

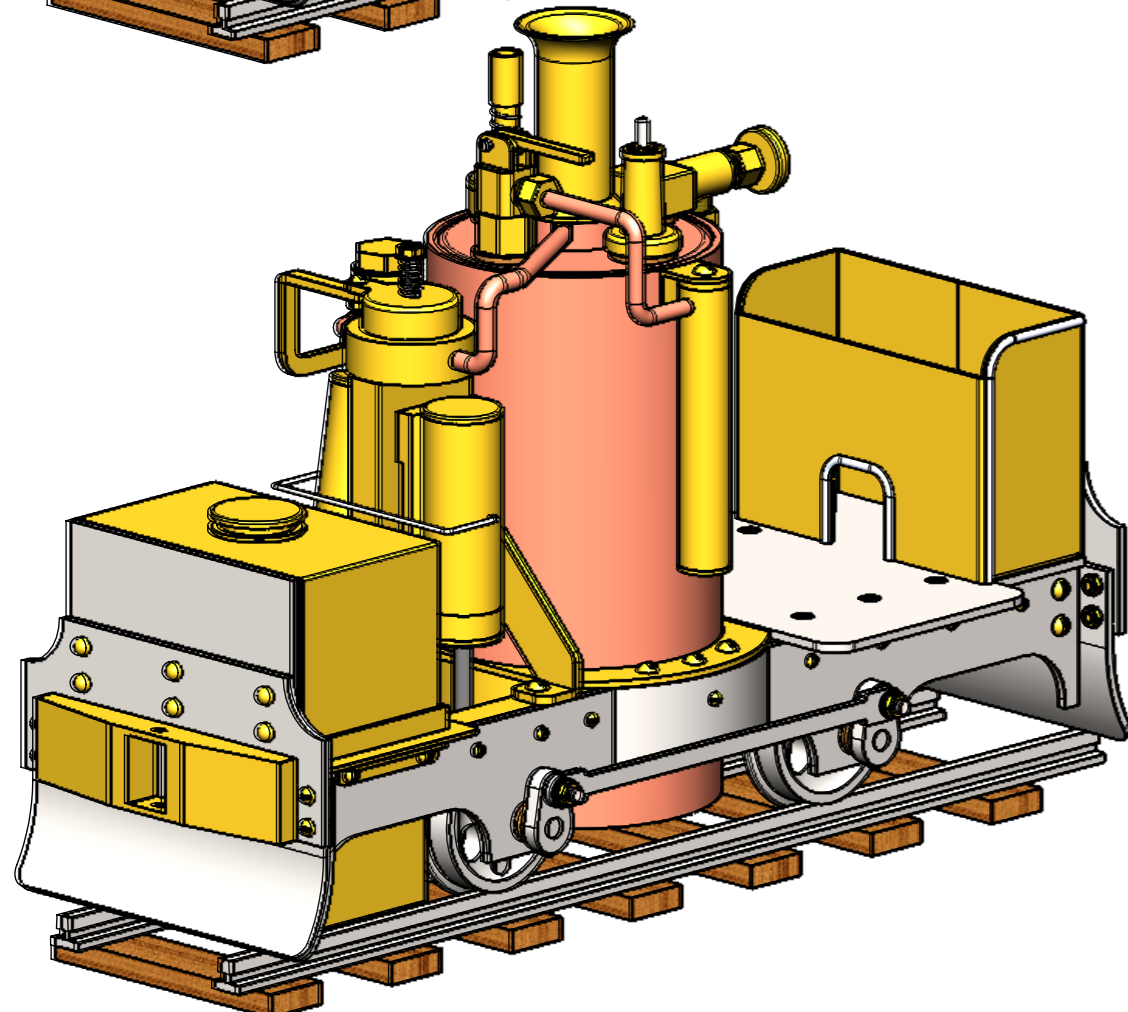
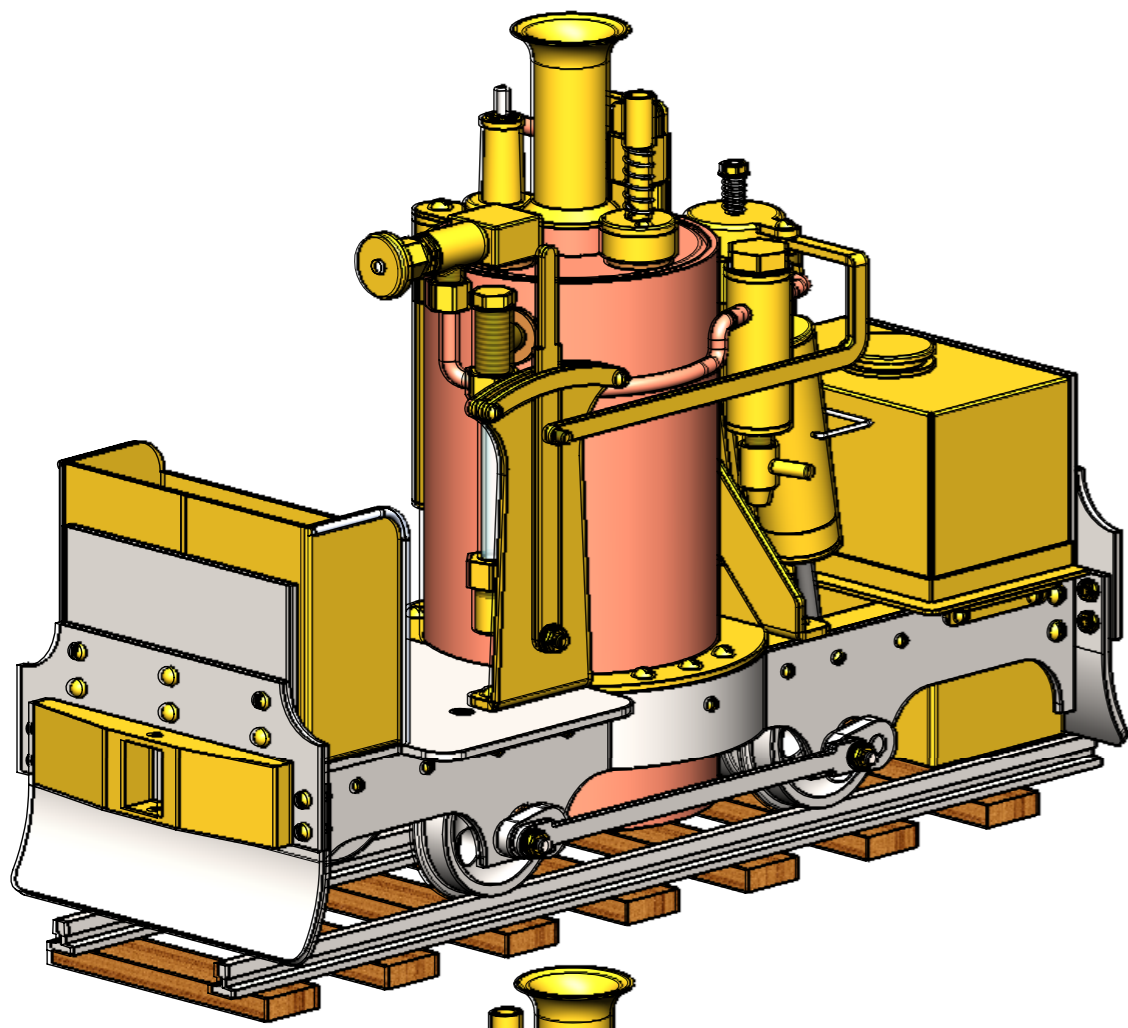
NOTES: FOUND THE ORIGINAL DRAWINGS ON THE INTERNET. ORIGINAL DRAWINGS DRAWN BY DAVE WATKINS 15/8/95. ORIGINAL SCALE 16mm TO 1 FOOT. (1:18 BASED ON 578mm GAUGE)

