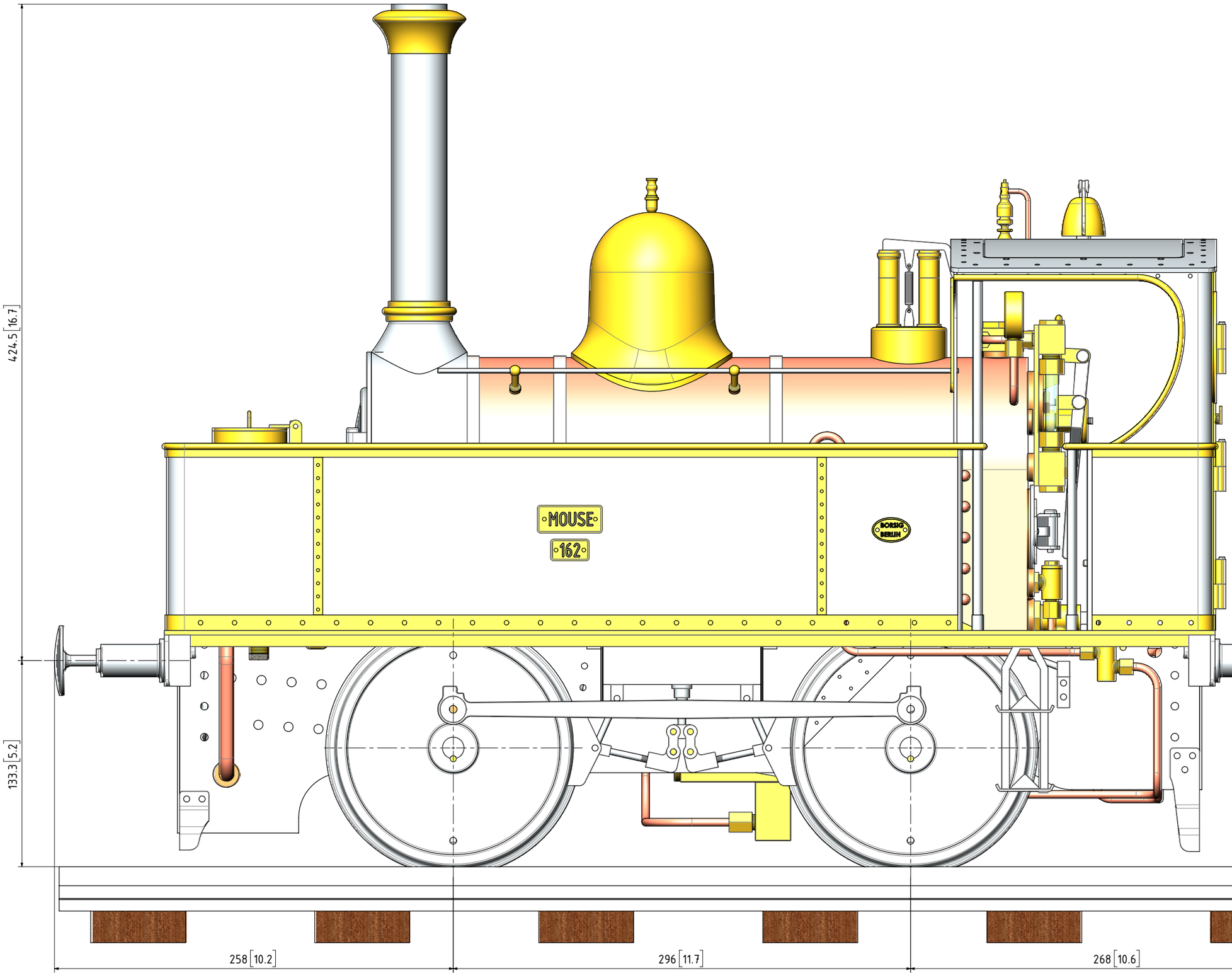


NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE
A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162
184mm (7.5inch) GAUGE

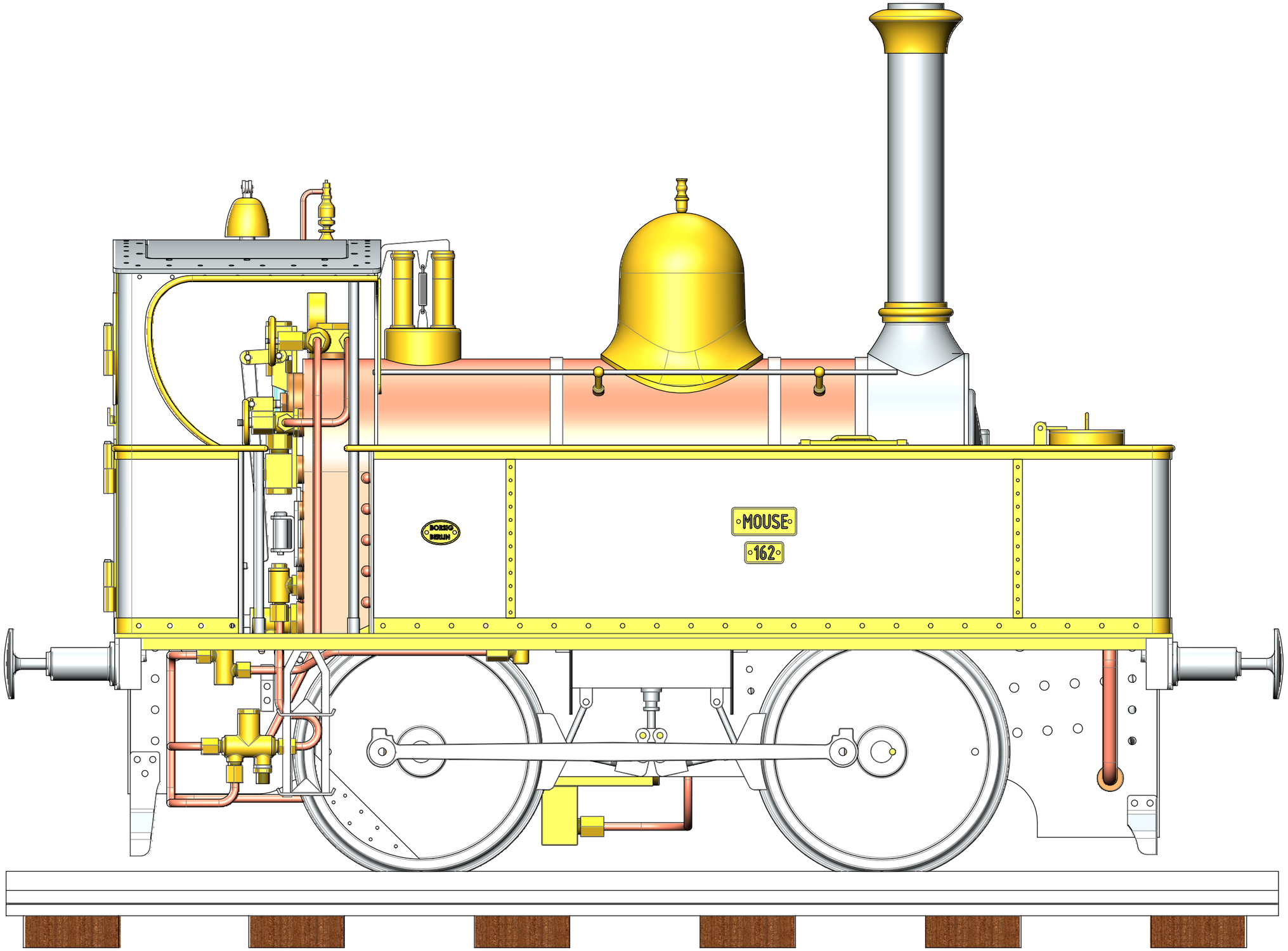
DRAWING CONTENTS
GENERAL ARRANGEMENT
LEFTHAND VIEW

PROJECT No 07A-10-00
JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION JDWDS
DATE MARCH 2019
SHEET: 01 OF 18

MODEL SCALE: 1:1
DWG SCALE: 1:2.5 @A3 OR AS SHOWN
Copyright © J.A.M. DE WAAL PAPAKURA NZ
A3 No: 07A-10-00-SHT01

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES



NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE
A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162
184mm (7.5inch) GAUGE

