There are structural steel diagonal rod braces in the longitudinal walls, perpendicular to the direction of the steel portals.

The suspended floor is constructed from conventional mesh reinforced insitu concrete topping over proprietary hollowcore flooring. The floor system is supported on large (700mm deep x 600mm wide) cast insitu reinforced concrete beams, supported on substantial (600mm x 600mm) reinforced concrete columns, all supported by large foundation pads tied around the perimeter of the building by substantial ground beams, and throughout the body of the building, by the on-grade floor slab. The reinforced concrete beams form a perimeter frame around the entire footprint and there are two grids of transverse beams within the body of the floor plate.

The stair is light weight construction and is drawn as having two steel PFC stringers and precast concrete treads.

Seismic Load Resisting Structure:

The lateral load resisting system in the longitudinal direction for the single storey building envelope consists primarily of the diagonal structural steel roof bracing in conjunction with the direct connection to the two way reinforced concrete moment resisting framed suspended office floor, and the transverse lateral loads (in the north-south direction) are sustained by the structural steel moment resisting portal frames.

The lateral load resisting system for the roof above the suspended floor consists of the roof and wall plane diagonal steel bracing and the steel moment resisting portal frames. The lateral load resisting system for the suspended floor consists of the reinforced concrete two way moment resisting frames in both principal directions.

We have examined two specific aspects of this building to determine if they represent a severe structural weakness, and they are the stairs and the hollowcore flooring. The stairs are of relatively light weight construction and wrap around the lift, therefore they are not of the precast flight/landing/flight type that have proven problematic when assessed using the stair assessment guidelines, Practice Advisory Note #13. The second item is the hollowcore flooring. Drawing B236-S2.601 shows that there are 600mm wide timber infills between the side of the hollowcore and the beams, this limits the transfer of seismic deformations from the beam to the hollowcore in an earthquake. The hollowcore seating is not specifically called up in the details, but scales 75mm, which was the norm in this design era and is satisfactory. Finally, the framing under the suspended floor appears to be large and this equates to a stiff building that is likely to remain elastic in an earthquake, which inhibits inelastic span growth and therefore loss of floor seating. As a result of this review, no severe structural weaknesses or critical structural weaknesses have been detected in this building structure.

There is paucity in the detail obtained from information contained in the property file, specifically for the foundations and upper roof of this Block, however, there is sufficiently comprehensive information in the detail drawings to allow us to make a robust assessment of the likely seismic performance of the building at a high level of certainty for an ISA.

There were fit out alterations carried out in 2016 recorded in the documentation that we hold, but these did not affect the lateral load resisting system.

Seismic Assessment:

We have used the following parameters in the ISA assessment.

- Building era 2004 – 2011.
- Seismic Zone B, Tauranga.
- Class D soft soil.

- Natural period 0.4 seconds, (this is based on the structural steel diagonal roof (and wall in the second storey) bracing distributing the lateral loads to the reinforced concrete moment resisting framed suspended floor. This natural period is also appropriate for the structural steel moment resisting portal frames in the transverse direction in both the upper storey and the single storey section).
- Building Importance Level 2.
- Structural Ductility factor 1.25 (this is based on the in-plane loaded diagonal steel bracing panels and the reinforced concrete moment resisting frames, and the structural steel moment resisting frames, although both of these frame types can arguably achieve a higher structural ductility factor. This is subject to commentary in the PAR evaluation).
- Plan irregularity 1.0 (this value has been selected despite the asymmetric arrangement of the lateral load resisting systems in the two sections of the building. The reason is that because of the type of construction, the design philosophy for the building was no doubt that it would act as a series of discrete tributary loaded resisting structural elements in the single storey transverse direction, but as a single structural entity in the longitudinal direction, because of the direct connection of the roof brace panels to the concrete frame. This is addressed in the PAR section).
- Vertical irregularity 1.0.
- Pounding Potential 1.0 (because the building has no neighbours).
- Site Characteristics 1.0 (because there is no recorded risk of liquefaction or site instability).
- Performance Achievement Ratio 1.1. (This is based on the regularity, pounding and site factors as detailed above but includes an enhancement 'other' factor of 1.1 which is less than the maximum of 2.5 available for buildings less than or equal to 3 storeys. This 'other factor' was selected because the natural period is arguably too short, and the ductility factor too low, for this building and this may well be demonstrated if the moment resisting structural steel portal frames and the reinforced concrete frames are analysed in detail, which is beyond the scope of this ISA. Also, there is a high density of reinforced concrete moment resisting frames, with very large members supporting only a single suspended floor level. By all appearances there is a lot of lateral load supporting structure for a small building, and this represents another redundancy in the system. All of these factors have been nominally recognised by an 'other factor' of 1.1).

Seismic Rating and Grade:

The Baseline rating of 100% NBS is modified by the Performance Achievement Ratio of 1.1 resulting in a Seismic Rating of >100% NBS which makes this Block A building neither an Earthquake Risk nor Earthquake Prone.

Rating >100% NBS.
Grade A+.

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block G	Date:	14/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-1 Initial Evaluation Procedure Step 1

Step 1 - General Information

1.1 Photos (attach sufficient to describe building)

NOTE: THERE ARE MORE PHOTOS ON PAGE 1a ATTACHED

1.2 Sketches (plans etc, show items of interest)

NOTE: THERE ARE MORE SKETCHES ON PAGE 1a ATTACHED

1.3 List relevant features (Note: only 10 lines of text will print in this box. If further text required use Page 1a)

Refer to report details.

1.4 Note information sources Tick as appropriate

Visual Inspection of Exterior	☑	Specifications	☐
Visual Inspection of Interior	☐	Geotechnical Reports	☑
Drawings (note type)	☑	Other (list)	☐

Property File.

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block G	Date:	14/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-2 Initial Evaluation Procedure Step 2

Step 2 - Determination of $(\%NBS)_b$

(Baseline *(%NBS)* for particular building - refer Section B5)

2.1 Determine nominal $(\%NBS) = (\%NBS)_{nom}$

a) Building Strengthening Data

	Longitudinal	Transverse
Tick if building is known to have been strengthened in this direction	☐	☐
If strengthened, enter percentage of code the building has been strengthened to	N/A	N/A

b) Year of Design/Strengthening, Building Type and Seismic Zone

	Longitudinal	Transverse
Pre 1935	○	○
1935-1965	○	○
1965-1976	○	○
1976-1984	○	○
1984-1992	○	○
1992-2004	○	○
2004-2011	◉	◉
Post Aug 2011	○	○
Building Type:	Not applicable	Not applicable
Seismic Zone:	Not applicable	Not applicable

c) Soil Type

	Longitudinal	Transverse
From NZS1170.5:2004, Cl 3.1.3 :	D Soft Soil	D Soft Soil
From NZS4203:1992, Cl 4.6.2.2 : (for 1992 to 2004 and only if known)	Not applicable	Not applicable

d) Estimate Period, T

Comment:

		Longitudinal	Transverse
$h_n =$		5	5 m
$A_c =$		1.00	1.00 m^2
Moment Resisting Concrete Frames:	$T = \max(0.09h_n^{0.75}, 0.4)$	○	○
Moment Resisting Steel Frames:	$T = \max(0.14h_n^{0.75}, 0.4)$	○	○
Eccentrically Braced Steel Frames:	$T = \max(0.08h_n^{0.75}, 0.4)$	○	○
All Other Frame Structures:	$T = \max(0.06h_n^{0.75}, 0.4)$	○	○
Concrete Shear Walls	$T = \max(0.09h_n^{0.75}/A_c^{0.5}, 0.4)$	○	○
Masonry Shear Walls:	$T \leq 0.4\text{sec}$	○	○
User Defined (input Period):		◉	◉
	T:	0.40	0.40

Where h_n = height in metres from the base of the structure to the uppermost seismic weight or mass.

			Longitudinal	Transverse
e) Factor A:	Strengthening factor determined using result from (a) above (set to 1.0 if not strengthened)	Factor A:	1.00	1.00
f) Factor B:	Determined from NZSEE Guidelines Figure 3A.1 using results (a) to (e) above	Factor B:	1.00	1.00
g) Factor C:	For reinforced concrete buildings designed between 1976-84 Factor C = 1.2, otherwise take as 1.0.	Factor C:	1.00	1.00
h) Factor D:	For buildings designed prior to 1935 Factor D = 0.8 except for Wellington and Napier (1931-1935) where Factor D may be taken as 1.0, otherwise take as 1.0.	Factor D:	1.00	1.00

$(\%NBS)_{nom}$ = AxBxCxD — $(\%NBS)_{nom}$: 100% (Longitudinal), 100% (Transverse)

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block G	Date:	14/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-2 Initial Evaluation Procedure Step 2 continued

2.2 Near Fault Scaling Factor, Factor E

If $T \leq 1.5$sec, Factor E = 1

			Longitudinal	Transverse
a) Near Fault Factor, *N(T,D)* (from NZS1170.5:2004, Cl 3.1.6)		N(T,D):	1	1
b) Factor E	= 1/N(T,D)	Factor E:	1.00	1.00

2.3 Hazard Scaling Factor, Factor F

a) Hazard Factor, *Z*, for site

Location: Tauranga — Refer right for user-defined locations

Z = 0.2 (from NZS1170.5:2004, Table 3.3)

Z_{1992} = 0.85 (NZS4203:1992 Zone Factor from accompanying Figure 3.5(b))

Z_{2004} = 0.2 (from NZS1170.5:2004, Table 3.3)

b) Factor F

For pre 1992 = $1/Z$

For 1992-2011 = Z_{1992}/Z

For post 2011 = Z_{2004}/Z

	Longitudinal	Transverse
Factor F:	1.00	1.00

2.4 Return Period Scaling Factor, Factor G

		Longitudinal	Transverse
a) Design Importance Level, I (Set to 1 if not known. For buildings designed prior to 1965 and known to be designed as a public building set to 1.25. For buildings designed 1965-1976 and known to be designed as a public building set to 1.33 for Zone A or 1.2 for Zone B. For 1976-1984 set I value.)	I =	1	1
b) Design Risk Factor, R_o (set to 1.0 if other than 1976-2004, or not known)	R_o =	1	1
c) Return Period Factor, R (from NZS1170.0:2004 Building Importance Level)	*Choose Importance Level*	○1 ◉2 ○3 ○4	○1 ◉2 ○3 ○4
	R =	1.0	1.0
d) Factor G = IR_o/R	Factor G:	1.00	1.00

2.5 Ductility Scaling Factor, Factor H

a) Available Displacement Ductility Within Existing Structure

Comment:

		Longitudinal	Transverse
	μ =	1.25	1.25
b) Factor H		k_μ	k_μ
For pre 1976 (maximum of 2)	=	1.14	1.14
For 1976 onwards	=	1	1
	Factor H:	1.00	1.00

(where k_μ is NZS1170.5:2004 Inelastic Spectrum Scaling Factor, from accompanying Table 3.3)

2.6 Structural Performance Scaling Factor, Factor I

a) Structural Performance Factor, S_p

(from accompanying Figure 3.4)

		Longitudinal	Transverse
Tick if light timber-framed construction in this direction		☐	☐
	S_p =	0.93	0.93
b) Structural Performance Scaling Factor = $1/S_p$	Factor I:	1.00	1.00

Note Factor B values for 1992 to 2004 have been multiplied by 0.67 to account for Sp in this period

	Longitudinal	Transverse
2.7 Baseline *%NBS* for Building, *(%NBS)*$_b$ (equals $(\%NBS)_{nom}$ x E x F x G x H x I)	100%	100%

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA} Page 4

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block G	Date:	14/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-3 Initial Evaluation Procedure Step 3

Step 3 - Assessment of Performance Achievement Ratio (PAR)
(Refer Appendix B - Section B3.2)

a) Longitudinal Direction

potential CSWs — **Effect on Structural Performance** (Choose a value - Do not interpolate) — **Factors**

3.1 Plan Irregularity
Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor A: 1.0
Comment

3.2 Vertical Irregularity
Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor B: 1.0
Comment

3.3 Short Columns
Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor C: 1.0
Comment

3.4 Pounding Potential
(Estimate D1 and D2 and set D = the lower of the two, or 1.0 if no potential for pounding, or consequences are considered to be minimal)

a) Factor D1: - Pounding Effect

Note:
Values given assume the building has a frame structure. For stiff buildings (eg shear walls), the effect of pounding may be reduced by taking the coefficient to the right of the value applicable to frame buildings.

Factor D1 For Longitudinal Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 1	○ 1	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment

b) Factor D2: - Height Difference Effect

Factor D2 For Longitudinal Direction: 1.0

Table for Selection of Factor D2	Severe	Significant	Insignificant
	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	○ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	◉ 1

Comment

Factor D: 1.0

3.5 Site Characteristics - *Stability, landslide threat, liquefaction etc as it affects the structural performance from a life-safety perspective*

Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor E: 1.0
Comment

3.6 Other Factors - *for allowance of all other relevant characterstics of the building*
For ≤ 3 storeys - Maximum value 2.5, otherwise - Maximum value 1.5. No minimum. — Factor F: 1.1
Record rationale for choice of Factor F:
Refer to report

3.7 Performance Achievement Ratio (PAR)
(equals **A x B x C x D x E x F**)

PAR — Longitudinal: **1.10**

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block G	Date:	14/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-3 Initial Evaluation Procedure Step 3

Step 3 - Assessment of Performance Achievement Ratio (PAR)
(Refer Appendix B - Section B3.2)

b) Transverse Direction

Factors

potential CSWs **Effect on Structural Performance**
(Choose a value - Do not interpolate)

3.1 Plan Irregularity

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor A** 1.0

Comment

3.2 Vertical Irregularity

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor B** 1.0

Comment

3.3 Short Columns

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor C** 1.0

Comment

3.4 Pounding Potential

(Estimate D1 and D2 and set D = the lower of the two, or 1.0 if no potential for pounding, or consequences are considered to be minimal)

a) Factor D1: - Pounding Effect

Note:
Values given assume the building has a frame structure. For stiff buildings (eg shear walls), the effect of pounding may be reduced by taking the coefficient to the right of the value applicable to frame buildings.

Factor D1 For Transverse Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 1	○ 1	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment

b) Factor D2: - Height Difference Effect

Factor D2 For Transverse Direction: 1.0

Table for Selection of Factor D2	Severe	Significant	Insignificant
	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	○ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	◉ 1

Comment

Factor D 1.0

3.5 Site Characteristics - *Stability, landslide threat, liquefaction etc as it affects the structural performance from a life-safety perspective*

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor E** 1.0

Comment

3.6 Other Factors - *for allowance of all other relevant characterstics of the building*

For ≤ 3 storeys - Maximum value 2.5
otherwise - Maximum value 1.5.
No minimum.

Factor F 1.10

Record rationale for choice of Factor F:

Refer to report

PAR

3.7 Performance Achievement Ratio (PAR)
(equals **A x B x C x D x E x F**)

Transverse **1.10**

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block G	Date:	14/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-4 Initial Evaluation Procedure Steps 4, 5, 6 and 7

Step 4 - Percentage of New Building Standard *(%NBS)*

		Longitudinal	Transverse
4.1	**Assessed Baseline *%NBS (%NBS)*$_b$** (from Table IEP - 1)	100%	100%
4.2	**Performance Achievement Ratio (PAR)** (from Table IEP - 2)	1.10	1.10
4.3	**PAR x Baseline *(%NBS)*$_b$**	>100%	>100%
4.4	**Percentage New Building Standard *(%NBS)* - Seismic Rating** (Use lower of two values from Step 4.3)		>100%

Step 5 - Is *%NBS* < 34? NO

Step 6 - Potentially Earthquake Risk (is *%NBS* < 67)? NO

Step 7 - Provisional Grading for Seismic Risk based on IEP

Seismic Grade A+

Additional Comments (items of note affecting IEP based seismic rating)

Relationship between Grade and *%NBS*:

Grade:	A+	A	B	C	D	E
%NBS:	> 100	100 to 80	79 to 67	66 to 34	< 34 to 20	< 20

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA} **Page 7**

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block G	Date:	14/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-5 Initial Evaluation Procedure Step 8

Step 8 - Identification of potential Severe Structural Weaknesses (SSWs) that could result in significant risk to a significant number of occupants

8.1 Number of storeys above ground level 2

8.2 Presence of heavy concrete floors and/or concrete roof? (Y/N) Y

Potential Severe Structural Weaknesses (SSWs):

Note: Options that are greyed out are not applicable and need not be considered.

Occupancy not considered to be significant - no further consideration required

Risk not considered to be significant - no further consideration required

The following potential Severe Structural Weaknesses (SSWs) have been identified in the building that could result in significant risk to a significant number of occupants:

1. None identified

2. Weak or soft storey (except top storey)

3. Brittle columns and/or beam-column joints the deformations of which are not constrained by other structural elements

4. Flat slab buildings with lateral capacity reliant on low ductility slab-to-column connections

5. No identifiable connection between primary structure and diaphragms

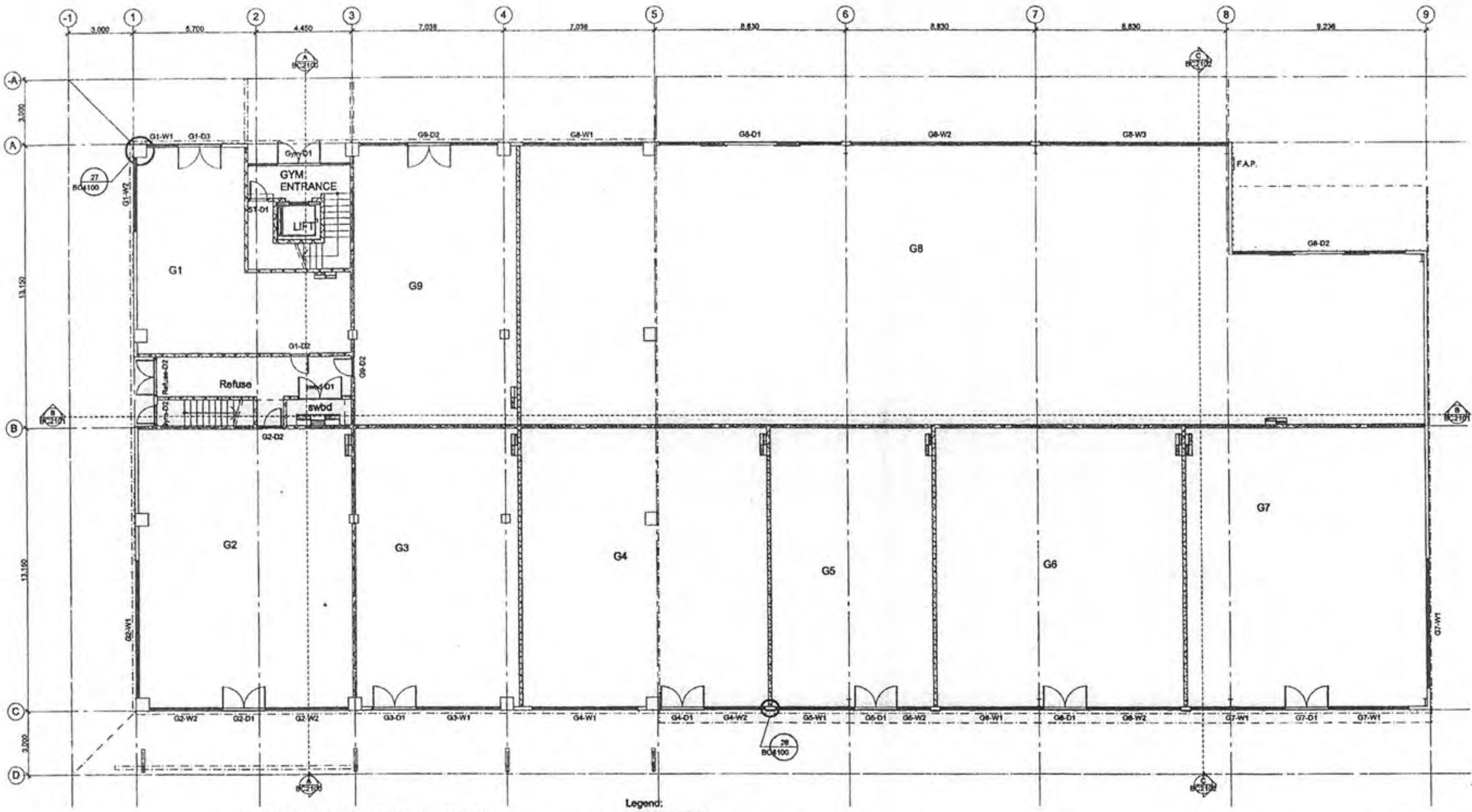
6. Ledge and gap stairs

IEP Assessment Confirmed by S. R. Mitchell **Signature**

S R Mitchell **Name**

70562 **CPEng. No**

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*



REFERENCE PLAN GROUND FLOOR
Scale 1:100

Legend:

150mm steel framed wall with 1 layer 19mm Gib board fyreline from floor to underside Roofing / floor above. Refer to Fire engineers drawings for FRR.

150mm steel framed wall with Gib board interior linings

Distrubution Board

FOR INFORMATION ONLY
- EXISTING CONSENTED DRAWING

Amendment Rec...
15 MAR 2007
TCC

GENERAL NOTES
1. DO NOT SCALE OFF DRAWING.
2. CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS ON SITE.
3. ARCHITECTS TO BE NOTIFIED OF ANY VARIATION BETWEEN SITE DIMENSIONS AND THOSE ON PLANS.
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TCC172250

ISSUE	REVISION	BY	DATE
A	Building Consent	MG	01.09.06

IGNITE
IGNITE Architects Limited
1 West Street, Parnell, Auckland, New Zealand
PO BOX 37 853 Parnell, Auckland
T: +64 9 356 4791, F: +64 9 356 3606
E: office@ignitearchitects.com
www.ignitearchitects.com

CLIENT
AMP capital INVESTORS

PROJECT
BLOCK G
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE
REFERENCE PLAN
GROUND FLOOR

DATE	SCALE
01 SEPTEMBER 2006	

DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19

DRAWING NUMBER
BC1300 (A)

TCC172279

Exit doors are to open in the direction of escape

GENERAL NOTES

1. DO NOT SCALE OFF DRAWING.
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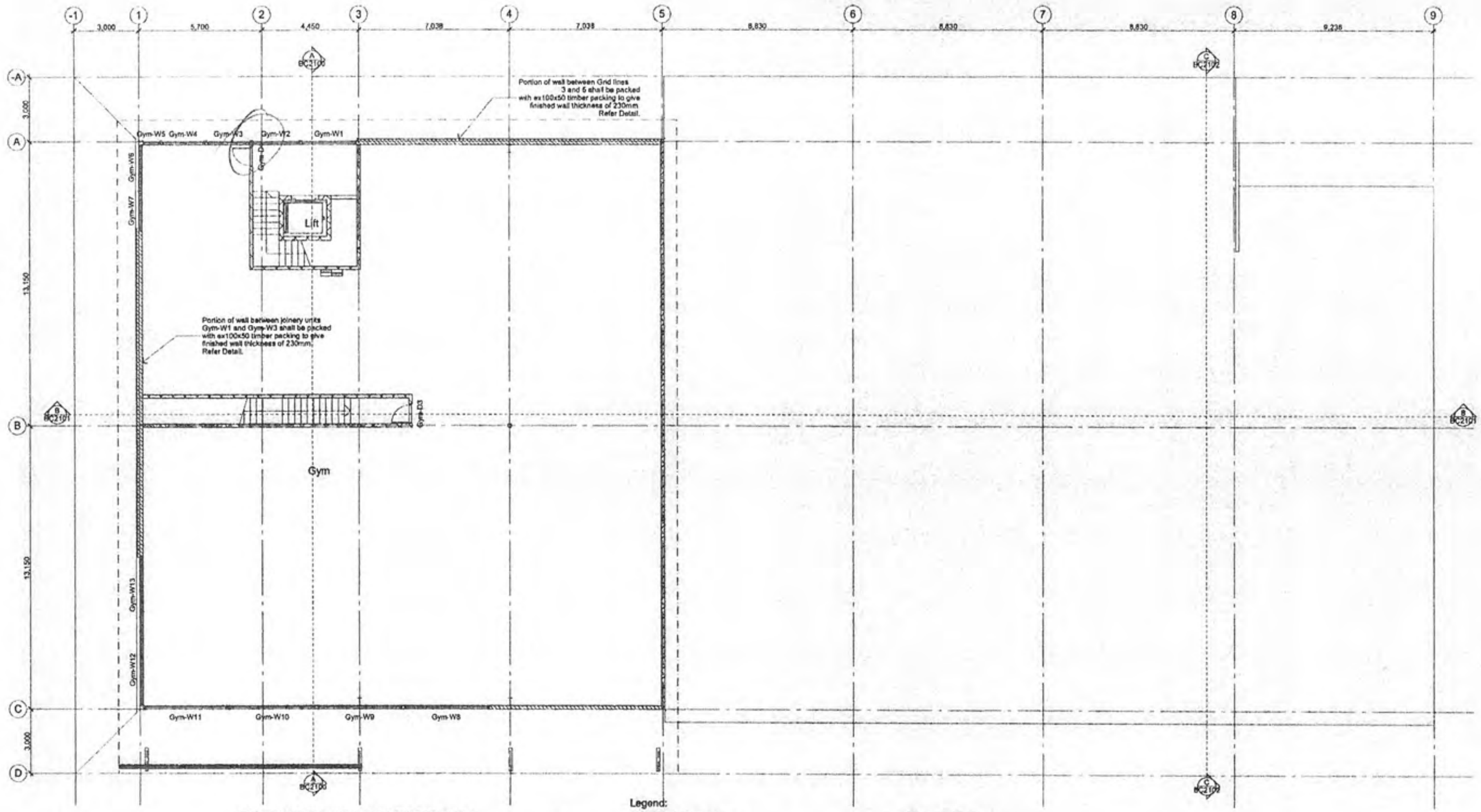

REFERENCE PLAN FIRST FLOOR

Scale 1:100

Note:
ex150x50 timber framing to exterior walls of first floor only.

Legend:

- ex150x50 timber framed wall with 1 layer 19mm Gib board fyreline from floor to underside Roofing / floor above. Refer to Fire engineers drawings for FRR.
- ex150x50 timber framed wall with 1 layer 19mm Gib board Fyreline each side of framed wall to form rated spandrel panel as detailed. Framing ripped to suit.
- 150mm steel framed wall with 1 layer 19mm Gib board fyreline from floor to underside Roofing / floor above. Refer to Fire engineers drawings for FRR.
- Distrubution Board

APPROVED
These plans are approved in conformation with the NZ Building Code
These plans must remain on site
TAURANGA CITY COUNCIL

ISSUE	REVISION	BY	DATE
A	Building Consent	MG	01.09.06

IGNITE

IGNITE Architects Limited
1 Witt Street, Parnell, Auckland, New Zealand
PO BOX 37 853 Parnell, Auckland
T: +64 9 356 4791, F: +64 9 356 3606
E: office@ignitearchitects.com
www.ignitearchitects.com

CLIENT
AMP capital INVESTORS

PROJECT
BLOCK G
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE
REFERENCE PLAN
FIRST FLOOR

DATE	SCALE
01 SEPTEMBER 2006	

DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19

DRAWING NUMBER
BC1301 (A)

TCC172284

Regular Maintenance checks of the exterior should be undertaken by the owner

GENERAL NOTES

1. DO NOT SCALE OFF DRAWING
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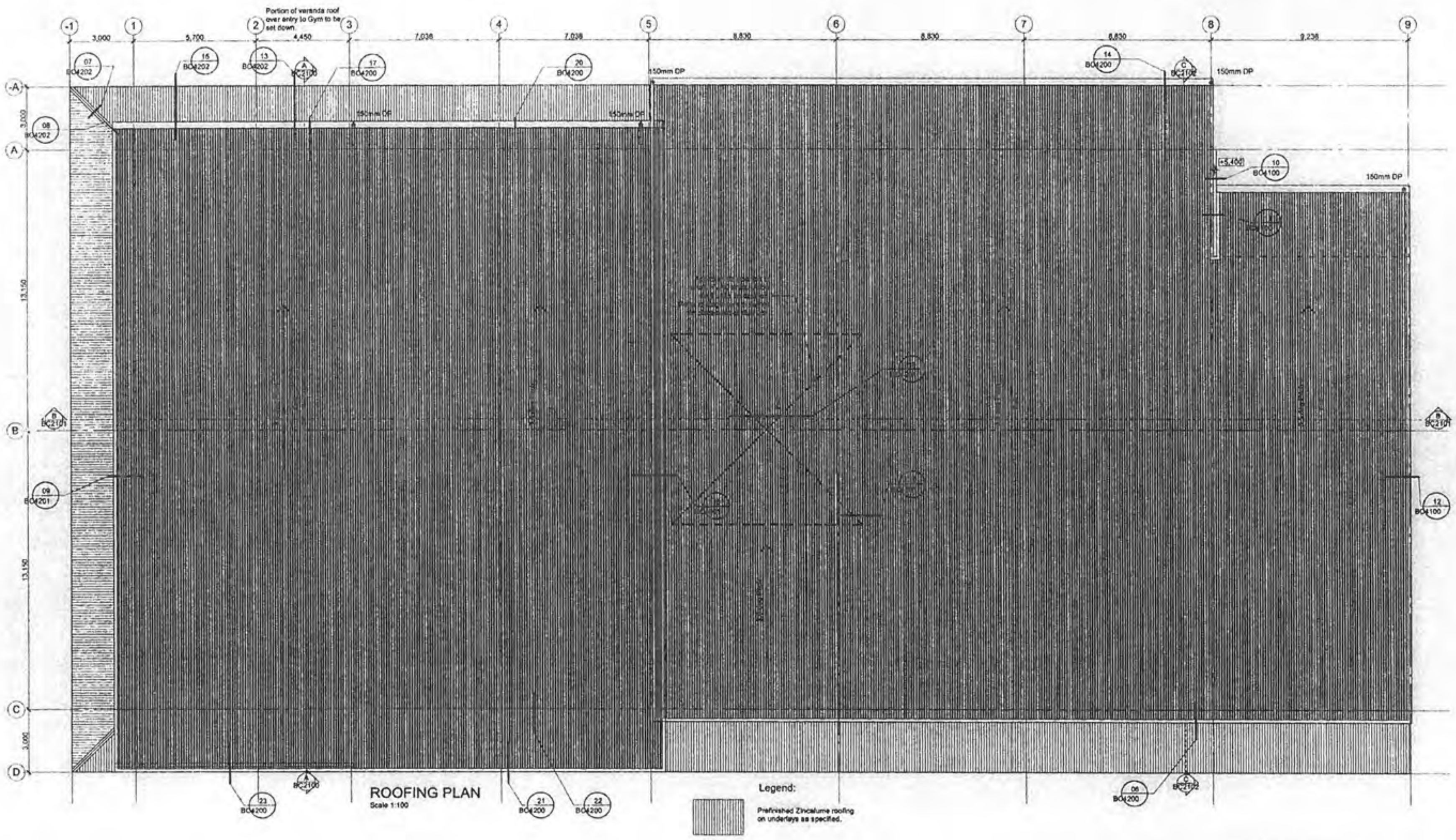

ROOFING PLAN
Scale 1:100

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ISSUE	REVISION	BY	DATE
A	Building Consent	MG	01.09.06

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1 Watt Street, Parnell, Auckland, New Zealand
PO BOX 37 853 Parnell, Auckland
T: +64 9 356 4791, F: +64 9 356 3606
E: office@ignitearchitects.com
www.ignitearchitects.com

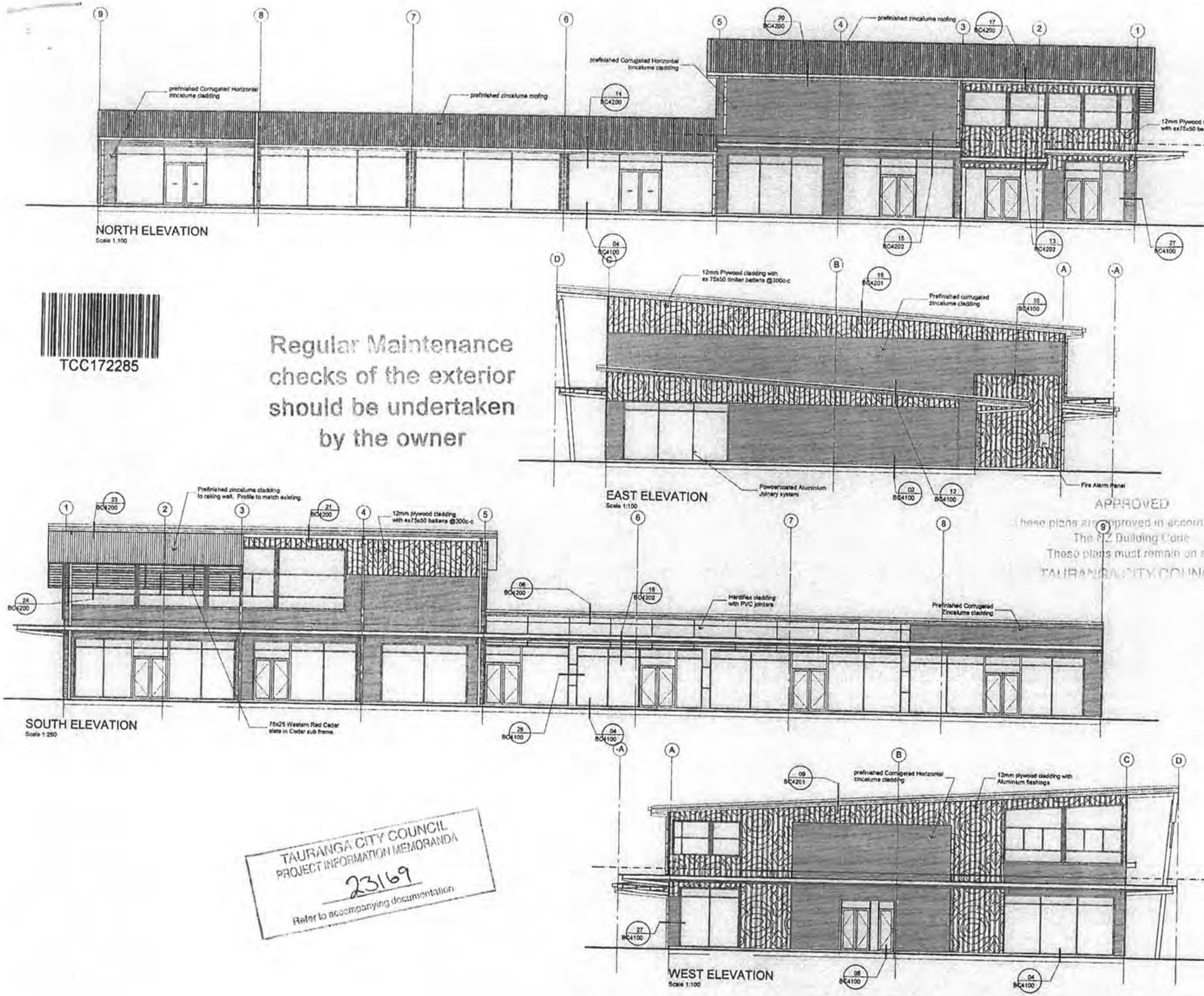
CLIENT
AMP capital INVESTORS

PROJECT
BLOCK G
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE
ROOF PLAN

DATE		SCALE
01 SEPTEMBER 2006		
DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19

DRAWING NUMBER
BC1700 A



TCC172285

Regular Maintenance checks of the exterior should be undertaken by the owner

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TAURANGA CITY COUNCIL
PROJECT INFORMATION MEMORANDA
23169
Refer to accompanying documentation

GENERAL NOTES
1. DO NOT SCALE OFF DRAWING.
2. CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS ON SITE.
3. ARCHITECTS TO BE NOTIFIED OF ANY VARIATION BETWEEN SITE DIMENSIONS AND THOSE ON PLANS.
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ISSUE	REVISION	BY	DATE
A	Building Consent	MG	01.09.06

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1 West Street, Parnell, Auckland, New Zealand
PO BOX 37 853 Parnell, Auckland
T: +64 9 356 4791, F: +64 9 356 3606
E: office@ignitearchitects.com
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PROJECT
BLOCK G
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE
ELEVATIONS

DATE	SCALE	
01 SEPTEMBER 2006		
DRAWN: MG	CHECK: CMcM	PROJECT NO.: 457-05-19
DRAWING NUMBER: BC2000		A

TCC172288

All work to satisfy the requirements of N.Z.B.C. including Clause E2 (External Moisture)

GENERAL NOTES
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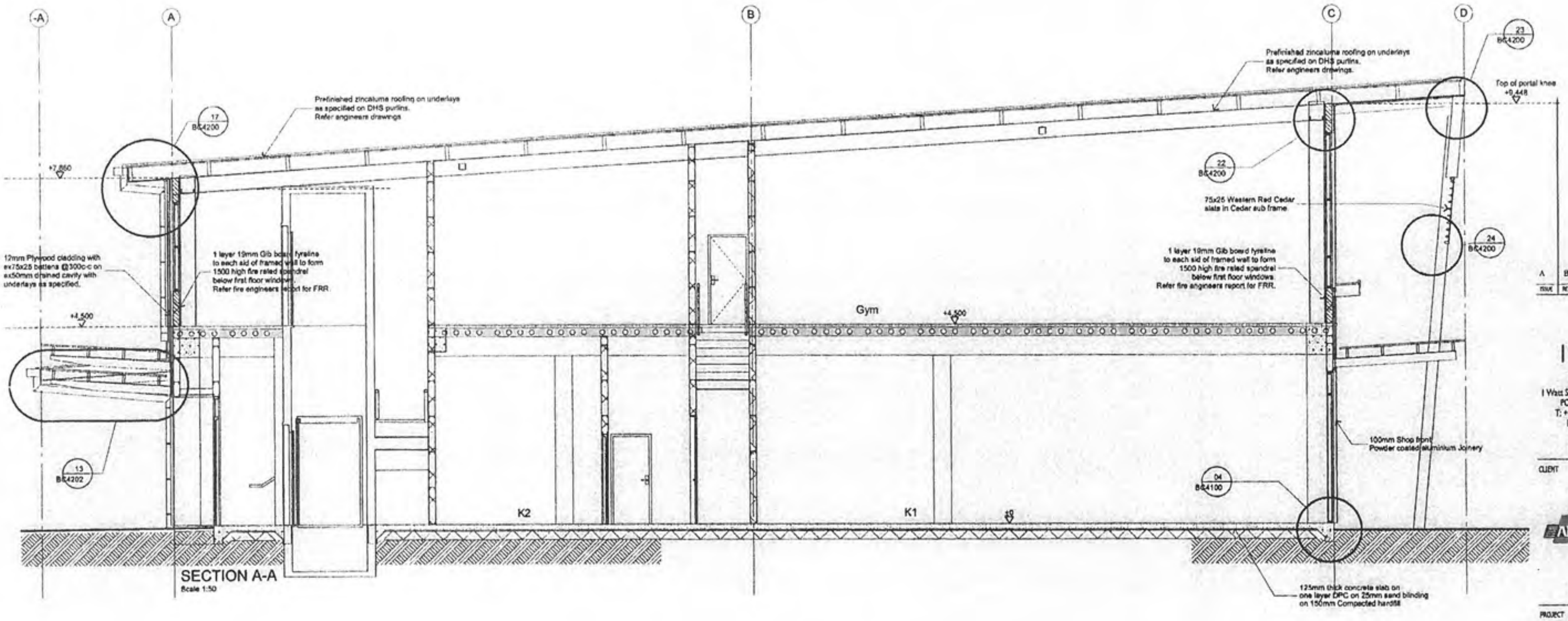

A	Building Consent	MG	01.09.06
ISSUE	REVISION	BY	DATE

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E: office@ignitearchitects.com
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PROJECT
BLOCK G
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE
SECTIONS

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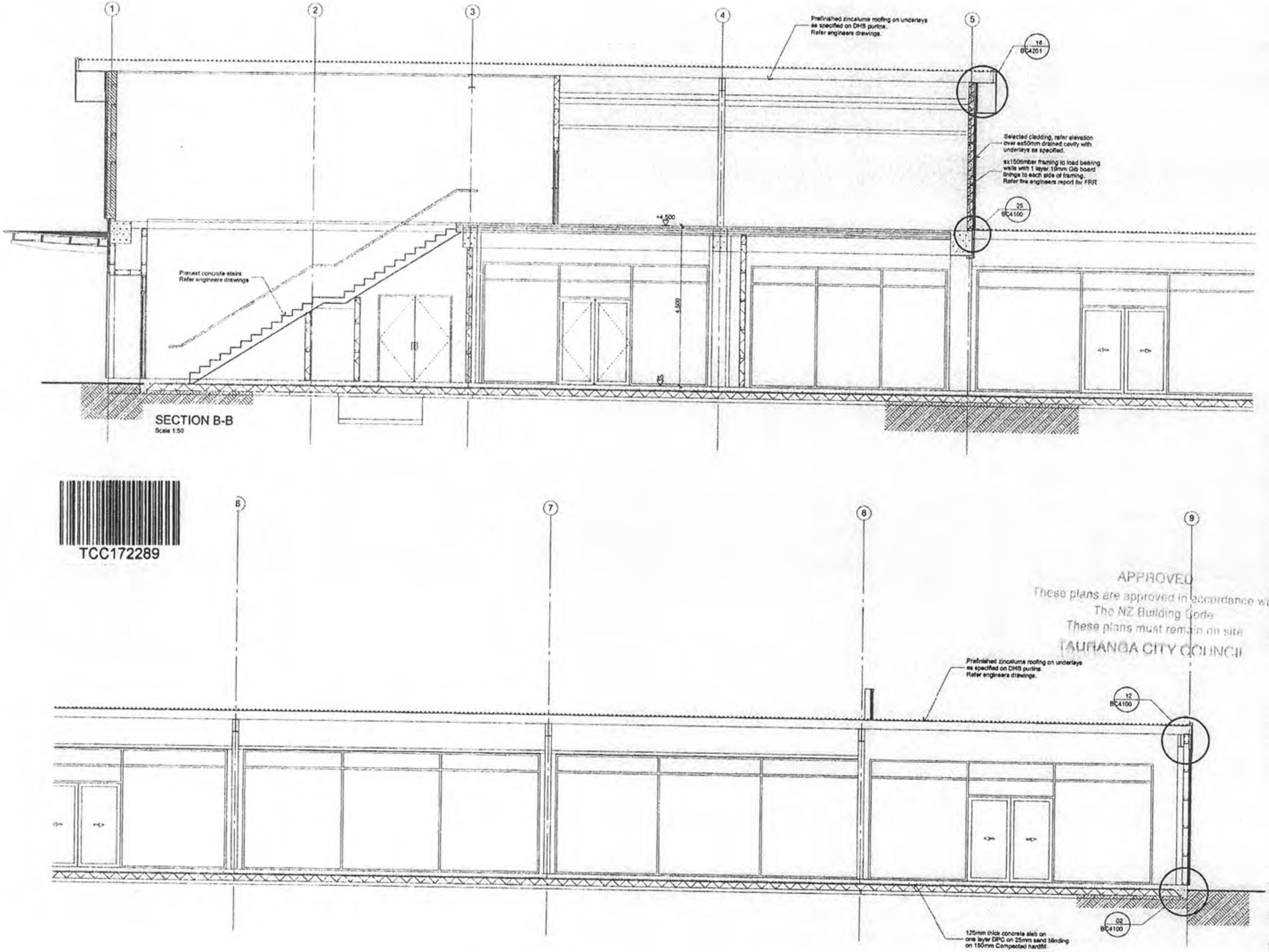
DATE		SCALE
01 SEPTEMBER 2006		
DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19
DRAWING NUMBER		
BC2100		A



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ISSUE	REVISION	BY	DATE
A	Building Consent	MG	01.09.06

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E: office@ignitearchitects.com
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PROJECT
BLOCK G
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE
SECTIONS

DATE	SCALE	
01 SEPTEMBER 2006		
DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19

DRAWING NUMBER
BC2101 (A)

TCC172290

GENERAL NOTES

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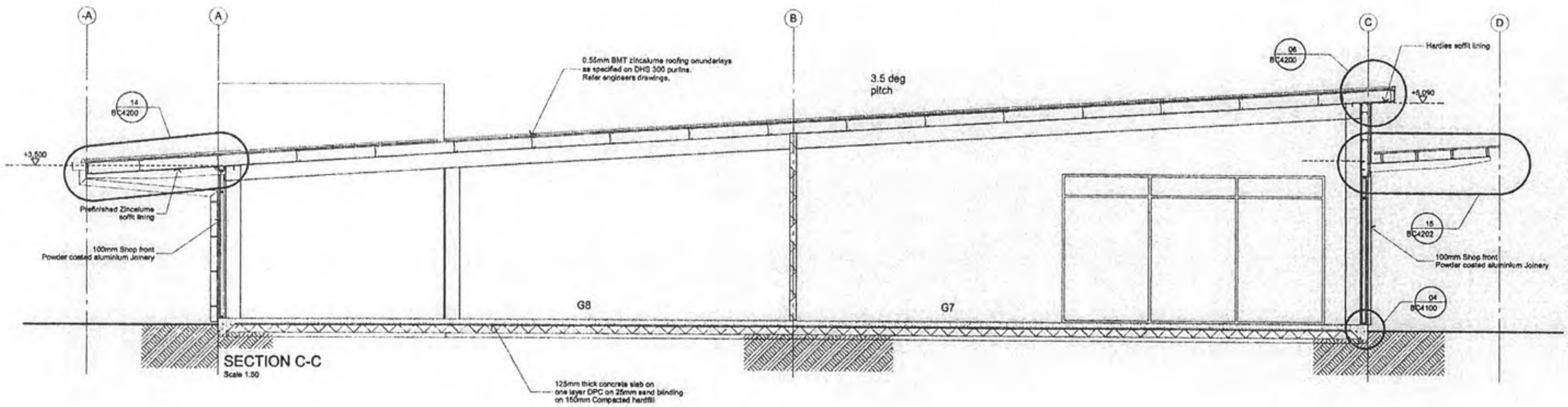
All work to satisfy the requirements of N.Z.B.C. including Clause E2 (External Moisture)



SECTION C-C
Scale 1:50

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A	Building Consent	MG	01.09.06
DWR	REVISION	BY	DATE

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PROJECT
BLOCK G
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE
SECTIONS

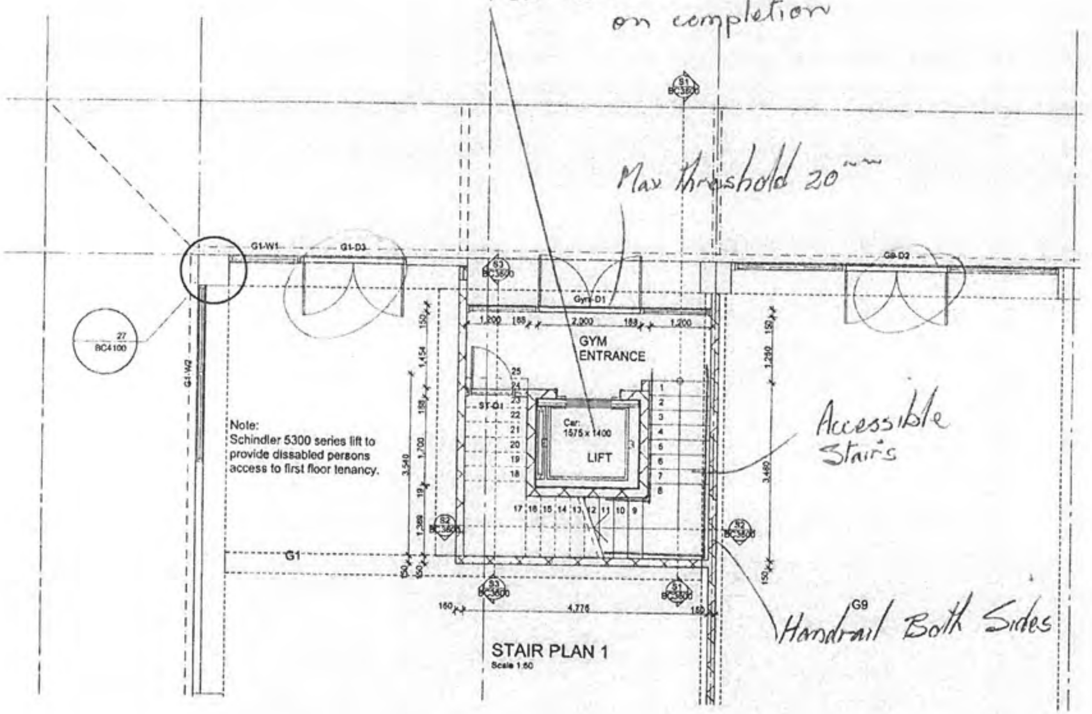
DATE		SCALE
01 SEPTEMBER 2006		
DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19
DRAWING NUMBER		
BC2102		A

TCC172291

Peer Review Construction on completion

Max threshold 20mm

Exit Doors to open out.



