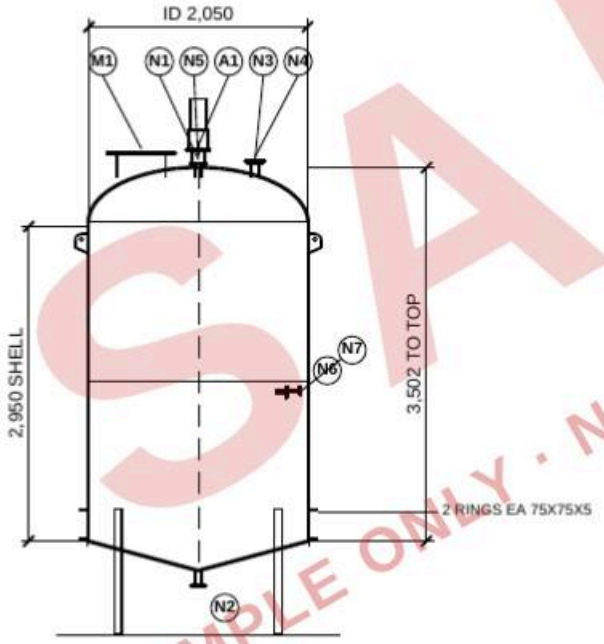


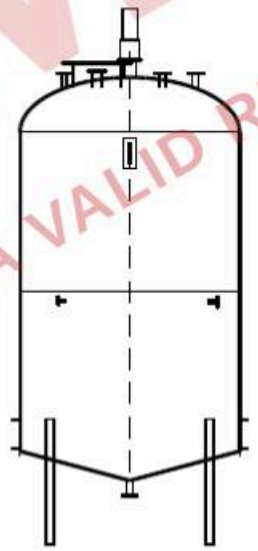
PLAN SCALE 1:71



ISOMETRIC VIEW (NOT TO SCALE)



FRONT ELEVATION SCALE 1:71



RIGHT SIDE VIEW SCALE 1:71

NOZZLE SCHEDULE

MARK	SERVICE	SIZE	TYPE	RATING	LOCATION	PROJ.
N1	Inlet	NPS 2	CLAMP	NOTE 5	TOP 0°	150
N2	Outlet	NPS 2	CLAMP	NOTE 5	BOTTOM	150
N3	CIP spray ball	NPS 2	CLAMP	NOTE 5	TOP 60°	150
N4	Vent	NPS 3	CLAMP	NOTE 5	TOP 120°	175
N5	Level	NPS 1.5	CLAMP	NOTE 5	TOP 180°	150
N6	Temperature	NPS 1	CLAMP	NOTE 5	SHELL 45°	150
N7	Sample	NPS 0.5	CLAMP	NOTE 5	SHELL 125°	150
M1	Manway	457 mm	MANWAY	-	TOP 240°	250
A1	Agitator (ON PAD)	NPS 4	SO	CL150	TOP 0°	175

DESIGN DATA

SERVICE	MILK
VOLUME TO SHELL TOP	10.0 m3
WORKING VOLUME	9.5 m3 (95 % FILL)
DESIGN BASIS	API 650 13TH ED. METHODS (J+S)
MATERIAL	SS316L
DESIGN PRESSURE	ATMOSPHERIC, FULL OF LIQUID
DESIGN TEMPERATURE	95 °C
LIQUID DENSITY	1030 kg/m3
CORROSION ALLOWANCE	0 mm
SHELL THICKNESS	5 mm
WEIGHT FAB / EMPTY / TEST	1,283 / 1,341 / 11,380 kg
HYDROTEST	FULL OF WATER, 4 h HOLD
FINISH	POLISH Ra<=0.8 um, PICKLE, PASSIVATE
INSULATION	NONE

NOTES

1. ALL DIMENSIONS IN mm UNLESS NOTED.
2. NOZZLE ANGLES CLOCKWISE FROM NORTH (PLAN).
3. PROJECTIONS FROM SHELL / HEAD OUTSIDE TO FLANGE FACE.
4. WELD DETAILS AND CUTTING LIST: SEPARATE SHEETS.
5. CLAMP NOZZLES: SANITARY WELD FERRULE + CLAMP + GASKET TO DIN 32676 / ISO 2852 (CLIENT TO CONFIRM). PRESSURE RATING BY THE FITTING VENDOR.
6. A1: TOP-ENTRY AGITATOR 0.75 kW, VENDOR SUPPLY; FLANGE NPS 4, ON PAD 251 OD x 10 mm.