DRAWING CONTENTS
GENERAL ARRANGEMENT
RIGHTHAND VIEW

JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION | JDWDS

PROJECT No 07A-10-00

DATE MARCH 2019

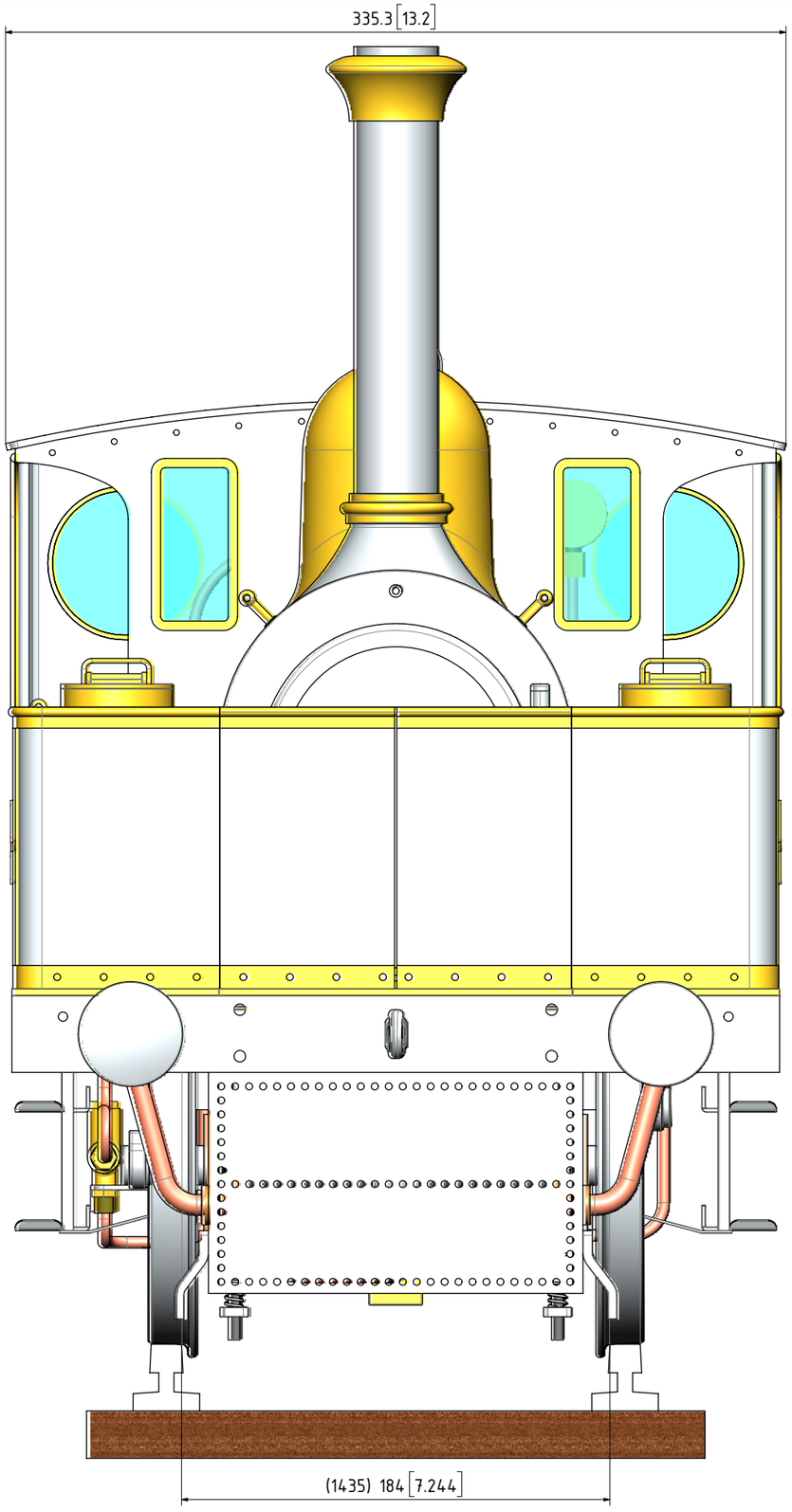
MODEL SCALE: 1:1

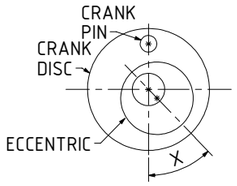
DWG SCALE: 1:2.5 @A3 OR AS SHOWN

Copyright © J.A.M. DE WAAL PAPAKURA NZ

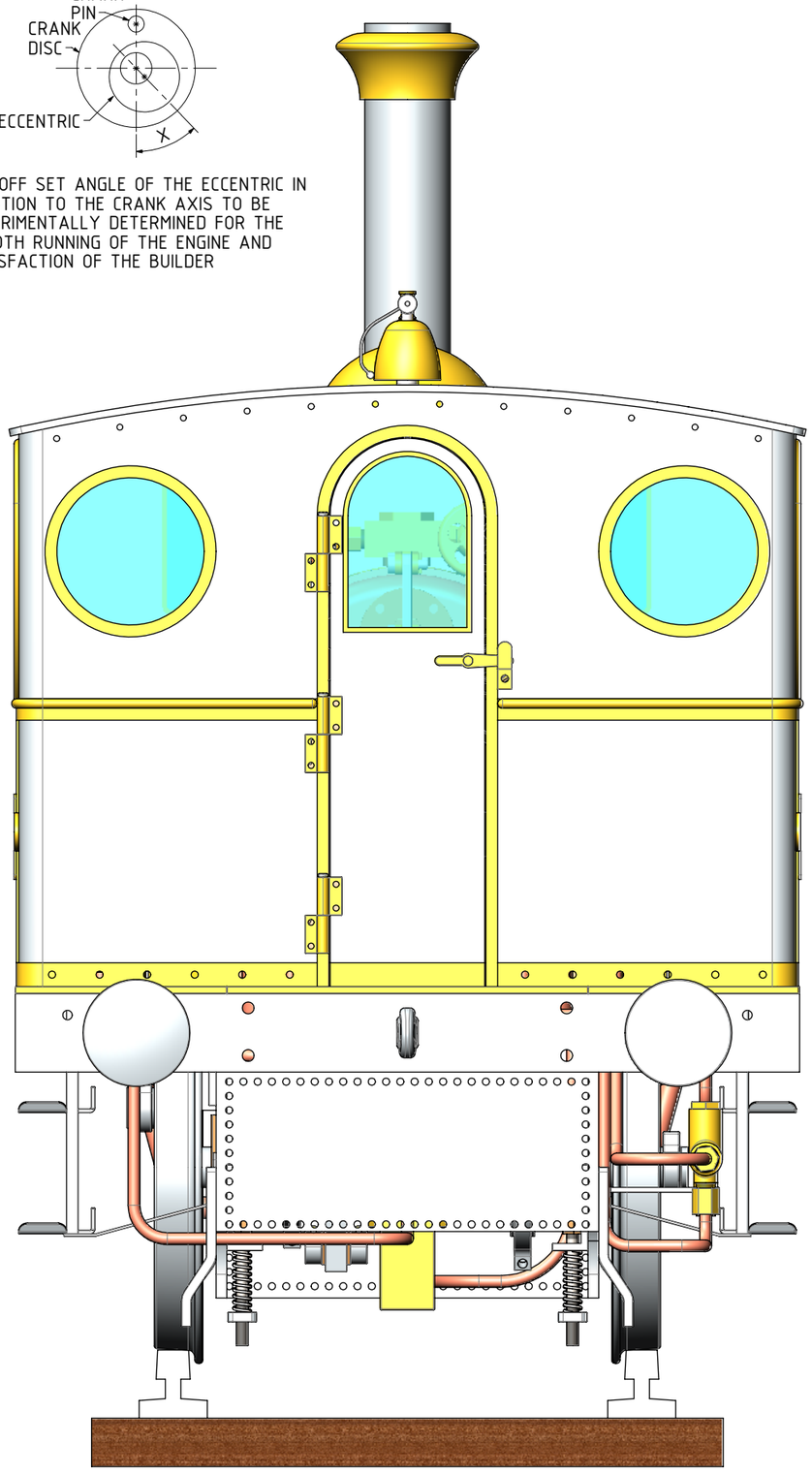
SHEET: 02 OF 18 | A3 | No: 07A-10-00-SHT02

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES





THE OFF SET ANGLE OF THE ECCENTRIC IN RELATION TO THE CRANK AXIS TO BE EXPERIMENTALLY DETERMINED FOR THE SMOOTH RUNNING OF THE ENGINE AND SATISFACTION OF THE BUILDER



NOTES:
0. ALL DRAWINGS ARE IN METRIC MEASUREMENTS
1. ALL ENGINEERING PRACTICES SHALL BE APPLIED WITH REGARDS TO HOLE AND SHAFT TOLERANCES.
2. WHERE SCREWS OR BOLTS ARE USED THE CLEARANCE HOLES SHALL BE APPROXIMATELY 5% TO 8% LARGER THAN THE MATCHING TAPPED HOLE.
3. PREFERABLY ALL TAPPED HOLES AND MATCHING SCREWS AND/OR BOLTS TO BE METRIC FINE (MF)
4. MATERIALS SPECIFIED ON THE DRAWINGS ARE INDICATIVE ONLY. THE BUILDER CAN MAKE HIS/HER OWN MATERIAL CHOICE.
5. ALL CONNECTIONS/JOINTS WHICH HAVE STEAM PRESSURE APPLIED TO IT SHALL BE SILVER/HARD SOLDERED.
6. COMPRESSION SPRINGS ARE DRAWN IN COMPRESSED STATE (CP), UNCOMPRESSED STATE IS APPROX 40% TO 60% LONGER THEN COMPRESSED STATE.
7. WHERE PREFERRED SCREW OR RIVETED CONNECTIONS CAN BE OMITTED AND PARTS CAN BE BONDED TOGETHER BY USING EITHER HIGH STRENGTH GLUE, EPOXY RESIN, OR SOLDER.
8. PARTS WHICH ARE DIRECTLY EXPOSED TO STEAM AND/OR WATER SHOULD BE CONSTRUCTED USING NON-FERROUS OR NON CORROSIVE MATERIAL SUCH AS BRASS, BRONZE, GUNMETAL, STAINLESS STEEL, COPPER OR MONEL.
9. THE ORDER IN WHICH THE PARTS/COMPONENTS ARE MANUFACTURED AND THE MODEL IS ASSEMBLED IS ENTIRELY LEFT TO THE BUILDER/MODEL MAKER.
10. A COLOUR SCHEME FOR THIS PROJECT IS ENTIRELY LEFT UP TO THE MODEL MAKER.
11. THE MANNER IN WHICH THE PARTS/COMPONENTS ARE MANUFACTURED IS ENTIRELY LEFT UP TO THE BUILDER.
12. USE LOCTITE, ON SCREW OR PRESS FIT CONNECTIONS OR SURFACES, WERE DEEMED NECESSARY TO PREVENT PARTS FROM LOOSENING.
13. WASHERS AND/OR SPRING WASHERS SHALL BE USED WHERE DEEMED NECESSARY.
14. INQUIRE AT THE APPROPRIATE AUTHORITIES WHETHER OR NOT THIS BOILER REQUIRE A PRESSURE TEST CERTIFICATE.
XX. ERRORS AND/OR OMISSIONS MAY OCCUR IN THE DRAWINGS, DO NOT HESITATE TO CONTACT ME SO THAT THE ERRORS/OMISSIONS CAN BE RECTIFIED.

MATERIAL ABBREVIATIONS:
ALU = ALUMINIUM
HALU= HARD ALUMINIUM
BRS = BRASS
BRZ = BRONZE OR GUNMETAL (BRZ/GM)
CI = CAST IRON
CU = COPPER
GRA = GRAPHITE
MS = MILD STEEL/BRIGHT MILD STEEL
SS = SILVER STEEL OR STAINLESS STEEL
SPS = SPRING STEEL
PEEK= POLYETHER ETHER KETONE
SYN = SYNTHETIC MATERIAL SUCH AS VETON, NYLON, TEFLON OR RUBBER
IN GENERAL SYNTHETIC MATERIALS SOULD BE ABLE TO WITHSTAND THE HEAT AND PRESSURE(S) APPLIED TO THEM.
nnn/nnn MEANS THAT EITHER MATERIAL CAN BE USED

OTHER ABBREVIATIONS
DP = DEEP
DAA= DRILL AFTER ASSEMBLY
D&TAA= DRILL AND TAP AFTER ASSEMBLY
CF = CLOSE FIT (SIZE FOR SIZE)
PF = PRESS FIT
PFAA= PRESS FIT AFTER ASSEMBLY
PCD = PITCH CIRCLE DIAMETER
RM = REAM
HEX = HEXACON, 6SIDED
CP = COMPRESSED
KNL = KNURLED
CSK = COUNTERSINK
PL = PLACES
DWL= DOWEL
SPF= SPOTFACE
(T)HESOP=(TAPPED)HOLES EQUALLY SPACED ON PCD
(T)HESOC=(TAPPED)HOLES EQUALLY SPACED ON CIRCUMFERENCE
[SA-xxx]= SUB ASSEMBLY-xxx

NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

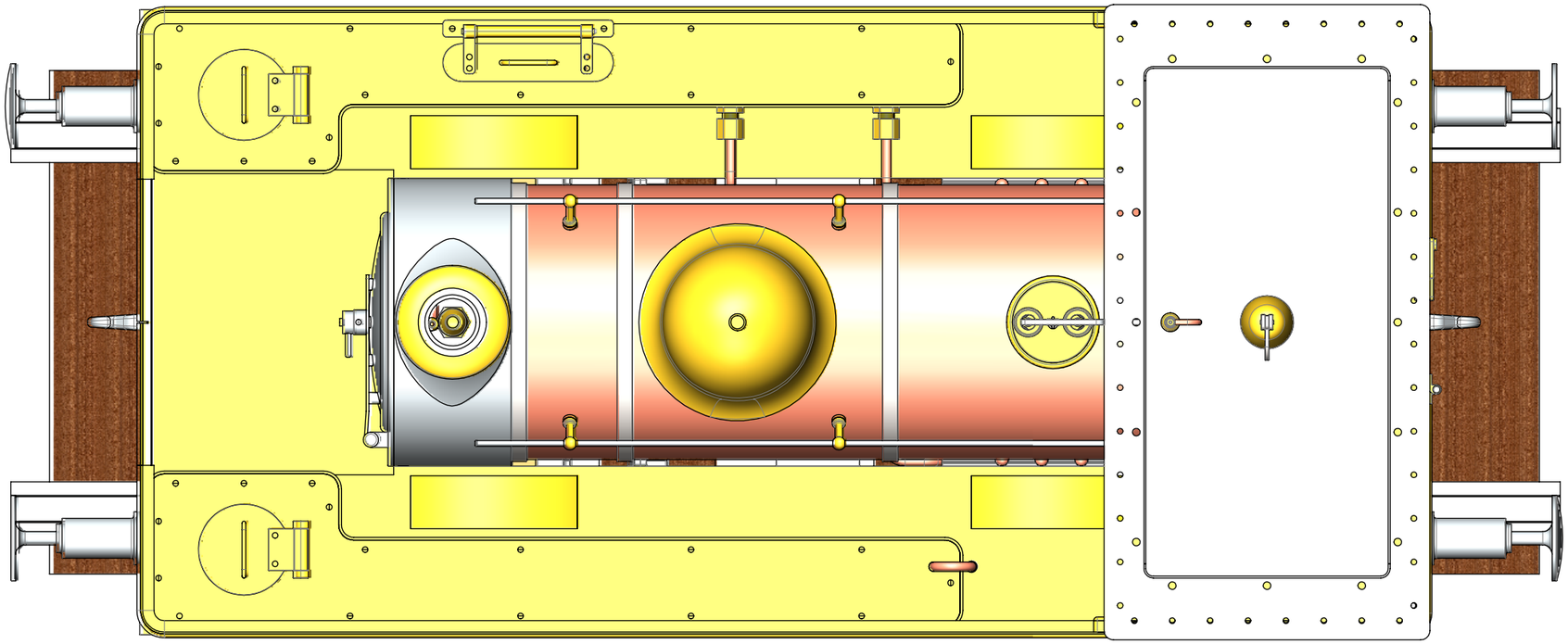
TITLE
A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162 184mm (7.5inch) GAUGE

