

DESIGN DATA		
BOILER EVAPORATOR CAPACITY	50 000 kg/hr	
DESIGN PRESSURE	2.5 N/mm ²	
MAX ALLOWABLE WORKING PRESSURE	2.5 N/mm ²	
HYDROSTATIC TEST PRESSURE	3.75 N/mm ²	
SATURATED STEAM TEMPERATURE	226 °C	
DESIGN TEMPERATURE	226 °C	
DRUM WATER CAPACITY	14 489 LITRES	
DRUM METAL WEIGHT	7 129 KG	
TOTAL DRUM WEIGHT	22 129 KG	
HEAT TREATMENT	REHEATED ON RSH DRG ONLY - REFER PARA 4.3.2	
NON RESTRICTION TEST		
BUTT WELDS ON DRUMS SHELL	100% RADIOGRAPHY TEST	
BUTT WELDS ON MANHOLE RING	100% MAGNETIC PARTICLE INSPECTION	
TUBE HOLES AT DRUM DRG. WELD	100% MAGNETIC PARTICLE INSPECTION	
CONSTRUCTION MATERIAL		
SHELL (BS 1501-223-235)	3	2450 x 4751 x 25.1 PLATE
HEAD (BS 1501-223-480A)	2	FORMED FROM 18 PLATE
MANHOLE RING (BS 1501-223-480A)	2	110 x 32 x 98.15

REV	DESCRIPTION	DATE	CHECKED	APPROVED
0	INITIAL ISSUE	26/06/2015	THAM YE	LA YK

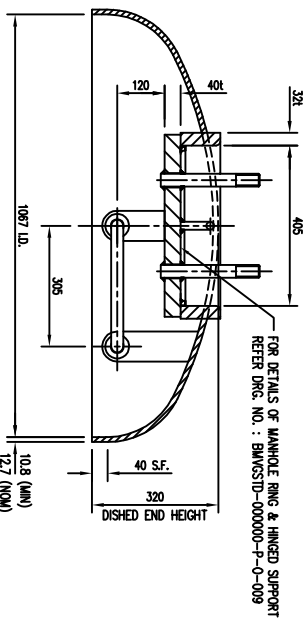
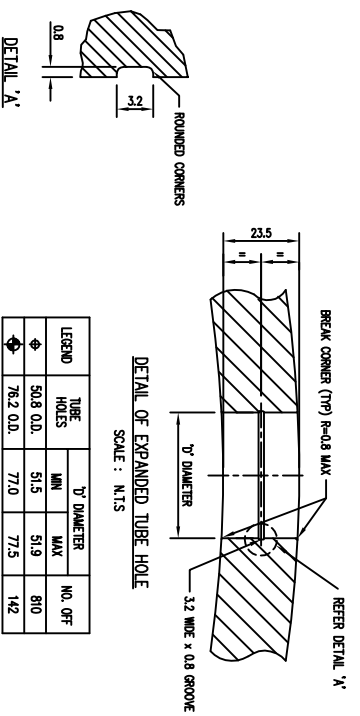
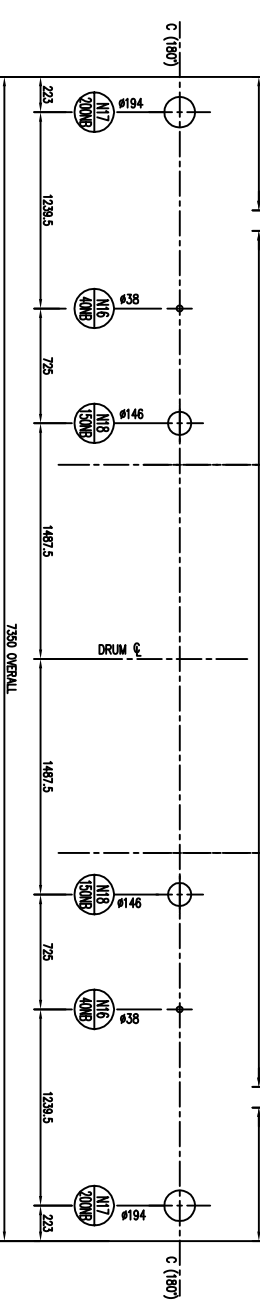
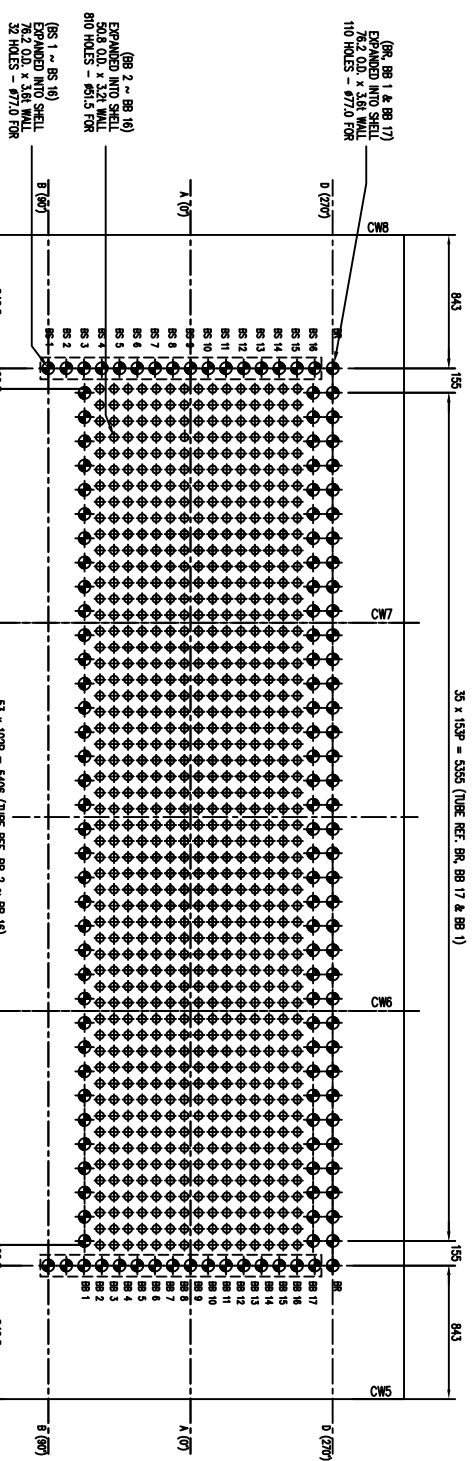
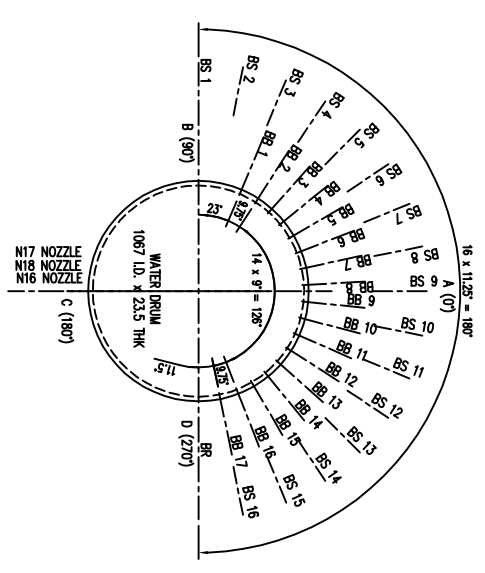
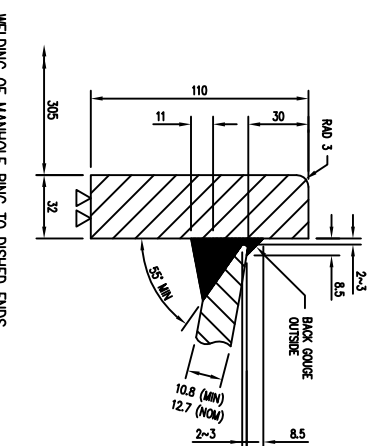
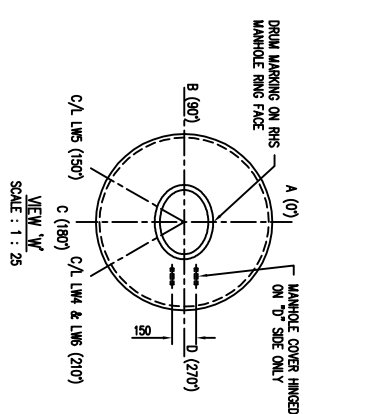
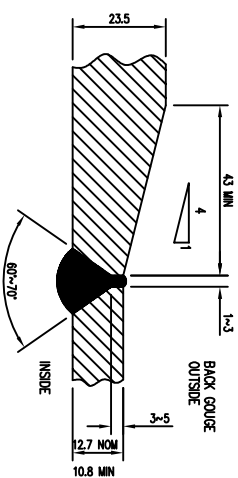
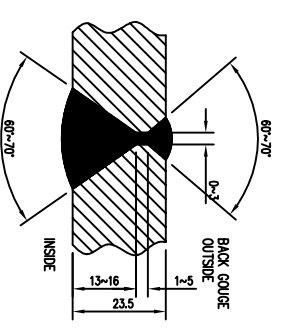
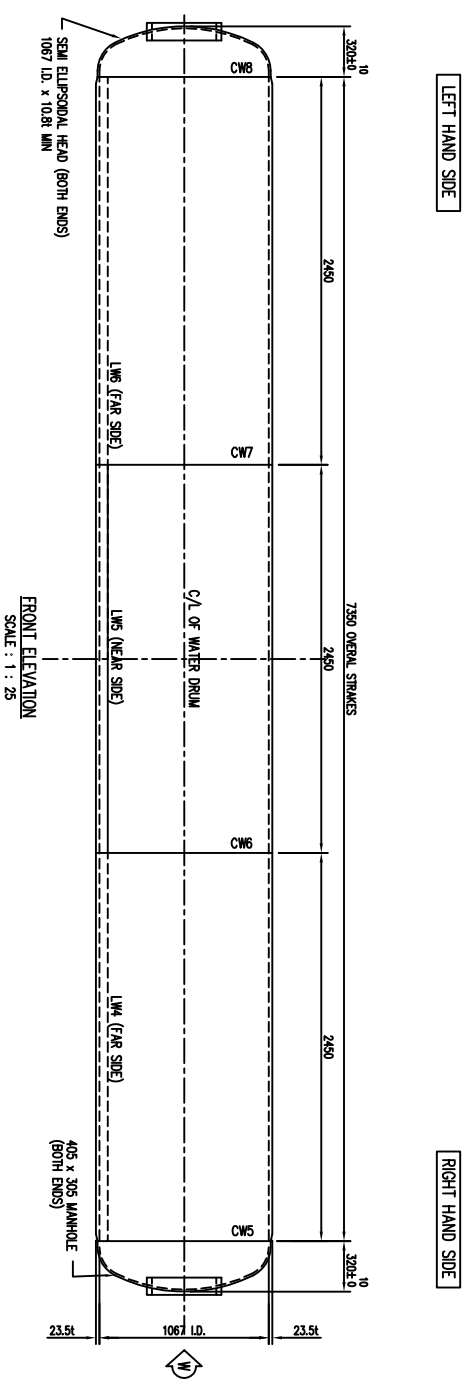
PURCHASER	
MANUFACTURER:	STOCK

MANUFACTURER:	
BOILERMECH SDN BHD	(COMPANY NO. 58098-0)
LOT 875, JALAN SIRANG 8	KAWASAN PERINDUSTRIAN SIRANG
47200 SIRANG JAYA, SELANGOR DARUL EHSAN	TEL: 603-8023 9137 FAX: 603-8023 2127

TITLE:	
STREAM DRUM WELDS & DRILLING DETAILS	SCALE: 1:10

DRAWN	
A FIZUAL	DATE: 26/06/2015
THAM YE	SCALE: AS SHOWN
LA YK	PROJECT NO.: BMVG-0465

APPROVED	
LA YK	REV: 0



DESIGN DATA

BOILER EVAPORATIVE CAPACITY	50,000 KG/HR
DESIGN PRESSURE	2.5 N/MM ²
MAX ALLOWABLE WORKING PRESSURE	2.5 N/MM ²
NOMINAL WORKING PRESSURE	2.0 N/MM ²
HYDROSTATIC TEST PRESSURE	3.75 N/MM ²
SATURATED STEAM TEMPERATURE	226 °C
DESIGN TEMPERATURE	226 °C
DRUM WATER CAPACITY	7,199 LITRES
DRUM METAL WEIGHT	5,080 KG
TOTAL DRUM WEIGHT	12,249 KG
HEAT TREATMENT	REHEATED IN RHS DRUM ONLY - REFER PARA 4.3.2

NON RESTRICTIVE TEST

BUTT WELDS ON DRUMS SHELL	100% RADIOGRAPHY TEST
BUTT WELDS ON MANHOLE RING	100% MAGNETIC PARTICLE INSPECTION
TUBE HOLES AT DRUM DRG. WELD	100% MAGNETIC PARTICLE INSPECTION

CONSTRUCTION MATERIAL

PART	QTY	DESCRIPTION
SHELL (BS EN 10028 P235NH)	3	2490 x 3408 x 23.51 PLATE
HEAD (BS 1501-223-480A)	2	FORMED FROM 1271 PLATE
MANHOLE RING (BS 1501-223-480A)	2	110 x 32 x 985 UG

- NOTES:**
- ALL DIMENSIONS IN MILLIMETRES.
 - WELL CERTIFICATES REQUIRED FOR ALL PLATES AND HEAT NO. TO BE STAMPED ON EACH STRIKE AND ALL OFF CUTS.
 - FOR STEAM DRUM NOZZLES AND WELDMENT.
 - REFER DRG. NO.: BMV0465-B50250-P-0-007.
 - ALL WELDS TO COMPLY SHIP WELDING PROCEDURE SPECIFICATION (WPS) APPROVED BY QUALIFIED THIRD INSPECTION PARTY.
 - HYDROSTATIC TEST TO BE APPLIED PRIOR TO EXPANDING BOILER TUBE HOLES DRILLING.
 - TUBE HOLES TO BE DRILLED UNDER SIZE & THEN REAMED TO FINISHED DIMENSIONS. SURFACE FINISHING TO COMPLY CODE SECTION 4.4.4.2.
 - PRIOR TO FINAL INSPECTION FOR DESPATCH, ALL SLAG, DRG. CRT. WELD SPATTER AND OTHER FOREIGN MATTERS TO BE REMOVED FROM DRUMS.

