - 5 ARRANGEMENT FIELD INSTALLATION				
 AARDING THERMAL ACOUSTICS	Via the 100,000 Hz band, the substrate mass corresponds to the appropriate wavelength.		minimum installation 	
	Drawing status	Size	Drawing no.	Scale
FOR ERECTION	A0	604.077-15-005	0	Rev.
All rights reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of AARDING Thermal Acoustics.				

INTERNAL VIEW LEFT SIDE ELEVATION

SECTION B-B

I.D. NUMBER
604077-15-10?-??

ITEM NO.
SHEET NO.

QUANTITIES ON THIS DRAWING ARE FOR 1 UNIT
UNITS TOTAL :
1x REQUIRED

DETAIL "B"

COVER LINER THK: 2.5

LINER HOLE

CLIPS

320 320

260 260

85 150 85 85 150 85

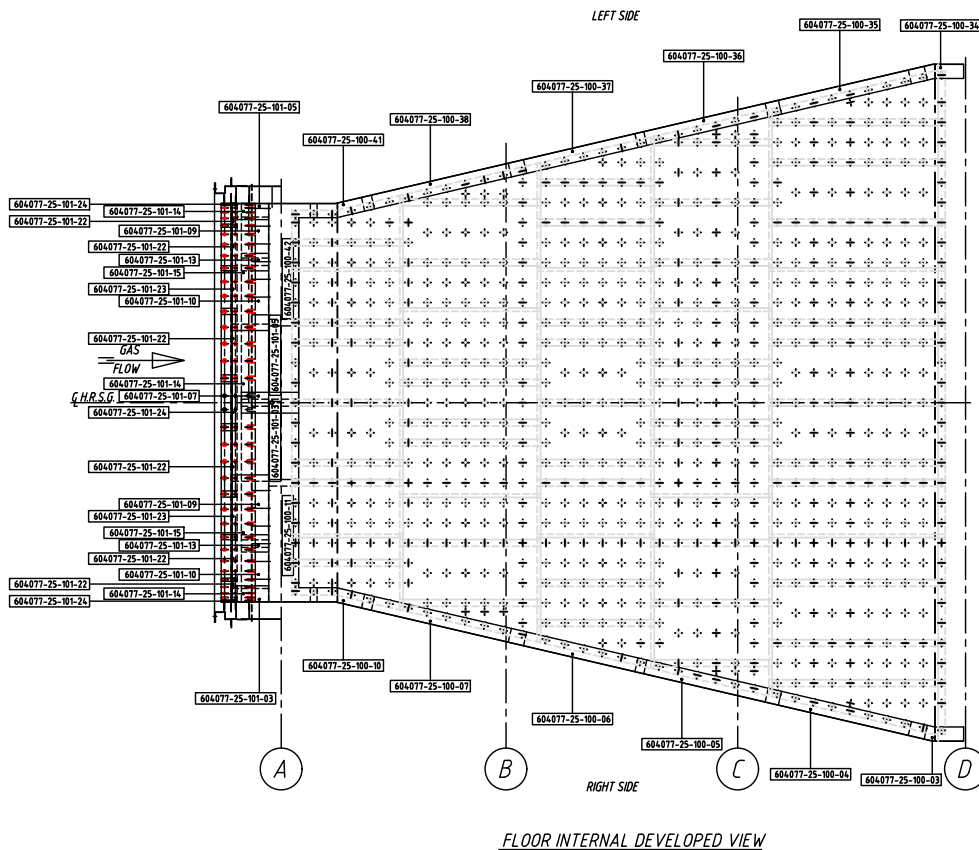
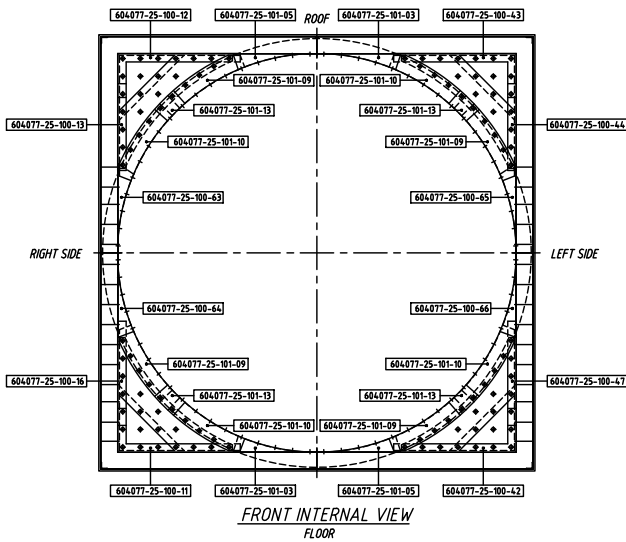
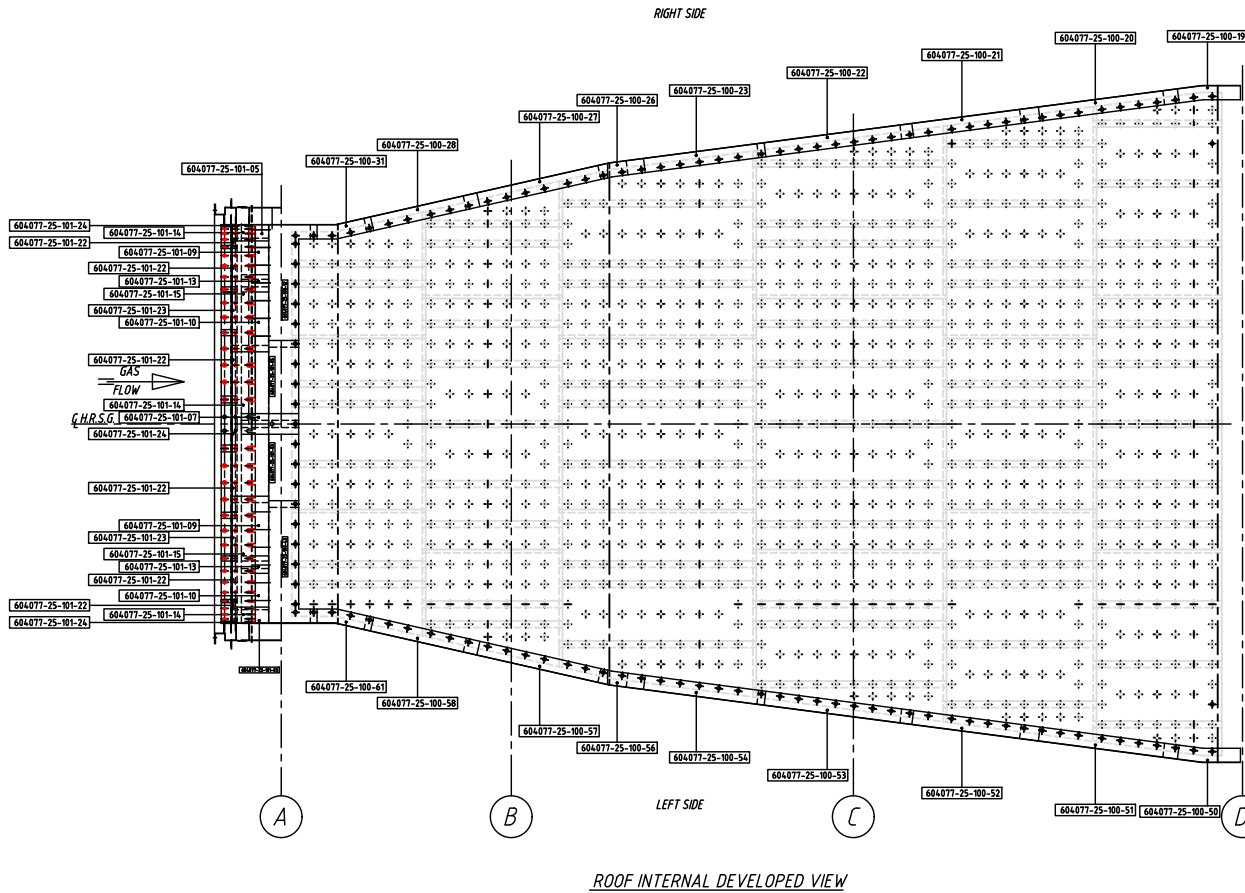
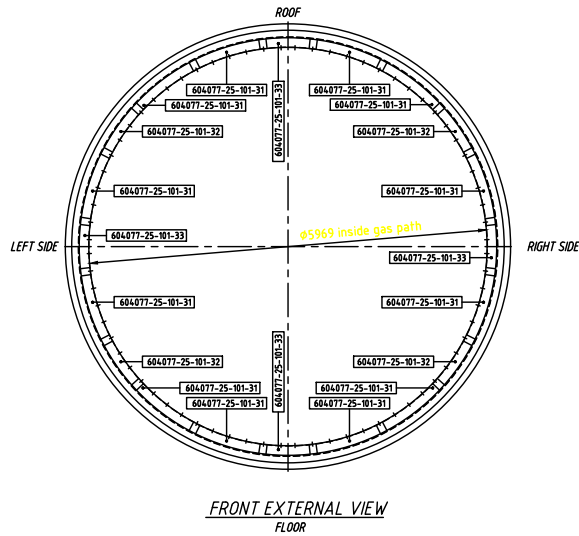
150 150

