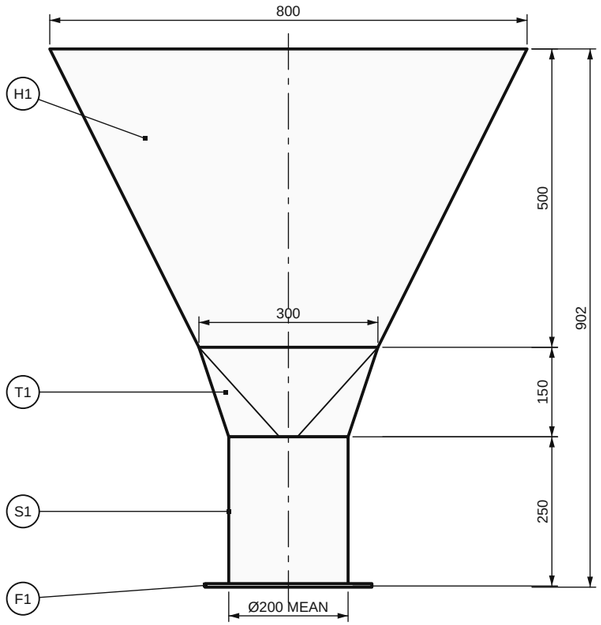
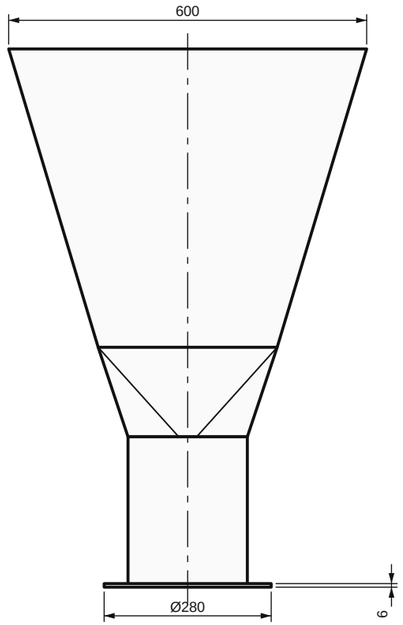


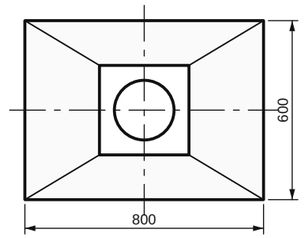
FRONT ELEVATION

SCALE 1:10



SIDE ELEVATION

SCALE 1:10



PLAN

SCALE 1:20

BILL OF MATERIAL

LINE	QTY	PC MARK	DESCRIPTION	LENGTH	REMARKS	WEIGHT kg
1	ONE	FH1	FEED HOPPER ASSEMBLY		SEE RS1001-07	23.1
2	2	H1	PL2 TRAPEZOID 800/300	522.0	FRONT, BACK	9.01
3	2	H2	PL2 TRAPEZOID 600/300	559.0	LEFT, RIGHT	7.89
4	1	T1	PL2 SQ 300 TO Ø200	DEVELOPED	BRAKE FORM, SEE RS1001-04	2.36
5	1	S1	PL2 x 250	628.3	ROLL Ø200 MEAN	2.46
6	1	F1	PL6 Ø280 x Ø203	—	8-Ø11 HOLES	1.34

TOTAL WEIGHT: 23.1 kg

THIS DRAWING TO BE READ TOGETHER WITH RS1001-02 GENERAL NOTES.

SAMPLE
NOT FOR CONSTRUCTION

UNITS
MILLIMETRES

STEEL
PER NOTE 2.0

ELECTRODES
E49XX (E70XX) UNO

WELDS
SIZE BY ENGINEER

OPEN HOLES
Ø11 UNO

BOLTS
BY PURCHASER

FINISH
BY PURCHASER

REV	DATE	DESCRIPTION	INITIAL
A	9 Nov 2026	ISSUED FOR REVIEW (SAMPLE)	RS

DESIGNED — | DRAWN RS 9 Nov 2026 | CHECKED RS 9 Nov 2026

RUTHEN SYSTEMS
DRAFTING · ruthensystems.com

ORIGINAL SIGNED AND SEALED BY

TITLE
FEED HOPPER — GENERAL ARRANGEMENT

APPROVED BY

DRAWING NUMBER · SHEET · REV
RS1001-01 · 1 OF 7 · A

Drawn with the Ruthen Systems hopper drawing package generator · ruthensystems.com