TITLE
**DE WINTON NARROW GAUGE LOCOMOTIVE
 CALLED "IDRIS" (TRACK GAUGE 45mm)**

DRAWING CONTENTS
GENERAL ARRANGEMENT

PROJECT No 07E-09-00
JDW DRAUGHTING SERVICES
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 NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000
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PROJECTION 	JDWDS	MODEL SCALE: 1:12.8
DATE MAY-2015	Copyright © J.A.M. DE WAAL PAKAPURA NZ	DWG SCALE: NTS @A3 OR AS SHOWN
SHEET: 01 OF 08	A3	No: IDRIS-01



QTY.	PART NUMBER
1	IDRIS-1-01A-LH-SIDE FRAME
1	IDRIS-1-01B-RH-SIDE FRAME
2	IDRIS-1-02-SIDE FRAME ANGLE-1
2	IDRIS-1-03-SIDE FRAME ANGLE-2
4	IDRIS-1-04-WHEEL BEARING BUSH
1	IDRIS-1-05-SIDE FRAME FOOT PLATE LH ANGLE
1	IDRIS-1-06-SIDE FRAME FOOT PLATE RH ANGLE
2	IDRIS-1-07-BUFFER PLATE
2	IDRIS-1-08-FRONT REAR PLATE
2	IDRIS-1-09-BUFFER BEAM MOUNTING PLATE
2	IDRIS-1-10-BUFFER BEAM
1	IDRIS-1-11-FRONT FOOT PLATE
1	IDRIS-1-12-COAL BUNKER FRONT
1	IDRIS-1-13-WATER TANK
2	IDRIS-1-14-WATER TANK SUPPORT ANGLE
1	IDRIS-1-15-CYLINDER SUPPORT PLATE
1	IDRIS-1-16-BOTTOM PORT BLOCK
1	IDRIS-1-17-TOP PORT BLOCK
1	IDRIS-1-18-REVERSING VALVE
1	IDRIS-1-19-REVERSER STAND
1	IDRIS-1-20-REVERSER STAND GUIDE BAR
2	IDRIS-1-21-REVERSER STAND SPACER
1	IDRIS-1-22-REVERSER STAND LEVER
1	IDRIS-1-23-REACH ROD
1	IDRIS-1-24-CYLINDER PIVOT AXLE
1	IDRIS-1-25-EXHAUST PIPE
1	IDRIS-1-26-OILER-CONTROL VALVE PIPE
1	IDRIS-1-27-CONTROL VALVE CONNECTOR NUT
1	IDRIS-1-28-CONTROL VALVE CENTER PIVOT
1	IDRIS-1-29-CENTER PIVOT SPRING

QTY.	PART NUMBER
1	IDRIS-2-01-GASTANK
1	IDRIS-2-02-ON-OFF CONTROL VALVE NIPL
1	IDRIS-2-03-FILLER VALVE NIPL
1	IDRIS-2-04-CONTROL VALVE BODY
1	IDRIS-2-05-CONTROL VALVE SPINDLE SCREW
1	IDRIS-2-06-CONTROL VALVE SPINDLE
1	IDRIS-2-07-CONTROL VALVE SPINDLE NUT
1	IDRIS-2-08-GAS JET HOLDER
1	IDRIS-2-09-GAS JET NOS
1	IDRIS-2-10-GAS JET HOLDER CAP
1	IDRIS-2-11-DRAW OFF PIPE
1	IDRIS-2-12-BURNER RING+SUPPLY PIPE
1	IDRIS-2-13-DUMMY LOWER WATERTANK
1	IDRIS-2-24-GAS TANK FILLER BODY
1	IDRIS-2-25-GAS TANK FILLER TOP BODY
1	IDRIS-2-26-GAS TANK FILLER VALVE STEM
1	IDRIS-2-27-GAS TANK FILLER VALVE STEM SPRING