KKS DWG.No. 5-HA-000-API-348

FOR ERECTION A0 604077-15-006

FOR ERECTION

FOR ERECTION



MARKING INSTRUCTIONS FOR SHOP DRAWING AND ERECTION:

- EACH COMPONENT WILL BE MARKED AS INDICATED:
- EXAMPLE:
- DENOTES UNIT NUMBER
- DENOTES ERECTION MARK
- (FOR MULTIPLE UNITS)

WELDINGS:

- NOT DIMENSIONED FILLET WELDS SHALL HAVE A DIMENSION 5" EQUAL TO 0.7 TIMES THE MINIMUM THICKNESS TO BE WELDED.
- SEE FIELD SYMBOLS TABLE

MATERIALS:

- SIDE WALLS LINER AND COVER PLATES
- INLET DUCT - THK. 3 mm INS. AISI 409

NOTES:

- ALL DIMENSIONS ARE MILLIMETERS UNLESS NOT OTHERWISE NOTED.
- ALL ELEVATIONS REFER TO QUOTE +0.00 FINISHED GROUND FLOOR.
- ARRANGEMENT SHOWN IS FOR (1) ONE UNIT, (1) ONE UNIT ON THIS CONTRACT.
- FOR ALL OTHER MANUFACTURING, TESTING AND FINISHING INSTRUCTIONS REFER TO M.A. 11680MDD06286.
- SHOP DRAWING NUMBERS GIVEN ONLY FOR INTERNAL USE.

REFERENCE DRAWINGS:

- FOR INLET DUCT INSULATED PANELS ERECTION SCHEME SEE DWG. 11680MDD09195 SH-1/2 & 2/2
- FOR SIDE WALLS INLET DUCT FIELD INSTALLATION SEE DWG. 11680MDD06287

I.D. NUMBER
604077-25-101-??
ITEM NO.
SHEET NO.

QUANTITIES ON THIS DRAWING ARE FOR 1 UNIT
1x REQUIRED

Rev. 0 and above are
RELEASED for ERECTION

KKK DWG.No: 5-HA-000-API-350

REV.	DATE	DESCRIPTION / Description	SCALE	PREPARED BY / Prepared By	CHECKED BY / Checked By	DATE / Date
1	18/10/05	REVISED FOR LABELLING "AS BUILT" ONLY. NO OTHER CHANGES	A.S.	A.R.	A.N.	
LAVRION - METKA H.R.S.G. INNER SHEET, INLET DUCT ARR'GT FIELD INSTALLATION						
ALSTOM ALSTOM POWER ITALIA S.p.A.						
11680MDD06286						
REV. 1						

PROJECT : LAVRION-METKA
CLIENT : ALSTOM

THIS INNERSHEETING ROOF, FLOOR AND FRONT INLET DUCT
ARRANGEMENT FIELD INSTALLATION

Drawing status	Size	Drawing no.	Rev.
FOR ERECTION	A0	604077-25-002	0

MARKING INSTRUCTIONS FOR SHOP DRAWINGS AND ERECTION:

- EACH COMPONENT WILL BE MARKED AS INDICATED:
- EXAMPLE:
- DENOTES LINE NUMBER
- DENOTES ERECTION MARK
- OMEGA BILL OF MATERIAL POSITION - SHOP
- MEANS MARK'S NUMBER - ERECTION

WELDINGS:

- NOT DIMENSIONED FILLET WELDS SHALL HAVE A DIMENSION "a" EQUAL TO 0.7 TIMES THE MINIMUM THICKNESS TO BE WELDED.
- MEANS FIELD WELDING.

MATERIALS:

- BEAMS & PLATE (ROLLED SECTION) S235JR EN 10025
- BEAMS & PLATE (BUILT-UP SECTION) S355JR EN 10025
- BOLTS C1.8.5 - EN 8098 - UNI 5737 (GALVANIZED)
- NUTS C1.8 - EN 8098 - UNI 5588

ERECTION DWG. No.	SHEET	PART	DESCRIPTION	MAIN SHAPE	PCS	1 PC WEIGHT	TOTAL WEIGHT	SHOP DWG. No.
11680MDD06290	1	MB1	GIRDER	HE1800/480	1	7557	7557	362-1-014
11680MDD06290	1	MB10	GIRDER	HE800/283	1	1140.5	1140.5	362-1-015
11680MDD06290	1	MB11	GIRDER	HE800/283	1	1419.9	1419.9	362-1-015
11680MDD06290	1	MB12	GIRDER	HE800/283	1	1156.1	1156.1	362-1-015
11680MDD06290	1	MB13	GIRDER	HE800/283	1	1434.4	1434.4	362-1-015
11680MDD06290	1	MB14	GIRDER	HE800/283	1	1170.6	1170.6	362-1-015
11680MDD06290	1	MB16	GIRDER	HE400	1	1329.5	1329.5	362-1-016
11680MDD06290	1	MB17	GIRDER	HE400	1	1329.5	1329.5	362-1-016
11680MDD06290	1	MB18	GIRDER	HE400	1	1313.3	1313.3	362-1-016
11680MDD06290	1	MB19	GIRDER	HE400	1	1287	1287	362-1-016
11680MDD06290	1	MB2	GIRDER	HE1000/480	1	7422.1	7422.1	362-1-014
11680MDD06290	1	MB20	GIRDER	HE400	1	1279.5	1279.5	362-1-016
11680MDD06290	1	MB21	GIRDER	HE400	1	1273.3	1273.3	362-1-016
11680MDD06290	1	MB3	GIRDER	HE1000/480	1	7214.1	7214.1	362-1-014
11680MDD06290	1	MB4	GIRDER	HE1000/480	1	7255.5	7255.5	362-1-014
11680MDD06290	1	MB5	GIRDER	HE1000/480	1	7081.8	7081.8	362-1-014
11680MDD06290	1	MB6	GIRDER	HE1000/480	1	7420.7	7420.7	362-1-014
11680MDD06290	1	MB7	GIRDER	HE400	1	715.7	715.7	362-1-015
11680MDD06290	1	MB8	GIRDER	HE400	1	672.1	672.1	362-1-015
11680MDD06290	1	MB9	GIRDER	HE800/283	1	1404.2	1404.2	362-1-015
11680MDD06290	1	MB1	BEAM	IP300	14	96.6	1352.4	362-1-011
11680MDD06290	1	MB10	BEAM	HE300	2	235.8	471.6	362-1-011
11680MDD06290	1	MB11	BEAM	HE800/184	2	409.7	819.4	362-1-012
11680MDD06290	1	MB12	BEAM	HE800/184	2	511.3	1022.6	362-1-012
11680MDD06290	1	MB13	BEAM	HE800/184	2	468.6	937.2	362-1-012
11680MDD06290	1	MB14	BEAM	HE800/184	2	464.4	928.8	362-1-012
11680MDD06290	1	MB15	BEAM	HE800/184	2	464.4	928.8	362-1-012
11680MDD06290	2	MB16	BEAM	IP500	9	365.9	3293.1	362-1-013
11680MDD06290	2	MB17	BEAM	IP500	9	366.5	3298.5	362-1-013
11680MDD06290	2	MB18	BEAM	IP500	9	342.9	3086.1	362-1-013
11680MDD06290	2	MB19	BEAM	IP500	9	362.1	3258.9	362-1-013
11680MDD06290	1	MB2	BEAM	IP300	14	129	1806	362-1-011
11680MDD06290	2	MB20	BEAM	IP500	9	347.7	3129.3	362-1-013
11680MDD06290	1	MB3	BEAM	IP300	14	120	1680	362-1-011
11680MDD06290	1	MB4	BEAM	IP300	14	112.9	1580.6	362-1-011
11680MDD06290	1	MB5	BEAM	IP300	14	112.1	1569.4	362-1-011
11680MDD06290	1	MB6	BEAM	HE300	2	202.2	404.4	362-1-011
11680MDD06290	1	MB7	BEAM	HE300	2	271.7	543.4	362-1-011
11680MDD06290	1	MB8	BEAM	HE300	2	252	504	362-1-011
11680MDD06290	1	MB9	BEAM	HE300	2	237.3	474.6	362-1-011
11680MDD06290	1	MS10	COLUMN	HS1200/427	1	16023.7	16023.7	362-1-001
11680MDD06290	1	MS1E	COLUMN	HS1200/427	1	16076.6	16076.6	362-1-002
11680MDD06290	1	MS1F	COLUMN	HS1200/427	1	16120	16120	362-1-003
11680MDD06290	1	MS1G	COLUMN	HS1200/427	1	16037.4	16037.4	362-1-004
11680MDD06290	1	MS1H	COLUMN	HS1200/427	1	16423.7	16423.7	362-1-005
11680MDD06290	1	MS11	COLUMN	HS1200/427	1	16270.3	16270.3	362-1-001
11680MDD06290	1	MS20	COLUMN	HS1200/427	1	16035.1	16035.1	362-1-001
11680MDD06290	1	MS2E	COLUMN	HS1200/427	1	16071	16071	362-1-002
11680MDD06290	1	MS2F	COLUMN	HS1200/427	1	16133.4	16133.4	362-1-003
11680MDD06290	1	MS2G	COLUMN	HS1200/427	1	16024.8	16024.8	362-1-004
11680MDD06290	1	MS21	COLUMN	HS1200/427	1	16380.3	16380.3	362-1-005
11680MDD06290	1	MS21	COLUMN	HS1200/427	1	16260	16260	362-1-006
11680MDD06290	1	MS1	STIFFENER	N.A.	320	4	1280	362-1-011
11680MDD06290	1	MS10	STIFFENER	N.A.	28	1.1	30.8	362-1-011
11680MDD06290	1	MS11	STIFFENER	N.A.	4	2.8	11.2	362-1-011
11680MDD06290	1	MS12	STIFFENER	N.A.	268	5.3	1420.4	362-1-011
11680MDD06290	1	MS13	STIFFENER	N.A.	16	31.4	502.4	362-1-012
11680MDD06290	1	MS14	STIFFENER	N.A.	4	31.4	125.6	362-1-012
11680MDD06290	2	MS15	STIFFENER	N.A.	90	16.6	1494	362-1-013
11680MDD06290	1	MS16	STIFFENER	N.A.	24	6.8	163.2	362-1-016
11680MDD06290	1	MS17	STIFFENER	N.A.	8	6.4	51.2	362-1-011
11680MDD06290	1	MS18	STIFFENER	N.A.	8	5.9	47.2	362-1-011
11680MDD06290	1	MS19	STIFFENER	N.A.	4	6.3	25.2	362-1-011
11680MDD06290	1	MS2	STIFFENER	N.A.	140	5.8	812	362-1-011
11680MDD06290	1	MS20	STIFFENER	N.A.	32	5.8	185.6	362-1-011
11680MDD06290	1	MS3	STIFFENER	N.A.	20	18.1	362	362-1-011
11680MDD06290	1	MS4	STIFFENER	N.A.	28	1.5	42	362-1-011
11680MDD06290	1	MS5	STIFFENER	N.A.	4	4	16	362-1-011
11680MDD06290	1	MS6	STIFFENER	N.A.	28	1.6	44.8	362-1-011
11680MDD06290	1	MS7	STIFFENER	N.A.	4	4	16	362-1-011
11680MDD06290	1	MS8	STIFFENER	N.A.	28	1.3	36.4	362-1-011
11680MDD06290	1	MS9	STIFFENER	N.A.	4	3.4	13.6	362-1-011
11680MDD06290	1	MS1	BRACING	L120x13	2	155.3	310.6	362-1-012
11680MDD06290	1	MS2	BRACING	L120x13	2	136.2	272.4	362-1-012
11680MDD06290	1	MS3	BRACING	L120x13	2	167.5	335	362-1-012
11680MDD06290	1	MS4	BRACING	L120x13	10	192.9	1929	362-1-012
11680MDD06290	1	MS5	BRACING	L120x13	2	179.9	359.8	362-1-012
TOTAL WEIGHT [KG]							296886.1	