STAIR PLAN 1
Scale 1:50

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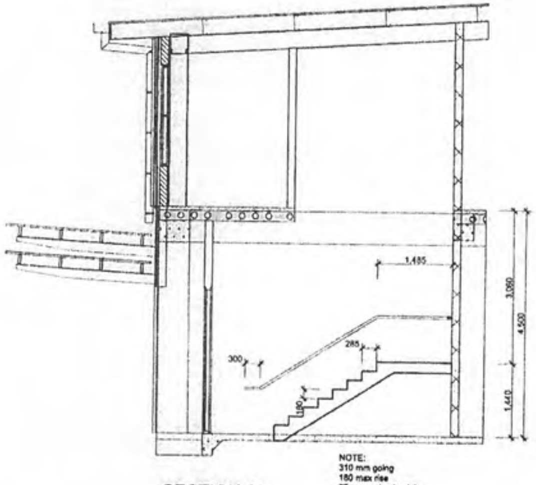
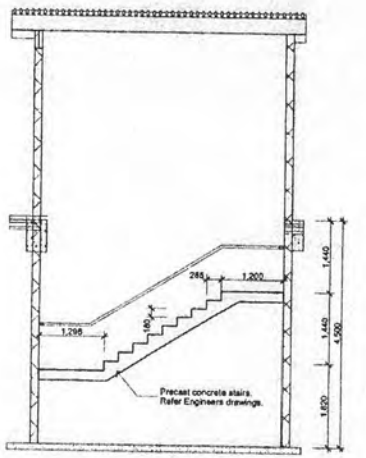
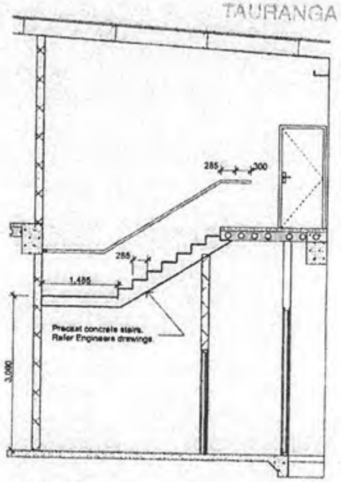


SECTION S1
Scale 1:50

NOTE:
310 mm going
180 max rise
25mm nosing to stairs



SECTION S2
Scale 1:50



SECTION S3
Scale 1:50

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ISSUE	REVISION	BY	DATE
A	Building Consent	MG	01.09.06

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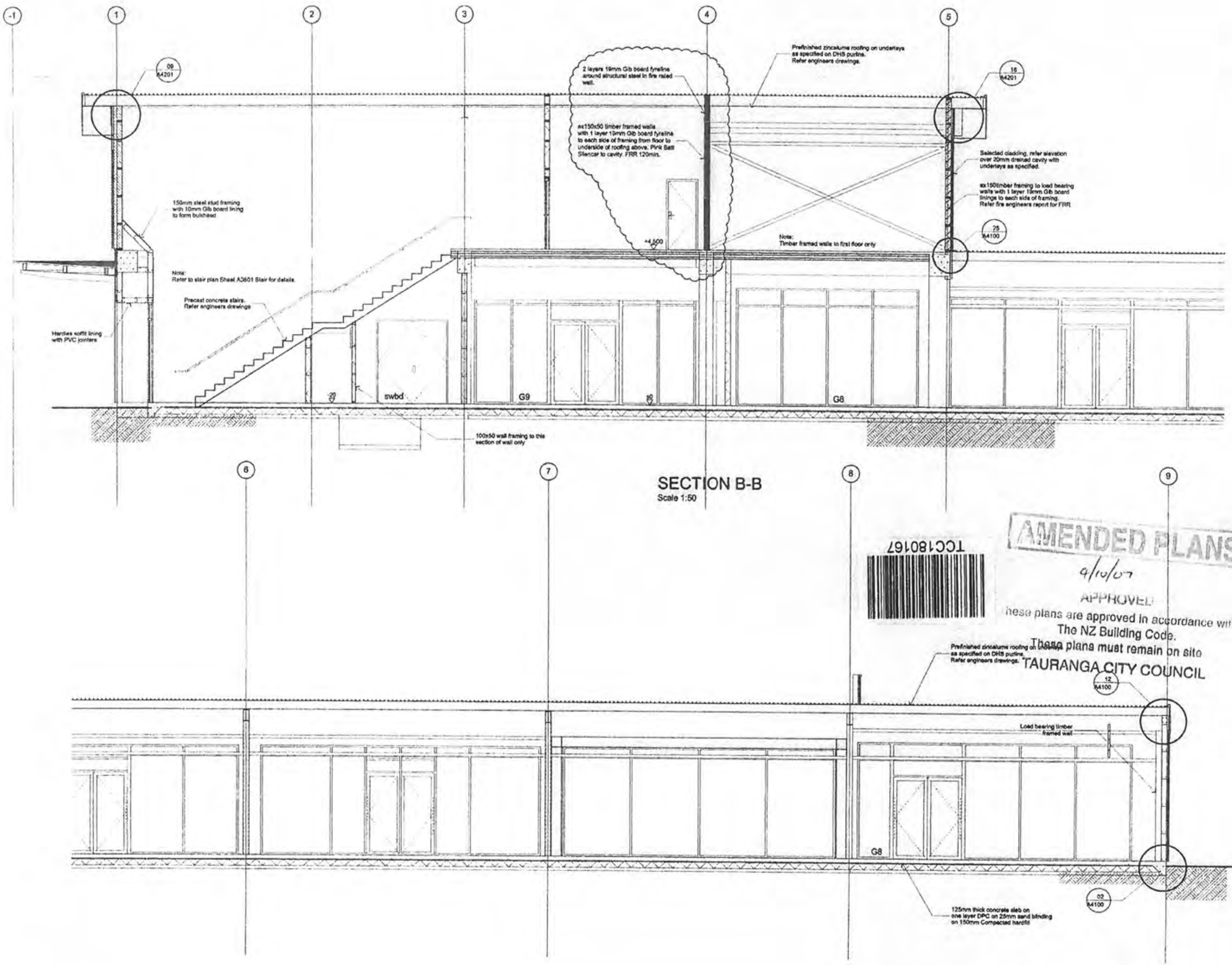
PROJECT
BLOCK G
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE
STAIR PLAN 1

DATE	SCALE
01 SEPTEMBER 2006	

DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19

DRAWING NUMBER
BC3600 (A)



SECTION B-B
Scale 1:50

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ISSUE	REVISION	BY	DATE
F	BUILDING CONSENT	MG	06.09.07
E	CONST. REV.	MG	25.07.07
D	CONST. REV.	MG	20.12.06
C	CONSTRUCTION	MG	28.11.06
B	TENDER	MG	08.09.06
A	TENDER	MG	10.08.06

AMENDED PLANS
9/10/07
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TCC180167

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PROJECT
BLOCK G
BETHLEHEM
SHOPPING CENTRE

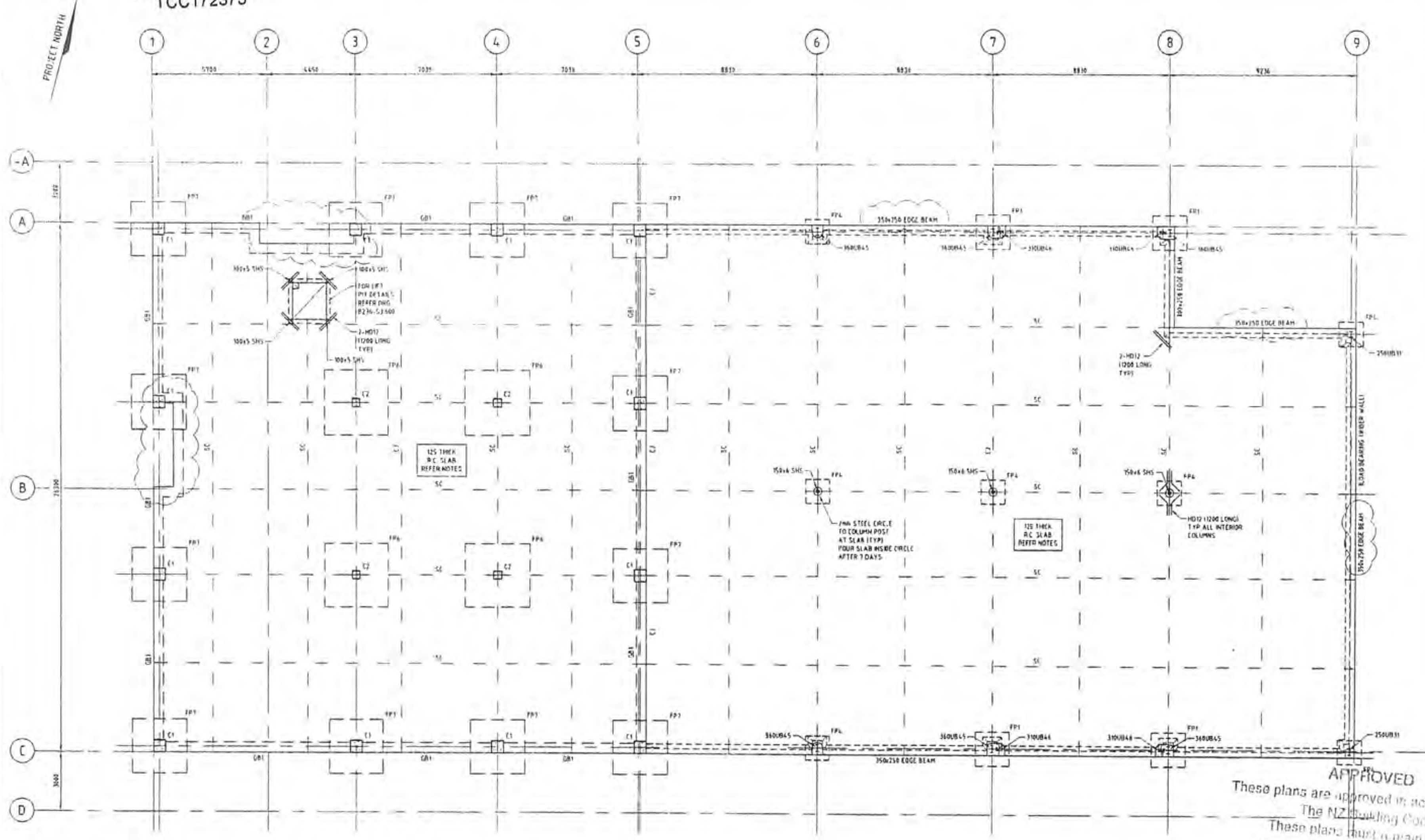
DRAWING TITLE
SECTIONS

DATE	SCALE
06 SEPTEMBER 2007	1:50 @A1 1:100 @A3

DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19

DRAWING NUMBER
A2101 (F)

TCC172373



NOTES

1. REFER TO ARCHITECTS FOR FLOOR LEVELS AND FALLS
2. BUILDING PLATFORM FOR 125 SLAB ON GRADE TO CONSIST OF 1 LAYER OF DPC ON 25mm SAND BLINDING ON 150mm COMPACTED HARDFILL
3. PROVIDE 665 MESH TO SLAB ON GRADE U.N.O
4. REFER TO GEOTECHNICAL REPORT FOR FOUNDATION
5. REFER TO HYDRAULICS DRAWINGS FOR IN GROUND SEVICES UNDER THE 125 SLAB ON GRADE
6. REFER TO SPECIFICATION FOR CONCRETE COMPRESSIVE STRENGTHS & TIMBER FRAMING FOR LOAD BEARING/BRACED TIMBER WALLS TO BE 150x50 STUDS AT 400 CRS
7. CLADDING FOR LOAD BEARING / BRACED TIMBER WALLS TO CONSIST OF 1mm D-D PLYWOOD ONE SIDE WITH BRACELOK OMGIB BPL BRACING UNIT OTHER. ALL FIXINGS TO BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION
8. ALL TIMBER FRAMING DETAILS TO BE TO NZS 3604

LEGEND
CJ-CONSTRUCTION JOINT
SC-SAWCUT

REFER TO ELECTRICAL SPECIFICATION FOR EARTHING REQUIREMENTS

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GROUND FLOOR PLAN
SCALE 1:100

R.C. COLUMN SCHEDULE		
COLUMN TYPE	C1	C2
SIZE (AxB)	600x600	400x400

GROUND BEAM SCHEDULE	
GROUND BEAM TYPE	GB1
DEPTH	600
WIDTH	500

REFERENCE DRGS	DRG No
LEVEL 1 FLOOR PLAN	B236-S1.601
TYPICAL CONCRETE DETAILS FOUNDATIONS AND PRECAST PANELS	B236-S3.600
TYPICAL CONCRETE DETAILS	B236-S3.601

CONSENT
~~NOT FOR CONSTRUCTION~~

Rev	Date	Revision Details	Drn	Ver	App
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
04	01.09.06	CONSENT	-	-	-
03	09.08.06	TENDER	-	-	-
02	19.07.06	PRELIMINARY	-	-	-
01	17.07.06	PRELIMINARY	-	-	-

Connell Wagner
Connell Wagner Limited Auckland Office, PO Box 9762 Newmarket Auckland, 139 Carlton Gore Road Newmarket, New Zealand

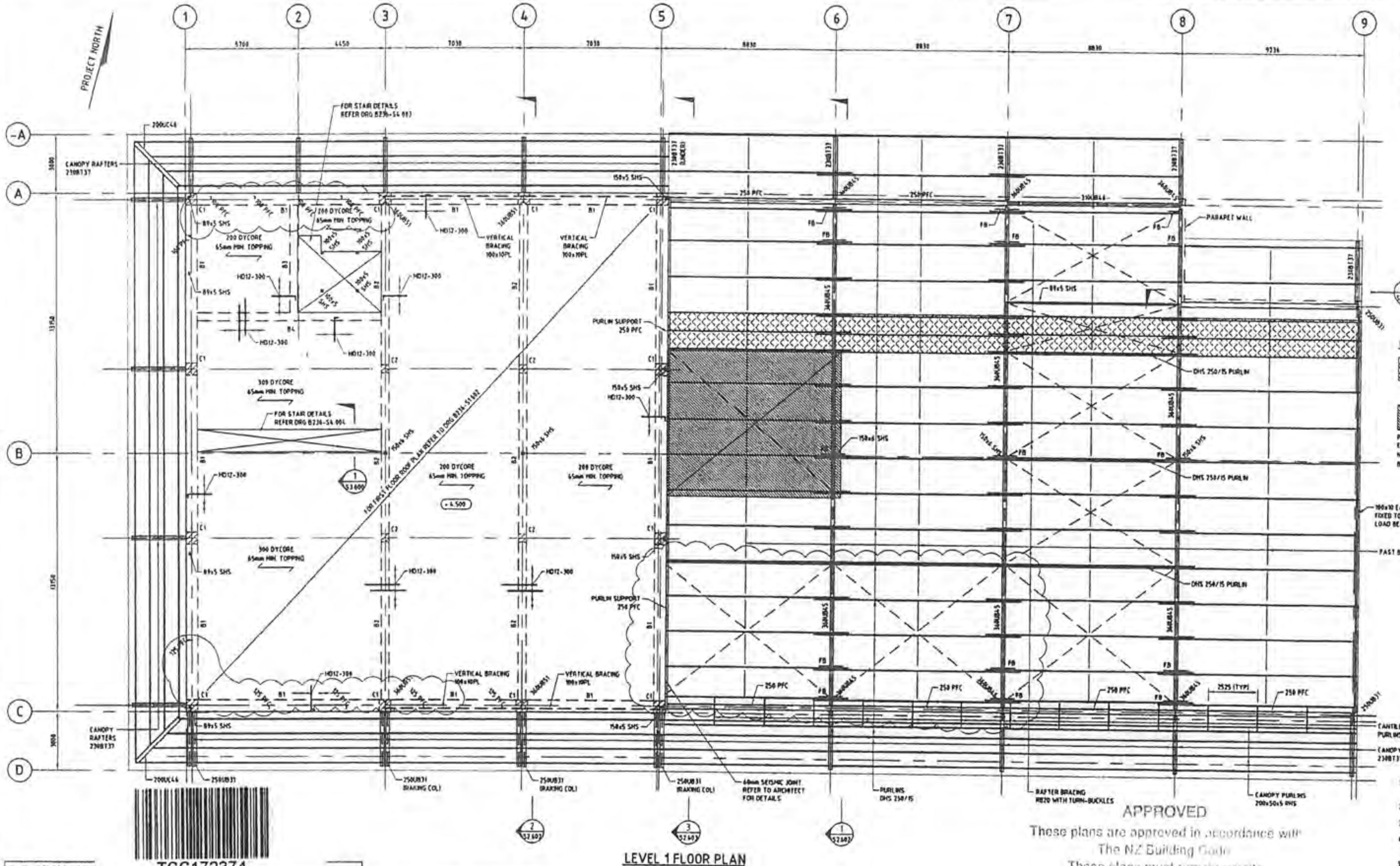
Client: AMP capital INVESTORS

Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn GJO	Signed GJH	Date 09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SMB	Signed SMB	Date 09.08.06

Drawing Title: STRUCTURAL BLOCK G GROUND FLOOR PLAN

Project No: B236
Scale: 1:100 A1, 1:200 A3
Sheet Size: A1
Drawing No: B236-S1.600
Rev: 04



LEVEL 1 FLOOR PLAN
SCALE 1:100

TCC172374

R.C. BEAM SCH				
R.C. BEAM TYPE	B1	B2	B3	B4
DEPTH	700	700	600	600
WIDTH	600	600	600	600

R.C. COLUMN SCHEDULE		
COLUMN TYPE	C1	C2
SIZE (AxB)	600x600 (UNDER)	600x600 (UNDER)

NOTES
1. PROVIDE 1 ROW OF FAST BRACE BRACING TO EACH PURLIN BAY UNO.
2. LAP PURLINS (WHERE SHOWN) 0.1x LENGTH OF ADJACENT. REFER TO MANUFACTURERS SPECIFICATION FOR DETAIL.
3. PROVIDE HANGERS BETWEEN DHS PURLINS AND 150 PFC AT TOP OF INTERTENANCY WALLS @ 3.6m CRS UNO.
4. THE FOLLOWING STEELWORK IS TO BE PAINTED WITH INTUMESCENT PAINT TO ACHIVE MIN FRR = 120min
   - STEEL STRUCTURE TO LEVEL 1 STAIR.

LEGEND

ZONE FOR ROOF TOP PLANT TO BE PLACED. MAXIMUM WEIGHT OF PLANT IN ANY 1 BAY = 325kg

MECHANICAL PLANT PLATFORM 9.8m x 7.4m

PROVIDE 114x6.0 CHS COLUMN STUB TO EACH CORNER OF PLANT PLATFORM.
NOTE: ALL PLANT PLATFORM DETAILS TO BE CONFIRMED PRIOR TO FABRICATION.

1. FLOOR DESIGN LOADS
   SDL = 0.5kPa
   LL = 5.0kPa OR 4.5kN POINT LOAD
2. FLOOR MESH
   HDM 4.3@150 UNO.
3. PROVIDE HD12-300 (1200 LONG) STARTER BARS TO ALL EXTERIOR RC BEAMS.
4. PROVIDE HD12-300 (1800 LONG). SADDLE BARS TO ALL INTERIOR RC BEAMS (STAGGER 300)
5. PRECAST FLOOR SIZES ARE INDICATIVE ONLY. FINAL DESIGN BY MANUFACTURER.
6. SET-OUT OF PRECAST FLOOR SYSTEM TO BE BY MANUFACTURER EXCEPT FIRST DYCORE UNIT PARALLEL TO GRIDS A & C TO BE OFFSET 600mm FROM BEAMS.
7. ALL DYCORE UNITS TO HAVE 2 CORES BROKEN OUT & CONCRETE FILLED. REFER TO S3.600 FOR DETAILS.
8. REFER TO ARCHITECT FOR FLOOR/ROOF LEVELS & FALLS.

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REFERENCE DRGS	DRG No.
LEVEL 1 ROOF PLAN	B236-S1.602
EXTERNAL ELEVATIONS	B236-S2.600
EXTERNAL ELEVATIONS	B236-S2.602

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Rev	Date	Revision Details	Drn	Ver.	App.
04	01.09.06	CONSENT	-	-	-
03	09.08.06	TENDER	-	-	-
02	19.07.06	PRELIMINARY	-	-	-
01	17.07.06	PRELIMINARY	-	-	-

Connell Wagner

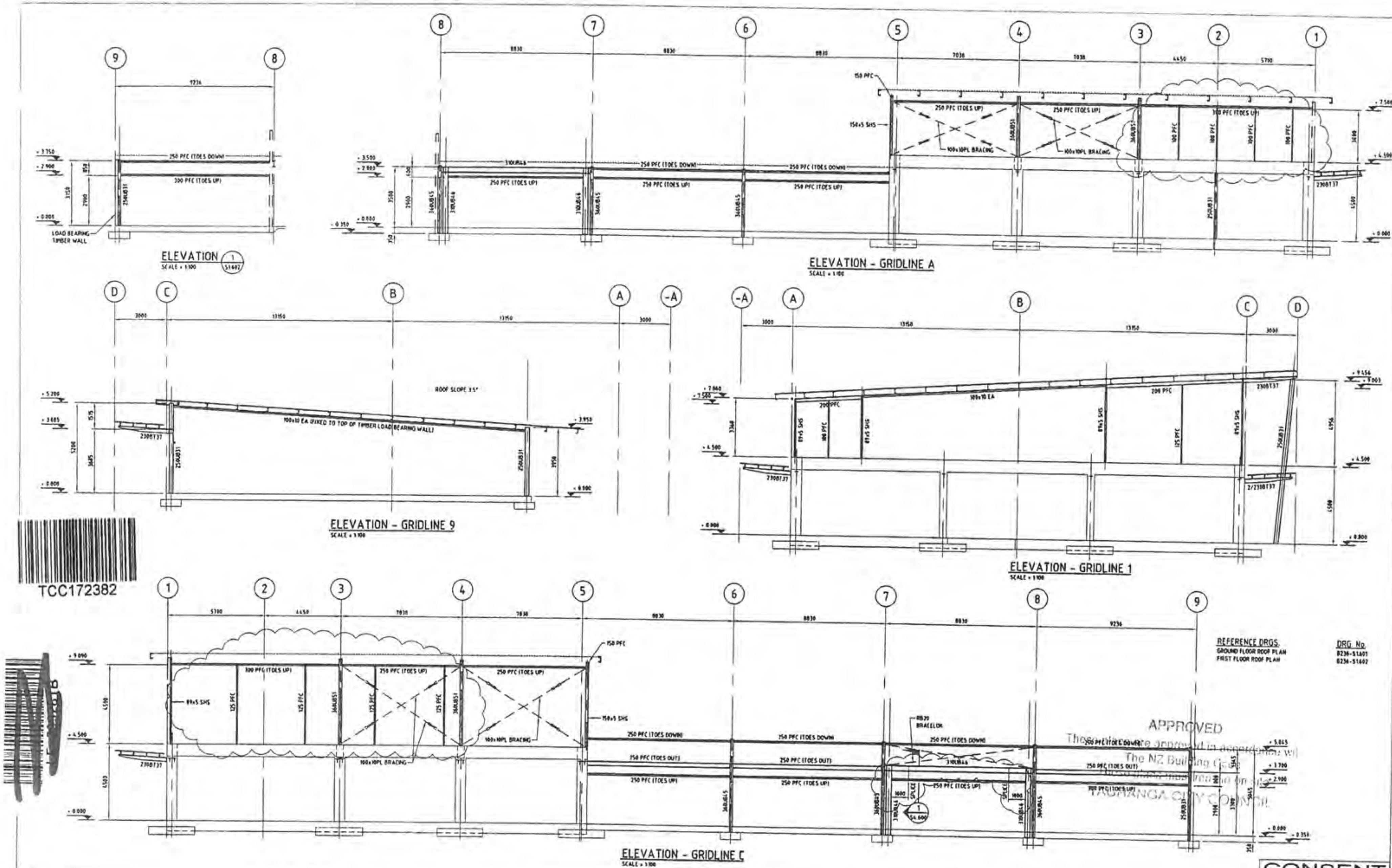
Client: AMP capital INVESTORS

Project: BETHLEHEM SHOPPING CENTRE
STAGE 3

Drawn	Signed	Date
GJD	GJH	09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SMB	Signed SMB	Date 09.08.06

Drawing Title: STRUCTURAL
BLOCK G
LEVEL 1 FLOOR PLAN

Project No. B236
Scale 1:100 A1, 1:200 A3
Sheet Size A1
Drawing No. B236-S1.601
Rev. 04



TCC172382

Rev.	Date	Revision Details	Drn	Ver.	App.
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
04	01.09.06	CONSENT	-	-	-
03	09.08.06	TENDER	-	-	-
02	19.07.06	PRELIMINARY	-	-	-
01	17.07.06	PRELIMINARY	-	-	-

Connell Wagner

Connell Wagner Limited Auckland Office
PO Box 9762, Newmarket, Auckland
Telephone: +64 9 520 6019
Facsimile: +64 9 524 7815

Client: AMP capital INVESTORS

Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn GJD	Signed GJH	Date 09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SMB	Signed SMB	Date 09.08.06

Drawing Title: STRUCTURAL BLOCK G EXTERNAL ELEVATIONS

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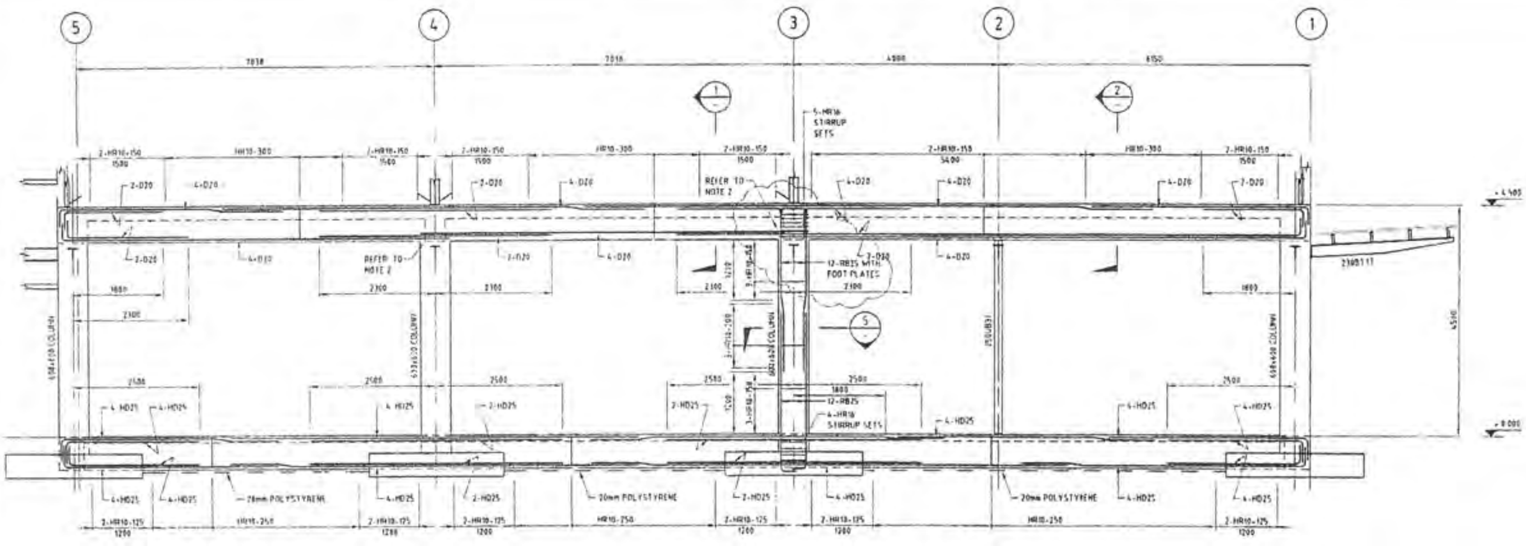
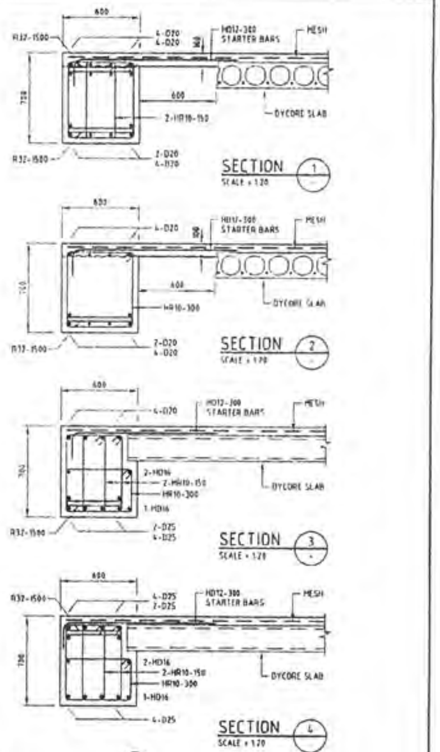
Project No. B236

Scale 1:100 A1 1:200 A3 | Sheet Size A1

Drawing No. B236-S2.600 | Rev. 04

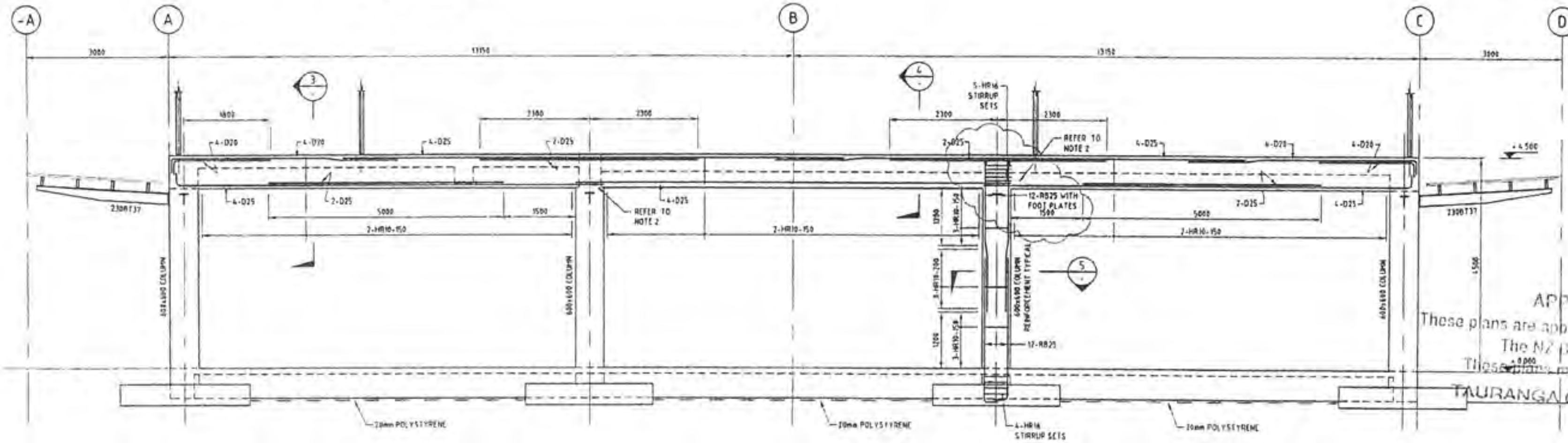


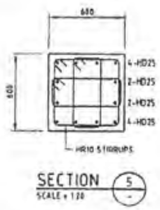
ELEVATION - GRIDLINE A AND C SIMILAR
SCALE 1:50



NOTES:
1. REFER TO S3600 FOR TYPICAL DYCOR/BEAM CONNECTION DETAIL
2. BOTTOM REINFORCEMENT BARS TO INTERIOR COLUMNS ON GRIDS A & C / 1 & 5 TO BE VEE SPLICE WELDED TOGETHER WITHIN THE BEAM-COLUMN JOINT

TCC172383





ELEVATION - GRIDLINE 1 AND 5 SIMILAR
SCALE 1:50

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REFERENCE DRGS
GROUND FLOOR PLAN
LEVEL 1 FLOOR PLAN

DRG No
B236-S1600
B236-S1601

Rev	Date	Revision Details	Drn	Ver	App
04	01.09.06	CONSENT	-	-	-
03	09.08.06	TENDER	-	-	-
02	19.07.06	PRELIMINARY	-	-	-
01	17.07.06	PRELIMINARY	-	-	-

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Client: AMP capital INVESTORS

Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn GJD	Signed GJH	Date 09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SMB	Signed SMB	Date 09.08.06

Drawing Title: STRUCTURAL
BLOCK G
EXTERNAL ELEVATIONS

CONSENT
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Project No: B236

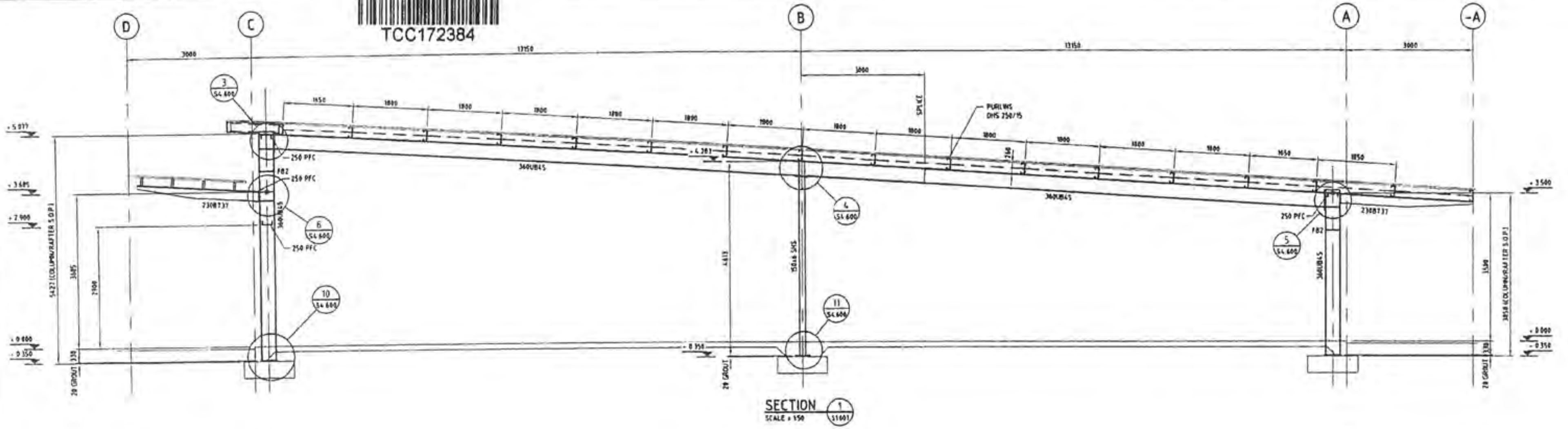
Scale: 1:50 A1, 1:100 A3

Sheet Size: A1

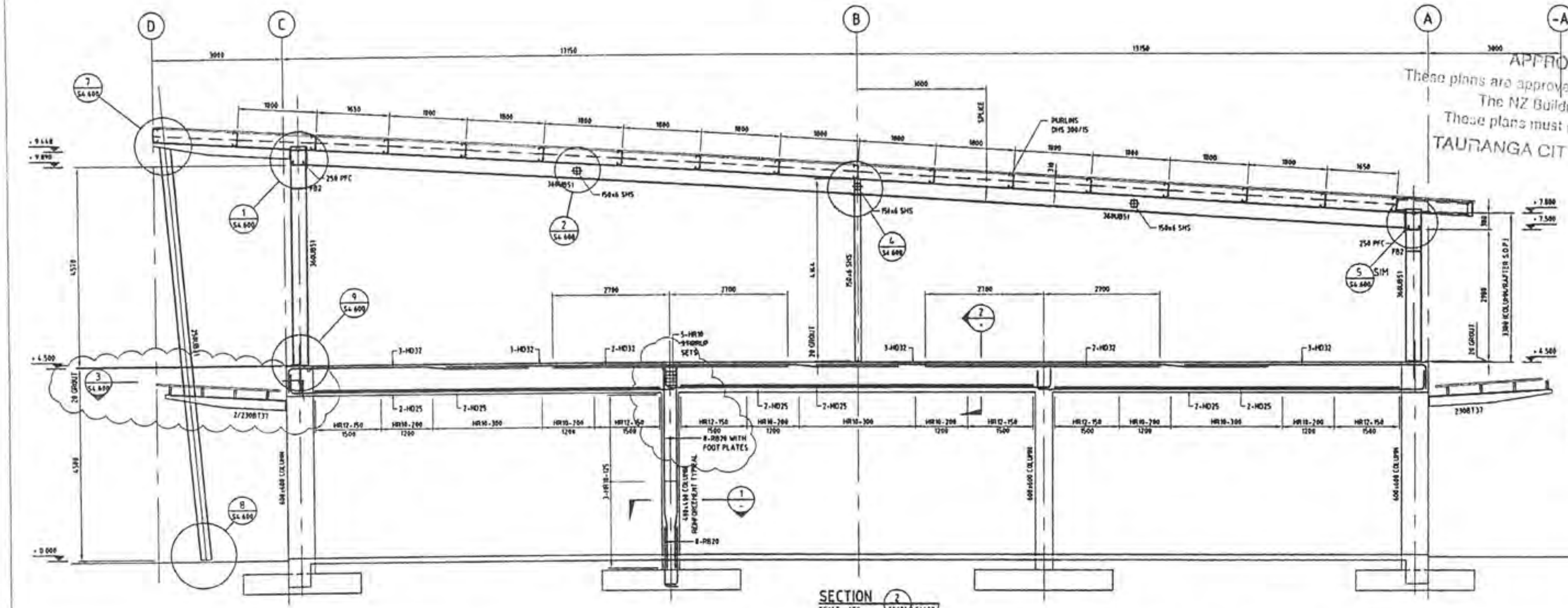
Drawing No: B236-S2.601

Rev: 04

TCC172384



SECTION 1
SCALE 1:50



SECTION 2
SCALE 1:50

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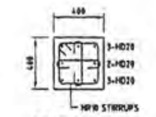
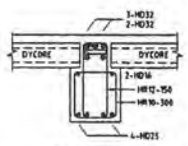


SECTION 1
SCALE 1:20



SECTION 2
SCALE 1:20

CONSENT
~~NOT~~ FOR CONSTRUCTION

Rev.	Date	Revision Details	Drn	Ver.	App.
04	01.09.06	CONSENT	-	-	-
03	09.08.06	TENDER	-	-	-
02	19.07.06	PRELIMINARY	-	-	-
01	17.07.06	PRELIMINARY	-	-	-

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Connell Wagner Limited Auckland Office
PO Box 9762, Newmarket, Auckland
Telephone +64 9 524-6019
Facsimile +64 9 524-7815

Client: AMP capital INVESTORS

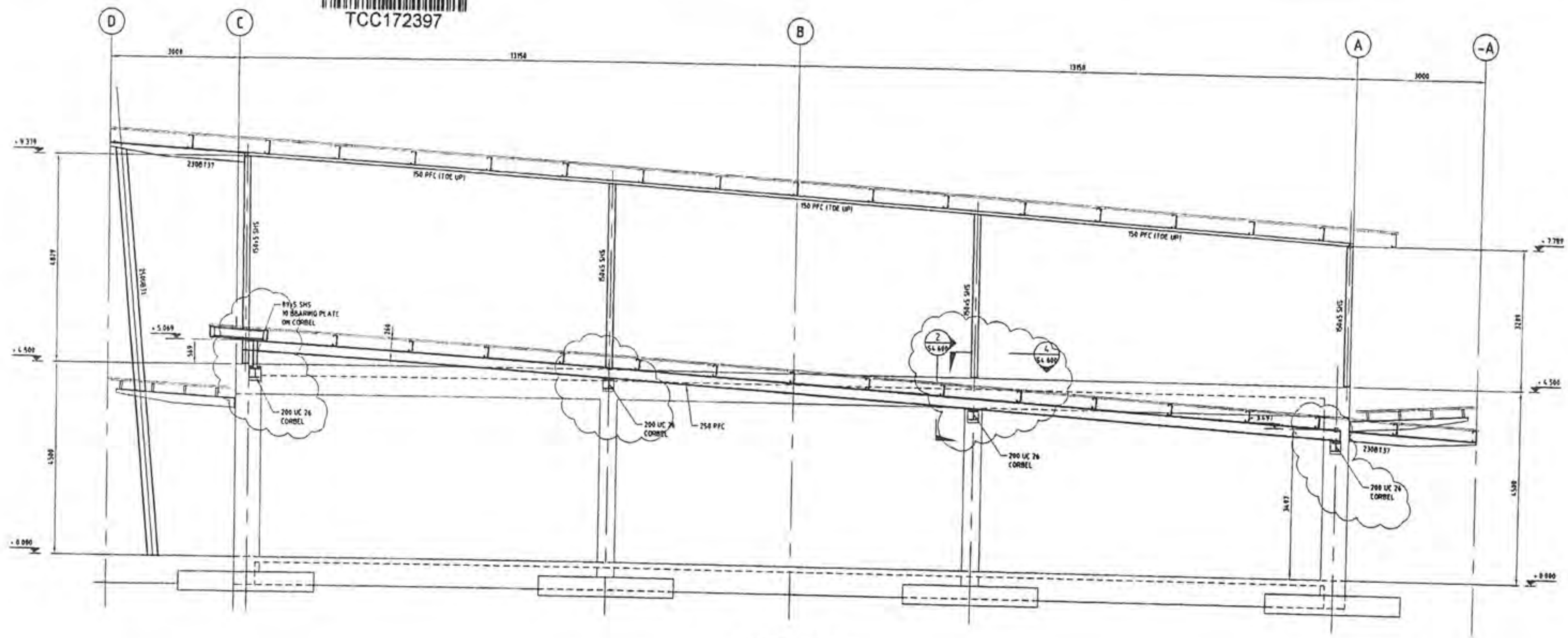
Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn	Signed	Date
GJD	GJH	09.08.06
Designed DPL	Signed DPL	09.08.06
Verified PB	Signed -	Date -
Approved SHB	Signed SHB	09.08.06

Drawing Title: STRUCTURAL BLOCK G SECTIONS

Project No: B236
Scale: 1:50 A1, 1:100 A3
Sheet Size: A1
Drawing No: B236-S2.602
Rev: 04

TCC172397



SECTION 3
SCALE 1:50

APPROVED
These plans are approved in accordance with
The NZ Building Code
These plans must remain on site
TAURANGA CITY COUNCIL

Rev.	Date	Revision Details	Drn	Ver.	App.
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
03	01.09.06	CONSENT	-	-	-
02	09.08.06	TENDER	-	-	-
01	19.07.06	PRELIMINARY	-	-	-

Connell Wagner
Connell Wagner Limited Auckland Office
PO Box 9762, Newmarket, Auckland
139 Carlton Gore Road, Newmarket, New Zealand
Telephone: +64 9 520 6019
Facsimile: +64 9 524 7815
Email: akl@conwag.com

Client: AMP capital INVESTORS

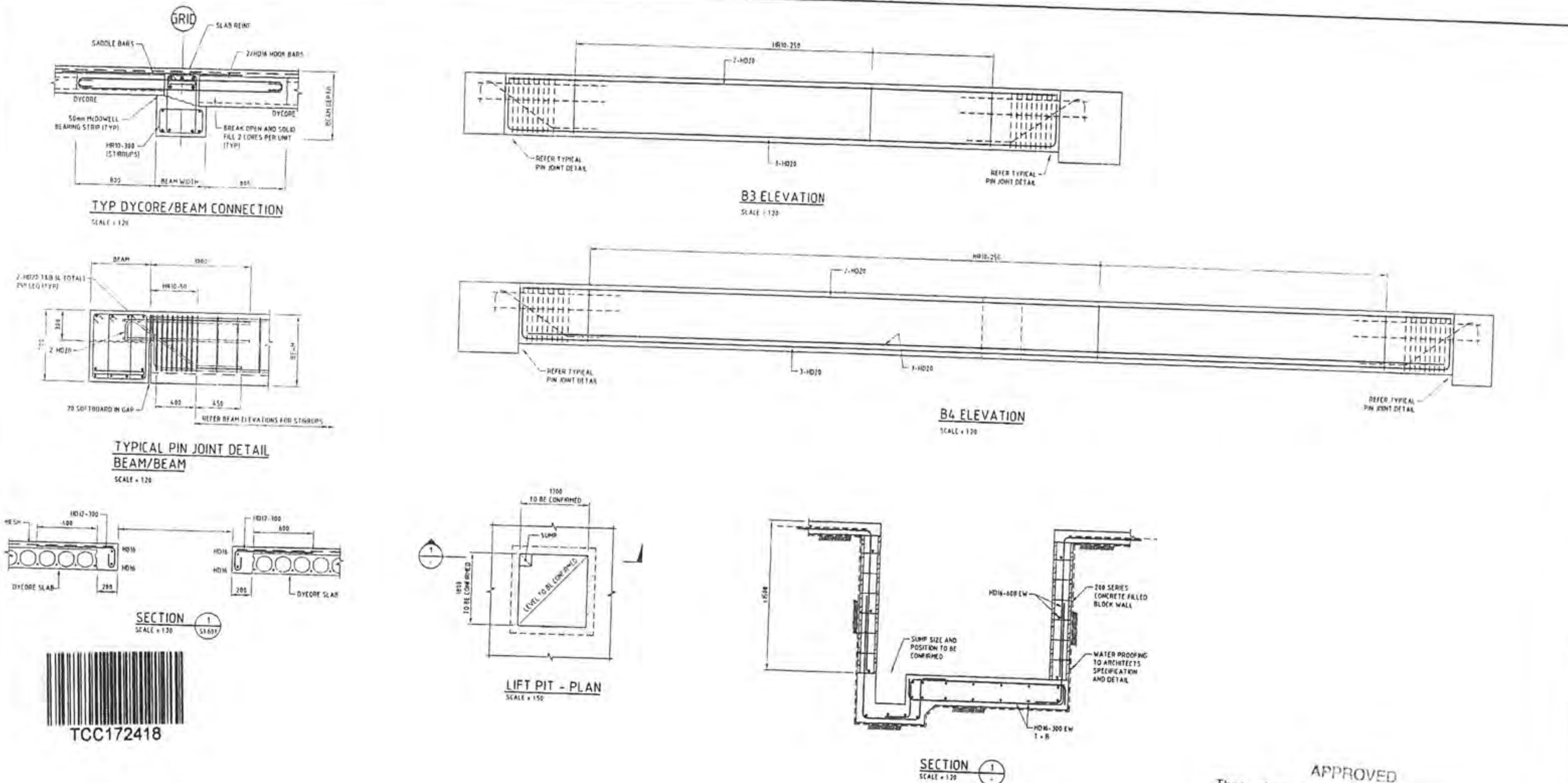
Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn	Signed	Date
GJD	GJH	09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SHB	Signed SHB	Date 09.08.06

Drawing Title: STRUCTURAL BLOCK G SECTIONS

CONSENT
NOT FOR CONSTRUCTION

Project No. B236
Scale 1:50 A1, 1:100 A3
Sheet Size A1
Drawing No. B236-S2.603
Rev 03



APPROVED
These plans are approved in accordance with
The NZ Building Code
These plans must remain on site
TAURANGA CITY COUNCIL

Rev	Date	Revision Details	Drn	Ver	App
02	10.09.06	CONSENT			
01	09.08.06	TENDER			

Connell Wagner

Connell Wagner Limited Auckland Office
PO Box 9762 Newmarket Auckland
Telephone +64 9 524-6019
Facsimile +64 9 524-7815

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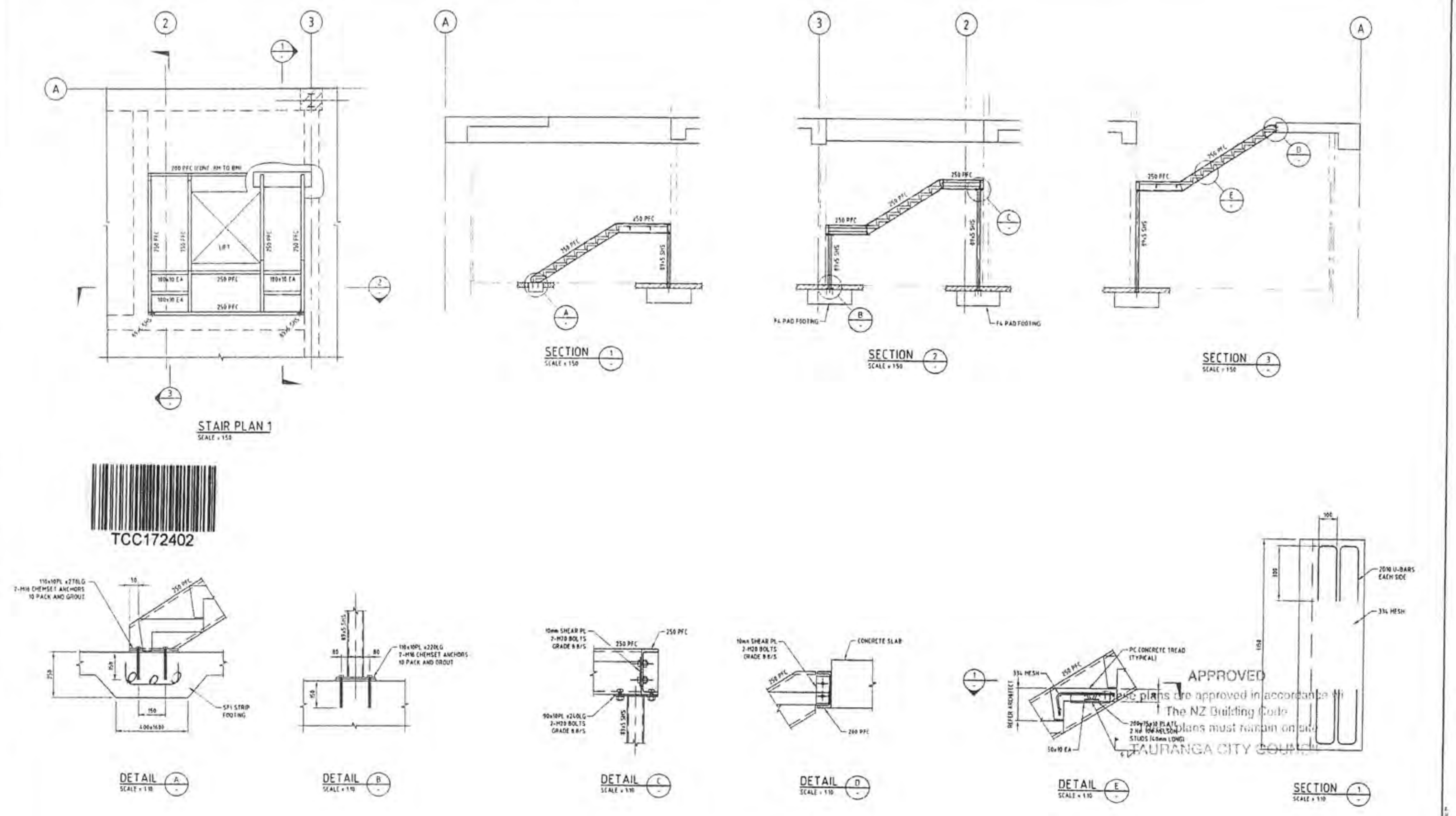
Drawn GJD	Signed GJH	Date 09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SMB	Signed SMB	Date 09.08.06

Drawing Title: STRUCTURAL BLOCK G CONCRETE DETAILS

CONSENT
~~NOT FOR CONSTRUCTION~~

Project No	B236
Scale	1:20 A1, 1:40 A3
Sheet Size	A1
Drawing No	B236-S3.600
Rev	02



Rev.	Date	Revision Details	Drn	Ver.	App.
02	10.09.06	CONSENT	-	-	-
01	09.08.06	TENDER	-	-	-

Connell Wagner

Connell Wagner Limited Auckland Office
PO Box 9762, Newmarket Auckland
119 Carlton Gore Road, Newmarket, New Zealand

Client: AMP capital INVESTORS

Project: BETHLEHEM SHOPPING CENTRE STAGE 3

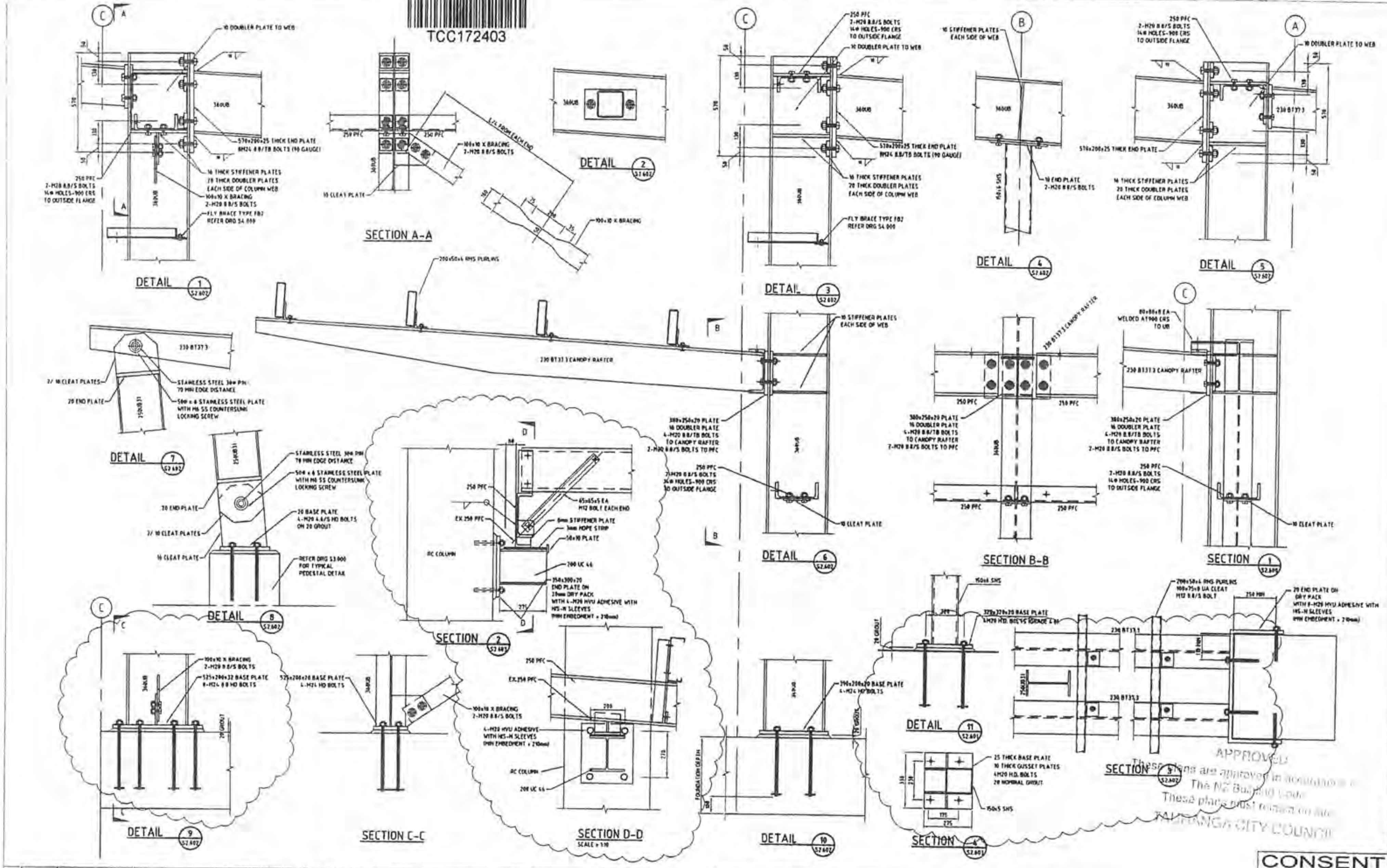
Drawn GJD	Signed GJH	Date 09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SHB	Signed SHB	Date 09.08.06

Drawing Title: STRUCTURAL TYPICAL STEEL DETAILS STAIRS (BLOCK G) SHEET 1

CONSENT
~~NOT FOR CONSTRUCTION~~

Project No: B236
Scale: 1:20 A1, 1:40 A3
Sheet Size: A1
Drawing No: B236-S4.003
Rev: 02

TCC172403



Rev.	Date	Revision Details	Drn	Ver.	App.
02	01.09.06	CONSENT	-	-	-
01	09.08.06	TENDER	-	-	-

Connell Wagner

Connell Wagner Limited Auckland Office

Client: **AMP capital INVESTORS**

Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn GJO	Signed GJH	Date 09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SMB	Signed SMB	Date 09.08.06

Drawing Title: STRUCTURAL BLOCK G STEEL DETAILS

CONSENT
NOT FOR CONSTRUCTION

Project No. B236

Scale 1:10 A1, 1:20 A3

Sheet Size A1

Drawing No. B236-S4.600

Rev. 02

Description:

Building H was designed in mid to late 2006 but it appears that a canopy addition was conducted in mid-2007 and modifications to the building canopy were carried out in 2008. We presume that these alterations occurred on completion of the main building envelope and the original drawings show that there were no alterations to the lateral load resisting system of the building.