ESTINEER

FOR REVIEW

GENERAL ARRANGEMENT

TANK T-102 10 m3 SS316L VERTICAL

DRAWING No.	REV	SCALE	SHEET	SIZE
ESTN-T-102-01	A	1:71	1 OF 2	A4

DRAWN	CHECKED	APPROVED	DATE
ESTINEER SOFTWARE			2026-11-16

SAMPLE
EXAMPLE ONLY · NOT A VALID REPORT
NOT FOR FABRICATION

NOZZLE SCHEDULE

MARK	SERVICE	SIZE	TYPE	RATING	LOCATION	PROJ.
N1	Inlet	NPS 2	CLAMP	NOTE 5	TOP 0°	150
N2	Outlet	NPS 2	CLAMP	NOTE 5	BOTTOM	150
N3	CIP spray ball	NPS 2	CLAMP	NOTE 5	TOP 60°	150
N4	Vent	NPS 3	CLAMP	NOTE 5	TOP 120°	175
N5	Level	NPS 1.5	CLAMP	NOTE 5	TOP 180°	150
N6	Temperature	NPS 1	CLAMP	NOTE 5	SHELL 45°	150
N7	Sample	NPS 0.5	CLAMP	NOTE 5	SHELL 125°	150
M1	Manway	457 mm	MANWAY	-	TOP 240°	250
A1	Agitator (ON PAD)	NPS 4	SO	CL150	TOP 0°	175

DESIGN DATA

SERVICE	MILK
VOLUME TO SHELL TOP	10.0 m3
WORKING VOLUME	9.5 m3 (95 % FILL)
DESIGN BASIS	API 650 13TH ED. METHODS (J+S)
MATERIAL	SS316L
DESIGN PRESSURE	ATMOSPHERIC, FULL OF LIQUID
DESIGN TEMPERATURE	95 °C
LIQUID DENSITY	1030 kg/m3
CORROSION ALLOWANCE	0 mm
SHELL THICKNESS	5 mm
WEIGHT FAB / EMPTY / TEST	1,283 / 1,341 / 11,380 kg
HYDROTEST	FULL OF WATER, 4 h HOLD
FINISH	POLISH Ra<=0.8 um, PICKLE, PASSIVATE
INSULATION	NONE

NOTES

1. ALL DIMENSIONS IN mm UNLESS NOTED.
2. NOZZLE ANGLES CLOCKWISE FROM NORTH (PLAN).
3. PROJECTIONS FROM SHELL / HEAD OUTSIDE TO FLANGE FACE.
4. WELD DETAILS AND CUTTING LIST: SEPARATE SHEETS.
5. CLAMP NOZZLES: SANITARY WELD FERRULE + CLAMP + GASKET TO DIN 32676 / ISO 2852 (CLIENT TO CONFIRM). PRESSURE RATING BY THE FITTING VENDOR.
6. A1: TOP-ENTRY AGITATOR 0.75 kW, VENDOR SUPPLY; FLANGE NPS 4, ON PAD 251 OD x 10 mm.

SAMPLE
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ESTINEER

GENERAL ARRANGEMENT: SCHEDULES

NOZZLE SCHEDULE, DESIGN DATA AND NOTES

TANK T-102 10.0 m3 SS316L

DWG ESTN-T-102-01-2 REV A 2026-11-16

SCALE NTS

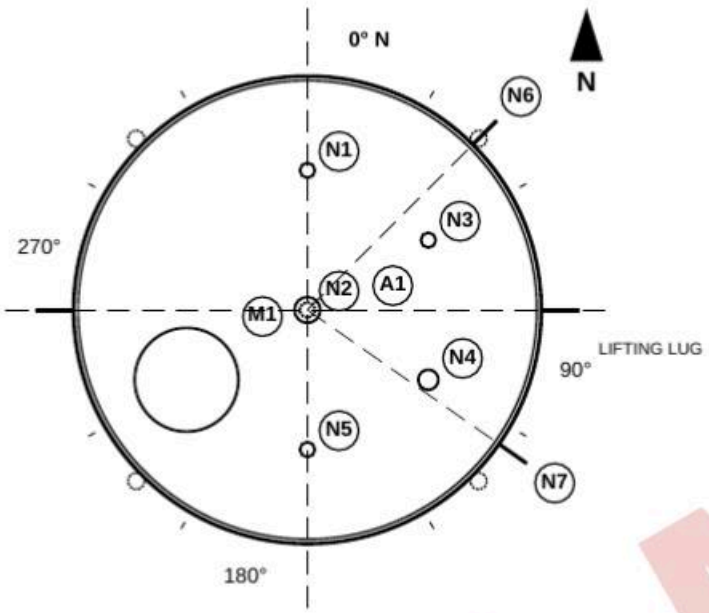
SIZE A4

SHEET 2 OF 2

FOR REVIEW

ORIENTATION PLAN (VIEW FROM ABOVE)