DESIGN CODE : **BS 1113 : 1999 EDITION**

RESERVE FOR THIRD PARTY STAMP

RESERVE FOR DASH STAMP

REV.	DESCRIPTION	DATE	CHECKED	APPROVED
0	INITIAL ISSUE	26/06/2015	THAM YE	LA YK

PURCHASER : **STOCK**

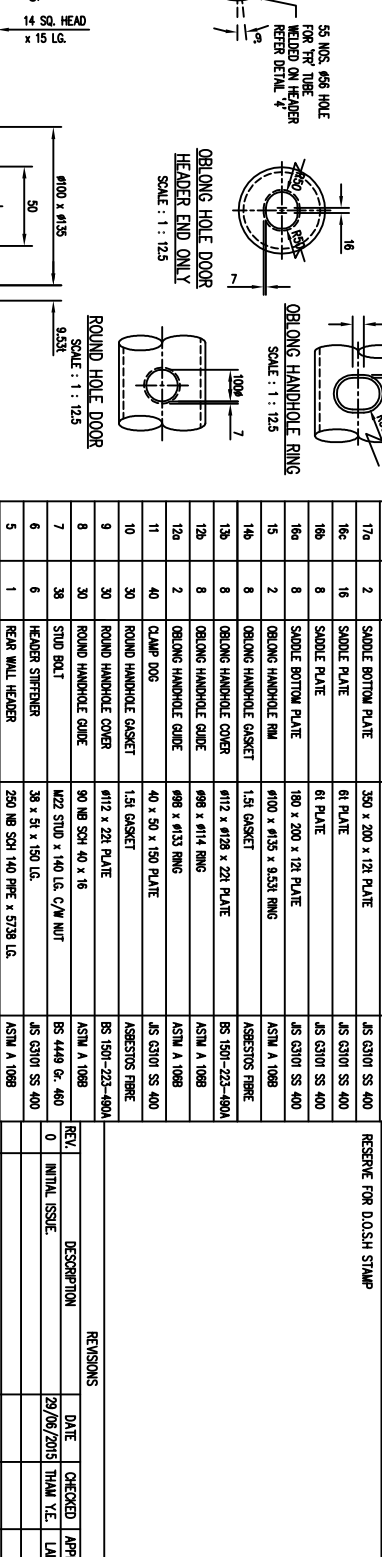
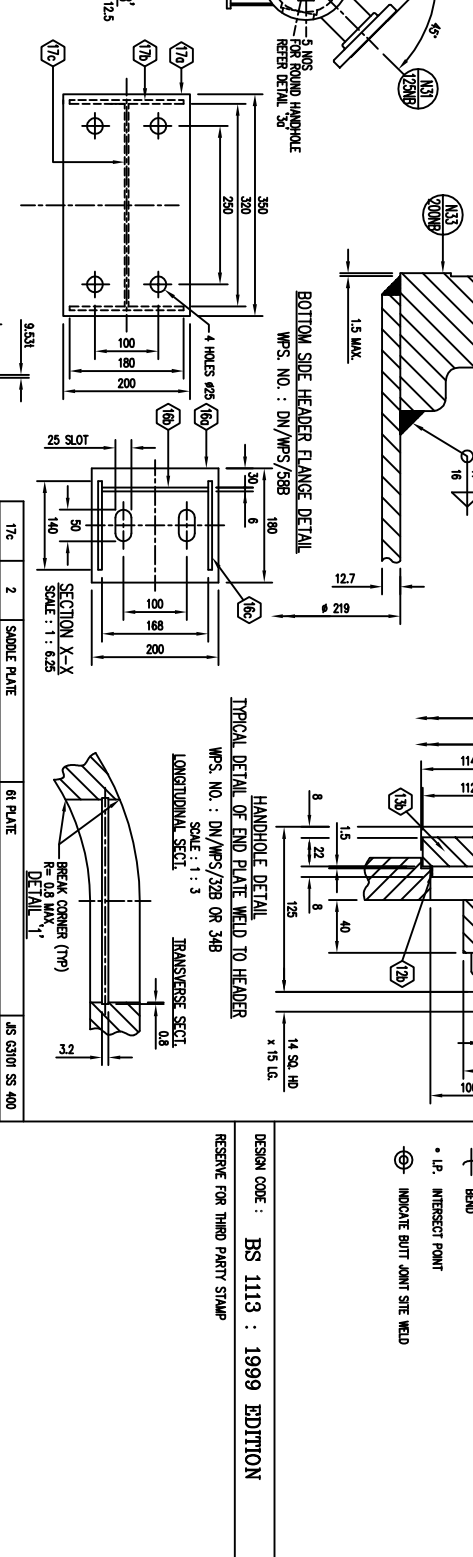
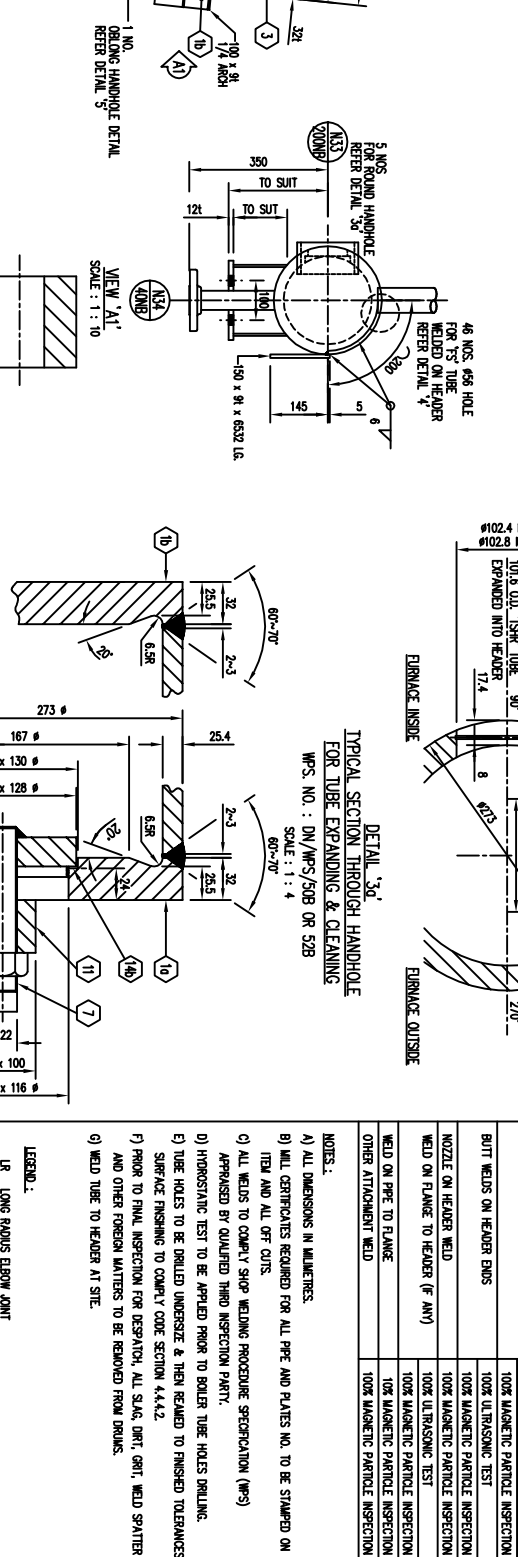
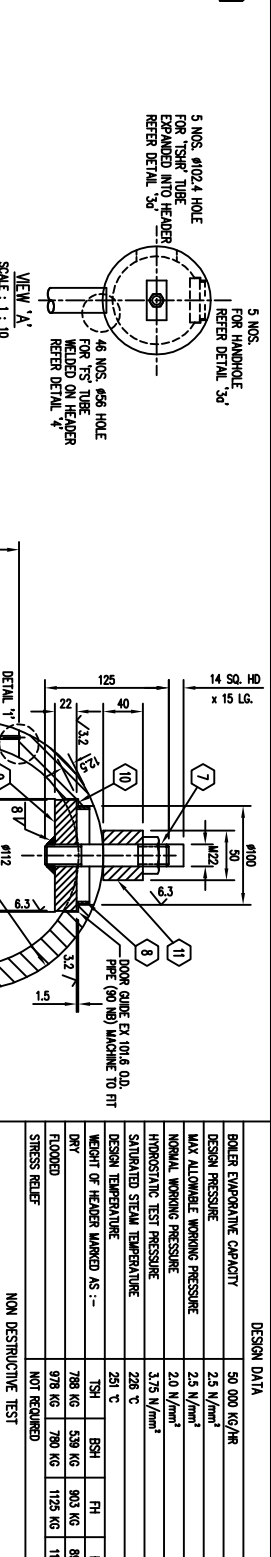
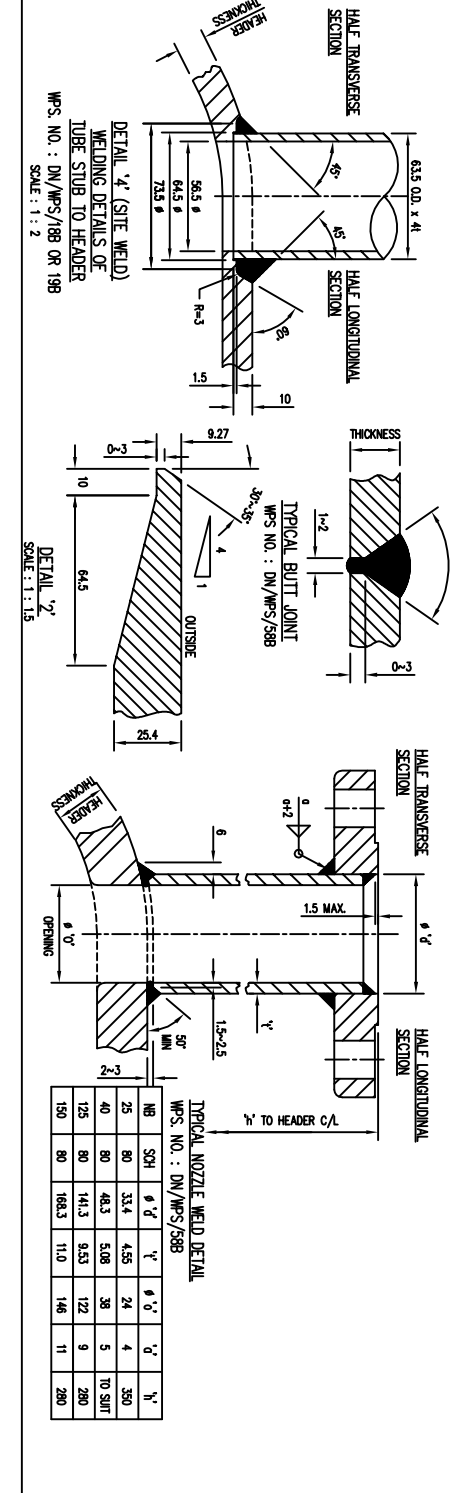
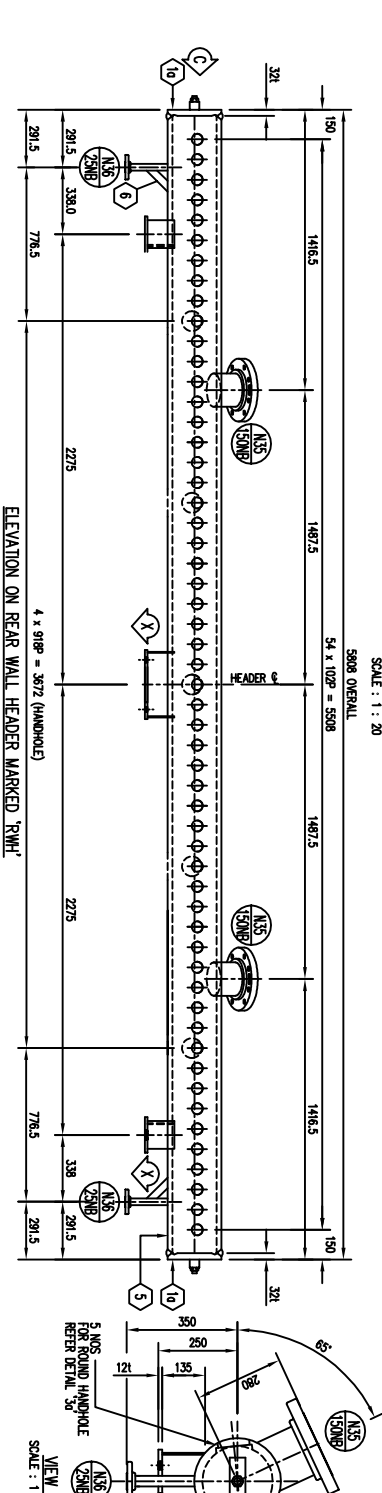
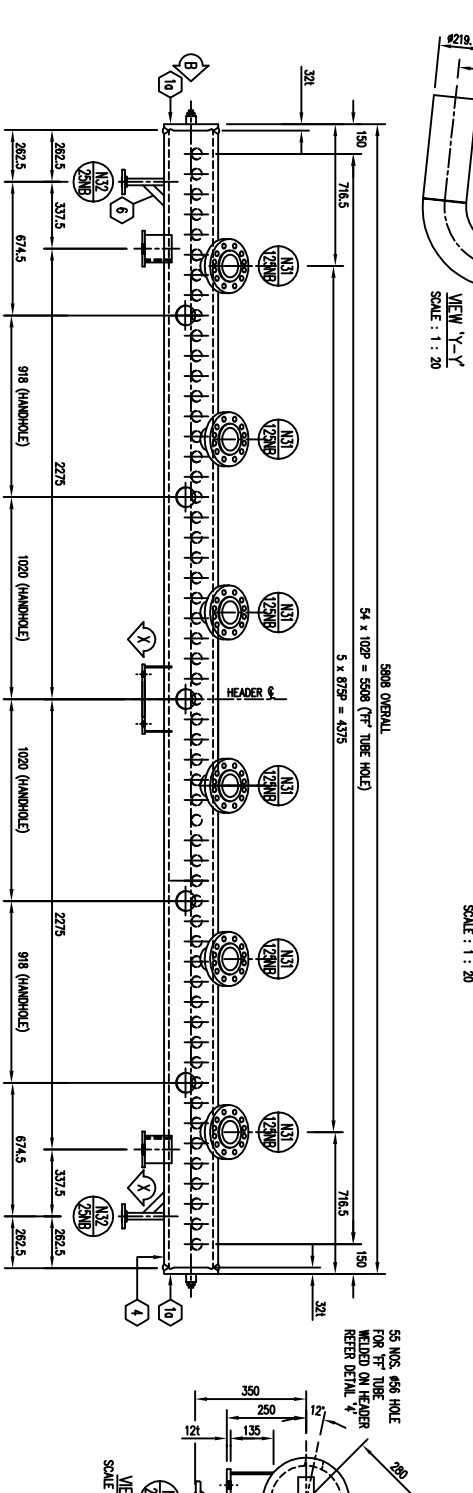
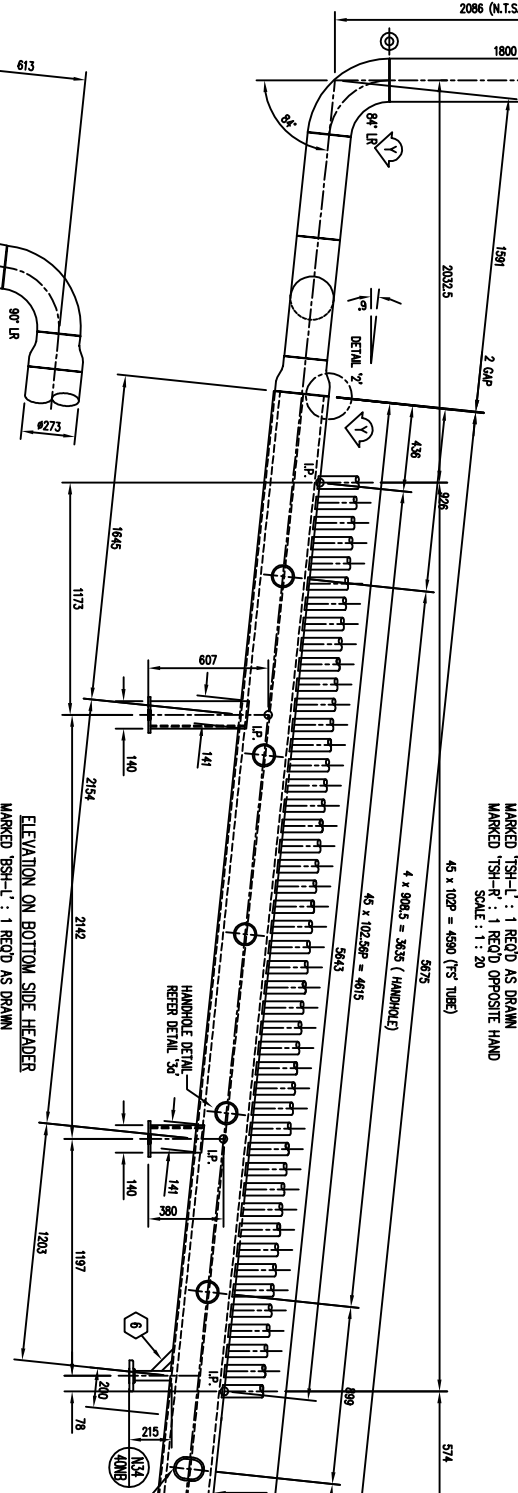
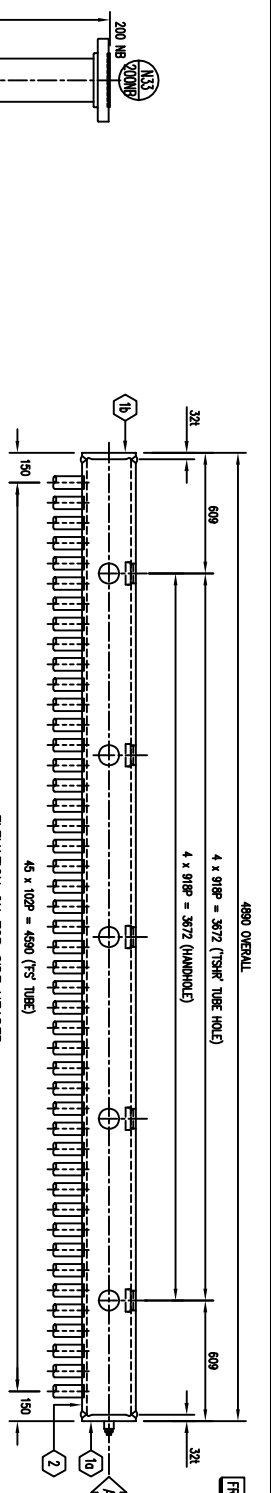
MANUFACTURER:

BOILERMECH SDN BHD
 (COMPANY NO. 88098-I)
 LOT 875, JALAN SIRIANG 8
 KAWASAN PERINDUSTRIAN SIRIANG
 47200 SIRIANG JAYA, SELANGOR DARUL EHSAN
 TEL: 603-8023 9137 FAX: 603-8023 2127

BOILER MODEL:
BMV0-50-25
50,000 KG/HR WATER TUBE BOILER

TITLE:
WATER DRUM WELDS & DRILLING DETAILS

DRAWN	A FIZAL	DATE	26/06/2015
CHECKED	THAM YE	SCALE	AS SHOWN
APPROVED	LA YK	PROJECT NO.	BMV0-0465
DRG. NO.	BMV0465-B50250-P-0-003	REV	0



ITEM NO.	REQ.	PART	DESCRIPTION	MATERIAL
176	4	SCOOLE PLATE	81 PLATE	JS C301 SS 400
177	2	SCOOLE BOTTOM PLATE	350 x 200 x 121 PLATE	JS C301 SS 400
178	2	SCOOLE PLATE	81 PLATE	JS C301 SS 400
186	16	SCOOLE PLATE	81 PLATE	JS C301 SS 400
187	8	SCOOLE BOTTOM PLATE	180 x 200 x 121 PLATE	JS C301 SS 400
188	8	OBLONG HANDHOLE RING	4100 x 4135 x 825 RING	ASTM A 1088
189	2	OBLONG HANDHOLE COVER	4112 x 4128 x 221 PLATE	BS 1501-221-490A
190	8	OBLONG HANDHOLE GASKET	498 x 4114 RING	ASTM A 1088
191	8	OBLONG HANDHOLE GASKET	498 x 4113 RING	ASTM A 1088
192	40	CLAMP DOG	40 x 50 x 150 PLATE	JS C301 SS 400
193	20	ROUND HANDHOLE GASKET	1.5\"/>	
194	30	ROUND HANDHOLE COVER	4112 x 221 PLATE	BS 1501-221-490A
195	30	ROUND HANDHOLE GASKET	40 NB SCH 40 x 16	ASTM A 1088
196	38	STUD BOLT	M22 STD x 140 LC. C/W NUT	BS 4449 G. 440
197	6	HEADER STRENGTHEN	38 x 51 x 150 LC.	JS C301 SS 400
198	1	REAR WALL HEADER	250 NB SCH 140 PRE x 5728 LC.	ASTM A 1088
199	4	FRONT HEADER	250 NB SCH 140 PRE x 5728 LC.	ASTM A 1088
200	2	BOTTOM SIDE HEADER	250 NB SCH 140 PRE x 5840 LC.	ASTM A 1088
201	4	HEADER END	250 NB SCH 140 PRE x 4820 LC.	ASTM A 1088
202	4	HEADER END W/COVER	4273 x 221 PLATE	BS 1501-221-490A
203	2	REAR HEADER DRUM	NOZZLE : 25 NB SCH 80 PRE FLANGE : 200 NB MS B16.5 CLASS 300 S9F	ASTM A 1088
204	2	REAR HEADER SUPPLY	NOZZLE : 40 NB SCH 80 PRE FLANGE : 200 NB MS B16.5 CLASS 300 S9F	ASTM A 105
205	2	BOTTOM SIDE HEADER DRUM	NOZZLE : 25 NB SCH 80 PRE FLANGE : 200 NB MS B16.5 CLASS 300 S9F	ASTM A 1088
206	2	BOTTOM SIDE HEADER SUPPLY	NOZZLE : 40 NB SCH 80 PRE FLANGE : 200 NB MS B16.5 CLASS 300 S9F	ASTM A 105
207	2	FRONT HEADER DRUM	NOZZLE : 25 NB SCH 80 PRE FLANGE : 200 NB MS B16.5 CLASS 300 S9F	ASTM A 1088
208	2	FRONT HEADER SUPPLY	NOZZLE : 40 NB SCH 80 PRE FLANGE : 200 NB MS B16.5 CLASS 300 S9F	ASTM A 105

DESIGN DATA	
BOILER EVAPORATOR CAPACITY	50,000 KG/HR
DESIGN PRESSURE	2.5 N/m ²
MAX ALLOWABLE WORKING PRESSURE	2.5 N/m ²
NOMINAL WORKING PRESSURE	2.0 N/m ²
HYDROSTATIC TEST PRESSURE	3.75 N/m ²
SATURATED STEAM TEMPERATURE	226 °C
DESIGN TEMPERATURE	226 °C
WEIGHT OF HEADER MARKED AS --	TSR 788 KG, S9H 903 KG, FH 995 KG, DRT 978 KG, 780 KG, 1125 KG, 1177 KG
STRESS RELIEF	NOT REQUIRED

- NOTES:
- ALL DIMENSIONS IN MILLIMETERS.
 - ALL CERTIFICATES REQUIRED FOR ALL PRE AND PLATES NO. TO BE STAMPED ON EACH ITEM AND ALL CUTS.
 - ALL WELDS TO COMPLY SHOP WELDING PROCEDURE SPECIFICATION (WPS).
 - APPROVED BY QUALIFIED THIRD INSPECTION PARTY.
 - HYDROSTATIC TEST TO BE APPLIED PRIOR TO BOILER TUBE HOLES DRILLING.
 - TUBE HOLES TO BE DRILLED UNDERSTRESS & THEN REAMED TO FINISHED TOLERANCES. SURFACE FINISHING TO COMPLY CODE SECTION 4.4.4.2.
 - PRIOR TO FINAL INSPECTION FOR DISPATCH, ALL SLAG, DIRT, GRIT, WELD SPATTER AND OTHER FOREIGN MATTERS TO BE REMOVED FROM DRUMS.
 - WELD TUBE TO HEADER AT SITE.

- LEGEND:
- LR LONG RADIUS ELBOW JOINT
 - BRND BEND
 - IP INTERSECT POINT
 - INDICATE BUTT JOINT SITE WELD

DESIGN CODE : BS 1113 : 1999 EDITION

RESERVE FOR THIRD PARTY STAMP

REV.	DESCRIPTION	DATE	CHECKED	APPROVED
0	INITIAL ISSUE	29/06/2015	THAM YE	LA YK

RESERVE FOR D.O.S.H STAMP

PURCHASER :

STOCK

MANUFACTURER :

BOILERMECH SDN BHD
(COMPANY NO. 58098-01)
LOT 875, JALAN SERANG 8
TAMAN PERINDUSTRIAN SERANG
47200 SERANG, JAYA, SELANGOR DARUL EHSAN
TEL: 603-8023 9137 FAX: 603-8023 2127

BOILER MODEL : BMFG-50-25

50,000 KG/HR WATER TUBE BOILER

SATURATED WATER/STEAM HEADERS

DRAWN	DATE
A. FIZAL	29/06/2015

CHECKED	SCALE
THAM YE	AS SHOWN

APPROVED	PROJECT NO.
LA YK	BMFG-0465

DWG. NO.	REV.
BMFG0465-BMFG250-P-0-004	0

DESIGN DATA

BOILER EVAPORATIVE CAPACITY	50,000 KG/HR
DESIGN PRESSURE	2.5 N/mm ²
MAX ALLOWABLE WORKING PRESSURE	2.5 N/mm ²
NORMAL WORKING PRESSURE	2.0 N/mm ²
HYDROSTATIC TEST PRESSURE	3.75 N/mm ²
SATURATED STEAM TEMPERATURE	226 °C
DESIGN TEMPERATURE	251 °C

NON DESTRUCTIVE TEST

BLT WELDS ON 200 NB PIPE AND ABOVE	100% RADIOGRAPHY TEST
BLT WELDS ON OTHER PIPE SIZE	100% MAGNETIC PARTICLE INSPECTION
WELD ON PIPE TO FLANGE	100% MAGNETIC PARTICLE INSPECTION

NOTES:

- ALL DIMENSIONS IN MILLIMETRES.
- ALL PIPES TO ASTM A 106 OR B.
- ALL OTHER FLANGES TO ANSI B16.5 CLASS 300 SOLEF. MATERIAL TO ASTM A 105 UNLESS OTHERWISE STATED.
- BEND RADIUS AS INDICATED OR EQUIVALENT TO L.R. ELBOW.
- ALL ELBOW & FITTINGS TO ASTM A 234 WPB.
- LENGTH ON C/L INDICATES LENGTH BEFORE BENDING.
- QUANTITIES SHOWN ARE FOR ONE BOILER.

LEGEND:

- L.R LONG RADIUS ELBOW JOINT
- BRND
- ⊕ DENOTES BUTT JOINT SITE WELD POSITION

DESIGN CODE : **BS 1113 : 1999 EDITION**

RESERVE FOR THIRD PARTY STAMP

RESERVE FOR D.O.S.H STAMP



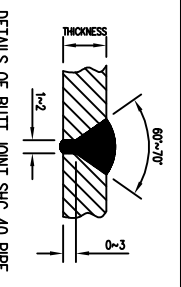
BOILERMECH SDN BHD
 (COMPANY NO. 58098-U)
 LOT 875, JALAN SIRIANG 8
 TAMAN PERINDUSTRIAN SIRIANG
 47920 SIRIANG JAYA, SELANGOR DARUL EHSAN
 TEL: 603-8023 9137 FAX: 603-8023 2127

BOILER MODEL : **BMVG-50-25**
50,000 KG/HR WATER TUBE BOILER

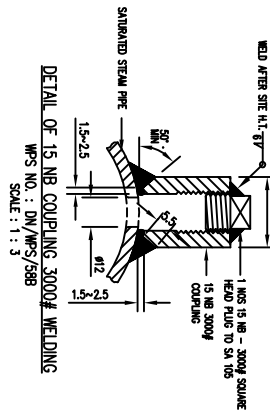
TITLE : **HEADER CONNECTORS**

DRAWN	A.FAZLAL	DATE	06/07/2015
CHECKED	THAM YE	SCALE	AS SHOWN
APPROVED	LA YK	PROJECT NO.	BMVT-0465
DRG. NO.	BMVG0465-B50250-P-0-005	REV	0

DESCRIPTION	MARK	SIZE	NO. REQD.	RADIUS ON TUBE C/L	MATERIAL
TOP SIDE HEADER RISER	TSR L/R	101.6 O.D. x 4.881 x 2460 LG	1 EACH	480	BS 3099-P1-320
		90 NB x SCH 40 LR ELBOW	1 EACH	133.3	ASTM A 234 WPB
	TSR L/2R	101.6 O.D. x 4.881 x 3946 LG	1 EACH	480	BS 3099-P1-320
	TSR L/2R	101.6 O.D. x 4.881 x 5172 LG	1 EACH	480	"
	TSR L/R	101.6 O.D. x 4.881 x 6498 LG	1 EACH	480	"
	TSR L/2R	101.6 O.D. x 4.881 x 7924 LG	1 EACH	480	BS 3099-P1-320
FRONT HEADER SUPPLY	FHS L/R	125 NB x SCH 40 x 15394 LG	1 EACH	152.4	ASTM A 105
		125 NB x SCH 40 LR ELBOW	4 EACH	152.4	ASTM A 234 WPB
	FHS L/2R	125 NB x SCH 40 x 15811 LG	1 EACH	152.4	ASTM A 105
		125 NB x SCH 40 LR ELBOW	4 EACH	152.4	ASTM A 234 WPB
	FHS L/2R	125 NB x SCH 40 x 1761 LG	1 EACH	152.4	ASTM A 105
		150 NB x SCH 40 LR ELBOW	1 EACH	228.6	ASTM A 234 WPB
REAR WALL HEADER SUPPLY	RHS L/R	150 NB x SCH 40 x 4712 LG	1 EACH	304.8	ASTM A 105
		200 NB x SCH 40 LR ELBOW	2 EACH	304.8	ASTM A 105
		200 NB x SCH 40 LR ELBOW	2 EACH	304.8	ASTM A 234 WPB
MAIN STEAM SUPPLY	MSS	250 NB x SCH 40 x 787 LG	1	-	ASTM A 105
		FLANGE 250 NB TO ANSI B16.5 CLASS 300 SOLEF.	1	-	ASTM A 105
		250 NB x 200NB x SCH 40 ECCENTRIC REDUCER	2	-	ASTM A 234 WPB
		250 NB x SCH 40 EQUAL TEE	1	-	ASTM A 234 WPB