This is a near rectangular single storey mono-pitch roof Block, with a triangular footprint extension on the western end of the south elevation. The building is located in almost the centre of the shopping complex and has its long axis orientated in a nominal east-west direction. It is a stand-alone building that is surrounded by car parking and landscaped areas. Block H is seismically isolated from all other buildings.

This building is a medium sized foot-print single storey, mono-pitched roof, retail type building, with 6 bays in the east-west longitudinal direction and 2 bays in the north-south transverse direction. There are now canopies on the north, west and part of the south elevation, however these are minor additions.

Construction of the warehouse type envelope consists of long-run metal mono-pitch roof sheeting over cold rolled steel purlins, supported on structural steel portal frame rafters, which are located on each primary transverse frame grid. Strangely there is a step that runs east west, in the roof plane, but this only occurs in the western section of the building and does not affect the seismic performance of that section. Each of the primary frame portal rafters is supported by structural steel portal columns at the span ends, and there are internal 150 x 6mm SHS columns at approximately mid-span of the portal rafters and as such these columns do not significantly contribute to the lateral load resisting stiffness and strength. The structural steel columns land on the conventional reinforced concrete pad foundations that are below the concrete on-grade slab. The strip footings and pad foundations that have been recorded as being reinforced concrete, although there are no sizes or reinforcement details given in the Block H set of structural drawings, there is a detail of the column connection to the foundations pad, and from the sizes drawn on the foundation plan, we assess the foundation arrangement and proportions as robust.

The canopies either have cold rolled steel purlins over structural steel rafters, supported on steel columns, and independent foundation pads or they are the cantilever type canopy that is more prevalent on the other Blocks. The high level canopy rafters are connected as an extension of the main structural rafters in the building envelope, and this provides adequate lateral stability. The low level ones are robustly fixed to the main portal columns with bolted connections, which again provides significant lateral stability.

The original architectural drawings call up that there is a combination of shop front glazing, and prefinished Zincalume, and plywood cladding, which represents a lightweight cladding system, on all elevations, except for part of the south elevation. A large section of the south elevation has 150mm thick full height precast reinforced concrete panels, which serve as both cladding and bracing panels.

There are 2 full bays of full width, diagonal structural steel rod and double purlin roof bracing, in the transverse direction. There are substantial parallel flange channel (PFC) eaves ties on the north and south elevations, and these appear to act as collector beams to distribute lateral loads from the roof plane bracing to the precast concrete panels loaded as in-plane shear walls.

The on-grade floor slab consists of a conventional mesh reinforced 125mm thick on-grade slab.

Seismic Load Resisting Structure:

The lateral load resisting system for the building envelope consists primarily of the diagonal structural steel roof bracing in conjunction with the precast reinforced concrete wall panels acting as in-plane loaded shear walls in the longitudinal direction. The transverse lateral loads in the north-south direction, are sustained by the structural steel moment resisting portal frames. It is most likely that the original design engineer apportioned the seismic loads in the building to the different structural elements in proportion to the tributary area. This is a common design technique and means that the various structural elements are designed to safely sustain the seismic loading attributed to them based on the vertical and horizontal area that they directly support. On this basis the southern precast concrete wall would be considered as capable of sustaining the seismic design actions generated by the self-weight of the wall, and the attached roof structure, by in-plane bending as a shear wall, as well as sustaining the seismic shears transferred from the roof bracing.

In the drawings specifically for this Block, there are no details of the reinforcement in the precast concrete wall panels and likewise there are no specific details of the foundations (there are not even sizes in the key notes), or their connections to the wall panels, however, we have discovered sheets of 'Typical Details' which describe the structural elements missing off the Block specific drawings. Anyway, it is typical for the precast concrete wall panels to have been designed to sustain the post-fire lateral loads by cantilever action above the on-grade floor slab, and we see no reason why this would not be the case for this building. This feature represents a redundancy in the lateral load resisting system.

Whilst there is paucity in the detail obtained from information contained in the property file, specifically for this Block, however, when read with the 'Typical Details' for 'Stage 1' it is sufficiently comprehensive that it allows us to make a robust assessment of the likely seismic performance of the building at a level of certainty well above that generally associated with an ISA.

No severe structural weaknesses or critical structural weaknesses have been detected in this building structure.

There are no alterations or modifications to the building recorded in the documentation that would have any effect on the lateral load resisting system.

Seismic Assessment:

We have used the following parameters in the ISA assessment.

- Building era 2004 – 2011.
- Seismic Zone B, Tauranga.
- Class D soft soil.
- Natural period 0.4 seconds, (this is based on the structural steel diagonal roof bracing distributing the lateral loads to the full height precast reinforced concrete wall panels in the south elevation, acting as in-plane loaded shear walls in the longitudinal direction. In the transverse direction there are structural steel moment resisting portal frames which suggests that the natural period could be somewhat longer for these elements. This is addressed in the Performance Achievement Ratio (PAR) section).
- Building Importance Level 2.
- Structural Ductility factor 1.25 (this is based on the roof plane diagonal bracing and the in-plane loaded reinforced concrete wall panels and is conservative for the structural steel portal frames).

- Plan irregularity 1.0 (this value has been selected despite the asymmetric arrangement of the lateral load resisting walls in both directions. The reason is that because of the type of construction, the design philosophy for the building was no doubt that it would act as a series of discrete tributary loaded resisting structural elements. This is addressed in the PAR section).
- Vertical irregularity 1.0.
- Pounding Potential 1.0 (because the building has no neighbours).
- Site Characteristics 1.0 (because there is no recorded risk of liquefaction or site instability).
- Performance Achievement Ratio 1.1. (This is based on the regularity, pounding and site factors as detailed above but includes an enhancement 'other' factor of 1.1 which is less than the maximum of 2.5 available for buildings less than or equal to 3 storeys. This 'other factor' was selected because the natural period is arguably too short, and the ductility factor too low, for the moment resisting structural steel portal frames. Also, the precast concrete wall panels have no doubt been designed and detailed to sustain the post fire lateral load whilst acting as face loaded cantilevers above the foundation and on-grade slab, and this represents another redundancy in the system. The structural framing drawings show two panels of steel diagonal bracing above steel framing built into the north elevation, above the shop front framing. We interpret this as representing another longitudinal line of lateral load resistance and therefore another redundancy. All of these factors have been nominally recognised by an 'other factor' of 1.1).

Seismic Rating and Grade:

The Baseline rating of 100% NBS is modified by the Performance Achievement Ratio of 1.1 resulting in a Seismic Rating of >100% NBS which makes this Block H building neither an Earthquake Risk nor Earthquake Prone.

Rating >100% NBS.
Grade A+.

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in the "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block H	Date:	16/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-1 Initial Evaluation Procedure Step 1

Step 1 - General Information

1.1 Photos (attach sufficient to describe building)

NOTE: THERE ARE MORE PHOTOS ON PAGE 1a ATTACHED

1.2 Sketches (plans etc, show items of interest)

NOTE: THERE ARE MORE SKETCHES ON PAGE 1a ATTACHED

1.3 List relevant features (Note: only 10 lines of text will print in this box. If further text required use Page 1a)

Refer to report details

1.4 Note information sources Tick as appropriate

Visual Inspection of Exterior	☑	Specifications	☐
Visual Inspection of Interior	☐	Geotechnical Reports	☑
Drawings (note type)	☑	Other (list)	☐

Property File.

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA} Page 2

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block H	Date:	16/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-2 Initial Evaluation Procedure Step 2

Step 2 - Determination of *(%NBS)*$_b$
(Baseline *(%NBS)* for particular building - refer Section B5)
2.1 Determine nominal *(%NBS)* = *(%NBS)*$_{nom}$

	Longitudinal	Transverse
a) Building Strengthening Data		
Tick if building is known to have been strengthened in this direction	☐	☐
If strengthened, enter percentage of code the building has been strengthened to	N/A	N/A

b) Year of Design/Strengthening, Building Type and Seismic Zone

	Longitudinal	Transverse
Pre 1935	○	○
1935-1965	○	○
1965-1976	○	○
1976-1984	○	○
1984-1992	○	○
1992-2004	○	○
2004-2011	◉	◉
Post Aug 2011	○	○
Building Type:	Not applicable	Not applicable
Seismic Zone:	Not applicable	Not applicable

c) Soil Type

	Longitudinal	Transverse
From NZS1170.5:2004, Cl 3.1.3 :	D Soft Soil	D Soft Soil
From NZS4203:1992, Cl 4.6.2.2 : (for 1992 to 2004 and only if known)	Not applicable	Not applicable

d) Estimate Period, *T*
Comment:

	Formula	Longitudinal	Transverse
h_n =		5	5 m
A_c =		1.00	1.00 m²
Moment Resisting Concrete Frames:	$T = \max(0.09h_n^{0.75}, 0.4)$	○	○
Moment Resisting Steel Frames:	$T = \max(0.14h_n^{0.75}, 0.4)$	○	○
Eccentrically Braced Steel Frames:	$T = \max(0.08h_n^{0.75}, 0.4)$	○	○
All Other Frame Structures:	$T = \max(0.06h_n^{0.75}, 0.4)$	○	○
Concrete Shear Walls	$T = \max(0.09h_n^{0.75}/A_c^{0.5}, 0.4)$	○	○
Masonry Shear Walls:	$T \leq 0.4$sec	○	○
User Defined (input Period):		◉	◉
T:		0.40	0.40

Where h_n = height in metres from the base of the structure to the uppermost seismic weight or mass.

	Description	Longitudinal	Transverse
e) Factor A:	Strengthening factor determined using result from (a) above (set to 1.0 if not strengthened)	Factor A: 1.00	1.00
f) Factor B:	Determined from NZSEE Guidelines Figure 3A.1 using results (a) to (e) above	Factor B: 1.00	1.00
g) Factor C:	For reinforced concrete buildings designed between 1976-84 Factor C = 1.2, otherwise take as 1.0.	Factor C: 1.00	1.00
h) Factor D:	For buildings designed prior to 1935 Factor D = 0.8 except for Wellington and Napier (1931-1935) where Factor D may be taken as 1.0, otherwise take as 1.0.	Factor D: 1.00	1.00
***(%NBS)*$_{nom}$ = AxBxCxD**		*(%NBS)*$_{nom}$ 100%	100%

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block H	Date:	16/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-2 Initial Evaluation Procedure Step 2 continued

2.2 Near Fault Scaling Factor, Factor E
If $T \leq$ 1.5sec, Factor E = 1

		Longitudinal	Transverse
a) Near Fault Factor, *N(T,D)* (from NZS1170.5:2004, Cl 3.1.6)		N(T,D): 1	1
b) Factor E	= 1/N(T,D)	Factor E: 1.00	1.00

2.3 Hazard Scaling Factor, Factor F
a) Hazard Factor, *Z*, for site

Location: Tauranga — Refer right for user-defined locations

Z = 0.2 (from NZS1170.5:2004, Table 3.3)
Z_{1992} = 0.85 (NZS4203:1992 Zone Factor from accompanying Figure 3.5(b))
Z_{2004} = 0.2 (from NZS1170.5:2004, Table 3.3)

b) Factor F

			Longitudinal	Transverse
For pre 1992	=	$1/Z$		
For 1992-2011	=	Z_{1992}/Z		
For post 2011	=	Z_{2004}/Z		
			Factor F: 1.00	1.00

2.4 Return Period Scaling Factor, Factor G

		Longitudinal	Transverse
a) Design Importance Level, I (Set to 1 if not known. For buildings designed prior to 1965 and known to be designed as a public building set to 1.25. For buildings designed 1965-1976 and known to be designed as a public building set to 1.33 for Zone A or 1.2 for Zone B. For 1976-1984 set I value.)		I = 1	1
b) Design Risk Factor, R_o (set to 1.0 if other than 1976-2004, or not known)		R_o = 1	1
c) Return Period Factor, R (from NZS1170.0:2004 Building Importance Level)	*Choose Importance Level*	○1 ◉2 ○3 ○4	○1 ◉2 ○3 ○4
		R = 1.0	1.0
d) Factor G	= IR_o/R	Factor G: 1.00	1.00

2.5 Ductility Scaling Factor, Factor H

			Longitudinal	Transverse
a) Available Displacement Ductility Within Existing Structure *Comment:*			μ = 1.25	1.25
b) Factor H			k_μ	k_μ
	For pre 1976 (maximum of 2)	=	1.14	1.14
	For 1976 onwards	=	1	1
			Factor H: 1.00	1.00

(where kμ is NZS1170.5:2004 Inelastic Spectrum Scaling Factor, from accompanying Table 3.3)

2.6 Structural Performance Scaling Factor, Factor I

		Longitudinal	Transverse
a) Structural Performance Factor, S_p (from accompanying Figure 3.4) Tick if light timber-framed construction in this direction		☐	☐
		S_p = 0.93	0.93
b) Structural Performance Scaling Factor	= $1/S_p$	Factor I: 1.00	1.00

Note Factor B values for 1992 to 2004 have been multiplied by 0.67 to account for Sp in this period

	Longitudinal	Transverse
2.7 Baseline *%NBS* for Building, $(\%NBS)_b$ (equals $(\%NBS)_{nom} \times E \times F \times G \times H \times I$)	100%	100%

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block H	Date:	16/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-3 Initial Evaluation Procedure Step 3

Step 3 - Assessment of Performance Achievement Ratio (PAR)

(Refer Appendix B - Section B3.2)

a) Longitudinal Direction

potential CSWs — **Effect on Structural Performance** (Choose a value - Do not interpolate) — **Factors**

3.1 Plan Irregularity

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* — **Factor A** 1.0

Comment

3.2 Vertical Irregularity

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* — **Factor B** 1.0

Comment

3.3 Short Columns

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* — **Factor C** 1.0

Comment

3.4 Pounding Potential

(Estimate D1 and D2 and set D = the lower of the two, or 1.0 if no potential for pounding, or consequences are considered to be minimal)

a) Factor D1: - Pounding Effect

Note:
Values given assume the building has a frame structure. For stiff buildings (eg shear walls), the effect of pounding may be reduced by taking the coefficient to the right of the value applicable to frame buildings.

Factor D1 For Longitudinal Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 1	○ 1	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment

b) Factor D2: - Height Difference Effect

Factor D2 For Longitudinal Direction: 1.0

Table for Selection of Factor D2	Severe	Significant	Insignificant
	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	○ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	◉ 1

Comment

Factor D 1.0

3.5 Site Characteristics - *Stability, landslide threat, liquefaction etc as it affects the structural performance from a life-safety perspective*

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* — **Factor E** 1.0

Comment

3.6 Other Factors - *for allowance of all other relevant characterstics of the building*

**For ≤ 3 storeys - Maximum value 2.5
otherwise - Maximum value 1.5.
No minimum.**

Factor F 1.1

Record rationale for choice of Factor F:

Refer to report

3.7 Performance Achievement Ratio (PAR)
(equals **A x B x C x D x E x F**)

PAR
Longitudinal **1.10**

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block H	Date:	16/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-3 Initial Evaluation Procedure Step 3

Step 3 - Assessment of Performance Achievement Ratio (PAR)
(Refer Appendix B - Section B3.2)

b) Transverse Direction

Factors

potential CSWs **Effect on Structural Performance**
(Choose a value - Do not interpolate)

3.1 Plan Irregularity
Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor A** 1.0
Comment

3.2 Vertical Irregularity
Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor B** 1.0
Comment

3.3 Short Columns
Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor C** 1.0
Comment

3.4 Pounding Potential
(Estimate D1 and D2 and set D = the lower of the two, or 1.0 if no potential for pounding, or consequences are considered to be minimal)

a) Factor D1: - Pounding Effect

Note:
Values given assume the building has a frame structure. For stiff buildings (eg shear walls), the effect of pounding may be reduced by taking the coefficient to the right of the value applicable to frame buildings.

Factor D1 For Transverse Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 1	○ 1	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment

b) Factor D2: - Height Difference Effect

Factor D2 For Transverse Direction: 1.0

Table for Selection of Factor D2	Severe	Significant	Insignificant
	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	○ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	◉ 1

Comment

Factor D 1.0

3.5 Site Characteristics - *Stability, landslide threat, liquefaction etc as it affects the structural performance from a life-safety perspective*

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor E** 1.0
Comment

3.6 Other Factors - *for allowance of all other relevant characterstics of the building* **For ≤ 3 storeys - Maximum value 2.5 otherwise - Maximum value 1.5. No minimum.** **Factor F** 1.10

Record rationale for choice of Factor F:
Refer to report

PAR

3.7 Performance Achievement Ratio (PAR)
(equals **A x B x C x D x E x F**) **Transverse** **1.10**

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block H	Date:	16/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-4 Initial Evaluation Procedure Steps 4, 5, 6 and 7

Step 4 - Percentage of New Building Standard *(%NBS)*

		Longitudinal	Transverse
4.1	**Assessed Baseline *%NBS (%NBS)*$_b$** (from Table IEP - 1)	100%	100%
4.2	**Performance Achievement Ratio (PAR)** (from Table IEP - 2)	1.10	1.10
4.3	**PAR x Baseline *(%NBS)*$_b$**	>100%	>100%
4.4	**Percentage New Building Standard *(%NBS)* - Seismic Rating** (Use lower of two values from Step 4.3)		>100%

Step 5 - Is *%NBS* < 34? NO

Step 6 - Potentially Earthquake Risk (is *%NBS* < 67)? NO

Step 7 - Provisional Grading for Seismic Risk based on IEP

Seismic Grade A+

Additional Comments (items of note affecting IEP based seismic rating)

Relationship between Grade and *%NBS*:

Grade:	A+	A	B	C	D	E
%NBS:	> 100	100 to 80	79 to 67	66 to 34	< 34 to 20	< 20

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block H	Date:	16/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-5 Initial Evaluation Procedure Step 8

Step 8 - Identification of potential Severe Structural Weaknesses (SSWs) that could result in significant risk to a significant number of occupants

8.1 Number of storeys above ground level 1

8.2 Presence of heavy concrete floors and/or concrete roof? (Y/N) N

Potential Severe Structural Weaknesses (SSWs):

Note: Options that are greyed out are not applicable and need not be considered.

Occupancy not considered to be significant - no further consideration required

Risk not considered to be significant - no further consideration required

The following potential Severe Structural Weaknesses (SSWs) have been identified in the building that could result in significant risk to a significant number of occupants:

1. None identified

2. Weak or soft storey (except top storey)

3. Brittle columns and/or beam-column joints the deformations of which are not constrained by other structural elements

4. Flat slab buildings with lateral capacity reliant on low ductility slab-to-column connections

5. No identifiable connection between primary structure and diaphragms

6. Ledge and gap stairs

IEP Assessment Confirmed by S.R. Mitchell **Signature**

S R Mitchell **Name**

70562 **CPEng. No**

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*

GENERAL NOTES

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2. CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS ON SITE.
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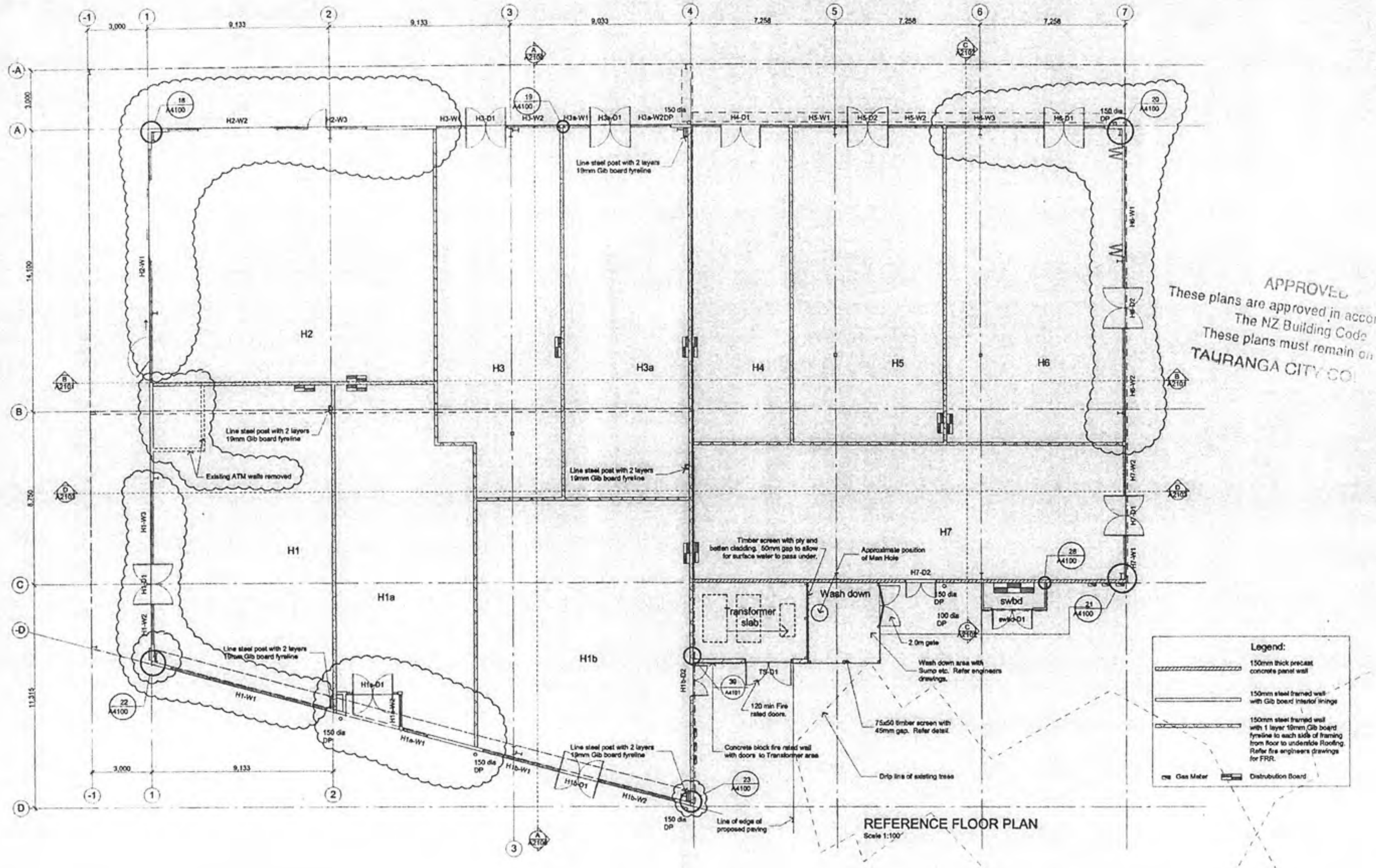

REFERENCE FLOOR PLAN
Scale 1:100

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The NZ Building Code
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TAURANGA CITY CO[UNCIL]

ISSUE	REVISION	BY	DATE
K	BUILDING CONSENT	MG	23.08.07
J	CONST.REV.	MG	11.05.07
H	CONSTRUCTION	MG	29.03.07
G	BUILDING CONSENT	MG	27.03.07
F	PRELIMINARY	MG	20.02.07
E	CONST. REV	MG	09.01.07
D	CONSTRUCTION	MG	29.11.06
C	TENDER	MG	04.10.06
B	TENDER	MG	08.09.06
A	TENDER	MG	10.08.06

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CLIENT

AMP capital INVESTORS

PROJECT
BLOCK H
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE
REFERENCE FLOOR PLAN

DATE		SCALE
23 AUGUST 2007		1:100 @ A1 1:200 @ A3
DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19
DRAWING NUMBER		
A1300		K

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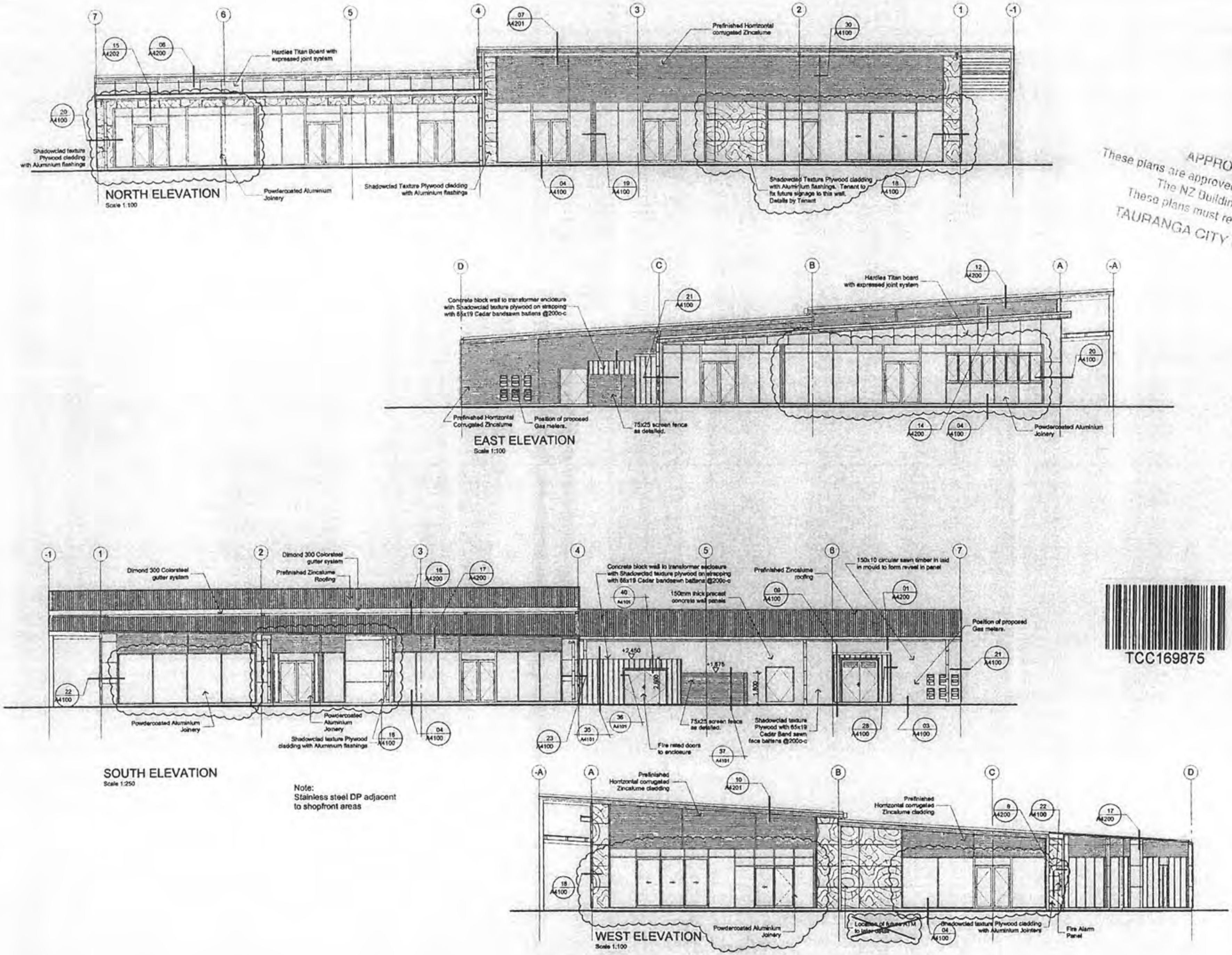

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ISSUE	REVISION	BY	DATE
H	BUILDING CONSENT	MG	23.08.07
G	CONSTRUCTION	MG	29.03.07
F	BUILDING CONSENT	MG	27.03.07
E	PRELIMINARY	MG	20.02.07
D	CONST. REV.	MG	09.01.07
C	CONSTRUCTION	MG	29.11.06
B	TENDER	MG	08.09.06
A	TENDER	MG	10.08.06

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PROJECT

BLOCK H
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE

ELEVATIONS

DATE	SCALE
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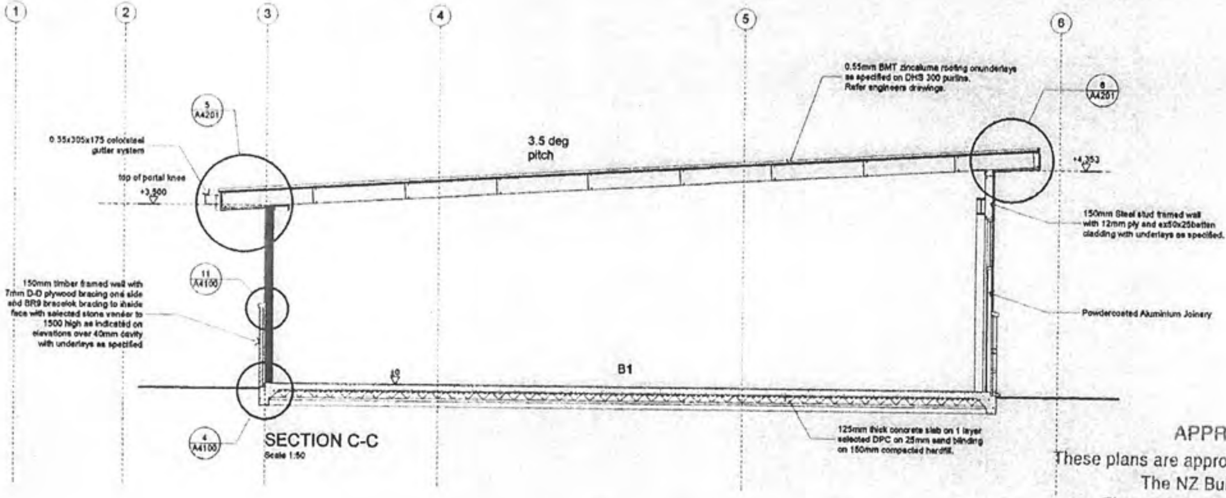
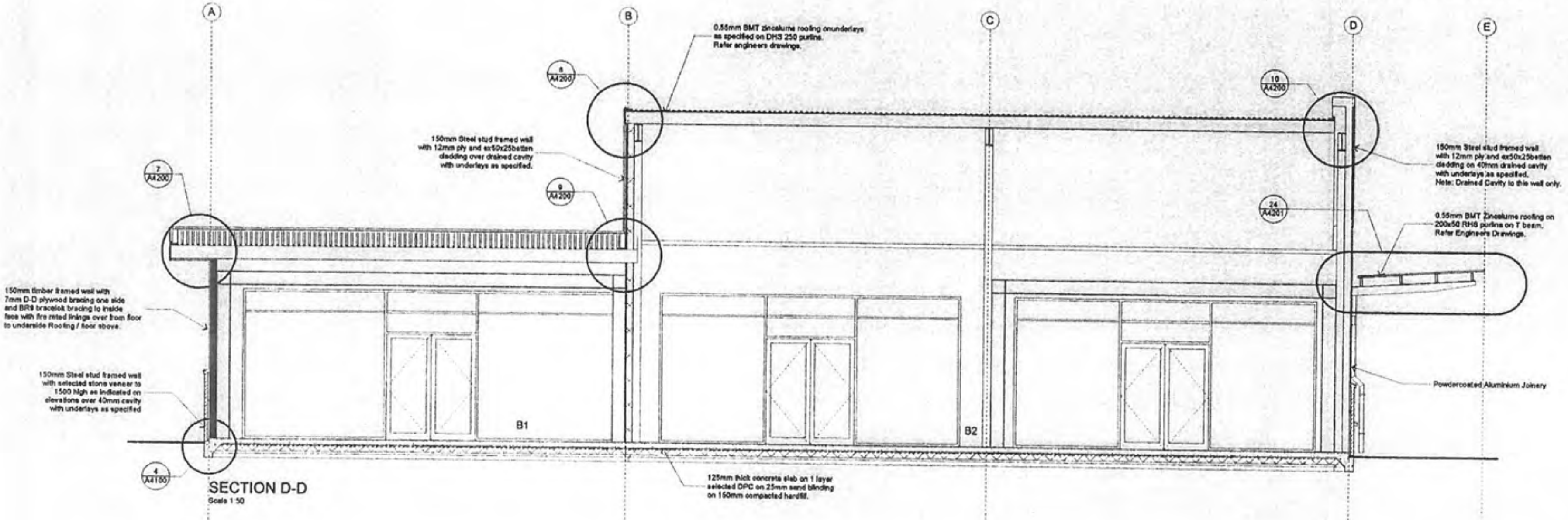
DRAWN: MG / CHECK: Check	PROJECT NO: 457-05-19
DRAWING NUMBER: A2000	H



SECTION C-C
Scale 1:50



SECTION D-D
Scale 1:50

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ISSUE	REVISION	BY	DATE
A	BUILDING CONSENT	MG	11.07.06

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PROJECT
BLOCK B
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE
SECTIONS

DATE	SCALE
11 JULY 2006	

DRAWN	CHECK	PROJECT NO.
MG		457-05-19

DRAWING NUMBER
A2101 (A)

TCC172311

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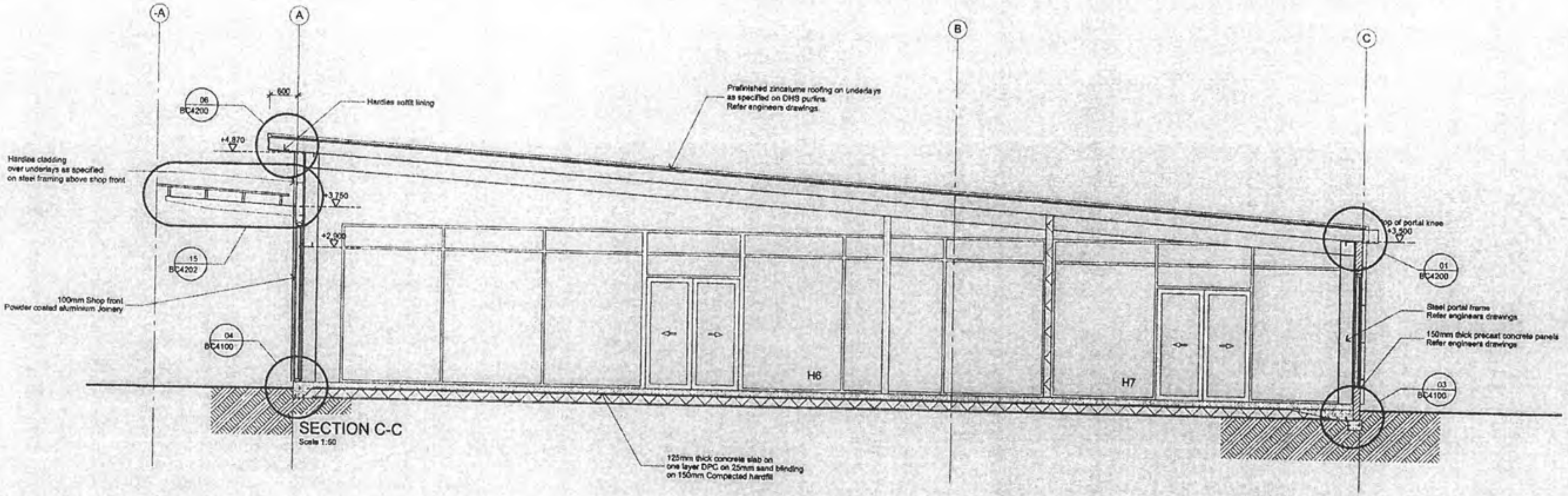
All work to satisfy the requirements of N.Z.B.C. including Clause E2 (External Moisture)



SECTION C-C

Scale 1:50

A	Building Consent	MG	01.09.06
ISSUE	REVISION	BY	DATE

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PROJECT

BLOCK H
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE

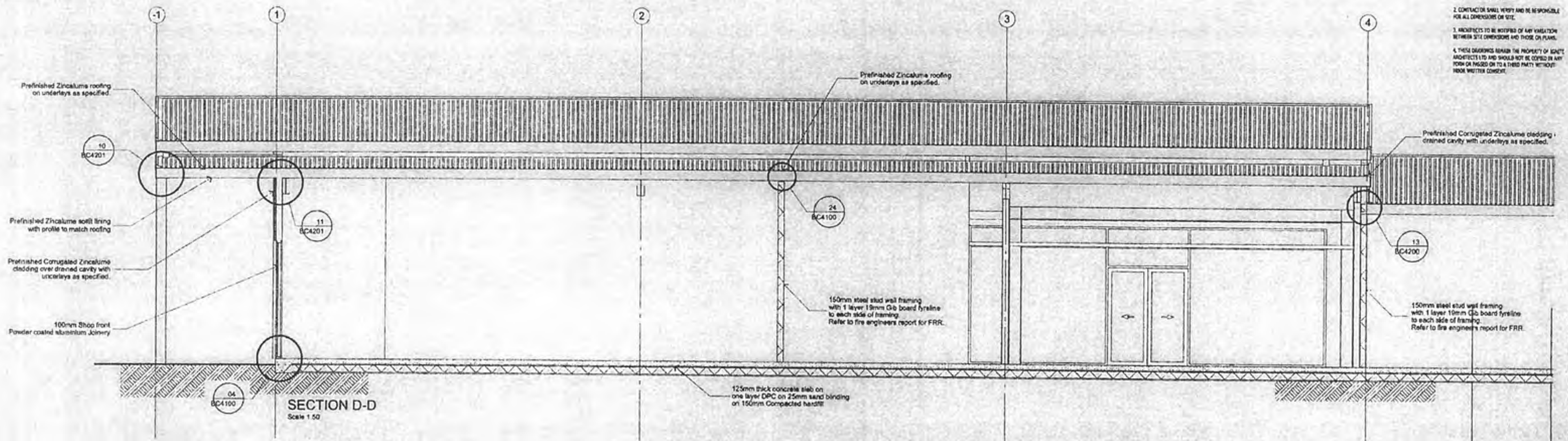
SECTIONS

DATE	SCALE
01 SEPTEMBER 2006	

DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19

DRAWING NUMBER

BC2102 (A)



SECTION D-D
Scale 1:50

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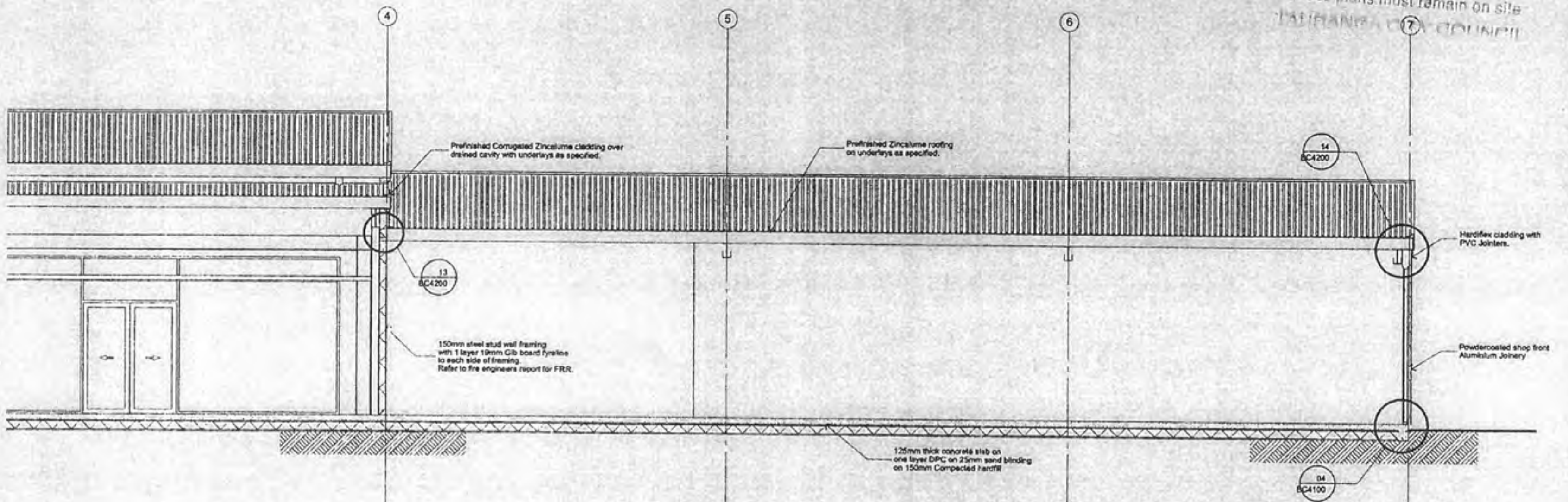

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DRAWING TITLE
SECTIONS

DATE	SCALE
18 SEPTEMBER 2006	

DRAWN	CHECK	PROJECT NO.
MG	Chkd	457-05-19

DRAWING NUMBER
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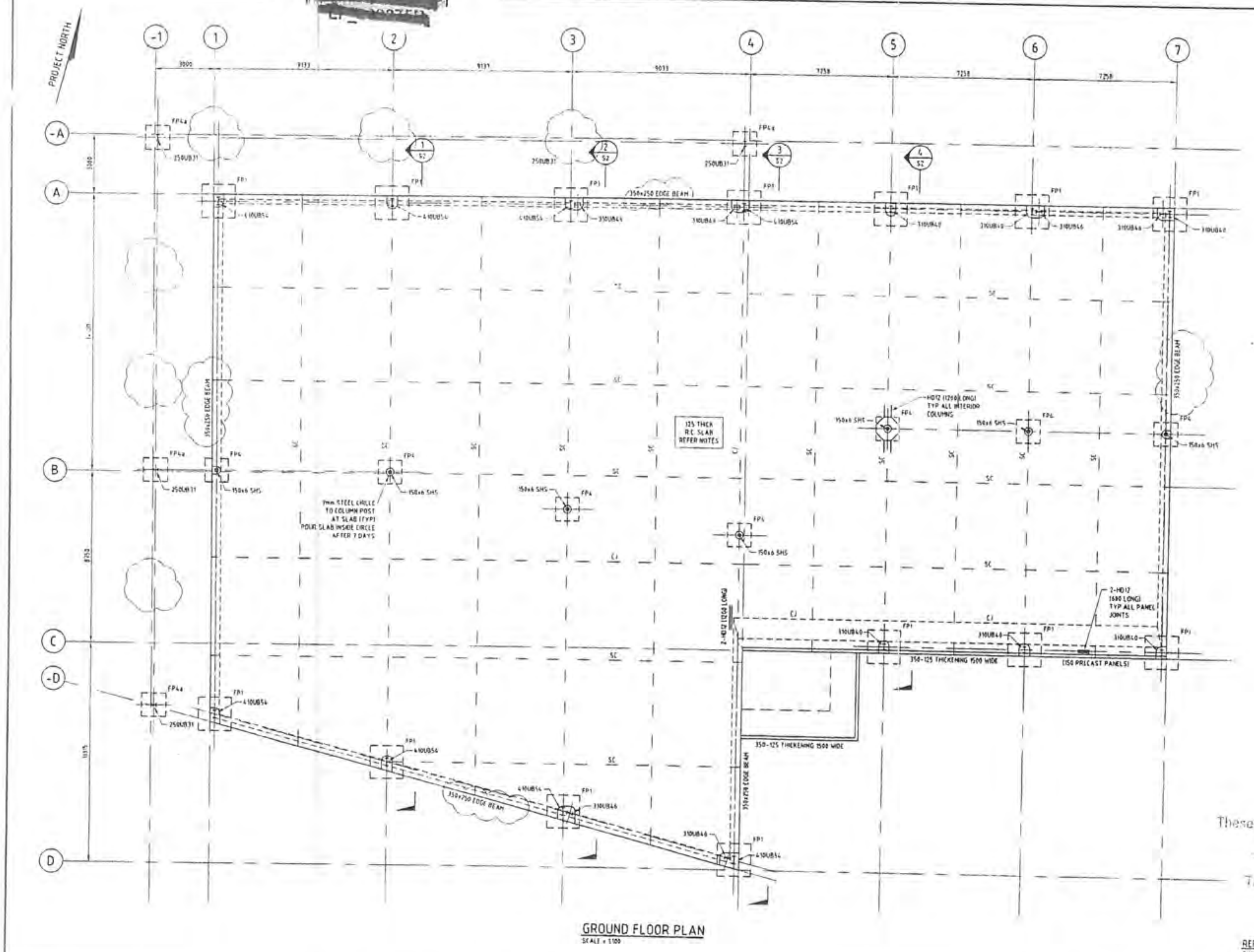
[redacted]



GROUND FLOOR PLAN
SCALE = 1:100

NOTES
1 REFER TO ARCHITECTS FOR FLOOR LEVELS AND FALLS
2 BUILDING PLATFORM FOR 125 SLAB ON GRADE TO CONSIST OF 1 LAYER OF DPC ON 25mm SAND BLINDING ON 150mm COMPACTED HARDFILL
3 PROVIDE 665 MESH TO SLAB ON GRADE U.N.O.
4 REFER TO GEOTECHNICAL REPORT FOR FOUNDATION BEARING PRESSURES. ALL FOUNDATIONS TO BE INSPECTED BY AN ENGINEER PRIOR TO POURING OF THE FOUNDATION.
5 REFER TO HYDRAULICS DRAWINGS FOR IN GROUND SEVICES UNDER THE 125 SLAB ON GRADE
6 REFER TO SPECIFICATION FOR CONCRETE COMPRESSIVE STRENGTHS
7 REFER TO ELECTRICAL SPECIFICATION FOR EARTHING REQUIRMENTS

LEGEND
CJ - CONSTRUCTION JOINT
SC - SAWCUT

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REFERENCE DRGS	DRG. No
TYPICAL CONCRETE DETAILS FOUNDATIONS AND PRECAST PANELS	B236-S3.600
TYPICAL CONCRETE DETAILS	B236-S3.601

Rev	Date	Revision Details	Drn	Ver	App
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-	-	-	-	-	-
-	-	-	-	-	-
04	01.09.06	CONSENT	-	-	-
03	09.08.06	TENDER	-	-	-
02	19.07.06	PRELIMINARY	-	-	-
01	17.07.06	PRELIMINARY	-	-	-

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PO Box 9762 Newmarket, Auckland
519 Carlton Gore Road, Newmarket, New Zealand
Telephone +64 9 520 6019
Facsimile +64 9 524 1695
Email akl@conwag.com

Client: AMP capital INVESTORS

Project: BETHLEHEM SHOPPING CENTRE
STAGE 3

Drawn	Signed	Date
GJD	GJH	09.08.06
Designed DPL	Signed DPL	09.08.06
Verified PB	Signed -	-
Approved SMB	Signed SMB	09.08.06