Rev. 1 and above are RELEASED FOR ERECTION

KKS DWG. No. 5-HA-000-AP-307

NOTE:

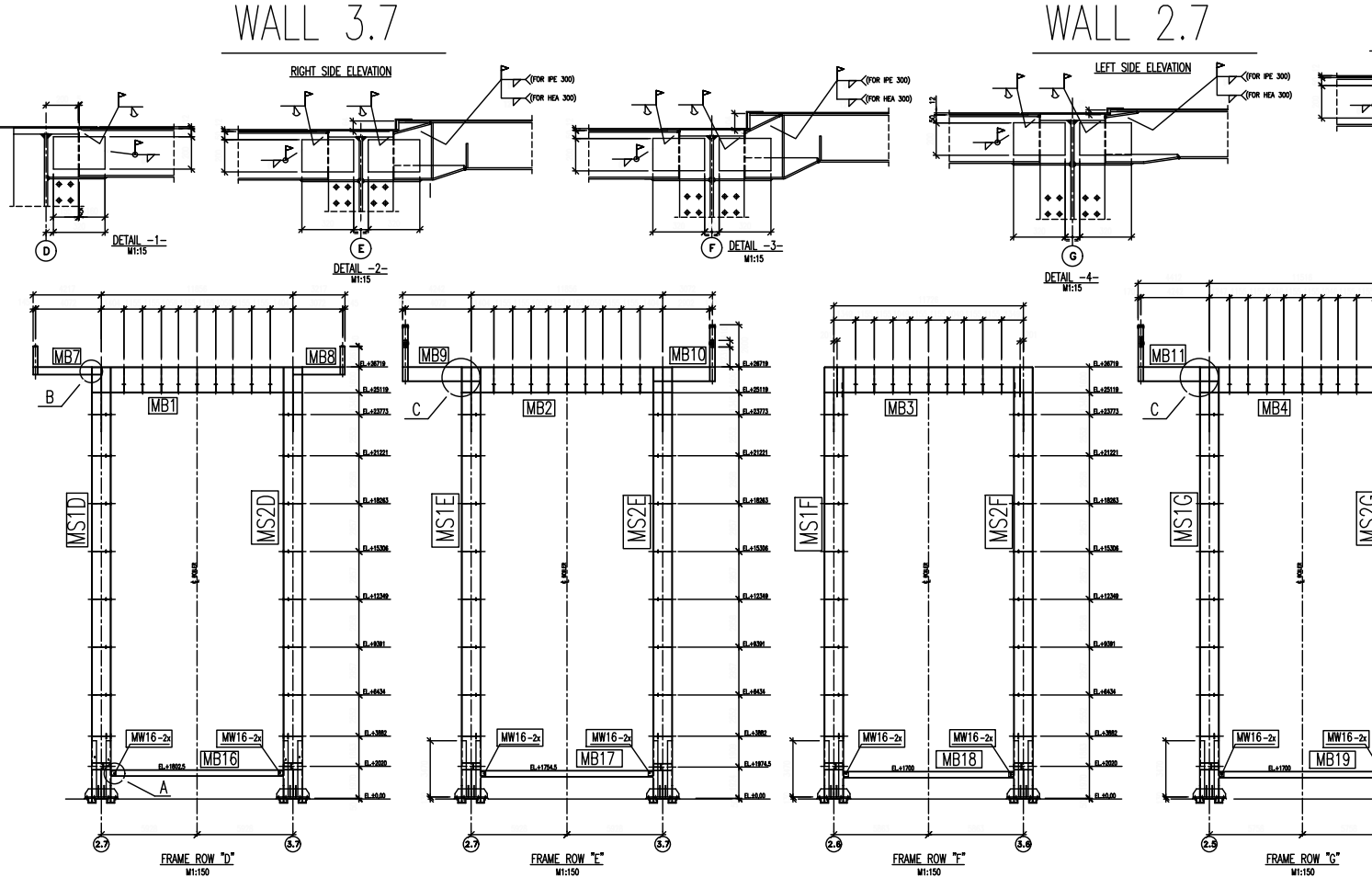
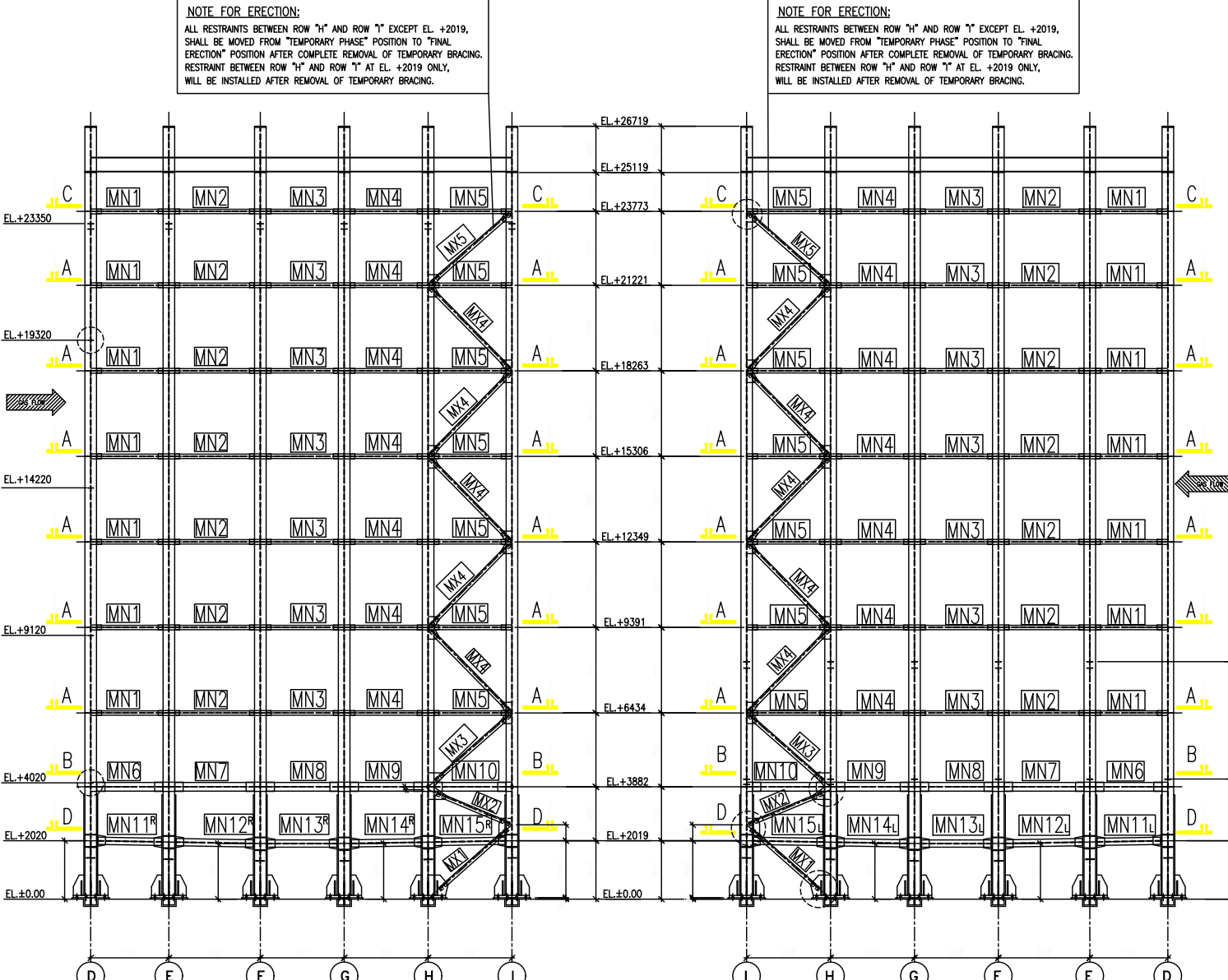
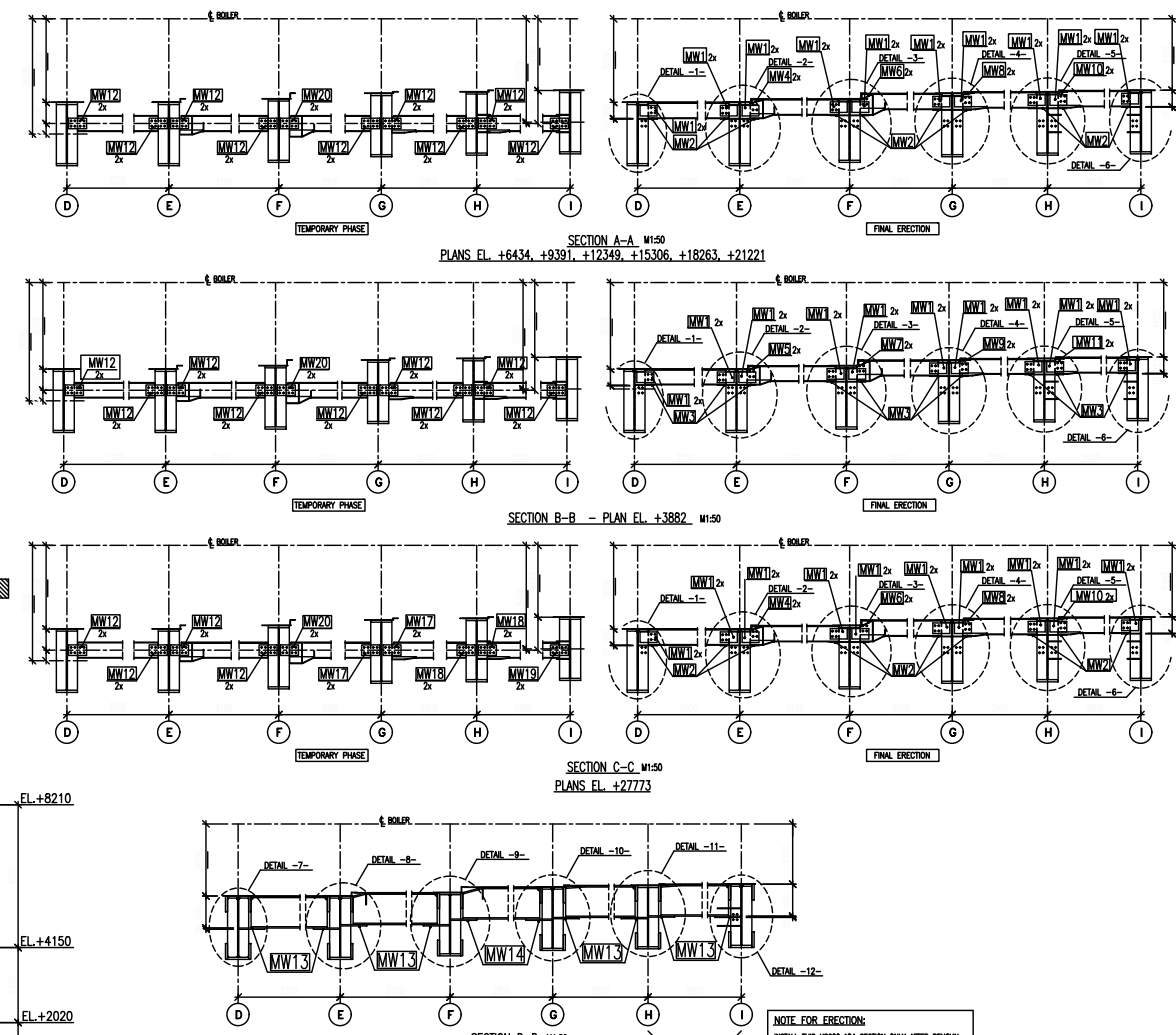
- ALL DIMENSIONS ARE MILLIMETERS
- ALL ELEVATIONS REFER TO QUOTE +0.00 FINISHED GROUND FLOOR