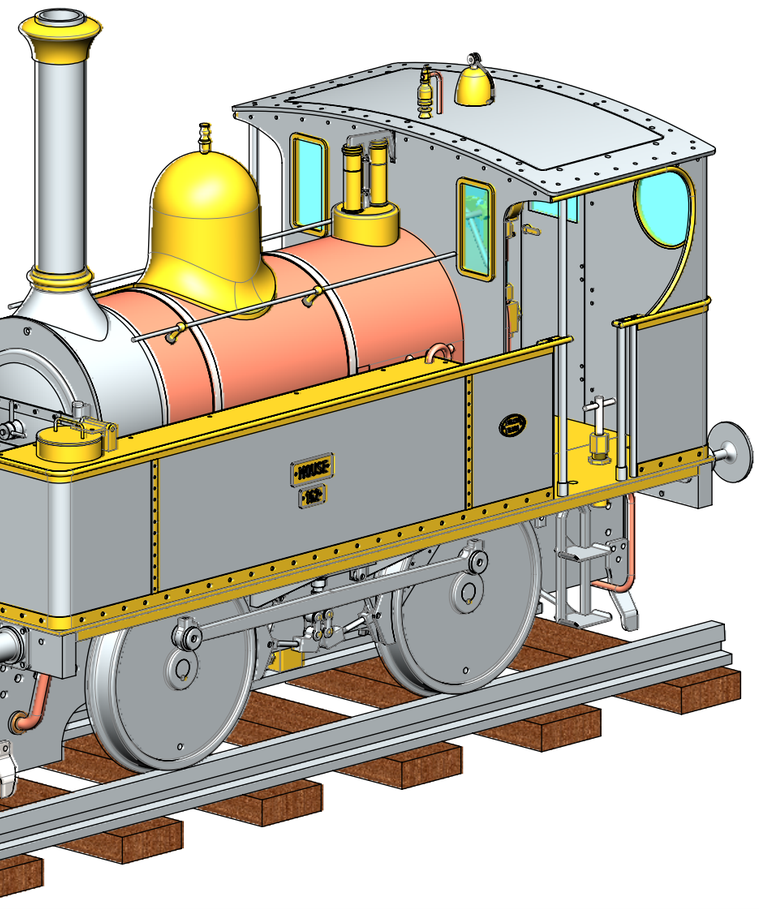
DRAWING CONTENTS
GENERAL ARRANGEMENT FRONT AND REAR VIEW AND NOTES

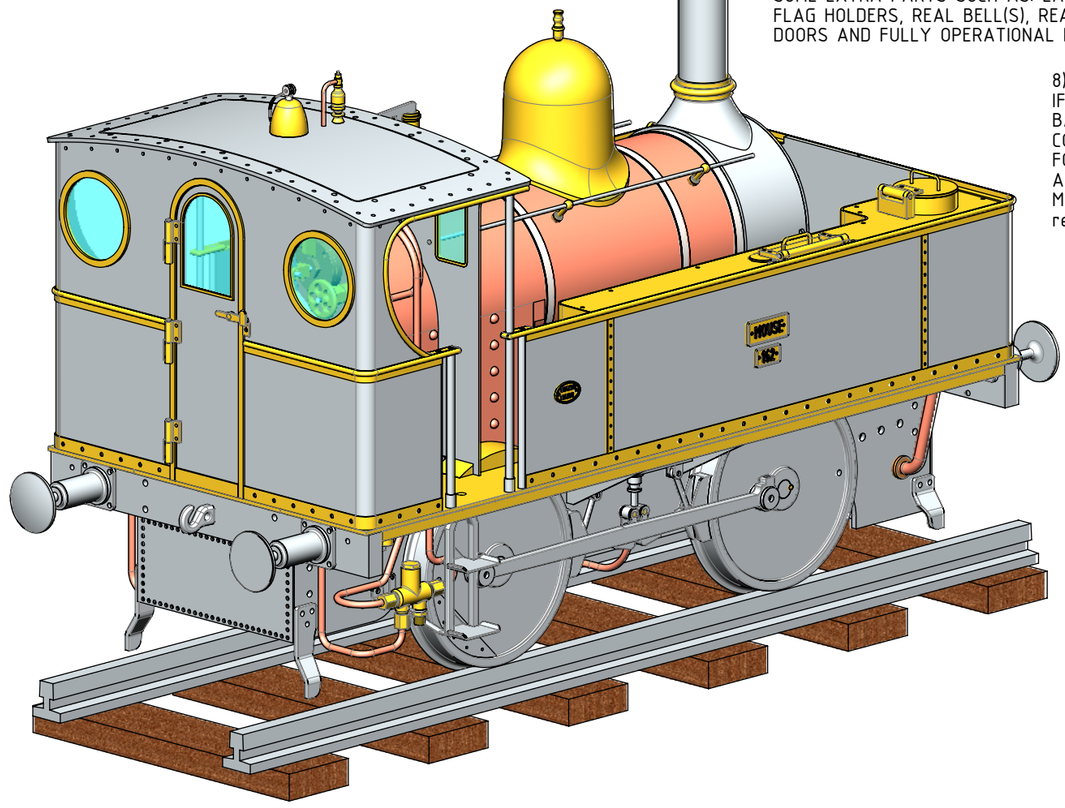
JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xfra.co.nz.

PROJECT No 07A-10-00
PROJECTION
JDWDS
MODEL SCALE: 1:1
DWG SCALE: 1:2.5 @A3 OR AS SHOWN
DATE MARCH 2019
Copyright © J.A.M. DE WAAL PAPAKURA NZ
SHEET: 03 OF 18
A3
No: 07A-10-00-SHT03

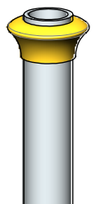
DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES







ADDITIONAL NOTES ABOUT THESE DRAWINGS:
0) NO MATERIALS HAVE BEEN SPECIFIED ON THESE DRAWINGS. THE BUILDER TO CHOOSE ITS OWN PREFERRED MATERIAL FOR THE PARTS/COMPONENTS. THE FOLLOWING COLOURS ON THE DRAWINGS INDICATES POSSIBLE MATERIALS WHICH CAN BE USED FOR PARTS:
YELLOW=BRASS, LIGHT GREY=ALUMINIUM OR MILD STEEL, REDDISH BROWN=COPPER, DARK BROWN=BRONZE OR GUN METAL, WHITISH=SILVER STEEL OR STAINLESS STEEL
1) FASTENERS.
NO FASTENERS SUCH AS BOLTS, SCREWS, NUTS AND WASHERS HAVE BEEN SHOW ON THESE DRAWINGS. THE BUILDER TO CHOOSE ITS OWN PREFERRED TYPE OF FASTENERS.
2) PRESSURE GAUGE.
THE RANGE OF THE PRESSURE GAUGE TO BE DETERMENT AFTER MAXIMUM BOILER PRESSURE IS ESTABLISHED AND THE AVAILABILITY ON THE MARKET. THE PRESSURE GAUGE IS A PROPRIETY ITEM.
3) PIPING
PREFERABLY ALL PIPING TO BE COPPER. THE PIPING ON THE DRAWINGS ARE INDICATIVE ONLY. THE BUILDER TO ESTABLISH THE PIPE LENGTH AND ROUTE FROM WORK PIECE. THE PIPE SIZES ARE INDICATIVE ONLY. THE BUILDER TO ESTABLISH THE AVAILABILITY OF THE PIPE SIZE(S) FROM THE LOCAL SUPPLIER(S). THE PIPE NUT(S) TO BE ADJUSTED TO THE USED PIPE SIZE.
4) BOILER.
BEFORE STARTING: THE BOILER AS SHOWN ON THESE DRAWING SHOULD BE INSPECTED BY AN AUTHORISED PROFESSIONAL ENGINEER. THE RUNNING AND MAXIMUM BOILER PRESSURE TO BE CALCULATED. MAKE SURE THE THE BOILER FULLY COMPLIES WITH THE LOCAL RULES AND REGULATIONS OF MODEL BOILERS. A COMPLIANCE AND TEST CERTIFICATE SHOULD BE OBTAINED.
BOILER INSULATION AND BOILER CLADDING ARE NOT SHOWN ON THESE DRAWINGS.
IF BOILER INSULATION AND BOILER CLADDING ARE PREFERRED THEN THE THE FOLLOWING COULD BE CONSIDERED: INSULATION MATERIAL 2mm THICK AND CLADDING 0.5mm THICK.
THE BOILER STRAPS DIAMETER SHOULD BE ADJUSTED ACCORDINGLY.
THE BOILER DOME IS REMOVABLE SO THAT THERE IS ACCESS TO THE BOILER WATER FILLER CAP.



5) CHIMNEY.
THE CHIMNEY HAS A LIGHT PRESS FIT. IT IS MADE REMOVABLE FOR TRANSPORT PURPOSES.
6) DUMMY PARTS.
IF PREFERRED SOME OF THE DUMMY PARTS COULD BE REPLACED WITH REAL OPERATING PART(S). THE BUILDER TO DESIGN THE PART OR ALTERNATIVELY PURCHASE.
7) ENHANCEMENT
THE APPEARANCE OF THE LOCOMOTIVE COULD BE ENHANCED BY ADDING SOME EXTRA PARTS SUCH AS: LAMP HOLDERS, FRONT AND REAR LIGHTS, FLAG HOLDERS, REAL BELL(S), REAL WHISTLE, OPENING AND CLOSING FRONT DOORS AND FULLY OPERATIONAL BRAKE SYSTEM.

8) CONTACT.
IF THE BUILDER WISH TO OBTAIN MORE BACKGROUND INFORMATION ABOUT THE CONSTRUCTION OF THIS ENGINE THAN THE FOLLOWING PERSON(S) CAN BE CONTACTED AS FOLLOWS:
Mr H.KAAN
redactie@stoomgroepholland.nl

NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE
A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162 184mm (7.5inch) GAUGE

DRAWING CONTENTS
GENERAL ARRANGEMENT, NOTES, TOP VIEW AND ISOMETRIC VIEWS

JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECT No 07A-10-00	PROJECTION JDWDS	MODEL SCALE: 1:1
		DWG SCALE: 1:2.5 @A3 OR AS SHOWN
DATE MARCH 2019		Copyright © J.A.M. DE WAAL PAPAKURA NZ
SHEET: 04 OF 18	A3	No: 07A-10-00-SHT04

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES

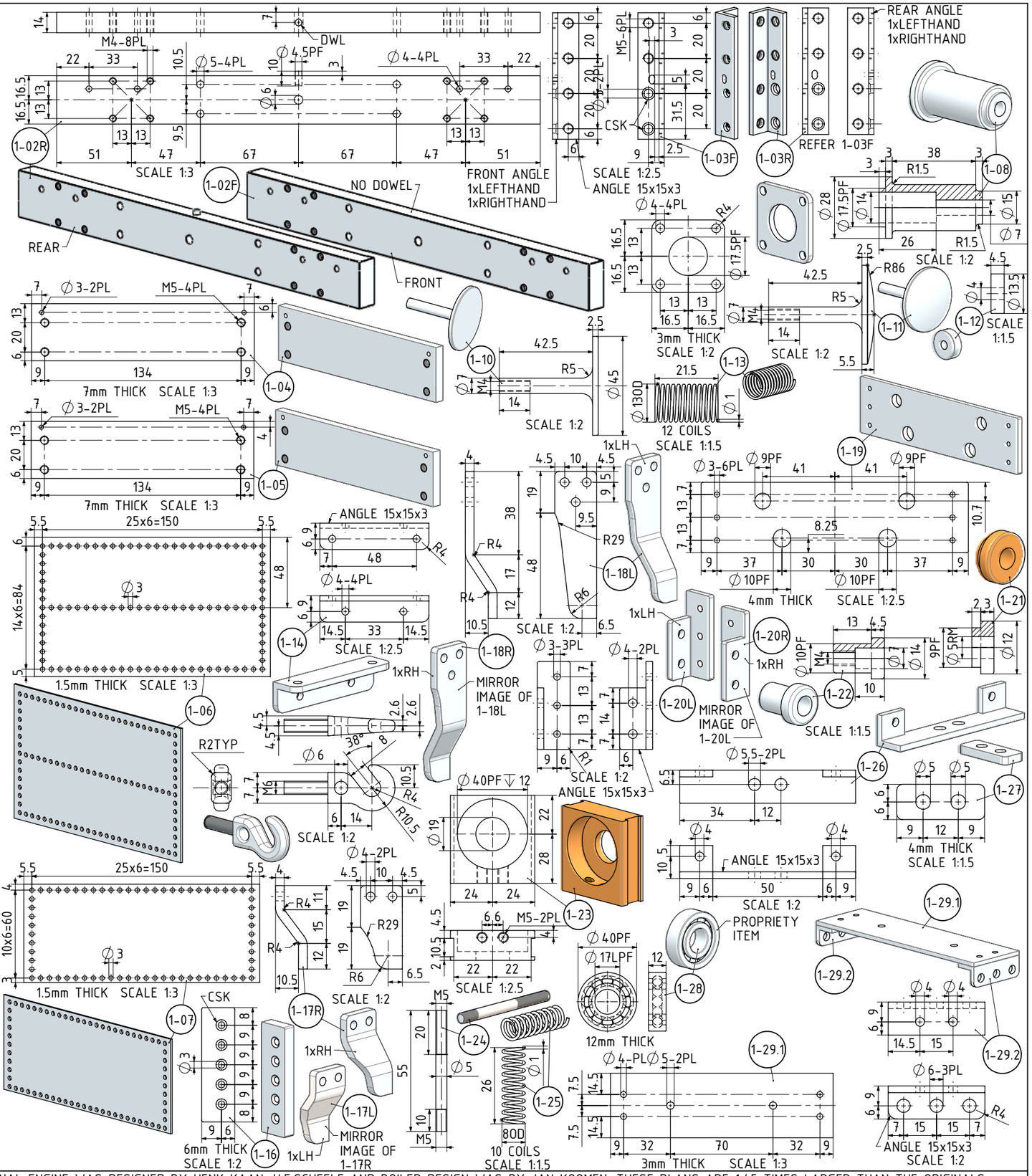
QTY.	PART NUMBER
1	MOUSE-1-01-SIDE FRAME PLATE
1	MOUSE-1-01-SIDE FRAME PLATE
1	MOUSE-1-02-FRONT-REAR BUFFER BEAM
1	MOUSE-1-02-FRONT-REAR BUFFER BEAM
2	MOUSE-1-03-SIDE FRAME PLATE ANGLE BRACKET
2	MOUSE-1-03-SIDE FRAME PLATE ANGLE BRACKET
1	MOUSE-1-04-FRONT SKIRT MOUNTING PLATE
1	MOUSE-1-05-REAR SKIRT MOUNTING PLATE
1	MOUSE-1-06-FRONT SKIRT PLATE
1	MOUSE-1-07-REAR SKIRT PLATE
4	MOUSE-1-08-BUFFER HOUSING
4	MOUSE-1-09-BUFFER HOUSING BACK PLATE
2	MOUSE-1-10-BUFFER TYPE-1
2	MOUSE-1-11-BUFFER TYPE-2
4	MOUSE-1-12-BUFFER END COLLAR
4	MOUSE-1-13-BUFFER COIL SPRING
4	MOUSE-1-14-FOOTPLATE SUPPORT ANGLE
2	MOUSE-1-15-PULLING HOOK
8	MOUSE-1-16-AXLE BOX GUIDE PLATE
1	MOUSE-1-17-FRONT RAIL SCOOP
1	MOUSE-1-17-FRONT RAIL SCOOP
1	MOUSE-1-18-REAR RAIL SCOOP
1	MOUSE-1-18-REAR RAIL SCOOP
1	MOUSE-1-19-MOTION CROSS STRETCHER
1	MOUSE-1-20-MOTION CROSS STRETCHER ANGLE
1	MOUSE-1-20-MOTION CROSS STRETCHER ANGLE
4	MOUSE-1-21-SLIDE VALVE ROD BUSH
2	MOUSE-1-22-CROSSHEAD ROD BUSH
4	MOUSE-1-23-AXLE BOX
8	MOUSE-1-24-AXLEBOX SPRING SHAFT
8	MOUSE-1-25-AXLEBOX COIL SPRING
4	MOUSE-1-26-AXLEBOX KEEPER
4	MOUSE-1-27-AXLEBOX SPRING RETAINER
4	MOUSE-1-28-AXLEBOX ROLLER BEARING
1	MOUSE-1-29-WTR FD PMP CROSS BRACE PLATE
2	MOUSE-1-30-WTR FD PMP SPACER+ANGLE
2	MOUSE-1-31-WTR FD PMP MOUNTING BRACKET
2	MOUSE-1-32-BRAKE SYSTEM SUPPORT BRACKET
2	MOUSE-1-33-BRAKE CYLINDER STEM
8	MOUSE-1-34-BRAKE CYLINDER STEM LINK
4	MOUSE-1-35-BRAKE SHOE CONNETION ROD
4	MOUSE-1-36-BRAKE SHOE STABILIZER ROD
4	MOUSE-1-37-BRAKE STABILIZER CONNETOR
4	MOUSE-1-38-BRAKE SHOE
1	MOUSE-1-39-MECH. WATER PUMP
1	MOUSE-1-40-MECH. WTR PMP DISCHARGE NIPPLE
1	MOUSE-1-41-CYLINDER BLOCK
2	MOUSE-1-42-CYLINDER FRONT COVER
2	MOUSE-1-43-CYLINDER REAR COVER
2	MOUSE-1-44-SLIDE VALVE GUIDE NIPPLE+GLAND
1	MOUSE-1-45-CYLINDER BLOCK STEAM EXHAUST
1	MOUSE-1-46-ASH PAN
2	MOUSE-1-47-FIRE GRATE SUPPORT BRACKET
1	MOUSE-1-48-FIRE GRATE
1	MOUSE-1-49-FIRE GRATE RESTING PIN
1	MOUSE-1-50-EXHAUST PIPE EXTENSION
1	MOUSE-1-51-MECH. WTR PMP TOP DISCHARGE NIPPLE.
2	MOUSE-1-52-REAR FOOTPLATE ANGLE BRACKET
2	MOUSE-1-53-WATER TANKS PIPE EYELET