DETAILS OF BUTT JOINT SHC 40 PIPE & WELDING FITTING
 WPS NO. : DN/WPS/588

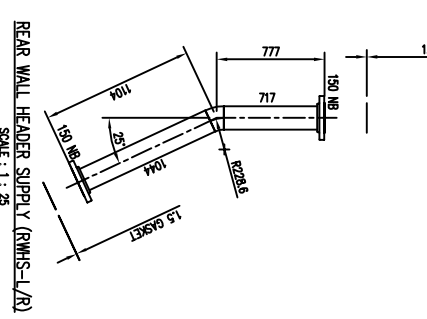


DETAIL OF 15 NB COUPLING 3000# WELDING
 WPS NO. : DN/WPS/588
 SCALE : 1 : 1.3

TUBE	DIMENSION
FHS LR	2885 3220
FHS 2R	2887 2299
FHS 3R	2550 1379

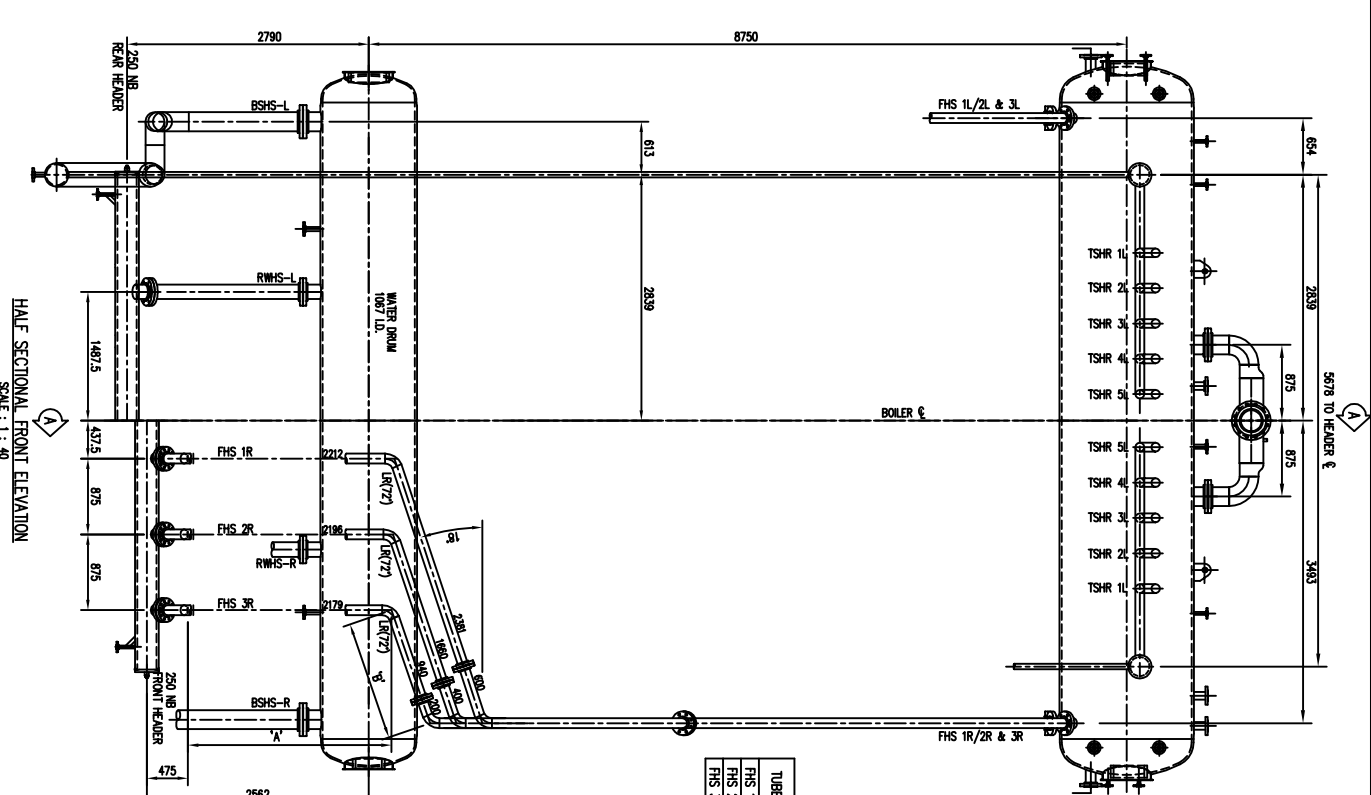
NB	SCH	4" T	6" T	8" T
125	40	141.3	6.55	6
150	40	168.3	7.11	7
200	40	219.1	8.18	8
250	40	273.1	9.27	9

TYPICAL FLANGE JOINT
 WPS NO. : DN/WPS/588

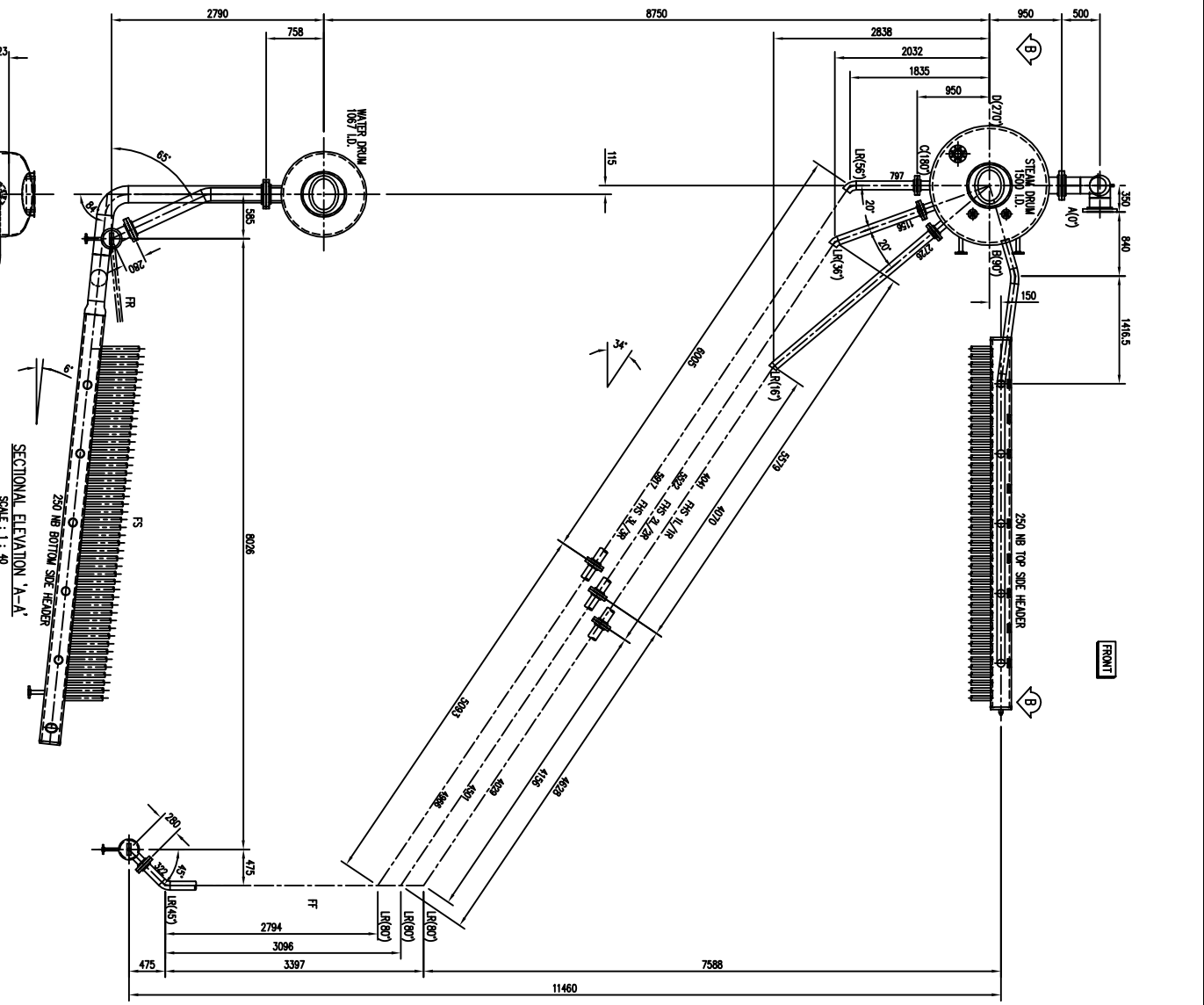


REAR WALL HEADER SUPPLY (RHS-L/R)
 SCALE : 1 : 25

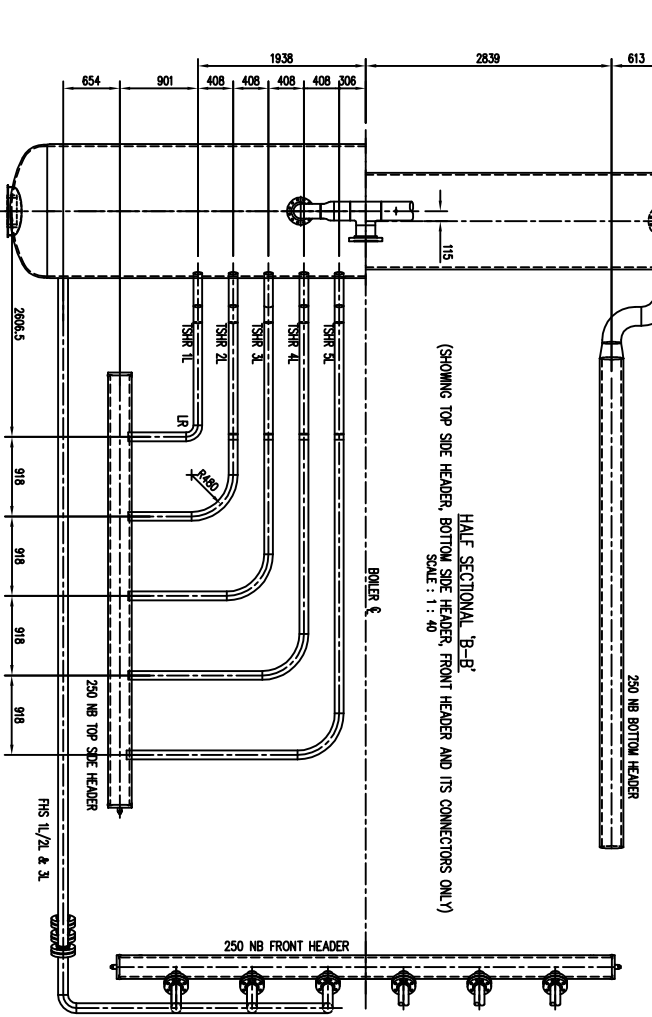
HALF SECTIONAL FRONT ELEVATION
 SCALE : 1 : 40



SECTIONAL ELEVATION 'A-A'
 SCALE : 1 : 40

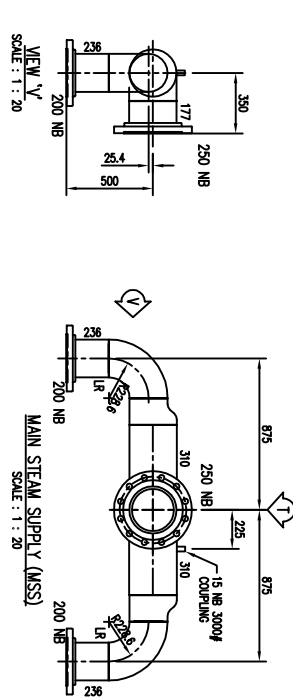


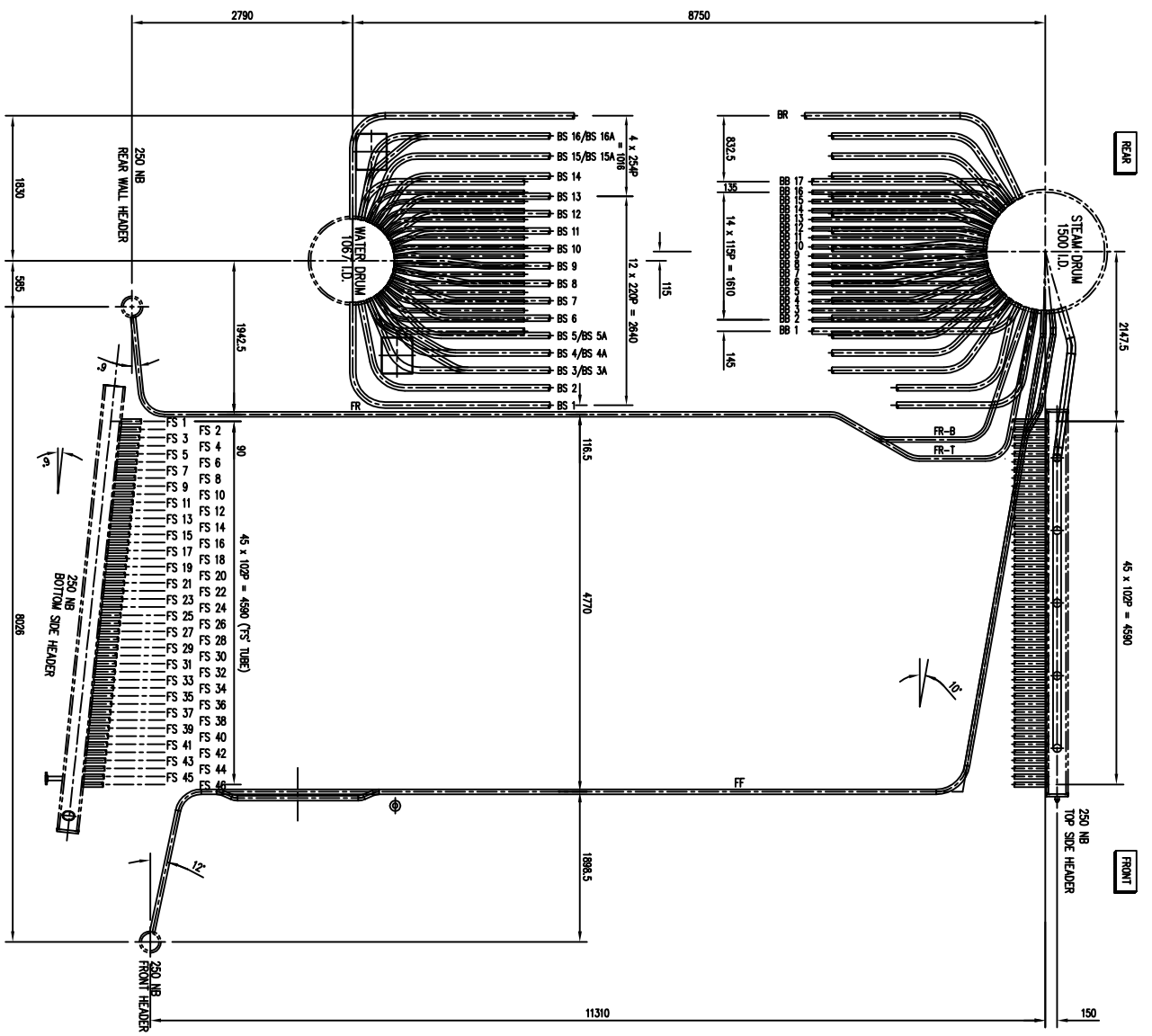
HALF SECTIONAL 'B-B'
 (SHOWING TOP SIDE HEADER, BOTTOM SIDE HEADER, FRONT HEADER AND ITS CONNECTORS ONLY)
 SCALE : 1 : 40