QTY.	PART NUMBER
1	IDRIS-3-01-BOILER SHELL
1	IDRIS-3-02-BOILER SHELL TOP PLATE
1	IDRIS-3-03-BOILER SHELL BOTTOM PLATE
1	IDRIS-3-04-BOILER FLUE
20	IDRIS-3-05-BOILER BOTTOM PLATE HEDGEHOG SPIKE
4	IDRIS-3-06-BOILER TOP PLATE BUSH
2	IDRIS-3-07-BOILER SIDE BUSH
1	IDRIS-3-08-BOILER MOUNTING FLANGEL
1	IDRIS-3-09-REGULATOR VALVE BODY
1	IDRIS-3-10-REGULATOR VALVE SPINDLE SCREW
1	IDRIS-3-11-REGULATOR VALVE SPINDLE
1	IDRIS-3-12-REGULATOR VALVE SPINDLE NUT
1	IDRIS-3-13-REGULATOR VALVE ANGLE BODY
1	IDRIS-3-14-REGULATOR VALVE PIPE NUT
1	IDRIS-3-15-BOILER FILLER BODY
1	IDRIS-3-16-BOILER FILLER BODY TOP
1	IDRIS-3-17-BOILER FILLER TUBE
1	IDRIS-3-18-BOILER FILLER TUBE SPRING
1	IDRIS-3-19-BOILER SAFETY VALVE BODY
1	IDRIS-3-20-BOILER SAFETY VALVE BALL VALVE
1	IDRIS-3-21-BOILER SAFETY VALVE HOUSING
1	IDRIS-3-22-BOILER SAFETY VALVE STEM
1	IDRIS-3-23-BOILER SAFETY VALVE SPRING
1	IDRIS-3-24-BOILER SAFETY VALVE RETAINER
1	IDRIS-3-25-WTR LVL IND BOTTOM ELBOW
2	IDRIS-3-26-WTR LVL IND GLASS TUBE NUT
1	IDRIS-3-27-WTR LVL IND GLASS TUBE
1	IDRIS-3-28-WTR LVL IND TOP TEE
1	IDRIS-3-29-WTR LVL IND TOP TEE PLUG
1	IDRIS-3-30-OILER DRAIN NOZZLE
1	IDRIS-3-31-OILER BALL VALVE
1	IDRIS-3-32-OILER BALL VALVE RELEASE NUT
1	IDRIS-3-33-OILER CONTAINER BOTTOM PLATE
1	IDRIS-3-34-OILER CONTAINER TUBE
1	IDRIS-3-35-OILER CONTAINER TOP PLATE
1	IDRIS-3-36-OILER CONTAINER TOP PLATE CAP
1	IDRIS-3-37-OILER STEAM SUPPLY PIPE
1	IDRIS-3-38-BOILER CHIMNEY
1	IDRIS-3-39-SUPPLY VALVE-OILER PIPE
1	IDRIS-3-40-WHISTLE BASE
1	IDRIS-3-41-WHISTLE SPRING
1	IDRIS-3-42-WHISTLE BALL VALVE
1	IDRIS-3-43-WHISTLE PUSH ROD
1	IDRIS-3-44-WHISTLE MAIN BODY
1	IDRIS-3-45-WHISTLE LEVER
1	IDRIS-3-46-WHISTLE PIPE NUT
1	IDRIS-3-47-WHISTLE
1	IDRIS-3-48-WHISTLE MOUNTING BRACKET
1	IDRIS-3-49-WHISTLE SUPPLY PIPE

QTY.	PART NUMBER
1	IDRIS-4-01-FRONT WHEEL AXLE
2	IDRIS-4-02-REAR WHEEL CRANK AXLE-1
2	IDRIS-4-03-REAR WHEEL CRANK AXLE PIN
1	IDRIS-4-04-REAR WHEEL MIDDLE CRANK AXLE
2	IDRIS-4-05-REAR WHEEL CRANK DISC
1	IDRIS-4-06-REAR WHEEL CRANK DISC SPACER
2	IDRIS-4-07-FRONT WHEEL
2	IDRIS-4-08-REAR WHEEL
4	IDRIS-4-09-FLY CRANK
2	IDRIS-4-10-COUPLING ROD
2	IDRIS-4-11-CYLINDER+PORT BLOCK
2	IDRIS-4-12-CYLINDER TOP LID
2	IDRIS-4-13-CYLINDER BOTTOM LID
2	IDRIS-4-14-CYLINDER BOTTOM LID COVER
2	IDRIS-4-15-PISTON
2	IDRIS-4-16-PISTON ROD
2	IDRIS-4-17-PISTON ROD BIG END
1	IDRIS-4-18-CYLINDER HOLDING SPRING

QTY.	PART NUMBER
1	IDRIS-45mm-RAIL
11	IDRIS-M2.5 NUT
4	IDRIS-M2.5x4 GRUB SREW
10	IDRIS-M2.5x4 RIVET
6	IDRIS-M2.5x5 C-SINK SCREW
6	IDRIS-M2.5x5 ROUND HEAD SCREW
11	IDRIS-M2.5x6 ROUND HEAD SCREW
2	IDRIS-M2.5x8 ROUND HEAD SCREW
18	IDRIS-M2x5 ROUND HEAD SCREW
6	IDRIS-M3 NUT
6	IDRIS-M3 WASHER
8	IDRIS-M3x5 C-SINK SCREW
19	IDRIS-M3x5 ROUND HEAD SCREW
4	IDRIS-M3x6 ROUND HEAD SCREW
9	IDRIS-M3x8 ROUND HEAD SCREW
2	IDRIS-M4x8 C-SINK SCREW

NOTES:

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. INQUIRE AT THE APROPRIATE AUTHOROTIES WHETHER OR NOT THIS BOILER REQUIRES A PRESSURE TEST CERTIFICATE.
6. ALL CONNECTIONS/JOINTS WHICH HAVE STEAM PRESSURE APPLIED TO IT SHALL BE SILVER/HARD SOLDERED.
7. COMPRESSION SPRINGS ARE DRAWN IN COMPRESSED STATE (CP), UNCOMPRESSED STATE IS APPROX 40% TO 60% LONGER THEN COMPRESSED STATE.
8. WHERE PREFERED SCREW CONNECTIONS CAN BE OMITTED AND PARTS CAN BE BONDED TOGETHER BY USING EITHER GLUE, POXY RESIN,SOLDER OR RIVETS.
9. PARTS WHICH ARE DIRECTLY EXPOSED TO STEAM AND/OR WATER SHLOULD BE CONSTRUCTED USING NON-FERROUS OR NON CORROSIVE MATERIAL SUCH AS BRASS, BRONZE, GUNMETAL, STAINLESS STEEL, COPPER OR MONEL.

MATERIAL ABBREVIATIONS:

ALU = ALUMINIUM
 BRS = BRASS
 BRZ = BRONZE OR GUNMETAL (BRZ/GM)
 CU = COPPER
 MS = MILD STEEL/BRIGHT MILD STEEL
 S/S = SILVER STEEL OR STAINLESS STEEL
 SPS = SPRING STEEL
 SYN = SYNTHETIC MATERIAL SUCH AS VETON, NYLON, TEFLON OR RUBBER
 CI = CAST IRON

OTHER ABBREVIATIONS

PF = PRESS FIT
 PCD = PITCH CIRCLE DIAMETER
 RM = REAM
 HEX = HEXACON, 6SIDED
 CP = COMPRESSED
 [SA-n-xxx]= SUB ASSEMBLY-n-xxx

TO WATCH "IDRIS" IN ACTION REFER TO THE VIDEO CLIP ON: www.youtube.com/watch?v=096MXej5454

THIS ENGINE AS DRAWN OPERATES ON GAS. AN ALTERNATIVE ENERGY SOURCE IS SHOWN ON DRAWING -04 PART NUMBERS 2-20, 2-21, 2-22 & 2-3.
 ALTERNATIVE FUELS: PARAFINE, KEROSENE, METHELATED SPIRITIS etc.

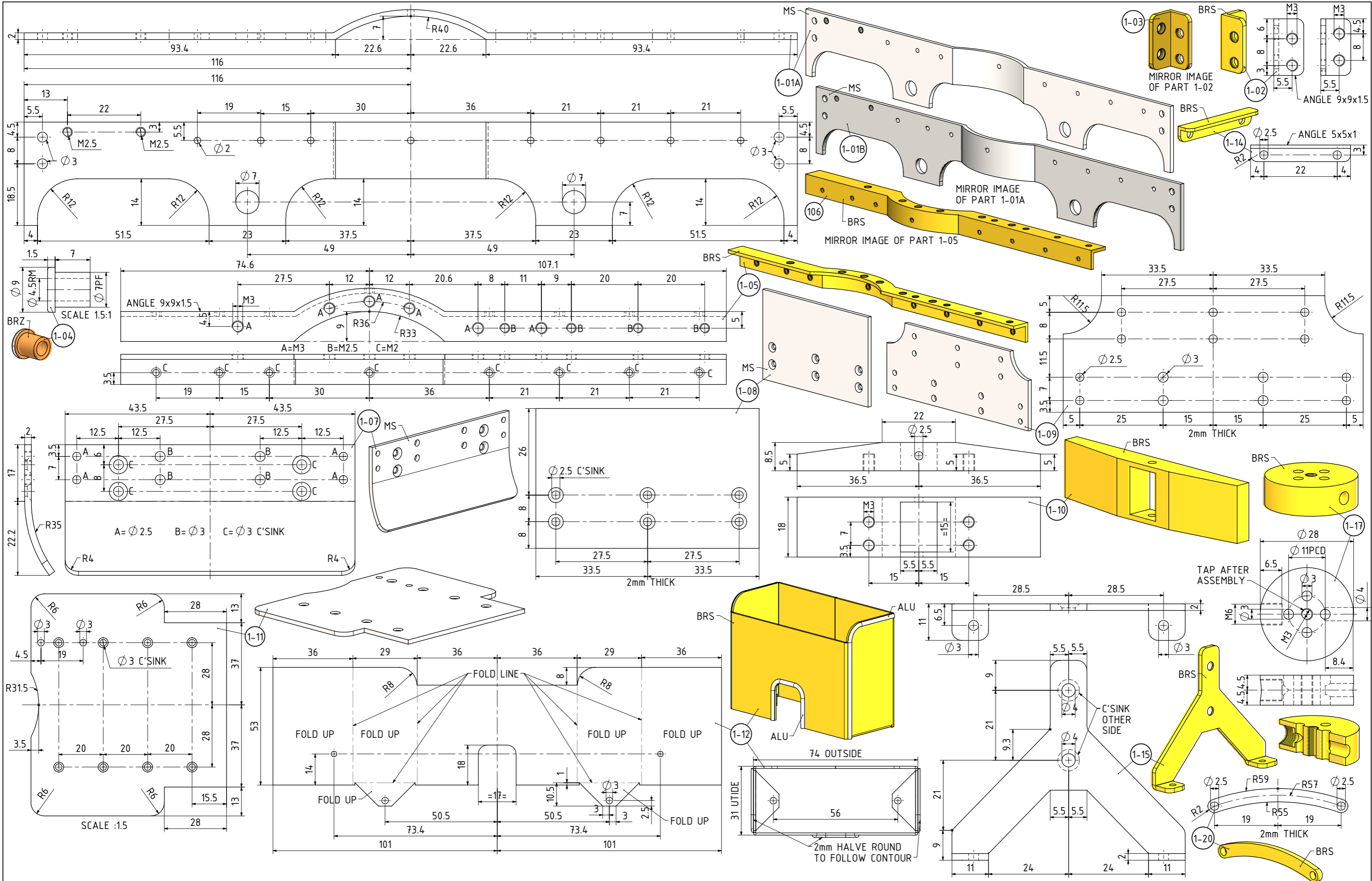
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TITLE
DE WINTON NARROW GAUGE LOCOMOTIVE CALLED "IDRIS" (TRACK GAUGE 45mm)

