Structural Design Certificate

Property location Street address *(Include no., street, suburb/locality & postcode)*	MUST BE ACCURATE ADDRESS/PROPERTY DESCRIPTION–REFER TO APPLICATION FOR BUILDING APPROVAL FOR DETAILS **18 Boyle Street** **Balgowlah, NSW, 2093**
Description of component/s certified Clearly describe the extent of work covered by this certificate.	We hereby certify that the structural details of the following elements of the proposed building work have been designed in this office: • Proposed 4m high x 2.2m wide pylon sign If completed in accordance with the relevant plans and notations and in accordance with the design conditions identified herein, these aspects of the building work should be structurally sound.
Basis of certification Detail the basis for giving the certificate and the extent to which tests, specifications, rules, standards, codes of practice and other publications, were relied upon.	**Design Conditions:** • AS 1170.0 - Structural Design Actions- General principles • AS 1170.1 - Structural Design Actions- Permanent, imposed and other actions • AS 1170.2 - Structural Design Actions Code - Wind Actions (Region A2) • AS 1664 – Aluminium Structures • AS 3600 - Concrete Structures • AS 4100 - Steel Structures **Notations:** • This certificate relates to the structural aspects of the proposed 4m high x 2.2m wide sign only and does not cover non-structural items such as secondary framing, signage numerals, light boxes and other signage items and their connection to the main structure. These components shall be constructed in accordance with the manufacturer's recommendations. • All external frame work shall be hot dip galvanised or coated with a suitable medium term protective paint system to the sign manufacturer's specification for the intended life time of the sign.
Reference documentation Clearly identify any relevant documentation, e.g. numbered structural engineering plans.	**Relevant Drawings :** • SLN Consulting Drawings 2018-ST-106-1 and 2

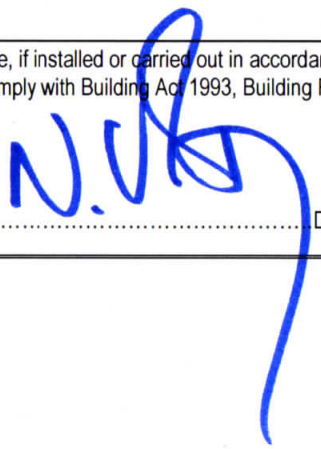
Building/works expert details. Certificate must be completed by a building expert or works expert.
'Building expert' for building activity on an airport site, means a person generally recognised within the industry as having expert knowledge about, or qualifications for, the construction of buildings.
'Works expert' for building activity on an airport site, means a person generally recognised within the industry as having expert knowledge about, or qualifications for, the carrying out of works.
'Building expert' and 'works expert' are defined in the Airport (Building Control) Regulations 1996. Refer to Regulations for full details.
A copy of the signatories registration/licence/experience MUST be attached to certificate EG BSA Licence, RPEQ Registration, CV detailing expert knowledge

Name	**Nenad Vrbancic**		
Company name (if applicable)	**SLN Consulting Pty Ltd**		
Postal address	**PO Box 1260, Runaway Bay, QLD, 4216**		
Contact person	**Nenad Vrbancic**		
Telephone No	**0424870888**		
Mobile No	**0424870888**		
Fax No.	**N/A**		
Email address	**nenad@slnconsulting.com.au**		
License or registration number:	**MIEAust CPEng NER Reg. No. 4484065** **RPEQ Reg. No. 16283** **VBA Reg. No. EC 47024**	Copy of licence /registration/ CV **MUST** Be Attached	Tick Box ✓

Signature

for and on behalf of
SLN Consulting Pty Ltd
Our Ref : 2018-ST-106

I certify that the item/s described above, if installed or carried out in accordance with the information contained in this certificate, including any referenced documentation, will comply with Building Act 1993, Building Regulations 2006, The Building Code of Australia and Relevant Australian or International Standards.