ROOF OPENINGS SOLID, BOTTOM OPENINGS DASHED



DEVELOPED SHELL (VIEW FROM OUTSIDE)



ANGLE CLOCKWISE FROM NORTH / ELEVATION FROM SHELL BOTTOM / CIRCUMFERENCE 6,472 mm

NOZZLE SCHEDULE

TAG	SERVICE	SIZE	CONNECTION	RATING	LOCATION	ANGLE	POSITION	PROJECTION	NECK / PAD
N1	Inlet	NPS 2.0	CLAMP	150	ROOF	0°	R 615 from centre	150	10S / 2.77 mm
N2	Outlet	NPS 2.0	CLAMP	150	BOTTOM	0°	centre	150	10S / 2.77 mm
N3	CIP spray ball	NPS 2.0	CLAMP	150	ROOF	60°	R 615 from centre	150	10S / 2.77 mm
N4	Vent	NPS 3.0	CLAMP	150	ROOF	120°	R 615 from centre	175	10S / 3.05 mm
N5	Level	NPS 1.5	CLAMP	150	ROOF	180°	R 615 from centre	150	10S / 2.77 mm
N6	Temperature	NPS 1.0	CLAMP	150	SHELL	45°	EL 1,400 above bottom	150	10S / 2.77 mm
N7	Sample	NPS 0.5	CLAMP	150	SHELL	125°	EL 1,410 above bottom	150	10S / 2.11 mm
M1	Manway	457 mm	MANWAY	150	ROOF	240°	R 615 from centre	250	vendor collar t5
A1	Agitator	NPS 4	SO FLG	150	ROOF	0°	R 0 from centre	175	40S / 6.02 mm