DRAWING CONTENTS
ISOMETRIC VIEWS, BOM & NOTES

PROJECT No 07E-09-00
JDW DRAUGHTING SERVICES
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PROJECTION
JDWDS
 DATE **MAY-2015**
 MODEL SCALE: 1:12.8
 DWG SCALE: NTS @A3 OR AS SHOWN
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 SHEET: 02 OF 08 **A3** No: IDRIS-02



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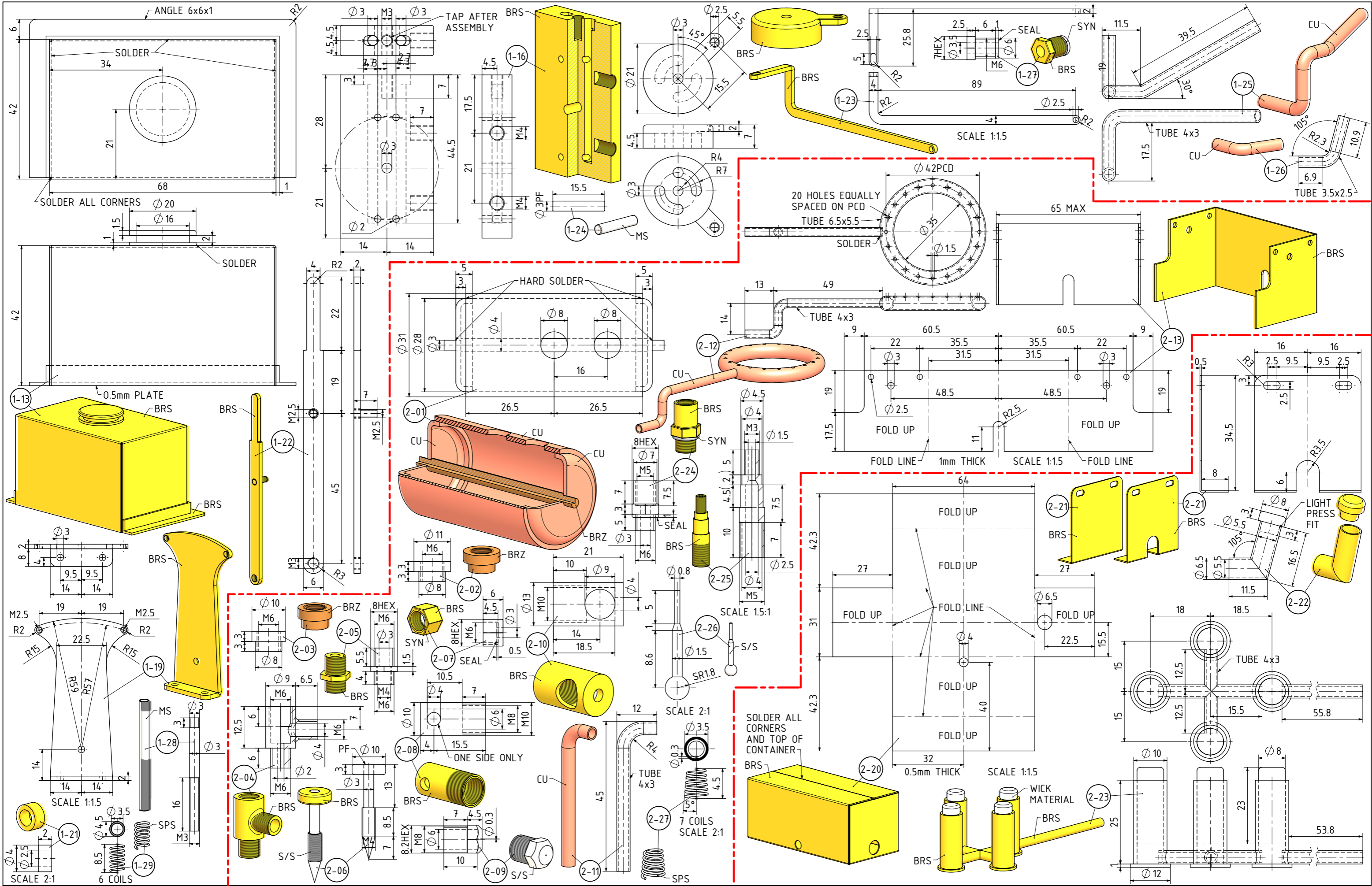
TITLE
**DE WINTON NARROW GAUGE LOCOMOTIVE
 CALLED "IDRIS" (TRACK GAUGE 45mm)**

DRAWING CONTENTS
PARTS AND ASSMBLIES

PROJECT No 07E-09-00
JDW DRAUGHTING SERVICES
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PROJECTION
JDWDS
 DATE **MAY-2015**

MODEL SCALE: 1:12.8
 DWG SCALE: 1:1 @A3 OR AS SHOWN
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SHEET: 03 OF 08 A3 No: IDRIS-03



