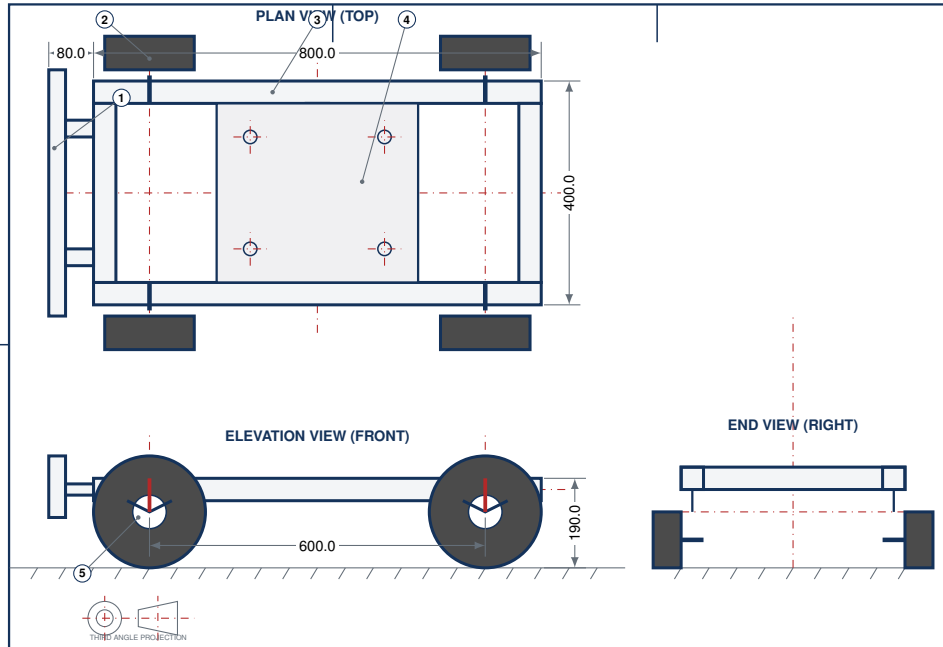


GENERAL DRAWING NOTES

1. ALL WELDING SHALL BE CONDUCTED IN ACCORDANCE WITH AWS D1.1 PROCEDURES.
2. BRACKETS MUST BE WELDED PRE-ALIGNMENT TO ASSURE ACCURACY OF WHEEL SPINDLE AXES.
3. SHARP EDGES OF HOLES TO BE BROKEN 0.5mm MAXIMUM.
4. COAT ENTIRE FRAME STRUCTURE WITH BLACK SAND-TEXTURE POWDER COAT TO SPECIFICATION PL-24B.
5. STRUCTURAL TESTING REQUIRED FOR PROTOTYPE PHASES. STATIC payload capacity rating: 120 kg.
6. TOLERANCES UNLESS OTHERWISE SPECIFIED:

   1 PLACE DECIMAL: ±0.2 mm
   2 PLACE DECIMAL: ±0.05 mm
   ANGULAR TOLERANCE: ±0.5°

VERTEX AUTONOMOUS SYSTEMS	PROJECT: **MERIDIAN AUTONOMOUS ROVER**	DRAWN BY: **A. VALDEZ**	APPROVED BY: **M. STERLING**
	DRAWING TITLE: **CHASSIS ASSEMBLY & WELDMENT**	DATE: **15-JUL-2026**	SCALE: **1:5**
		DRAWING NUMBER: **VAS-MRD-001**	
DEPT: **AEROSPACE R&D**	UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN MILLIMETERS. ANGLES ±0.5°. SURFACE FINISH 3.2 μm.	SHEET: **1 OF 4**	REV: **C**

VERTEX

AUTONOMOUS SYSTEMS

PROJECT: MERIDIAN AUTONOMOUS ROVER

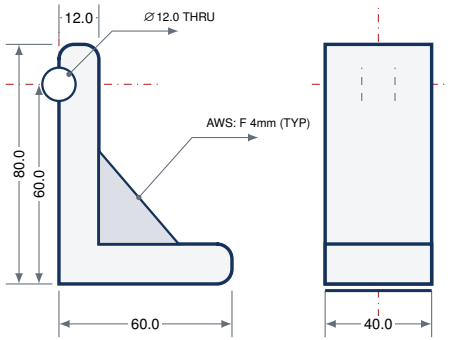
DRAWING TITLE: SUSPENSION DETAIL & BOM

DEPT: AEROSPACE R&D

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN MILLIMETERS. ANGLES $\pm 0.5^{\circ}$. SURFACE FINISH 3.2 μm.