QTY.	PART NUMBER
1	MOUSE-2-01-FRONT WHEEL AXLE
2	MOUSE-2-02A-REAR WHEEL CRANKSHAFT PART-1
1	MOUSE-2-02B-REAR WHEEL CRANKSHAFT PART-2
4	MOUSE-2-02C-REAR WHEEL CRANKSHAFT PART-3
2	MOUSE-2-02D-REAR WHEEL CRANKSHAFT PART-4
2	MOUSE-2-03-FRONT WHEEL
2	MOUSE-2-04-REAR WHEEL
4	MOUSE-2-05-WHEEL CRANK PIN
4	MOUSE-2-06-WHEEL CRANK PIN WASHER
2	MOUSE-2-07-SLIP ECCENTRIC SHEAVE
2	MOUSE-2-08-SLIP ECCENTRIC STOP COLLAR
1	MOUSE-2-09-FD PMP ECCENTRIC SHEAVE
1	MOUSE-2-10-FD PMP ECCENTRIC STRAP
1	MOUSE-2-11-FD PMP ECCENTRIC STRAP ROD
1	MOUSE-2-12-SLIDE VALVE ECCENTRIC STRAP
1	MOUSE-2-12-SLIDE VALVE ECCENTRIC STRAP
2	MOUSE-2-13-SLIDE VALVE ECCENTRIC STRAP ROD
2	MOUSE-2-14-COUPLING ROD
2	MOUSE-2-15-PISTON+CROSSHEAD
2	MOUSE-2-16-CON-ROD
1	MOUSE-2-17-SLIDE VALVE
1	MOUSE-2-17-SLIDE VALVE
1	MOUSE-2-18-MECH. WTER PMP PISTON

QTY.	PART NUMBER
1	MOUSE-3-01-SMOKE BOX SUPPORT FRAME
1	MOUSE-3-02-FRONT FACE PLATE+DOOR
1	MOUSE-3-03-DOOR LOCKING DART
1	MOUSE-3-04-CHIMNEY
1	MOUSE-3-05-SNIFTER VALVE
1	MOUSE-3-06-STEAM CONNECTOR NIPPLE
1	MOUSE-3-07-BOILER SHELL
1	MOUSE-3-08-FIRE BOX
1	MOUSE-3-09-SUPPLY STEAM MANIFOLD
1	MOUSE-3-10-BLOWER NOZZLE+PIPE
1	MOUSE-3-11-REGULATOR BODY
1	MOUSE-3-12-REGULATOR SPINDLE
1	MOUSE-3-13-REGULATOR HANDLE
1	MOUSE-3-14-REGULATOR HANDLE LINKS
1	MOUSE-3-15-FIRE BOX DOOR
1	MOUSE-3-16-FIRE DOOR HINGE BRACKET
1	MOUSE-3-17-BLOWDOWN VALVE
1	MOUSE-3-18-WATER LAVEL GAUGE
1	MOUSE-3-19-BOILER TOP STEAM MANIFOLD
1	MOUSE-3-20-STEAM DOME
1	MOUSE-3-21-SAFETY VALVE
1	MOUSE-3-22-SAFETY VALVE CENTER PULL SPRING
1	MOUSE-3-23-BOILER STEAM SUPPLY PIPE-1
1	MOUSE-3-24-SNIFTER SUPPLY PIPE
1	MOUSE-3-25-BOILER SUPPLY PIPE PART-2
12	MOUSE-3-26-M8x5 PIPE NUT
1	MOUSE-3-27-WATER GAUGE PIPE
2	MOUSE-3-28-BOILER NON RETURN VALVE
1	MOUSE-3-29-BLOWER VALVE
1	MOUSE-3-30-INJECTOR STEAM SUPPLY VALVE
1	MOUSE-3-31-MANIFOLD-BLWER VALE PIPE
1	MOUSE-3-32-STEAM PRESSURE GAUGE
1	MOUSE-3-33-BOILER STRAP
2	MOUSE-3-34-HAND RAIL+SUPPORT

QTY.	PART NUMBER
1	MOUSE-4-01-FRONT END FOOTPLATE
1	MOUSE-4-02-LEFTHAND SIDE FOOTPLATE
1	MOUSE-4-03-LEFTHAND WATER TANK
2	MOUSE-4-04-WATER TANK FILLER LID
1	MOUSE-4-05-LEFTHAND OUTER WALL
1	MOUSE-4-06-PISPLACEMENT LUBRICATOR
1	MOUSE-4-07-BYPASS VALVE
1	MOUSE-4-08-RIGHTHAND SIDE FOOTPLATE
1	MOUSE-4-09-RIGHTHAND WATER TANK
1	MOUSE-4-10-RIGHTHAND OUTER WALL
1	MOUSE-4-11-DUMMY FRONT DOORS
1	MOUSE-4-12-REAR FOOTPLATE
1	MOUSE-4-13-RH WATER TANK HAND PUMP COVER
1	MOUSE-4-14-HAND PUMP
2	MOUSE-4-15-HAND PUMP LINK
1	MOUSE-4-16-HAND PUMP PISTON
1	MOUSE-4-17-HAND PUMP HANDLE
1	MOUSE-4-18-WATER TANKS BALANCE PIPE
1	MOUSE-4-19-WATER TANK TO MECH PUMP PIPE
1	MOUSE-4-20-MECH. PUMP TO BYPASS WATER PIPE
1	MOUSE-4-21-BYPASS TO WATER TANK PIPE
1	MOUSE-4-22-HAND PUMP INTERNAL PIPE
1	MOUSE-4-23-RH WATER TANK TO MECH. PUMP PIPE
1	MOUSE-4-24-CABIN SIDE STEPS
1	MOUSE-4-24-CABIN SIDE STEPS
1	MOUSE-4-25-INJECTOR WATER VALVE
1	MOUSE-4-26-WATER TANK TO INJ. WTR VALVE
1	MOUSE-4-27-MECH. PUMP TO BOILER NRV PIPE
1	MOUSE-4-28-DUMMY WATER INJECTOR
1	MOUSE-4-29-MANIFOLD TO DUMMY INJECTOR STEAM PIPE
1	MOUSE-4-30-DUMMY INJETOR TO BOILER NRV PIPE
1	MOUSE-4-31-WATER SUPPLY TO DUMMY INJECTOR PIPE
2	MOUSE-4-32-MAKERS PLATE
2	MOUSE-4-33-LOCO NAME PLATE
2	MOUSE-4-34-LOCO NUMBER PLATE

QTY.	PART NUMBER
1	MOUSE-5-01-CABIN FRAMES
1	MOUSE-5-02-CABIN ROOF
1	MOUSE-5-03-CABIN REAR DOOR
3	MOUSE-5-04-CABIN HINGE BRACKT
1	MOUSE-5-05-DOOR HANDLE
1	MOUSE-5-06-CABIN ROOF BELL
1	MOUSE-5-07-DUMMY WHISTLE
1	MOUSE-RAIL 184mm



NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

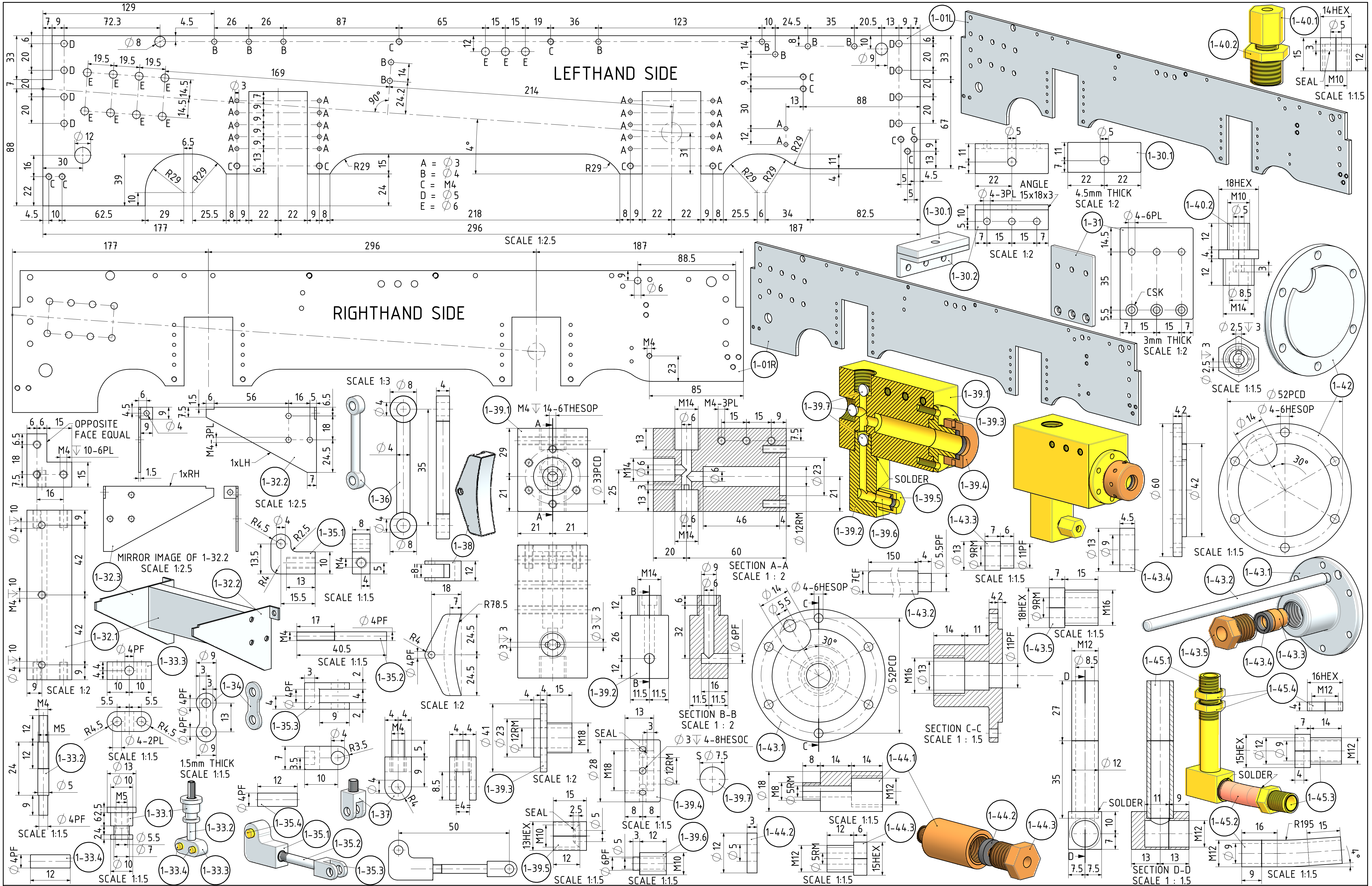
TITLE
A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162
184mm (7.5inch) GAUGE

DRAWING CONTENTS
BILL OF MATERIALS PARTS AND ASSEMBLIES

JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECT No 07A-10-00
PROJECTION
JDWDS
MODEL SCALE: 1:1
DWG SCALE: 1:1 @A3 OR AS SHOWN
DATE MARCH 2019
Copyright © J.A.M. DE WAAL PAPAKURA NZ
SHEET: 05 OF 18
A3
No: 07A-10-00-SHT05