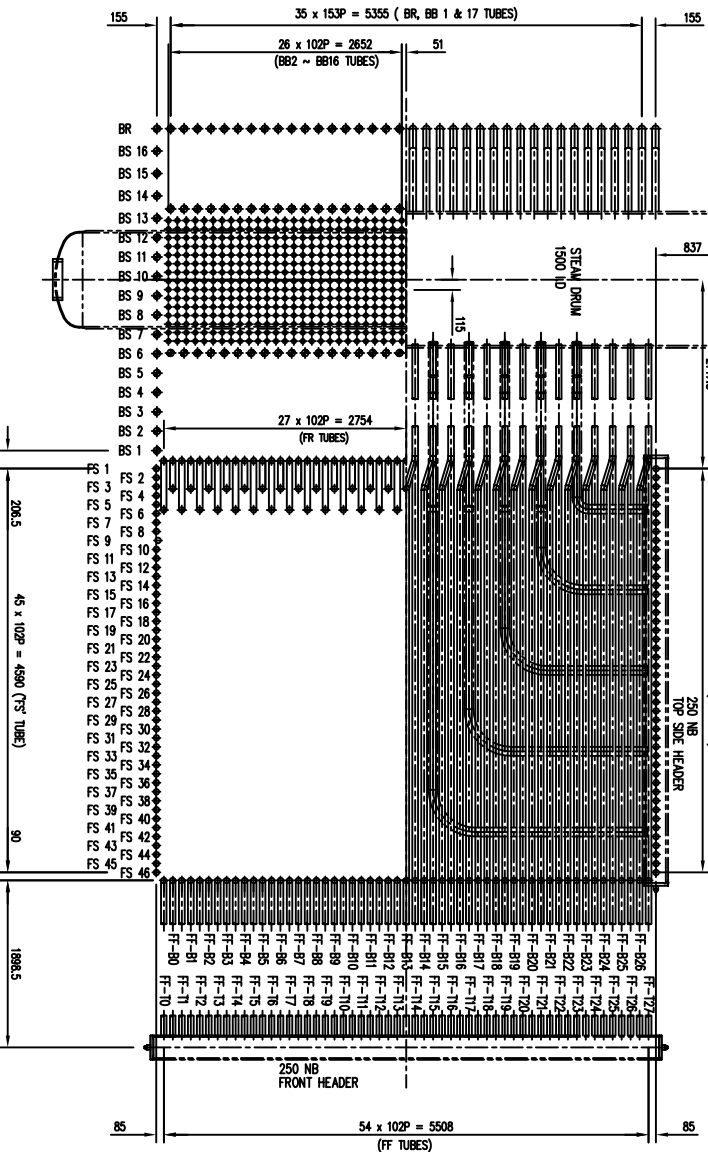
VIEW 'V'
 SCALE : 1 : 20

MAIN STEAM SUPPLY (MSS)
 SCALE : 1 : 20



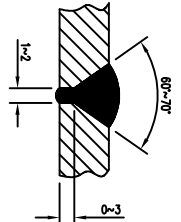


SECTIONAL ELEVATION
SCALE: 1 : 40



HALF SECTIONAL ELEVATION A-A
SCALE: 1 : 40

EURNACE FRONT TUBE				EURNACE SIDE TUBE				
TUBE	QTY.	LENGTH ON C/L	TUBE	QTY.	LENGTH ON C/L	TUBE	QTY.	LENGTH ON C/L
FF-1	1	4929	FF-29	1	4833	BS 1	2	1046
FF-2	1	4929	FF-30	1	4917	BS 2	2	9905
FF-3	1	4955	FF-31	1	4917	BS 3	1	9094
FF-4	1	4955	FF-32	1	4742	BS 3A	1	8945
FF-5	1	4455	FF-33	1	4455	BS 4	1	8995
FF-6	1	4742	FF-34	1	4455	BS 4A	1	9475
FF-7	1	4777	FF-35	1	4955	BS 5	1	8207
FF-8	1	4917	FF-36	1	4929	BS 5A	1	8161
FF-9	1	4853	FF-37	1	4955	BS 6	2	7908
FF-10	1	4883	FF-38	1	4429	BS 7	2	7892
FF-11	1	4883	FF-39	1	4429	BS 8	2	7553
FF-12	1	4883	FF-40	1	4429	BOILER BANK TUBE		
FF-13	1	4817	FF-41	1	4429	TUBE SIZE : 76.2 O.D. x 3.6 THK		
FF-14	1	4777	FF-42	1	4429	BENDING RADIUS : 410mm		
FF-15	1	4742	FF-43	1	4429	BOILER BANK TUBE		
FF-16	1	4455	FF-44	1	4429	TUBE SIZE : 50.8 O.D. x 3.2 THK		
FF-17	1	4455	FF-45	1	4429	BENDING RADIUS : 415mm		
FF-18	1	4955	FF-46	1	4429	BOILER SIDE TUBE		
FF-19	1	4929	FF-47	1	4429	TUBE SIZE : 63.5 O.D. x 4.5 THK		
FF-20	1	4955	FF-48	1	4429	BENDING RADIUS : -		
FF-21	1	4455	FF-49	1	4429	EURNACE FRONT TUBE		
FF-22	1	4455	FF-50	1	4429	TUBE SIZE : 63.5 O.D. x 4.5 THK		
FF-23	1	4742	FF-51	1	4429	BENDING RADIUS : 300mm		
FF-24	1	4777	FF-52	1	4429	EURNACE REAR TUBE		
FF-25	1	4917	FF-53	1	4429	TUBE SIZE : 76.2 O.D. x 3.6 THK		
FF-26	1	4853	FF-54	1	4929	BENDING RADIUS : 410mm		
FF-27	1	4833	FF-55	1	4929	BOILER REAR TUBE		
FF-28	1	4883		-		TUBE SIZE : 63.5 O.D. x 4.5 THK		
						BENDING RADIUS : 400mm		



DETAIL OF BUTT WELD ON TUBE
MPS. NO. : DN/MPS/639/649

TUBE	QTY.	LENGTH ON C/L	TUBE	QTY.	LENGTH ON C/L	TUBE	QTY.	LENGTH ON C/L
FR	55	9676	FR-1	27	1778	FR	55	9676
FR-1	27	1722	FR-1	27	1778	FR-1	27	1778
FR-2	27	1722	FR-2	27	1778	FR-2	27	1778
FR-3	27	1722	FR-3	27	1778	FR-3	27	1778
FR-4	27	1722	FR-4	27	1778	FR-4	27	1778
FR-5	27	1722	FR-5	27	1778	FR-5	27	1778
FR-6	27	1722	FR-6	27	1778	FR-6	27	1778
FR-7	27	1722	FR-7	27	1778	FR-7	27	1778
FR-8	27	1722	FR-8	27	1778	FR-8	27	1778
FR-9	27	1722	FR-9	27	1778	FR-9	27	1778
FR-10	27	1722	FR-10	27	1778	FR-10	27	1778
FR-11	27	1722	FR-11	27	1778	FR-11	27	1778
FR-12	27	1722	FR-12	27	1778	FR-12	27	1778
FR-13	27	1722	FR-13	27	1778	FR-13	27	1778
FR-14	27	1722	FR-14	27	1778	FR-14	27	1778
FR-15	27	1722	FR-15	27	1778	FR-15	27	1778
FR-16	27	1722	FR-16	27	1778	FR-16	27	1778
FR-17	27	1722	FR-17	27	1778	FR-17	27	1778
FR-18	27	1722	FR-18	27	1778	FR-18	27	1778
FR-19	27	1722	FR-19	27	1778	FR-19	27	1778
FR-20	27	1722	FR-20	27	1778	FR-20	27	1778
FR-21	27	1722	FR-21	27	1778	FR-21	27	1778
FR-22	27	1722	FR-22	27	1778	FR-22	27	1778
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FR-55	27	1722	FR-55	27	1778	FR-55	27	1778

DESIGN DATA

BOILER EVAPORATIVE CAPACITY	50,000 KG/HR
DESIGN PRESSURE	2.5 N/mm ²
NORMAL WORKING PRESSURE	2.0 N/mm ²
HYDROSTATIC TEST PRESSURE	3.75 N/mm ²
SATURATED STEAM TEMPERATURE	226 °C
DESIGN TEMPERATURE FOR TUBE MARKED AS --	FR&B & FS : 300 °C IS & FR : 300 °C

NOTE:

- A) ALL DIMENSIONS IN MILLIMETRES.
- B) LENGTH ON C/L INDICATES LENGTH BEFORE BENDING.
- C) QUANTITIES SHOWN ARE FOR ONE BOILER.
- D) PREFIX 'X' FOR TUBES ON BOILER OPERATING SIDE.

LEGEND:

- INDICATE BUTT JOINT SITE WELD

MANUFACTURER: BOLLERMECH SDN BHD
(COMPANY NO. 89098-U)
LOT 875, JALAN SIRIANG 8
TAMAN PERINDUSTRIAN SIRIANG
47920 SIRIANG JAYA, SELANGOR DARUL EHSAN
TEL: 603-8023 9137 FAX: 603-8023 2127

BOILER MODEL: BMVGC0465-25
50,000 KG/HR WATER TUBE BOILER

TITLE: GENERATING TUBE LAYOUT

DRAWN	A.FAZAL	DATE	07/07/2015
CHECKED	THAI YE	SCALE	AS SHOWN
APPROVED	LAI YK	PROJECT NO.	BMVGC0465
DRG. NO.	BMVGC0465-B50250-P-0-006	REV.	0

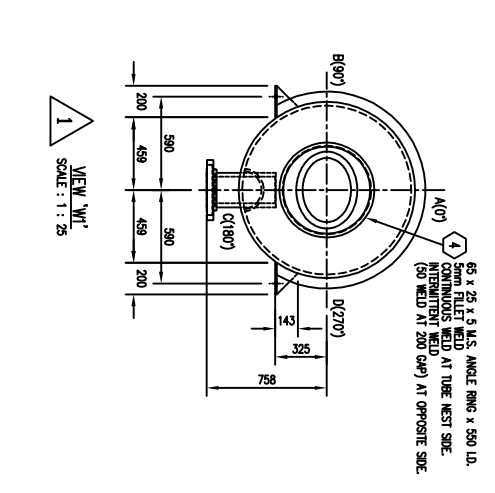
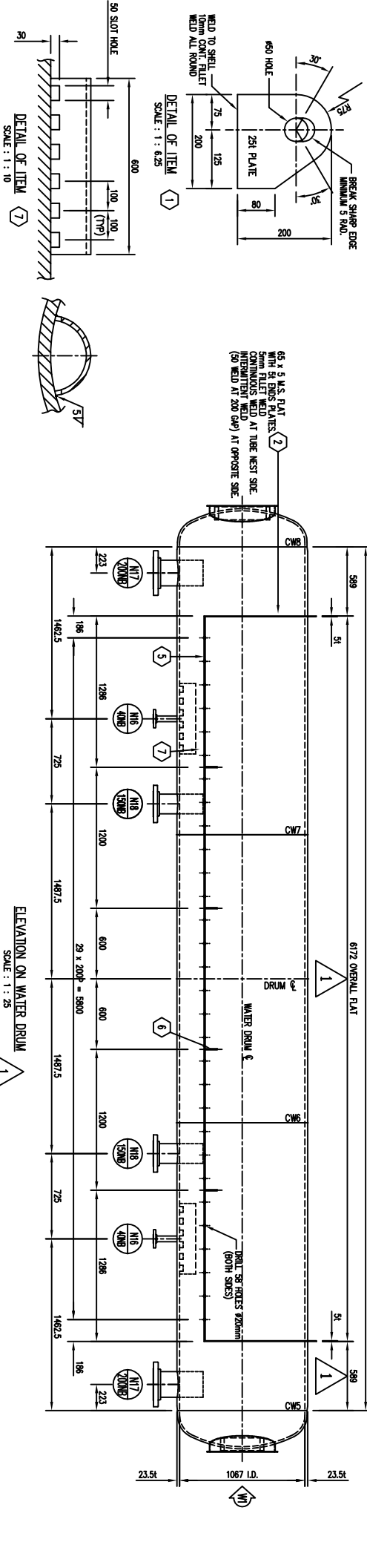
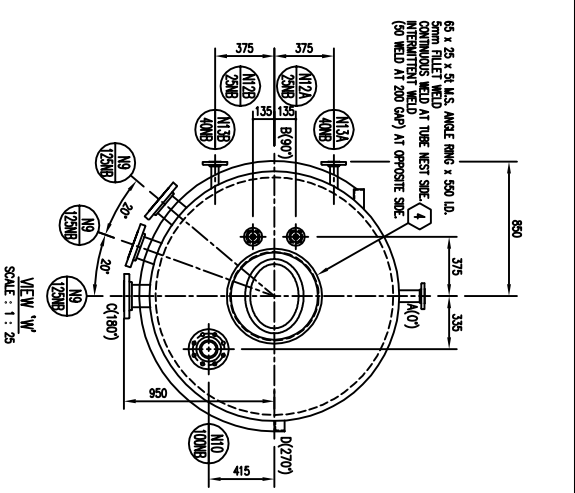
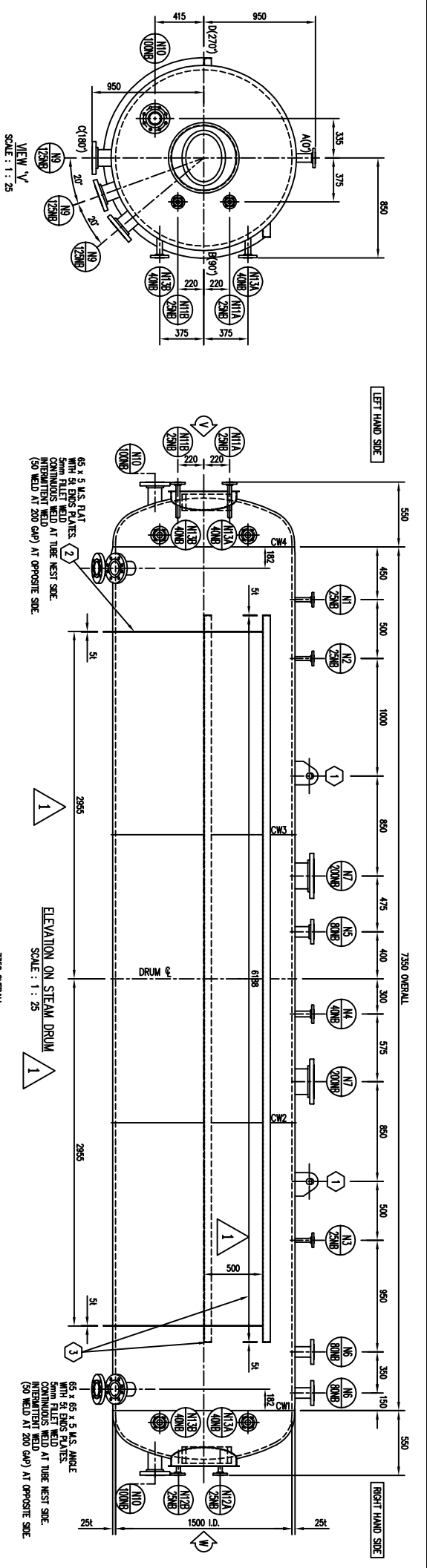
REVISIONS