DRAWN BY:	APPROVED BY:
A. VALDEZ	M. STERLING
DATE: 15-JUL-2026	SCALE: 1:2
DRAWING NUMBER: VAS-MRD-002	
SHEET: 2 OF 4	REV: B

ITEM 5: SUSPENSION BRACKET DETAIL



SIDE ELEVATION FRONT ELEVATION

BILL OF MATERIALS (BOM)

ITEM	PART NO.	DESCRIPTION	MATERIAL	QTY	MASS (g)
1	VAS-MRD-002	Front Bumper Assembly	ASTM A36 Steel	1	1420
2	VAS-MRD-005	HD All-Terrain Wheel	Composite / Rubber	4	850
3	VAS-MRD-010	Side Frame Rail	AISI 1020 Steel	2	3200
4	VAS-MRD-012	Center Mount Plate	Aluminum 6061-T6	1	1150
5	VAS-MRD-018	Suspension Bracket	AISI 1020 Steel	4	420
6	VAS-MRD-022	Rear Cross-Member	AISI 1020 Steel	1	1650
7	VAS-MRD-024	Front Cross-Member	AISI 1020 Steel	1	1650

STRUCTURAL MANUFACTURING REQUIREMENTS

- Total dry weight: 17.63 kg.
- Fasteners: ISO 4762 M8 Grade 10.9 cap screws. Torque to 28 N·m.
- Alignment: Wheel axes parallel within 0.15mm, coplanar within 0.25mm.
- Weld Inspection: 100% visual inspection; MPI on 10% sample.

VERTEX
AUTONOMOUS SYSTEMS

PROJECT:
MERIDIAN AUTONOMOUS ROVER

DRAWING TITLE:
SUSPENSION DETAIL & BOM

DEPT:
AEROSPACE R&D

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS IN MILLIMETERS. ANGLES $\pm 0.5^{\circ}$. SURFACE FINISH 3.2 μm.

DRAWN BY:	APPROVED BY:
A. VALDEZ	M. STERLING
DATE: 15-JUL-2026	SCALE: 1:2
DRAWING NUMBER: VAS-MRD-002	
SHEET: 3 OF 4	REV: B

REVISION HISTORY

REV	DESCRIPTION	DATE	DRAWN BY	APPROVED BY
A	Initial Release for Prototype Build	10-MAY-2026	A. VALDEZ	M. STERLING
B	Relocated suspension points 15mm forward for CG optimization	02-JUN-2026	A. VALDEZ	M. STERLING
C	Front bumper mount plate thickness changed from 4mm to 6mm	15-JUL-2026	A. VALDEZ	M. STERLING

1.0 MANUFACTURING AND MATERIAL SPECIFICATIONS

1.1 Tubing: ASTM A513 DOM square steel tubing, min yield 310 MPa. Wall tolerance: ± 0.15 mm. Deburred.

1.2 Plates: Laser cut from ASTM A36 carbon steel plate, min yield 250 MPa. Remove laser dross.

1.3 Machined Parts: Axle shafts machined from AISI 4140 steel (HRC 28-32). Journal finish: 0.8 μm Ra max.

2.0 WELDING AND FINISHING SPECIFICATIONS

2.1 Welding: GMAW per AWS D1.1. Filler ER70S-6. Gas: 75% Ar / 25% CO_2 mix. AWS certified welders.

2.2 Joint Prep: Clean joints of oil, rust, and water. Tack welds must be slag-free.

2.3 Coatings: SSPC-SP6 blast cleaning. Apply zinc primer (50 μm) and matte black powder coat (80 μm).

VERTEX AUTONOMOUS SYSTEMS	PROJECT: MERIDIAN AUTONOMOUS ROVER	DRAWN BY: A. VALDEZ	APPROVED BY: M. STERLING
	DRAWING TITLE: REVISIONS & TECHNICAL SPECS	DATE: 15-JUL-2026	SCALE: NTS
		DRAWING NUMBER: VAS-MRD-003	
DEPT: AEROSPACE R&D	UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS IN MILLIMETERS. ANGLES $\pm 0.5^{\circ}$. SURFACE FINISH 3.2 μm.	SHEET: 4 OF 4	REV: A