Signature..... Date: **30 July 2019**

GENERAL

- THESE STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH THE WORK.
- CONSTRUCTION USING THESE STRUCTURAL DRAWINGS SHALL NOT COMMENCE UNTIL A CONSTRUCTION CERTIFICATE IS ISSUED BY THE PRINCIPAL CERTIFYING AUTHORITY.
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT CURRENT STANDARDS AUSTRALIA CODES AND WITH THE BUILDING CODE OF AUSTRALIA.
- ALL DIMENSIONS SHOWN ON THESE STRUCTURAL DRAWINGS SHALL BE VERIFIED BY THE BUILDER ON SITE. THESE STRUCTURAL DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS.
- UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.
- THE METHOD OF CONSTRUCTION AND THE MAINTENANCE OF SAFETY DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR. IF ANY STRUCTURAL ELEMENT PRESENTS DIFFICULTY IN RESPECT OF CONSTRUCTABILITY OR SAFETY, THE MATTER SHALL BE REFERRED TO THE STRUCTURAL ENGINEER FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
- DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERLOADED. TEMPORARY BRACING SHALL BE PROVIDED BY THE CONTRACTOR IN ORDER TO KEEP THE BUILDING WORKS AND EXCAVATIONS STABLE AT ALL TIMES.
- ALL PROPRIETARY FIXINGS TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.
- SIGNAGE NUMERALS, LIGHT BOXES AND OTHER SIGNAGE ITEMS AND THEIR CONNECTION TO THE MAIN STRUCTURE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.

FOOTINGS

- SIGN FOOTINGS HAVE BEEN DESIGNED FOR A MINIMUM ALLOWABLE BEARING CAPACITY OF 100KPA. CONTRACTOR TO VERIFY THAT THE ACTUAL SITE CONDITIONS ARE IN ACCORDANCE WITH THIS ASSUMPTION PRIOR TO FOOTING INSTALLATION.
- THE ENGINEER SHOULD BE INFORMED IF THE ACTUAL ALLOWABLE BEARING CAPACITY IS DIFFERENT THAN ASSUMED. AMENDMENTS TO ORIGINAL SIGN FOOTING DESIGN MAY BE REQUIRED.

CONCRETE

- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF AS3600 INCLUDING AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS. CONSTRUCT IN ACCORDANCE WITH AS2870.
- CONCRETE QUALITY AND CLEAR CONCRETE COVER TO ALL REINFORCEMENT FOR DURABILITY SHALL BE AS FOLLOWS UNLESS SHOWN OTHERWISE:

ELEMENT	EXPOSURE CLASSIFICATION TO AS3600	STRENGTH GRADE (MPA)	SLUMP	MAX. AGG SIZE (MM)	MINIMUM COVER
SLABS	A2	25	80	20	30
FOOTING BEAMS	A2	25	80	20	50

- ALL REINFORCING BARS TO BE GRADE D500N. ALL MESH SHALL BE GRADE 500L.
- WHERE NOT SHOWN ON THE STRUCTURAL DRAWINGS CONSTRUCTION JOINTS SHALL BE LOCATED TO THE APPROVAL OF THE STRUCTURAL ENGINEER.
- THE STRUCTURAL ENGINEER SHALL BE GIVEN 24 HOURS NOTICE FOR REINFORCEMENT INSPECTION AND CONCRETE SHALL NOT BE DELIVERED UNTIL FINAL APPROVAL HAS BEEN OBTAINED FROM THE STRUCTURAL ENGINEER.
- THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE SHALL BE COMPACTED WITH MECHANICAL VIBRATORS.
- CURING OF ALL CONCRETE IS TO BE ACHIEVED BY KEEPING SURFACES CONTINUOUSLY WET FOR A PERIOD OF 3 DAYS OR BY PREVENTION OF LOSS OF MOISTURE FOR A TOTAL OF 7 DAYS FOLLOWED BY A GRADUAL DURING OUT. APPROVED SPRAY ON CURING COMPOUNDS THAT COMPLY WITH AS3799 MAY BE USED WHERE FLOOR FINISHES WILL NOT BE AFFECTED (REFER MANUFACTURERS SPECIFICATION). POLYTHENE SHEETING OR WET HESSIAN MAY BE USED TO RETAIN CONCRETE MOISTURE WHERE PROTECTED FROM WIND AND TRAFFIC.
- ANY CHANGES TO THESE RECOMMENDATIONS BY PERSONS UNAUTHORISED BY SLN CONSULTING PTY LTD WILL LEGALLY BE INTERPRETED AS THAT PERSON ASSUMING RESPONSIBILITY FOR THE PERFORMANCE OF THE FOOTING SYSTEM.