REV.	DESCRIPTION	DATE	CHECKED	APPROVED
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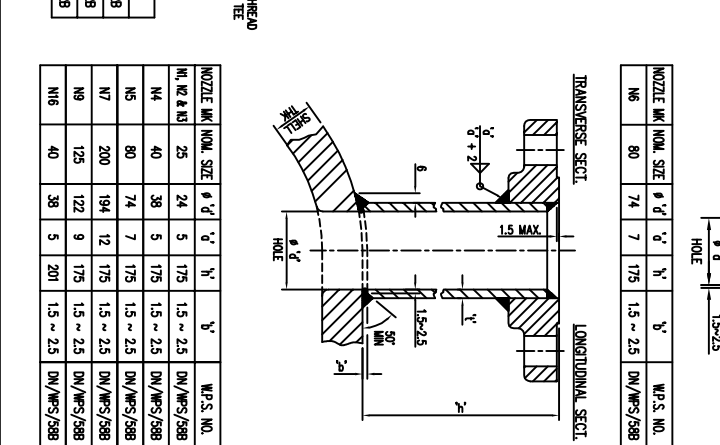
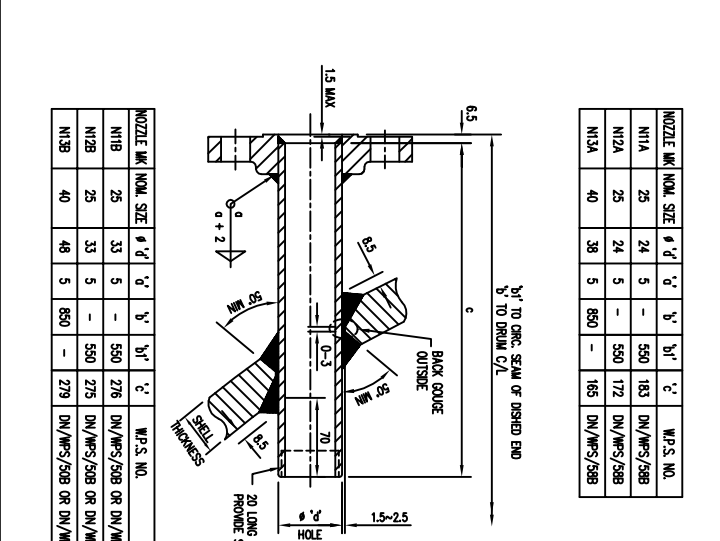
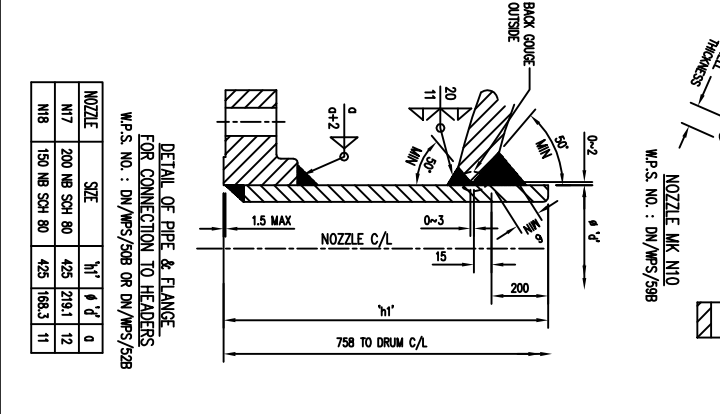
RESERVE FOR D.O.S.H STAMP

DESIGN CODE: BS 1113 : 1999 EDITION

RESERVE FOR THIRD PARTY STAMP



ITEM NO.	REQ.	SIZE	PART	DESCRIPTION	QTY.	DRUM C/L	MATERIAL
1	1	25 NB	SAFETY VALVE	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
2	1	25 NB	MAIN STEAM SUPPLY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
3	1	25 NB	FEED WATER (PROVISE)	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
4	1	25 NB	REAR HEADER SUPPLY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
5	1	25 NB	FRONT HEADER SUPPLY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
6	1	25 NB	WATER LEVEL GAUGE - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
7	1	25 NB	WATER LEVEL ALARM - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
8	1	25 NB	WATER LEVEL CONTROL - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
9	1	25 NB	WATER LEVEL ALARM - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
10	1	25 NB	WATER LEVEL CONTROL - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
11	1	25 NB	WATER LEVEL ALARM - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
12	1	25 NB	WATER LEVEL CONTROL - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
13	1	25 NB	WATER LEVEL ALARM - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
14	1	25 NB	WATER LEVEL CONTROL - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
15	1	25 NB	WATER LEVEL ALARM - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
16	1	25 NB	WATER LEVEL CONTROL - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
17	1	25 NB	WATER LEVEL ALARM - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
18	1	25 NB	WATER LEVEL CONTROL - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
19	1	25 NB	WATER LEVEL ALARM - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
20	1	25 NB	WATER LEVEL CONTROL - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
21	1	25 NB	WATER LEVEL ALARM - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
22	1	25 NB	WATER LEVEL CONTROL - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
23	1	25 NB	WATER LEVEL ALARM - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
24	1	25 NB	WATER LEVEL CONTROL - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
25	1	25 NB	WATER LEVEL ALARM - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
26	1	25 NB	WATER LEVEL CONTROL - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
27	1	25 NB	WATER LEVEL ALARM - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
28	1	25 NB	WATER LEVEL CONTROL - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
29	1	25 NB	WATER LEVEL ALARM - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
30	1	25 NB	WATER LEVEL CONTROL - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
31	1	25 NB	WATER LEVEL ALARM - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
32	1	25 NB	WATER LEVEL CONTROL - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
33	1	25 NB	WATER LEVEL ALARM - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
34	1	25 NB	WATER LEVEL CONTROL - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
35	1	25 NB	WATER LEVEL ALARM - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
36	1	25 NB	WATER LEVEL CONTROL - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
37	1	25 NB	WATER LEVEL ALARM - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
38	1	25 NB	WATER LEVEL CONTROL - STEAMWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
39	1	25 NB	WATER LEVEL ALARM - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088
40	1	25 NB	WATER LEVEL CONTROL - WATERWAY	NOZZLE : 25 NB SCH 80 PIPE	1	425	ASTM A 1088



DESIGN DATA	
BOILER EVAPORATIVE CAPACITY	50,000 KG/HR
DESIGN PRESSURE	2.5 N/mm ²
MAX ALLOWABLE WORKING PRESSURE	2.0 N/mm ²
NORMAL WORKING PRESSURE	3.75 N/mm ²
HYDROSTATIC TEST PRESSURE	226 °C
SATURATED STEAM TEMPERATURE	251 °C
DESIGN TEMPERATURE	7,630 KG
STEAM DRUM LIFTING WEIGHT	5,090 KG
WATER DRUM LIFTING WEIGHT	REQUIRED ON DRUM ENDS REFER PARA 4.5.2
HEAT TREATMENT	NON DESTRUCTIVE TEST
WELD OF PIPE TO DRUMS	100% MAGNETIC PARTICLE TEST
WELD OF LEFT LEG TO DRUM	100% MAGNETIC PARTICLE TEST
WELD OF PIPE TO FLANGE	100% MAGNETIC PARTICLE TEST
WELD ON OTHER ATTACHMENT TO DRUM	100% MAGNETIC PARTICLE TEST

- NOTES:
- ALL DIMENSIONS IN MILLIMETRES.
 - ALL FLANGE BOLT HOLES TO BE DRILLED OFF CENTRES.
 - ALL WELDS TO COMPLY SHARP WELDING PROCEDURE SPECIFICATION (WPS) APPRAISED BY QUALIFIED THIRD PARTY.

REV.	DESCRIPTION	DATE	CHECKED	APPROVED
0	INITIAL ISSUE	26/06/2015	THAM YE LA YK.	LA YK.
1	REVISED SEALING RING & SMOKE SUPPORT	09/09/2015	THAM YE LA YK.	LA YK.

RESERVE FOR D.O.S.H STAMP

DESIGN CODE : **BS 1113 : 1999 EDITION**

RESERVE FOR THIRD PARTY STAMP

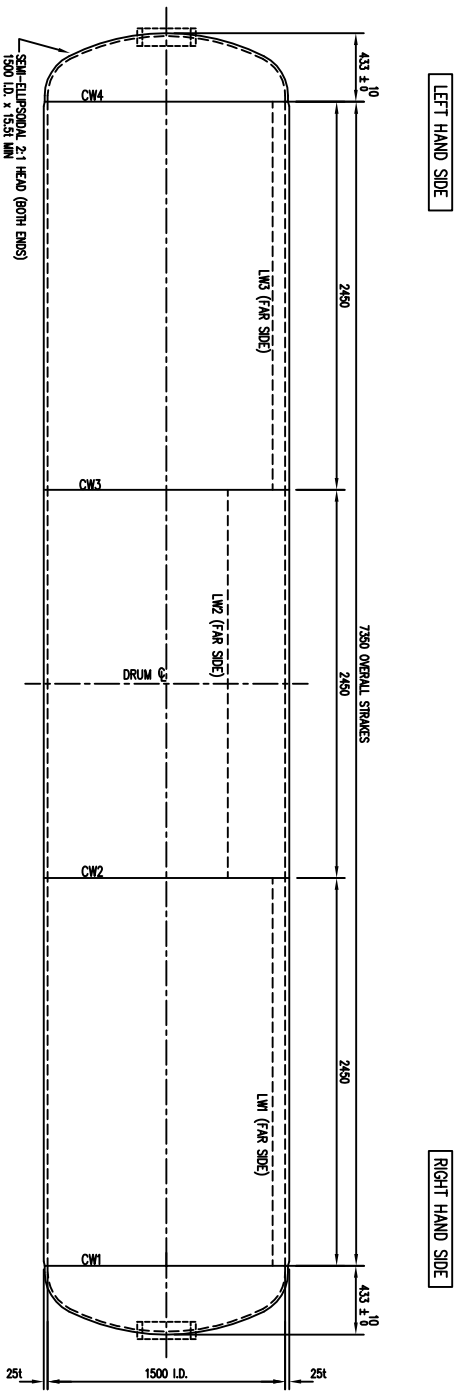
MANUFACTURER : **BOILERMECH SDN BHD**
 (COMPANY NO. 58098-U) 6
 LOT 875, JALAN SIRANG 8
 TAMAY PENINSULAN SIRANG
 47920 SIRANG JAYA, SELANGOR DARUL EHSAN
 TEL: 603-8023 9137 FAX: 603-8023 2127

BOILER MODEL : **BMV-60-25**
50,000 KG/HR WATER TUBE BOILER

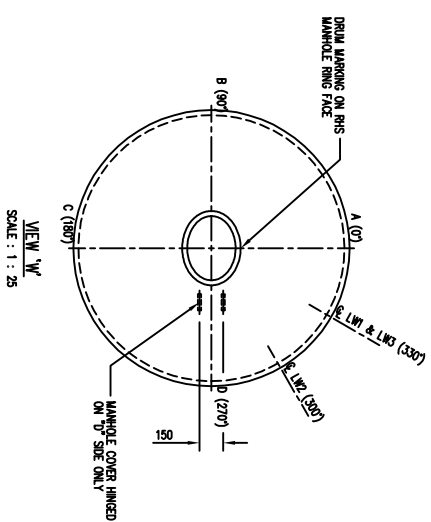
STOCK

BOILER WORK : **STEAM DRUM & WATER DRUM NOZZLES AND WELDMENT**

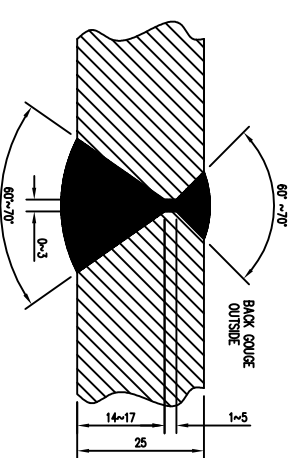
DRWING	THAM YE	SCALE	DATE
CHECKED	LA YK.	SCALE	26/06/2015
APPROVED	LA YK.	PROJECT NO.	BMV-0465
DRG. NO.	BMVG0465-B50250-P-0-007	REV.	1



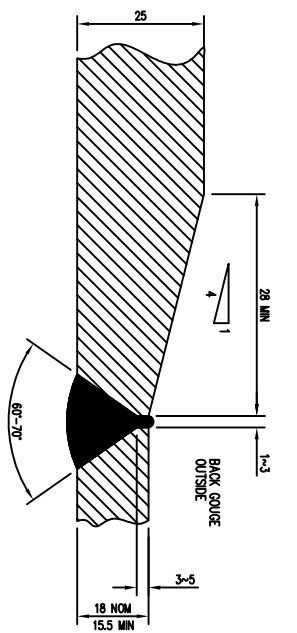
FRONT ELEVATION
SCALE : 1 : 25



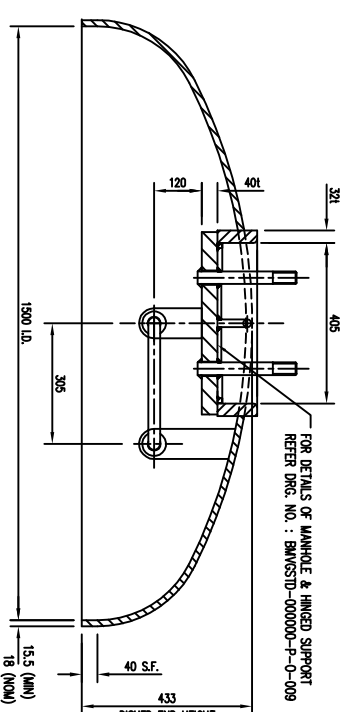
VIEW 'W'
SCALE : 1 : 25



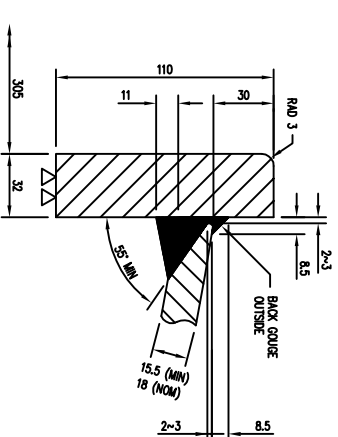
WELD PREPARATION OF CW2, CW3, LW1, LW2 & LW3
WPS NO : DN/WPS/508 OR DN/WPS/528 OR BM/WPS/018 OR BM/WPS/038



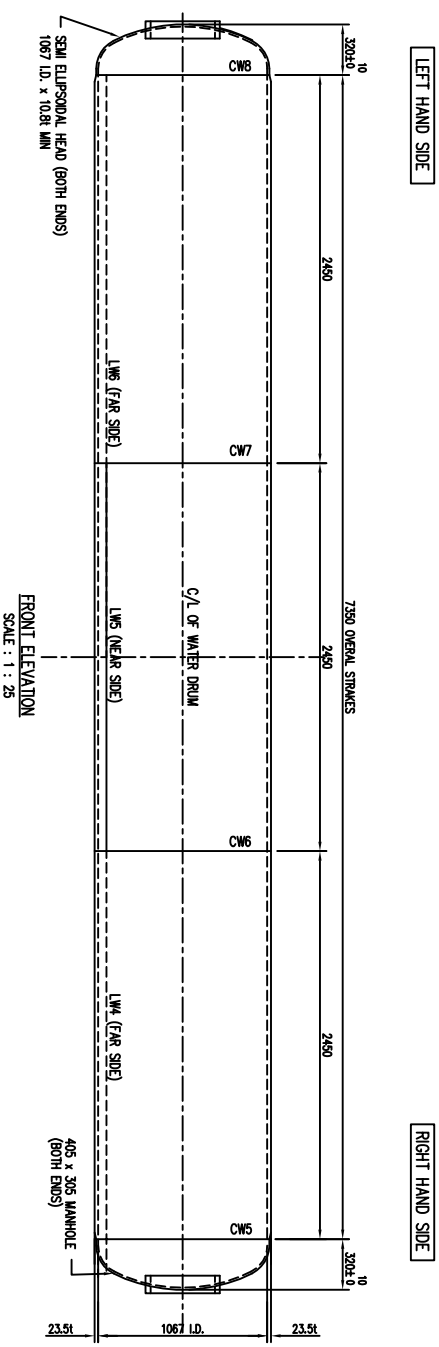
WELD PREPARATION OF CW1 & CW4
WPS NO : DN/WPS/508 OR DN/WPS/528 OR BM/WPS/038



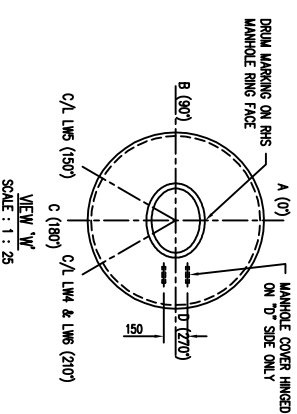
ASSEMBLY OF MANHOLE COVER
AT DISHD ENDS
SCALE : 1 : 10