NOTES

1.0 GENERAL

- THE PURCHASER MUST RETAIN A LICENSED PROFESSIONAL ENGINEER TO REVIEW THESE DRAWINGS FOR THE INTENDED USE (CONTENTS, LOADS, SUPPORTS, WEAR, ACCESS) BEFORE FABRICATION. PLATE THICKNESSES AND WELDS HAVE NOT BEEN SIZED FOR ANY LOAD.
- THIS DRAWING SET SHOWS A HOPPER OF FOUR FLAT PANELS (H1, H2), A SQUARE-TO-ROUND TRANSITION (T1), A ROLLED SPOUT (S1) AND A FLANGE (F1). READ ALL SHEETS TOGETHER.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. DO NOT SCALE DRAWINGS.
- SHEET PARTS ARE DEVELOPED AT MID-THICKNESS. CUT FROM THE DXF FILES AT 1:1.

2.0 MATERIALS

- H1, H2, T1, S1: MILD STEEL SHEET, 2 mm. F1: MILD STEEL PLATE, 6 mm.
- STEEL GRADE TO BE SPECIFIED BY THE PURCHASER, E.G. CSA G40.21 300W OR ASTM A1011 CS.
- FLANGE BOLTS, NUTS, WASHERS AND GASKET BY PURCHASER TO SUIT THE MATING FLANGE.

3.0 FABRICATION

- LASER OR PLASMA CUT FROM THE DXF FILES. REMOVE BURRS AND SLAG. MARK EACH PART WITH ITS PIECE MARK.
- T1: BRAKE FORM ON THE BEND LINES, SEE RS1001-04. S1: ROLL TO Ø200 MEAN (Ø202 OUTSIDE).
- WELDING IN ACCORDANCE WITH CSA W59 BY A FABRICATOR HOLDING CSA W47.1 CERTIFICATION, OR TO THE PURCHASER'S WELDING STANDARD. WELD SIZES BY THE RESPONSIBLE ENGINEER.
- TACK ALL JOINTS AND CHECK OVERALL DIMENSIONS BEFORE WELDING OUT.

4.0 FINISH

- CLEAN ALL WELDS. FINISH BY PURCHASER: HOT-DIP GALVANIZE AFTER FABRICATION TO CSA G164, OR PAINT SYSTEM AS SPECIFIED.

5.0 CHECKS

- CHECK TOP OPENING 800 x 600 AND EQUAL DIAGONALS; OUTLET 300 x 300 SQUARE; ROUND ENDS Ø200 MEAN; FLANGE SQUARE TO SPOUT AXIS.
- TOLERANCES TO BE AGREED BETWEEN PURCHASER AND FABRICATOR.

6.0 DESIGN BASIS

- SIZES: TOP 800 x 600, OUTLET 300 x 300, HEIGHT 500; ROUND OUTLET Ø200 x 150; SPOUT 250 LG; FLANGE Ø280, BORE Ø203, 8-Ø11 ON PCD 241.5.
- NOT INCLUDED: LOADS, CONTENTS AND THEIR FLOW, SUPPORTS AND LIFTING POINTS, GUARDING, FOOD-CONTACT OR OTHER REGULATORY REQUIREMENTS.
- FLAT PATTERNS, CUT FILES AND THESE SHEETS ARE PRODUCED FROM THE SAME GEOMETRY.

SAMPLE
NOT FOR CONSTRUCTION

UNITS	**MILLIMETRES**
STEEL	PER NOTE 2.0
ELECTRODES	E49XX (E70XX) UNO
WELDS	SIZE BY ENGINEER
OPEN HOLES	Ø11 UNO
BOLTS	BY PURCHASER
FINISH	BY PURCHASER

REV	DATE	DESCRIPTION	INITIAL
A	9 Nov 2026	ISSUED FOR REVIEW (SAMPLE)	RS

DESIGNED	DRAWN	CHECKED
—	RS 9 Nov 2026	RS 9 Nov 2026

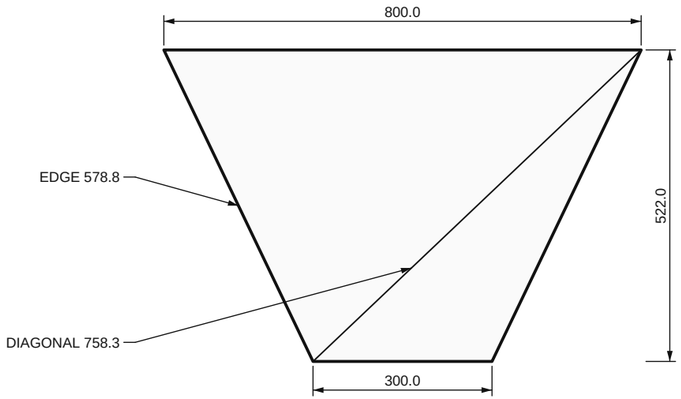
RUTHEN SYSTEMS
DRAFTING · ruthensystems.com