STRUCTURAL STEEL

- ALL WORKMANSHIP AND MATERIAL SHALL BE IN ACCORDANCE WITH AS4100 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS. FABRICATION SHALL BE CARRIED OUT IN ACCORDANCE WITH SECTION 14 OF AS4100. ERECTION SHALL BE CARRIED OUT IN ACCORDANCE WITH SECTION 15 OF AS4100.
- UNLESS NOTED OTHERWISE, ALL STEEL SHALL BE OF THE FOLLOWING GRADE IN ACCORDANCE WITH THE FOLLOWING AUSTRALIAN STANDARDS.

TYPE OF STEEL	GRADE
UNIVERSAL BEAMS AND COLUMNS, PARALLEL FLANGE CHANNELS, LARGE ANGLES	300
WELDED SECTIONS	300
HOT ROLLED PLATES, FLOOR PLATES AND SLABS	250
HOLLOW SECTIONS	C350
COLD FORMED PURLINS AND GIRTS	G450/Z350

- COPIES OF WORKSHOP FABRICATION DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AT LEAST 14 DAYS PROIR TO COMMENCEMENT OF FABRICATION. FABRICATION SHALL NOT COMMENCE WITHOUT THE STRUCTURAL ENGINEER'S APPROVAL OF THE WORKSHOP DRAWINGS. ALL DIMENSIONS AND SETOUTS TO BE OBTAINED FROM ARCHITECTURAL DRAWINGS WHERE NOT INDICATED ON STRUCTURAL DRAWINGS. THE ENGINEER SHALL ACCEPT NO RESPONSIBILITY WHATSOEVER FOR THE ACCURACY OF THE WORKSHOP DRAWINGS.
- THE FABRICATION AND ERECTION OF THE STRUCTURAL STEELWORK SHALL BE SUPERVISED BY A QUALIFIED PERSON EXPERIENCED IN SUCH SUPERVISION IN ORDER TO ENSURE THAT ALL REQUIREMENTS OF THE DESIGN ARE MET.
- ALL MEMBERS SHALL BE SUPPLIED IN SINGLE LENGTHS. SPLICES SHALL ONLY BE PERMITTED IN LOCATIONS SHOWN ON THE STRUCTURAL DRAWINGS.
- BOLTING CATEGORIES ARE IDENTIFIED ON THE STRUCTURAL DRAWINGS IN THE FOLLOWING MANNER:

BOLTING CATEGORY:	COMMENTS:
4.6/S	COMMERCIAL BOLTS - GRADE 4.6 SNUG TIGHTENED
8.8/S	HIGH STRENGTH STRUCTURAL BOLTS - GRADE 8.8 SNUG TIGHTENED

- ALL WELDING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS1554.1. ALL FILLET WELDS TO BE 8MM CONTINUOUS SP CATEGORY USING E48XX ELECTRODES OR EQUIVALENT. ALL BUTT WELDS TO BE COMPLETE PENETRATION SP CATEGORY.
- ALL EXTERNAL STEELWORK TO BE HOT DIP GALV. IN ACCORDANCE WITH AS4680. COATING MASS SHALL BE 600G/M2. PROVIDE BREATHER HOLES IN CLOSED SECTIONS. INTERNAL STEELWORK TO BE CLASS 2.5 ABRASIVE BLAST CLEANED AND PRIMED WITH 1 COAT INORGANIC ZINC SILICATE, MINIMUM 65 MICRONS DRY FILM THICKNESS.