ESTINEER

NOZZLE ORIENTATION

ORIENTATION PLAN, DEVELOPED SHELL AND NOZZLE SCHEDULE

TANK T-102 10.0 m3 SS316L

DWG ESTN-T-102-NO REV A 2026-11-16

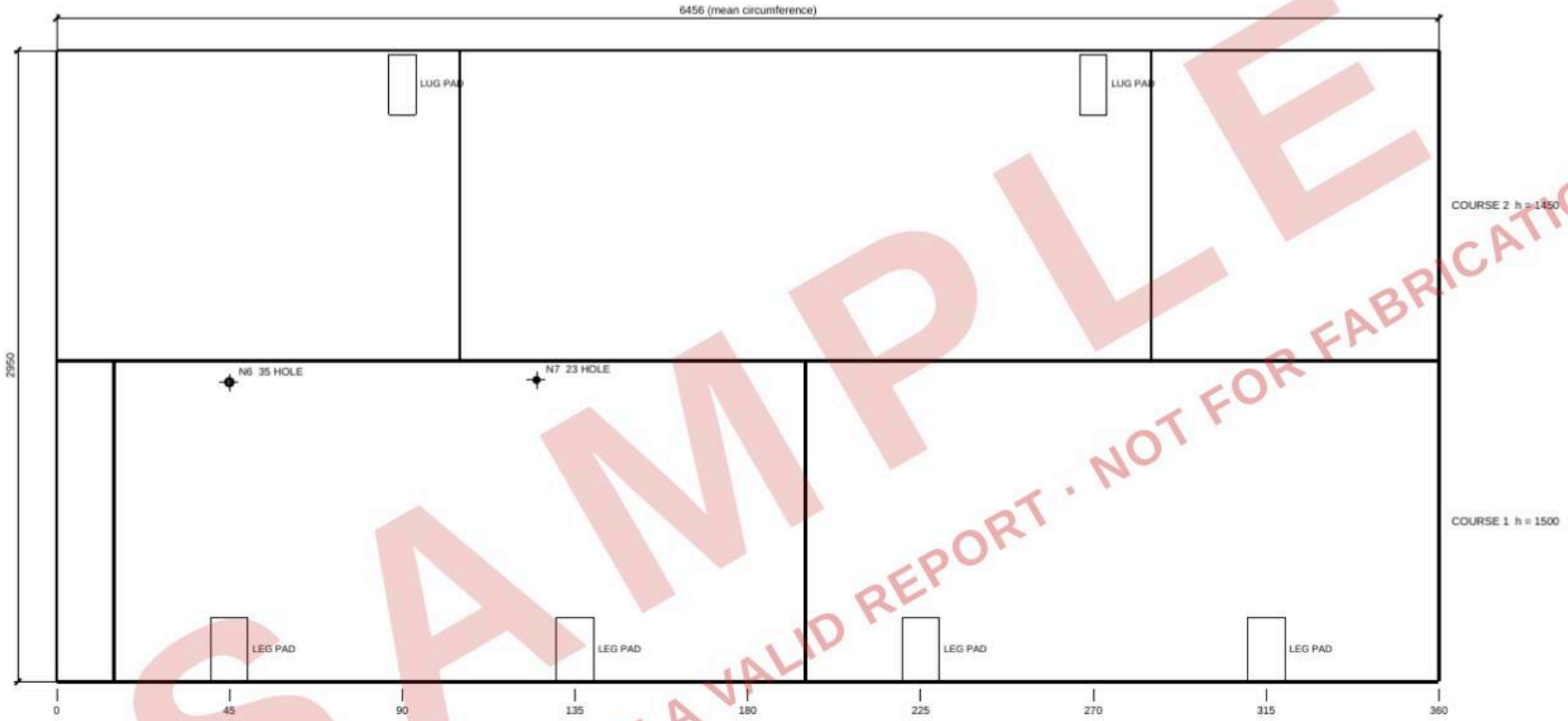
SCALE NTS

SIZE A4

SHEET 1 OF 1

FOR REVIEW

SAMPLE
EXAMPLE ONLY · NOT A VALID REPORT · NOT FOR FABRICATION



DEVELOPED LENGTH (ANGLE CLOCKWISE FROM NORTH, VIEWED FROM OUTSIDE)

PLATE STOCK BASIS 1500 x 6000 mm; LONGITUDINAL SEAMS STAGGERED BETWEEN COURSES

SAMPLE
EXAMPLE ONLY · NOT A VALID REPORT · NOT FOR FABRICATION

ESTINEER	**SHELL DEVELOPMENT** DEVELOPED SHELL, COURSES AND OPENINGS TANK T-102 10.0 m3 SS316L DWG ESTN-T-102-S01 REV A 2026-11-16	SCALE 1:28 SIZE A4	SHEET **1 OF 8** **FOR REVIEW**