ORIGINAL SIGNED AND SEALED BY

TITLE
FEED HOPPER — GENERAL NOTES

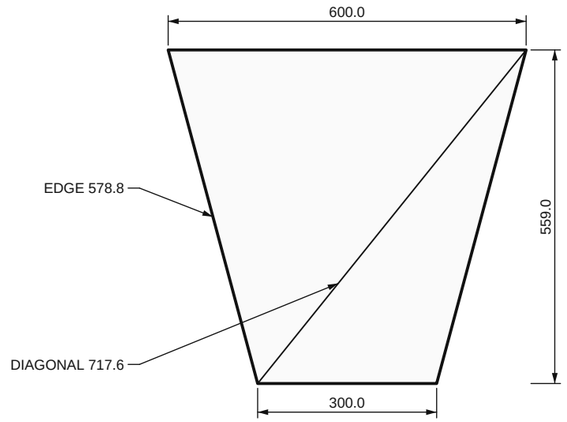
APPROVED BY

DRAWING NUMBER · SHEET · REV
RS1001-02 · 2 OF 7 · A



H1 — FRONT AND BACK PANEL (QTY 2)

SCALE 1:10 · SLOPE 73.30° FROM HORIZONTAL



H2 — LEFT AND RIGHT PANEL (QTY 2)

SCALE 1:10 · SLOPE 63.43° FROM HORIZONTAL

CORNERS

INSIDE ANGLE BETWEEN PANELS	97.38°
CORNER LINE SLOPE	59.75°
CORNER LINE LENGTH	578.8

SET THE PANELS UPSIDE DOWN ON A FLAT TABLE, SMALL EDGES UP. HOLD THE CORNERS AT THE INSIDE ANGLE, CHECK THE 800 x 600 OPENING AND ITS DIAGONALS, THEN TACK.

CUT FILE: RS-FH-101_A_hopper-panels.dxf

SAMPLE
NOT FOR CONSTRUCTION

UNITS	**MILLIMETRES**
STEEL	PER NOTE 2.0
ELECTRODES	E49XX (E70XX) UNO
WELDS	SIZE BY ENGINEER
OPEN HOLES	Ø11 UNO
BOLTS	BY PURCHASER
FINISH	BY PURCHASER