DESIGNED BY:

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PROJECT:
4m HIGH x 2.2m WIDE
PYLON SIGN
18 BOYLE STREET
BALGOWLAH, NSW

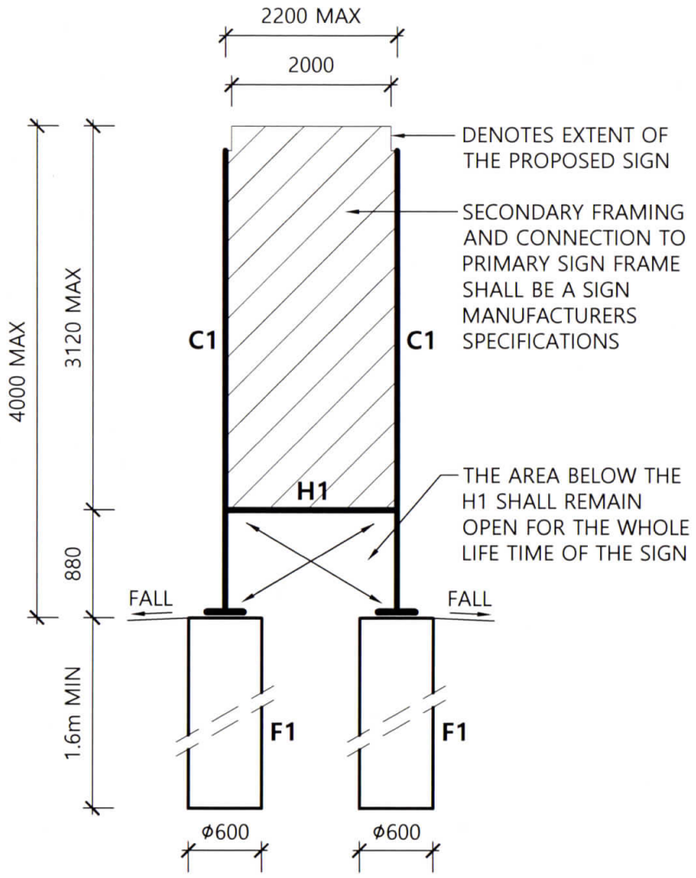
DRAWING TITLE:
STANDARD NOTES

CLIENT:
WETTON SIGNAGE

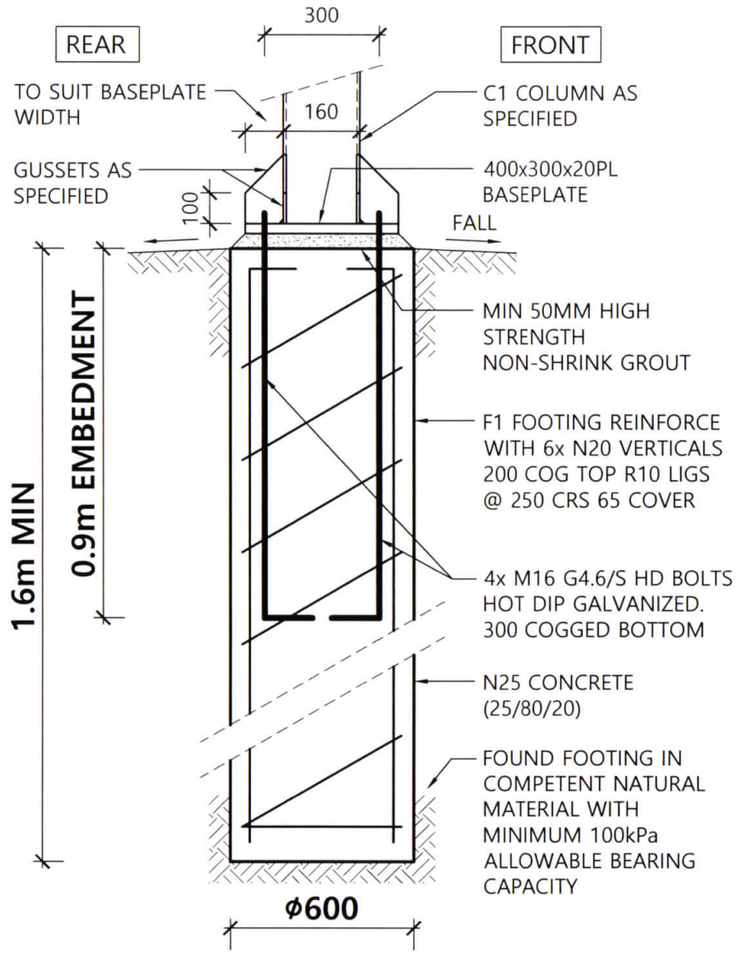
APPROVED:
NENAD VRBANCIC
FOR AND ON BEHALF OF
SLN CONSULTING PTY LTD