Drawing Title: STRUCTURAL
BLOCK H
GROUND FLOOR PLAN

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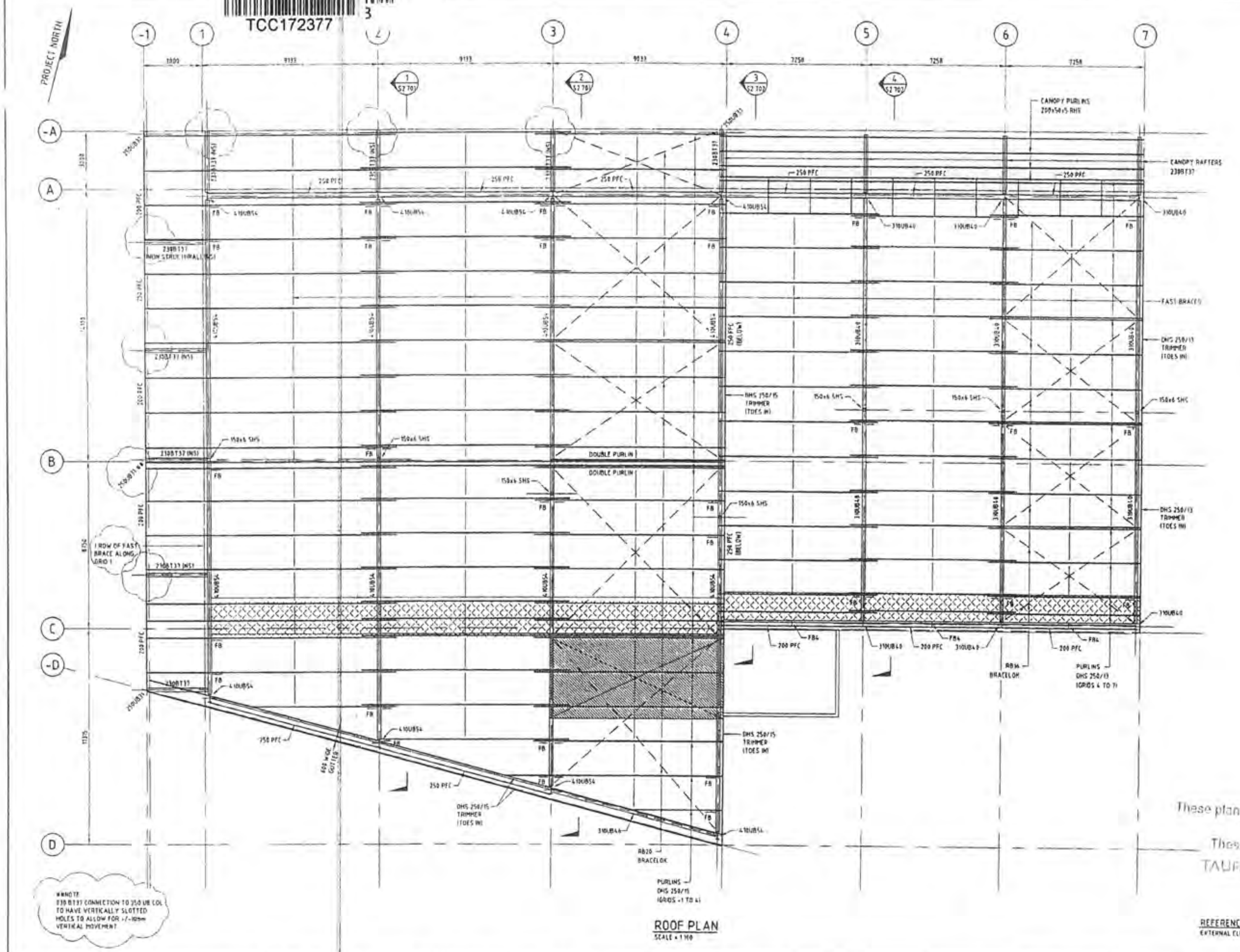
Project No: B236
Scale: 1:100 A1, 1:200 A3
Sheet Size: A1
Drawing No: B236-S1.700
Rev: 04

TCC172377 3



ROOF PLAN
SCALE 1:100

NOTES
1. PROVIDE 1 ROW OF FAST BRACE BRACING TO EACH PURLIN BAY UNO
2. LAP PURLINS (WHERE SHOWN) 0.1x LENGTH OF ADJACENT. REFER TO MANUFACTURERS SPECIFICATION FOR DETAIL
3. PROVIDE HANGERS BETWEEN DHS PURLINS AND 150 PFC,s AT THE TOP OF INTERTENANCY WALLS AT 3.6M CRS. UNO

LEGEND

ZONE FOR ROOF TOP PLANT TO BE PLACED MAXIMUM WEIGHT OF PLANT IN ANY 1 BAY = 325kg

MECHANICAL PLANT PLATFORM 9.0m x 4.2m

PROVIDE 114x4.8 CHS COLUMN STUB TO EACH CORNER OF PLANT PLATFORM
NOTE: ALL PLANT PLATFORM DETAILS TO BE CONFIRMED PRIOR TO FABRICATION

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REFERENCE DRGS
EXTERNAL ELEVATIONS

DRG No
B236-S2.700

Rev	Date	Revision Details	Drn	Ver	App
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
04	01.09.06	CONSENT	-	-	-
03	09.08.06	TENDER	-	-	-
02	19.07.06	PRELIMINARY	-	-	-
01	17.07.06	PRELIMINARY	-	-	-

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Client: AMP Capital INVESTORS

Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn GJD	Signed GJH	Date 09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SHB	Signed SHB	Date 09.08.06

Drawing Title: STRUCTURAL BLOCK H ROOF PLAN

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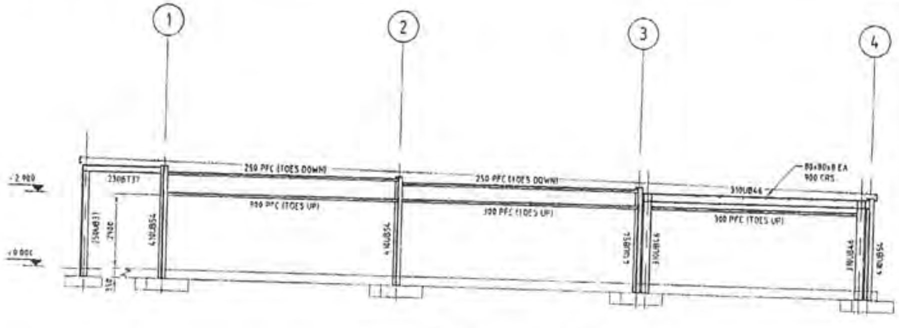
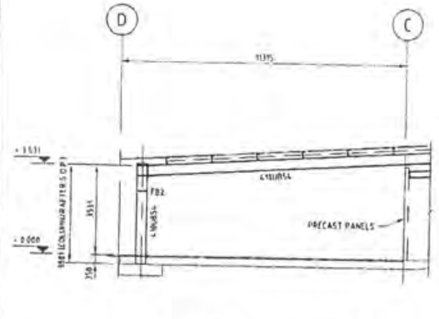
Project No: B236
Scale: 1:100 A1, 1:200 A3
Sheet Size: A1
Drawing No: B236-S1.701
Rev: 04

TCC172407

ELEVATION - GRIDLINE 1
SCALE 1:100



ELEVATION - GRIDLINE -D
SCALE 1:100



PART ELEVATION - GRIDLINE 4
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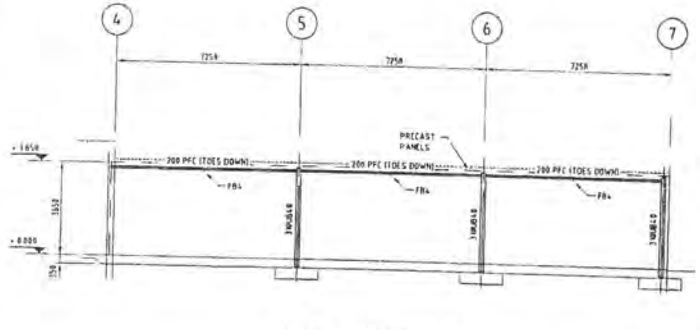
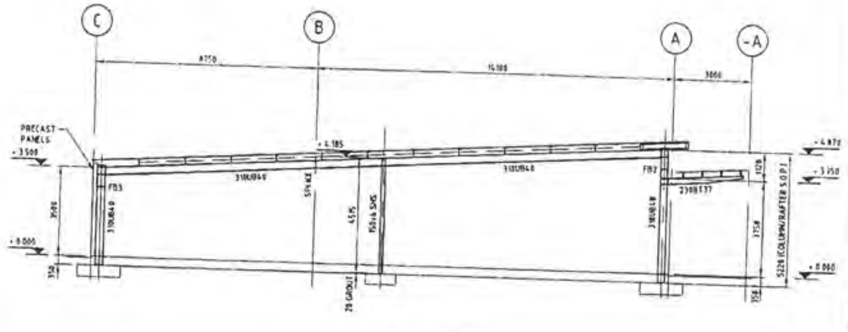


PART ELEVATION - GRIDLINE C
SCALE 1:100



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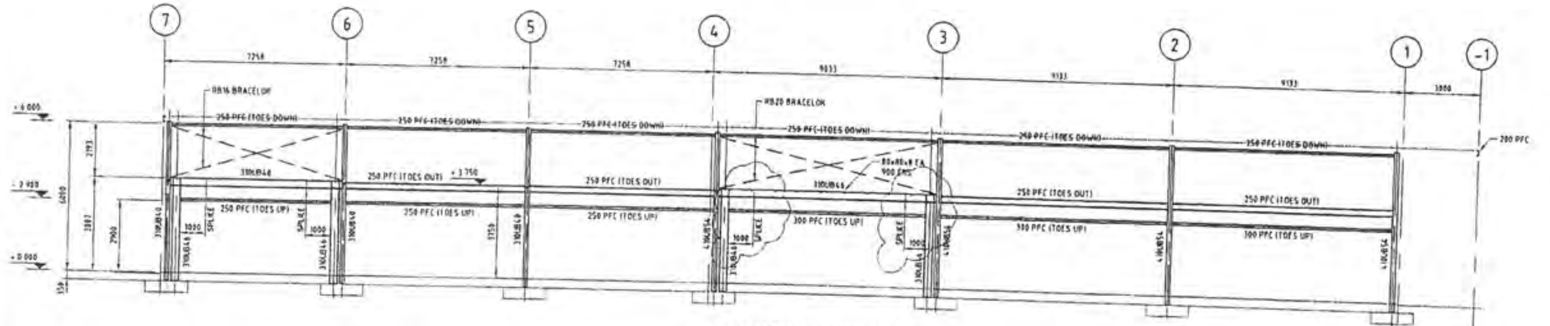

ELEVATION - GRIDLINE A
SCALE 1:100

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REFERENCE DRGS
ROOF PLAN

DRG No.
B236-S1.701

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02	01.09.06	CONSENT			
01	09.08.06	TENDER			

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Client: AMP capital INVESTORS

Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn GJD	Signed GJH	Date 09 08 06
Designed DPL	Signed DPL	Date 09 08 06
Verified PB	Signed -	Date -
Approved SMB	Signed SMB	Date 09 08 06

Drawing Title: STRUCTURAL BLOCK H EXTERNAL ELEVATIONS

CONSENT
~~NOT~~ FOR CONSTRUCTION

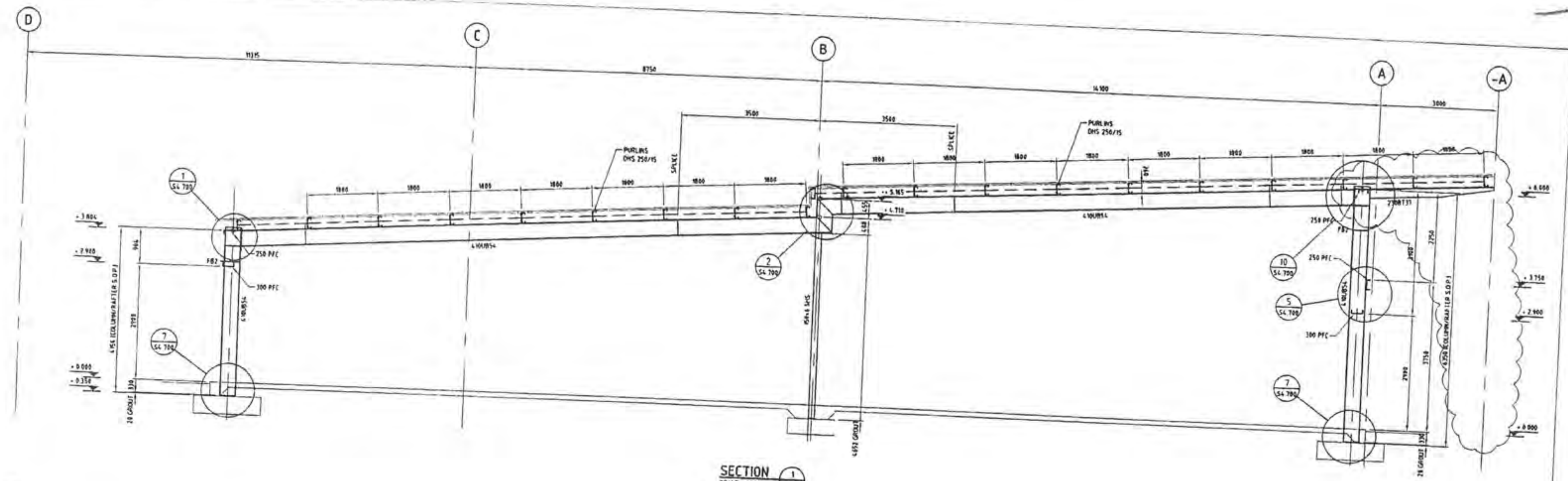
Project No: B236

Scale: 1:100 A1, 1:200 A3

Sheet Size: A1

Drawing No: B236-S2.700

Rev: 02



SECTION 1/S1.701
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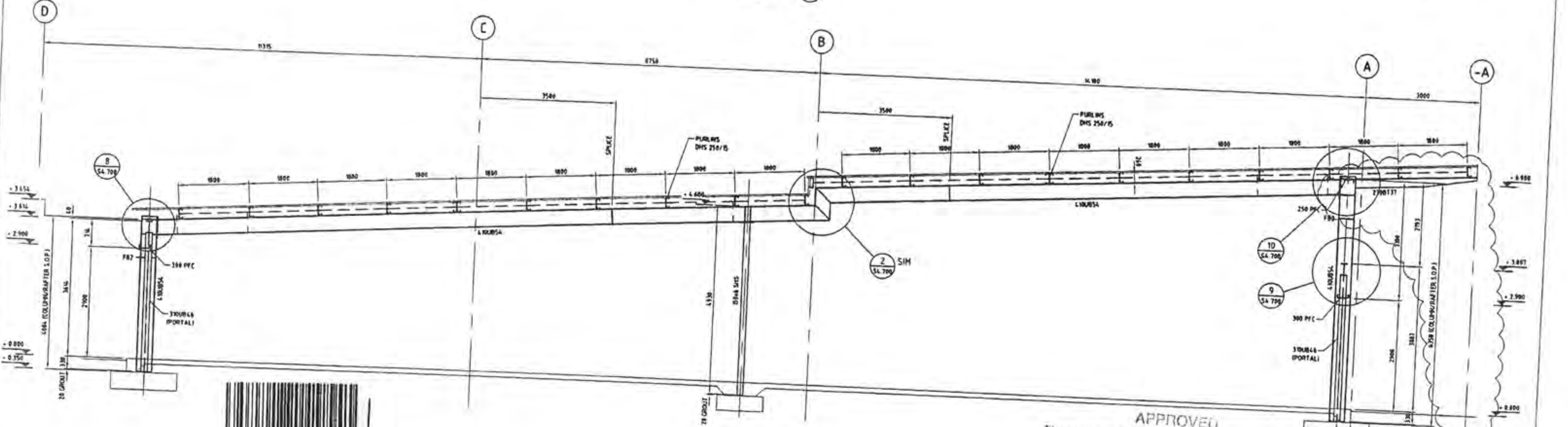

SECTION 2/S1.701
SCALE 1:50

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-	-	-	-	-	-
-	-	-	-	-	-
04	01.09.06	CONSENT	-	-	-
03	09.08.06	TENDER	-	-	-
02	19.07.06	PRELIMINARY	-	-	-
01	17.07.06	PRELIMINARY	-	-	-

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Project: BETHLEHEM SHOPPING CENTRE STAGE 3

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Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SMB	Signed SMB	Date 09.08.06

Drawing Title: STRUCTURAL BLOCK H SECTIONS

CONSENT
NOT FOR CONSTRUCTION

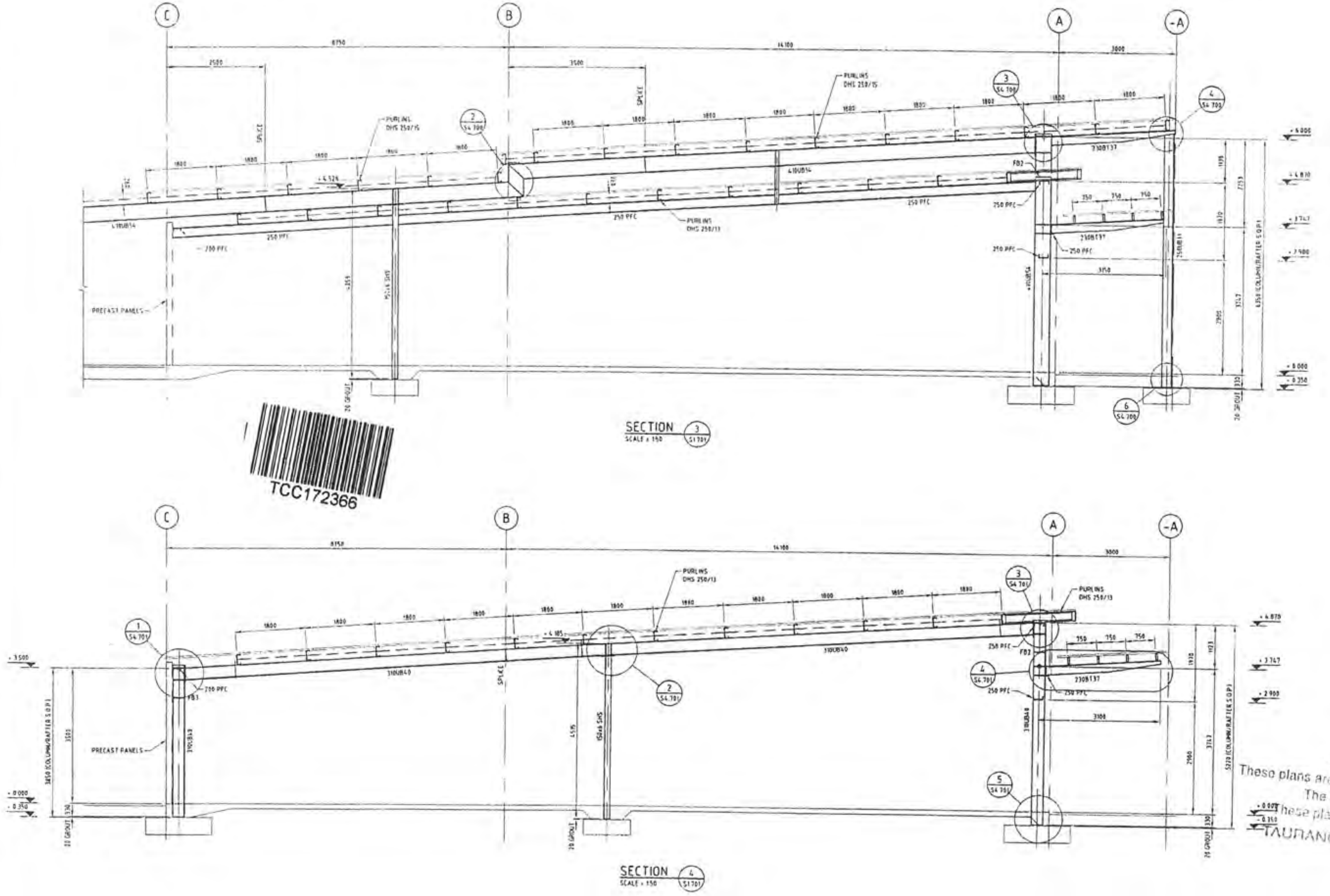
Project No. B236

Scale 1:50 A1, 1:100 A3

Sheet Size A1

Drawing No. B236-S2.701

Rev. 04



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04	01.09.06	CONSENT	-	-	-
03	09.08.06	TENDER	-	-	-
02	19.07.06	PRELIMINARY	-	-	-
01	17.07.06	PRELIMINARY	-	-	-

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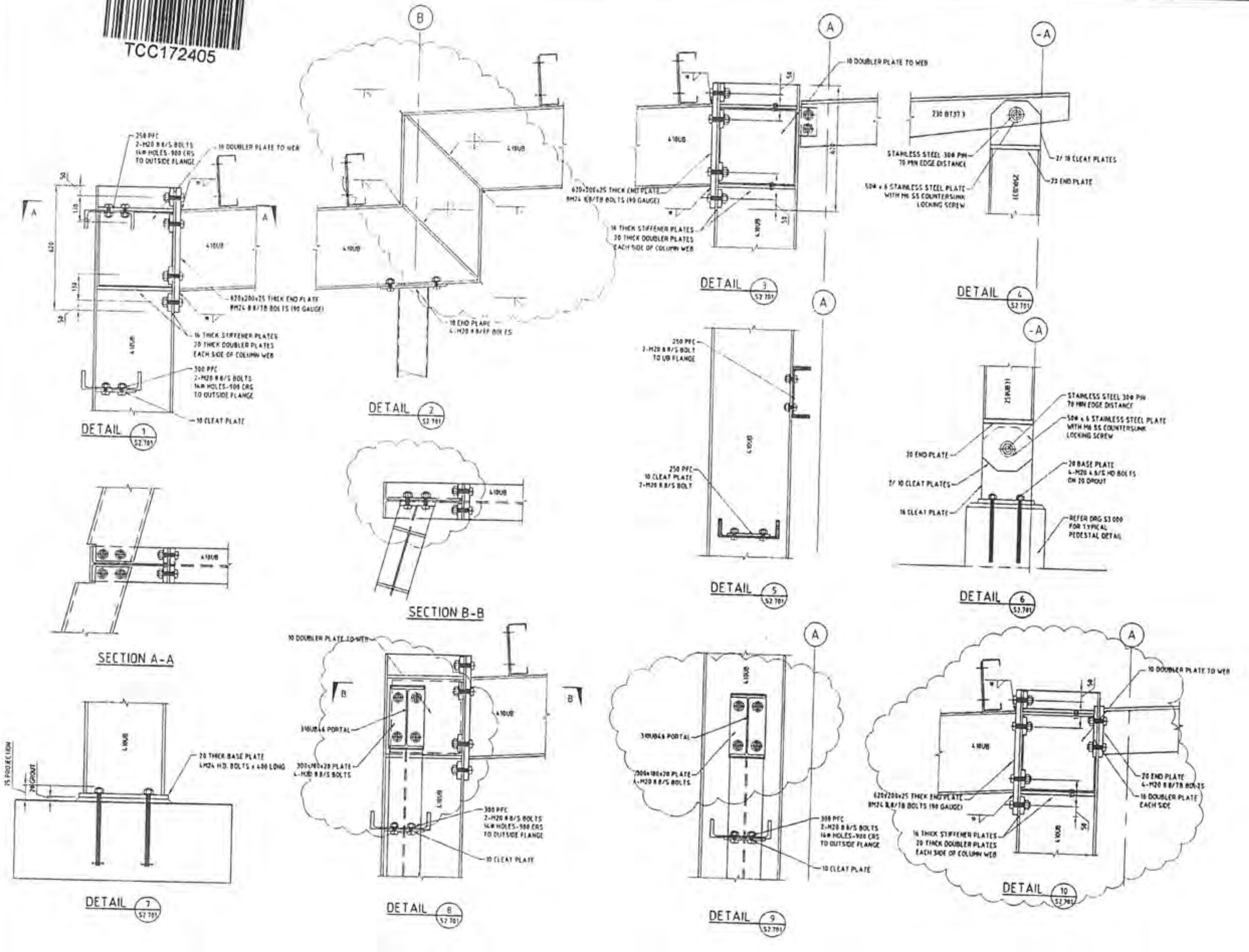
Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn GJD	Signed GJH	Date 09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SMB	Signed SMB	Date 09.08.06

Drawing Title: STRUCTURAL BLOCK H SECTIONS

CONSENT
~~NOT~~ FOR CONSTRUCTION

Project No: B236
Scale: 1:50 A1, 1:100 A3
Sheet Size: A1
Drawing No: B236-S2.702
Rev: 04



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Rev	Date	Revision Details	Drn	Ver	App
02	01.09.06	CONSENT			
01	09.08.06	TENDER			

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Project: BETHLEHEM SHOPPING CENTRE STAGE 3

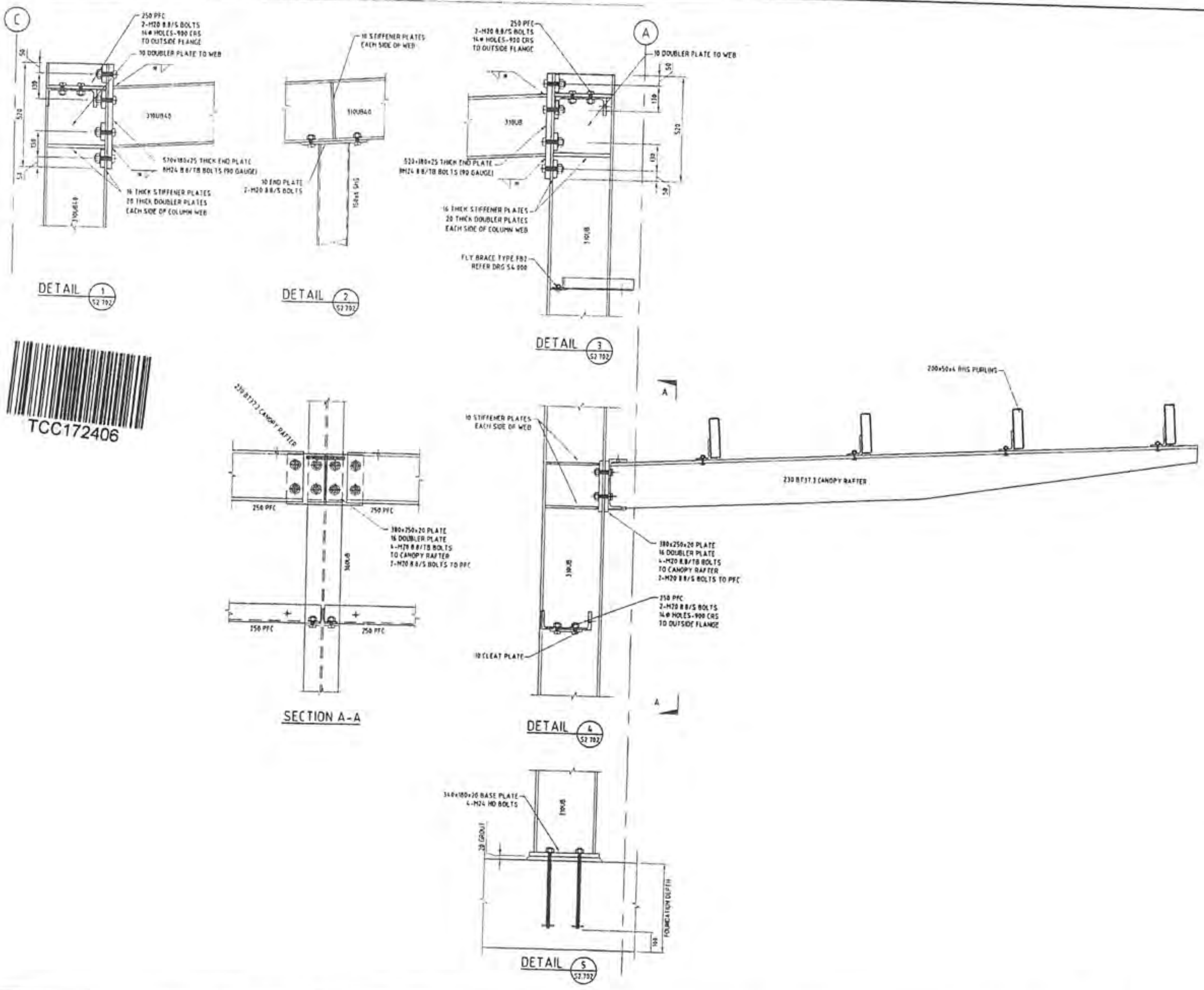
Drawn	Signed	Date
GJD	GJH	09.08.06
Designed DPL	Signed DPL	09.08.06
Verified PB	Signed -	-
Approved SMB	Signed SMB	09.08.06

Drawing Title: STRUCTURAL BLOCK H STEEL DETAILS SHEET 1

CONSENT
NOT FOR CONSTRUCTION

Project No: B236
Scale: 1:20 A3
Sheet Size: A1
Drawing No: B236-S4.700
Rev: 02

TCC172405



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Rev	Date	Revision Details	Drn	Ver	App
02	01.09.06	CONSENT	-	-	-
01	09.08.06	TENDER	-	-	-

Connell Wagner

Connell Wagner Limited Auckland Office
PO Box 9762 Newmarket, Auckland
139 Carlton Gore Road, Newmarket, New Zealand

Client: **AMP capital INVESTORS**

Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn GJD	Signed GJH	Date 09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SMB	Signed SMB	Date 09.08.06

Drawing Title: STRUCTURAL BLOCK H STEEL DETAILS SHEET 2

CONSENT
~~NOT FOR CONSTRUCTION~~

Project No. B236
Scale 1:10 A1 1:20 A3
Sheet Size A1
Drawing No. B236-S4.701
Rev 02

Description:

Building J was designed in mid to late 2006. This Block has an L shaped floor plate consisting of a long eastern rectangle that is parallel to Bethlehem Road, and another near rectangular section that projects from the western side of the long rectangle, toward the west. It is a single storey mono-pitch roof Block, with 2 different roof levels over the east section, both with the same pitch direction, and an orthogonal pitch direction over the west section. In this respect the building has complexity, but in all other respects it is very simple.

The building is located in almost the centre of the shopping complex but toward the eastern boundary and has its long axis orientated in a nominal north-south direction. It is a stand-alone building that is surrounded by car parking, road access, and landscaped areas. Block J is seismically isolated from all other buildings.

This building is a medium sized foot-print single storey, mono-pitched roof retail type building, with 6 bays in the north-south longitudinal direction in the east section, and either 1 or 2 bays in the west section. It has a single bay in the east-west transverse direction, in the east section, and 4 bays in the transverse direction in the west section. There are canopies on the north and east elevations, however these are relatively small and minor in construction.

Construction of the warehouse type envelope consists of long-run metal mono-pitch roof sheeting over cold rolled steel purlins, supported on structural steel portal frame rafters, which are located on each primary transverse frame grid in the east section, and every primary longitudinal grid in the west section. There is a step in the roof plane between the east and west sections because of the different pitch directions, and there is a step in the roof plane between the south half of the east section and the north half. Each of the primary frame portal rafters is supported by structural steel portal columns at the span ends, and there are internal 150 x 6mm SHS columns at approximately mid-span of the portal rafters in the west section and as such these columns do not significantly contribute to the lateral load resisting stiffness and strength. The structural steel columns land on the conventional reinforced concrete pad foundations that are below the concrete on-grade slab. The strip footings and pad foundations that have been recorded as being reinforced concrete, although there are no sizes or reinforcement details given in the Block J set of structural drawings, there is a detail of the column connection to the foundations pad, and from the sizes drawn on the foundation plan, we assess the foundation arrangement and proportions as robust.

The canopies are the cantilever type canopy that is more prevalent on the other Blocks and consist of T section steel rafters robustly fixed to the main portal columns with bolted connections, and RHS purlins. The canopies are small, and these connections provide adequate lateral stability.

The original architectural drawings call up that there is a combination of shop front glazing, and prefinished Zincalume, and plywood cladding, which represents a lightweight cladding system, on all elevations, except for part of the south elevation. There are large sections of 150mm thick full height precast concrete panels on the south elevation of both the east and west sections, and also on the west elevation of the east section. These panels serve as both cladding and bracing panels.

There are 2 full bays of full width diagonal structural steel rod and double purlin roof bracing in the transverse direction in the east section and a full bay of full width roof bracing in the longitudinal direction, in the west section. There are substantial parallel flange channel (PFC) eaves ties on virtually all of the elevations, and these appear to act as collector beams to distribute lateral loads from the roof plane bracing to the precast concrete panels loaded as in-plane shear walls.

The on-grade floor slab consists of a conventional mesh reinforced 125mm thick on-grade slab.

Seismic Load Resisting Structure:

The lateral load resisting system for the building envelope consists primarily of the diagonal structural steel roof bracing in conjunction with the precast reinforced concrete wall panels acting as in-plane loaded shear walls, in both the transverse and the longitudinal direction. The transverse lateral loads (in the east-west direction) in the east section are also sustained by the structural steel moment resisting portal frames, and the longitudinal loads (in the north-south direction) in the west section are sustained by the structural steel moment resisting portal frames.

It is most likely that the original design engineer apportioned the seismic loads in the building to the different structural elements in proportion to the tributary area. This is a common design technique and means that the various structural elements are designed to safely sustain the seismic loading attributed to them based on the vertical and horizontal area that they directly support. On this basis the precast concrete walls would be considered as capable of sustaining the seismic design actions generated by the self-weight of the wall and the attached roof structure, by in-plane bending as a shear wall as well as sustaining the seismic shears transferred from the roof bracing. Where there are steel portals not directly connected to the concrete wall panels by bolted connections, through eaves ties, or through the connection of roof plane bracing, then those portal frames would be designed to sustain the load apportioned to them. In all, this results in a series of primary and secondary lateral load resisting systems and the seismic actions would be shared between them, effectively generating significant redundancy in the lateral load resisting system.

In the drawings specifically for this Block, there are no details of the reinforcement in the precast concrete wall panels and likewise there are no specific details of the foundations (there are not even sizes in the key notes), or their connections to the wall panels, however, we have discovered sheets of 'Typical Details' which describe the structural elements missing off the Block specific drawings. Anyway, it is typical for the precast concrete wall panels to have been designed to sustain the post-fire lateral loads by cantilever action above the on-grade floor slab, and we see no reason why this would not be the case for this building. This feature represents another redundancy in the lateral load resisting system.

Whilst there is paucity in the detail obtained from information contained in the property file, specifically for this Block, however, when read with the 'Typical Details' for 'Stage 1' it is sufficiently comprehensive that it allows us to make a robust assessment of the likely seismic performance of the building at a level of certainty well above that generally associated with an ISA.

No severe structural weaknesses or critical structural weaknesses have been detected in this building structure.

There are no alterations or modifications to the building recorded in the documentation that would have any effect on the lateral load resisting system.

Seismic Assessment:

We have used the following parameters in the ISA assessment.

- Building era 2004 – 2011.
- Seismic Zone B, Tauranga.
- Class D soft soil.

- Natural period 0.4 seconds, (this is based on the structural steel diagonal roof bracing distributing the lateral loads to the full height precast reinforced concrete wall panels acting as in-plane loaded shear walls in both of the principal directions. There are structural steel moment resisting portal frames in both principal directions which suggests that the natural period could be somewhat longer for these elements. This is addressed in the Performance Achievement Ratio (PAR) section).
- Building Importance Level 2.
- Structural Ductility factor 1.25 (this is based on the roof plane diagonal bracing and the in-plane loaded reinforced concrete wall panels, and is conservative for the structural steel portal frames).
- Plan irregularity 1.0 (this value has been selected despite the asymmetric arrangement of the lateral load resisting walls in both directions. The reason is that because of the type of construction, the design philosophy for the building was no doubt that it would act as a series of discrete tributary loaded resisting structural elements. This is addressed in the PAR section).
- Vertical irregularity 1.0.
- Pounding Potential 1.0 (because the building has no neighbours).
- Site Characteristics 1.0 (because there is no recorded risk of liquefaction or site instability).
- Performance Achievement Ratio 1.2. (This is based on the regularity, pounding and site factors as detailed above but includes an enhancement 'other' factor of 1.2 which is less than the maximum of 2.5 available for buildings less than or equal to 3 storeys. This 'other factor' was selected because the natural period is arguably too short, and the ductility factor too low, for the moment resisting structural steel portal frames, which are in both principal directions. Also, the precast concrete wall panels have no doubt been designed and detailed to sustain the post fire lateral load whilst acting as face loaded cantilevers above the foundation and on-grade slab, and this represents another redundancy in the system. All of these factors have been nominally recognised by an 'other factor' of 1.2).

Seismic Rating and Grade:

The Baseline rating of 100% NBS is modified by the Performance Achievement Ratio of 1.2 resulting in a Seismic Rating of >100% NBS which makes this Block H building neither an Earthquake Risk nor Earthquake Prone.

Rating >100% NBS.
Grade A+.

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA} Page 1

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Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block J	Date:	19/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-1 Initial Evaluation Procedure Step 1

Step 1 - General Information

1.1 Photos (attach sufficient to describe building)

NOTE: THERE ARE MORE PHOTOS ON PAGE 1a ATTACHED

1.2 Sketches (plans etc, show items of interest)

NOTE: THERE ARE MORE SKETCHES ON PAGE 1a ATTACHED

1.3 List relevant features (Note: only 10 lines of text will print in this box. If further text required use Page 1a)

Refer to report details.

1.4 Note information sources Tick as appropriate

Visual Inspection of Exterior	☑	Specifications	☐
Visual Inspection of Interior	☐	Geotechnical Reports	☑
Drawings (note type)	☑	Other (list)	☐

Property File.

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block J	Date:	19/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-2 Initial Evaluation Procedure Step 2

Step 2 - Determination of *(%NBS)*$_b$

(Baseline *(%NBS)* for particular building - refer Section B5)

2.1 Determine nominal *(%NBS)* = *(%NBS)*$_{nom}$

	Longitudinal	Transverse
a) Building Strengthening Data		
Tick if building is known to have been strengthened in this direction	☐	☐
If strengthened, enter percentage of code the building has been strengthened to	N/A	N/A
b) Year of Design/Strengthening, Building Type and Seismic Zone		
Pre 1935	○	○
1935-1965	○	○
1965-1976	○	○
1976-1984	○	○
1984-1992	○	○
1992-2004	○	○
2004-2011	◉	◉
Post Aug 2011	○	○
Building Type:	Not applicable	Not applicable
Seismic Zone:	Not applicable	Not applicable
c) Soil Type		
From NZS1170.5:2004, Cl 3.1.3 :	D Soft Soil	D Soft Soil
From NZS4203:1992, Cl 4.6.2.2 : (for 1992 to 2004 and only if known)	Not applicable	Not applicable
d) Estimate Period, *T*		
Comment:		
h_n =	5	5 m
A_c =	1.00	1.00 m^2
Moment Resisting Concrete Frames: $T = \max(0.09h_n^{0.75}, 0.4)$	○	○
Moment Resisting Steel Frames: $T = \max(0.14h_n^{0.75}, 0.4)$	○	○
Eccentrically Braced Steel Frames: $T = \max(0.08h_n^{0.75}, 0.4)$	○	○
All Other Frame Structures: $T = \max(0.06h_n^{0.75}, 0.4)$	○	○
Concrete Shear Walls $T = \max(0.09h_n^{0.75}/A_c^{0.5}, 0.4)$	○	○
Masonry Shear Walls: $T \leq 0.4$sec	○	○
User Defined (input Period):	◉	◉
T:	0.40	0.40

Where h_n = height in metres from the base of the structure to the uppermost seismic weight or mass.

		Longitudinal	Transverse
e) Factor A:	Strengthening factor determined using result from (a) above (set to 1.0 if not strengthened)	Factor A: 1.00	1.00
f) Factor B:	Determined from NZSEE Guidelines Figure 3A.1 using results (a) to (e) above	Factor B: 1.00	1.00
g) Factor C:	For reinforced concrete buildings designed between 1976-84 Factor C = 1.2, otherwise take as 1.0.	Factor C: 1.00	1.00
h) Factor D:	For buildings designed prior to 1935 Factor D = 0.8 except for Wellington and Napier (1931-1935) where Factor D may be taken as 1.0, otherwise take as 1.0.	Factor D: 1.00	1.00
***(%NBS)*$_{nom}$ = AxBxCxD**		*(%NBS)*$_{nom}$ 100%	100%

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block J	Date:	19/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-2 Initial Evaluation Procedure Step 2 continued

2.2 Near Fault Scaling Factor, Factor E

If $T \leq 1.5$sec, Factor E = 1

			Longitudinal	Transverse
a) Near Fault Factor, *N(T,D)* (from NZS1170.5:2004, Cl 3.1.6)		N(T,D):	1	1
b) Factor E	= 1/N(T,D)	Factor E:	1.00	1.00

2.3 Hazard Scaling Factor, Factor F

a) Hazard Factor, *Z*, for site

Location: Tauranga — Refer right for user-defined locations

Z =	0.2	(from NZS1170.5:2004, Table 3.3)
Z_{1992} =	0.85	(NZS4203:1992 Zone Factor from accompanying Figure 3.5(b))
Z_{2004} =	0.2	(from NZS1170.5:2004, Table 3.3)

b) Factor F

For pre 1992	=	$1/Z$
For 1992-2011	=	Z_{1992}/Z
For post 2011	=	Z_{2004}/Z

	Longitudinal	Transverse
Factor F:	1.00	1.00

2.4 Return Period Scaling Factor, Factor G

			Longitudinal	Transverse
a) Design Importance Level, I (Set to 1 if not known. For buildings designed prior to 1965 and known to be designed as a public building set to 1.25. For buildings designed 1965-1976 and known to be designed as a public building set to 1.33 for Zone A or 1.2 for Zone B. For 1976-1984 set I value.)		I =	1	1
b) Design Risk Factor, R_o (set to 1.0 if other than 1976-2004, or not known)		R_o =	1	1
c) Return Period Factor, R (from NZS1170.0:2004 Building Importance Level)	*Choose Importance Level*		○1 ◉2 ○3 ○4	○1 ◉2 ○3 ○4
		R =	1.0	1.0
d) Factor G	= IR_o/R	Factor G:	1.00	1.00

2.5 Ductility Scaling Factor, Factor H

a) Available Displacement Ductility Within Existing Structure

Comment:

		Longitudinal	Transverse
	μ =	1.25	1.25

b) Factor H

		Longitudinal k_μ	Transverse k_μ
For pre 1976 (maximum of 2)	=	1.14	1.14
For 1976 onwards	=	1	1
	Factor H:	1.00	1.00

(where k_μ is NZS1170.5:2004 Inelastic Spectrum Scaling Factor, from accompanying Table 3.3)

2.6 Structural Performance Scaling Factor, Factor I

a) Structural Performance Factor, S_p

(from accompanying Figure 3.4)

		Longitudinal	Transverse
Tick if light timber-framed construction in this direction		☐	☐
	S_p =	0.93	0.93
b) Structural Performance Scaling Factor = $1/S_p$	Factor I:	1.00	1.00

Note Factor B values for 1992 to 2004 have been multiplied by 0.67 to account for Sp in this period

	Longitudinal	Transverse
2.7 Baseline *%NBS* for Building, $(\%NBS)_b$ (equals $(\%NBS)_{nom} \times E \times F \times G \times H \times I$)	100%	100%

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

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Table IEP-3 Initial Evaluation Procedure Step 3

Step 3 - Assessment of Performance Achievement Ratio (PAR)
(Refer Appendix B - Section B3.2)

a) Longitudinal Direction

potential CSWs | **Effect on Structural Performance** (Choose a value - Do not interpolate) | **Factors**

3.1 Plan Irregularity

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* — **Factor A** 1.0

Comment

3.2 Vertical Irregularity

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* — **Factor B** 1.0

Comment

3.3 Short Columns

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* — **Factor C** 1.0

Comment

3.4 Pounding Potential

(Estimate D1 and D2 and set D = the lower of the two, or 1.0 if no potential for pounding, or consequences are considered to be minimal)

a) Factor D1: - Pounding Effect

> *Note:*
> ***Values given assume the building has a frame structure. For stiff buildings (eg shear walls), the effect of pounding may be reduced by taking the coefficient to the right of the value applicable to frame buildings.***

Factor D1 For Longitudinal Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 1	○ 1	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment

b) Factor D2: - Height Difference Effect

Factor D2 For Longitudinal Direction: 1.0

Table for Selection of Factor D2	Severe	Significant	Insignificant
	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	○ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	◉ 1

Comment

Factor D 1.0

3.5 Site Characteristics - *Stability, landslide threat, liquefaction etc as it affects the structural performance from a life-safety perspective*

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* — **Factor E** 1.0

Comment

3.6 Other Factors - *for allowance of all other relevant characterstics of the building*

For ≤ 3 storeys - Maximum value 2.5 otherwise - Maximum value 1.5. No minimum.

Factor F 1.2

Record rationale for choice of Factor F:

Refer to report

PAR

3.7 Performance Achievement Ratio (PAR)
(equals **A x B x C x D x E x F**)

Longitudinal **1.20**

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA} Page 5

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block J	Date:	19/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-3 Initial Evaluation Procedure Step 3

Step 3 - Assessment of Performance Achievement Ratio (PAR)

(Refer Appendix B - Section B3.2)

b) Transverse Direction

Factors

potential CSWs — **Effect on Structural Performance** **(Choose a value - Do not interpolate)**

3.1 Plan Irregularity

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor A** 1.0

Comment

3.2 Vertical Irregularity

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor B** 1.0

Comment

3.3 Short Columns

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor C** 1.0

Comment

3.4 Pounding Potential

(Estimate D1 and D2 and set D = the lower of the two, or 1.0 if no potential for pounding, or consequences are considered to be minimal)

a) Factor D1: - Pounding Effect

Note:
Values given assume the building has a frame structure. For stiff buildings (eg shear walls), the effect of pounding may be reduced by taking the coefficient to the right of the value applicable to frame buildings.

Factor D1 For Transverse Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 1	○ 1	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment

b) Factor D2: - Height Difference Effect

Factor D2 For Transverse Direction: 1.0

Table for Selection of Factor D2	Severe	Significant	Insignificant
	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	○ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	◉ 1

Comment

Factor D 1.0

3.5 Site Characteristics - *Stability, landslide threat, liquefaction etc as it affects the structural performance from a life-safety perspective*

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor E** 1.0

Comment

3.6 Other Factors - *for allowance of all other relevant characterstics of the building*

For ≤ 3 storeys - Maximum value 2.5 otherwise - Maximum value 1.5. No minimum.

Factor F 1.20

Record rationale for choice of Factor F:

Refer to report

PAR

3.7 Performance Achievement Ratio (PAR)
(equals **A x B x C x D x E x F**)

Transverse **1.20**

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block J	Date:	19/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-4 Initial Evaluation Procedure Steps 4, 5, 6 and 7

Step 4 - Percentage of New Building Standard *(%NBS)*

		Longitudinal	Transverse
4.1	**Assessed Baseline *%NBS (%NBS)*$_b$** (from Table IEP - 1)	100%	100%
4.2	**Performance Achievement Ratio (PAR)** (from Table IEP - 2)	1.20	1.20
4.3	**PAR x Baseline *(%NBS)*$_b$**	>100%	>100%
4.4	**Percentage New Building Standard *(%NBS)* - Seismic Rating** (Use lower of two values from Step 4.3)		>100%

Step 5 - Is *%NBS* < 34? NO

Step 6 - Potentially Earthquake Risk (is *%NBS* < 67)? NO

Step 7 - Provisional Grading for Seismic Risk based on IEP

Seismic Grade A+

Additional Comments (items of note affecting IEP based seismic rating)

Relationship between Grade and *%NBS*:

Grade:	A+	A	B	C	D	E
%NBS:	> 100	100 to 80	79 to 67	66 to 34	< 34 to 20	< 20

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block J	Date:	19/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-5 Initial Evaluation Procedure Step 8

Step 8 - Identification of potential Severe Structural Weaknesses (SSWs) that could result in significant risk to a significant number of occupants

8.1	**Number of storeys above ground level**	1
8.2	**Presence of heavy concrete floors and/or concrete roof? (Y/N)**	N

Potential Severe Structural Weaknesses (SSWs):

Note: Options that are greyed out are not applicable and need not be considered.

