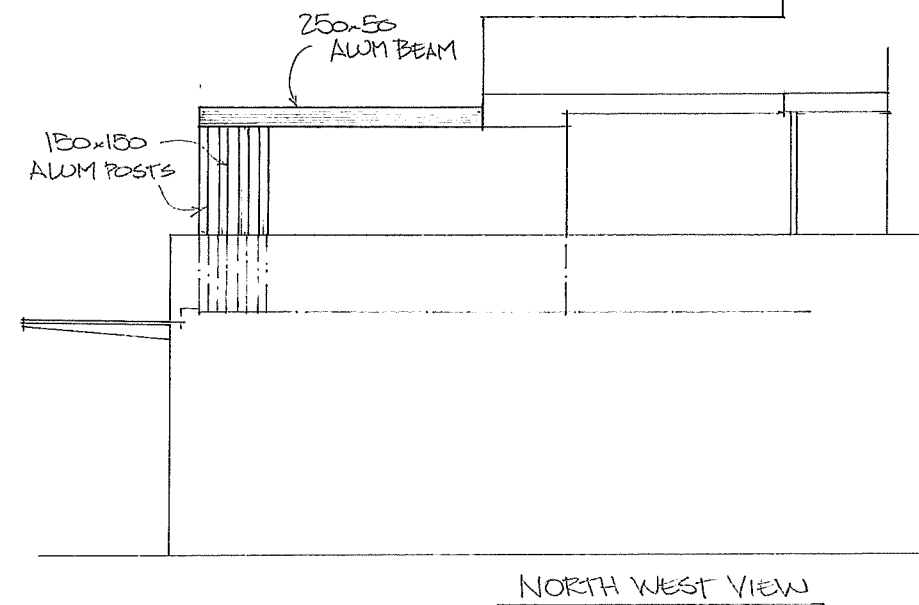