REV	DATE	DESCRIPTION	INITIAL
A	9 Nov 2026	ISSUED FOR REVIEW (SAMPLE)	RS

DESIGNED	DRAWN	CHECKED
—	RS 9 Nov 2026	RS 9 Nov 2026

RUTHEN SYSTEMS

DRAFTING · ruthensystems.com

ORIGINAL SIGNED AND SEALED BY

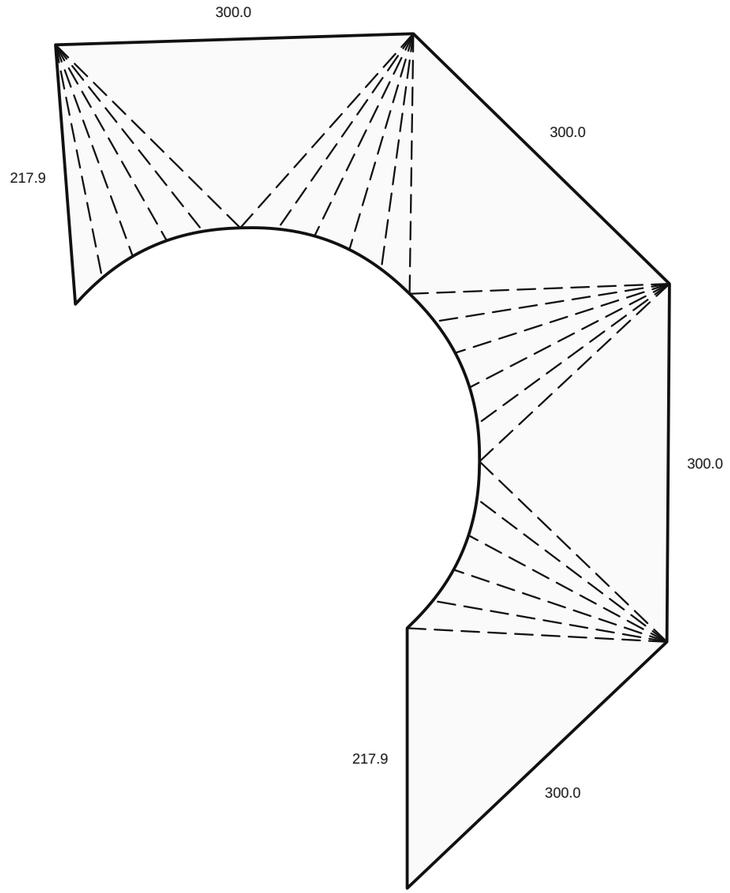
TITLE

FEED HOPPER — H1, H2 HOPPER PANELS

APPROVED BY

DRAWING NUMBER · SHEET · REV

RS1001-03 · 3 OF 7 · A



DEVELOPED VIEW: T1 TRANSITION

SCALE 1:5

SOLID: CUT LINE. DASHED: BEND LINE (NOT CUT). THE SEAM IS ON A SIDE BOUNDARY AT THE FRONT-LEFT CORNER. FIGURES: TRUE LENGTHS OF THE STRAIGHT EDGES.

BEND TABLE (EACH CORNER)

LINE (EACH CORNER, IN ORDER)	LENGTH	BEND FROM FLAT
SIDE BOUNDARY (FROM SIDE)	217.9	11.2°
CORNER FAN LINE 1	199.2	17.7°
CORNER FAN LINE 2	188.7	14.8°
CORNER FAN LINE 3	188.7	14.8°
CORNER FAN LINE 4	199.2	17.7°
SIDE BOUNDARY (TO NEXT SIDE)	217.9	11.2°

SAME AT ALL FOUR CORNERS. ALL BENDS GO THE SAME WAY, CLOSING THE PART AROUND ITS AXIS. AT THE SEAM CORNER ONE SIDE BOUNDARY IS THE SEAM, NOT A BEND.

FORMING NOTES

1. MARK THE BEND LINES FROM THE DEVELOPED VIEW; LINE LENGTHS ARE TRUE LENGTHS ON THE PART.
2. SHOP BEND ON THE BEND LINES ONLY, SMALLEST INSIDE RADIUS THE TOOLING GIVES. ANGLES ARE BETWEEN FLAT FACETS; THE CORNERS MAY INSTEAD BE ROLLED TO A SMOOTH CONE.
3. FORM THE SIDE BOUNDARY LINES FIRST, THEN THE FAN LINES FROM EACH SIDE TOWARD THE MIDDLE OF THE CORNER.
4. CHECK THE SQUARE END (300 x 300) AGAINST H1/H2 AND THE ROUND END WITH A Ø200 TEMPLATE. CLOSE THE SEAM AND WELD W3.

SQUARE END	4 x 300.0
ROUND END, DEVELOPED	628.3 (Ø200 MEAN)
SEAM EDGES	2 x 217.9
CUT FILE	RS-FH-102_A_outlet.dxf

SAMPLE
NOT FOR CONSTRUCTION

UNITS	**MILLIMETRES**
STEEL	PER NOTE 2.0
ELECTRODES	E49XX (E70XX) UNO
WELDS	SIZE BY ENGINEER
OPEN HOLES	Ø11 UNO
BOLTS	BY PURCHASER
FINISH	BY PURCHASER

REV	DATE	DESCRIPTION	INITIAL
A	9 Nov 2026	ISSUED FOR REVIEW (SAMPLE)	RS

DESIGNED	DRAWN	CHECKED
—	RS 9 Nov 2026	RS 9 Nov 2026

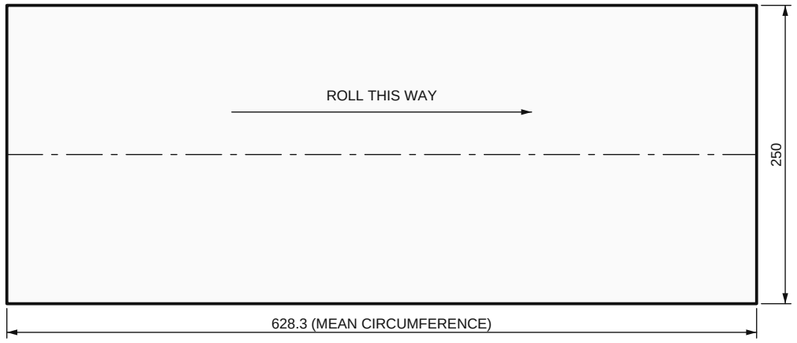
RUTHEN SYSTEMS
DRAFTING · ruthensystems.com