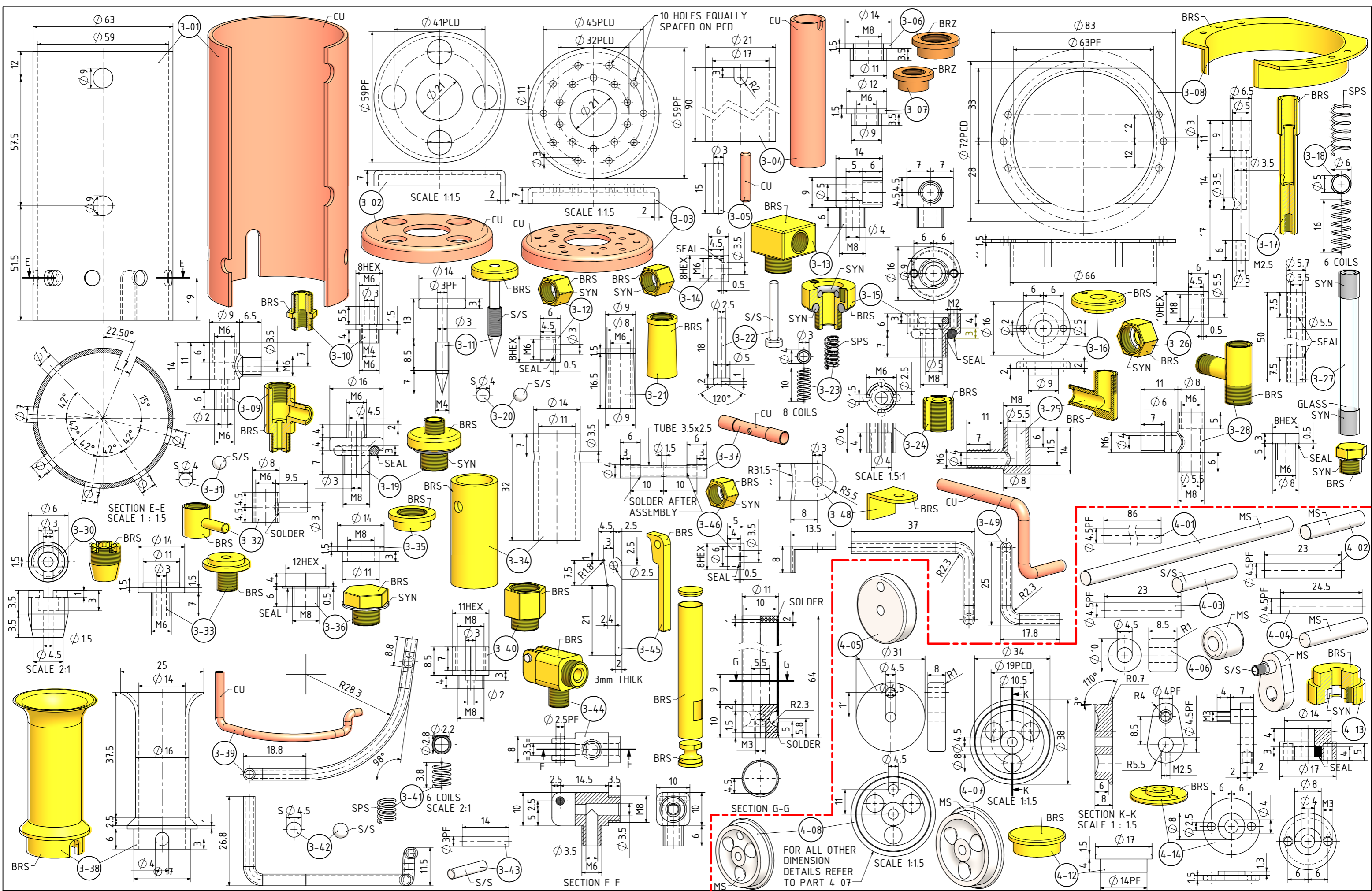
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DRAWING CONTENTS
PARTS AND ASSMBLIES

PROJECT No 07E-09-00
 JDW DRAUGHTING SERVICES
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PROJECTION
JDWDS
 DATE MAY-2015
 SHEET: 04 OF 08
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A3 No: IDRIS-04