FIELD WELD SYMBOLS ACC. AWS A2.4-98

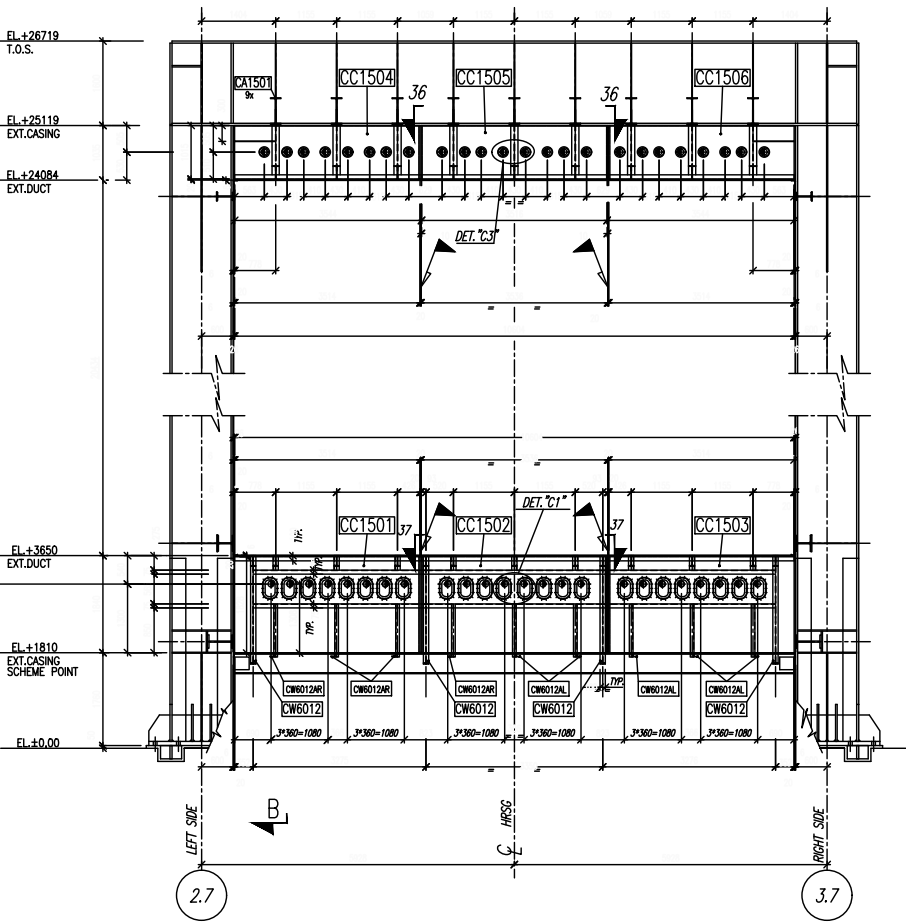
[A]=[mm]

Rev.	Date	By	Check	Scale
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2	26-07-04	MASSAL	MASSAL	1:75