CUTTING AND MATERIAL LIST

MARK	DESCRIPTION	t	LENGTH	WIDTH	QTY	kg	CLASS	REMARK
S1-1	Shell plate	5	3228	1500	1	193.2	CUT	Roll to ID 2050
S1-2	Shell plate	5	3228	1500	1	193.2	CUT	Roll to ID 2050
S2-1	Shell plate	5	3228	1450	1	186.8	CUT	Roll to ID 2050
S2-2	Shell plate	5	3228	1450	1	186.8	CUT	Roll to ID 2050
-	Top head (2:1 ellipsoidal)	-	-	-	1	192.0	CUT	2:1 ellipsoidal head, t=5 mm; bought formed; blank 2570 mm
-	Cone bottom plate	-	-	-	1	136.3	CUT	15 deg slope cone, t=5 mm, rolled from flat segments, +25 % development offcut
-	Cone junction compression ring	-	-	-	1	14.8	CUT	flat bar ring, area 261 mm2 (junction check)
-	Nozzle N1 Inlet	-	-	-	1	1.3	BUY	NPS 2 neck 10S (wall 2.77 mm) x 200 mm + sanitary clamp set: weld ferrule, clamp, EPDM gasket, blank cap (budget price, vendor quote to…
-	Nozzle N2 Outlet	-	-	-	1	1.4	BUY	NPS 2 neck 10S (wall 2.77 mm) x 205 mm + sanitary clamp set: weld ferrule, clamp, EPDM gasket, blank cap (budget price, vendor quote to…
-	Nozzle N3 CIP spray ball	-	-	-	1	1.3	BUY	NPS 2 neck 10S (wall 2.77 mm) x 200 mm + sanitary clamp set: weld ferrule, clamp, EPDM gasket, blank cap (budget price, vendor quote to…
-	Nozzle N4 Vent	-	-	-	1	2.2	BUY	NPS 3 neck 10S (wall 3.05 mm) x 225 mm + sanitary clamp set: weld ferrule, clamp, EPDM gasket, blank cap (budget price, vendor quote to…
-	Nozzle N5 Level	-	-	-	1	1.1	BUY	NPS 1-1/2 neck 10S (wall 2.77 mm) x 200 mm + sanitary clamp set: weld ferrule, clamp, EPDM gasket, blank cap (budget price, vendor quote to…
-	Nozzle N6 Temperature	-	-	-	1	0.8	BUY	NPS 1 neck 10S (wall 2.77 mm) x 205 mm + sanitary clamp set: weld ferrule, clamp, EPDM gasket, blank cap (budget price, vendor quote to…
-	Nozzle N7 Sample	-	-	-	1	0.5	BUY	NPS 1/2 neck 10S (wall 2.11 mm) x 205 mm + sanitary clamp set: weld ferrule, clamp, EPDM gasket, blank cap (budget price, vendor quote to…
-	Manway M1 Manway	-	-	-	1	20.6	BUY	Sanitary hinged manway 457 mm, 316L (budget price, vendor quote to confirm)
-	Nozzle A1 Agitator	-	-	-	1	9.5	BUY	NPS 4 neck 40S (wall 6.02 mm) x 225 mm + slip-on flange Class 150 RF, SS316L (catalogue)
-	CIP spray ball	-	-	-	1	1.5	BUY	316L static spray ball (budget price, vendor quote to confirm)
-	Agitator mounting pad 251 OD x 10 mm	10	OD 251	-	1	3.1	CUT	ring plate under the A1 flange, SS316L (plate rate)
-	Agitator top-entry 0.75 kW, about 40 rpm	-	-	-	1	57.5	SITE	supply by vendor with gear motor, shaft, impeller and seal; weight estimated: price needed
-	Legs	-	-	-	4	40.9	BUY	4 pipe legs NPS 2-1/2 x 1175 mm (catalogue) + adjustable feet
-	Leg pads	5	300	173	4	8.3	CUT	4 pads 300 x 173 x 5 mm, SS316L (geometry)
-	Leg support rings (2)	L	6707	75X75X5	2	71.9	CUT	2 rings EA 75X75X5 rolled to shell OD, at 300 mm spacing (SS316L angle, catalogue CS weight x density ratio, priced at SS316L plate rate x 1.3…
-	Lifting lugs + pads	10/5	180/280	120/126	2	6.3	CUT	2 lugs 120 x 180 x 10 mm, hole 40, on pads 280 x 126 x 5 mm, SS316L (geometry)
-	Deposited weld metal (weld register)	-	-	-	1	9.7	WELD	per weld schedule

SAMPLE
EXAMPLE ONLY · NOT A VALID REPORT · NOT FOR FABRICATION

ESTINEER

CUTTING AND MATERIAL LIST

TOTAL FABRICATED WEIGHT 1,283 KG (EXCL. CONSUMABLES)

TANK T-102 10.0 m3 SS316L

DWG ESTN-T-102-S02 REV A 2026-11-16

SCALE NTS

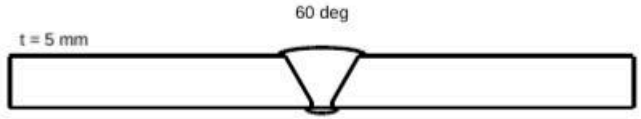
SIZE A4

SHEET **2 OF 8**

FOR REVIEW

DETAIL W1 SHELL LONG + CIRC SEAMS

NTS



FULL PENETRATION BUTT WELD (API 650 J.3.1.2)

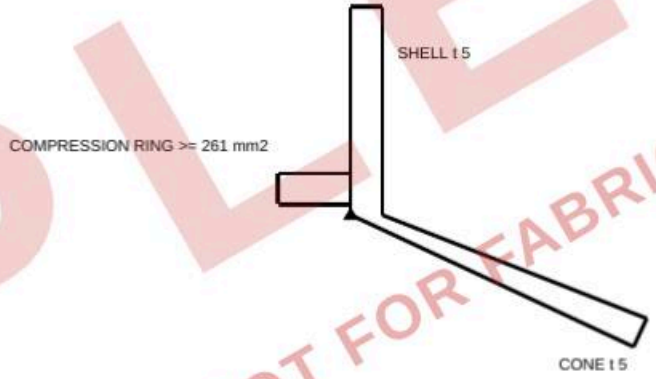
SINGLE-V 60 deg, ROOT FACE 1-1.5, GAP 2-3, BACK GOUGE + BACK WELD

