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Ref: 23084

12th January 2024

Brett Hutton
JCDecaux
Unit 2-3, 182-190 Euston Rd,
Alexandria NSW 2015

RE: Pacific Hwy, Hornsby, NSW, Outbound
Column Mounted P50 Signage, Structural Feasibility Statement

This Structural Feasibility Statement has been conducted by Dennis Bunt Consulting Engineers Pty Ltd (DBCE) at the request of JCDecaux.

The proposed sign is documented in the generic DA drawings by the architects Tzannes (JCD Multi-Site P50) 21027/ 001(D), 002(D) and 003(C) and the site-specific DA drawings by DBCE 23084 / DA01(B), DA02(C).

The P50 sign is a single sided LED screen with visual screen dimensions of 3072mm horizontally x 4608mm vertically. The top of the LED screen will be located 8200mm approx. above the adjacent footpath. The sign is to be located above a column and horizontal beam that will form an L shape under the screen. The column and horizontal beam will be clad in stainless steel. There will be a door in the rear of the column to store equipment for the LED screen.

Site Description

The site is in an area between Pacific Hwy to the east and Sydney trains tracks to the north. The ground is fairly flat and is at the same level as the Pacific Hwy. There is a vertical drop to the tracks to the north of the sign approximately 10m from the sign. The sign will be located adjacent to a low-level fence next to the Pacific Hwy footpath.

There is no requirement for a permanent access platform with balustrades or anchor points for this signage as the sign will be accessed by an elevated work platform located on the footpath if maintenance is required. Part out the footpath will be cordoned off from the public while this occurs.

Structural Description

Steel frame

The structure will consist of a fabricated steel column 600mm x 400mm x 20mm thick and a rectangular box section welded to the top of the column to form an L shape.

A door is to be located in the rear of the column to store equipment so the column will act as a C section for most of its height.

A welded steel frame consisting of 200 x 100 RHS (Rectangular Hollow Section) vertical members and 100x100 SHS (Square Hollow Section) horizontal members will be bolted to the top of the horizontal box section. Spigots will be welded to the top of this section and the vertical members in the welded frame will drop over the spigots and be fixed with bolts.

The LED screen will be assembled in the contractor's factory and clamped to the welded frame so it can be transported to site as one unit.

The L shaped structure will have stainless steel cladding fixed to it also in the contractor's factory and be transported to the site as one unit.

On site the L shaped structure will be bolted to the top of the concrete footing and the welded frame supporting the LED screen bolted to the L shaped frame.

The weight of the structure including the digital screen and the cladding is approximately 3.1 tonnes.

The sign is to be designed for a wind load for region A, terrain category 2.5 and a 50 year design life in accordance with AS/NZS 1170.2:2021 Structural design actions, Wind actions.

The structural assessment of the sign has been done in accordance with AS4100:2020 Steel structures.

Footing

A concrete pile and pile cap are proposed to minimise the impact of the sign footing on the adjacent footpath and fence and trees in the area.

The pile cap will be 1m square in area and 1m deep. The concrete pile will be 750mm in diameter and extend below the ground level by approximately 8m.

If the ground is non-cohesive ie sand a continuous flight augur pile (CFA) is recommended. For a CFA pile the concrete is pumped into the hole as the drill bit is removed so the concrete stops the walls of the hole from collapsing inwards.

Recommendations


Based on the survey and our preliminary design we see no reason why the cantilevered signage cannot be installed.

A geotechnical report is commissioned to provide information on the soil profile and its depth below ground.

A services search is undertaken in the area of the footing.

If you have any questions, please do not hesitate to ring the undersigned on 9451 7757

Yours Faithfully,

A handwritten signature in blue ink, appearing to read 'J Linsell', is written over a light blue rectangular background.

John Linsell BE(Hons), MIEAust, CPEng, NPER(Struct)
for Dennis Bunt Consulting Engineers Pty Ltd