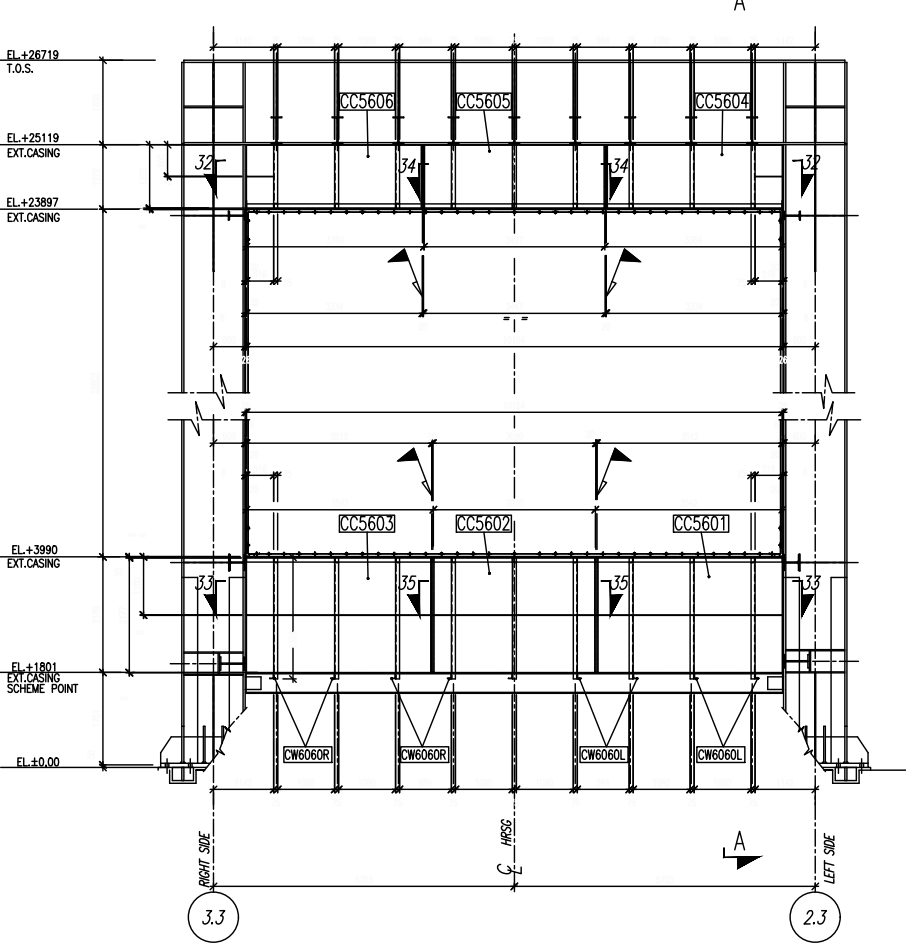
11680MDD06290 1 2



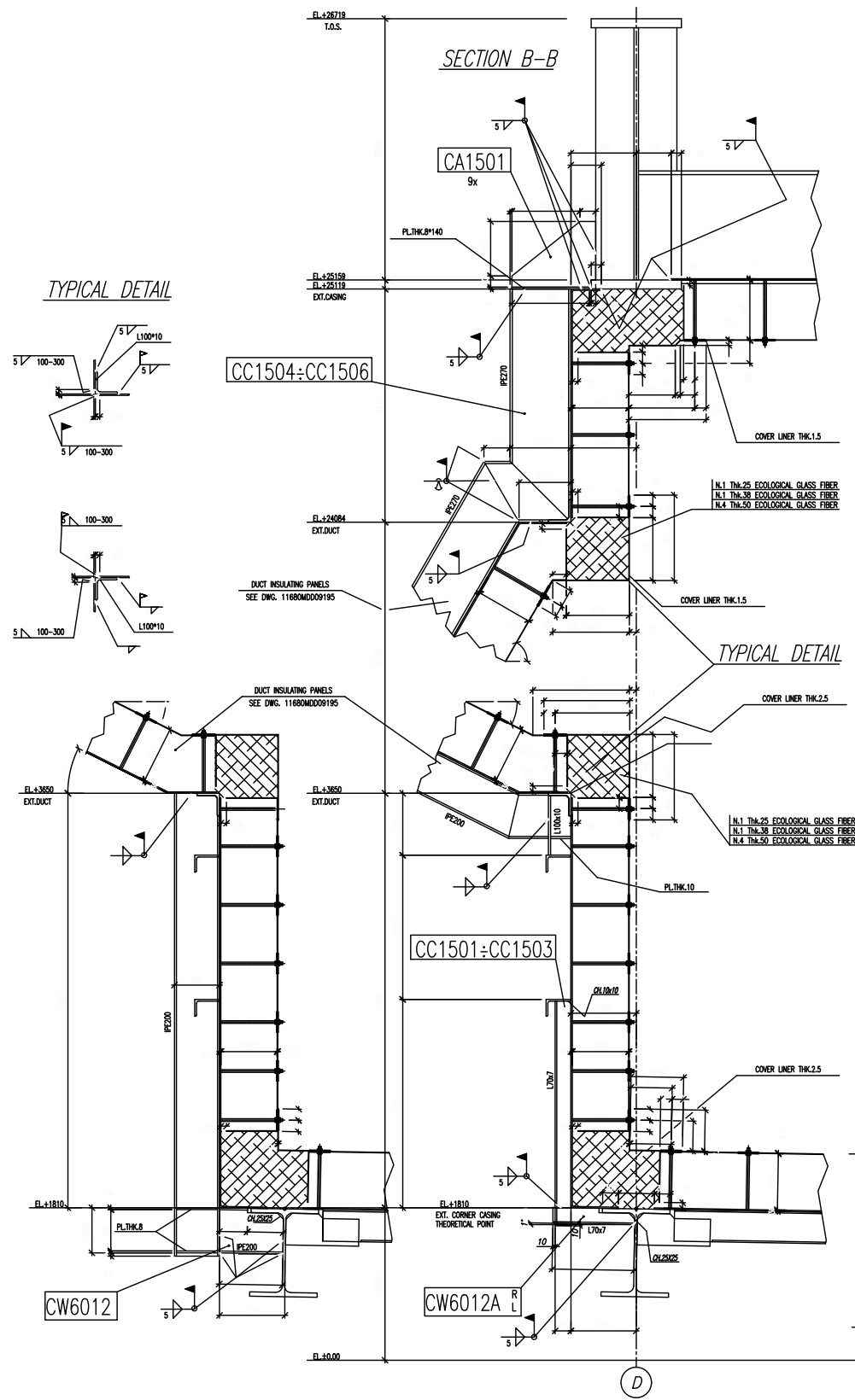
FRONT SIDE EXTERNAL VIEW



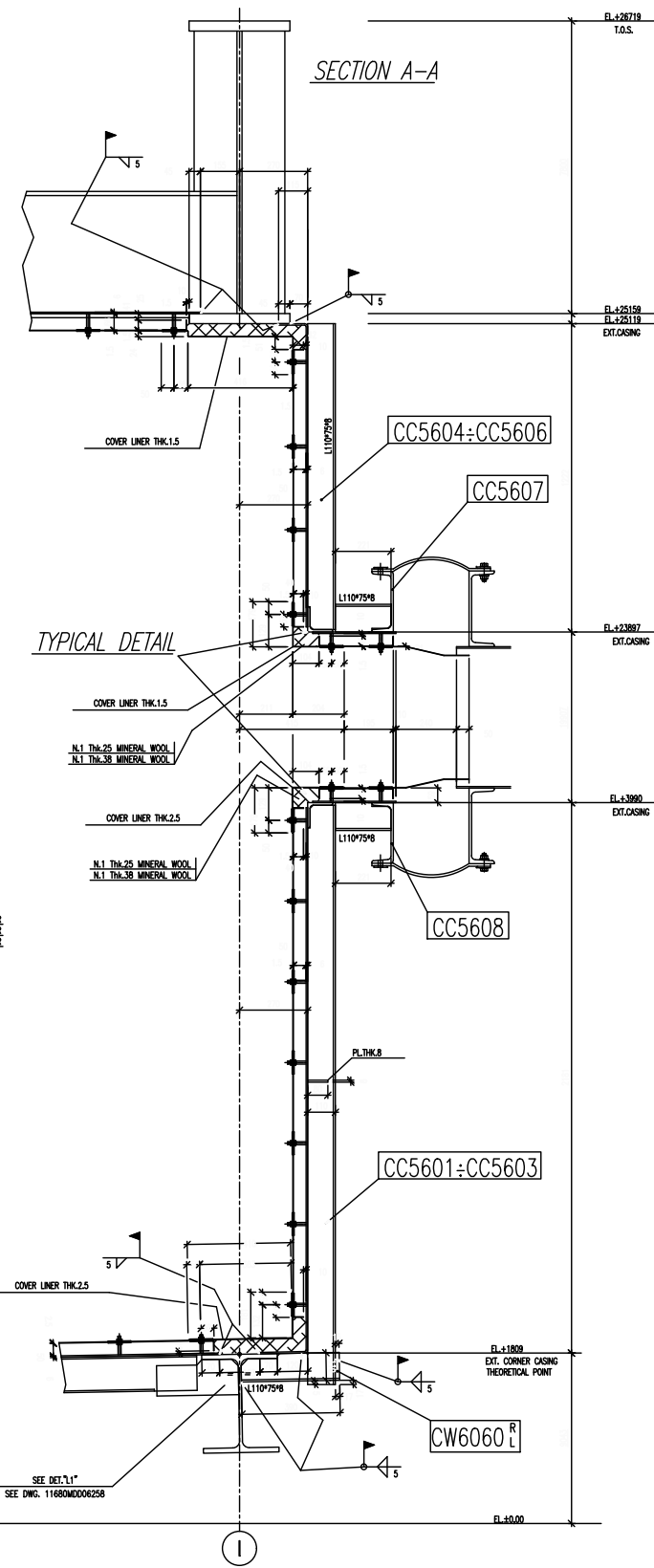
REAR SIDE EXTERNAL VIEW



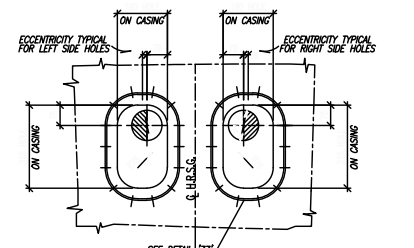
SECTION B-B



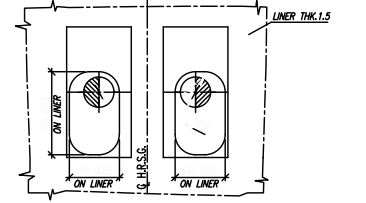
SECTION A-A



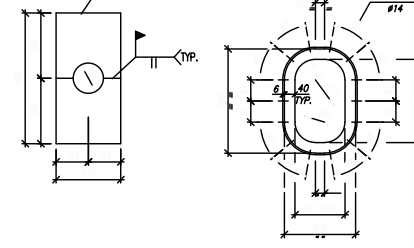
DETAIL "C1"