ORIGINAL SIGNED AND SEALED BY

TITLE
FEED HOPPER — T1 TRANSITION — DEVELOPED VIEW AND FORMING

APPROVED BY

DRAWING NUMBER · SHEET · REV
RS1001-04 · 4 OF 7 · A



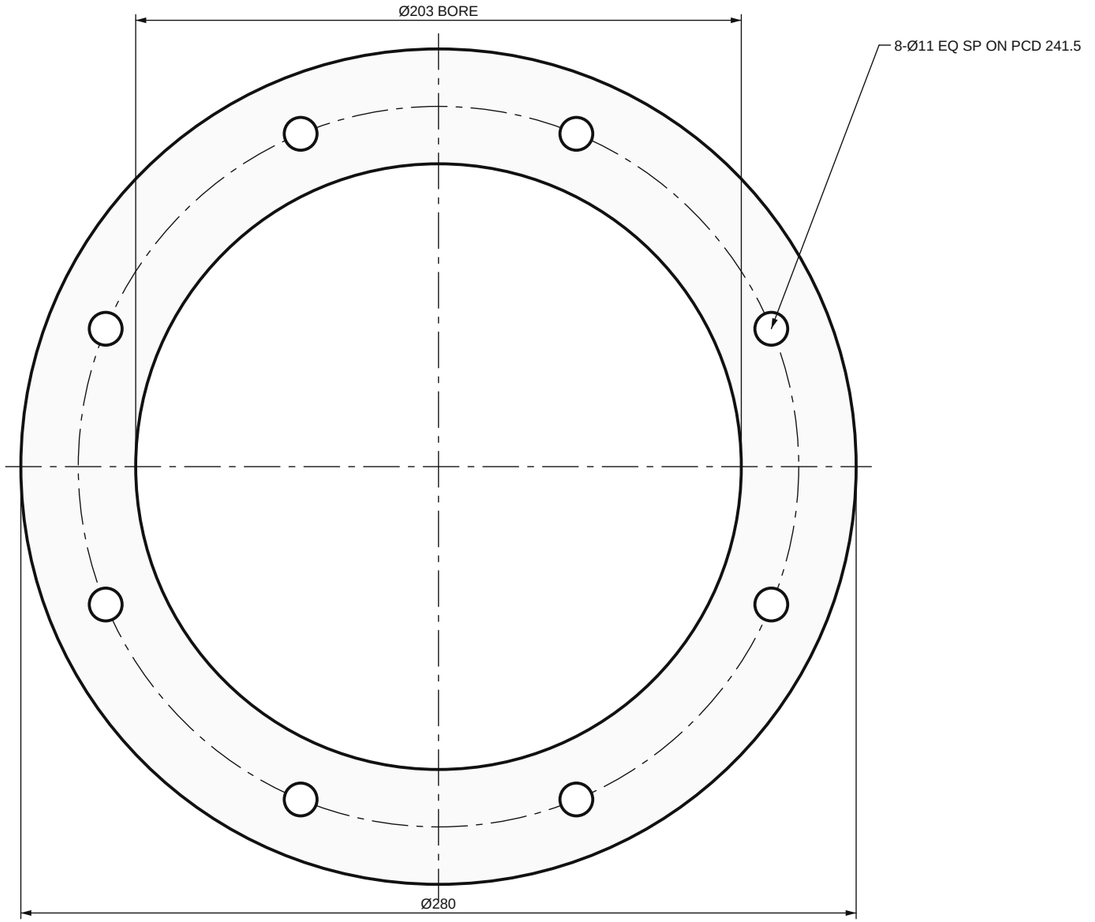
S1 — SPOUT BLANK

SCALE 1:5

ROLLING NOTES

1. ROLL ALONG THE 628.3 LENGTH TO Ø200 MEAN (Ø202 OUTSIDE). BLANK LENGTH IS THE MEAN CIRCUMFERENCE; NO SEAM GAP.
2. PRE-BEND BOTH ENDS BEFORE ROLLING SO THE SEAM CLOSES ROUND, WITHOUT A FLAT.
3. CHECK WITH A Ø202 OUTSIDE TEMPLATE; WELD SEAM W5.