DRAWN:	SCALE:	DESIGNED:
NV/7-2019	A/S	NV/7-2019

DRAWING NO:	SHEET:	REV:
2019-ST-106-1	1 OF 2	



TYPICAL SIGN ELEVATION (FRONT)
SCALE NTS



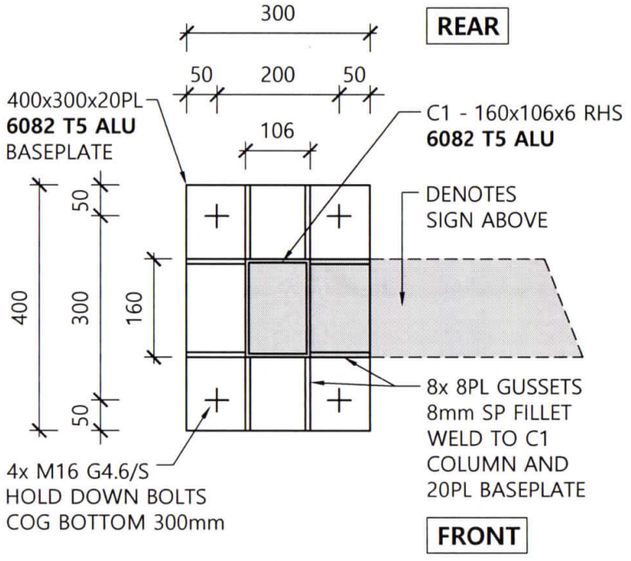
F1 - PIER FOOTING DETAIL
NTS

SIGN SCHEDULE - WIND REGION A2			
SIGN DIMENSIONS		**FRAME SCHEDULE**	
W WIDTH [m]	2.2	C1 - 160x106x6 RHS **6082 T5 ALU**	ALL FRAME MEMBERS SHALL BE FULLY SHOP WELDED 8mm SP CONTINUOUS WELD
H HEIGHT [m]	4.0	H1 - 160x106x6 RHS **6082 T5 ALU**	
		400x300x20PL **6082 T5 ALU** BASEPLATE	

F1 - BORED PIER FOOTING DETAILS			
DIMENSIONS		REINFORCEMENT	HOLD DOWN BOLTS
WIDTH [m]	ϕ0.60	6x N20 VERTICALS 200 COG TOP R10 LIGS @ 250 CRS 65 COVER	4x M16 G4.6/S 300 COGGED ENDS 0.9m EMBEDMENT HD GALVANIZED
DEPTH [m]	1.60		

GENERAL NOTES

- F1 SIGN FOOTINGS SHALL BE FOUNDED IN COMPETENT NATURAL OR CONTROLLED COMPACTED FILL MATERIAL WITH MINIMUM 100kPa ALLOWABLE BEARING CAPACITY
- PROPOSED SIGN WAS DESIGNED FOR THE FOLLOWING WIND CRITERIA:
  - REGION A2
  - TERRAIN CATEGORY 3
- SLN CONSULTING STRUCTURAL DESIGN & CERTIFICATION RELATES TO PRIMARY SIGN FRAME, FRAME CONNECTION TO FOOTINGS & FOOTING SYSTEM (F1-BORED PIERS) ONLY AND DOES NOT INCLUDE THE SECONDARY FRAMING, CLADDING AND OTHER SIGN ITEMS. THESE COMPONENTS SHALL BE AS PER SIGN MANUFACTURERS SPECIFICATIONS
- ALL EXTERNAL FRAME WORK SHALL BE HOT DIP GALVANIZED OR COATED WITH A SUITABLE MEDIUM TERM PROTECTIVE PAINT SYSTEM AS PER SIGN MANUFACTURER'S SPECIFICATION FOR THE INTENDED LIFE TIME OF THE SIGN.



TYPICAL BASEPLATE DETAIL
SCALE 1:10

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NV/7-2019	A/S	NV/7-2019

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