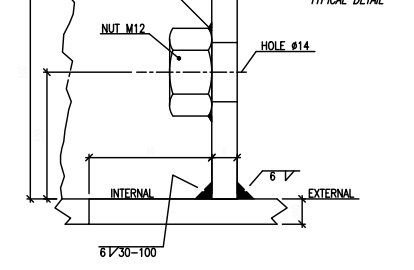
INTERNAL VIEW



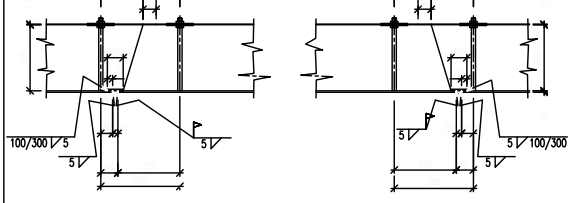
EXTERNAL VIEW



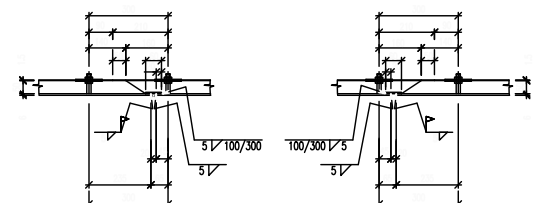
DETAIL "ZZ"



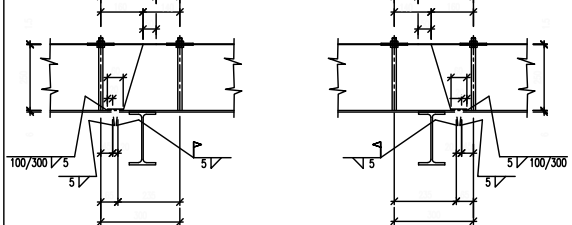
SECTION 36-36



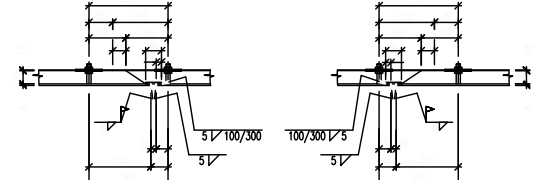
SECTION 34-34



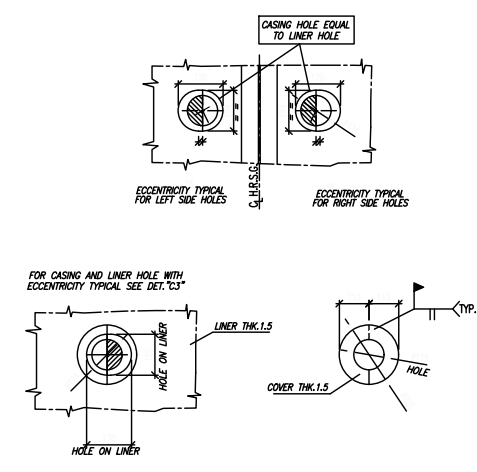
SECTION 37-37



SECTION 35-35



DETAIL "C3"