CUT FILE: RS-FH-103_A_spout-blank.dxf



F1 — FLANGE

SCALE 1:2

PL 6. 8-Ø11 HOLES EQUALLY SPACED ON PCD 241.5, FIRST AT 22.5° FROM THE CENTRE LINE. CUT FILE: RS-FH-104_A_spout-flange.dxf

SAMPLE
NOT FOR CONSTRUCTION

UNITS	**MILLIMETRES**
STEEL	PER NOTE 2.0
ELECTRODES	E49XX (E70XX) UNO
WELDS	SIZE BY ENGINEER
OPEN HOLES	Ø11 UNO
BOLTS	BY PURCHASER
FINISH	BY PURCHASER

REV	DATE	DESCRIPTION	INITIAL
A	9 Nov 2026	ISSUED FOR REVIEW (SAMPLE)	RS

DESIGNED	DRAWN	CHECKED
—	RS 9 Nov 2026	RS 9 Nov 2026

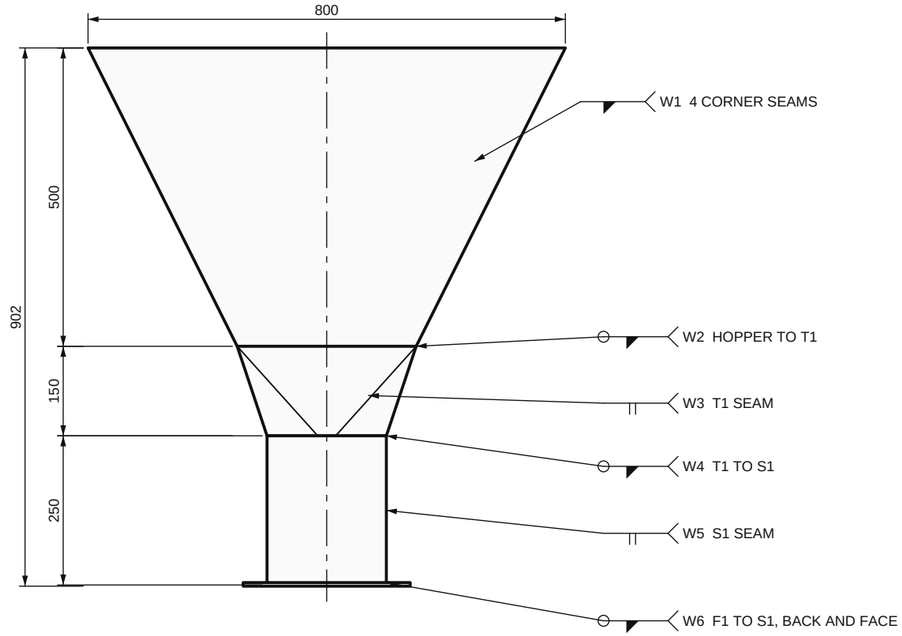
RUTHEN SYSTEMS
DRAFTING · ruthensystems.com

ORIGINAL SIGNED AND SEALED BY

TITLE
FEED HOPPER — S1 SPOUT AND F1 FLANGE

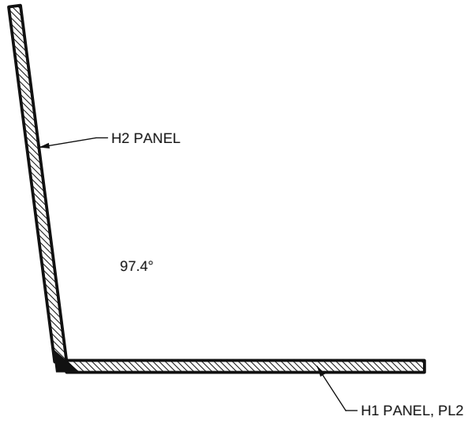
APPROVED BY

DRAWING NUMBER · SHEET · REV
RS1001-05 · 5 OF 7 · A



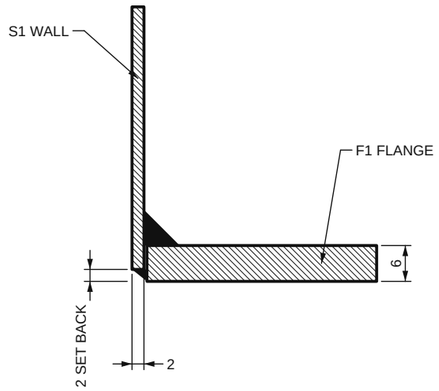
WELD LOCATIONS

SCALE 1:10



CORNER SEAM DETAIL (W1)

NO SCALE



FLANGE TO SPOUT DETAIL (W6)