Occupancy not considered to be significant - no further consideration required

Risk not considered to be significant - no further consideration required

The following potential Severe Structural Weaknesses (SSWs) have been identified in the building that could result in significant risk to a significant number of occupants:

1. None identified

2. Weak or soft storey (except top storey)

3. Brittle columns and/or beam-column joints the deformations of which are not constrained by other structural elements

4. Flat slab buildings with lateral capacity reliant on low ductility slab-to-column connections

5. No identifiable connection between primary structure and diaphragms

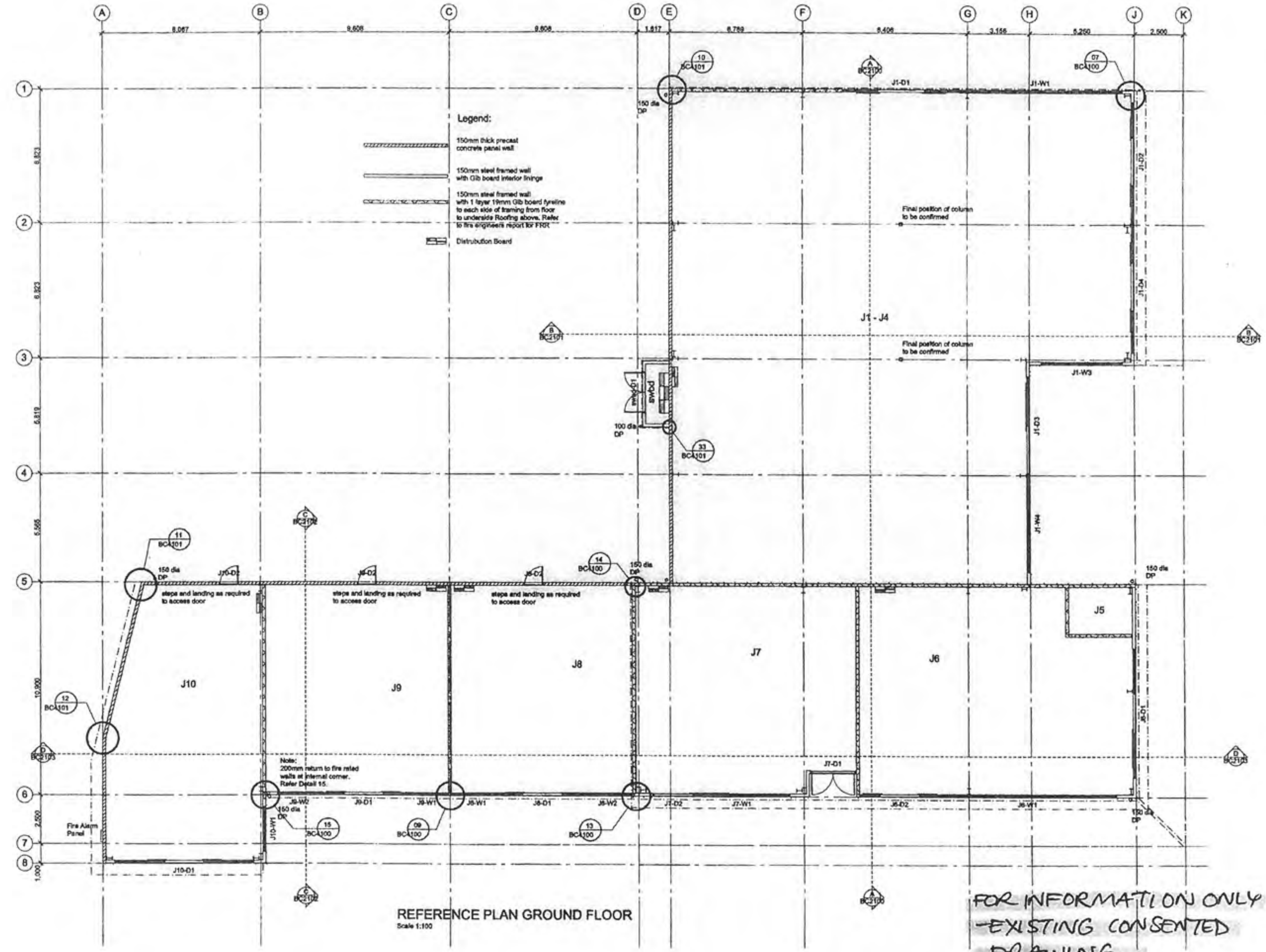
6. Ledge and gap stairs

IEP Assessment Confirmed by S. R. Mitchell Signature

S R Mitchell Name

70562 CPEng. No

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*



REFERENCE PLAN GROUND FLOOR
Scale 1:100

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ISSUE	REVISION	BY	DATE
A	Building Consent	MG	01.09.06

IGNITE
IGNITE Architects Limited
1 Watt Street, Parnell, Auckland, New Zealand
PO BOX 37 853 Parnell, Auckland
T: +64 9 356 4791, F: +64 9 356 3606
E: office@ignitearchitects.com
www.ignitearchitects.com

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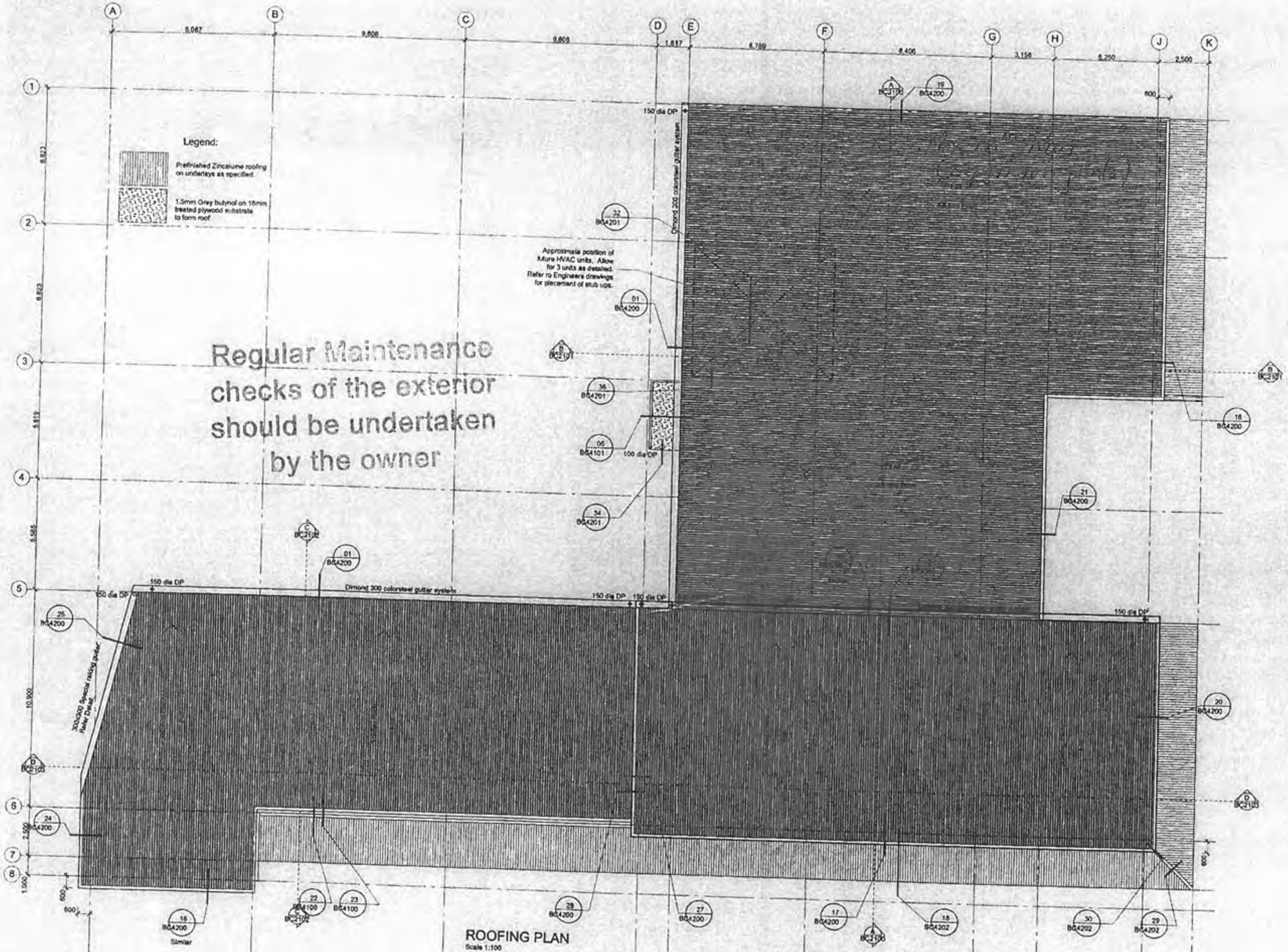
PROJECT
BLOCK J
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE
REFERENCE FLOOR PLAN

DATE		SCALE
01 SEPTEMBER 2006		
DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19

DRAWING NUMBER
BC1300 (A)

TCC172325



Regular Maintenance checks of the exterior should be undertaken by the owner

ROOFING PLAN
Scale 1:100

GENERAL NOTES

1. DO NOT SCALE OFF DRAWING.
2. CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS ON SITE.
3. ARCHITECTS TO BE NOTIFIED OF ANY VARIATION BETWEEN SITE DIMENSIONS AND THOSE ON PLANS.
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ISSUE	REVISION	BY	DATE
A	Building Consent	MO	01.09.06

IGNITE
IGNITE Architects Limited
1 Watt Street, Parnell, Auckland, New Zealand
PO BOX 37 853 Parnell, Auckland
T: +64 9 356 4791, F: +64 9 356 3606
E: office@ignitearchitects.com
www.ignitearchitects.com

CLIENT
AMP capital INVESTORS

PROJECT
BLOCK J
BETHLEHEM
SHOPPING CENTRE

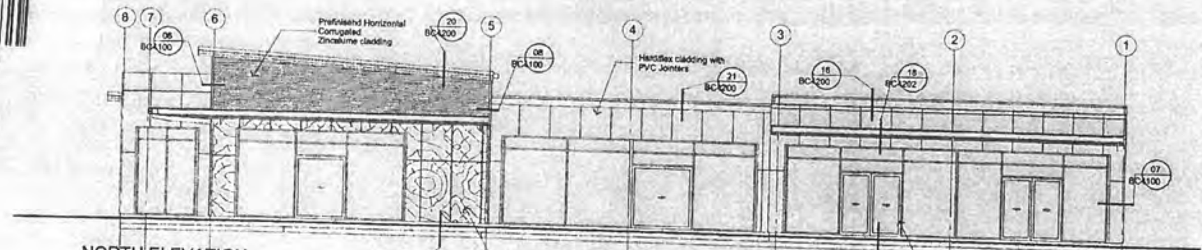
DRAWING TITLE
ROOF PLAN

DATE	SCALE
01 SEPTEMBER 2006	

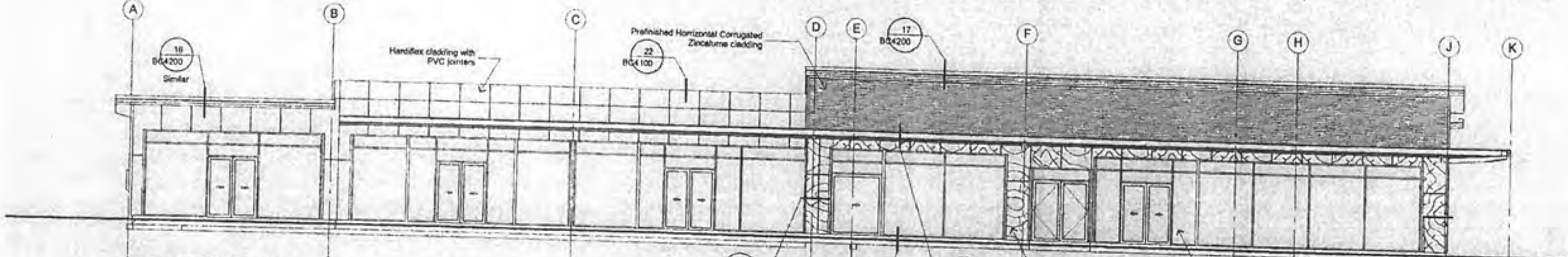
DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19

DRAWING NUMBER
BC1700 (A)

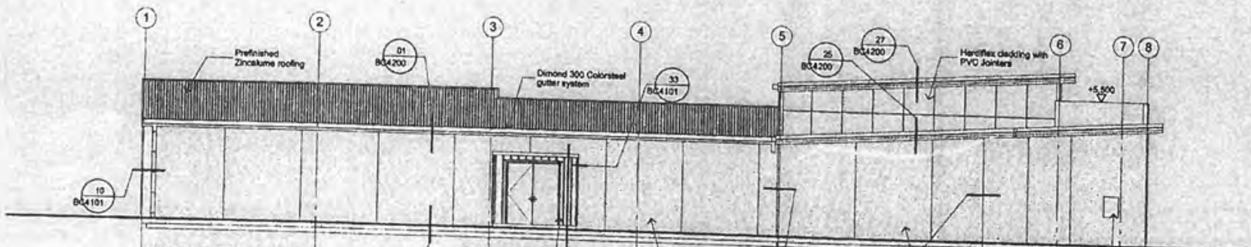
TCC172326



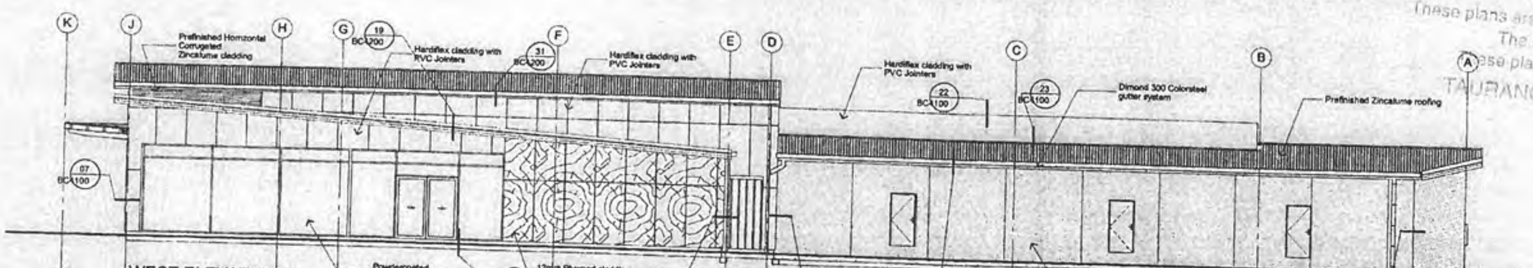
NORTH ELEVATION
Scale 1:100



EAST ELEVATION
Scale 1:100



SOUTH ELEVATION
Scale 1:100



WEST ELEVATION
Scale 1:100

GENERAL NOTES

Regular Maintenance checks of the exterior should be undertaken by the owner

TAURANGA CITY COUNCIL
PROJECT INFORMATION MEMORANDA
23169.
Refer to accompanying documentation

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A	Building Consent	MG	01.09.06
ISSUE	REVISION	BY	DATE

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IGNITE Architects Limited
1 West Street, Parnell, Auckland, New Zealand
PO BOX 37 853 Parnell, Auckland
T: +64 9 354 4791, F: +64 9 356 3606
E: office@ignitearchitects.com
www.ignitearchitects.com

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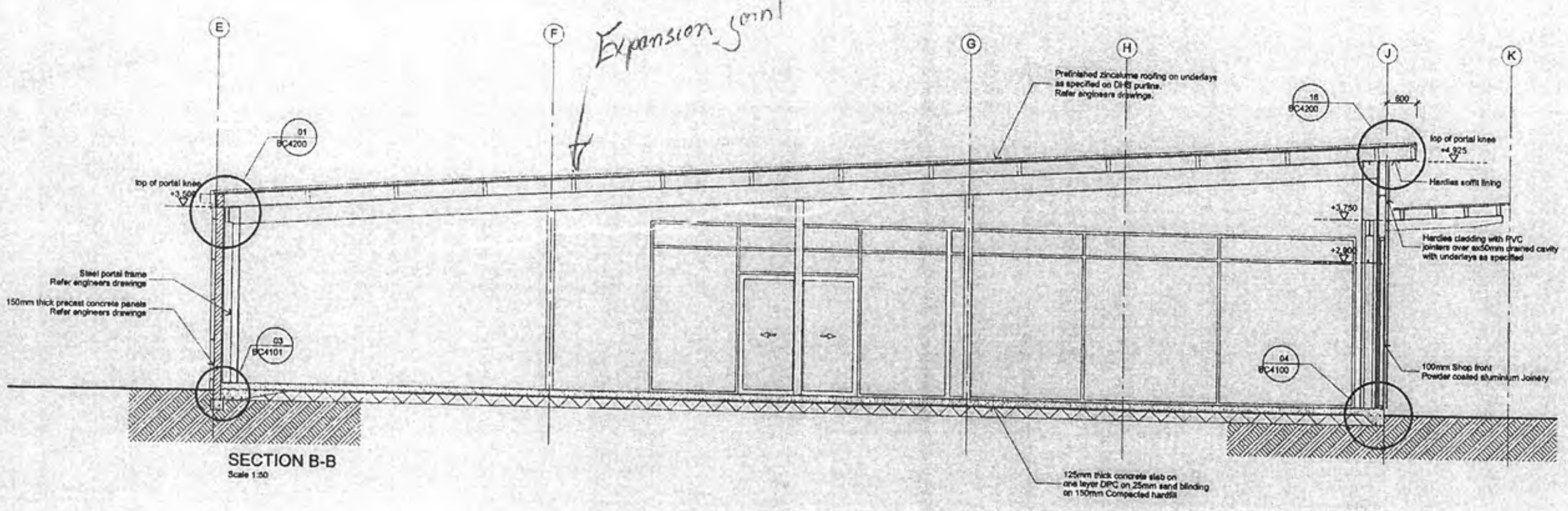
PROJECT
BLOCK J
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE
ELEVATIONS

DATE: 01 SEPTEMBER 2006 | SCALE
DRAWN: MG | CHECK: CMcN | PROJECT NO.: 457-05-19
DRAWING NUMBER: BC2000 (A)

TCC172330

All work to satisfy the requirements of N.Z.B.C. including Clause E2 (External Moisture)



SECTION B-B
Scale 1:50

GENERAL NOTES
1. DO NOT SCALE OFF DRAWING.
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IGNITE Architects Limited
1 Wist Street, Parnell, Auckland, New Zealand
PO BOX 37 853 Parnell, Auckland
T: +64 9 356 4791, F: +64 9 356 3606
E: office@ignitearchitects.com
www.ignitearchitects.com

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PROJECT
BLOCK J
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE
SECTIONS

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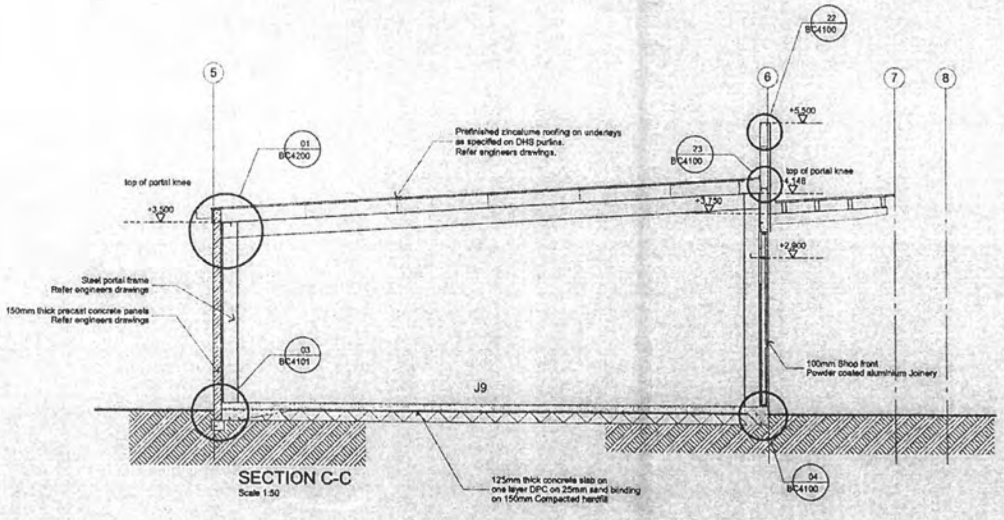
DATE	SCALE
01 SEPTEMBER 2006	

DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19

DRAWING NUMBER
BC2101 (A)



SECTION C-C
Scale 1:50

TCC172331

GENERAL NOTES

1. DO NOT SCALE OFF DRAWING.

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A	Building Consent	MG	01.09.06

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IGNITE Architects Limited

1 Watt Street, Parnell, Auckland, New Zealand
PO BOX 37 853 Parnell, Auckland
T: +64 9 356 4791, F: +64 9 356 3606
E: office@ignitearchitects.com
www.ignitearchitects.com

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PROJECT

BLOCK J
BETHLEHEM
SHOPPING CENTRE

DRAWING TITLE

SECTIONS

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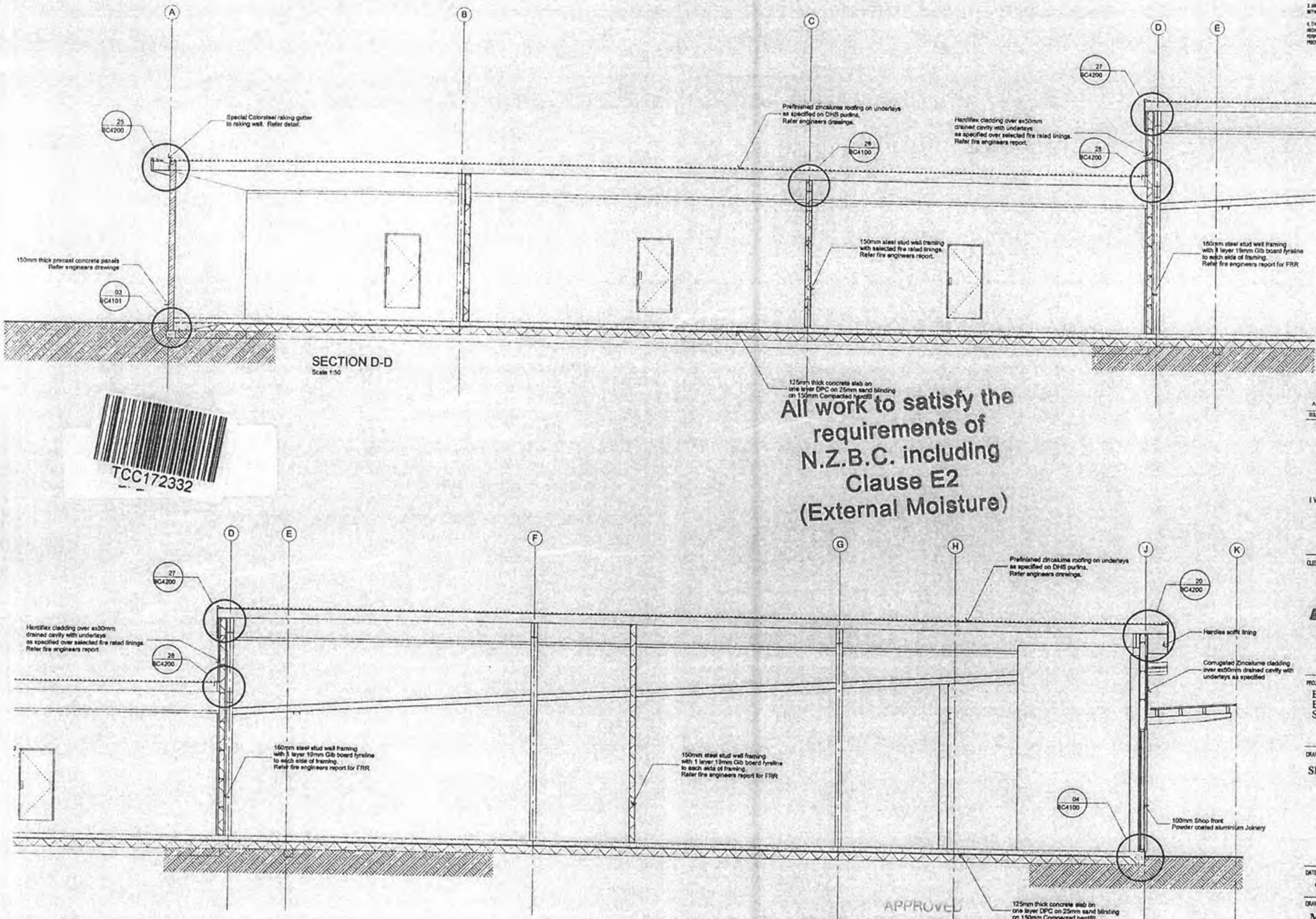
DATE	SCALE
01 SEPTEMBER 2006	

DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19

DRAWING NUMBER
BC2102 (A)



TCC172332

All work to satisfy the requirements of N.Z.B.C. including Clause E2 (External Moisture)

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GENERAL NOTES

ISSUE	REVISION	BY	DATE
A	Building Consent	MG	01.09.06

IGNITE
IGNITE Architects Limited
1 Watt Street, Parnell, Auckland, New Zealand
PO BOX 37 853 Parnell, Auckland
T: +64 9 356 4791, F: +64 9 356 3606
E: office@ignitearchitects.com
www.ignitearchitects.com

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PROJECT
BLOCK J
BETHLEHEM
SHOPPING CENTRE

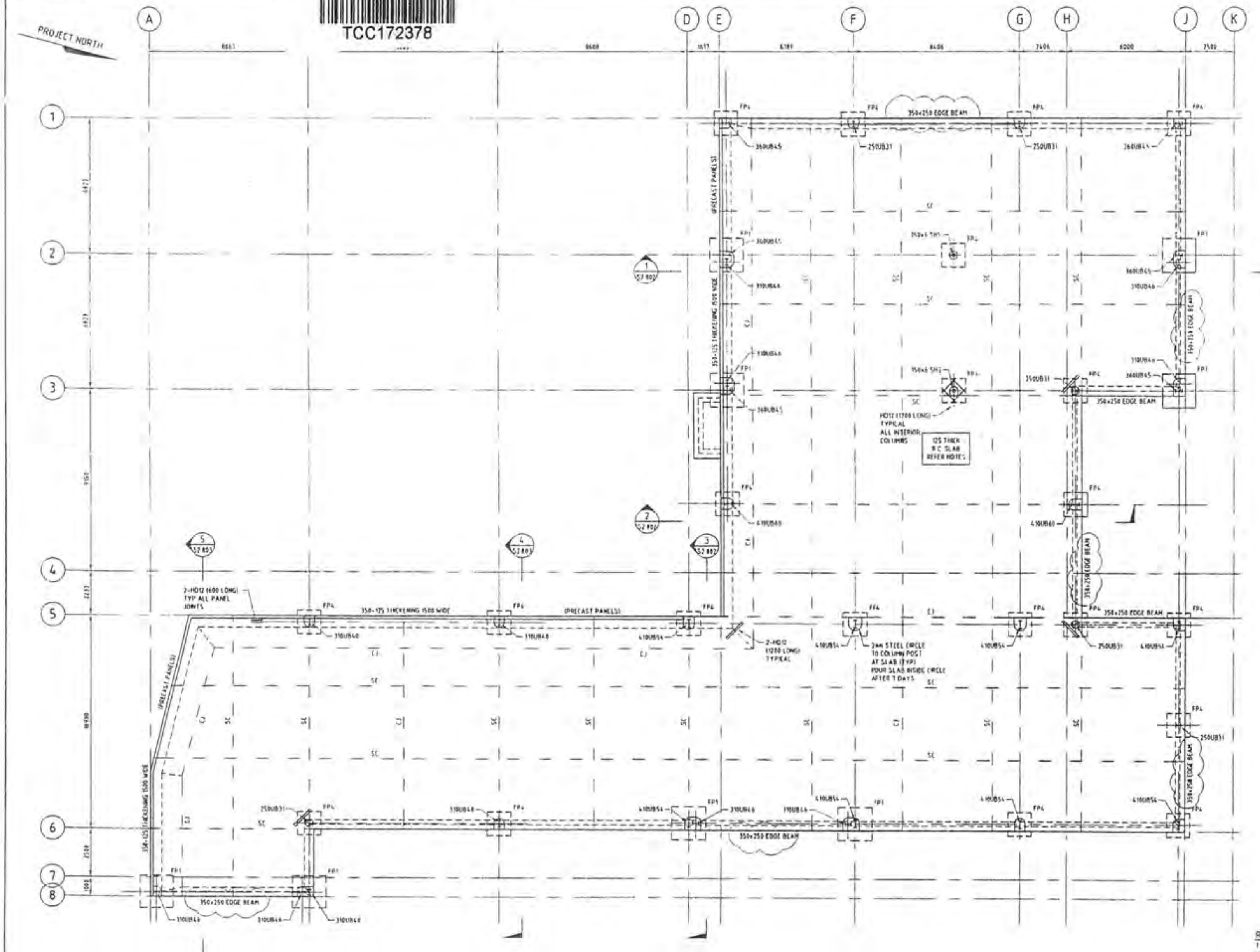
DRAWING TITLE
SECTIONS

DATE	SCALE
01 SEPTEMBER 2006	

DRAWN	CHECK	PROJECT NO.
MG	CMcM	457-05-19

DRAWING NUMBER
BC2103 Ⓐ

TCC172378



GROUND FLOOR PLAN

SCALE 1:100

NOTES

1. REFER TO ARCHITECTS FOR FLOOR LEVELS AND FALLS
2. BUILDING PLATFORM FOR 125 SLAB ON GRADE TO CONSIST OF 1 LAYER OF DPC ON 25mm SAND BLINDING ON 150mm COMPACTED HARDFILL
3. PROVIDE 665 MESH TO SLAB ON GRADE U N O
4. REFER TO GEOTECHNICAL REPORT FOR FOUNDATION BEARING PRESSURES. ALL FOUNDATIONS TO BE INSPECTED BY AN ENGINEER PRIOR TO POURING OF THE FOUNDATION
5. REFER TO HYDRAULICS DRAWINGS FOR IN GROUND SEVICES UNDER THE 125 SLAB ON GRADE
6. REFER TO SPECIFICATION FOR CONCRETE COMPRESSIVE STRENGTHS
7. REFER TO ELECTRICAL SPECIFICATION FOR EARTHING REQUIREMENTS.

LEGEND

CJ-CONSTRUCTION JOINT

SC-SAWCUT

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TAURANGA CITY COUNCIL

REFERENCE DRGS	DRG No
TYPICAL CONCRETE DETAILS FOUNDATIONS AND PRECAST PANELS	B236-S3.600
TYPICAL CONCRETE DETAILS	B236-S3.601

Rev	Date	Revision Details	Drn	Ver	App
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
04	01.09.06	CONSENT	-	-	-
03	9.08.06	TENDER	-	-	-
02	19.07.06	PRELIMINARY	-	-	-
01	17.07.06	PRELIMINARY	-	-	-

Connell Wagner

Connell Wagner Limited Auckland Office
PO Box 9762 Newmarket, Auckland
119 Carlton Gore Road Newmarket, New Zealand

Telephone +64 9 520-6019
Facsimile +64 9 524-1815
Email akl@conwag.com

Client: AMP capital INVESTORS

Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn	Signed	Date
GJD	GJH	09 08 06
Designed DPL	DPL	09 08 06
Verified PB	-	.
Approved SMB	SMB	09 08 06

Drawing Title: STRUCTURAL BLOCK J GROUND FLOOR PLAN

CONSENT

~~NOT~~ FOR CONSTRUCTION

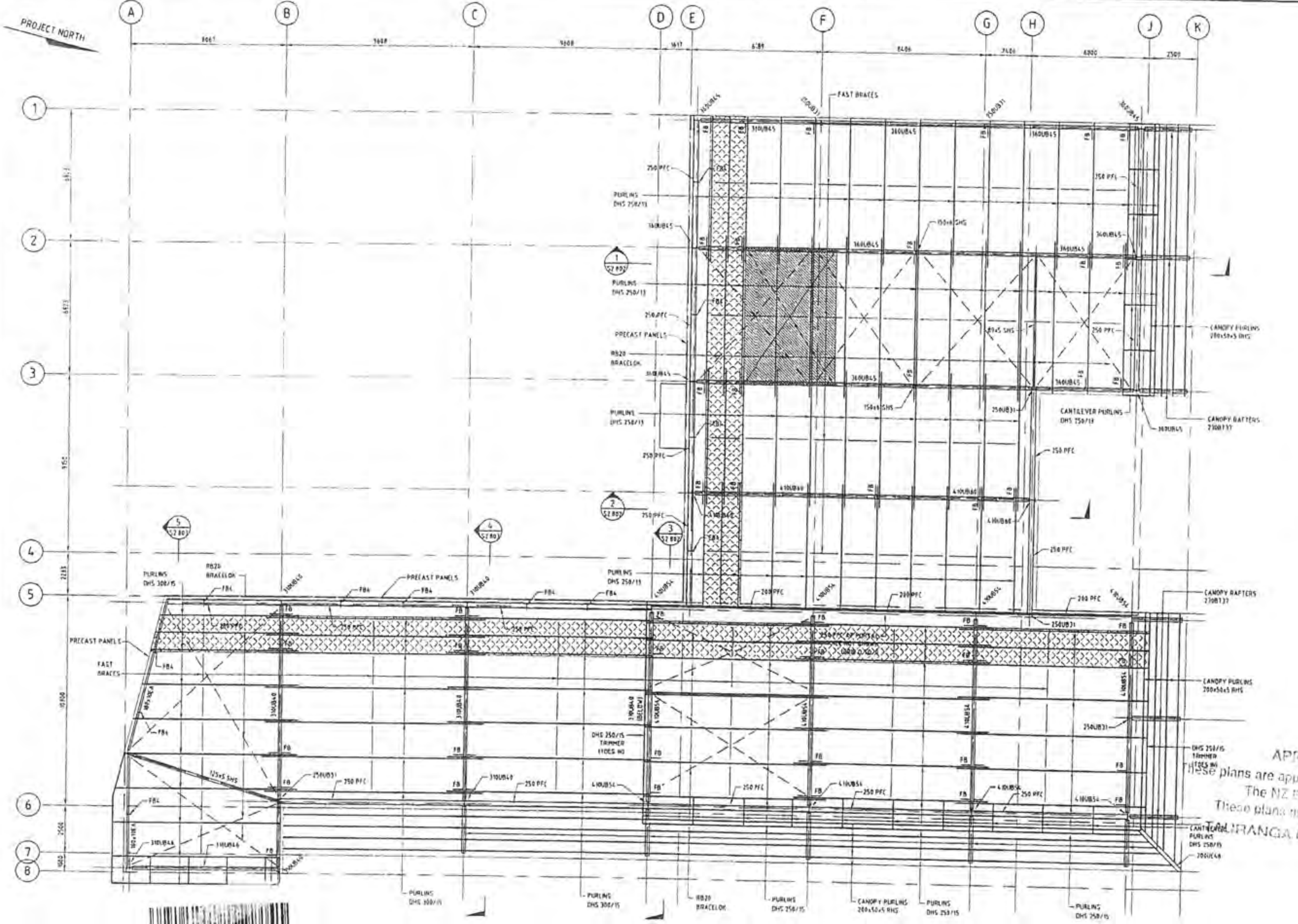
Project No. B236

Scale 1:100 A1, 1:200 A3

Sheet Size A1

Drawing No B236-S1.800

Rev 04



ROOF PLAN

SCALE 1:100

NOTES

1. PROVIDE 1 ROW OF FAST BRACE BRACING TO EACH PURLIN BAY UNO
2. LAP PURLINS (WHERE SHOWN) 0.1x LENGTH OF ADJACENT. REFER TO MANUFACTURERS SPECIFICATION FOR DETAIL
3. PROVIDE HANGERS BETWEEN DHS PURLINS AND 150 PFC's AT THE TOP OF INTERTENANCY WALLS AT 3.6M CRS. UNO

LEGEND

ZONE FOR ROOF TOP PLANT TO BE PLACED. MAXIMUM WEIGHT OF PLANT IN ANY 1 BAY = 325kg.

MECHANICAL PLANT PLATFORM 6.8m x 4.8m

PROVIDE 114x4.8 CHS COLUMN STUB TO EACH CORNER OF PLANT PLATFORM
NOTE: ALL PLANT PLATFORM DETAILS TO BE CONFIRMED PRIOR TO FABRICATION

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REFERENCE DRGS	DRG. No.
ELEVATIONS	B236-S2.800
ELEVATIONS	B236-S2.801
SECTIONS	B236-S2.802
SECTIONS	B236-S2.803

LF_299278B

Rev	Date	Revision Details	Drn	Ver	App
04	01.09.06	CONSENT	-	-	-
03	09.08.06	TENDER	-	-	-
02	19.07.06	PRELIMINARY	-	-	-
01	17.07.06	PRELIMINARY	-	-	-

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Connell Wagner Limited Auckland Office
PO Box 9762 Newmarket, Auckland
138 Carlton Gore Road Newmarket New Zealand

Telephone +64 9 520 6019
Facsimile +64 9 524 7815
Email akl@conwag.com

Client: AMP capital INVESTORS

Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn	Signed	Date
GJD	GJH	09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SMB	Signed SMB	Date 09.08.06

Drawing Title: STRUCTURAL BLOCK J ROOF PLAN

CONSENT
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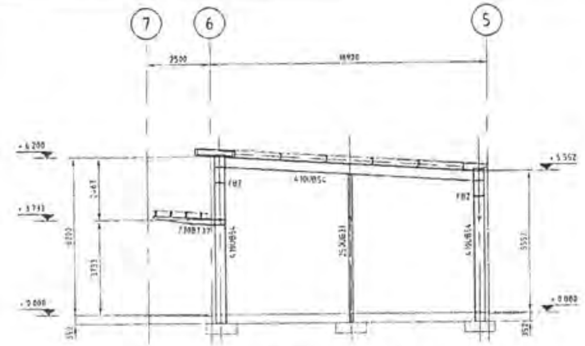
Project No: B236

Scale: 1:100 A1, 1:200 A3

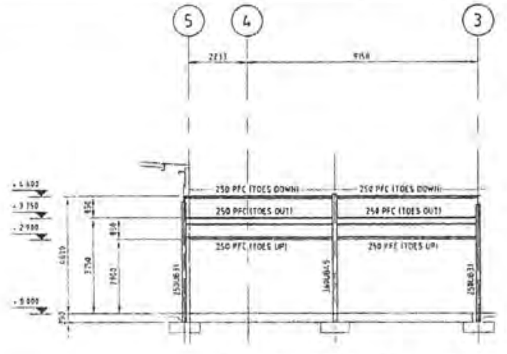
Sheet Size: A1

Drawing No: B236-S1.801

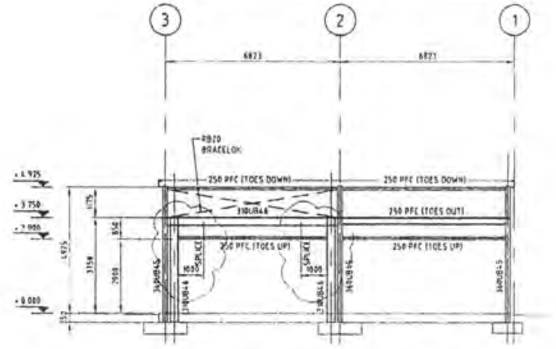
Rev: 04



PART ELEVATION - GRIDLINE J
SCALE 1:100

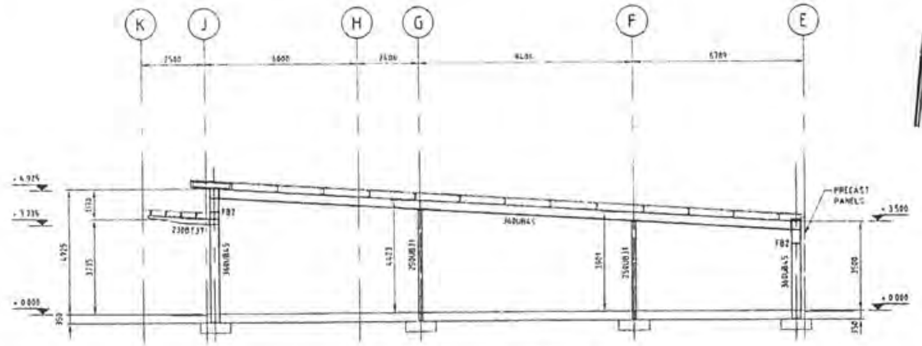


PART ELEVATION - GRIDLINE H
SCALE 1:100

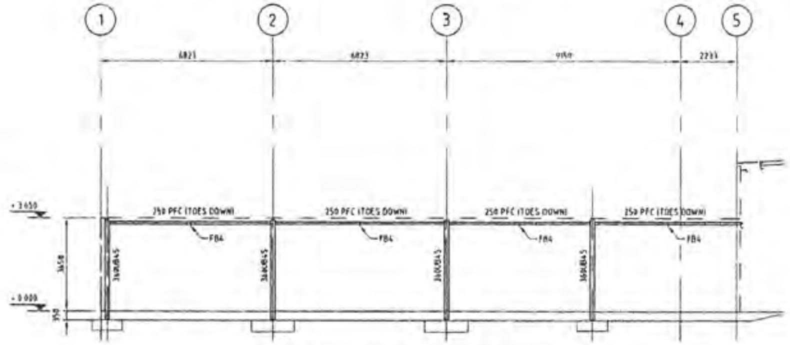


PART ELEVATION - GRIDLINE J
SCALE 1:100

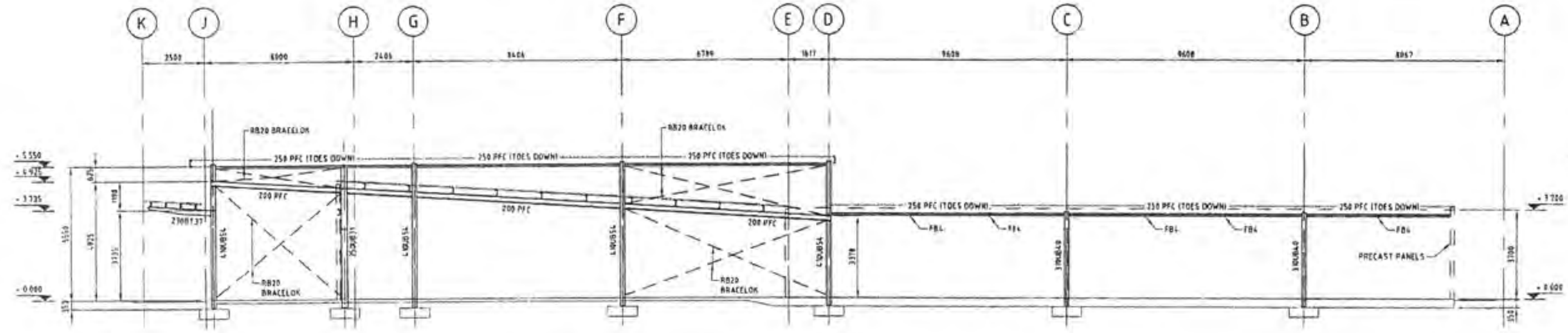
TCC172365



ELEVATION - GRIDLINE 1
SCALE 1:100



ELEVATION - GRIDLINE E
SCALE 1:100



ELEVATION - GRIDLINE 5
SCALE 1:100

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REFERENCE DRGS.
ROOF PLAN

DRG. No.
B236-S1001

CONSENT
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Rev	Date	Revision Details	Drn	Ver.	App
-	-	-	-	-	-
-	-	-	-	-	-
04	01.09.06	CONSENT	-	-	-
03	09.08.06	TENDER	-	-	-
02	19.07.06	PRELIMINARY	-	-	-
01	17.07.06	PRELIMINARY	-	-	-

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Client: AMP capital INVESTORS

Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn GJD	Signed GJH	Date 09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SHB	Signed SHB	Date 09.08.06

Drawing Title: STRUCTURAL BLOCK J EXTERNAL ELEVATIONS

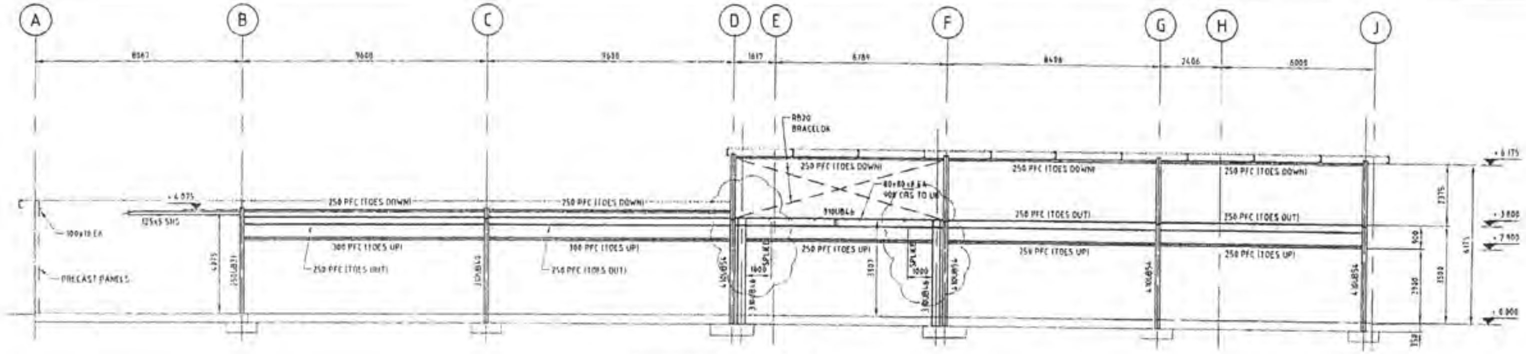
Project No. B236

Scale 1:100 A1 1:200 A3

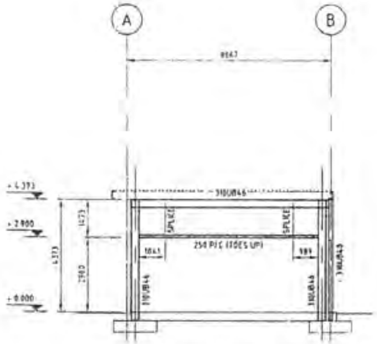
Sheet Size A1

Drawing No. B236-S2.800

Rev. 04



ELEVATION - GRIDLINE 6
SCALE 1:100



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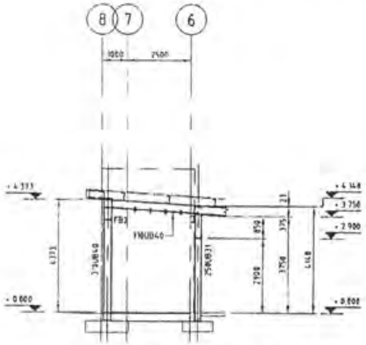
SCALE 1:100



PART ELEVATION - GRIDLINE B
SCALE 1:100

TCC172367

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REFERENCE DRGS
ROOF PLAN

DRG. No.
B236-S1801

Rev.	Date	Revision Details	Drn	Ver.	App
04	01.09.06	CONSENT	-	-	-
03	09.08.06	TENDER	-	-	-
02	19.07.06	PRELIMINARY	-	-	-
01	17.07.06	PRELIMINARY	-	-	-

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Client: AMP capital INVESTORS

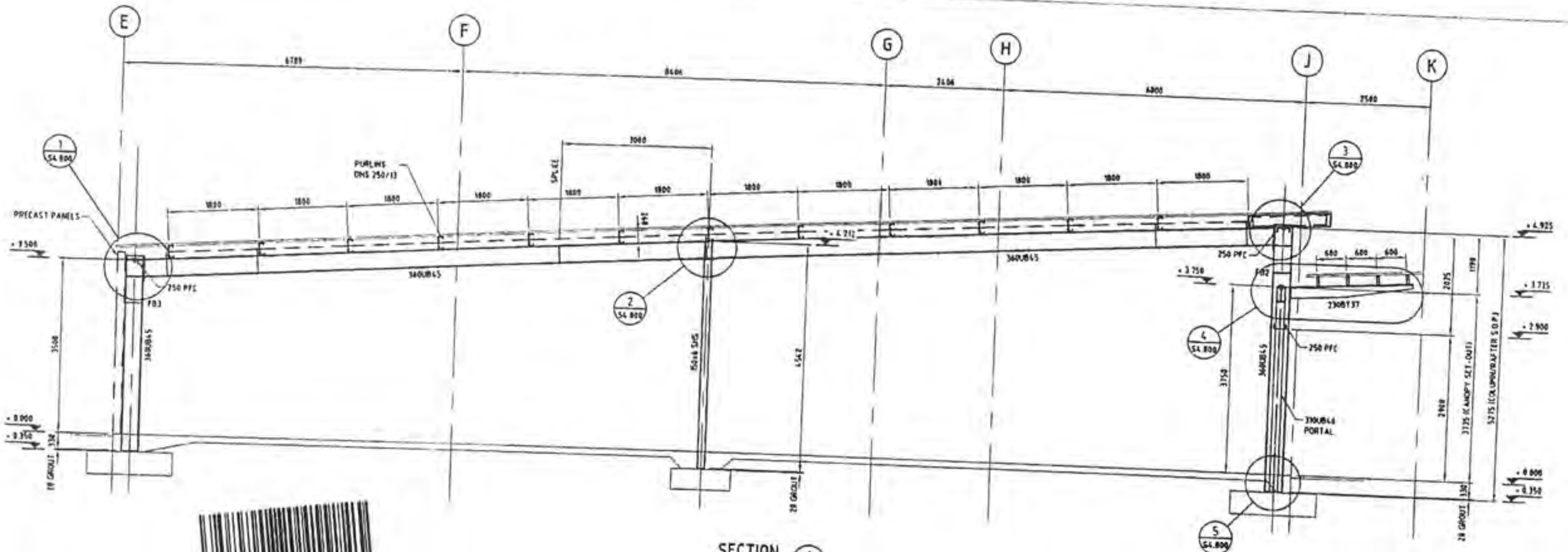
Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn GJD	Signed GJH	Date 09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SMB	Signed SMB	Date 09.08.06

Drawing Title:
STRUCTURAL
BLOCK J
EXTERNAL ELEVATIONS

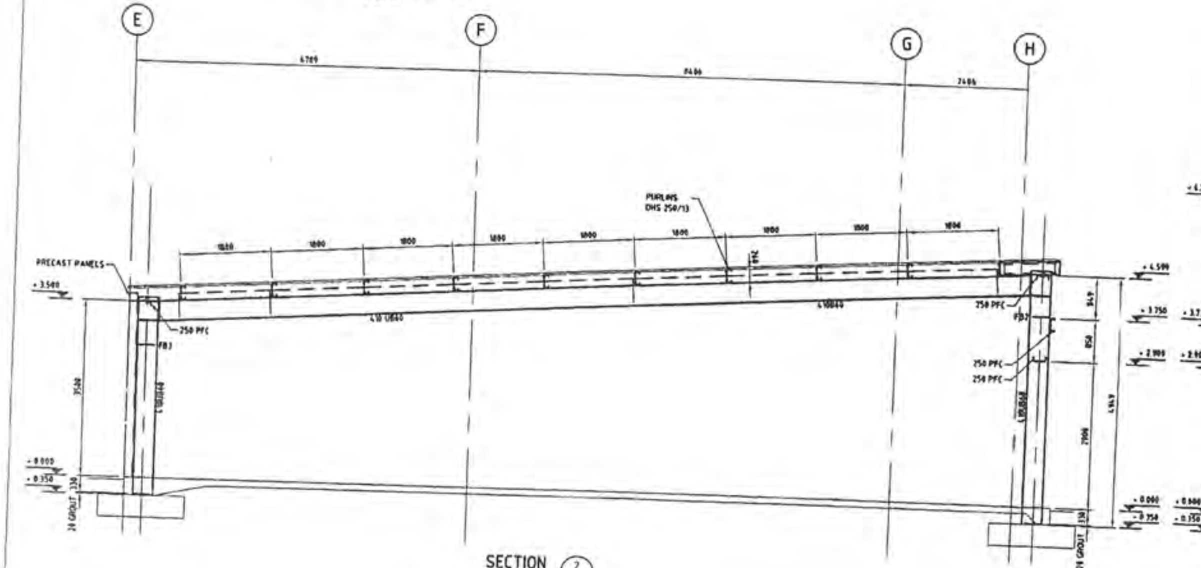
CONSENT
NOT FOR CONSTRUCTION

Project No: B236
Scale: 1:100 A1, 1:200 A3
Sheet Size: A1
Drawing No: B236-S2.801
Rev: 04



SECTION 1/S1.801
SCALE = 1:50

TCC172368



SECTION 2/S1.801
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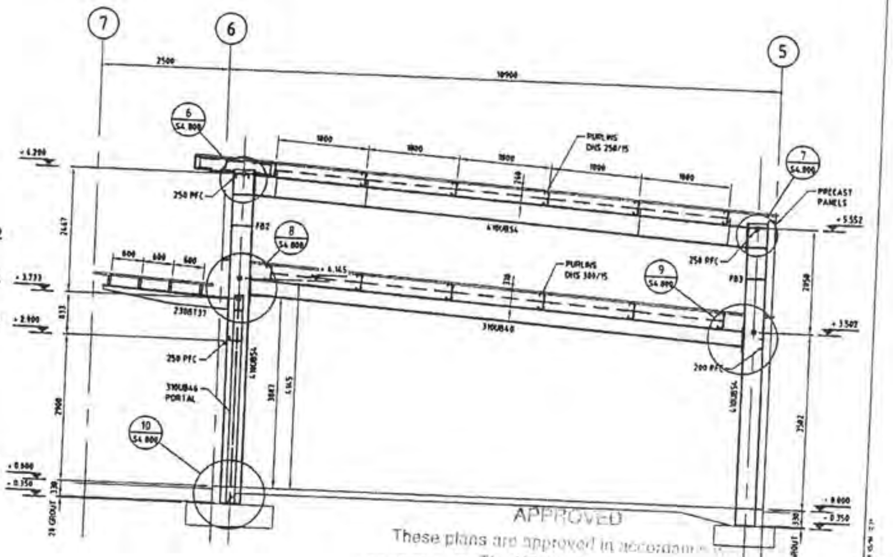

SECTION 3/S1.801
SCALE = 1:50

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Connell Wagner

Connell Wagner Limited Auckland Office
PO Box 9762, Newmarket, Auckland
139 Carlton Gore Road, Newmarket, New Zealand
Telephone: +64 9 520 6019
Facsimile: +64 9 524 7815
Email: aklcw@conwag.com

Client: AMP capital INVESTORS

Project: BETHLEHEM SHOPPING CENTRE STAGE 3

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Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SMB	Signed SMB	Date 09.08.06