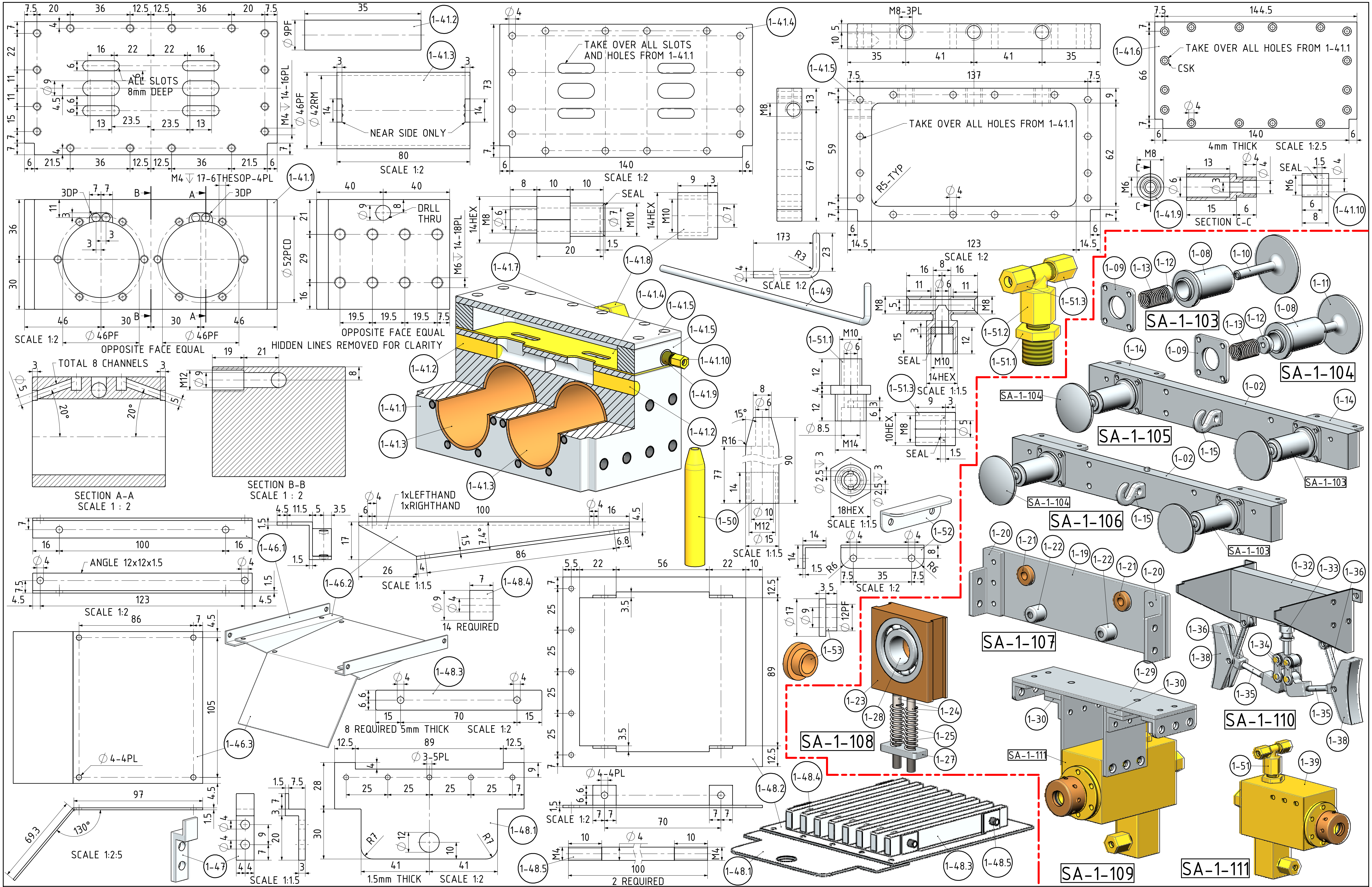
DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES



NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162 184mm (7.5inch) GAUGE	DRAWING CONTENTS PARTS AND ASSEMBLIES	PROJECT No 07A-10-00	MODEL SCALE: 1:1
		JDW DRAUGHTING SERVICES	DWG SCALE: 1:1 @A3 OR AS SHOWN
		J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.	PROJECTION JDWDS
		DATE MARCH 2019	Copyright © J.A.M. DE WAAL PAPAKURA NZ
		SHEET: 06 OF 18	A3 No: 07A-10-00-SHT06

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSSES



NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162 184mm (7.5inch) GAUGE

DRAWING CONTENTS

PARTS AND ASSEMBLIES

PROJECT No 07A-10-00

JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION

JDWDS

DATE MARCH 2019

MODEL SCALE: 1:1

DWG SCALE: 1:1 @A3 OR AS SHOWN

Copyright © J.A.M. DE WAAL PAPAKURA NZ

SHEET: 07 OF 18

A3

No: 07A-10-00-SHT07

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSSES

SA-1-101

SA-1-102

SA-1-113

SA-1-112

SCALE 1:4
ALL OTHER DIMENSION DETAILS AS PER 2-03

SCALE 1:3

SCALE 1:2.5

SCALE 1:1.5

SCALE 1:2

SCALE 1:3.5

SECTION A-A
SCALE 1 : 3.5

SECTION B-B
SCALE 1 : 1.5

TAKE OVER ALL HOLES FROM 2-04.1
1.5mm THICK SCALE 1:3

SPLIT LINE

O-RING

1xRIGHTHAND
1xLEFTHAND

NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE
A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162
184mm (7.5inch) GAUGE

DRAWING CONTENTS
PARTS AND ASSEMBLIES

PROJECT No 07A-10-00

JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION

JDWDS

DATE MARCH 2019

MODEL SCALE: 1:1

DWG SCALE: 1:1 @A3 OR AS SHOWN

Copyright © J.A.M. DE WAAL PAPAKURA NZ

SHEET: 08 OF 18 | A3 | No: 07A-10-00-SHT08

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES

SA-2-204

SA-2-205

SA-2-206

SA-2-201

SA-2-207

SA-2-202

CRANKS 90deg OFFSET

SA-2-208

SA-2-209

SA-2-203

ECCENTRIC STOP COLLAR 90deg OFFSET

CRANKS 90deg OFFSET

NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE
A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162
184mm (7.5inch) GAUGE

DRAWING CONTENTS
PARTS AND ASSEMBLIES

PROJECT No 07A-10-00

JDW DRAUGHTING SERVICES

J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION JDWDS

DATE MARCH 2019

MODEL SCALE: 1:1

DWG SCALE: 1:1 @A3 OR AS SHOWN

Copyright © J.A.M. DE WAAL PAPAKURA NZ

SHEET: 09 OF 18 | A3 | No: 07A-10-00-SHT09

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES

NOTE: THE ENTIRE BOILER SHOULD BE HARD/SILVER SOLDERED

IF THE BOILER BARREL IS SEAMLESS THEN 3-07.25 IS NOT REQUIRED

FOR FIREBOX ISOMETRIC VIEW AND POS NUMBERS REFER TO SHEET11

NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE
A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162
184mm (7.5inch) GAUGE

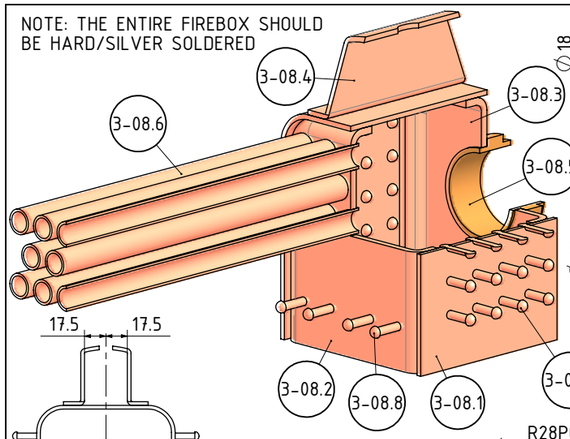
DRAWING CONTENTS
PARTS AND ASSEMBLIES

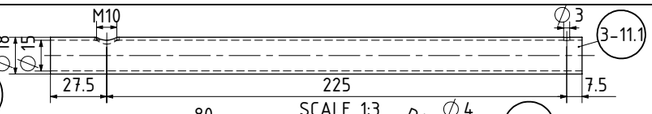
PROJECT No 07A-10-00
JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

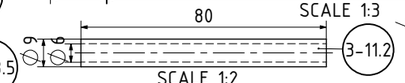
PROJECTION | JDWDS | MODEL SCALE: 1:1
DWG SCALE: 1:1 @A3 OR AS SHOWN
DATE MARCH 2019
Copyright © J.A.M. DE WAAL PAPAKURA NZ
SHEET: 10 OF 18 | A3 | No: 07A-10-00-SHT10

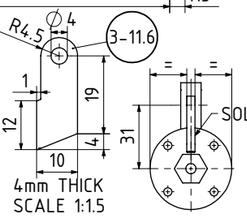
DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES

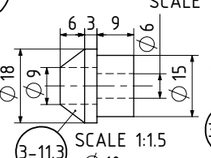
NOTE: THE ENTIRE FIREBOX SHOULD BE HARD/SILVER SOLDERED

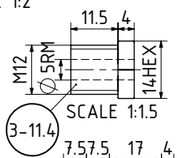


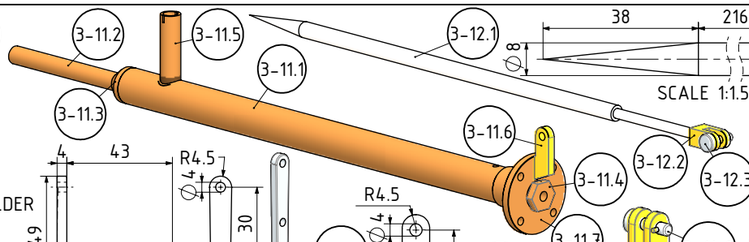


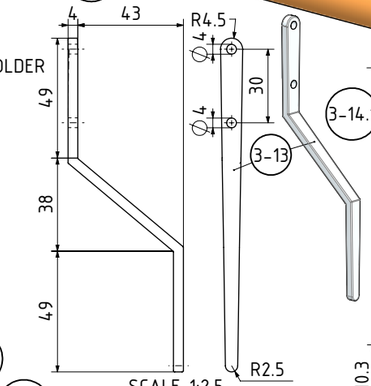


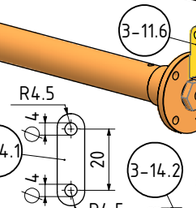


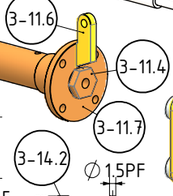


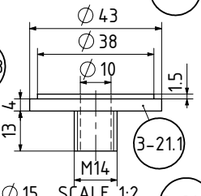


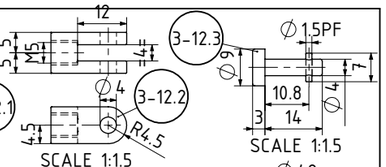


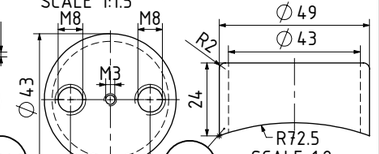


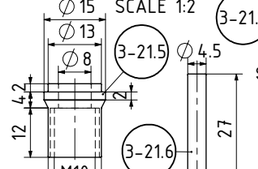


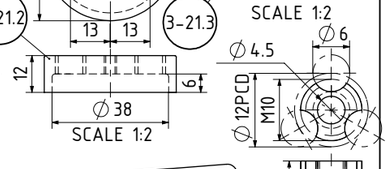


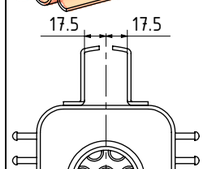


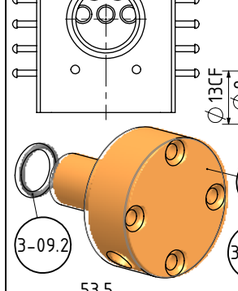


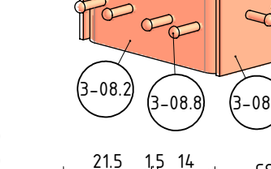


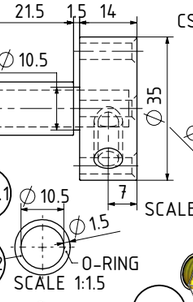


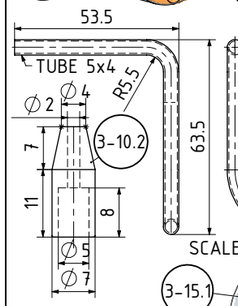


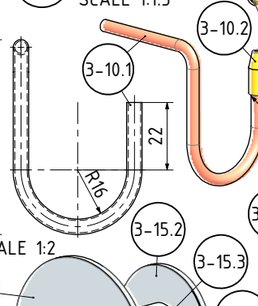


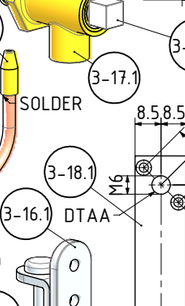


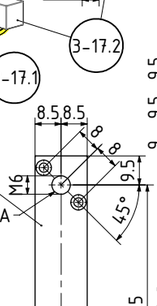


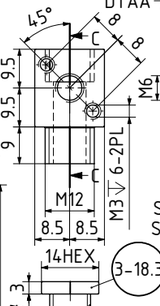


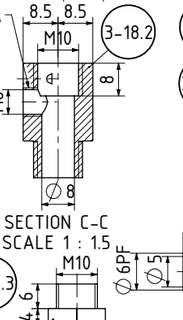


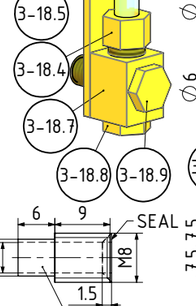


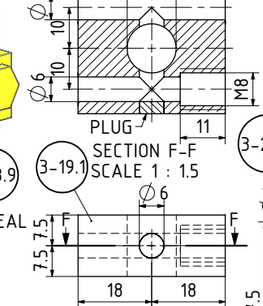












NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE
A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162
184mm (7.5inch) GAUGE