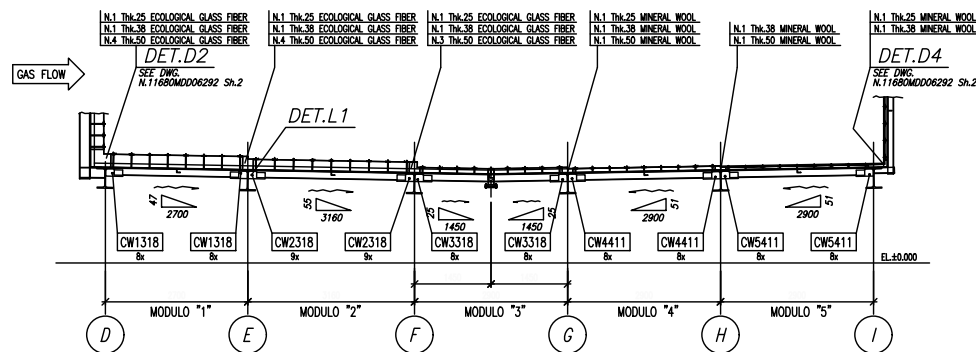
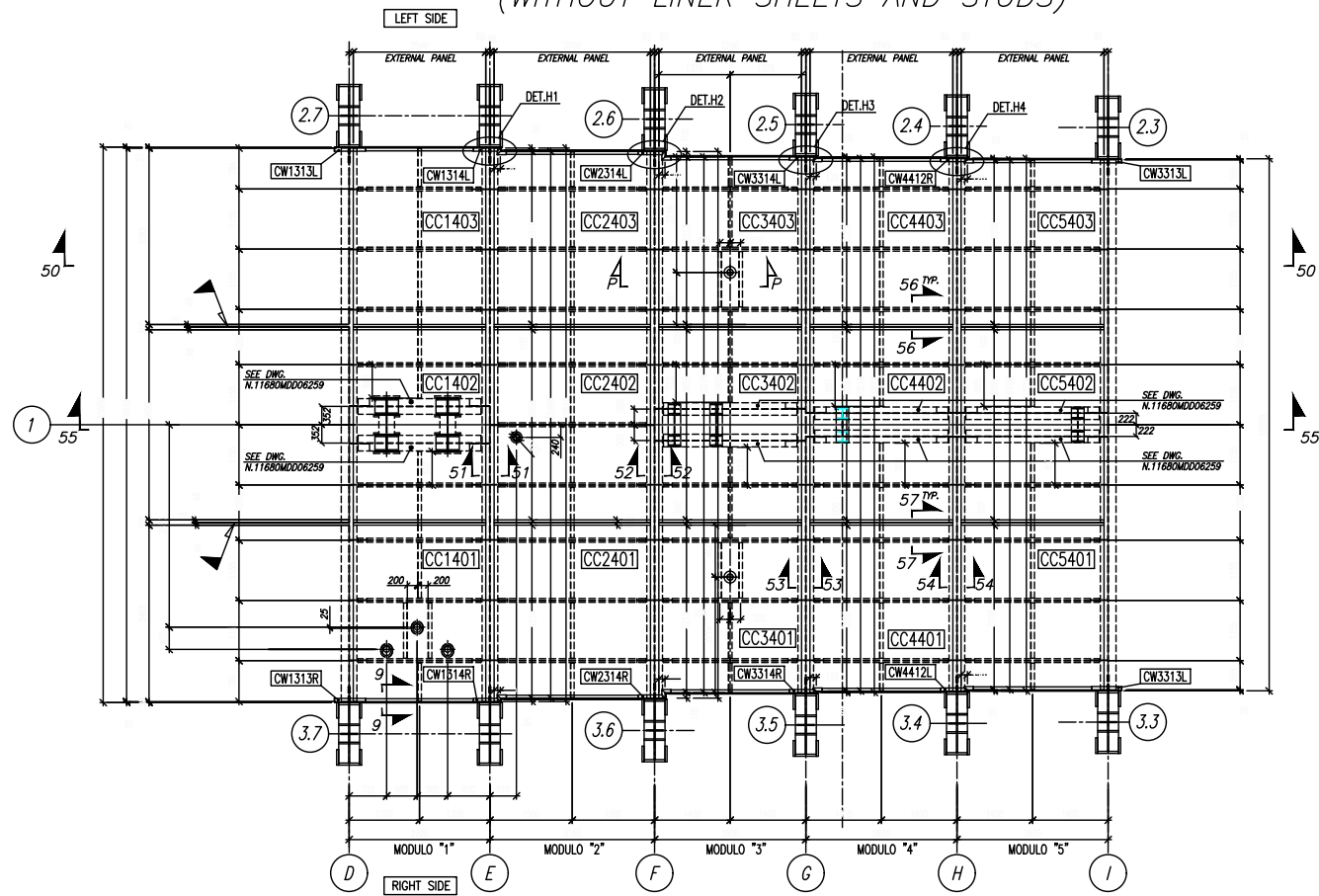
NOTES

FOR GENERAL NOTES, MATERIALS AND REFERENCE DRAWINGS SEE DWG. 11680MDD06292 SH1

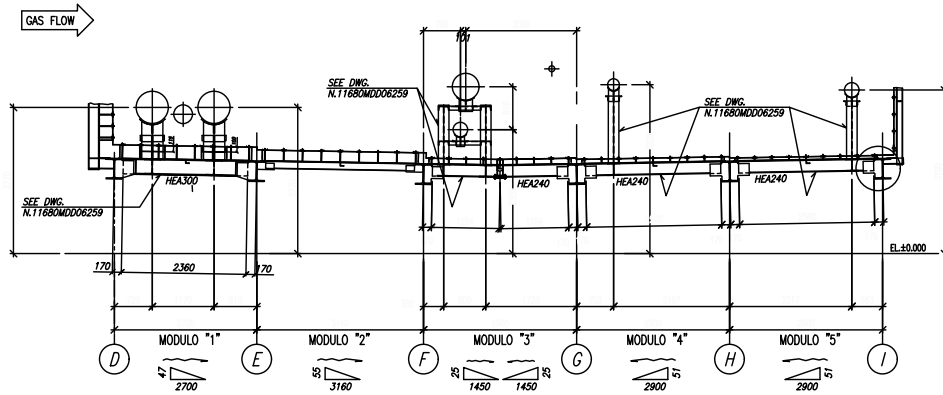
REV.	DATE	DESCRIPTION	SCALE	APPROVED	DATE
1	18-10-05	REVISED FOR LABELLING "AS BUILT" ONLY. NO OTHER CHANGES	1:50	A.N.	18/11/04
2	18-11-2004	FIELD WELD SYMBOLS ACC. AWS A2.4-98	1:50	A.N.	18/11/04
3	18-11-2004	CONTR./CHECK: HUTNI	1:50	A.N.	18/11/04
4	18-11-2004	CONTR./CHECK: HUTNI	1:50	A.N.	18/11/04
5	18-11-2004	CONTR./CHECK: HUTNI	1:50	A.N.	18/11/04

REV.	DATE	DESCRIPTION	SCALE	APPROVED	DATE
1	18-10-05	REVISED FOR LABELLING "AS BUILT" ONLY. NO OTHER CHANGES	1:50	A.N.	18/11/04
2	18-11-2004	FIELD WELD SYMBOLS ACC. AWS A2.4-98	1:50	A.N.	18/11/04
3	18-11-2004	CONTR./CHECK: HUTNI	1:50	A.N.	18/11/04
4	18-11-2004	CONTR./CHECK: HUTNI	1:50	A.N.	18/11/04
5	18-11-2004	CONTR./CHECK: HUTNI	1:50	A.N.	18/11/04

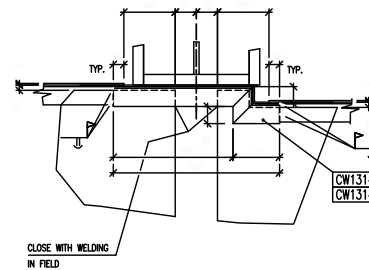
BOTTOM INTERNAL VIEW
(WITHOUT LINER SHEETS AND STUDS)



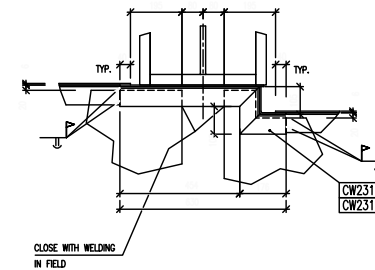
SECTION 50-50



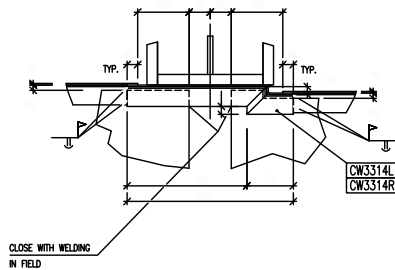
SECTION 55-55



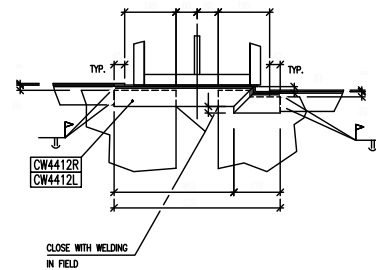
DETAIL "H1"



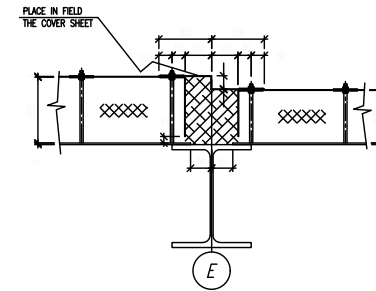
DETAIL "H2"



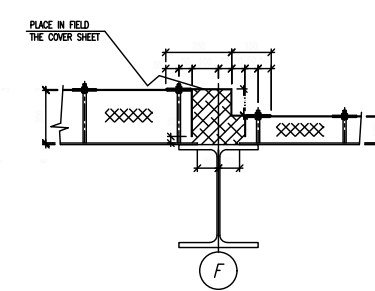
DETAIL "H3"



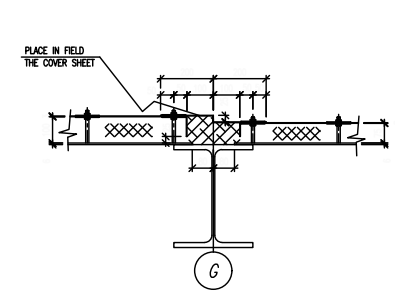
DETAIL "H4"