Drawing Title: STRUCTURAL BLOCK J SECTIONS

CONSENT
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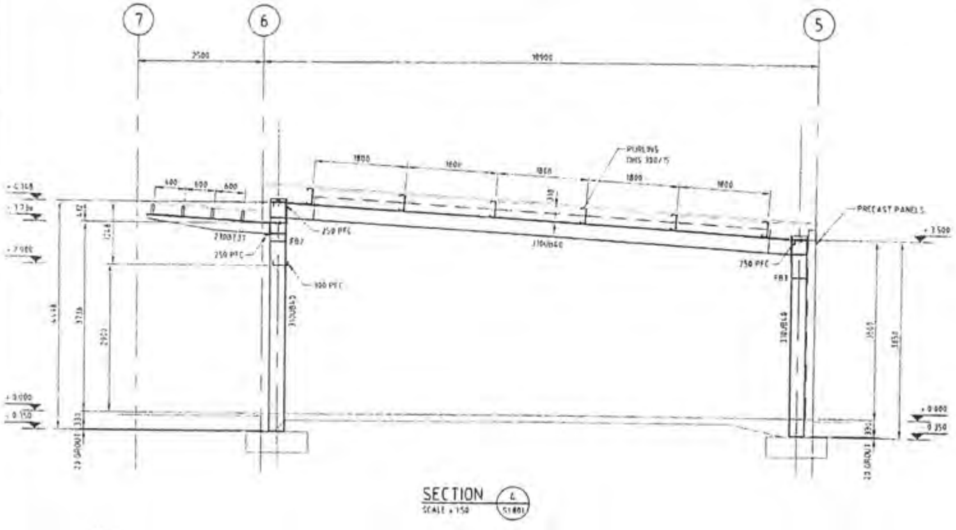
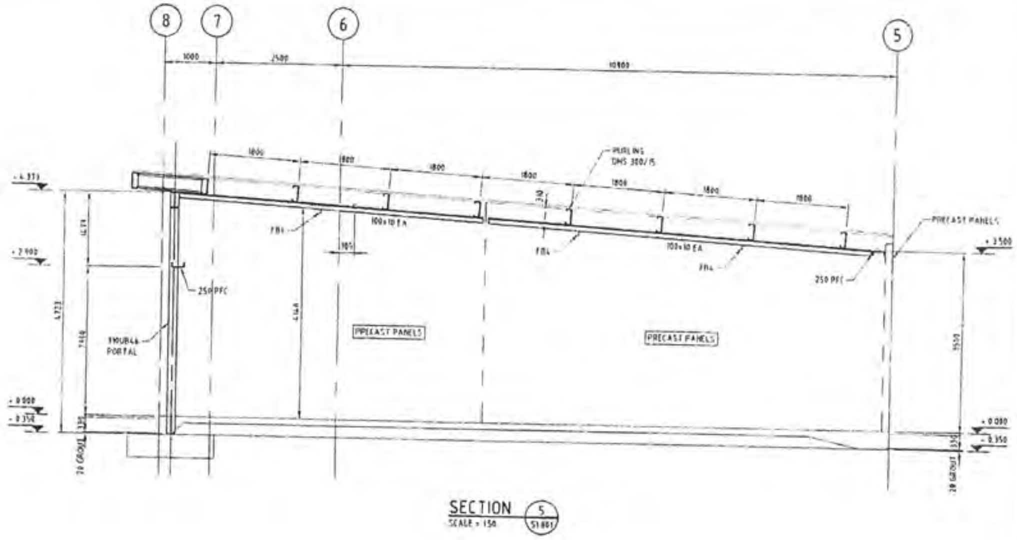
Project No. B236
Scale 1:50 A1, 1:100 A3
Sheet Size A1
Drawing No. B236-S2.802
Rev. 04



SECTION 4
SCALE 1:50



SECTION 5
SCALE 1:50

TCC172369

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03	09.08.06	TENDER	-	-	-
02	19.07.06	PRELIMINARY	-	-	-
01	17.07.06	PRELIMINARY	-	-	-

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Client: AMP capital INVESTORS

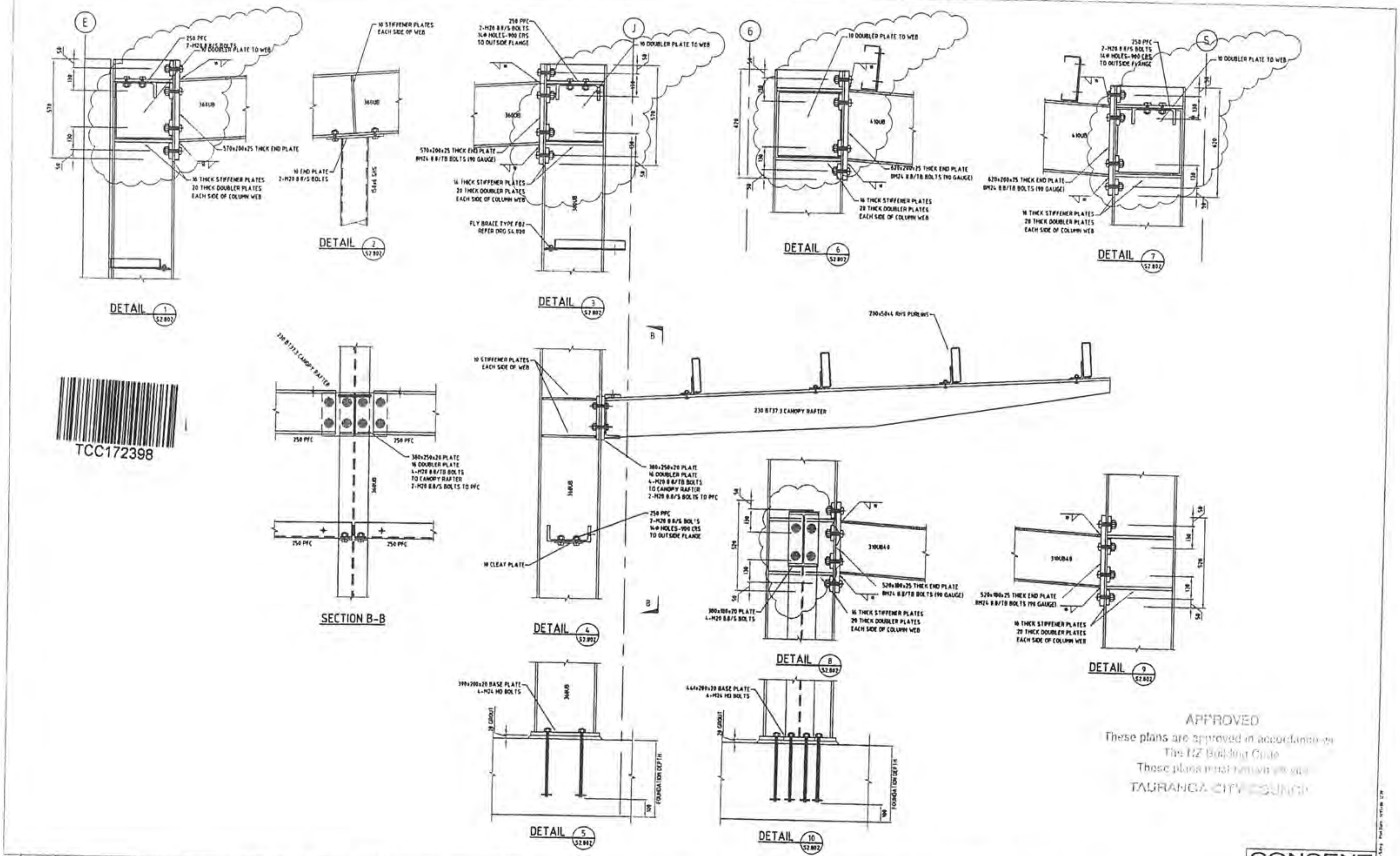
Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn GJD	Signed GJH	Date 09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SHB	Signed SHB	Date 09.08.06

Drawing Title: STRUCTURAL BLOCK J SECTIONS

CONSENT
~~NOT~~ FOR CONSTRUCTION

Project No B236
Scale 1:50 A1, 1:100 A3
Sheet Size A1
Drawing No B236-S2.803
Rev 04



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These plans must remain on site
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Rev.	Date	Revision Details	Drn	Ver.	App.
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01	09.08.06	TENDER	-	-	-

Connell Wagner

Connell Wagner Limited Auckland Office
PO Box 9762, Newmarket, Auckland
139 Carlton Gore Road, Newmarket, New Zealand
Telephone: +64 9 520-6019
Facsimile: +64 9 524-7815
Email: aklcw@conwag.com

Client: AMP capital INVESTORS

Project: BETHLEHEM SHOPPING CENTRE STAGE 3

Drawn GJD	Signed GJH	Date 09.08.06
Designed DPL	Signed DPL	Date 09.08.06
Verified PB	Signed -	Date -
Approved SMB	Signed SMB	Date 09.08.06

Drawing Title: STRUCTURAL BLOCK J STEEL DETAILS SHEET 1

CONSENT
NOT FOR CONSTRUCTION

Project No. B236

Scale 1:10 A1, 1:20 A3 — Sheet Size A1

Drawing No. B236-S4.800 — Rev. 02

Description:

The BP Service Centre was designed in 2018 but was built in 2020. There are architectural drawings done by Techitrades Architecture, and these are generally dated October 2019, but there are no structural drawings available. It appears that the entire design is probably a standard product that has been used on multiple sites, but despite this, we have located a series of photos that were taken during the construction. These clearly show everything from the foundations to the roof bracing and so are valuable in assisting us to assess the seismic rating for both the building and the canopy structure. We have also located the Geocon Geotechnical Ltd site geotechnical investigation and the interpretative report by Mark T Mitchell Ltd, Consulting Geotechnical Engineers.

This Block is a small rectangular shaped single storey retail building and an independent free standing canopy structure. This Service Centre is located at the southern end of the shopping centre site and fronts onto State Highway 2. Both the canopy and the shop are seismically isolated from all other buildings.

The retail building is a small foot-print single storey, mono-pitched roof retail type building, with 4 bays in the north-south longitudinal direction and 1 bay in the east-west transverse direction. Construction of the envelope consists of long-run metal mono-pitch roof sheeting over cold rolled steel purlins, supported on structural steel rafters, which are located on each primary transverse frame grid and are supported by the precast wall panels, and a structural steel truss that spans across the shop front glazing, on the entry elevation. There are precast concrete wall panels on all 4 elevations, and substantial roof plane diagonal steel bracing in both principal directions. There are conventional reinforced concrete strip footing foundations and an on-grade floor slab.

The canopy is of the free-standing cantilever type that is prevalent in fuel stations. The photos show substantial pad type foundations, structural steel columns with primary structural steel beams in both principal directions. The rafter beams have significant cantilevers beyond the columns and the purlins appear to be cold rolled steel sections. The roof and soffit cladding are light weight.

Seismic Load Resisting Structure:

The lateral load resisting system for the retail building consists primarily of the diagonal structural steel roof bracing in conjunction with the precast reinforced concrete wall panels acting as in-plane loaded shear walls in both the transverse and the longitudinal direction.

The lateral load resisting system for the canopy consists of cantilever columns with some lateral load sharing to the transverse and longitudinal steel rafters and beams.

No severe structural weaknesses or critical structural weaknesses have been detected in this building structure.

Seismic Assessment:

We have used the following parameters in the ISA assessment.

Retail Building:

- Building era Post 2011.
- Seismic Zone B, Tauranga.
- Class D soft soil.

- Natural period 0.4 seconds, (this is based on the structural steel diagonal roof bracing distributing the lateral loads to the full height precast reinforced concrete wall panels acting as in-plane loaded shear walls in both of the principal directions).
- Building Importance Level 2.
- Structural Ductility factor 1.25 (this is based on the roof plane diagonal bracing and the in-plane loaded reinforced concrete wall panels).
- Plan irregularity 1.0 (this value has been selected despite the asymmetric arrangement of the lateral load resisting walls in both directions. The reason is that because of the type of construction, the design philosophy for the building was no doubt that it would act as a series of discrete tributary loaded resisting structural elements. This is addressed in the PAR section).
- Vertical irregularity 1.0.
- Pounding Potential 1.0 (because the building has no neighbours).
- Site Characteristics 1.0 (because there is no recorded risk of liquefaction or site instability).
- Performance Achievement Ratio 1.0. (This is based on the regularity, pounding and site factors as detailed above but includes an enhancement/reduction 'other' factor of 1.0. This 'other factor' was selected because whilst there are obvious redundancies in the lateral load resisting system, such as the ability of the precast panels to cantilever above the on-grade floor slab under face loads, there are no drawings to verify the panel connection to the foundations).

Seismic Rating and Grade for the Shop:

The Baseline rating of 100% NBS is modified by the Performance Achievement Ratio of 1.0 resulting in a Seismic Rating of 100% NBS which makes this BP Service Centre building neither an Earthquake Risk nor Earthquake Prone.

Rating 100% NBS.
Grade A.

Canopy:

- Building era Post 2011.
- Seismic Zone B, Tauranga.
- Class D soft soil.
- Natural period 0.4 seconds, (this is based on the structural steel roof framing and supporting cantilever columns that have a high level of base rigidity. A minimum period is probably conservative but without structural drawings it is difficult to estimate a higher period).
- Building Importance Level 2.
- Structural Ductility factor 1.5 (this is based on the roof plane steel framing and the cantilever steel columns).
- Plan irregularity 1.0 (this value has been selected because the system is fully symmetrical).
- Vertical irregularity 1.0.
- Pounding Potential 1.0 (because the building has no neighbours).
- Site Characteristics 1.0 (because there is no recorded risk of liquefaction or site instability).
- Performance Achievement Ratio 1.0. (This is based on the regularity, pounding and site factors as detailed above but includes an enhancement/reduction 'other' factor of 1.0. This 'other factor' was selected because whilst there are obvious redundancies in the lateral load resisting system, such as the potential to have a longer natural period, there are no drawings to verify that assumption).

Seismic Rating and Grade for the Canopy:

The Baseline rating of 100% NBS is modified by the Performance Achievement Ratio of 1.0 resulting in a Seismic Rating of 100% NBS which makes this BP Service Centre canopy neither an Earthquake Risk nor Earthquake Prone.

Rating 100% NBS
Grade A

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in the "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block BP Shop	Date:	21/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-1 Initial Evaluation Procedure Step 1

Step 1 - General Information

1.1 Photos (attach sufficient to describe building)

NOTE: THERE ARE MORE PHOTOS ON PAGE 1a ATTACHED

1.2 Sketches (plans etc, show items of interest)

NOTE: THERE ARE MORE SKETCHES ON PAGE 1a ATTACHED

1.3 List relevant features (Note: only 10 lines of text will print in this box. If further text required use Page 1a)

Refer to report details.

1.4 Note information sources Tick as appropriate

Visual Inspection of Exterior	☑	Specifications	☐
Visual Inspection of Interior	☐	Geotechnical Reports	☑
Drawings (note type)	☑	Other (list)	☐

Property File.

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA} Page 2

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block BP Shop	Date:	21/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-2 Initial Evaluation Procedure Step 2

Step 2 - Determination of *(%NBS)* $_b$

(Baseline *(%NBS)* for particular building - refer Section B5)

2.1 Determine nominal *(%NBS)* = *(%NBS)* $_{nom}$

	Longitudinal	Transverse
a) Building Strengthening Data		
Tick if building is known to have been strengthened in this direction	☐	☐
If strengthened, enter percentage of code the building has been strengthened to	N/A	N/A
b) Year of Design/Strengthening, Building Type and Seismic Zone		
Pre 1935	○	○
1935-1965	○	○
1965-1976	○	○
1976-1984	○	○
1984-1992	○	○
1992-2004	○	○
2004-2011	○	○
Post Aug 2011	◉	◉
Building Type:	Not applicable	Not applicable
Seismic Zone:	Not applicable	Not applicable
c) Soil Type		
From NZS1170.5:2004, Cl 3.1.3 :	D Soft Soil	D Soft Soil
From NZS4203:1992, Cl 4.6.2.2 : (for 1992 to 2004 and only if known)	Not applicable	Not applicable
d) Estimate Period, *T*		
h_n =	5	5 m
A_c =	1.00	1.00 m^2
Moment Resisting Concrete Frames: $T = \max(0.09h_n^{0.75}, 0.4)$	○	○
Moment Resisting Steel Frames: $T = \max(0.14h_n^{0.75}, 0.4)$	○	○
Eccentrically Braced Steel Frames: $T = \max(0.08h_n^{0.75}, 0.4)$	○	○
All Other Frame Structures: $T = \max(0.06h_n^{0.75}, 0.4)$	○	○
Concrete Shear Walls: $T = \max(0.09h_n^{0.75}/A_c^{0.5}, 0.4)$	○	○
Masonry Shear Walls: $T \leq 0.4\text{sec}$	○	○
User Defined (input Period):	◉	◉
T:	0.40	0.40

Comment:

Where h_n = height in metres from the base of the structure to the uppermost seismic weight or mass.

		Longitudinal	Transverse
e) Factor A:	Strengthening factor determined using result from (a) above (set to 1.0 if not strengthened)	Factor A: 1.00	1.00
f) Factor B:	Determined from NZSEE Guidelines Figure 3A.1 using results (a) to (e) above	Factor B: 1.00	1.00
g) Factor C:	For reinforced concrete buildings designed between 1976-84 Factor C = 1.2, otherwise take as 1.0.	Factor C: 1.00	1.00
h) Factor D:	For buildings designed prior to 1935 Factor D = 0.8 except for Wellington and Napier (1931-1935) where Factor D may be taken as 1.0, otherwise take as 1.0.	Factor D: 1.00	1.00
(%NBS) $_{nom}$ **= AxBxCxD**		*(%NBS)* $_{nom}$ 100%	100%

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block BP Shop	Date:	21/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-2 Initial Evaluation Procedure Step 2 continued

2.2 Near Fault Scaling Factor, Factor E

If $T \leq 1.5$sec, Factor E = 1

			Longitudinal	Transverse
a) Near Fault Factor, *N(T,D)* (from NZS1170.5:2004, Cl 3.1.6)		N(T,D):	1	1
b) Factor E	= 1/N(T,D)	Factor E:	1.00	1.00

2.3 Hazard Scaling Factor, Factor F

a) Hazard Factor, *Z*, for site

Location: Tauranga — Refer right for user-defined locations

Z = 0.2 (from NZS1170.5:2004, Table 3.3)

Z_{1992} = 0.85 (NZS4203:1992 Zone Factor from accompanying Figure 3.5(b))

Z_{2004} = 0.2 (from NZS1170.5:2004, Table 3.3)

b) Factor F

For pre 1992 = $1/Z$

For 1992-2011 = Z_{1992}/Z

For post 2011 = Z_{2004}/Z

	Longitudinal	Transverse
Factor F:	1.00	1.00

2.4 Return Period Scaling Factor, Factor G

a) Design Importance Level, I

(Set to 1 if not known. For buildings designed prior to 1965 and known to be designed as a public building set to 1.25. For buildings designed 1965-1976 and known to be designed as a public building set to 1.33 for Zone A or 1.2 for Zone B. For 1976-1984 set I value.)

b) Design Risk Factor, R_o

(set to 1.0 if other than 1976-2004, or not known)

c) Return Period Factor, R

(from NZS1170.0:2004 Building Importance Level)

Choose Importance Level: Longitudinal ○1 ◉2 ○3 ○4; Transverse ○1 ◉2 ○3 ○4

d) Factor G = IR_o/R

	Longitudinal	Transverse
I =	1	1
R_o =	1	1
R =	1.0	1.0
Factor G:	1.00	1.00

2.5 Ductility Scaling Factor, Factor H

a) Available Displacement Ductility Within Existing Structure

Comment:

	Longitudinal	Transverse
μ =	1.25	1.25

b) Factor H

		Longitudinal k_μ	Transverse k_μ
For pre 1976 (maximum of 2)	=	1.14	1.14
For 1976 onwards	=	1	1
Factor H:		1.00	1.00

(where kμ is NZS1170.5:2004 Inelastic Spectrum Scaling Factor, from accompanying Table 3.3)

2.6 Structural Performance Scaling Factor, Factor I

a) Structural Performance Factor, S_p

(from accompanying Figure 3.4)

Tick if light timber-framed construction in this direction ☐ ☐

b) Structural Performance Scaling Factor = $1/S_p$

	Longitudinal	Transverse
S_p =	0.93	0.93
Factor I:	1.00	1.00

Note Factor B values for 1992 to 2004 have been multiplied by 0.67 to account for Sp in this period

	Longitudinal	Transverse
2.7 Baseline *%NBS* for Building, $(\%NBS)_b$ (equals $(\%NBS)_{nom}$ x E x F x G x H x I)	**100%**	**100%**

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block BP Shop	Date:	21/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-3 Initial Evaluation Procedure Step 3

Step 3 - Assessment of Performance Achievement Ratio (PAR)
(Refer Appendix B - Section B3.2)

a) Longitudinal Direction

potential CSWs	Effect on Structural Performance (Choose a value - Do not interpolate)			Factors
3.1 Plan Irregularity				
Effect on Structural Performance ○ *Severe*	○ *Significant*		◉ *Insignificant*	Factor A 1.0
Comment				
3.2 Vertical Irregularity				
Effect on Structural Performance ○ *Severe*	○ *Significant*		◉ *Insignificant*	Factor B 1.0
Comment				
3.3 Short Columns				
Effect on Structural Performance ○ *Severe*	○ *Significant*		◉ *Insignificant*	Factor C 1.0
Comment				

3.4 Pounding Potential
(Estimate D1 and D2 and set D = the lower of the two, or 1.0 if no potential for pounding, or consequences are considered to be minimal)

a) Factor D1: - Pounding Effect

> ***Note:***
> ***Values given assume the building has a frame structure. For stiff buildings (eg shear walls), the effect of pounding may be reduced by taking the coefficient to the right of the value applicable to frame buildings.***

Factor D1 For Longitudinal Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 1	○ 1	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment

b) Factor D2: - Height Difference Effect

Factor D2 For Longitudinal Direction: 1.0

Table for Selection of Factor D2	Severe	Significant	Insignificant
	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	○ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	◉ 1

Comment

Factor D 1.0

3.5 Site Characteristics - *Stability, landslide threat, liquefaction etc as it affects the structural performance from a life-safety perspective*

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* — Factor E 1.0

Comment

3.6 Other Factors - *for allowance of all other relevant characterstics of the building*

For ≤ 3 storeys - Maximum value 2.5
otherwise - Maximum value 1.5.
No minimum.

Factor F 1.0

Record rationale for choice of Factor F:

Refer to report

3.7 Performance Achievement Ratio (PAR)
(equals **A x B x C x D x E x F**)

	PAR
Longitudinal	1.00

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA} Page 5

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block BP Shop	Date:	21/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-3 Initial Evaluation Procedure Step 3

Step 3 - Assessment of Performance Achievement Ratio (PAR)
(Refer Appendix B - Section B3.2)

b) Transverse Direction

Factors

potential CSWs — **Effect on Structural Performance** **(Choose a value - Do not interpolate)**

3.1 Plan Irregularity
Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor A** 1.0
Comment

3.2 Vertical Irregularity
Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor B** 1.0
Comment

3.3 Short Columns
Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor C** 1.0
Comment

3.4 Pounding Potential
(Estimate D1 and D2 and set D = the lower of the two, or 1.0 if no potential for pounding, or consequences are considered to be minimal)

a) Factor D1: - Pounding Effect

Note:
Values given assume the building has a frame structure. For stiff buildings (eg shear walls), the effect of pounding may be reduced by taking the coefficient to the right of the value applicable to frame buildings.

Factor D1 For Transverse Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 1	○ 1	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment

b) Factor D2: - Height Difference Effect

Factor D2 For Transverse Direction: 1.0

Table for Selection of Factor D2	Severe	Significant	Insignificant
	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	○ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	◉ 1

Comment

Factor D 1.0

3.5 Site Characteristics - *Stability, landslide threat, liquefaction etc as it affects the structural performance from a life-safety perspective*

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor E** 1.0
Comment

3.6 Other Factors - *for allowance of all other relevant characterstics of the building* **For ≤ 3 storeys - Maximum value 2.5 otherwise - Maximum value 1.5. No minimum.** **Factor F** 1.00

Record rationale for choice of Factor F:
Refer to report

PAR

3.7 Performance Achievement Ratio (PAR)
(equals **A x B x C x D x E x F**) **Transverse** **1.00**

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block BP Shop	Date:	21/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-4 Initial Evaluation Procedure Steps 4, 5, 6 and 7

Step 4 - Percentage of New Building Standard *(%NBS)*

		Longitudinal	Transverse
4.1	**Assessed Baseline *%NBS (%NBS)*** $_b$ (from Table IEP - 1)	100%	100%
4.2	**Performance Achievement Ratio (PAR)** (from Table IEP - 2)	1.00	1.00
4.3	**PAR x Baseline *(%NBS)*** $_b$	100%	100%
4.4	**Percentage New Building Standard *(%NBS)* - Seismic Rating** (Use lower of two values from Step 4.3)		100%

Step 5 - Is *%NBS* < 34? NO

Step 6 - Potentially Earthquake Risk (is *%NBS* < 67)? NO

Step 7 - Provisional Grading for Seismic Risk based on IEP

Seismic Grade A

Additional Comments (items of note affecting IEP based seismic rating)

Relationship between Grade and *%NBS* :

Grade:	A+	A	B	C	D	E
%NBS:	> 100	100 to 80	79 to 67	66 to 34	< 34 to 20	< 20

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block BP Shop	Date:	21/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-5 Initial Evaluation Procedure Step 8

Step 8 - Identification of potential Severe Structural Weaknesses (SSWs) that could result in significant risk to a significant number of occupants

8.1 Number of storeys above ground level 1

8.2 Presence of heavy concrete floors and/or concrete roof? (Y/N) N

Potential Severe Structural Weaknesses (SSWs):

Note: Options that are greyed out are not applicable and need not be considered.

Occupancy not considered to be significant - no further consideration required

Risk not considered to be significant - no further consideration required

The following potential Severe Structural Weaknesses (SSWs) have been identified in the building that could result in significant risk to a significant number of occupants:

1. None identified

2. Weak or soft storey (except top storey)

3. Brittle columns and/or beam-column joints the deformations of which are not constrained by other structural elements

4. Flat slab buildings with lateral capacity reliant on low ductility slab-to-column connections

5. No identifiable connection between primary structure and diaphragms

6. Ledge and gap stairs

IEP Assessment Confirmed by **Signature**

S R Mitchell **Name**

70562 **CPEng. No**

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA} Page 1

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Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block BP Canopy	Date:	21/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-1 Initial Evaluation Procedure Step 1

Step 1 - General Information

1.1 Photos (attach sufficient to describe building)

NOTE: THERE ARE MORE PHOTOS ON PAGE 1a ATTACHED

1.2 Sketches (plans etc, show items of interest)

NOTE: THERE ARE MORE SKETCHES ON PAGE 1a ATTACHED

1.3 List relevant features (Note: only 10 lines of text will print in this box. If further text required use Page 1a)

Refer to report details.

1.4 Note information sources Tick as appropriate

Visual Inspection of Exterior	☑	Specifications	☐
Visual Inspection of Interior	☐	Geotechnical Reports	☑
Drawings (note type)	☑	Other (list)	☐

Property File.

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block BP Canopy	Date:	21/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-2 Initial Evaluation Procedure Step 2

Step 2 - Determination of *(%NBS)*$_b$

(Baseline *(%NBS)* for particular building - refer Section B5)

2.1 Determine nominal *(%NBS)* = *(%NBS)*$_{nom}$

	Longitudinal	Transverse
a) Building Strengthening Data		
Tick if building is known to have been strengthened in this direction	☐	☐
If strengthened, enter percentage of code the building has been strengthened to	N/A	N/A
b) Year of Design/Strengthening, Building Type and Seismic Zone		
Pre 1935	○	○
1935-1965	○	○
1965-1976	○	○
1976-1984	○	○
1984-1992	○	○
1992-2004	○	○
2004-2011	○	○
Post Aug 2011	◉	◉
Building Type:	Not applicable	Not applicable
Seismic Zone:	Not applicable	Not applicable
c) Soil Type		
From NZS1170.5:2004, Cl 3.1.3 :	D Soft Soil	D Soft Soil
From NZS4203:1992, Cl 4.6.2.2 : (for 1992 to 2004 and only if known)	Not applicable	Not applicable
d) Estimate Period, *T*		
Comment:		
h_n =	5	5 m
A_c =	1.00	1.00 m²
Moment Resisting Concrete Frames: $T = \max(0.09h_n^{0.75}, 0.4)$	○	○
Moment Resisting Steel Frames: $T = \max(0.14h_n^{0.75}, 0.4)$	○	○
Eccentrically Braced Steel Frames: $T = \max(0.08h_n^{0.75}, 0.4)$	○	○
All Other Frame Structures: $T = \max(0.06h_n^{0.75}, 0.4)$	○	○
Concrete Shear Walls: $T = \max(0.09h_n^{0.75}/A_c^{0.5}, 0.4)$	○	○
Masonry Shear Walls: $T \leq 0.4$sec	○	○
User Defined (input Period):	◉	◉
Where h_n = height in metres from the base of the structure to the uppermost seismic weight or mass. T:	0.40	0.40
e) Factor A: Strengthening factor determined using result from (a) above (set to 1.0 if not strengthened) — Factor A:	1.00	1.00
f) Factor B: Determined from NZSEE Guidelines Figure 3A.1 using results (a) to (e) above — Factor B:	1.00	1.00
g) Factor C: For reinforced concrete buildings designed between 1976-84 Factor C = 1.2, otherwise take as 1.0. — Factor C:	1.00	1.00
h) Factor D: For buildings designed prior to 1935 Factor D = 0.8 except for Wellington and Napier (1931-1935) where Factor D may be taken as 1.0, otherwise take as 1.0. — Factor D:	1.00	1.00
***(%NBS)*$_{nom}$ = AxBxCxD** — *(%NBS)*$_{nom}$	100%	100%

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block BP Canopy	Date:	21/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-2 Initial Evaluation Procedure Step 2 continued

2.2 Near Fault Scaling Factor, Factor E

If $T \leq 1.5$sec, Factor E = 1

		Longitudinal	Transverse
a) Near Fault Factor, *N(T,D)* (from NZS1170.5:2004, Cl 3.1.6)	N(T,D):	1	1
b) Factor E = 1/N(T,D)	Factor E:	1.00	1.00

2.3 Hazard Scaling Factor, Factor F

a) Hazard Factor, *Z*, for site

Location: Tauranga — Refer right for user-defined locations

$Z =$ 0.2 (from NZS1170.5:2004, Table 3.3)

$Z_{1992} =$ 0.85 (NZS4203:1992 Zone Factor from accompanying Figure 3.5(b))

$Z_{2004} =$ 0.2 (from NZS1170.5:2004, Table 3.3)

b) Factor F

For pre 1992 = $1/Z$

For 1992-2011 = Z_{1992}/Z

For post 2011 = Z_{2004}/Z

	Longitudinal	Transverse
Factor F:	1.00	1.00

2.4 Return Period Scaling Factor, Factor G

a) Design Importance Level, I

(Set to 1 if not known. For buildings designed prior to 1965 and known to be designed as a public building set to 1.25. For buildings designed 1965-1976 and known to be designed as a public building set to 1.33 for Zone A or 1.2 for Zone B. For 1976-1984 set I value.)

b) Design Risk Factor, R_o

(set to 1.0 if other than 1976-2004, or not known)

c) Return Period Factor, R

(from NZS1170.0:2004 Building Importance Level)

Choose Importance Level ○ 1 ◉ 2 ○ 3 ○ 4 (Longitudinal); ○ 1 ◉ 2 ○ 3 ○ 4 (Transverse)

d) Factor G = IR_o/R

	Longitudinal	Transverse
I =	1	1
R_o =	1	1
R =	1.0	1.0
Factor G:	1.00	1.00

2.5 Ductility Scaling Factor, Factor H

a) Available Displacement Ductility Within Existing Structure

Comment:

	Longitudinal	Transverse
μ =	1.50	1.50

b) Factor H

		Longitudinal k_μ	Transverse k_μ
For pre 1976 (maximum of 2)	=	1.29	1.29
For 1976 onwards	=	1	1
Factor H:		1.00	1.00

(where k_μ is NZS1170.5:2004 Inelastic Spectrum Scaling Factor, from accompanying Table 3.3)

2.6 Structural Performance Scaling Factor, Factor I

a) Structural Performance Factor, S_p

(from accompanying Figure 3.4)

Tick if light timber-framed construction in this direction ☐ ☐

b) Structural Performance Scaling Factor = $1/S_p$

Note Factor B values for 1992 to 2004 have been multiplied by 0.67 to account for Sp in this period

	Longitudinal	Transverse
S_p =	0.85	0.85
Factor I:	1.00	1.00

2.7 Baseline *%NBS* for Building, $(\%NBS)_b$

(equals $(\%NBS)_{nom} \times E \times F \times G \times H \times I$)

Longitudinal	Transverse
100%	100%

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block BP Canopy	Date:	21/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-3 Initial Evaluation Procedure Step 3

Step 3 - Assessment of Performance Achievement Ratio (PAR)
(Refer Appendix B - Section B3.2)

a) Longitudinal Direction

potential CSWs — **Effect on Structural Performance** (Choose a value - Do not interpolate) — **Factors**

3.1 Plan Irregularity

Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor A 1.0

Comment

3.2 Vertical Irregularity

Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor B 1.0

Comment

3.3 Short Columns

Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor C 1.0

Comment

3.4 Pounding Potential

(Estimate D1 and D2 and set D = the lower of the two, or 1.0 if no potential for pounding, or consequences are considered to be minimal)

a) Factor D1: - Pounding Effect

Note:
Values given assume the building has a frame structure. For stiff buildings (eg shear walls), the effect of pounding may be reduced by taking the coefficient to the right of the value applicable to frame buildings.

Factor D1 For Longitudinal Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 1	○ 1	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment

b) Factor D2: - Height Difference Effect

Factor D2 For Longitudinal Direction: 1.0

Table for Selection of Factor D2	Severe	Significant	Insignificant
	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	○ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	◉ 1

Comment

Factor D 1.0

3.5 Site Characteristics - *Stability, landslide threat, liquefaction etc as it affects the structural performance from a life-safety perspective*

Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor E 1.0

Comment

3.6 Other Factors - *for allowance of all other relevant characterstics of the building*

For ≤ 3 storeys - Maximum value 2.5 otherwise - Maximum value 1.5. No minimum.

Factor F 1.0

Record rationale for choice of Factor F:

Refer to report

3.7 Performance Achievement Ratio (PAR)
(equals A x B x C x D x E x F)

PAR — Longitudinal **1.00**

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	**Bethlehem Shopping Centre**	**Job No.:**	**2470**
AKA:		**By:**	**SME**
Name of building:	**Block BP Canopy**	**Date:**	**21/04/2021**
City:	**Tauranga**	**Revision No.:**	**A**

Table IEP-3 Initial Evaluation Procedure Step 3

Step 3 - Assessment of Performance Achievement Ratio (PAR)

(Refer Appendix B - Section B3.2)

b) Transverse Direction

potential CSWs

Effect on Structural Performance
(Choose a value - Do not interpolate)

Factors

3.1 Plan Irregularity

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor A** 1.0

Comment

3.2 Vertical Irregularity

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor B** 1.0

Comment

3.3 Short Columns

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor C** 1.0

Comment

3.4 Pounding Potential

(Estimate D1 and D2 and set D = the lower of the two, or 1.0 if no potential for pounding, or consequences are considered to be minimal)

a) Factor D1: - Pounding Effect

Note:
Values given assume the building has a frame structure. For stiff buildings (eg shear walls), the effect of pounding may be reduced by taking the coefficient to the right of the value applicable to frame buildings.

Factor D1 For Transverse Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 1	○ 1	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment

b) Factor D2: - Height Difference Effect

Factor D2 For Transverse Direction: 1.0

Table for Selection of Factor D2	Severe	Significant	Insignificant
	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	○ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	◉ 1

Comment

Factor D 1.0

3.5 Site Characteristics - *Stability, landslide threat, liquefaction etc as it affects the structural performance from a life-safety perspective*

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor E** 1.0

Comment

3.6 Other Factors - *for allowance of all other relevant characterstics of the building*

For ≤ 3 storeys - Maximum value 2.5
otherwise - Maximum value 1.5.
No minimum.

Factor F 1.00

Record rationale for choice of Factor F:

Refer to report

3.7 Performance Achievement Ratio (PAR)
(equals **A x B x C x D x E x F**)

PAR

Transverse **1.00**

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block BP Canopy	Date:	21/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-4 Initial Evaluation Procedure Steps 4, 5, 6 and 7

Step 4 - Percentage of New Building Standard *(%NBS)*

		Longitudinal	Transverse
4.1	**Assessed Baseline *%NBS (%NBS)$_b$*** (from Table IEP - 1)	100%	100%
4.2	**Performance Achievement Ratio (PAR)** (from Table IEP - 2)	1.00	1.00
4.3	**PAR x Baseline *(%NBS)$_b$***	100%	100%
4.4	**Percentage New Building Standard *(%NBS)* - Seismic Rating** (Use lower of two values from Step 4.3)		100%

Step 5 - Is *%NBS* < 34? NO

Step 6 - Potentially Earthquake Risk (is *%NBS* < 67)? NO

Step 7 - Provisional Grading for Seismic Risk based on IEP

Seismic Grade A

Additional Comments (items of note affecting IEP based seismic rating)

Relationship between Grade and *%NBS*:

Grade:	A+	A	B	C	D	E
%NBS:	> 100	100 to 80	79 to 67	66 to 34	< 34 to 20	< 20

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Block BP Canopy	Date:	21/04/2021
City:	Tauranga	Revision No.:	A

Table IEP-5 Initial Evaluation Procedure Step 8

Step 8 - Identification of potential Severe Structural Weaknesses (SSWs) that could result in significant risk to a significant number of occupants

8.1 Number of storeys above ground level — 1

8.2 Presence of heavy concrete floors and/or concrete roof? (Y/N) — N

Potential Severe Structural Weaknesses (SSWs):

Note: Options that are greyed out are not applicable and need not be considered.

Occupancy not considered to be significant - no further consideration required

Risk not considered to be significant - no further consideration required

The following potential Severe Structural Weaknesses (SSWs) have been identified in the building that could result in significant risk to a significant number of occupants:

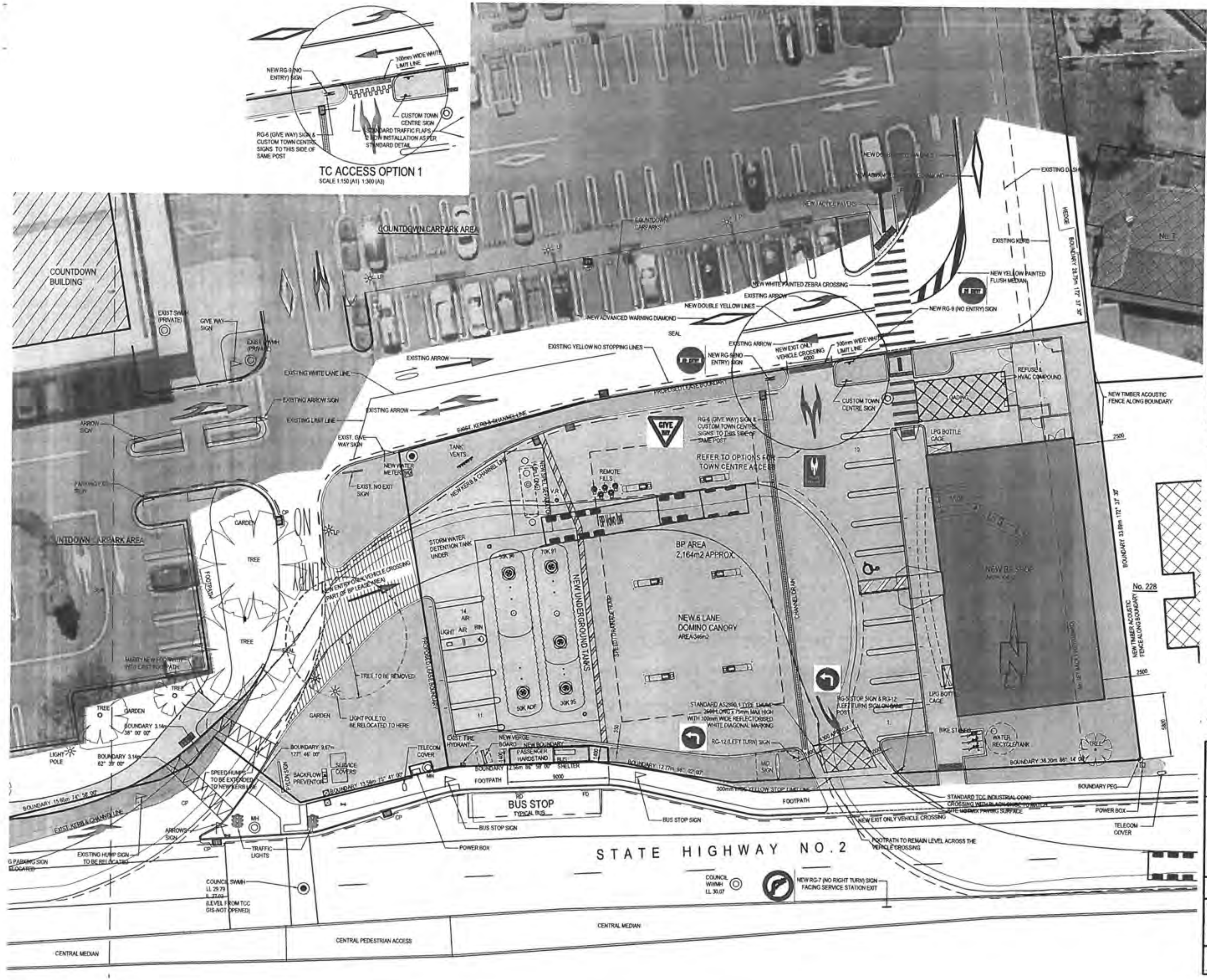
1. None identified
2. Weak or soft storey (except top storey)
3. Brittle columns and/or beam-column joints the deformations of which are not constrained by other structural elements
4. Flat slab buildings with lateral capacity reliant on low ductility slab-to-column connections
5. No identifiable connection between primary structure and diaphragms
6. Ledge and gap stairs

IEP Assessment Confirmed by S. R. Mitchell **Signature**

S R Mitchell **Name**

70562 **CPEng. No**

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*



TECHNITRADES ARCHITECTURE

12 Ben Lomond Crescent, Pakuranga, Auckland 2010
Phone (09) 5767166 | design@technitrades.co.nz

A1 Scale.	1:150
A3 Scale.	1:300
Designed.	L.MEIKLEJOHN
Drawn.	B.MILLWARD
A1 Plot Scale	1:1
A3 Plot Scale	1:2

NOTES

DO NOT SCALE.

DIMENSIONS IN MILLIMETERS UNLESS NOTED OTHERWISE.

IF IN DOUBT ON ANY ISSUE SEEK VERIFICATION PRIOR TO PROCEEDING.

READ THESE DRAWINGS IN CONJUNCTION WITH ALL OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS.

REV.	DESCRIPTION	BY	DATE
G	FENCE TO FULL EXTENT OF EAST BDY SHOWN	MK	04-09-19
F	ONLY PREFERRED TRAFFIC MANAGEMENT OPTION SHOWN	MK	16-07-19
E	VARIOUS TRAFFIC MANAGEMENT UPGRADES AND 2 OPTIONS FOR TC ACCESS	MK	10-06-19
D	FENCING CHANGE TO REAR OF BP SHOP	MK	04-05-19
C	5m SETBACK LINE ADDED	MK	18-03-19
B	AERIAL UNDERLAY ADDED	MK	06-03-19
A	RESOURCE CONSENT APPLICATION	BM	19-02-19

LEGEND:

- PROPOSED BP BUILDINGS
- EXISTING NEIGHBOURING BUILDINGS
- PROPOSED BP SITE LANDSCAPED AREAS
- ASPHALT & CONCRETE AREAS
- MACHINE LAID CONCRETE KERBS
- 9.0m HIGH BP MID SIGN (x1)
- VERGE BOARD SIGNS (x2)
- MANHOLE - STORMWATER (BY OWNER)
- NEW SLIP LANE - LANE WIDENING WORKS
- SW CATCHPIT
- 500w x 25h CONCRETE SPEED / DRAINAGE HUMP
- CHANNEL DRAIN SYSTEM
- 75mm WIDE PAINTED CAR PARK MARKINGS

Project Title:
BP BETHLEHEM TOWN CENTRE
19 Bethlehem Road (State Highway No.2), Bethlehem, Tauranga

Drawing Title:
PROPOSED SERVICE STATION DEVELOPMENT

Proposed Site Plan (East) With Tracking

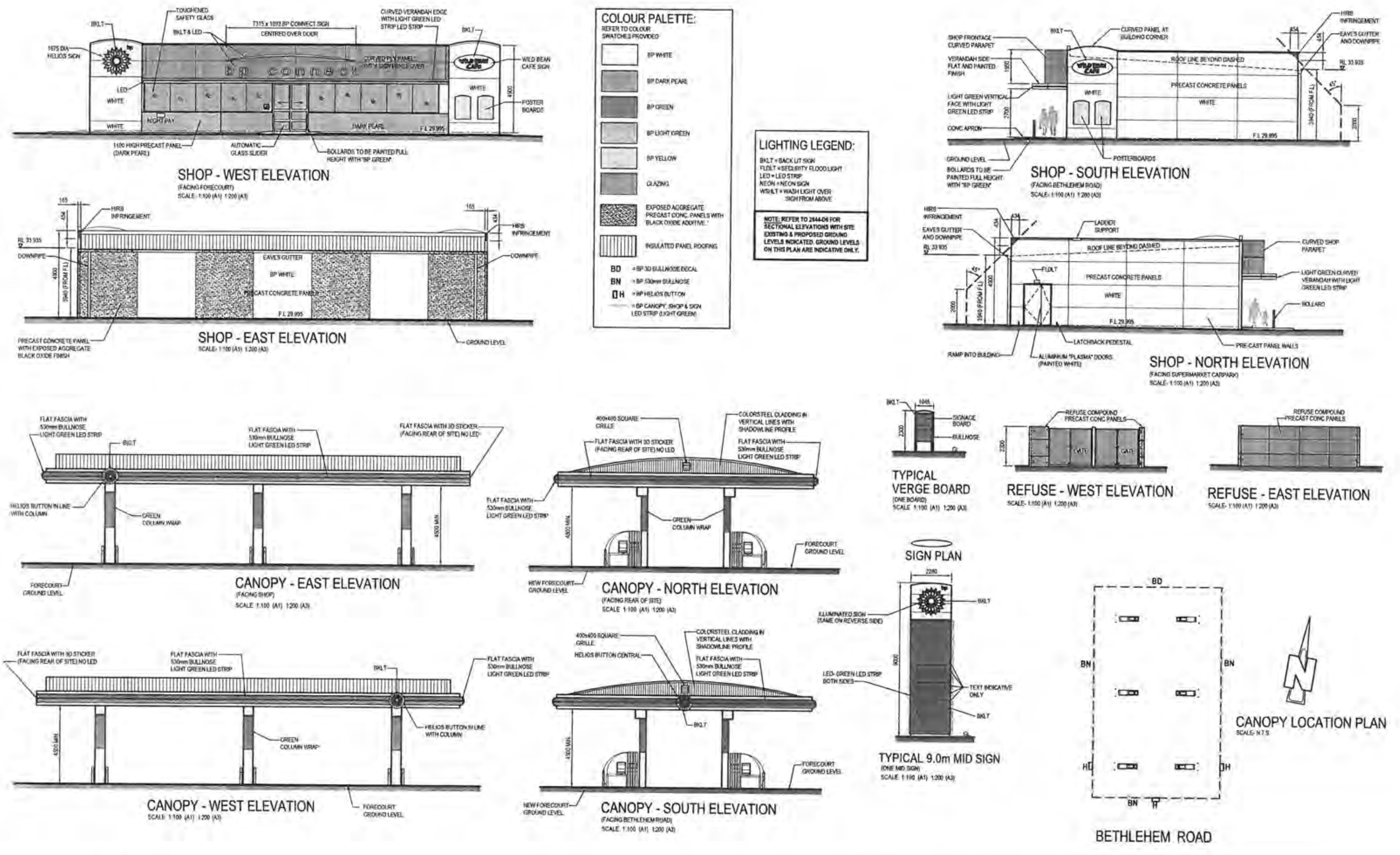
BP Oil Reference No.
3BTC1-10-G

Drawing prepared on behalf of:
BP OIL
MARKETING ENGINEERING

bp

Technitrades Drawing No.: 2844-F1

Rev No.: G



C	DIMENSIONS ADDED TO GUTTER AND INFRINGEMENTS	BM	09-10-19	A1 Scale	1:100
B	ELEVATIONS MODIFIED WITH HEIGHT IN RELATION TO BOUNDARY RESTRAINTS	BM	04-10-19	A3 Scale	1:200
A	RESOURCE CONSENT APPLICATION	BM	15-02-19	Designed	L.MEIKLEJOHN
REVISION	DESCRIPTION	BY	DATE	Drawn	B.MILLWARD
				A1 Plot Scale	1:1
				A2 Plot Scale	1:2

TECHNITRADES ARCHITECTURE
12 Ben Lomond Crescent, Pakuranga, Auckland 2010
Phone (09) 5767166 | design@technitrades.co.nz

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DIMENSIONS IN MILLIMETERS UNLESS NOTED OTHERWISE
IF IN DOUBT ON ANY ISSUE SEEK VERIFICATION PRIOR TO PROCEEDING
READ THESE DRAWINGS IN CONJUNCTION WITH ALL OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS

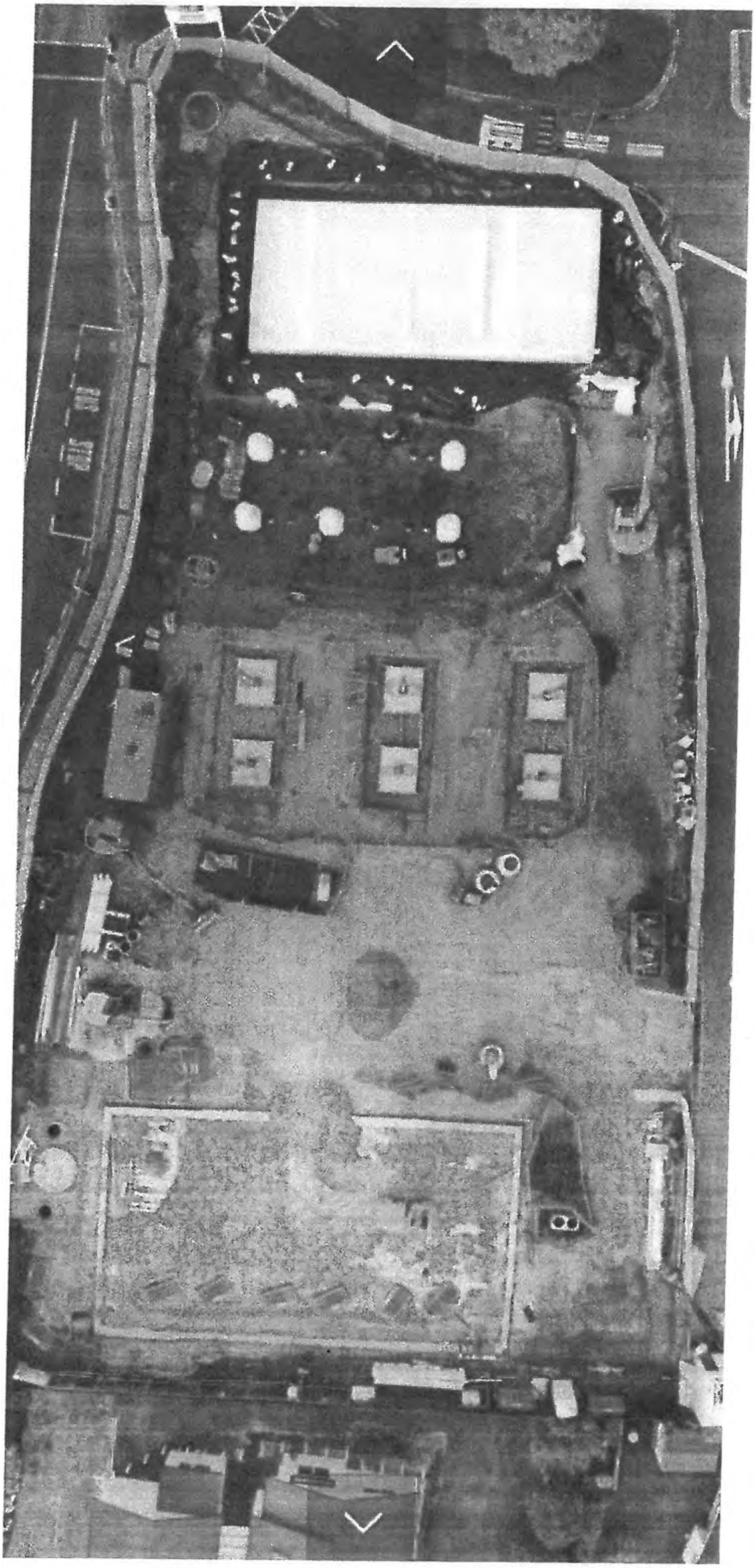
Client Reference No.
3BTC1-14-C

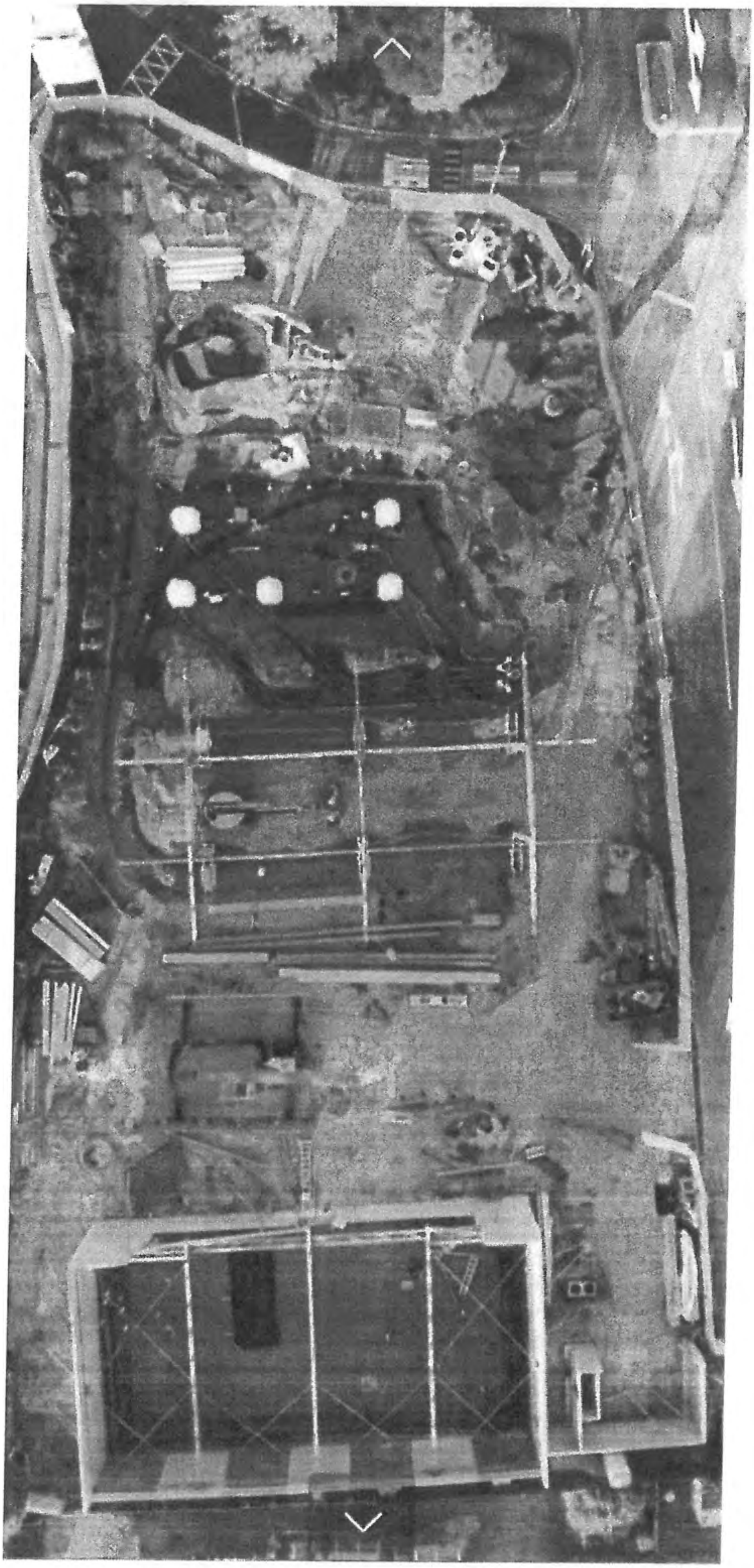
Project Title:
BP BETHLEHEM TOWN CENTRE
PROPOSED SERVICE STATION DEVELOPMENT
19 Bethlehem Road (State Highway No.2), Bethlehem, Tauranga

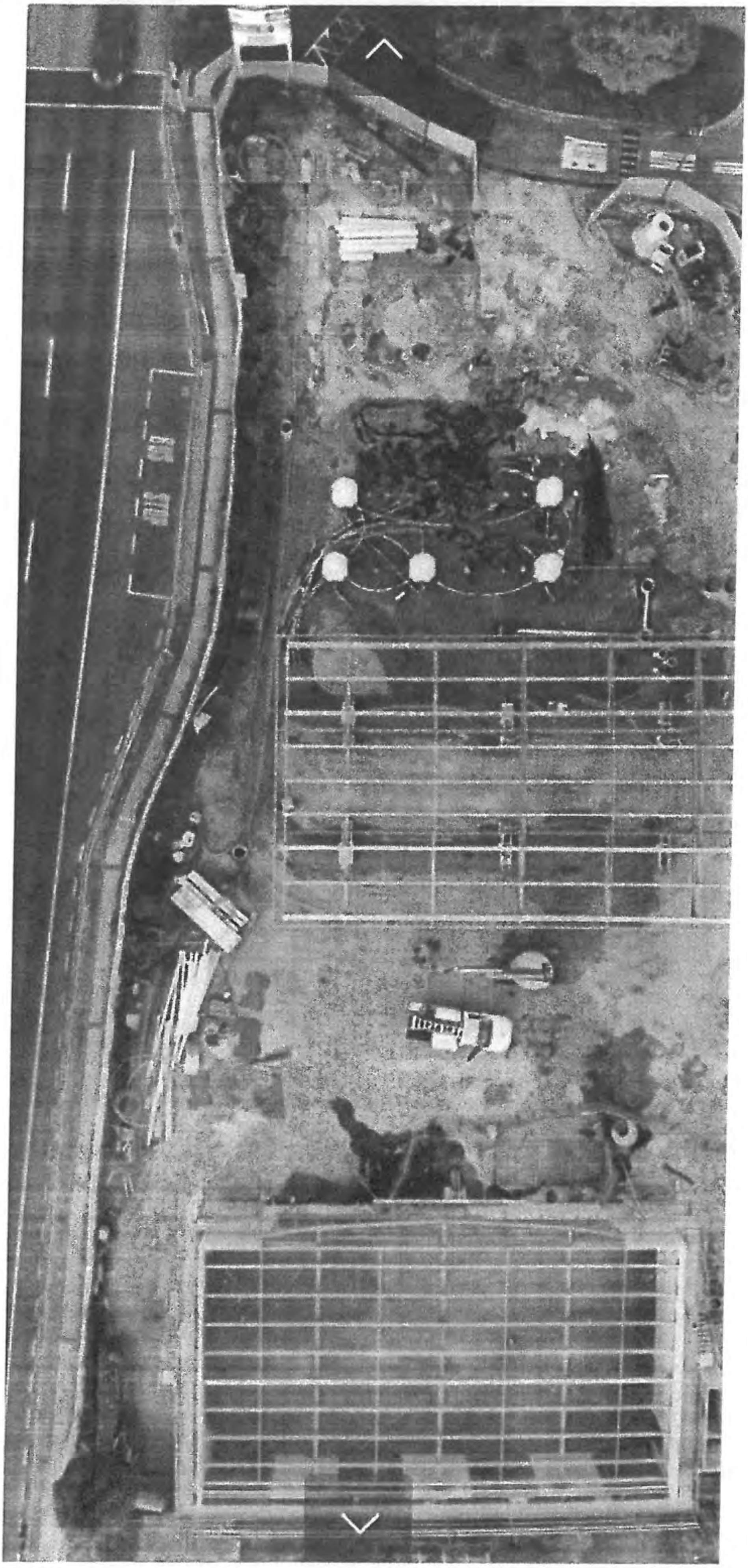
Drawing Title:
Proposed Elevations - 1

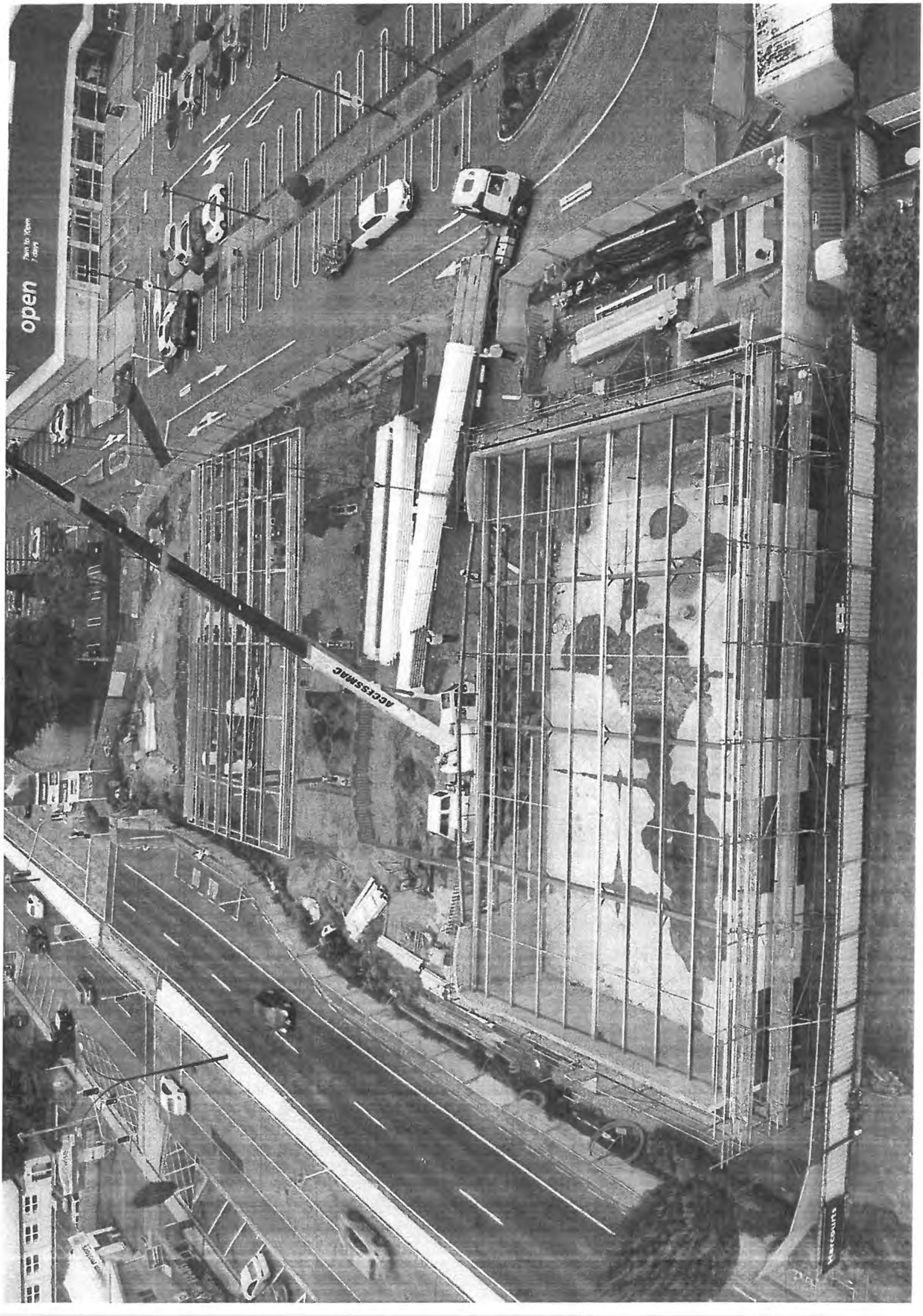
2844-F5 | Rev C

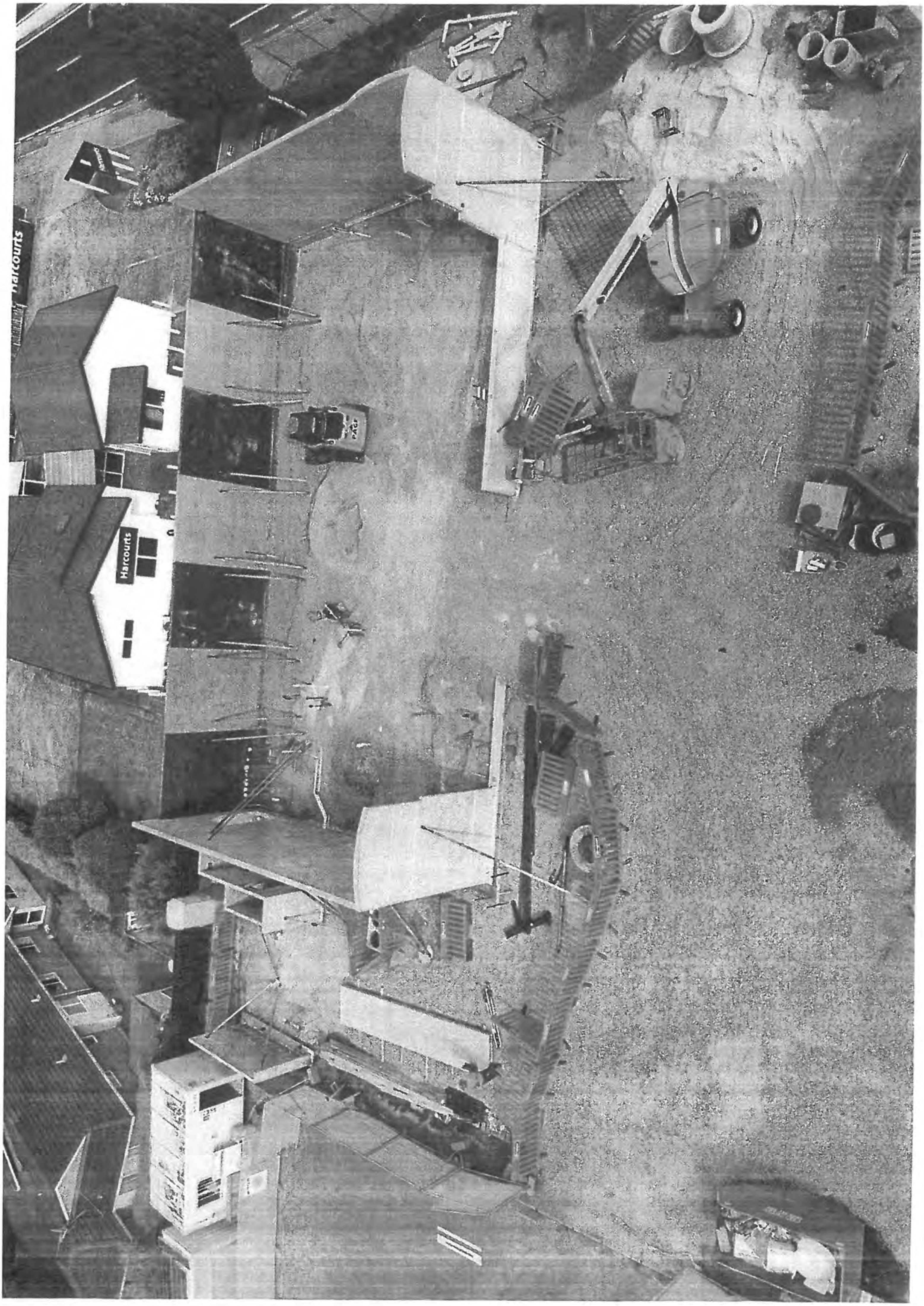
bp








open
ACCESSMAC
Harcourts


Harcourts
Harcourts

STEPHEN MITCHELL

ENGINEERS LIMITED

CONSULTING STRUCTURAL ENGINEERS

STRUCTURAL REPORT

Initial Seismic Assessment

Job Title:	Countdown – Bethlehem.
Building Type:	Existing Building
Client:	PMG Generation Fund.
Location:	Bethlehem Shopping Centre, Tauranga.
Job No.:	2470A
Date:	April 2021
Rev:	C

61b Barrys Point Road, Takapuna, North Shore City 0622
P.O. Box 32312, Devonport, North Shore City 0744
Tel: +64 9 914 5502, Fax: +64 9 914 5504
Email : general@srmitchell.co.nz

CONTENTS:

INTRODUCTION

PMG Generation Fund (PMG) engaged Stephen Mitchell Engineers Ltd (SME), to undertake an initial review of the expected seismic performance of the existing Countdown bulk retail building, at the Bethlehem Shopping Centre, Tauranga, based on an investigation of the Property File documentation, which was supplied by the client.

This report has been prepared under advice from PMG that it is to be used for Due Diligence purposes and therefore may be assigned under the same contractual terms and conditions that SME were engaged to undertake this assessment and prepare this report.

The following Initial Seismic Assessment (ISA), which is essentially the re-named version of the Initial Evaluation Procedure (IEP), and seismic rating, are based on our results derived from the application of the procedure detailed in the New Zealand Society for Earthquake Engineering technical publication 'Assessment and Improvement of the Structural Performance of Buildings in Earthquakes'. Specifically, the Initial Seismic Assessment that we have conducted has been undertaken using the current NZ Society of Earthquake Engineers (NZSEE) guidelines "The Seismic Assessment of Existing Buildings – Technical Guidelines for Engineering Assessments – July 2017 – Initial Seismic Assessment – Part B".

The ISA method was developed to provide an initial coarse screening tool for the assessment of the potential seismic performance of a building structure, bench marked against the New Building Standard (NBS). The grading system represents the capacity of the building's seismic load resisting structural elements to sustain the New Building Standard seismic lateral load actions, expressed as the percentage of that demand. The assessment is derived from both quantative parameters and the qualitative review of specific features of the buildings' form, design, construction, and location. For this ISA we have carried out a more comprehensive investigation of the original structural engineering design drawings, detail and available calculations than would normally be expected for this level of assessment, but because of this, we submit that it makes this particular ISA more complete, robust and reliable than a more typical ISA conducted under the ISA format.

The property file contained a comprehensive set of the original architectural and structural drawings for the original 2003 building and the 2014 refurbishment and some remedial work that was carried out in 2020. The quality of this property file documentation allows us to carry out a robust seismic assessment of the building structure and the determination of a reliable seismic performance and grade.

There was a 2013 geotechnical report by BCD Group, which includes bore-log data, discovered in the documentation for the K-Mart development (which is now known as Block E) on the other side of the shopping centre, and although not for the exact same location as the Countdown building, it is considered to be of sufficient accuracy to use for the Countdown Block, at this level of reporting. We have also discovered a geotechnical site investigation report by CMW Geosciences dated 27 July 2020 for a pad foundation under an additional column within the existing building, and this report includes useful hand auger log data and geotechnical ultimate bearing pressures.

WHAT THE SEISMIC RATING MEANS:

Our investigation has determined that the Bethlehem Countdown building will achieve a seismic rating of at least 100+% NBS, as an Importance Level 2 structure, with no identified Severe Structural Weaknesses or Critical Structural Weaknesses.

This means that the rating is based on seismic loads derived for an Importance Level 2 (IL2), which reflects the seismic loads appropriate for a building of this type, size, and occupancy. This Importance Level has been determined in accordance with the joint Australian/ New Zealand Standard – Structural Design Actions Part 0, AS/NZS 1170.0:2002.

Because this building is considered as a Grade A+ building (having an expected seismic performance greater than 100% NBS), the NZSEE grading scheme presented in Table 1 below, indicates a risk exposure for the building, with the current occupancy, to be less than, or comparable to, a new building structure.

A building with an earthquake rating less than 34% NBS, is one of the requirements for the Territorial Authority to consider it to be an Earthquake-Prone Building (EPB) in terms of the Building Act 2004. A building rating less than 67% NBS is considered as an Earthquake Risk Building (ERB) by the New Zealand Society for Earthquake Engineering. The Countdown building is therefore categorised as neither an ERB nor an EPB.

In addition to the building having sufficient strength to sustain the design seismic actions defined by the % NBS earthquake rating, the NZSEE guidelines also require that the rating must reflect the ability of the building to continue to perform in earthquake shaking beyond that % NBS ULS shaking demand level. This ability is defined in the guidelines as the available structural resilience. Structural resilience is necessary to allow a building to meet the overall performance objectives set out in the Building Code. These objectives would not be met if the building had a high probability of failure once the rated % NBS ULS shaking demand levels were exceeded.

Our qualitative and quantitative assessment of this building indicates no Severe Structural Weaknesses (SSW's), Critical Structural Weaknesses (CWS's) or geotechnical considerations that would negatively impact on any of the Block's structural resilience. Our review of the detailing in this building is such that we are satisfied that it will meet the requirements of the Building Code with respect to available resilience for earthquake intensities of a minimum of 100% ULS seismic demand. This level of seismic performance is the by-product of the design philosophy, procedures, parameters, and detailing employed by the original design engineers, which are described later in this report in more detail.

TABLE 1
(Copy of Table A3.1 from NZSEE 'The Seismic Assessment of Existing Buildings' – Part A).

Percentage of New Building Standard (%NBS)	Alpha rating	Approx. risk relative to a new building	Life-safety risk description
>100	A+	Less than or comparable to	Low risk
80-100	A	1-2 times greater	Low risk
67-79	B	2-5 times greater	Low to Medium risk
34-66	C	5-10 times greater	Medium risk
20 to <34	D	10-25 times greater	High risk
<20	E	25 times greater	Very high risk

BUILDING DESCRIPTION and DESIGN FEATURES:

The building was a bespoke Countdown bulk retail development for Progressive. It was designed in early to mid-2003 by architects Booth Sweetman Wolfe Ltd (BSWL) and structural engineers, Stiles and Hooker Ltd (S&H). It appears that the structural engineering design was reviewed by Bay Building Certifiers and Tauranga District Council issued a Building Consent in late August 2003. We have assessed the S&H structural engineering design and detailing as robust, competent, and professional. It is typical for a modern era low rise bulk retail building design.

In late 2013 minor modifications were undertaken to the mezzanine floor areas, and these were architecturally designed by BSW Group Ltd and structurally by Fairclough and King Consultants Ltd. The Building Consent for these works was issued by the Tauranga City Council in February 2014. Our review of the drawings for these works suggest that this alteration was primarily a cosmetic refurbishment of western back-of-house area and the northern mezzanine area including the floor area below the suspended mezzanine floor. There appears to have been a new beam installed to support a section of the northern mezzanine floor and this entailed installing new steel posts and braces, and a new foundation beam. We consider these works to be minor and if anything, they enhanced the lateral load resistance of this section of the building.

In early 2020, it appears that a problem arose with excessive deflection of the main portal rafter on Grid F. This is a special long span rafter that is not replicated at any other location in the building. As a result, Beca devised a method of installing a new 250 x 9.0mm structural steel square hollow section (SHS) column, and new foundation pad, at near mid-span of the rafter, to reduce the sag to a level compatible with the adjacent rafters. This work was completed by November 2020, when Beca provided a Producer Statement – Construction Review. We quote from the Beca Design Features Report, dated 10 February 2020, for this work; "The proposed modifications do not impact the lateral load resisting systems". As such, we will consider them no further in this report.

This Countdown Block is effectively a stand-alone building that has a car park frontage on the north, south and east sides and a service road on the western boundary side. It is seismically isolated from all other buildings.

This building is a large foot-print single storey, pitched roof warehouse type building, with 7 bays in the north-south longitudinal direction and a single bay in the east-west transverse direction. There are extensive canopies on the east, and south sides, and there is a significant canopy over the loading area on the western side.

Construction of the warehouse type envelope consists of long-run metal roof sheeting over cold rolled steel purlins, supported on custom built structural steel portal frame rafters, which are located on each primary transverse frame grid. Each of the primary frame portal rafters is supported by structural steel portal columns at the span ends, and there are no internal columns other than where the 2020 remediation to the Grid F rafter has been carried out. The structural steel columns land above the concrete on-grade slab and conventional strip footing and pad foundations that have been well detailed in reinforced concrete. On each primary transverse grid there is a reinforced concrete foundation tie beam that ties across the full width of the building between the portal column bases.

There are 150mm thick reinforced precast concrete wall panels along all four elevations, and these panels are virtually continuous along the north, south and west elevations. However, some of the panels are replaced with shop front glazing in the east elevation, and there are roller shutter door penetrations in the west elevation, as well as minor egress door penetrations at other locations. On the southern end of the east elevation, the precast concrete wall panels are deleted over a 3.6m height to allow for 6 large openings for shop front glazing. The upper panels are supported by structural steel trusses which are supported by the precast concrete return panels at each end and two internal structural steel columns. It appears from the steel work detailing that the truss and columns were designed to act as an in-plane loaded moment resisting frame, and this opinion is reinforced by the inclusion of a large diameter bored cast insitu reinforced concrete pile at each end of this frame, presumably to sustain the high tension and compression axial loads that the frame will generate during an earthquake. There are narrow precast concrete wall panels at each support line at mid-span of each truss bay, between the shop front window panels.

There is a single longitudinal bay of full width diagonal structural steel angle and SHS roof bracing in the transverse direction and this is continued into the east and west canopy bays. There are substantial SHS and parallel flange channel (PFC) eaves ties on the east and west elevations and these appear to act as collector beams to distribute lateral loads to the roof plane bracing.

The on-grade floor slab consists of a conventional mesh reinforced 100mm thick on-grade slab that is increased to 125mm thick in specific areas under the mezzanine floors.

There is a mezzanine area on the north side of the main building. The suspended floor is constructed from precast concrete flat slab units with a conventional mesh reinforced insitu concrete topping. The floor system is supported on a combination of the exterior precast concrete wall panels, significant lengths of precast concrete wall panel on the inside elevation of the mezzanine and structural steel beams and posts where there are no panels.

The lateral load resisting system for the building envelope appears to have several redundancies and consists primarily of the diagonal structural steel roof bracing in conjunction with the precast reinforced concrete wall panels acting as in-plane loaded shear walls in longitudinal direction, all supported on substantial spread foundations. The transverse lateral loads (in the east-west direction) are sustained by the structural steel moment resisting portal frames and it is clear from the reinforcement details for the concrete wall panels, and the foundation details, that the wall panels have been designed to sustain the post-fire lateral loads by cantilever action above the on-grade floor slab.

The lateral load resisting system for the suspended mezzanine floor consists of direct support by in-plane loaded reinforced concrete wall panels in both directions, coupled with a bay of structural steel bracing that was constructed in 2013. By inspection, there is a high density of bracing under the mezzanine floor, and we conclude that this section of the building will achieve a seismic rating of greater than 100% NBS without any severe structural weaknesses, and as such will not govern the seismic rating for the building as a whole.

The detail obtained from information contained in the property file confirms that we able to make a robust assessment of the likely seismic performance of the building at a level of certainty well above that generally associated with an ISA.

SEISMIC ASSESSMENT – PRELIMINARY REVIEW:

As a starting point for the overall seismic assessment, we referred to the New Zealand Society for Earthquake Engineering technical guideline "Assessment and Improvement of the Structural Performance of Buildings in Earthquakes", June 2006, including Corrigendum No 1,2 & 3.

Prior to commencing and Initial Seismic Assessment (ISA), we utilised an assessment accuracy check on the basis of the "Typical % NBS" tables in Appendix 3A that can be used to determine the estimated seismic performance for a generic similar type building, with this type of seismic load resisting structure, designed in 2003 and built in this specific Tauranga location. This approach required the modification of the seismic ratings derived from the standard tables due to the Tauranga location, and this was estimated with the use of the current Hazard factors from the NBS loadings code NZS1170.5. This preliminary assessment is a useful guide because the building was designed to the former loadings code NZS 4203:1992.

By reference to the original drawings, we determined that the building should be considered to be classified as 'Normal' having an 'ordinary' retail occupancy, so we have adopted a category of Importance Level 2 (IL = 2), for this assessment. We have selected a natural period of approximately 0.4 seconds in both directions, this being a realistic default maximum for in-plane loaded shear wall buildings attaining their stiffness from in-plane loaded precast concrete panels. This natural period will be conservative for the pin based structural steel moment resisting portal frames. From the geotechnical description in the 2013 BCD Group geotechnical report, we have selected a Class D soils category.

The critical lateral load resisting system consists of the structural steel roof bracing and the in-plane loaded reinforced concrete wall panels, which we estimate to be capable of achieving a ductility factor of 1.25. We discuss the structural steel portal frames in more detail in the next section.

Using this data, we established by interpolation between the Auckland and pre-earthquake Christchurch values tabulated in Tables 3A.5 and 3A.7 that the very approximate likely seismic capacity relative to the demands of the New Building Standard, (NBS), would be in the order of 95% NBS in the critical longitudinal direction.

This estimate is on this basis that the member capacities were accurately calculated to exactly match the demand derived from the New Building Standard, (normally there is some over-provisioning of structural capacity from excess member size and reinforcement content) and that there are no detrimental or enhancement aspects discovered during the assessment. From this approach we were confident that the Countdown Block will achieve a minimum seismic rating in the order of at least 95% NBS.

COMMENTARY ON ISA PARAMETERS:

The Building Consent for this block was certified in May 2003. The structural design was carried out to the requirements of the cited Loadings Code of the day, NZS4203:1992 which was the immediate predecessor to the current loadings code, NZS 1170, which now forms part of a suite of Codes and Standards commonly referred to as the New Building Standard (NBS).

We have assessed the building as being of a 'Normal Importance Level' of 2, which is appropriate to a building of this type, size, and occupancy, therefore the seismic demand is derived for an Importance Level 2 (IL2). This Importance Level has been determined in accordance with the joint Australian/ New Zealand Standard – Structural Design Actions Part 0, AS/NZS 1170.0:2002.

Effectively being a single-storey structure, primarily dependant on structural steel diagonal roof bracing, in-plane loaded reinforced concrete wall panels, and structural steel moment resisting portal frames for lateral load stability and strength, we assess this building as being designed and detailed to achieve a ductility factor of at least 1.25 for both the transverse and the longitudinal directions. This structural ductility factor reflects that used by the original design engineers for the precast concrete panels loaded in-plane, and the structural steel portal frames. It does not reflect the ductility factor used for the trussed portal frame on grid 8, which replaced some of the local concrete panels in order to form the shop front windows, and this was designed and detailed for a ductility factor of 2.0 by the design engineer. This is a reasonable design approach and is not critical.

The natural period was determined to be the default minimum of 0.4 seconds in both principal directions, this is as expected for an in-plane reinforced concrete shear wall structure although it would be conservative for the well-conditioned structural steel portal frames and this aspect is commented on later.

Based on the local geotechnical conditions, described in the BCD Group geotechnical report, and the CMW Geosciences investigation, we have selected a site seismic soil classification of 'Intermediate'. We use this because we have carried out a high level review of the original Stiles and Hooker calculations and have determined that they used the 'Intermediate' soil classification in accordance with the site seismic soil classes tabulated in NZS 4203 and we accept that they must have selected this parameter based on geotechnical advice, which to date we have not been able to locate. The 'Intermediate' soil class is appropriate for the recognition of the use of NZS 4203 in the IEP protocol.

The assessment of the building's Performance Achievement Ratio (PAR) reflects the current and conventional design aspects of the lateral load resisting systems within this project, one that appears to have no significant detrimental features but does have a significant level of redundancy against seismic loads, as determined and discussed below.

There is horizontal symmetry of the primary lateral load resisting system, with in-plane loaded shear walls on all four elevations and a regular array of moment resisting portal frames in the transverse direction. This symmetry is reflected by the use of a horizontal regularity factor of 1.0 for both principal directions, and there is sufficient evidence in the drawings for us to believe that the original design engineer apportioned the seismic loads in the building to the different structural elements in proportion to the tributary area. This is a common design technique and means that the various structural elements are designed to safely sustain the seismic loading attributed to them based on the vertical and horizontal area that they directly support. We have applied a vertical regularity reduction factor of 1.0 in both directions.

The building effectively has no immediate neighbours on any side, thus eliminating the potential to induce pounding, the appropriate pounding factor is therefore 1.0.

There is no suggestion of potential liquefaction or ground instability therefore the appropriate site characteristic factor is 1.0. The building founds on spread foundations bearing directly onto competent soils with the CMW Geoscience report providing a geotechnical ultimate bearing capacity for pad foundations of 450 kPa.

Whilst the primary lateral load resisting system consists of the diagonal structural steel roof bracing in conjunction with the precast reinforced concrete wall panels acting as in-plane loaded shear walls in the longitudinal direction, and structural steel moment resisting portal frames in the transverse direction, we have applied an 'Other Factor' of 1.05, and this is conservative considering the combined effect of several redundancies, which are as follows:

The transverse lateral loads (in the east-west direction) are sustained by the structural steel moment resisting portal frames and the precast concrete wall panels. These portal frames are not as stiff as the in-plane loaded walls, which the original design engineer reasonably assumed to be self-supporting under in-plane loading conditions. It is likely that the walls will sustain a larger proportion of the transverse seismic roof load than the designer anticipated, and therefore there is in effect a redundancy due to load sharing in the transverse lateral load resisting system.

We have taken the natural period of the building in both principal directions to be the default minimum of 0.4 seconds, which is appropriate to in-plane loaded precast concrete shear walls. The structural steel portals have a 4 holding down bolt, partial moment connection at the base and if analysed, such as in a Detailed Seismic Assessment (DSA), which is beyond the scope of this ISA level investigation, we are sure that the natural period of the portal frames would be greater than 0.4 seconds, which would reduce the NBS seismic demand, effectively increasing the seismic rating in the transverse direction.

We consider that the structural steel moment resisting portal frames will be capable of achieving a higher ductility than the conservative nominal elastic factor of 1.25. The original design engineers used this Nominally Ductile value, but the steel work detailing suggests that the frames have a higher level of inherent ductility than the original designer assumed. If a higher level of ductility is achievable, which a DSA would possibly verify, this would reduce the seismic demand in the transverse direction and therefore increase the seismic rating.

From our high level review, there is evidence in the calculations that the critical lateral load design case was a wind based combination and this suggests the building may have reserve capacity to sustain seismic loads above 100% NBS.

In both principal directions, it is clear from the reinforcement details for the concrete wall panels and the foundation details that the precast concrete wall panels have been designed to sustain the post-fire lateral loads by cantilever action above the on-grade floor slab. Because of this they have lateral load resisting strength but because the panels are being bent about their minor axis, they have a low rigidity compared to the primary lateral load resisting system however this mechanism is still considered to be a redundancy.

The distribution of seismic shears to each mechanism could only be determined and verified by undertaking a Detailed Seismic Assessment which is not warranted for this building, so we have recognised the likely level of redundancy by using the resulting PAR factor of 1.05 which has been adopted for both directions.

There were no areas of critical structural weakness that affect the primary lateral load resisting system, detected during this review.

DISCUSSION OF THE ISA RESULTS:

Having a similar lateral load resisting system that has similar dynamic properties, in each principal direction, (structural steel roof bracing and reinforced concrete shear walls in both directions and structural steel moment resisting portal frames), with the systems presumed to be capable of achieving a nominal ductility of 1.25, produces a similar result for each principal axis.

In both principal directions the assessed Baseline Rating is 104% of the New Building Standard (NBS). This reflects the modern characteristics of the building and the fact that the seismic loads were derived in accordance with the New Building Standard loadings code and is not dissimilar to the interpolated typical value of 95% NBS derived from the 'typical' tables. There is an enhancement of the Baseline Rating due to the performance assessment factor (PAR) of 1.05, the derivation of which is discussed above. The Baseline 104% NBS has been achieved with the application of an assessed Ductility Factor of 1.25.

The final rating of 109% NBS is both realistic and robust but because of the ISA protocol, this rating can only be reported as >100% NBS. The building has no areas of critical structural weakness.

In summary, the seismic rating in both principal directions is calculated to be >100% NBS. Therefore, in accordance with the ISA protocol the seismic rating for this building is >100% NBS and the building achieves a Seismic Grade of A+, and as such is neither Earthquake Prone nor an Earthquake risk.

DISCUSSION OF POTENTIAL SEVERE STRUCTURAL WEAKNESSES:

No potential severe structural weaknesses were detected for this Block.

CONCLUSIONS:

- This Initial Seismic Assessment has been conducted using the current NZ Society of Earthquake Engineers (NZSEE) guidelines "The Seismic Assessment of Existing Buildings – Technical Guidelines for Engineering Assessments – July 2017 – Initial Seismic Assessment – Part B".

- This building consists of a single seismically separated Block. There is an isolated section of suspended floor slab in the northern mezzanine.

- There is a comprehensive set of architectural and structural engineering drawings and calculations in the Council property file for the original 2003 construction, the

2013 refurbishment and the 2020 portal frame remedial. This information has allowed us to complete a robust assessment, at a level well above that normally associated with an ISA.

- The Countdown Block is a single storey pitch roofed warehouse type building with significant structural steel roof bracing, moment resisting steel portal frames and precast concrete wall panels. The building founds on conventional spread foundations.

- The application of the ISA protocol determined that the 'Baseline' seismic rating in both principal directions is 104% NBS and this was increased by a PAR factor of 1.05, which, although minimal, has been used conservatively to reflect that there is a combination of enhancement factors that are the specific characteristics and redundancies in the lateral restraint systems of this Block and its original design. The resulting final **seismic rating is >100% NBS**.

- In accordance with the ISA protocol the seismic rating for this building is >100% NBS and the building achieves a **Seismic Grade of A+,** and as such is neither Earthquake Prone nor an Earthquake Risk, and no severe structural weaknesses have been detected.

LIMITATION:

This report and its conclusions are based on the Initial Evaluation Procedure as detailed in the New Zealand Society for Earthquake Engineering Guideline 'Assessment and Improvement of the Structural Performance of Buildings in Earthquakes', an external and internal visual inspection of the property and a review of only the documents available in the Council Property File. No testing, measurement or intrusive examinations of the structural elements were made. The findings and conclusions rely on the building having been constructed in full accordance with the documentation reviewed and that the structural elements have remained unaltered and in sound condition and repair. No opinion regarding any aspect of the condition, or maintenance, of the building is expressed or implied and likewise the consideration of any discipline, other than the structural engineering assessment of the likely seismic performance, determined by high level document review and visual inspection, is expressed or implied.

Yours faithfully,

Stephen Mitchell
(CPEng # 70562)

Appendix A

Initial Evaluation Procedure (IEP)

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in the "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Countdown	Date:	26/03/2021
City:	Tauranga	Revision No.:	B

Table IEP-1 Initial Evaluation Procedure Step 1

Step 1 - General Information

1.1 Photos (attach sufficient to describe building)

NOTE: THERE ARE MORE PHOTOS ON PAGE 1a ATTACHED

1.2 Sketches (plans etc, show items of interest)

NOTE: THERE ARE MORE SKETCHES ON PAGE 1a ATTACHED

1.3 List relevant features (Note: only 10 lines of text will print in this box. If further text required use Page 1a)

Refer to report

1.4 Note information sources Tick as appropriate

Visual Inspection of Exterior	☑	Specifications	☐
Visual Inspection of Interior	☑	Geotechnical Reports	☑
Drawings (note type)	☑	Other (list)	☑

Drawings, calculations and geotechnical reports obtained from the property file.

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
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City:	Tauranga	Revision No.:	B

Table IEP-2 Initial Evaluation Procedure Step 2

Step 2 - Determination of *(%NBS)* $_b$

(Baseline *(%NBS)* for particular building - refer Section B5)

2.1 Determine nominal *(%NBS)* = *(%NBS)* $_{nom}$

	Longitudinal	Transverse
a) Building Strengthening Data		
Tick if building is known to have been strengthened in this direction	☐	☐
If strengthened, enter percentage of code the building has been strengthened to	N/A	N/A
b) Year of Design/Strengthening, Building Type and Seismic Zone		
Pre 1935	○	○
1935-1965	○	○
1965-1976	○	○
1976-1984	○	○
1984-1992	○	○
1992-2004	◉	◉
2004-2011	○	○
Post Aug 2011	○	○
Building Type:	Not applicable	Not applicable
Seismic Zone:	Not applicable	Not applicable
c) Soil Type		
From NZS1170.5:2004, Cl 3.1.3 :	C Shallow Soil	C Shallow Soil
From NZS4203:1992, Cl 4.6.2.2 : (for 1992 to 2004 and only if known)	Intermediate/Not Known	Intermediate/Not Known
d) Estimate Period, *T*		
Comment: h_n =	8	8 m
A_c =	1.00	1.00 m²
Moment Resisting Concrete Frames: $T = \max(0.09h_n^{0.75}, 0.4)$	○	○
Moment Resisting Steel Frames: $T = \max(0.14h_n^{0.75}, 0.4)$	○	○
Eccentrically Braced Steel Frames: $T = \max(0.08h_n^{0.75}, 0.4)$	○	○
All Other Frame Structures: $T = \max(0.06h_n^{0.75}, 0.4)$	○	○
Concrete Shear Walls $T = \max(0.09h_n^{0.75}/A_c^{0.5}, 0.4)$	○	○
Masonry Shear Walls: $T \leq 0.4$sec	○	○
User Defined (input Period):	◉	◉
Where h_n = height in metres from the base of the structure to the uppermost seismic weight or mass. T:	0.40	0.40
e) Factor A: Strengthening factor determined using result from (a) above (set to 1.0 if not strengthened) — Factor A:	1.00	1.00
f) Factor B: Determined from NZSEE Guidelines Figure 3A.1 using results (a) to (e) above — Factor B:	0.23	0.23
g) Factor C: For reinforced concrete buildings designed between 1976-84 Factor C = 1.2, otherwise take as 1.0. — Factor C:	1.00	1.00
h) Factor D: For buildings designed prior to 1935 Factor D = 0.8 except for Wellington and Napier (1931-1935) where Factor D may be taken as 1.0, otherwise take as 1.0. — Factor D:	1.00	1.00
(%NBS) $_{nom}$ **= AxBxCxD** — *(%NBS)* $_{nom}$	23%	23%

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Countdown	Date:	26/03/2021
City:	Tauranga	Revision No.:	B

Table IEP-2 Initial Evaluation Procedure Step 2 continued

2.2 Near Fault Scaling Factor, Factor E
If $T \leq 1.5$sec, Factor E = 1

			Longitudinal	Transverse
a) Near Fault Factor, *N(T,D)* (from NZS1170.5:2004, Cl 3.1.6)		N(T,D):	1	1
b) Factor E	= 1/N(T,D)	Factor E:	1.00	1.00

2.3 Hazard Scaling Factor, Factor F
a) Hazard Factor, *Z*, for site

Location: Tauranga — Refer right for user-defined locations

Z = 0.2 (from NZS1170.5:2004, Table 3.3)
Z_{1992} = 0.85 (NZS4203:1992 Zone Factor from accompanying Figure 3.5(b))
Z_{2004} = 0.2 (from NZS1170.5:2004, Table 3.3)

b) Factor F

				Longitudinal	Transverse
For pre 1992	=	$1/Z$			
For 1992-2011	=	Z_{1992}/Z			
For post 2011	=	Z_{2004}/Z			
			Factor F:	4.25	4.25

2.4 Return Period Scaling Factor, Factor G

			Longitudinal	Transverse
a) Design Importance Level, I (Set to 1 if not known. For buildings designed prior to 1965 and known to be designed as a public building set to 1.25. For buildings designed 1965-1976 and known to be designed as a public building set to 1.33 for Zone A or 1.2 for Zone B. For 1976-1984 set I value.)		I =	1	1
b) Design Risk Factor, R_o (set to 1.0 if other than 1976-2004, or not known)			Category IV	Category IV
		R_o =	1	1
c) Return Period Factor, R (from NZS1170.0:2004 Building Importance Level)	Choose Importance Level		○1 ◉2 ○3 ○4	○1 ◉2 ○3 ○4
		R =	1.0	1.0
d) Factor G	= IR_o/R	Factor G:	1.00	1.00

2.5 Ductility Scaling Factor, Factor H

			Longitudinal	Transverse
a) Available Displacement Ductility Within Existing Structure	Comment:	μ =	1.25	1.25
b) Factor H			k_μ	k_μ
	For pre 1976 (maximum of 2)	=	1.14	1.14
	For 1976 onwards	=	1	1
		Factor H:	1.00	1.00

(where kμ is NZS1170.5:2004 Inelastic Spectrum Scaling Factor, from accompanying Table 3.3)

2.6 Structural Performance Scaling Factor, Factor I

			Longitudinal	Transverse
a) Structural Performance Factor, S_p (from accompanying Figure 3.4)				
Tick if light timber-framed construction in this direction			☐	☐
		S_p =	0.93	0.93
b) Structural Performance Scaling Factor	= $1/S_p$	Factor I:	1.08	1.08

Note Factor B values for 1992 to 2004 have been multiplied by 0.67 to account for Sp in this period

	Longitudinal	Transverse
2.7 Baseline %NBS for Building, $(\%NBS)_b$ (equals $(\%NBS)_{nom} \times E \times F \times G \times H \times I$)	104%	104%

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Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
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City:	Tauranga	Revision No.:	B

Table IEP-3 Initial Evaluation Procedure Step 3

Step 3 - Assessment of Performance Achievement Ratio (PAR)
(Refer Appendix B - Section B3.2)

a) Longitudinal Direction

potential CSWs — **Effect on Structural Performance** **(Choose a value - Do not interpolate)** — **Factors**

3.1 Plan Irregularity
Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor A** 1.0
Comment

3.2 Vertical Irregularity
Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor B** 1.0
Comment

3.3 Short Columns
Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor C** 1.0
Comment

3.4 Pounding Potential
(Estimate D1 and D2 and set D = the lower of the two, or 1.0 if no potential for pounding, or consequences are considered to be minimal)

a) Factor D1: - Pounding Effect

> ***Note:***
> ***Values given assume the building has a frame structure. For stiff buildings (eg shear walls), the effect of pounding may be reduced by taking the coefficient to the right of the value applicable to frame buildings.***

Factor D1 For Longitudinal Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 1	○ 1	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment

b) Factor D2: - Height Difference Effect

Factor D2 For Longitudinal Direction: 1.0

Table for Selection of Factor D2	Severe	Significant	Insignificant
	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	○ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	◉ 1

Comment

Factor D 1.0

3.5 Site Characteristics - *Stability, landslide threat, liquefaction etc as it affects the structural performance from a life-safety perspective*

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor E** 1.0
Comment

3.6 Other Factors - *for allowance of all other relevant characterstics of the building* **For ≤ 3 storeys - Maximum value 2.5 otherwise - Maximum value 1.5. No minimum.** **Factor F** 1.1
Record rationale for choice of Factor F:
Comment

PAR

3.7 Performance Achievement Ratio (PAR)
(equals A x B x C x D x E x F) **Longitudinal** **1.05**

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
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City:	Tauranga	Revision No.:	B

Table IEP-3 Initial Evaluation Procedure Step 3

Step 3 - Assessment of Performance Achievement Ratio (PAR)

(Refer Appendix B - Section B3.2)

b) Transverse Direction

Factors

potential CSWs

Effect on Structural Performance
(Choose a value - Do not interpolate)

3.1 Plan Irregularity

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor A** 1.0

Comment

3.2 Vertical Irregularity

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor B** 1.0

Comment

3.3 Short Columns

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor C** 1.0

Comment

3.4 Pounding Potential

(Estimate D1 and D2 and set D = the lower of the two, or 1.0 if no potential for pounding, or consequences are considered to be minimal)

a) Factor D1: - Pounding Effect

Note:
Values given assume the building has a frame structure. For stiff buildings (eg shear walls), the effect of pounding may be reduced by taking the coefficient to the right of the value applicable to frame buildings.

Factor D1 For Transverse Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 1	○ 1	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment

b) Factor D2: - Height Difference Effect

Factor D2 For Transverse Direction: 1.0

Table for Selection of Factor D2	Severe	Significant	Insignificant
	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	○ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	◉ 1

Comment

Factor D 1.0

3.5 Site Characteristics - *Stability, landslide threat, liquefaction etc as it affects the structural performance from a life-safety perspective*

Effect on Structural Performance ○ *Severe* ○ *Significant* ◉ *Insignificant* **Factor E** 1.0

Comment

3.6 Other Factors - *for allowance of all other relevant characterstics of the building*

For ≤ 3 storeys - Maximum value 2.5
otherwise - Maximum value 1.5.
No minimum.

Factor F 1.05

Record rationale for choice of Factor F:

Comment

3.7 Performance Achievement Ratio (PAR)
(equals **A x B x C x D x E x F**)

PAR
Transverse **1.05**

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Countdown	Date:	26/03/2021
City:	Tauranga	Revision No.:	B

Table IEP-4 Initial Evaluation Procedure Steps 4, 5, 6 and 7

Step 4 - Percentage of New Building Standard *(%NBS)*

		Longitudinal	Transverse
4.1	**Assessed Baseline *%NBS (%NBS)*$_b$** (from Table IEP - 1)	104%	104%
4.2	**Performance Achievement Ratio (PAR)** (from Table IEP - 2)	1.05	1.05
4.3	**PAR x Baseline *(%NBS)*$_b$**	>100%	>100%
4.4	**Percentage New Building Standard *(%NBS)* - Seismic Rating** (Use lower of two values from Step 4.3)		>100%

Step 5 - Is *%NBS* < 34? NO

Step 6 - Potentially Earthquake Risk (is *%NBS* < 67)? NO

Step 7 - Provisional Grading for Seismic Risk based on IEP

Seismic Grade A+

Additional Comments (items of note affecting IEP based seismic rating)

Relationship between Grade and *%NBS*:

Grade:	A+	A	B	C	D	E
%NBS:	> 100	100 to 80	79 to 67	66 to 34	< 34 to 20	< 20

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*

Initial Evaluation Procedure (IEP) Assessment - Completed for {Client/TA}

Street Number & Name:	Bethlehem Shopping Centre	Job No.:	2470
AKA:		By:	SME
Name of building:	Countdown	Date:	26/03/2021
City:	Tauranga	Revision No.:	B

Table IEP-5 Initial Evaluation Procedure Step 8

Step 8 - Identification of potential Severe Structural Weaknesses (SSWs) that could result in significant risk to a significant number of occupants

8.1	Number of storeys above ground level	1
8.2	Presence of heavy concrete floors and/or concrete roof? (Y/N)	N

Potential Severe Structural Weaknesses (SSWs):

Note: Options that are greyed out are not applicable and need not be considered.