DRAWING CONTENTS
PARTS AND ASSEMBLIES

JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECT No 07A-10-00

PROJECTION JDWDS

DATE MARCH 2019

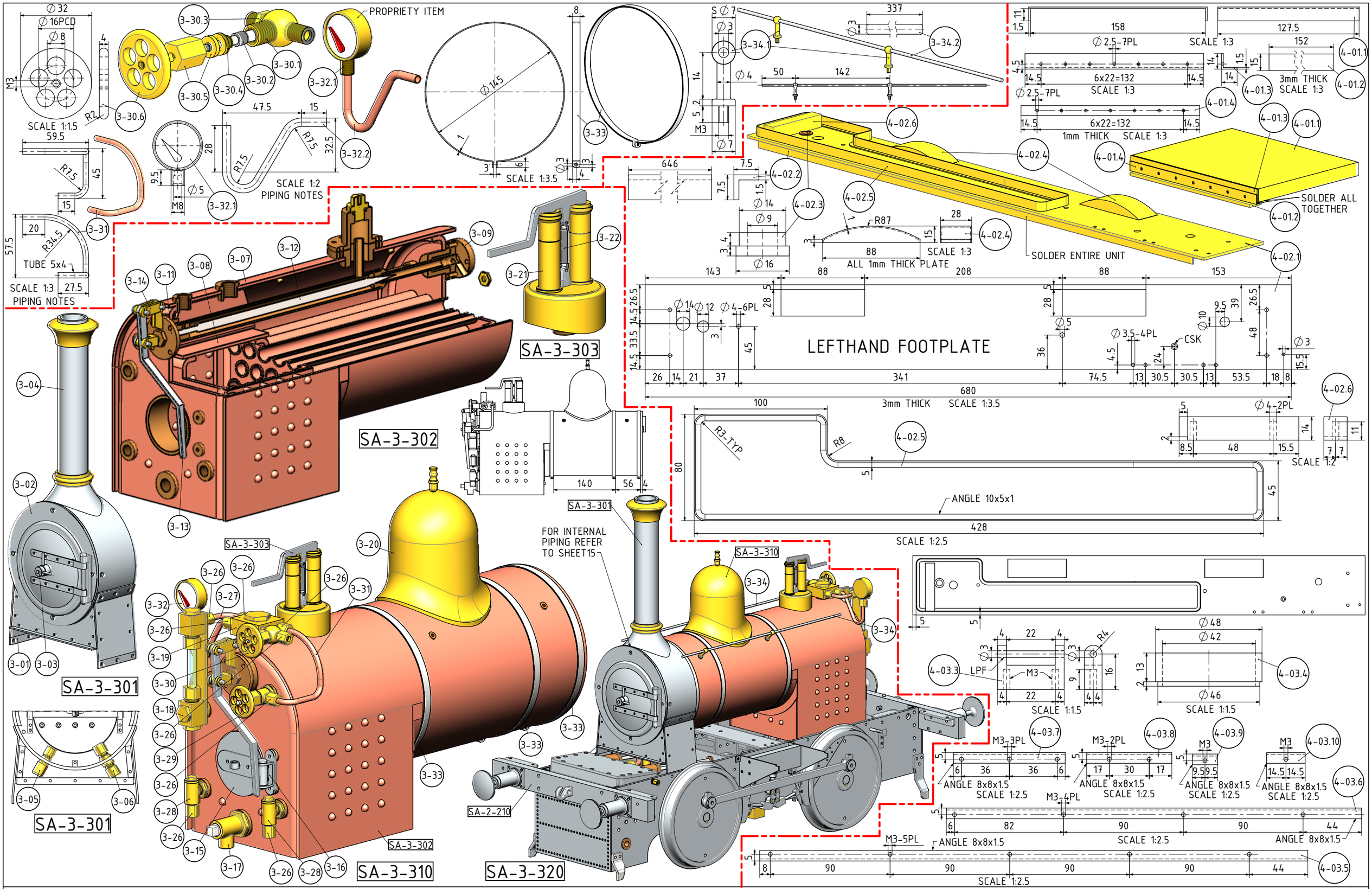
MODEL SCALE: 1:1

DWG SCALE: 1:1 @A3 OR AS SHOWN

Copyright © J.A.M. DE WAAL PAPAKURA NZ

SHEET: 11 OF 18 | A3 | No: 07A-10-00-SHT11

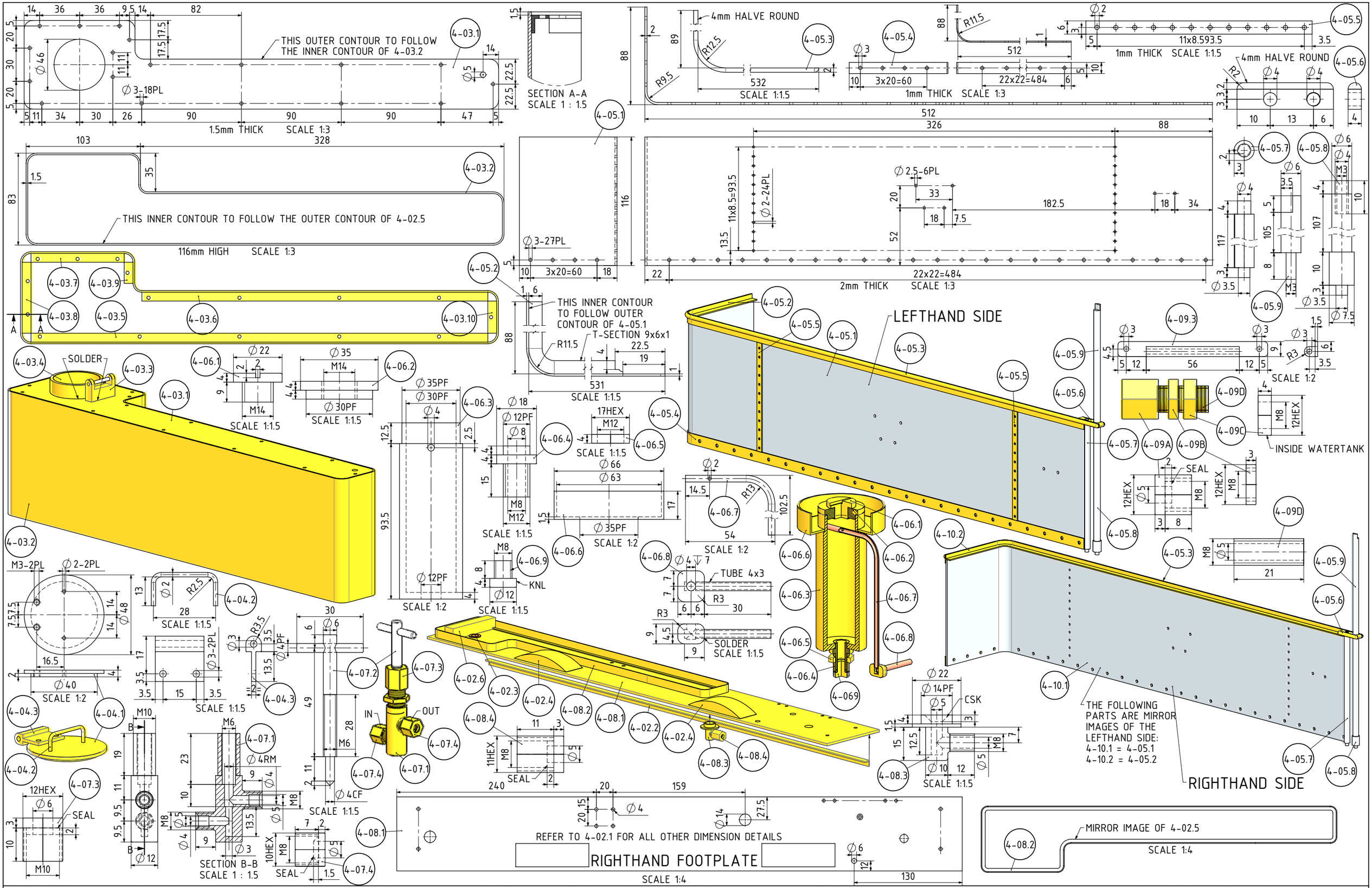
DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES



NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162 184mm (7.5inch) GAUGE	DRAWING CONTENTS PARTS AND ASSEMBLIES	PROJECT No 07A-10-00	MODEL SCALE: 1:1
		JDW DRAUGHTING SERVICES	DWG SCALE: 1:1 @A3 OR AS SHOWN
		J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.	DATE MARCH 2019
			Copyright © J.A.M. DE WAAL PAPAKURA NZ
			SHEET: 12 OF 18
			A3 No: 07A-10-00-SHT12

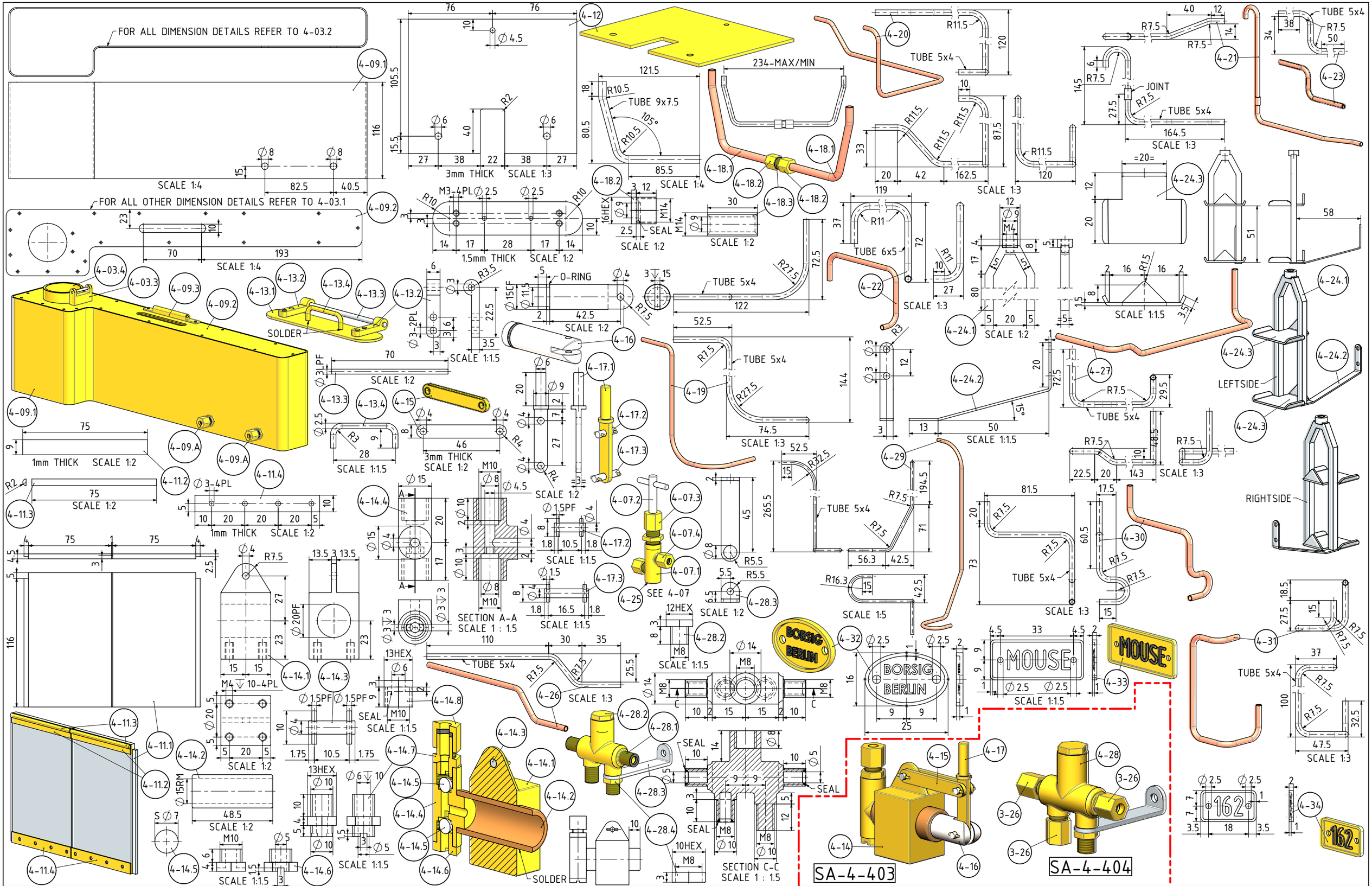
DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSSES



NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162 184mm (7.5inch) GAUGE	DRAWING CONTENTS PARTS AND ASSEMBLIES	PROJECT No 07A-10-00	MODEL SCALE: 1:1
		JDW DRAUGHTING SERVICES	DWG SCALE: 1:1 @A3 OR AS SHOWN
		J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.	DATE MARCH 2019
			Copyright © J.A.M. DE WAAL PAPAKURA NZ
			SHEET: 13 OF 18
			A3 No: 07A-10-00-SHT13