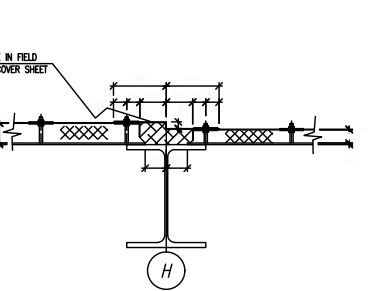
SECTION 51-51



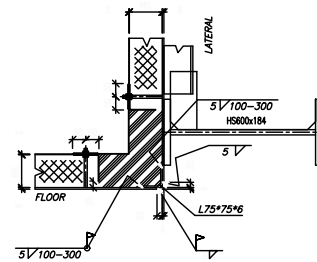
SECTION 52-52



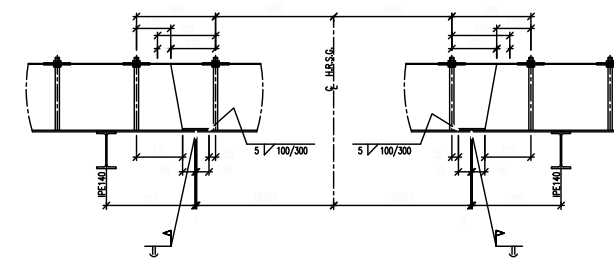
SECTION 53-53



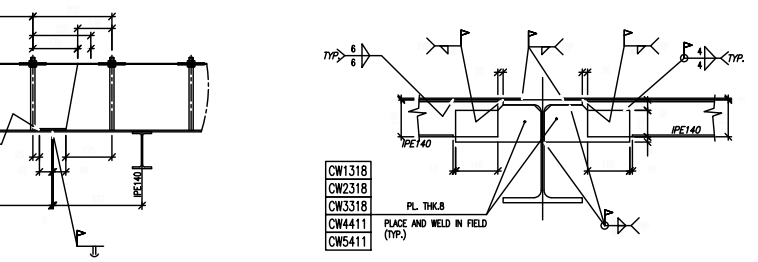
SECTION 54-54



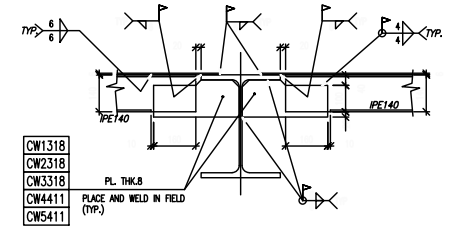
SECTION 9-9



SECTION 56-56

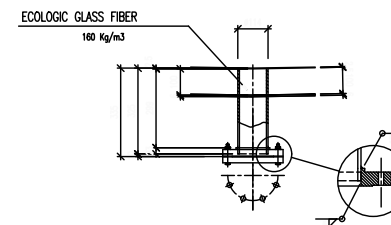


SECTION 57-57



DETAIL "L1"

P-P
M 1:10



Rev. 0 and above are RELEASED for ERECTION
KKS DWG.No. 5-HA-000-API-405

NOTES

FOR GENERAL NOTES, MATERIALS AND REFERENCE DRAWINGS SEE DWG. 11680MDD06292 Sh1

FIELD WELD SYMBOLS ACC. AWS A2.4-98



REV.	DATE	DESCRIPTION/Description	SCALE	FRONT/Signature	DATA/Date
1	18-10-05	REVISED FOR LABELLING "AS BUILT" ONLY. NO OTHER CHANGES	1:50	CONTR./Check: HUTNI	18/11/04
				CONTR./Check: HUTNI	18/11/04
				CONTR./Check: HUTNI	18/11/04
				CONTR./Check: HUTNI	18/11/04

REV.	DATE	DESCRIPTION/Description	SCALE	FRONT/Signature	DATA/Date
1	18-10-05	REVISED FOR LABELLING "AS BUILT" ONLY. NO OTHER CHANGES	1:50	CONTR./Check: HUTNI	18/11/04
				CONTR./Check: HUTNI	18/11/04
				CONTR./Check: HUTNI	18/11/04
				CONTR./Check: HUTNI	18/11/04

FABRIC EXPANSION JOINT – ERECTION DRAWING LIST

DRAWING NUMBER	REV.	DESCRIPTION
11680MDD06298	0	ERECTION DRAWING – COVER SHEET
04053516–01	A	DEKOMTE EXPANSION JOINT – TYPE 1RG – MARK "GT–1"
04053516–02	A	DEKOMTE EXPANSION JOINT – TYPE 1RG – MARK "GT–2"
04053516–03	A	DEKOMTE EXPANSION JOINT – TYPE 1RG – MARK "GT–3"
04053516–04	A	DEKOMTE EXPANSION JOINT – TYPE 1RG – MARK "GT–4"
04053516–05	A	DEKOMTE EXPANSION JOINT – TYPE 1RG – MARK "GT–5"
04053516–06	A	DEKOMTE EXPANSION JOINT – TYPE 1RG – MARK "GT–6"
04053516–07	A	DEKOMTE EXPANSION JOINT – TYPE 1RG – MARK "GT–7"
04053516–08	A	DEKOMTE EXPANSION JOINT – TYPE 1RG – MARK "GT–8"
04053516–09	A	DEKOMTE EXPANSION JOINT – TYPE 1RG – MARK "GT–9"
04053516–10	A	DEKOMTE EXPANSION JOINT – TYPE 1RG – MARK "GT–10"
04053516–12	A	DEKOMTE EXPANSION JOINT – TYPE 1RG – MARK "GT–12"
04053516–13	A	DEKOMTE EXPANSION JOINT – TYPE 1RG – MARK "GT–13"
04053516–14	A	DEKOMTE EXPANSION JOINT – TYPE 1RG – MARK "GT–14"
04053516–15	A	DEKOMTE EXPANSION JOINT – TYPE 1RG – MARK "GT–15"

NOTES:

MARKING INSTRUCTIONS FOR SHOP DRAWINGS AND ERECTION:

- EACH COMPONENT WILL BE MARKED AS INDICATED:

- EXAMPLE :

	GT-1
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DENOTES UNIT NUMBER

DENOTES ERECTION MARK

- ○ MEANS BILL OF MATERIAL POSITION. -SHOP

- □ MEANS MARK'S NUMBER. -ERECTION

NOTES:

- ALL DIMENSIONS ARE MILLIMETERS UNLESS DIFFERENTLY SHOWN.
- ALL ELEVATIONS REFER TO QUOTE +0,00 FINISHED GROUND FLOOR.
- ARRANGEMENT SHOWN IS FOR (1) ONE UNIT, (1) ONE UNIT ON THIS CONTRACT.
- FOR ALL OTHER MANUFACTURING, TESTING INSTRUCTIONS REFER TO M.R. 11680MDR06295.

NOTES FOR ERECTION:

- EXTERNAL SURFACE OF FABRIC JOINTS AND FLANGES SHALL NEVER BE COVERED BY PIPING INSULATION AND CLADDING.
- FABRIC JOINTS TO BE PROTECTED DURING ERECTION.

REFERENCE DRAWINGS:

- FOR HRSG FABRIC EXPANSION JOINT ASSEMBLY AND DETAILS SEE DWG. N. 11680MDD06295

Rev. 0 and above are
RELEASED for ERECTION

KKS DWG.No. 5-HA-000-API-367

1	18-10-05	REVISED FOR LABELLING "AS BUILT" ONLY. NO OTHER CHANGES	A.S.	A.R.	A.N.
REV.	DATA Date	DESCRIZIONE/Description	DIS. Dwg.	CONTR. Checked	VISTO Approv.
QUESTO DISEGNO E' PROPRIETA' DELLA ALSTOM Power Italia S.P.A. A TERMINE DI LEGGE NE E' VIETATA LA RIPRODUZIONE E LA COMUNICAZIONE A TERZI <u>This Drawing is the Property of ALSTOM Power Italia S.P.A.</u> The reproduction for any use by a third party is forbidden by law.			SCALA Scale	FIRME/Signature	DATA/Date
			1:20	DIS./Dwg. LR	20-01-05
				CONTR./Check. AR	10-02-05
				VISTO/Approv. AN	14-02-05
LAVRION – METKA H.R.S.G. FABRIC EXPANSION JOINT HEADERS & PIPES PENETRATION ERECTION DRAWING LIST					
ALSTOM					
ALSTOM Power Italia S.P.A.					
N°. DISEGNO/Drawing No.					TAV. / Sh. of
11680MDD06298					
REV.	1				