



Project: Fabrication of Variable Message Sign Steel Structure

Principal: J1 LED Intelligent Transport Systems

Location: Pacific Highway, Springwood



Overview of Project

Neumann Fabrication have been contracted by J1 LED to fabricate a cantilevered Type C steel Variable Message Sign (VMS) structure.

Scope of Works

The scope of works includes:

- Supply, fabrication, and galvanising of a steel structure to suit type C variable message sign, consisting of:
 - Gantry column.
 - Gantry sign frame.
 - Platform with handrail, including swinging gate.
 - Ladder with fall protection.
 - VMS adjusting rod assemblies.
 - HD bolt plate rings.



Fabrication Activities

All fabrication works undertaken and all materials supplied are in accordance with AS5100 - Bridge Design. The structural steel fabrication was carried out in house by Neumann Fabrication (a Main Roads registered fabricator). All structural fabrication was undertaken in accordance with MRTS78.



Fabrication and Welding Compliance

- MRTS78 - Fabrication of structural steelwork applicable standard TMR design criteria for bridges and other structures, March 2020.
- All welds undertaken were in accordance with AS/NZS 1554.1.
- All welding consumables were controlled by either hydrogen Type G493 to AS/NZS ISO 1434-B or T493 to AS/NZS ISO 17632-B.
- All butt welds are full penetration to AS/NZS 1554.1.



Continued overleaf...



Project: **Fabrication of Variable Message Sign Steel Structure, continued..**

Steel Compliance

- All hot rolled bars and sections supplied were in accordance with AS/NZS 3679.1 grade 300 or greater.
- All hot rolled sections supplied were in accordance with AS/NZS 3679.1.
- All steel plate complies with AS/NZS 3678 and Grade 250 to 350.
- All steel CHS, RHS and SHS are to the requirements of AS/NZS 1163 and are Grade C350LO.
- All steel hollow sections have end plate as required.



Fixtures Compliance, all fixtures have been supplied in accordance with MRTS78 – July 2017.

- 4.6/S Commercial Bolts of Grade 4.6 to AS1111 – Snug Tightened.
- 8.8/S High Strength Structural Bolts of Grade 8.8 to AS1252 – Snug Tightened.
- 8.8/TB High Strength Structural Bolts of Grade 8.8 to AS1252 – Fully tensioned to TN 62 as a bearing joint.
- 8.8/TF High Strength Structural Bolts of Grade 8.8 to AS1252 – Fully tensioned to TN 62 as a friction joint, with facing surfaces left uncoated.
- Stainless steel was isolated from mild steel using nylon washers.
- All nuts and bolts were hot dipped galvanised in accordance with AS1214.
- Bolting procedures for TB or TF connections complies with MTS78.



Protective Coating/Treatment

- All completed steelwork was hot dipped galvanised in accordance with AS/NZS 4680.



Non-Destructive Examination

- Visual Inspection was undertaken in accordance with Clause 7.3 AS1554.1.
- Visual Examination – Permissible Levels of Imperfections in accordance with AS1554.1 Table 6.2.2.
- Radiography and Ultrasonic Testing was undertaken – Permissible Levels of Imperfections in accordance with Table 6.2.1.



Conclusion/Outcome

The project is now complete and is fully compliant with all relevant standards. J1 LED will assemble the VMS sign to the completed structure at our Currumbin facility before loading out for delivery to site.