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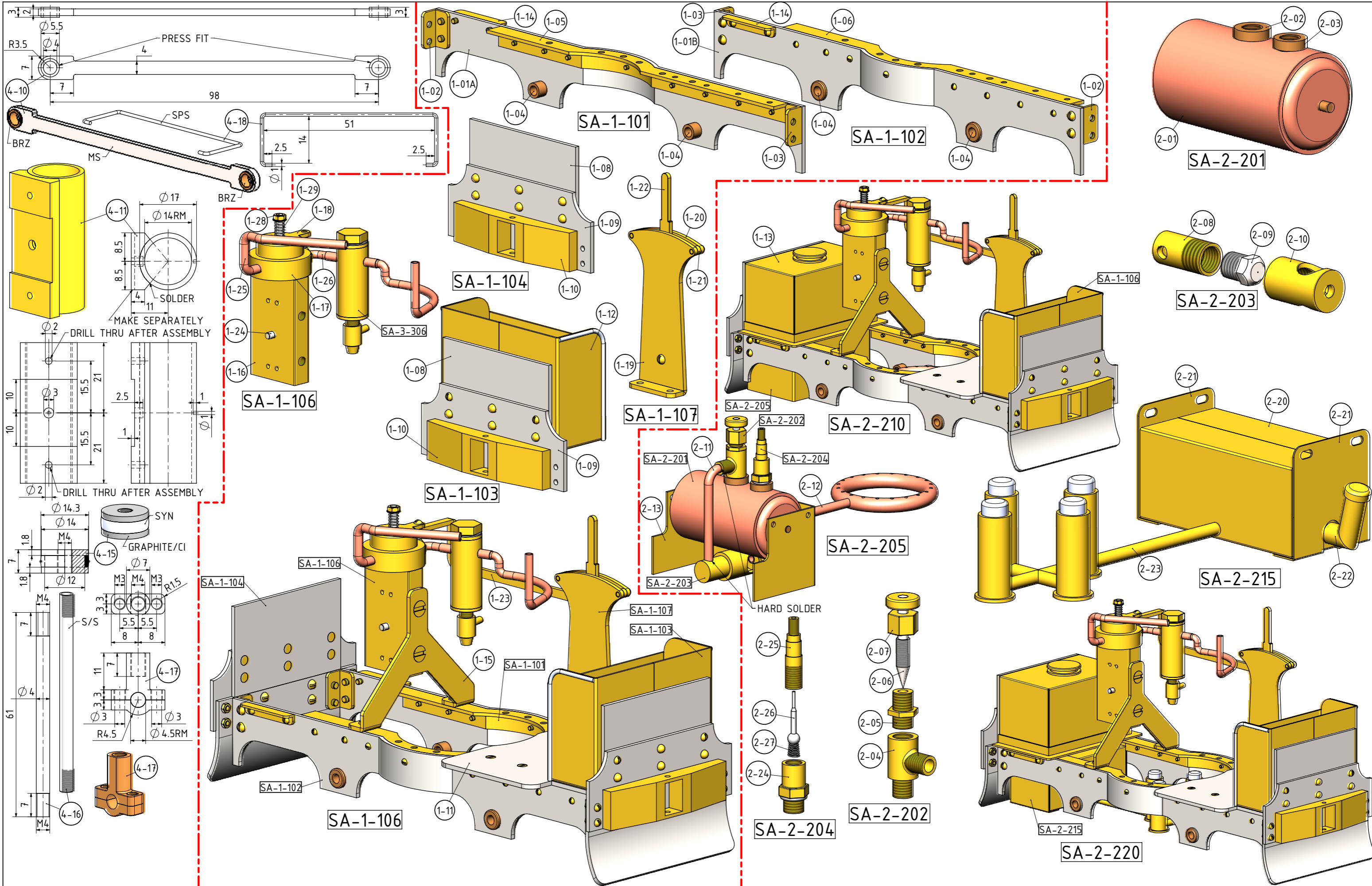
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DRAWING CONTENTS
PARTS AND ASSMBLIES

PROJECT No 07E-09-00
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PROJECTION
JDWDS
 DATE MAY-2015
 SHEET: 05 OF 08

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A3 No: IDRIS-05



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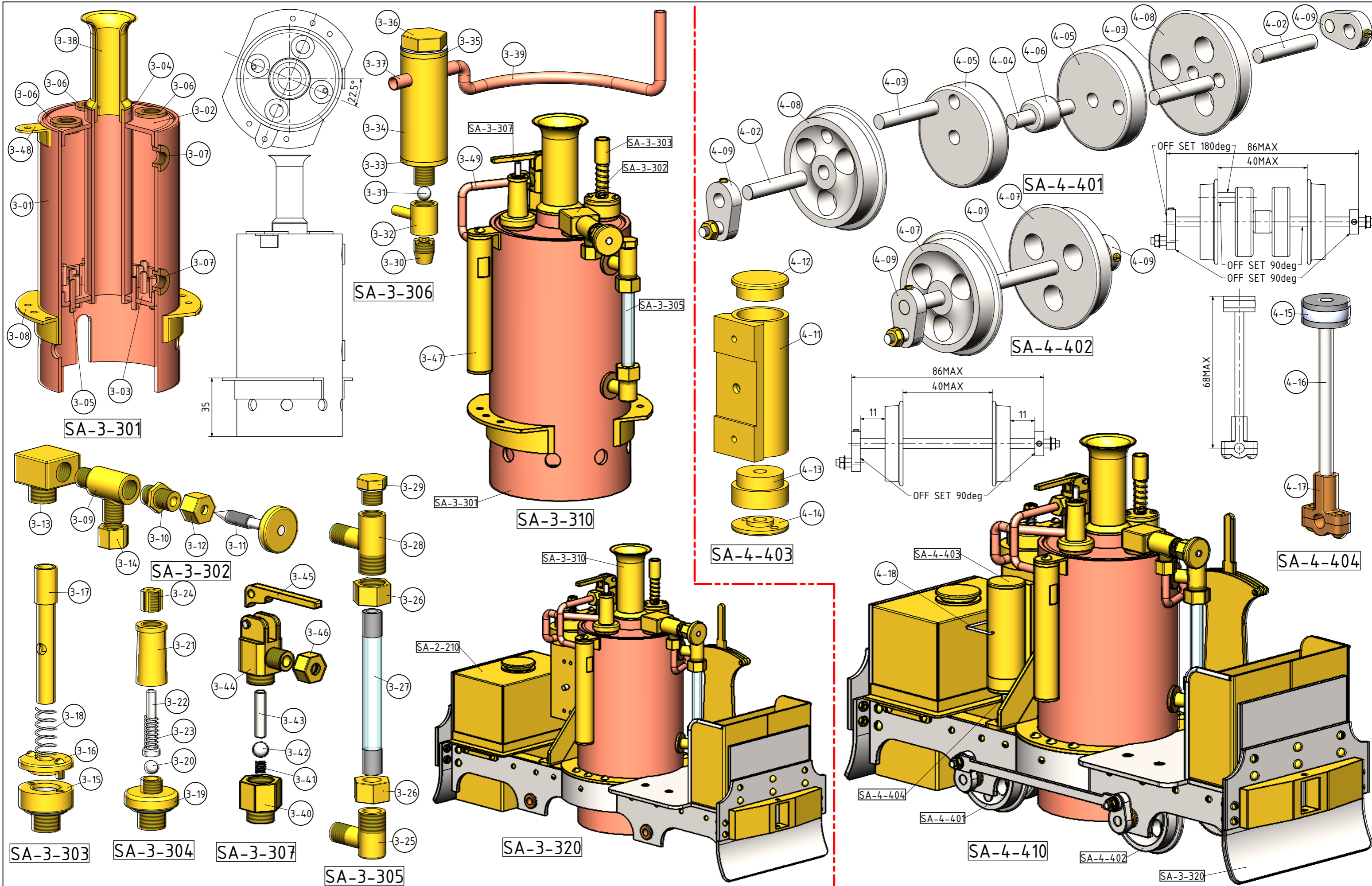
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DRAWING CONTENTS
PARTS AND ASSMBLIES