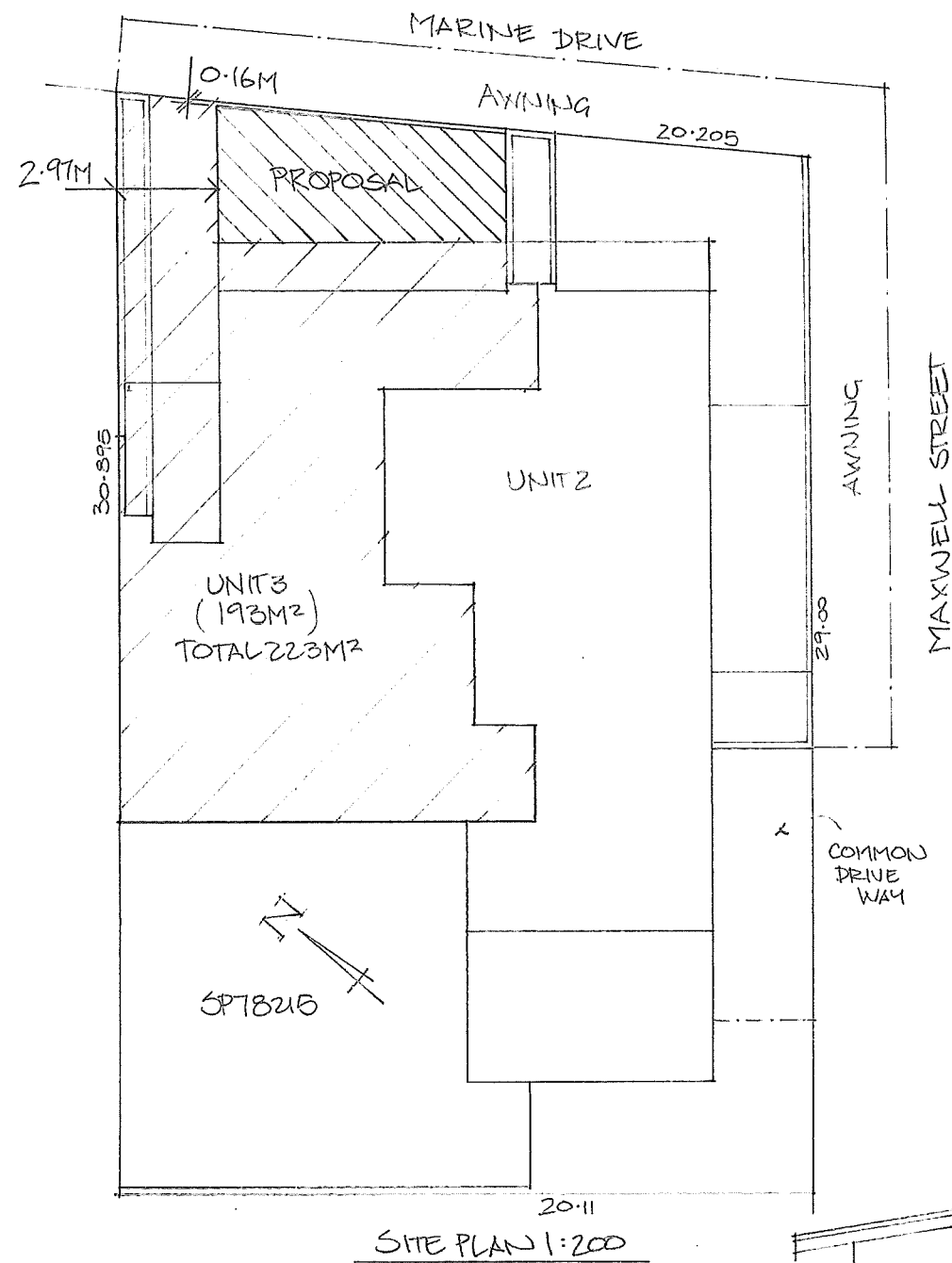
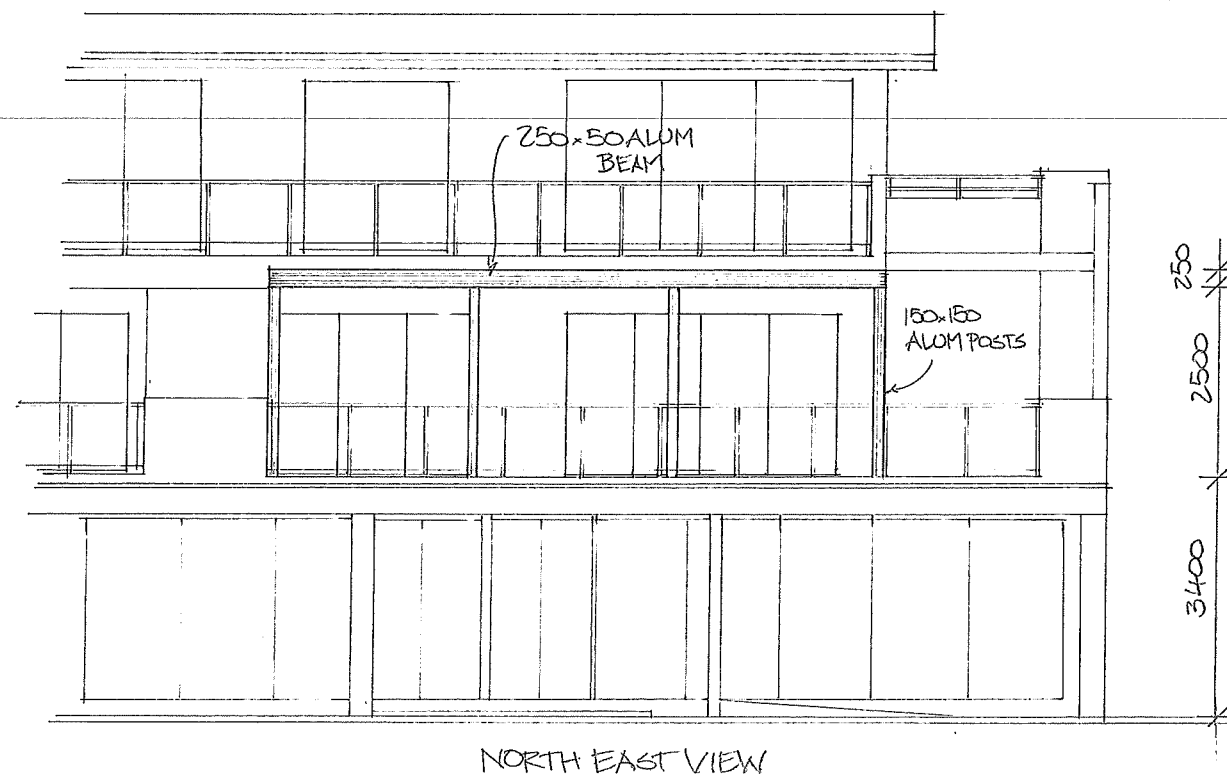