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSSES



NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE
A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162 184mm (7.5inch) GAUGE

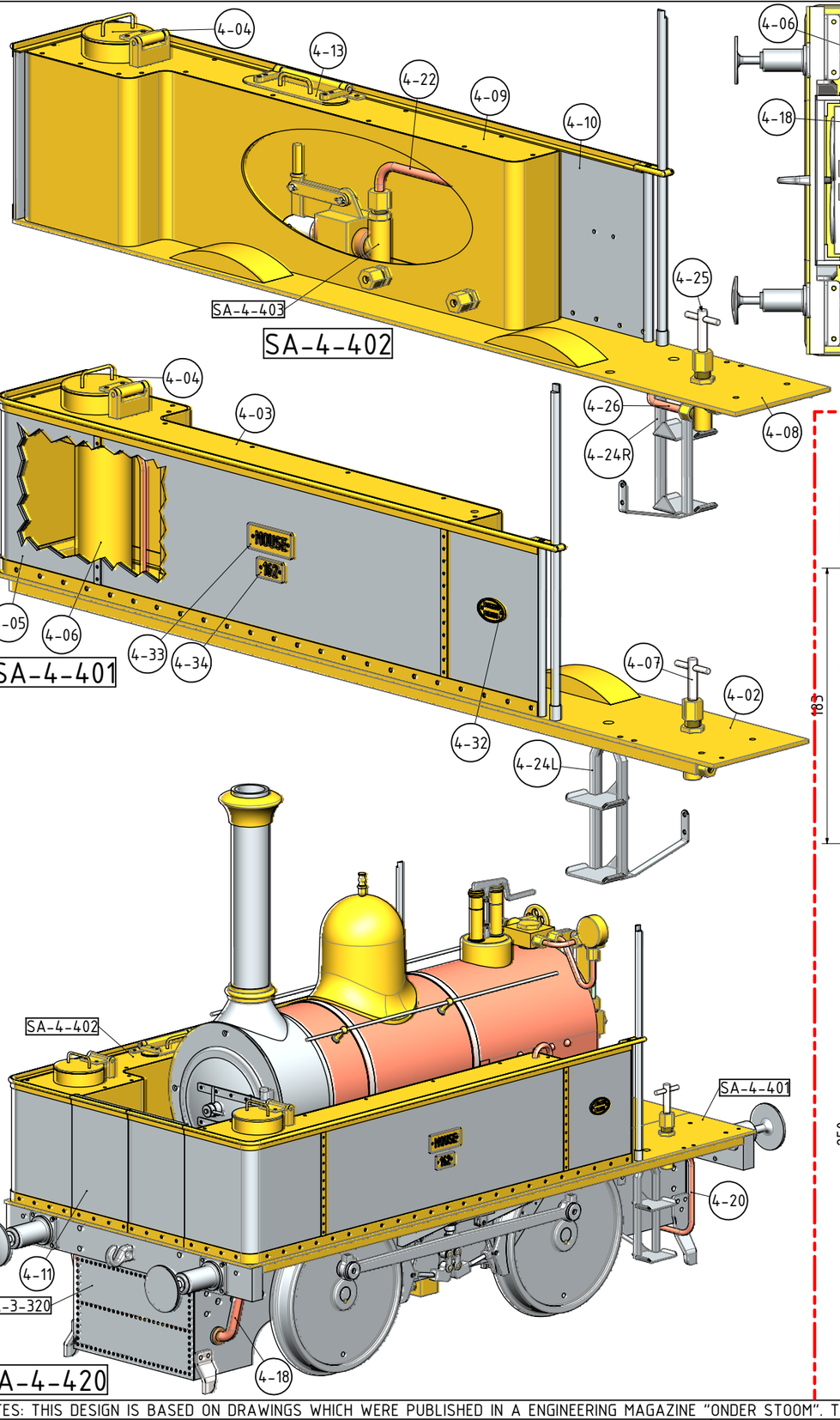
DRAWING CONTENTS
PARTS AND ASSEMBLIES

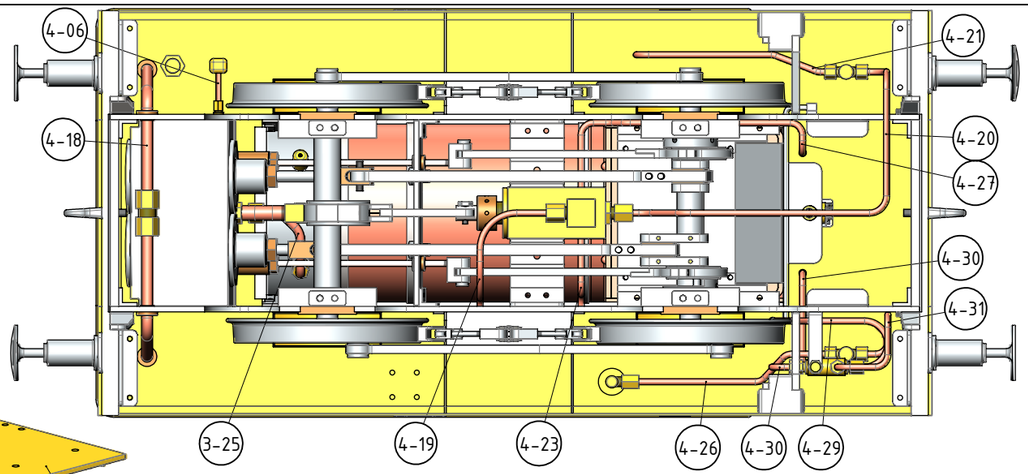
PROJECT No 07A-10-00
JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

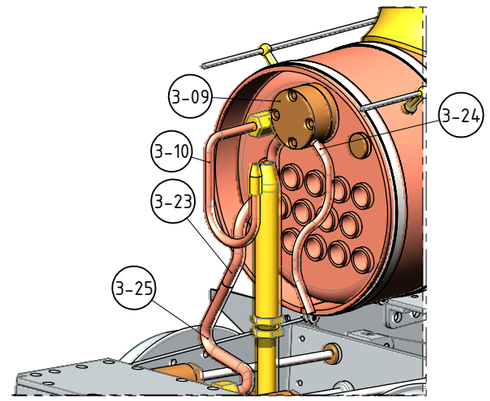
PROJECTION JDWDS
DATE MARCH 2019

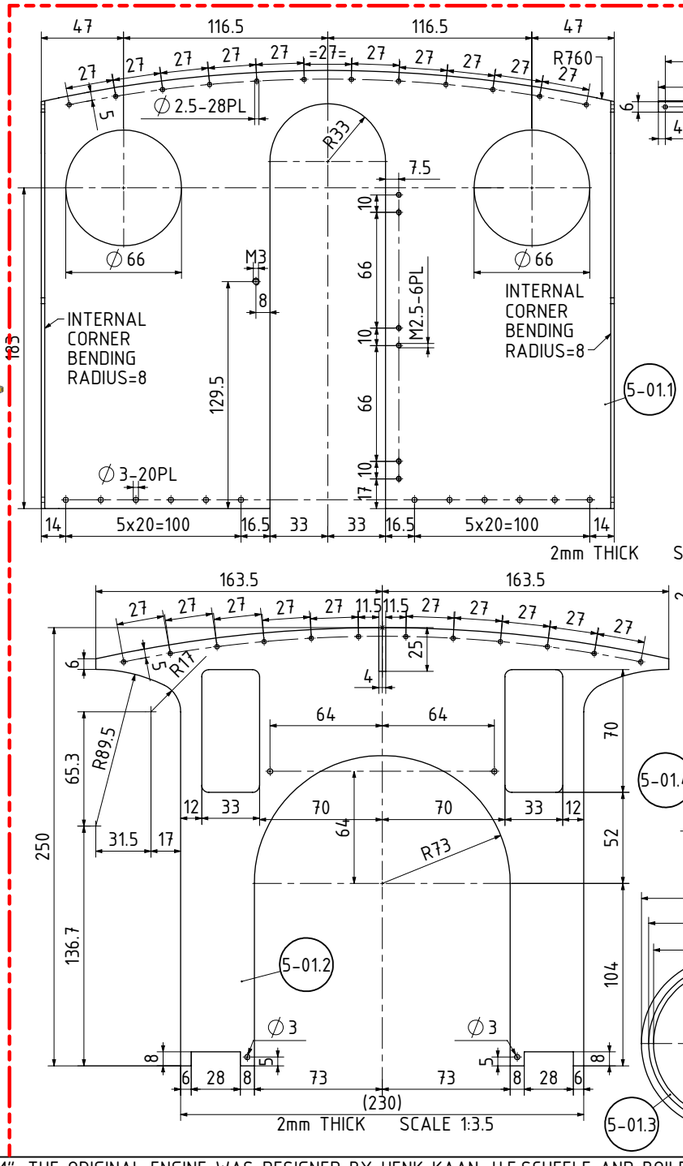
MODEL SCALE: 1:1
DWG SCALE: 1:1 @A3 OR AS SHOWN
Copyright © J.A.M. DE WAAL PAPAKURA NZ
SHEET: 14 OF 18 | A3 | No: 07A-10-00-SHT14

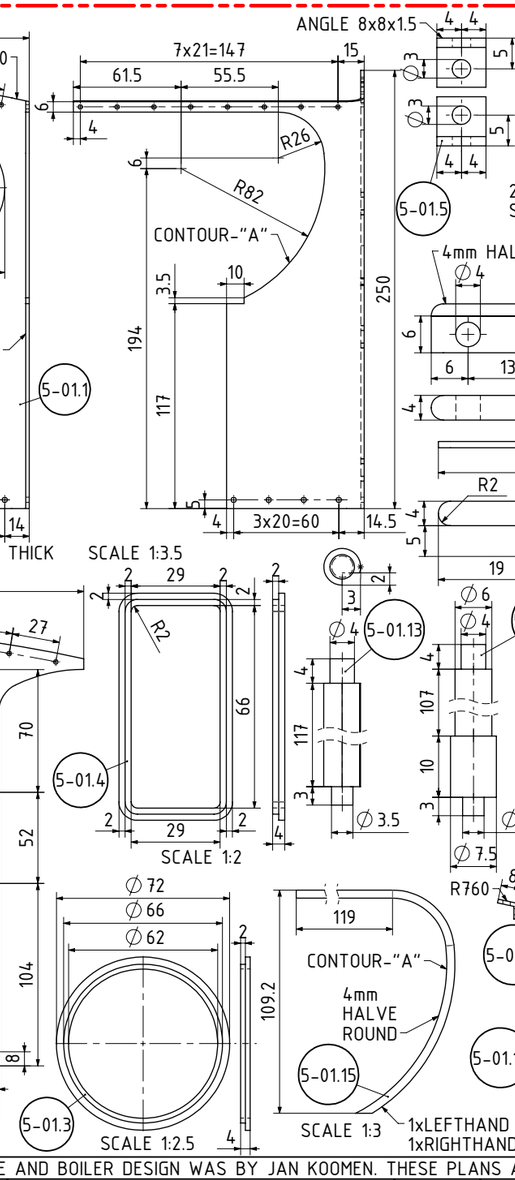
DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSSES

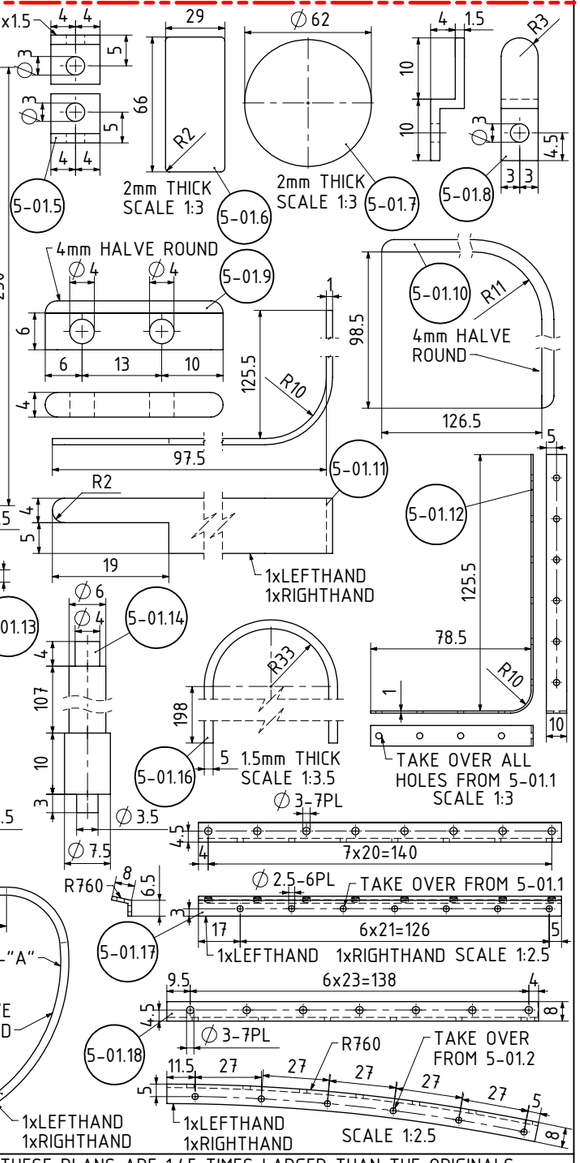












NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE
A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162 184mm (7.5inch) GAUGE