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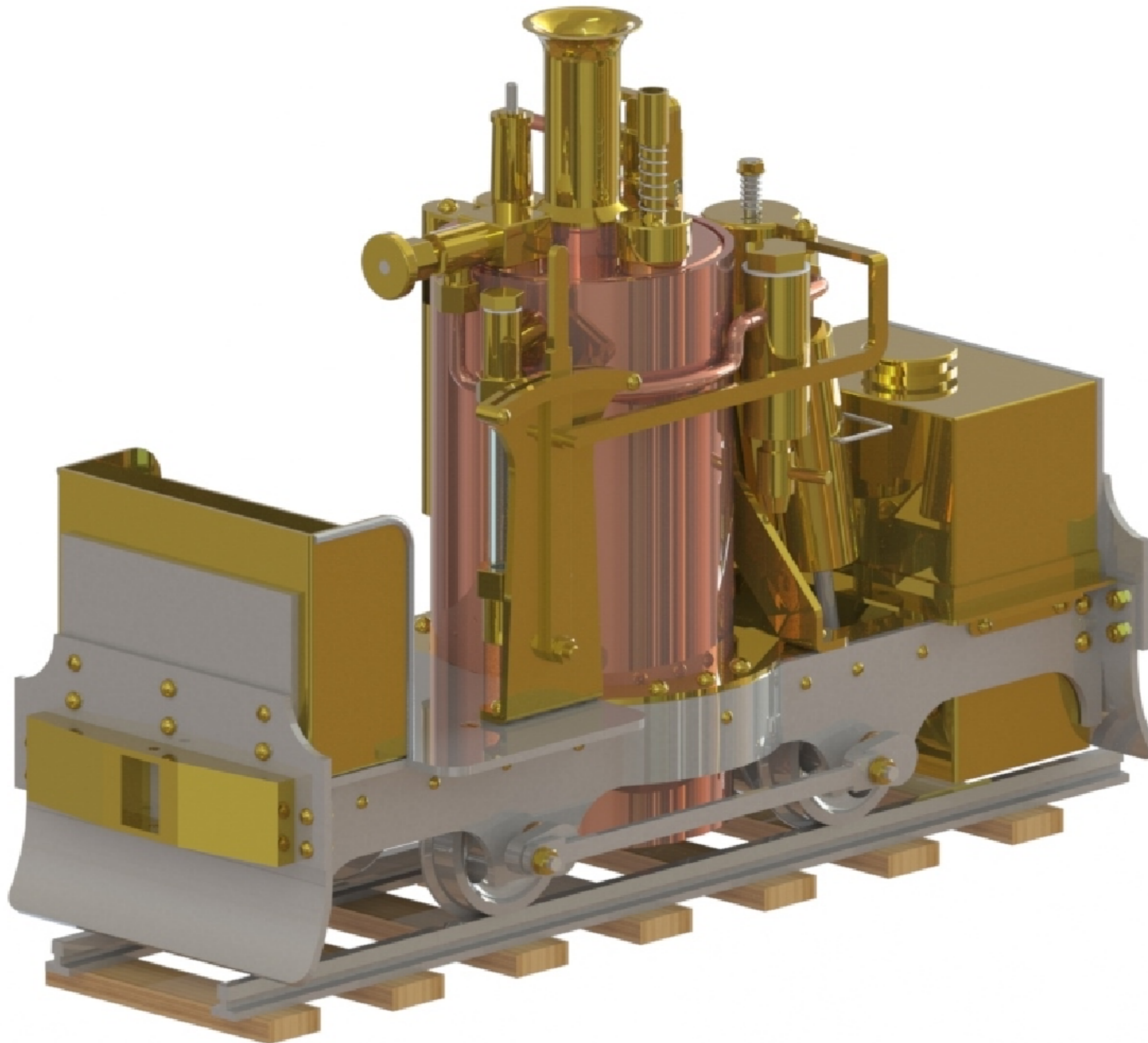
PROJECTION
JDWDS
 DATE **MAY-2015**

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 SHEET: 06 OF 08 **A3** No: IDRIS-06



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<p>TITLE DE WINTON NARROW GAUGE LOCOMOTIVE CALLED "IDRIS" (TRACK GAUGE 45mm)</p>	<p>DRAWING CONTENTS PARTS AND ASSMBLIES</p>	<p>PROJECT No 07E-09-00 JDW DRAUGHTING SERVICES J.A.M. DE WAAL, 12 BRIGHTWELL STREET PAPAOKURA 2110. NEW ZEALAND. PHONE: 0064 09 2988815. MOB: 0211791000 E-MAIL: dewaal@xtra.co.nz.</p>	<p>PROJECTION JDWDS DATE MAY-2015</p>	<p>MODEL SCALE: 1:12.8 DWG SCALE: 1:1 @A3 OR AS SHOWN Copyright © J.A.M. DE WAAL PAPAOKURA NZ SHEET: 07 OF 08 A3 No: IDRIS-07</p>
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TITLE
 DE WINTON NARROW GAUGE LOCOMOTIVE
 CALLED "IDRIS" (TRACK GAUGE 45mm)

DRAWING CONTENTS
 RENDERED ASSEMBLY

PROJECT No 07E-09-00
 JDW DRAUGHTING SERVICES
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PROJECTION

 DATE
 MAY-2015

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 DWG SCALE: 1:1 @A3 OR AS SHOWN
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 SHEET: 08 OF 08 A3 No: IDRIS-08