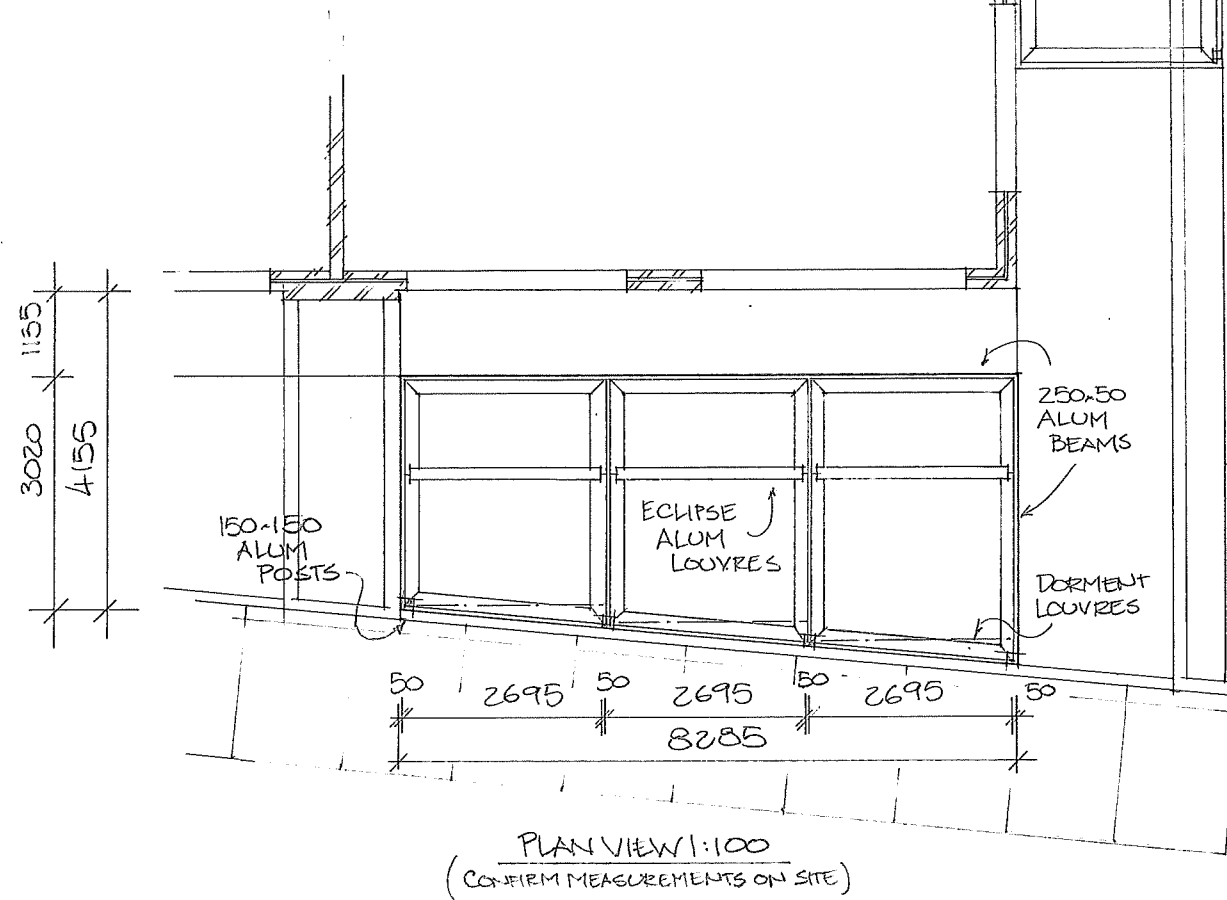