INSIDE: GRIND FLUSH AND POLISH Ra <= 0.8 um

GTAW ER316L (argon back purge)

DETAIL W2 CONE BOTTOM TO SHELL

NTS



FULL PENETRATION BUTT WELD, CONE SLOPE 15 deg TO DRAIN

GTAW ER316L (argon back purge)

SAMPLE
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ESTINEER

WELD DETAILS W1, W2

TYPICAL WELD DETAILS, NOT TO SCALE

TANK T-102 10.0 m3 SS316L

DWG ESTN-T-102-S03 REV A 2026-11-16

SCALE
NTS
SIZE A4

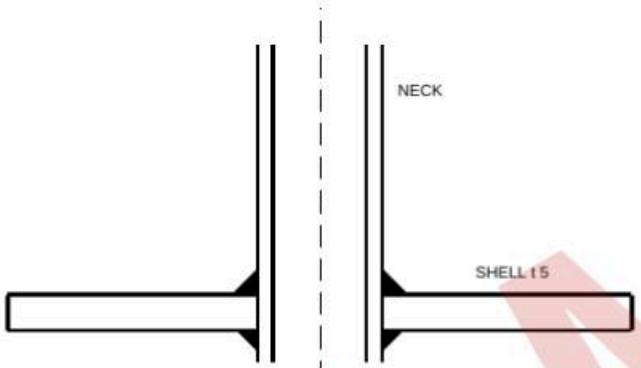
SHEET
3 OF 8
FOR REVIEW

DETAIL W3 NOZZLE NECK TO SHELL / HEAD

NTS

OUTSIDE FILLET a = 3.1 TO 6 (EACH JOINT IN WELD SCHEDULE)

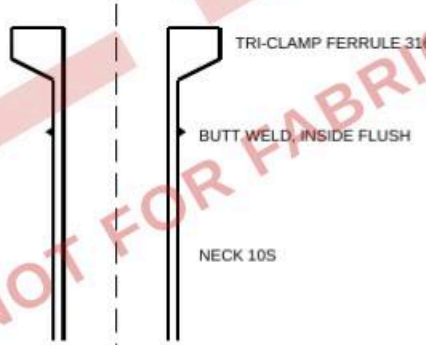
INSIDE FILLET / SEAL; HYGIENIC: FLUSH, RADIUSED, POLISHED



SET-IN NECK, FULL PENETRATION OR FILLET PER SCHEDULE

DETAIL W4 SANITARY CLAMP FERRULE

NTS



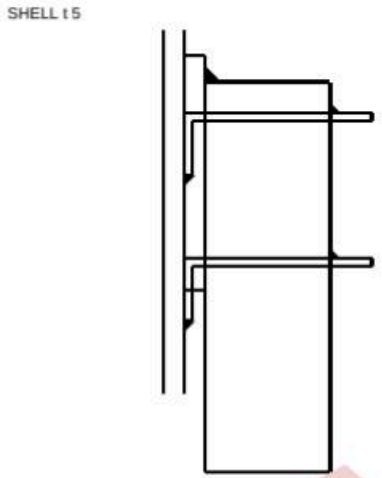
ORBITAL / GTAW BUTT WELD, ARGON PURGE

SAMPLE
EXAMPLE ONLY · NOT A VALID REPORT · NOT FOR FABRICATION

ESTINEER	**WELD DETAILS W3, W4** TYPICAL WELD DETAILS, NOT TO SCALE TANK T-102 10.0 m3 SS316L DWG ESTN-T-102-S04 REV A 2026-11-16	SCALE NTS SIZE A4	SHEET **4 OF 8** **FOR REVIEW**