NO SCALE

WELD LIST

MARK	LOCATION	JOINT	WELD	SEQ
W1	HOPPER CORNER SEAMS, 4 PLACES	CORNER	FILLET, OUTSIDE	2
W2	HOPPER OUTLET TO T1, ALL AROUND	CORNER	FILLET	3
W3	T1 SEAM (SIDE BOUNDARY AT FRONT-LEFT CORNER)	BUTT	SQUARE GROOVE	1
W4	T1 TO S1, ALL AROUND	CORNER	FILLET	4
W5	S1 LONGITUDINAL SEAM	BUTT	SQUARE GROOVE	1
W6	F1 TO S1, ALL AROUND: BACK FACE AND INSIDE THE BORE AT THE FACE	TEE	FILLET	5

NOTES

1. SHADED AREAS TO BE WELDED. DETAILS ARE SCHEMATIC; WELD SIZES BY THE RESPONSIBLE ENGINEER.
2. WELDING IN ACCORDANCE WITH CSA W59 BY A FABRICATOR HOLDING CSA W47.1 CERTIFICATION, OR TO THE PURCHASER'S WELDING STANDARD.
3. WELD SEAMS W3 AND W5 BEFORE FITTING THE PARTS TOGETHER.
4. TACK H1/H2 AT THE CORNERS, FIT T1, CHECK SIZES AND DIAGONALS, THEN WELD W1 ON OPPOSITE CORNERS IN TURN, THEN W2.
5. FIT AND WELD S1 (W4), THEN F1 (W6). CHECK THE FLANGE SQUARE TO THE SPOUT AXIS BEFORE AND AFTER WELDING.
6. GRIND THE INSIDE OF W2 AND W4 SMOOTH WHERE THE CONTENTS FLOW.

SAMPLE
NOT FOR CONSTRUCTION

UNITS	**MILLIMETRES**
STEEL	PER NOTE 2.0
ELECTRODES	E49XX (E70XX) UNO
WELDS	SIZE BY ENGINEER
OPEN HOLES	Ø11 UNO
BOLTS	BY PURCHASER
FINISH	BY PURCHASER

REV	DATE	DESCRIPTION	INITIAL
A	9 Nov 2026	ISSUED FOR REVIEW (SAMPLE)	RS

DESIGNED	DRAWN	CHECKED
—	RS 9 Nov 2026	RS 9 Nov 2026

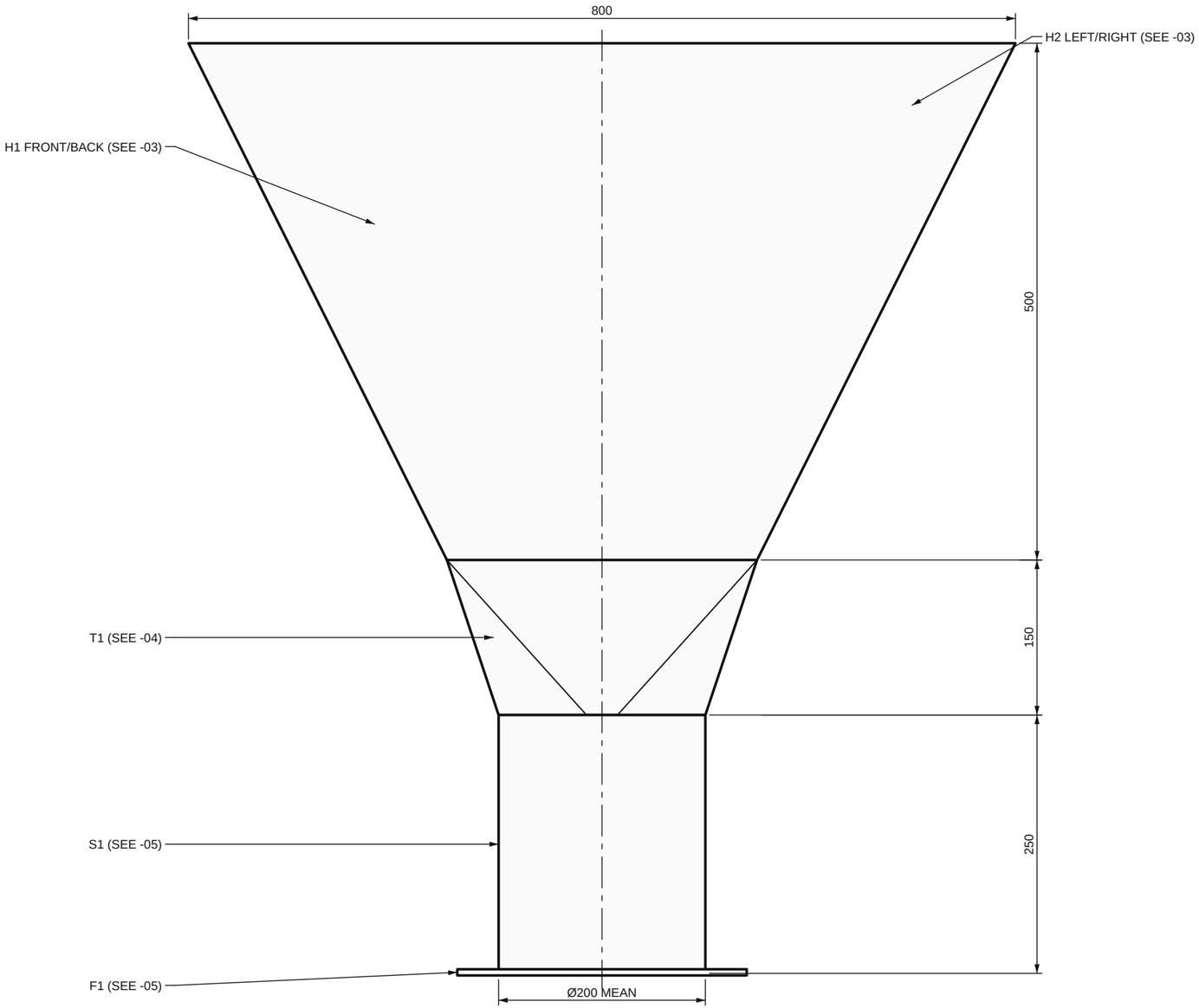
RUTHEN SYSTEMS
DRAFTING · ruthensystems.com