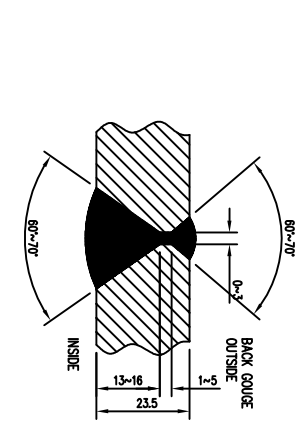
WELDING OF MANHOLE RING TO DISHD ENDS
WPS NO : WPS NO : DN/WPS/508 OR 528
SCALE : 1 : 2



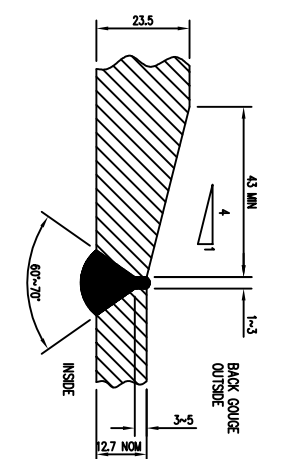
FRONT ELEVATION
SCALE : 1 : 25



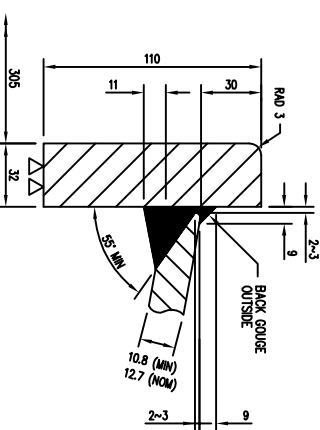
VIEW 'W'
SCALE : 1 : 25



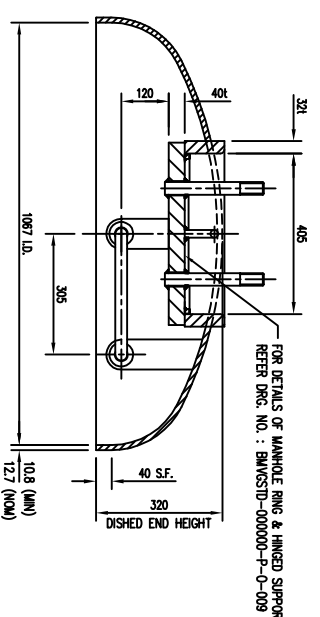
WELD PREPARATION OF CW6, CW7, LW4, LWS & LWS
WPS NO : DN/WPS/508 OR DN/WPS/528 OR BM/WPS/018 OR BM/WPS/038



WELD PREPARATION OF CW6 & CW8
WPS NO : DN/WPS/508 OR DN/WPS/528 OR BM/WPS/038



WELDING OF MANHOLE RING TO DISHD ENDS
WPS NO : WPS NO : DN/WPS/508 OR 528
SCALE : 1 : 2



ASSEMBLY OF MANHOLE COVER
AT DISHD ENDS
SCALE : 1 : 10

DESIGN DATA	
DRUM WATER CAPACITY	7.159 LITRES
DRUM METAL WEIGHT	5.090 KG
TOTAL DRUM WEIGHT	12.249 KG
HEAT TREATMENT	REQUIRED ON DSH END REFER PARA 4.5.2
CONSTRUCTION MATERIAL (BS EN 10028 P235NH)	
SHELL	3 2450 x 306 x 23.51 PLATE
HEAD	2 FORGED FROM 12.71 PLATE
MANHOLE RING	2 110 x 32 x 385 LG

RESERVE FOR DASH STAMP

DESIGN DATA	
DRUM WATER CAPACITY	14.499 LITRES
DRUM METAL WEIGHT	7.630 KG
TOTAL DRUM WEIGHT	22.129 KG
HEAT TREATMENT	REQUIRED ON DSH END REFER PARA 4.5.2
CONSTRUCTION MATERIAL (BS EN 10028 P235NH)	
SHELL	3 2450 x 4791 x 251 PLATE
HEAD	2 FORGED FROM 18.1 PLATE
MANHOLE RING	2 110 x 32 x 465 LG

RESERVE FOR THIRD PARTY STAMP

DESIGN DATA	
BOILER EVAPORATIVE CAPACITY	50.000 KG/HR
DESIGN PRESSURE	2.5 N/mm ²
MAX ALLOWABLE WORKING PRESSURE	2.5 N/mm ²
NOMINAL WORKING PRESSURE	7.630 KG
HYDROSTATIC TEST PRESSURE	3.75 N/mm ²
SATURATED STEAM TEMPERATURE	226 °C
DESIGN TEMPERATURE	251 °C
NON DESTRUCTIVE TEST	
BLITT WELDS ON DRUMS SHELL	100% RADIOGRAPH TEST
BLITT WELDS ON MANHOLE RING	100% ULTRASONIC TEST
TUBE HOLES AT DRUM CIRC. WELD	100% MAGNETIC PARTICLE TEST

- NOTES:
- ALL DIMENSIONS IN MILLIMETERS.
 - WILL GENERATE REQUIRED FOR ALL PLATES AND HEAT NO. TO BE STAMPED ON EACH STROKE AND ALL OF CUTS.
 - ALL WELDS TO COMPLY SHIP WELDING PROCEDURE SPECIFICATION (WPS) APPROVED BY QUALIFIED THIRD INSPECTION PARTY.

DESIGN CODE : BS 1113 : 1999 EDITION

RESERVE FOR THIRD PARTY STAMP

REV.	DESCRIPTION	DATE	CHECKED	APPROVED
0	INITIAL ISSUE	29/05/2015	THAM YE LA YK.	

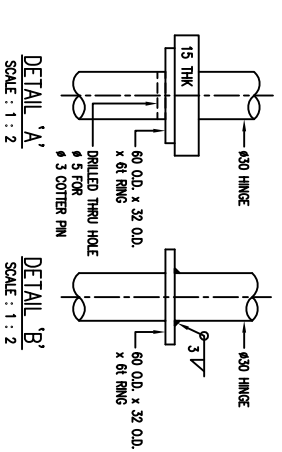
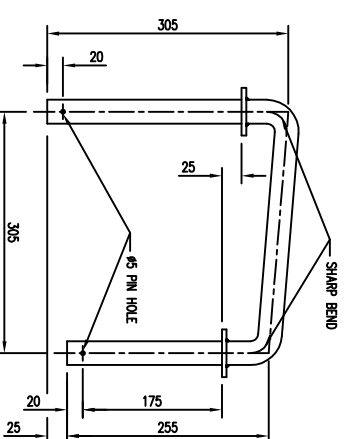
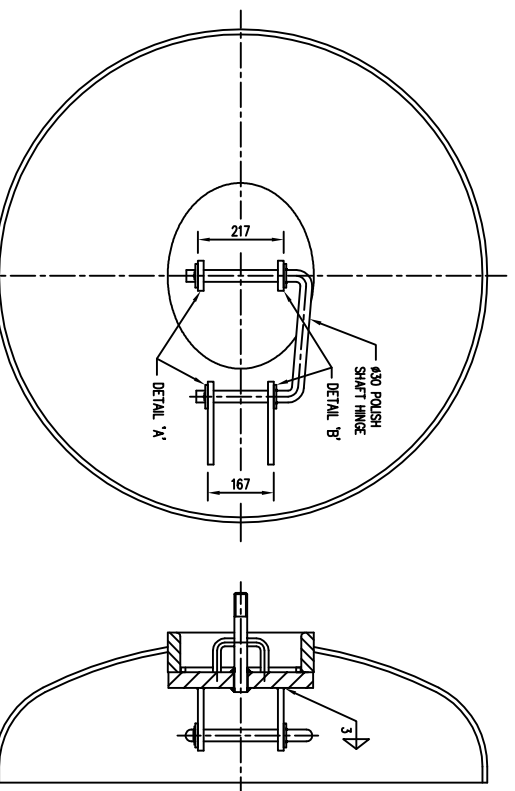
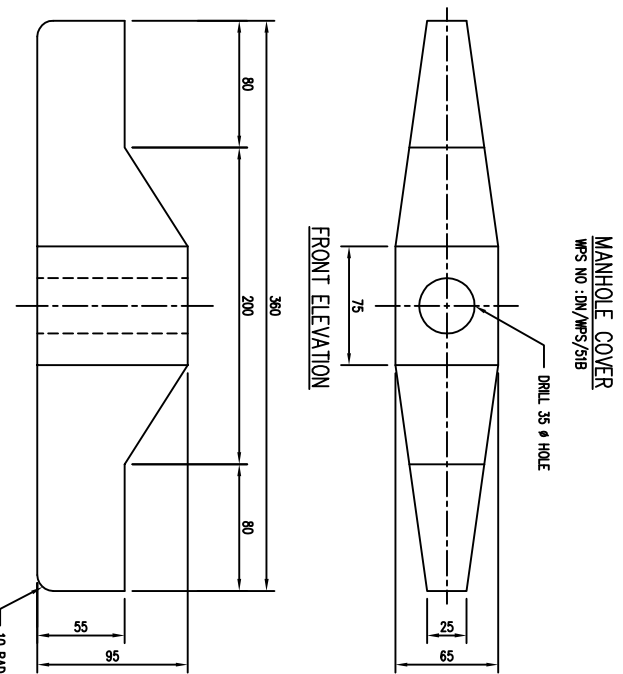
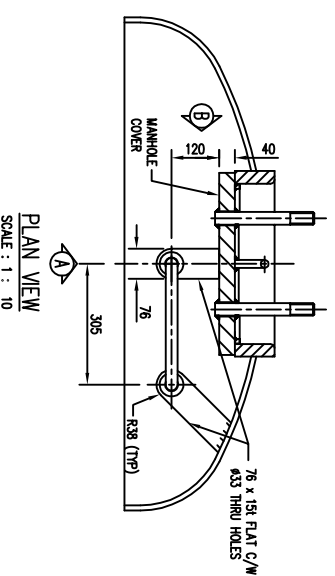
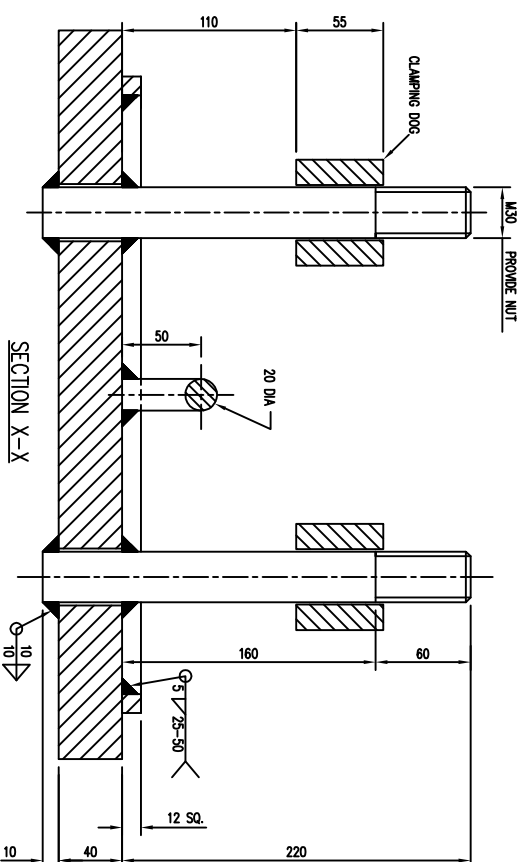
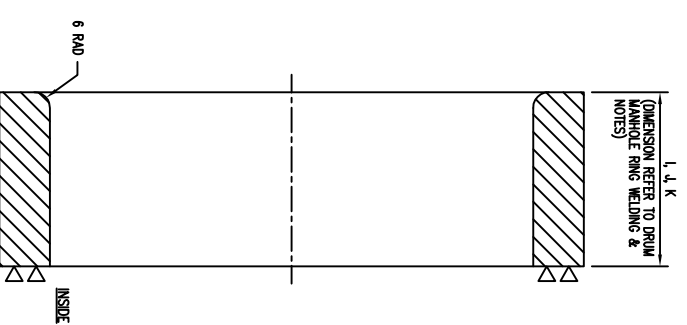
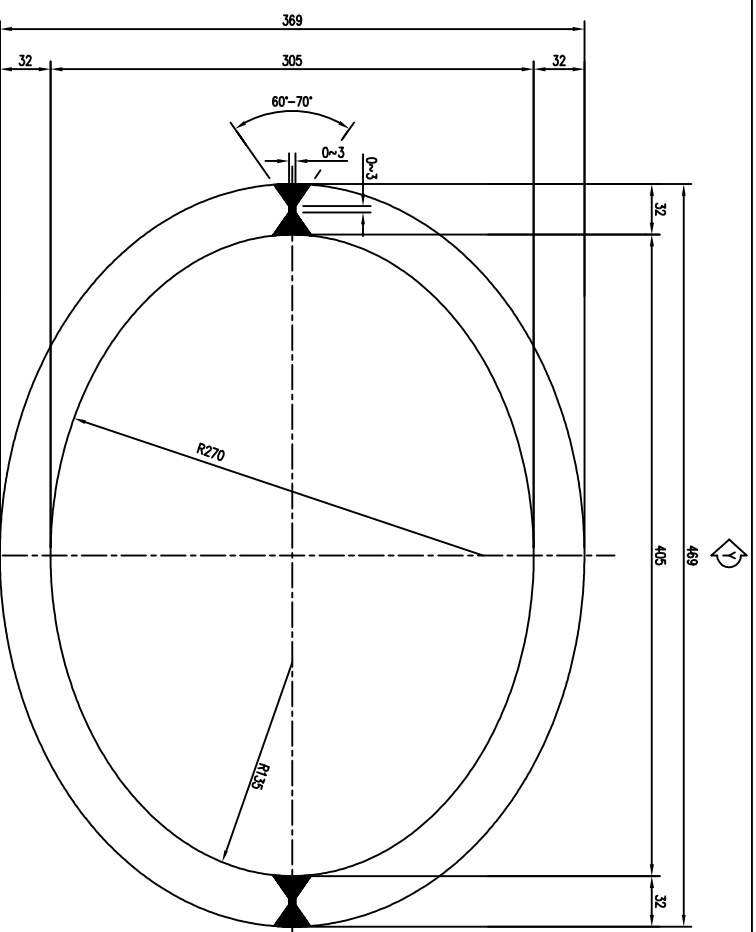
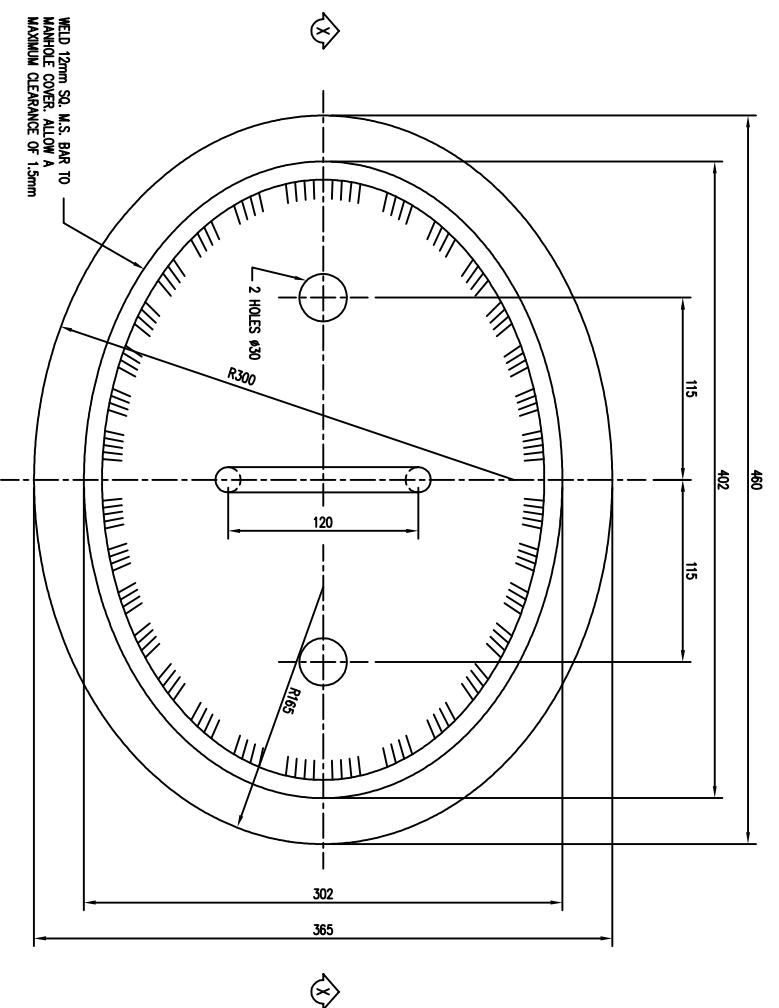
MANUFACTURER :
BOILERMECH SDN BHD
 (COMPANY NO. 88098-I)
 LOT 875, JALAN SIRIANG 8
 KAWASAN PERINDUSTRIAN SIRIANG
 47200 SIRIANG JAYA, SELANGOR DARUL EHSAN
 TEL: 603-8023 9137 FAX: 603-8023 2127