DETAIL W5 LEG TO SHELL

NTS



PAD 300x173x5 SS316L, R25

PAD-SHELL: FILLET 5 ALL ROUND, SEALED

LEG: PIPE NPS 2-1/2

LEG-PAD: FILLET 5, 2 SIDES + END

2 RINGS EA 75X75X5 SS316L @ 300

RING-SHELL: FILLET 5, 50 @ 150 EACH SIDE

LEG-RING: FILLET 5 BOTH SIDES

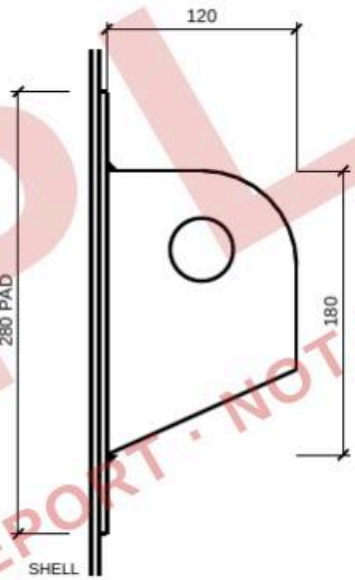
RING COPED ROUND LEG (CALC SEC. 7)

CLEARANCE UNDER TANK 600 mm

4 PIPE LEGS NPS 2-1/2 + ADJUSTABLE FOOT

DETAIL W6 LIFTING LUG

NTS



LUG 120 x 180 x 10, HOLE DIA 40

HOLE CENTRE 50 FROM LUG TOP EDGE

PAD 280 x 126 x 5, SS316L

LUG TO PAD: FILLET 8 BOTH SIDES

PAD TO SHELL: FILLET 5 ALL ROUND

PT OF LUG WELDS BEFORE FIRST LIFT

DRAWN IN TRUE PROPORTION

2 LUGS AT 180 deg, SS316L PLATE 120 x 180 x 10, HOLE 40 (CALC SECTION 8)

SAMPLE
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ESTINEER

WELD DETAILS W5, W6

TYPICAL WELD DETAILS, NOT TO SCALE

TANK T-102 10.0 m3 SS316L

DWG ESTN-T-102-S05 REV A 2026-11-16

SCALE NTS

SIZE A4

SHEET **5 OF 8**

FOR REVIEW

1. WELDING: GTAW ER316L (argon back purge); WPS/PQR AND WELDERS QUALIFIED TO ASME IX.
2. ALL SHELL AND HEAD SEAMS FULL PENETRATION. NO WELD ON A SEAM CROSSING WITHOUT GRINDING FLUSH.
3. OPENINGS KEPT CLEAR OF SEAMS (API 650 5.7.3 PRACTICE; SEE GA / DEVELOPMENT).
4. NDT PER WELD SCHEDULE. HYDROTEST FULL OF WATER 4 h AFTER ALL WELDING.
5. HYGIENIC: PRODUCT-CONTACT WELDS GROUND FLUSH, POLISHED Ra <= 0.8 um, PICKLED AND PASSIVATED.
6. DIMENSIONS IN mm. TOLERANCES: SHELL ROUNDNESS +/- 0.5 % D, NOZZLE POSITION +/- 3 mm, ORIENTATION +/- 1 deg.
7. AGITATOR / NON-SANITARY NOZZLE SLIP-ON FLANGES (ASME B16.5 CL 150): FILLET INSIDE AT FACE (SET BACK t + 3) AND HUB FILLET 1.4 t OUTSIDE (NOT W4).

SAMPLE
EXAMPLE ONLY · NOT A VALID REPORT · NOT FOR FABRICATION

ESTINEER	**WELDING NOTES** GENERAL NOTES FOR ALL WELD DETAILS TANK T-102 10.0 m3 SS316L DWG ESTN-T-102-S06 REV A 2026-11-16	SCALE NTS SIZE A4	SHEET **6 OF 8** **FOR REVIEW**