DRAWING CONTENTS
PARTS AND ASSEMBLIES

PROJECT No 07A-10-00

JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECTION JDWDS

DATE MARCH 2019

MODEL SCALE: 1:1

DWG SCALE: 1:1 @A3 OR AS SHOWN

Copyright © J.A.M. DE WAAL PAPAKURA NZ

SHEET: 15 OF 18 | A3 | No: 07A-10-00-SHT15

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES

13x23=299
∅3-14PL
R760
ANGLE 8x8x1.5
∅2.5-12PL
TAKE OVER FROM 5-01.1
SCALE 1:2.5
5-01.18
5-01.17
5-01.19
5-01.1
5-01.6
5-01.4
5-01.15
5-01.10
5-01.11
5-01.2
5-01.5
ALL WINDOWS CLEAR PLASTIC
5-01.14
5-01.13
5-01.12
5-01.3
5-01.7
5-01.16
5-01.8
5-01.9
5-01.12
13x23=299
∅4-16PL
∅3-42PL
7x20=140
335.3
SCALE 1:3.5
R760
REMOVABLE
5-02.1
5-02.2
5-02.3
M4
SCALE 1:3.5
SCALE 1:4
5-03.1
5-03.2
5-03.3
5-03.4
5-03.5
5-03.6
5-04
5-05.1
5-05.2
5-06.1
5-06.2
5-06.3
5-06.4
5-07.1
5-07.2
1.5mm THICK
SCALE 1:3
2mm THICK
SCALE 1:3
2mm THICK SCALE 1:3.5
SCALE 1:1.5
SA-5-504
SA-4-420
SA-5-505
SA-5-502
SA-5-501
5-06
5-02
5-07
5-05
5-03
5-04
5-01

NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

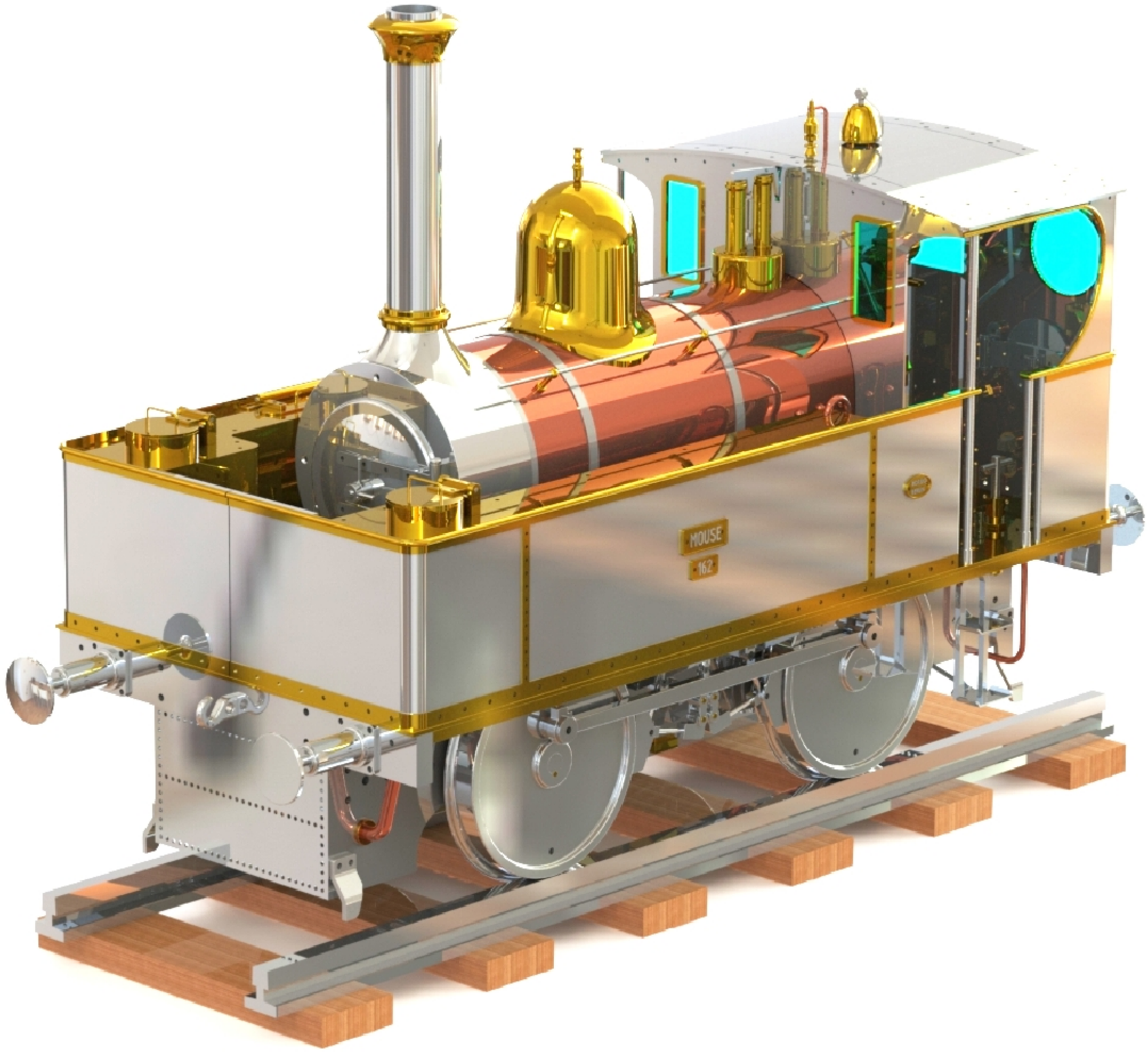
TITLE
A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162 184mm (7.5inch) GAUGE

DRAWING CONTENTS
PARTS AND ASSEMBLIES

JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECT No 07A-10-00
JDWDS
DATE MARCH 2019
SHEET: 16 OF 18
MODEL SCALE: 1:1
DWG SCALE: 1:1 @A3 OR AS SHOWN
Copyright © J.A.M. DE WAAL PAPAKURA NZ
A3 No: 07A-10-00-SHT16

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSSES



NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE
A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162 184mm (7.5inch) GAUGE

DRAWING CONTENTS
PARTS AND ASSEMBLIES

JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.

PROJECT No 07A-10-00

PROJECTION JDWDS

DATE MARCH 2019

MODEL SCALE: 1:1

DWG SCALE: 1:1 @A3 OR AS SHOWN

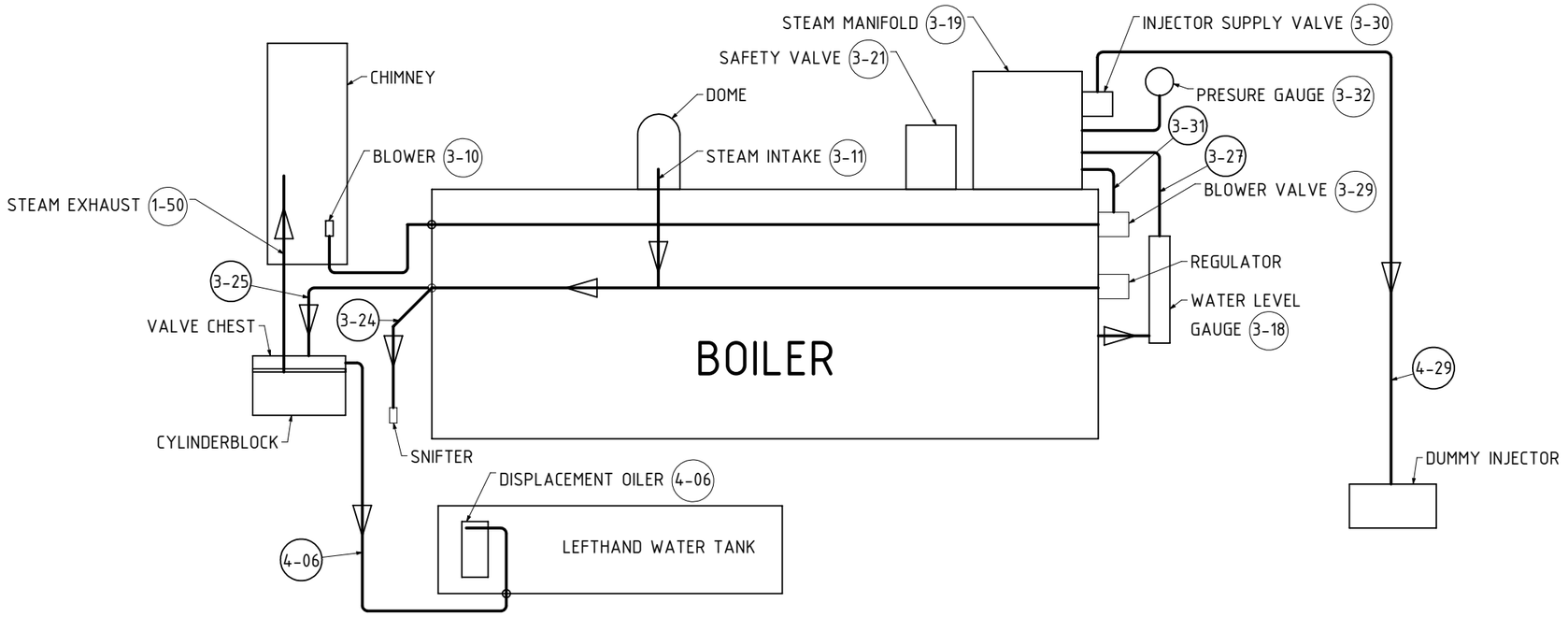
Copyright © J.A.M. DE WAAL PAPAKURA NZ

SHEET: 17 OF 18

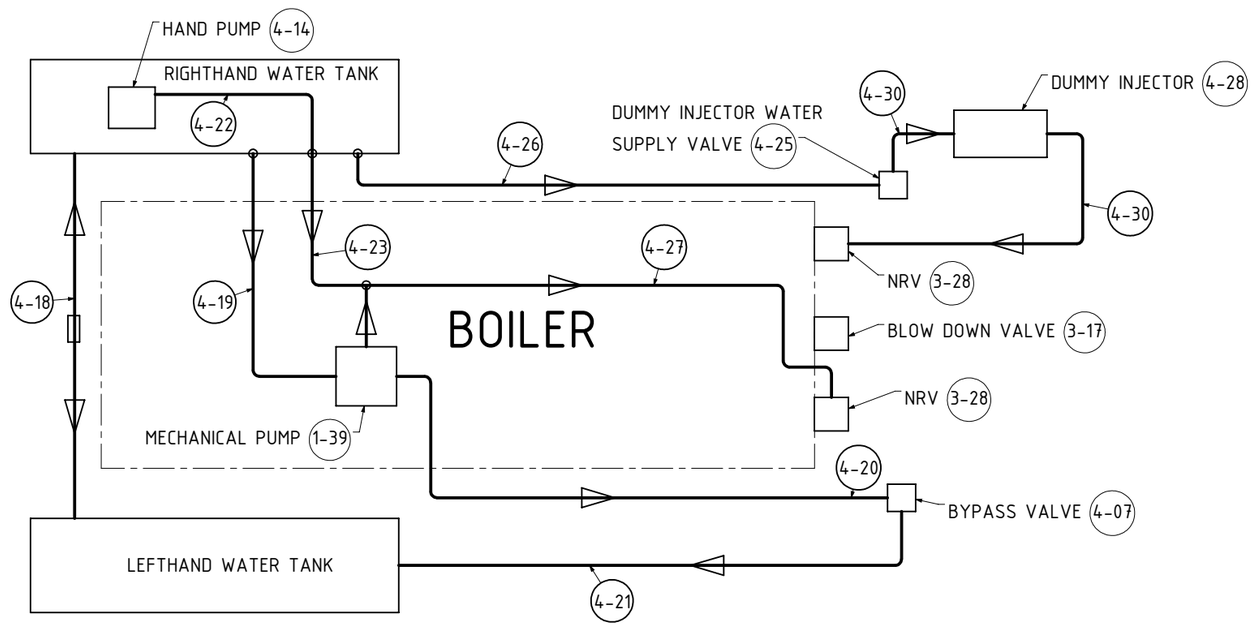
A3

No: 07A-10-00-SHT17

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES



STEAM SUPPLY PIPING DIAGRAM



WATER SUPPLY PIPING DIAGRAM

NOTES: THIS DESIGN IS BASED ON DRAWINGS WHICH WERE PUBLISHED IN A ENGINEERING MAGAZINE "ONDER STOOM". THE ORIGINAL ENGINE WAS DESIGNED BY HENK KAAN, H.E.SCHEELE AND BOILER DESIGN WAS BY JAN KOOMEN. THESE PLANS ARE 1.45 TIMES LARGER THAN THE ORIGINALS

TITLE A MODEL OF A COAL FIRED STEAM LOCOMOTIVE OF THE HSM ANIMAL SERIES "MOUSE" No 162 184mm (7.5inch) GAUGE

DRAWING CONTENTS
PIPING DIAGRAMS

PROJECT No 07A-10-00
JDW DRAUGHTING SERVICES
J.A.M. DE WAAL. 12 BRIGHTWELL STREET PAPAKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xfra.co.nz.

PROJECTION JDWDS
DATE MARCH 2019
SHEET: 18 OF 18

MODEL SCALE: 1:1
DWG SCALE: 1:1 @A3 OR AS SHOWN
Copyright © J.A.M. DE WAAL PAPAKURA NZ
A3 No: 07A-10-00-SHT18

DRAWINGS ARE FOR PERSONAL USE ONLY NOT FOR COMMERCIAL PURPOSES