PURCHASER :
STOCK

BOILER MODEL :
 BMWG-60-25
 50,000 KG/HR WATER TUBE BOILER

TITLE :
 SCANTLING DETAILS OF STEAM DRUM & WATER DRUM

DRAWN	A.FRUZUL	DATE	29/05/2015
CHECKED	THAM YE	SCALE	AS SHOWN
APPROVED	LA YK.	PROJECT NO.	BMWG-0465
DRG. NO.	BMWG0465-B50250-P-0-008	REV	0



DESIGN DATA

MANHOLE COVER WEIGHT	45 KG
MANHOLE NECK HEIGHT	45 KG
MANHOLE CLAMPING DOGS	12 KG EACH
NORMALIZE	YES - MANHOLE NECK ONLY
NON DESTRUCTIVE TEST	
BUTT WELDS ON MANHOLE NECK	100% RADIOGRAPHY TEST
FILET WELD	100% MAGNETIC PARTICLE INSPECTION
CONSTRUCTION MATERIAL	
MANHOLE NECK & MANHOLE COVER	BS 1501-223-490A
HINGE & CLAMPING DOG	AS 6301 SS 400
STUD BOLT	BS 4449 Gr. 480 OR EQUIVALENT

NOTES:

- ALL DIMENSIONS IN MILLIMETRES.
- ALL WELDS TO COMPLY SHARP WELDING PROCEDURE (W9) APPRAISED BY QUALIFIED THIRD INSPECTION PARTY.
- MANHOLE NECK TO BE NORMALIZED OR STRESS RELIEF.
- IF MANHOLE NECK TO BE NORMALIZED, IT SHALL BE AT TEMPERATURE 880C ±90 C FOR DURATION NOT LESS THAN 40 MINUTES, FOLLOWED BY COOLING IN STILL AIR.
- IF MANHOLE NECK TO BE STRESS RELIEF, IT SHALL BE AT TEMPERATURE 550C-600 C FOR DURATION NOT LESS THAN 40 MINUTES, FOLLOWED BY COOLING IN STILL AIR.

f) DIMENSIONS: L, L, K (mm) | Z' (mm)

F 110	0
J 120	10
K 140	30

DESIGN CODE : BS 1113 : 1999 EDITION
RESERVE FOR THIRD PARTY STAMP

RESERVE FOR D.O.S.H STAMP

REVISIONS

REV.	DESCRIPTION	DATE	CHECKED	APPROVED
0	INITIAL ISSUE	15/05/2009	LN YK	TEE S.C.

PURCHASER : STOCK

MANUFACTURER : **BOILERMECH SDN BHD**
(COMPANY NO. 88098-I)
LOT 875, JALAN SIRANG 8
TAMAN PERINDUSTRIAN SIRANG
47500 SIRANG JAYA, SELANGOR DARUL EHSAN
TEL: 603-8023 9137 FAX: 603-8023 2127

BOILER MODEL : **BAWQ WATER TUBE BOILER**

TITLE : **ACCESS MANHOLE & HINGED SUPPORT**

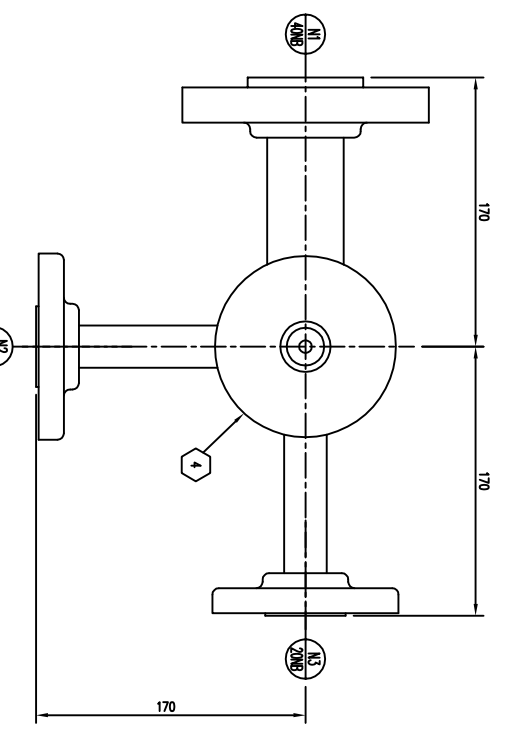
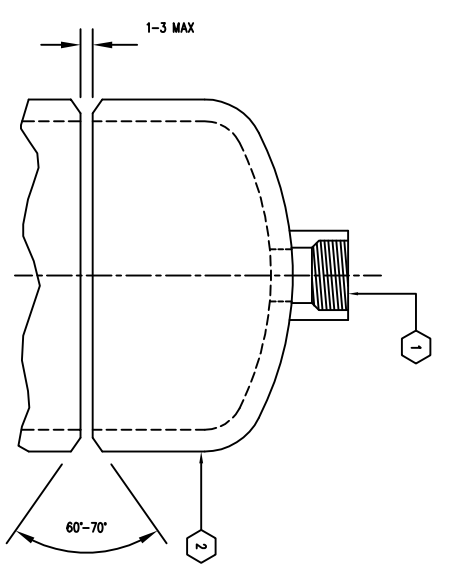
DRAWN	SJO C.C.	DATE	15/05/2009
CHECKED	LN YK	SCALE	AS SHOWN
APPROVED	TEE S.C.	PROJECT NO.	
DRG. NO.	BAWGSTD-000000-P-0-009	REV.	0

ASSEMBLY OF ACCESS MANHOLE ON DISHED END
SCALE : 1 : 5

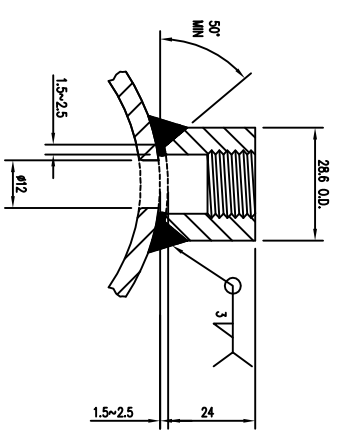
SIDE ELEVATION
CLAMPING DOG
2 OFF PER COVER

DESIGN DATA	
DESIGN PRESSURE	2.5 N/mm ²
MAXIMUM WORKING PRESSURE	2.5 N/mm ²
HYDROSTATIC TEST PRESSURE	3.75 N/mm ²
DESIGN TEMPERATURE	251 °C
WEIGHT (DRY)	27.7 KG
WEIGHT (FLOODED)	36.1 KG
STRESS RELIEF	NOT REQUIRED
NON DESTRUCTIVE TEST	
WELD ON FLANGES	100% MAGNETIC PARTICLE INSPECTION
BUTT WELD ON COLUMN	100% RADIOGRAPHY TEST
WELD ON PIPE TO COLUMN	100% MAGNETIC PARTICLE INSPECTION

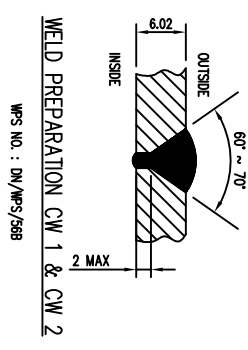
- NOTES:
- ALL DIMENSIONS IN MILLIMETRES.
 - TO BE LOCATED AT NOZZLE M13 ON STEAM DRUM.
 - ALL WELDS TO COMPLY SHOP WELDING PROCEDURE SPECIFICATION (WPS) APPRAISED BY QUALIFIED THIRD INSPECTION PARTY.
 - PRIOR TO FINAL INSPECTION FOR DISPATCH, ALL SLAG, DIRT, OIL, WELD SPATTER AND OTHER FOREIGN MATTERS TO BE REMOVED FROM WATER COLUMN.



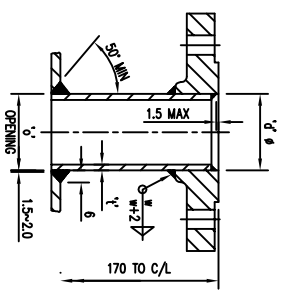
PLAN VIEW
SCALE : 1 : 2.5



DETAIL OF 15 NB BSP HALF COUPLING
WPS NO. : DN/WPS/58B
SCALE : 1 : 1

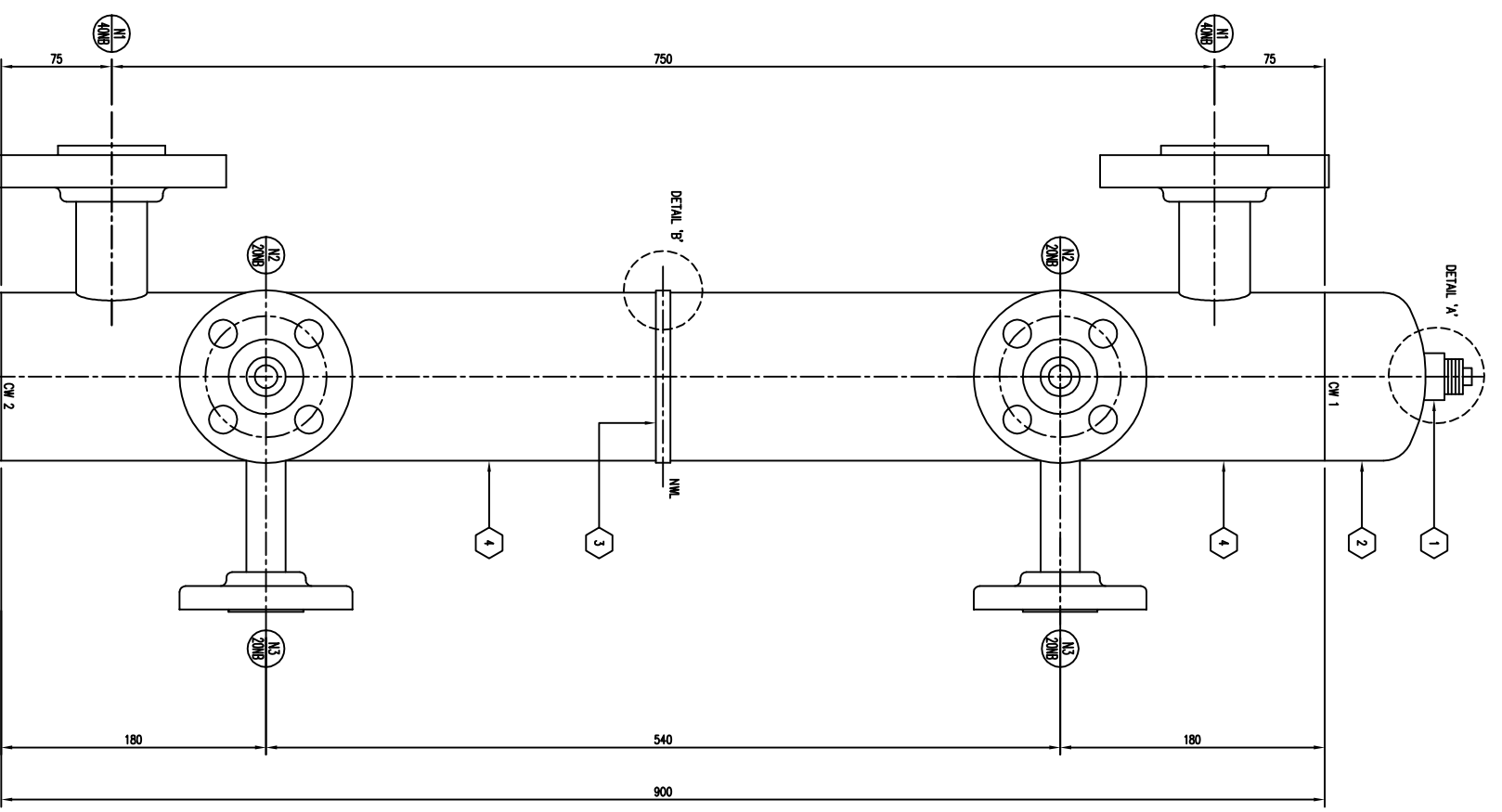


WELD PREPARATION CW 1 & CW 2
WPS NO. : DN/WPS/58B



TYPICAL NOZZLE WELD DETAIL
WPS NO. : DN/WPS/58B

NB	SCH	d	t	o	w
20	160	26.7	5.98	30.7	4
40	80	48.3	5.08	52.3	5



ELEVATION
SCALE : 1 : 2.5



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47500 SIRANG JAYA, SELANGOR DARUL EHSAN
TEL: 603-8023 9137 FAX: 603-8023 2127

BOILER MODEL : **BMWT-04-25**

TITLE : **4" WATER COLUMN FOR LEVEL GAUGE**

REV	NO	DESCRIPTION	DATE	CHECKED	APPROVED
0	INITIAL ISSUE		18/09/2009	WONG P.H.	LA Y.K.

ITEM	NO.	REQ.	DESCRIPTION	MATERIAL
4	2		114.3 O.D. x 6.021 SCH 40 PIPE	ASTM A 106B
3	1		12.7I DIAPHRAGM	BS 1501-221-400A
2	2		100 NB SCH 40 END CAP	ASTM A 234 WPB
1	2		1/2" CLASS 3000G HALF COUPLING C/W PLUG	ASTM A 105
N3	2		NOZZLE : 20 NB SCH 160 PIPE FLANGE : 20 NB ANS B16.3 CLASS 300 SOA.F.	ASTM A 106B ASTM A 105
N2	2		NOZZLE : 20 NB SCH 160 PIPE FLANGE : 20 NB ANS B16.3 CLASS 300 SOA.F.	ASTM A 106B ASTM A 105
N1	2		NOZZLE : 40 NB SCH 80 PIPE FLANGE : 40 NB ANS B16.5 CLASS 300 SOA.F.	ASTM A 106B ASTM A 105

MANUFACTURER :	BOILERMECH SDN BHD
PURCHASER : <td>STOCK</td>	STOCK
RESERVE FOR D.O.S.H STAMP	
DESIGN CODE : <td>BS 1113 : 1999 EDITION</td>	BS 1113 : 1999 EDITION
RESERVE FOR THIRD PARTY STAMP	

DRAWN	WONG P.H.	DATE	18/09/2009
CHECKED	WONG P.H.	SCALE	AS SHOWN
APPROVED	LA Y.K.	PROJECT NO.	BMVC-STD
DWG. NO.	BMVGSSTD-000250-P-WI-001	REV	0