WELD SCHEDULE

JOINT	DESCRIPTION	TYPE	SIZE	L m	DETAIL	NDT
L11,L12,L21,L22	Shell long seam	BUTT	5	5.90	W1	VT 100 % + RT spot, inside ground flush
C1	Shell circ seam 1	BUTT	5	6.44	W1	VT 100 % + RT spot, inside ground flush
H-Top	Top head to shell	BUTT	5	6.44	W2	VT 100 %, ground flush inside
CB1,CB2	Cone bottom radial seam	BUTT	5	2.12	W1	VT 100 % + RT spot, inside ground flush
H-Bot	Cone bottom to shell	BUTT	5	6.44	W2	VT 100 % + RT spot, inside ground flush
CR	Compression ring to junction	FILLET	a5	12.88	W2	VT
N1 to N3,N5 to N7 -sh	Nozzles: neck to parent, outside	FILLET	a4	0.89	W3	VT + PT
N1 to N3,N5 to N7 -in	Nozzles: neck to parent, inside (ground flush, polished)	FILLET	a3	0.79	W3	VT + PT
N1 to N3,N5,N6 -fl	Nozzles: ferrule to neck (orbital butt)	BUTT	2.77	0.82	W4	VT + PT
N4-sh	N4 neck to parent, outside	FILLET	a5	0.28	W3	VT + PT
N4,A1 -in	Nozzles: neck to parent, inside (ground flush, polished)	FILLET	a4	0.58	W3	VT + PT
N4-fl	N4 ferrule to neck (orbital butt)	BUTT	3.05	0.28	W4	VT + PT
N7-fl	N7 ferrule to neck (orbital butt)	BUTT	2.11	0.07	W4	VT + PT
M1,A1 -sh	Nozzles: neck to parent	FILLET	a6	1.80	W3	VT + PT
A1-fl	A1 slip-on flange to neck (2 fillets)	FILLET	a8	0.72	NOTE 7	VT + PT
A1-pad	Agitator pad outer fillet	FILLET	a7	0.79	W3	VT + PT
LEG1 to LEG4	Leg to pad (2 vertical fillets + end)	FILLET	a5	2.86	W5	VT
LEGP1 to LEGP4	Leg pad to shell (all round)	FILLET	a5	3.78	W5	VT + PT
LR	Leg rings to shell (stitch 50 long at 150 pitch, each side)	FILLET	a5	8.94	W5	VT
LEGR1 to LEGR4	Leg to rings (2 rings, fillets both sides across the ring outstand)	FILLET	a5	1.20	W5	VT
LUG1,LUG2	Lifting lug 1 to pad (2 fillets a8)	FILLET	a8	0.72	W6	VT + PT (before first lift)
LUGP1,LUGP2	Lifting lug pad 1 to shell (all round)	FILLET	a5	1.62	W6	VT + PT (before first lift)

TOTAL WELD LENGTH 66.4 m | DEPOSIT 9.7 kg

SAMPLE
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ESTINEER

WELD SCHEDULE

JOINTS, PROCESS, NDT AND DEPOSIT

TANK T-102 10.0 m3 SS316L

DWG ESTN-T-102-S07 REV A 2026-11-16

SCALE NTS

SIZE A4

SHEET **7 OF 8**

FOR REVIEW

NOZZLE DETAIL SCHEDULE

MARK	SIZE	NECK OD x t	FLANGE / END	PAD t	LOC	ORIENT	POSITION	PROJ
N1	NPS 2	60.3 x 2.77	SANITARY CLAMP FERRULE (VENDOR)	-	TOP	0	R 615	150
N2	NPS 2	60.3 x 2.77	SANITARY CLAMP FERRULE (VENDOR)	-	BOTTOM	0	-	150
N3	NPS 2	60.3 x 2.77	SANITARY CLAMP FERRULE (VENDOR)	-	TOP	60	R 615	150
N4	NPS 3	88.9 x 3.05	SANITARY CLAMP FERRULE (VENDOR)	-	TOP	120	R 615	175
N5	NPS 1.5	48.3 x 2.77	SANITARY CLAMP FERRULE (VENDOR)	-	TOP	180	R 615	150
N6	NPS 1	33.4 x 2.77	SANITARY CLAMP FERRULE (VENDOR)	-	SHELL	45	EL 1400	150
N7	NPS 0.5	21.3 x 2.11	SANITARY CLAMP FERRULE (VENDOR)	-	SHELL	125	EL 1410	150
M1	457 mm	VENDOR	SANITARY HINGED MANWAY (VENDOR)	-	TOP	240	R 615	250
A1	NPS 4	114.3 x 6.02	SLIP-ON FLANGE CLASS 150 RF	10 (OD 251)	TOP	0	R 0	175

SAMPLE
EXAMPLE ONLY · NOT A VALID REPORT · NOT FOR FABRICATION

ESTINEER

NOZZLE DETAIL SCHEDULE

NECKS, FLANGES, PADS AND POSITIONS

TANK T-102 10.0 m3 SS316L

DWG ESTN-T-102-S08 REV A 2026-11-16

SCALE NTS

SIZE A4

SHEET **8 OF 8**

FOR REVIEW