ORIGINAL SIGNED AND SEALED BY

TITLE
FEED HOPPER — WELDING DETAILS

APPROVED BY

DRAWING NUMBER · SHEET · REV
RS1001-06 · 6 OF 7 · A



ASSEMBLY FH1 — FRONT ELEVATION

SCALE 1:5

ASSEMBLY FH1

PC MARK	QTY	DESCRIPTION	DETAIL
H1	2	PL2 TRAPEZOID 800/300	RS1001-03
H2	2	PL2 TRAPEZOID 600/300	RS1001-03
T1	1	PL2 SQ 300 TO Ø200	RS1001-04
S1	1	PL2 x 250	RS1001-05
F1	1	PL6 Ø280 x Ø203	RS1001-05

ASSEMBLY SEQUENCE

1. FORM T1 AND ROLL S1; WELD THEIR SEAMS W3 AND W5.
2. SET H1, H2 UPSIDE DOWN ON A FLAT TABLE, SMALL EDGES UP; HOLD THE CORNERS AT THE INSIDE ANGLE (97.4°); TACK.
3. CHECK THE TOP OPENING 800 x 600 AND ITS DIAGONALS.
4. FIT THE T1 SQUARE END TO THE HOPPER OUTLET; CHECK THE ROUND END CENTRED AND LEVEL; TACK.
5. WELD W1 ON OPPOSITE CORNERS IN TURN, THEN W2 ALL AROUND.
6. FIT S1 TO T1; TACK; WELD W4. SLIDE F1 OVER S1 WITH THE SPOUT END 2 BACK FROM THE FLANGE FACE, SQUARE TO ITS AXIS; WELD W6 AT THE BACK AND INSIDE THE BORE.
7. CLEAN, CHECK PER NOTE 5.0 ON RS1001-02, FINISH PER NOTE 4.0.

WELD MARKS AND DETAILS: SEE RS1001-06.

SAMPLE
NOT FOR CONSTRUCTION

UNITS: **MILLIMETRES**
STEEL: PER NOTE 2.0
ELECTRODES: E49XX (E70XX) UNO
WELDS: SIZE BY ENGINEER
OPEN HOLES: Ø11 UNO
BOLTS: BY PURCHASER
FINISH: BY PURCHASER

REV	DATE	DESCRIPTION	INITIAL
A	9 Nov 2026	ISSUED FOR REVIEW (SAMPLE)	RS

DESIGNED: —
DRAWN: RS 9 Nov 2026
CHECKED: RS 9 Nov 2026

RUTHEN SYSTEMS
DRAFTING · ruthensystems.com

ORIGINAL SIGNED AND SEALED BY

TITLE: **FEED HOPPER — ASSEMBLY**

APPROVED BY

DRAWING NUMBER · SHEET · REV: **RS1001-07 · 7 OF 7 · A**