PROPOSED IMPROVEMENTS FOR: BUILDER:
 JUDY SAMS HV ALUMINIUM
 3/83 MARINE DRIVE, 10 MYRA STREET,
 TEA GARDENS NEW LAMBTON

PROPOSAL:
 CONSTRUCT AN ECLIPSE OPENING ROOF TO THE
 EXISTING PATIO AREA.
 ECLIPSE ALUM LOUVRES SUPPORTED BY 250x50 ALUM
 BEAMS ON 150x150 ALUM POSTS.
 DOWNPIPES TO THE EXISTING STORMWATER SYSTEM.



Eclipse Opening Roof Design Worksheet

This worksheet is a summary of design calculations from the Eclipse Opening Roof Design Manual
October 2013

Owners: JUDY SAMS Address: 3/83 MARINE DRIVE, TEA GARDENS

1. Wind Design Factors

Wind Region = A

Terrain Category = 2

Shielded or Non-shielded = NON SHIELDED

2. Design Wind Pressure, q_z

Using the Design Wind Factors select q_z from the Tables in Section 2 of Design Manual. $q_z = \underline{1.02}$ kPa

3. Pressure Coefficient, C_{p_u} & C_{p_d}

Determine both UPWARD and DOWNWARD pressure coefficients.

Height of Structure	$h_o = \underline{2.6}$ m	$h_o/w_o = \underline{0.764}$	$C_{p_u} = \underline{0.75}$
Height of Building	$h = \underline{2.6}$ m		
Projection of Structure	$w_o = \underline{3.4}$ m	$h_o/h = \underline{1.0}$	$C_{p_d} = \underline{0.6}$
Number of Enclosed Sides	$= \underline{1}$		

4. Wind Pressure (kPa)

Calculate wind pressure for both UPWARD and DOWNWARD directions.

Upward Pressure $P_u = q_z \times C_{p_u} = \underline{1.02} \times \underline{0.75}$ $P_u = \underline{0.765}$ kPa

Downward Pressure $P_d = q_z \times C_{p_d} = \underline{1.02} \times \underline{0.6}$ $P_d = \underline{0.612}$ kPa

5. Select Louvre Span (m)

Using P_u and P_d select the maximum louvre span from the Tables in Section 5 of the Design Manual.

Maximum Louvre Span, based on UPWARD pressure = 3.6 m

Maximum Louvre Span, based on DOWNWARD pressure = 4.2 m

The Allowable Maximum Span is the LESSER of these two values.

Maximum Louvre Span, $L_s = \underline{3.6}$ m

6. Louvre Support Beams

Calculate the Uniformly Distributed Beam Load (UDL) then select beam with appropriate span from Table 6.1.

For Design Pressure, P use the HIGHER value of P_u and P_d $P = \underline{0.765}$ kPa

EDGE BEAM Louvre Span Length (dist. between tracks): $L = \underline{2.695}$ m.

UDL = $P \times L/2 = \underline{0.765} \times \underline{1.348}$ UDL = 1.03 kN/m

MID BEAM Louvre Span Lengths (dist. between tracks): $L1 = \underline{2.695}$ m $L2 = \underline{2.695}$ m

UDL = $P \times (L1 + L2)/2 = \underline{0.765} \times \underline{2.695}$ UDL = 2.06 kN/m

Beam Selection Summary:

	UDL	Size	Max. Span
Beam 1	<u>1.03</u>	<u>250x80x3</u>	<u>6.53</u>
Beam 2	<u>2.06</u>	<u>250x80x3</u>	<u>4.87</u>
Beam 3			