Occupancy not considered to be significant - no further consideration required

Risk not considered to be significant - no further consideration required

The following potential Severe Structural Weaknesses (SSWs) have been identified in the building that could result in significant risk to a significant number of occupants:

1. None identified

2. Weak or soft storey (except top storey)

3. Brittle columns and/or beam-column joints the deformations of which are not constrained by other structural elements

4. Flat slab buildings with lateral capacity reliant on low ductility slab-to-column connections

5. No identifiable connection between primary structure and diaphragms

6. [illegible] and [illegible] stairs

IEP Assessment Confirmed by S.R. Mitchell Signature

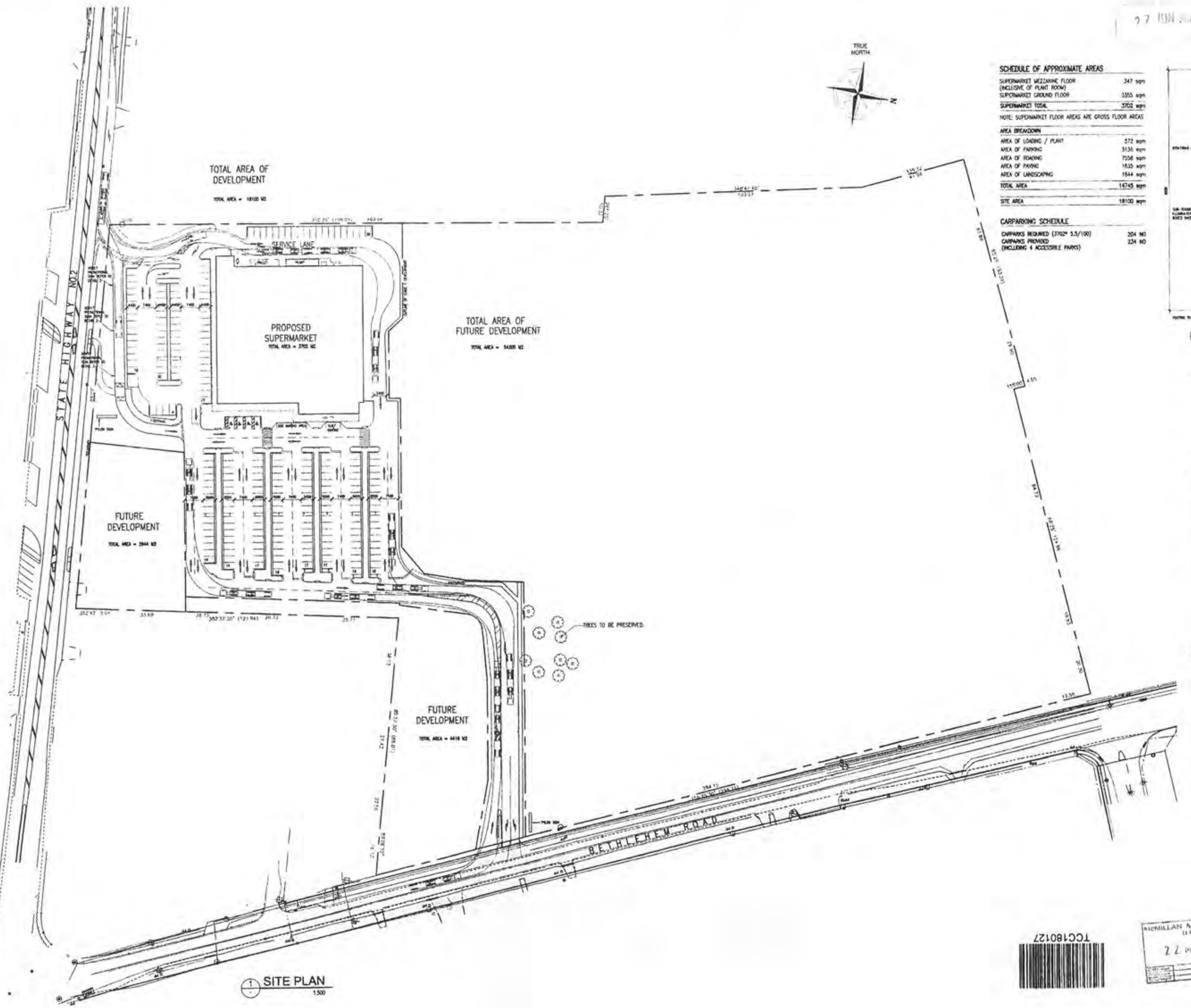
S R Mitchell Name

70562 CPEng. No

WARNING!! *This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.*

Appendix B

Existing Structural and Architectural Drawings



1 SITE PLAN
1:500

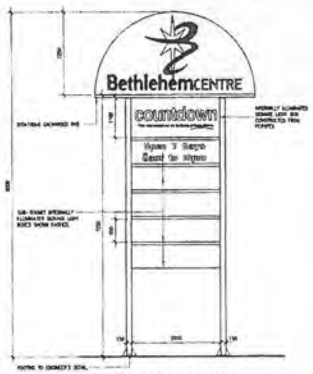
GENERAL NOTES

SCHEDULE OF APPROXIMATE AREAS

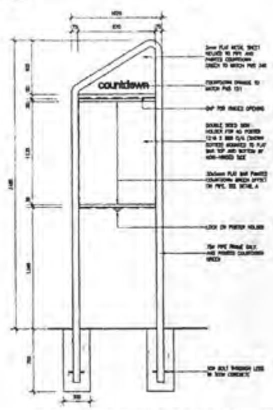
SUPERMARKET MEZZANINE FLOOR (INCLUSIVE OF PLANT ROOM)	347 sqm
SUPERMARKET GROUND FLOOR	3355 sqm
SUPERMARKET TOTAL	3702 sqm
NOTE: SUPERMARKET FLOOR AREAS ARE GROSS FLOOR AREAS	
AREA BREAKDOWN	
AREA OF LOADING / PLANT	572 sqm
AREA OF PARKING	3136 sqm
AREA OF ROADING	7356 sqm
AREA OF PAVING	1635 sqm
AREA OF LANDSCAPING	1844 sqm
TOTAL AREA	14745 sqm
SITE AREA	18100 sqm

CARPARKING SCHEDULE

CARPARKS REQUIRED (3702* 5.5/100)	204 NO
CARPARKS PROVIDED (INCLUDING 4 ACCESSIBLE PARKS)	234 NO



2 PYLON SIGN ASN02
1:50



3 PROMOTIONAL SIGN ASN17
1:20

Issue	Date	Description
e	21.05.03	ISSUED FOR BC STAGING
d	[illegible]	ISSUED FOR INFORMATION
c	[illegible]	ISSUED FOR BC STAGING
b	[illegible]	ISSUED FOR INFORMATION
a	[illegible]	ISSUED FOR INFORMATION

PROGRESSIVE

countdown

PROPOSED SUPERMARKET
BETHLEHEM COUNTDOWN

SITE PLAN

Drawn HJP — Date May 03
Checked — Scale 1:500 @ A0
Approved — Project no. 0292

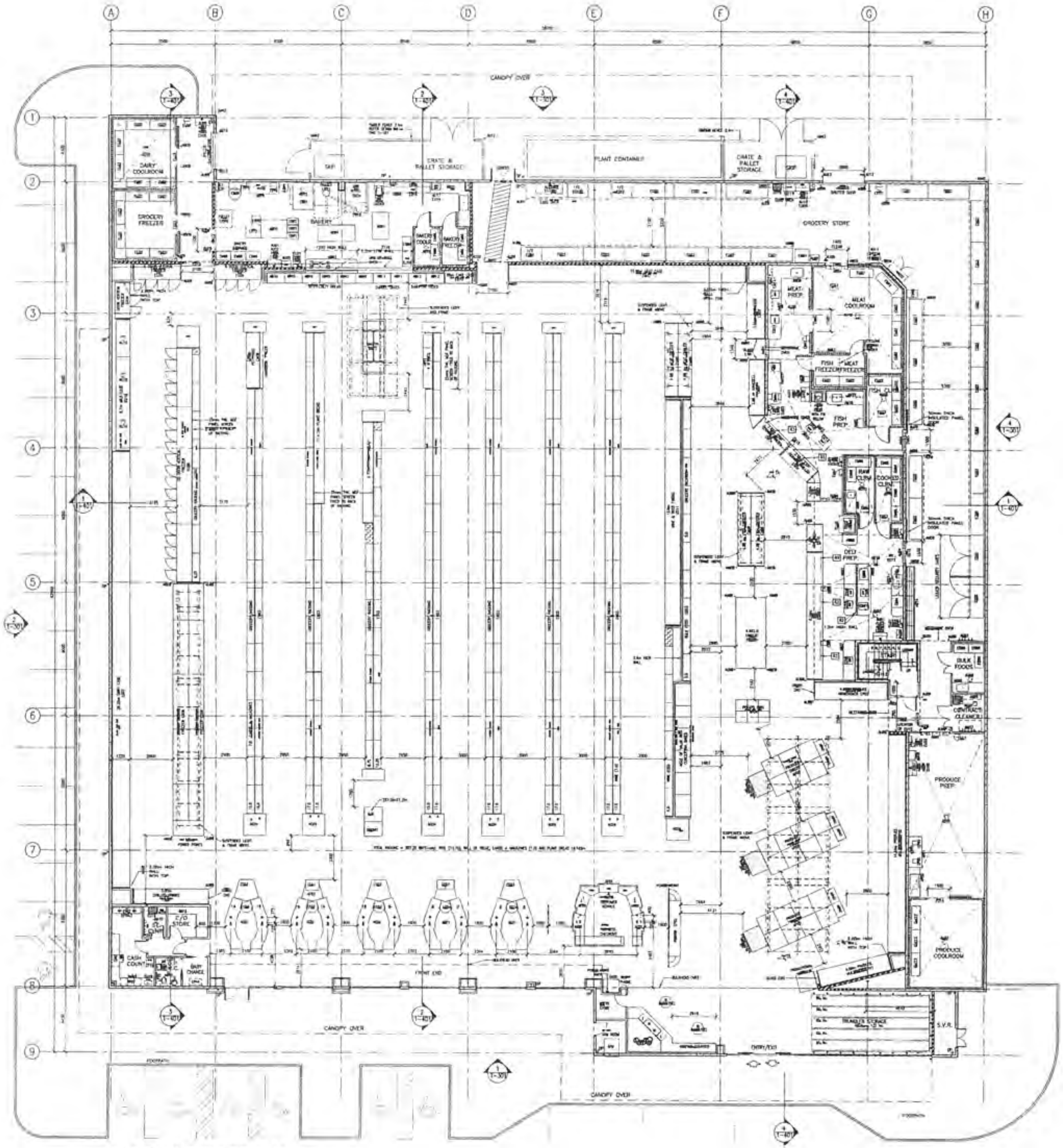
BTH-1-101 e

G:\0292-Bethlehem CD-Construction\Architectural Drawings\0-Current Drawings\BTH-1-101-d.dwg, 21/05/2003 11:39:18

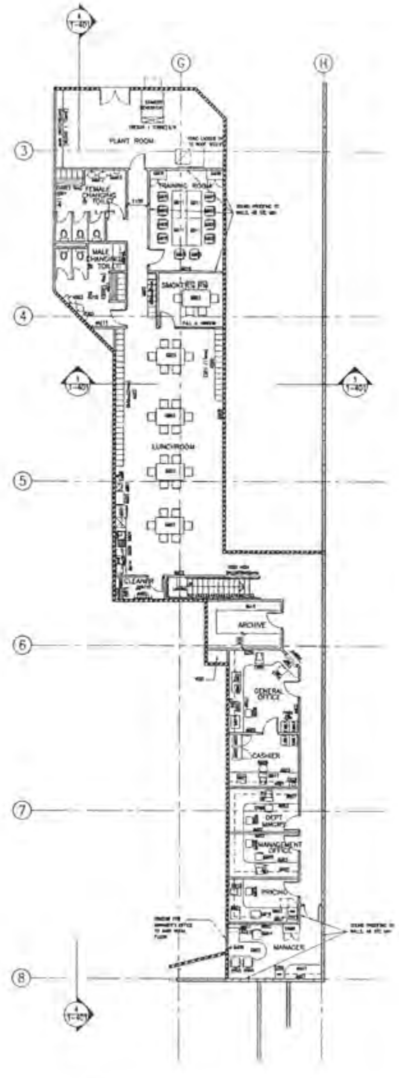
TCC180127

McMILLAN & LOCKWOOD B.O.P.
22 MAY 2003

22 JUN 2005



1 GROUND FLOOR PLAN
1:100



2 MEZZANINE FLOOR PLAN
1:100

GENERAL NOTES

LEGEND

TRUE NORTH

Issue	Date	Description
b	21.08.03	BUILDING CONSENT ISSUE
a	07.08.03	ISSUED FOR BC STAGING

PROGRESSIVE

countdown

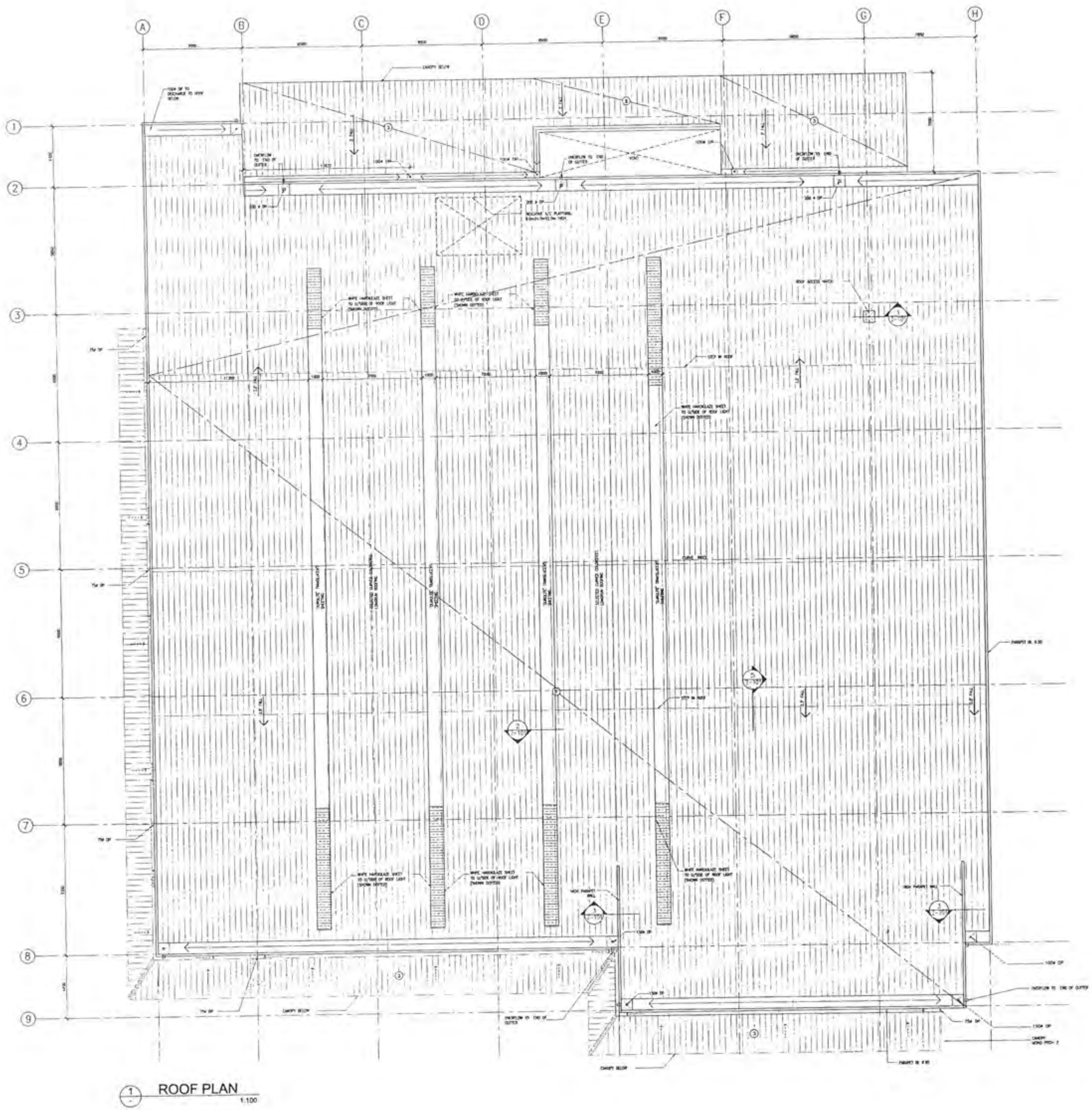
PROPOSED SUPERMARKET
BETHLEHEM COUNTDOWN

GROUND & MEZZANINE
LAYOUT PLAN

APPROVED

Drawn		Date	MAR 03
Checked		Scale	1:100
Approved		Project no.	

BTH-1-201 | b



1 ROOF PLAN 1:100

GENERAL NOTES

1. DO NOT SCALE OFF DRAWING
2. CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS ON SITE
3. ARCHITECTS TO BE NOTIFIED OF ANY VARIATION BETWEEN SITE DIMENSIONS AND THOSE ON PLANS

ROOFING LEGEND:

1. [illegible] COLORSTEEL [illegible] INSULATION ROOF/CEILING PANEL (THIS SECTION OF ROOF BY ROOFING CONTRACTOR) PROFILE [illegible]
2. [illegible] COLORSTEEL [illegible] PROFILE ROOFING ON [illegible] HEAVY WEIGHT VAPOUR BARRIER ON [illegible] WIRE MESH
3. [illegible] COLORSTEEL [illegible] PROFILE ROOFING

Issue	Date	Description
a	21.05.03	BUILDING CONSENT ISSUE

PROGRESSIVE

countdown

you can count on us to keep prices down

PROPOSED SUPERMARKET
BETHLEHEM COUNTDOWN

ROOF PLAN

Smith Sheasman Wolfe architects engineers [illegible]

Drawn		Date	MAR 03
Checked		Scale	1:100
Approved		Project no	0292

This plan is an instrument of service, the property of Smith Sheasman Wolfe, is a confidential document and must not be [illegible], reproduced, used or exhibited to any third party without the permission in writing of Smith Sheasman Wolfe.

127 129 [illegible] Street Auckland, New Zealand — Telephone +64 (09) 302 1273 — Facsimile +64 (09) 379 [illegible]

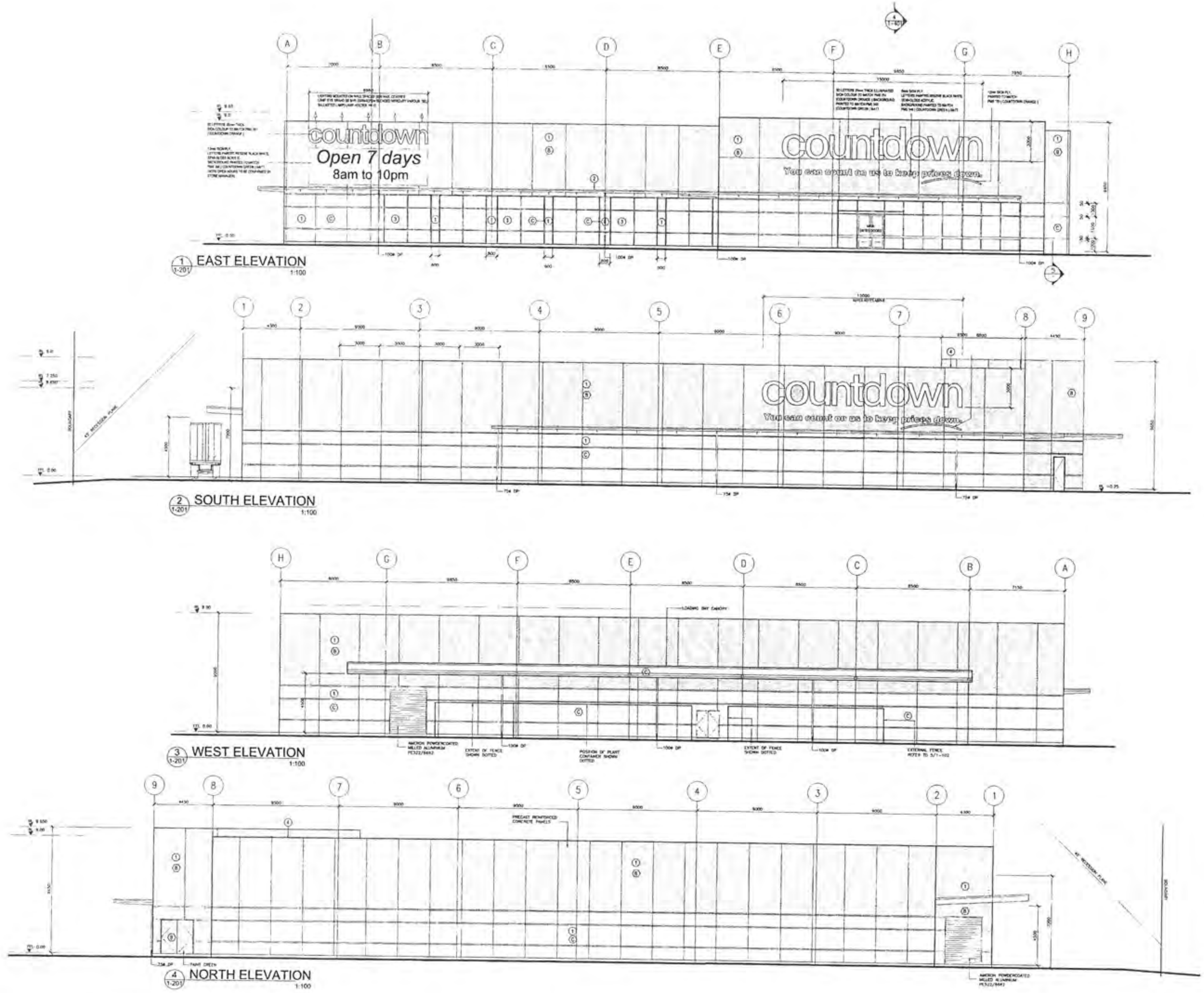
BTH-1-204 a

APPROVED

GENERAL NOTES

FINISH LEGEND

COLOUR LEGEND



b	21.05.03	BUILDING CONSENT ISSUE
a	01.05.03	ISSUED FOR BC STAGING
Issue	Date	Description

PROGRESSIVE

countdown

PROPOSED SUPERMARKET
BETHLEHEM COUNTDOWN

EXTERNAL ELEVATIONS

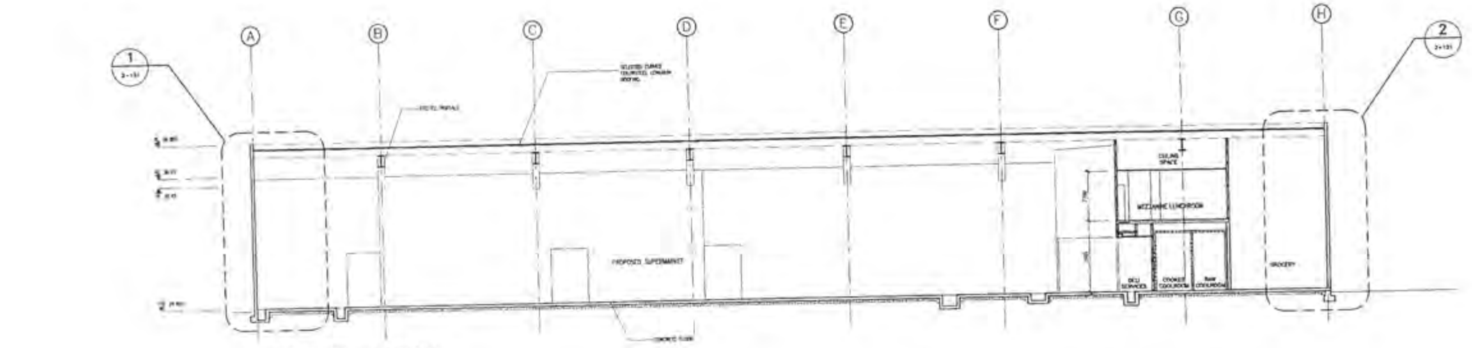
APPROVED

Drawn		Date	MAR 03
Checked		Scale	1:100
Approved		Project no.	0292

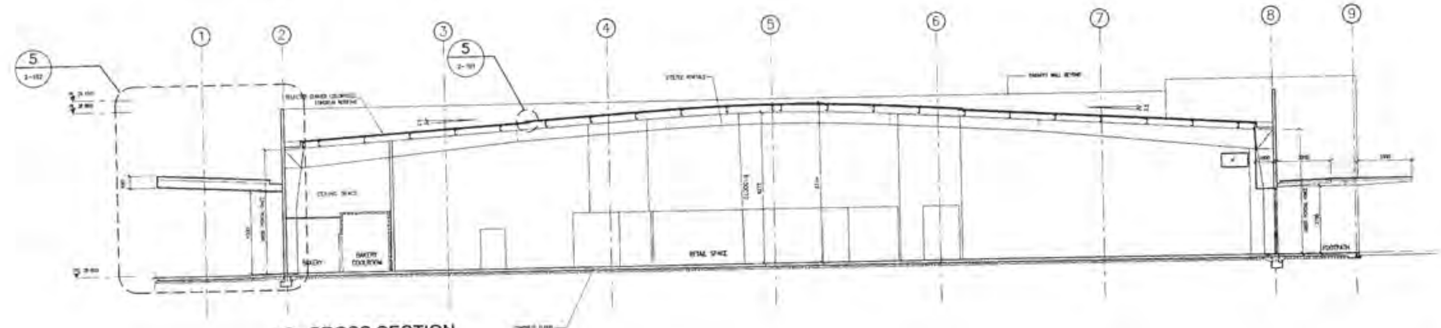
BTH-1-301 b

GENERAL NOTES

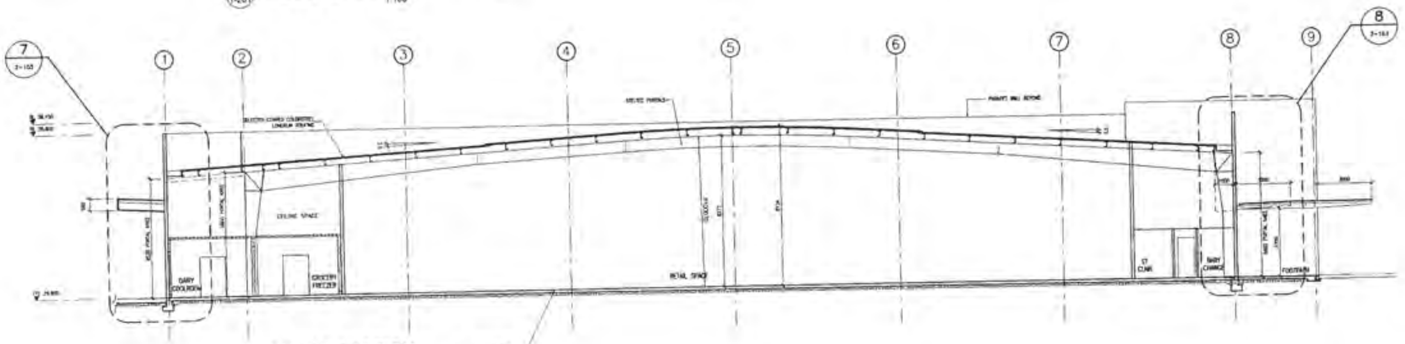
1. DO NOT SCALE OFF DRAWING
2. CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS ON SITE
3. ARCHITECTS TO BE NOTIFIED OF ANY VARIATION BETWEEN SITE DIMENSIONS AND THOSE ON PLANS



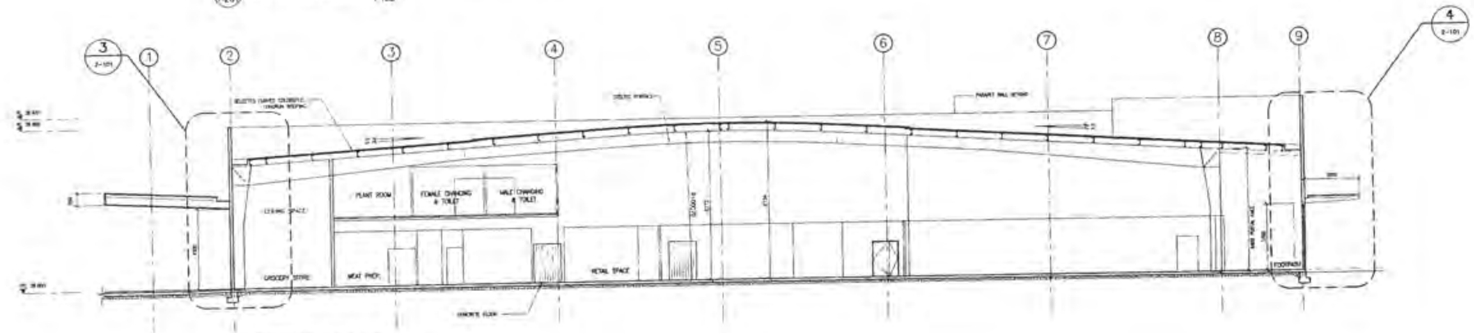
1 CROSS SECTION 1:100



2 CROSS SECTION 1:100



3 CROSS SECTION 1:100



4 CROSS SECTION

b	21.05.03	BUILDING CONSENT ISSUE
a	07.05.03	ISSUED FOR BC STAGING
Issue	Date	Description

PROGRESSIVE

countdown

PROPOSED SUPERMARKET
BETHLEHEM COUNTDOWN

SECTIONS - SHEET 1

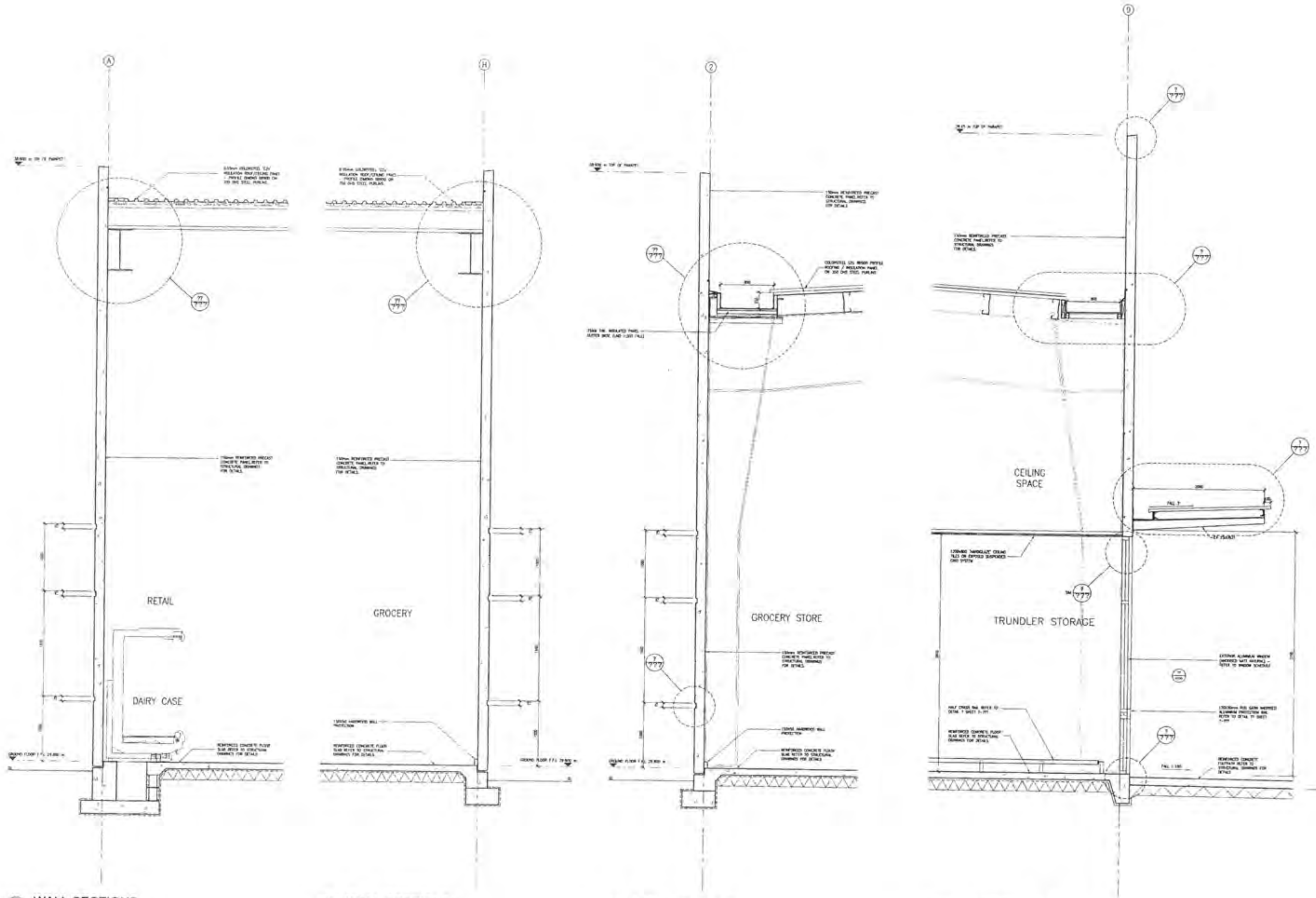
Drawn	Date	MAR 03
Checked	Scale	1:100
Approved	Project no.	[illegible]

APPROVED

BTH-1-401 | b

GENERAL NOTES

1. DO NOT SCALE OFF DRAWING
2. CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS ON SITE
3. ARCHITECTS TO BE NOTIFIED OF ANY VARIATION BETWEEN SITE DIMENSIONS AND THOSE ON PLANS.



1/1-401 WALL SECTIONS 1:20

2/1-401 WALL SECTIONS 1:20

3/1-401 WALL SECTIONS 1:20

4/1-401 WALL SECTIONS 1:20

Issue	Date	Description
a	21.05.03	BUILDING CONSENT ISSUE

PROGRESSIVE

countdown

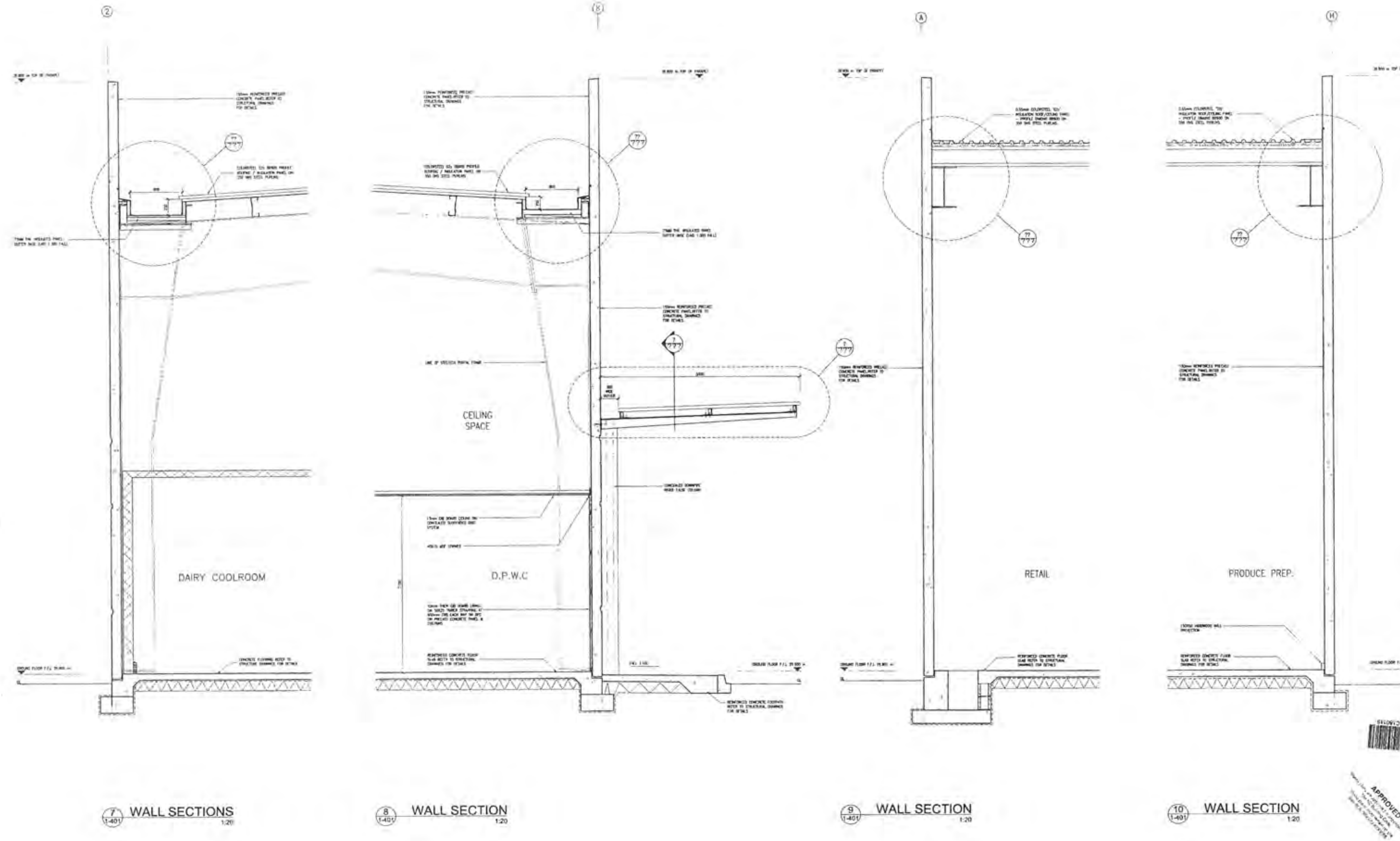
PROPOSED SUPERMARKET
BETHLEHEM COUNTDOWN

WALL SECTIONS - SHEET 1

APPROVED

BTH-2-101 | a

GENERAL NOTES



B	21.05.03	BUILDING CONSENT ISSUE
Issue	Date	Description

PROGRESSIVE

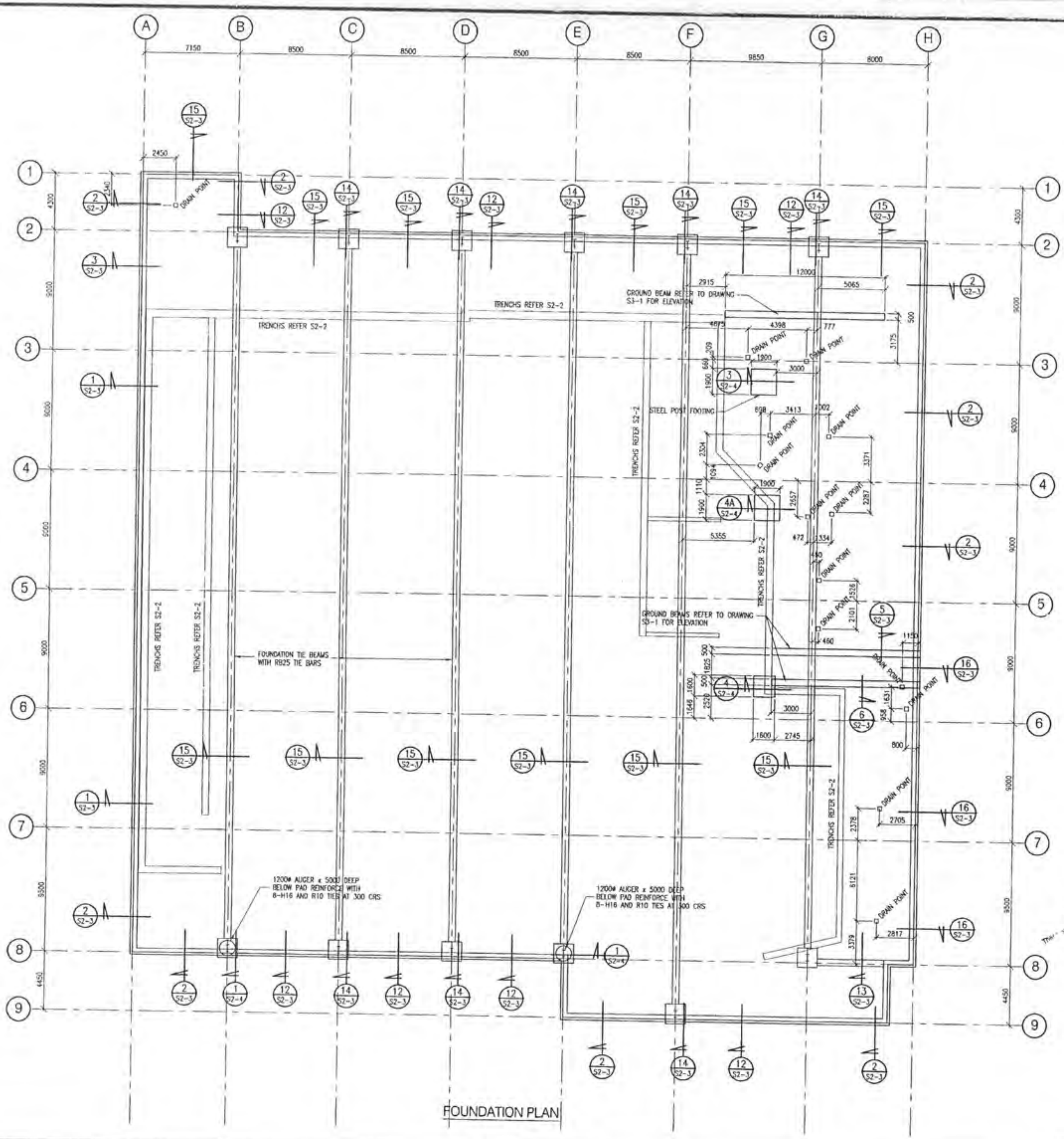
countdown

PROPOSED SUPERMARKET
BETHLEHEM COUNTDOWN

WALL SECTIONS - SHEET 3

APPROVED

BTH-2-103 a



NOTES

REFER TO PANEL ELEVATIONS DRAWINGS FOR FOOTING DEPTHS AND STEPS

APPROVED

TCC180150

CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE

Issue	Details	By	Chkd	Date
A	CONSENT ISSUE	A.R.P.		07/05/2007

StilesandHooker
Architects.Engineers

Hamilton Office
214 Collingwood Street
PO Box 713
Hamilton, New Zealand
Telephone 07 839 1254
Facsimile 07 839 1255

Auckland Office
Building R, Level 1
2 Nuffield Street
PO Box 109170
Newmarket
Auckland, New Zealand
Telephone 09 520 1094
Facsimile 09 520 2999

Email admin@stilesandhooker.co.nz

TELARC REGISTERED SUPPLIER ISO 9001

Client: PROGRESSIVE countdown

Project: BETHLEHEM SUPERMARKET PROJECT

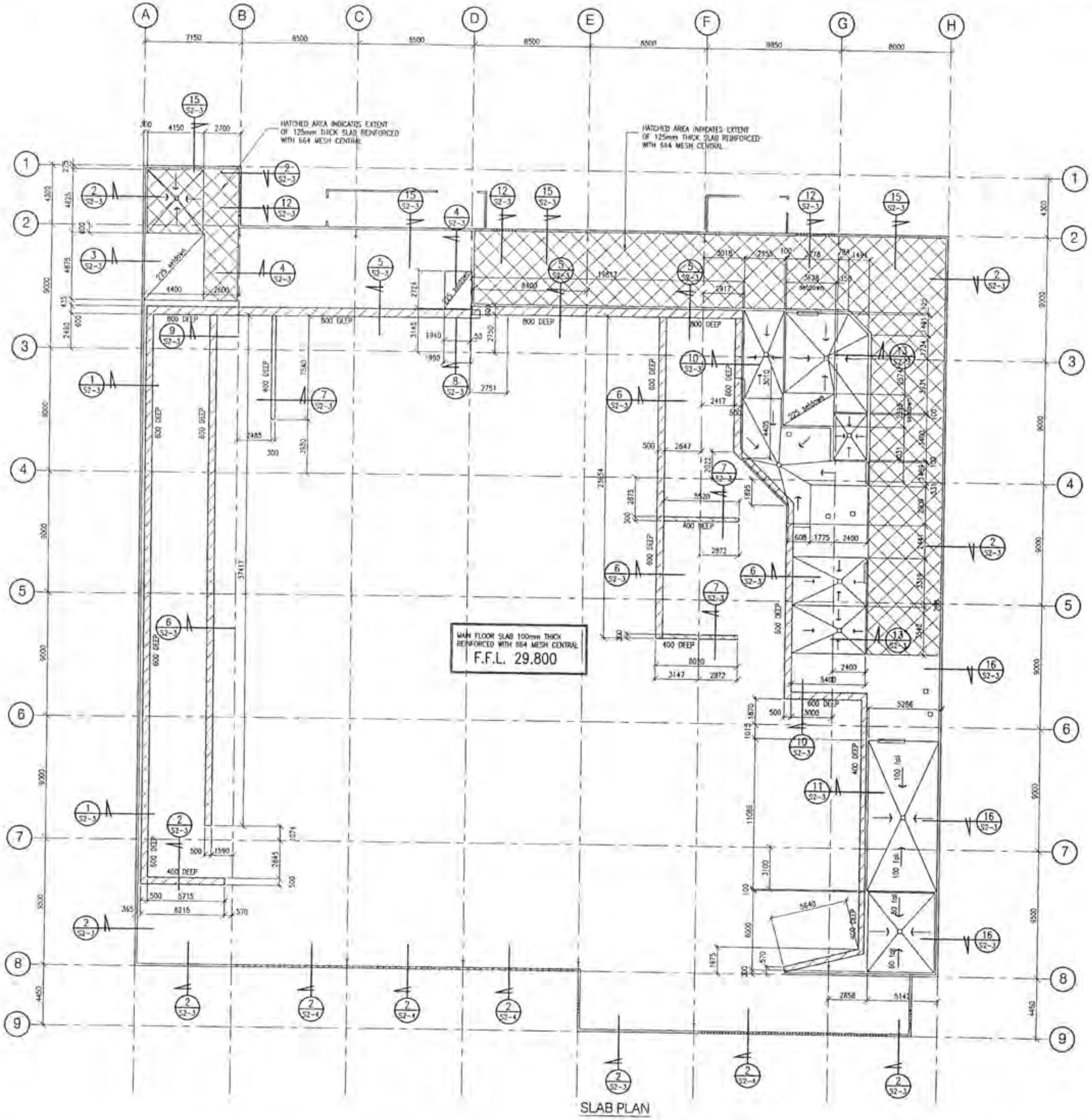
Drawing Title: FOUNDATION PLAN

Designed	Date	Drawn
P.R.	APRIL 2007	A.R.P.
Approved	Scale 1:150	Original Size A1
Job No 7015	Drawing No S2-1	Issue A

ORIGINAL

NOTES

CONTRACTOR TO SUPPLY TO ENGINEER PROPOSED SLAB JOINT LAYOUT TO SUIT CONTRACTORS POURING SEQUENCE FOR APPROVAL PRIOR TO CONSTRUCTION.



APPROVED

CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE.

A	CONSENT ISSUE
Issue	Details

StilesandHooker
Architects, Engineers

Hamilton Office: 214 Collingwood Street, PO Box 718, Hamilton, New Zealand

Auckland Office: Building B, Level 1, 2 Nuffield Street, PO Box 109173, Newmarket, Auckland, New Zealand

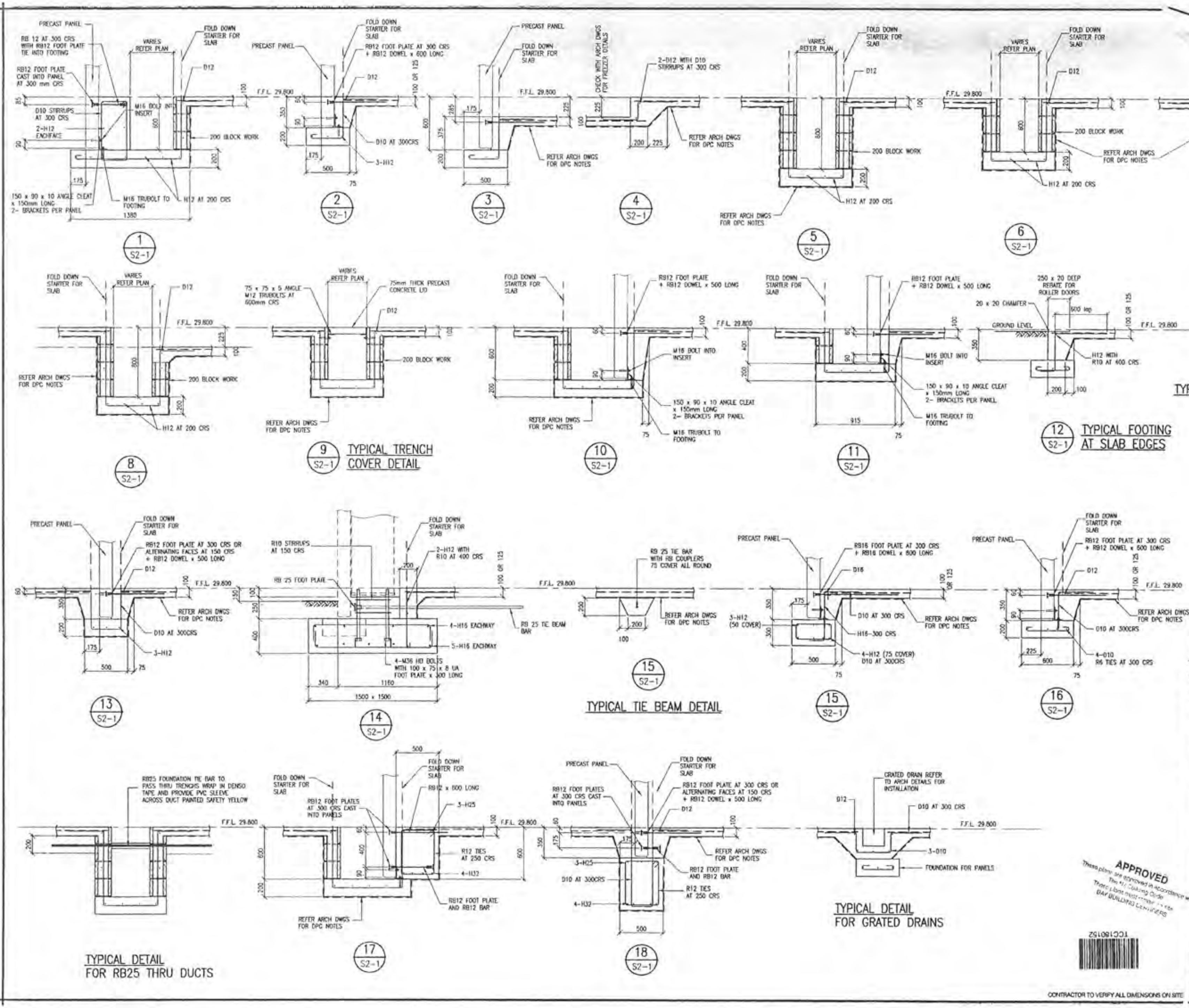
Client: PROGRESSIVE countdown

Project: BETHLEHEM SUPERMARKET PROJECT

Drawing Title: SLAB PLAN AND TRENCH LAYOUTS

ORIGINAL

Scale: 1:150	Original Size: A1	
Job No: 7015	Drawing No: S2-2	Issue: A



CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE

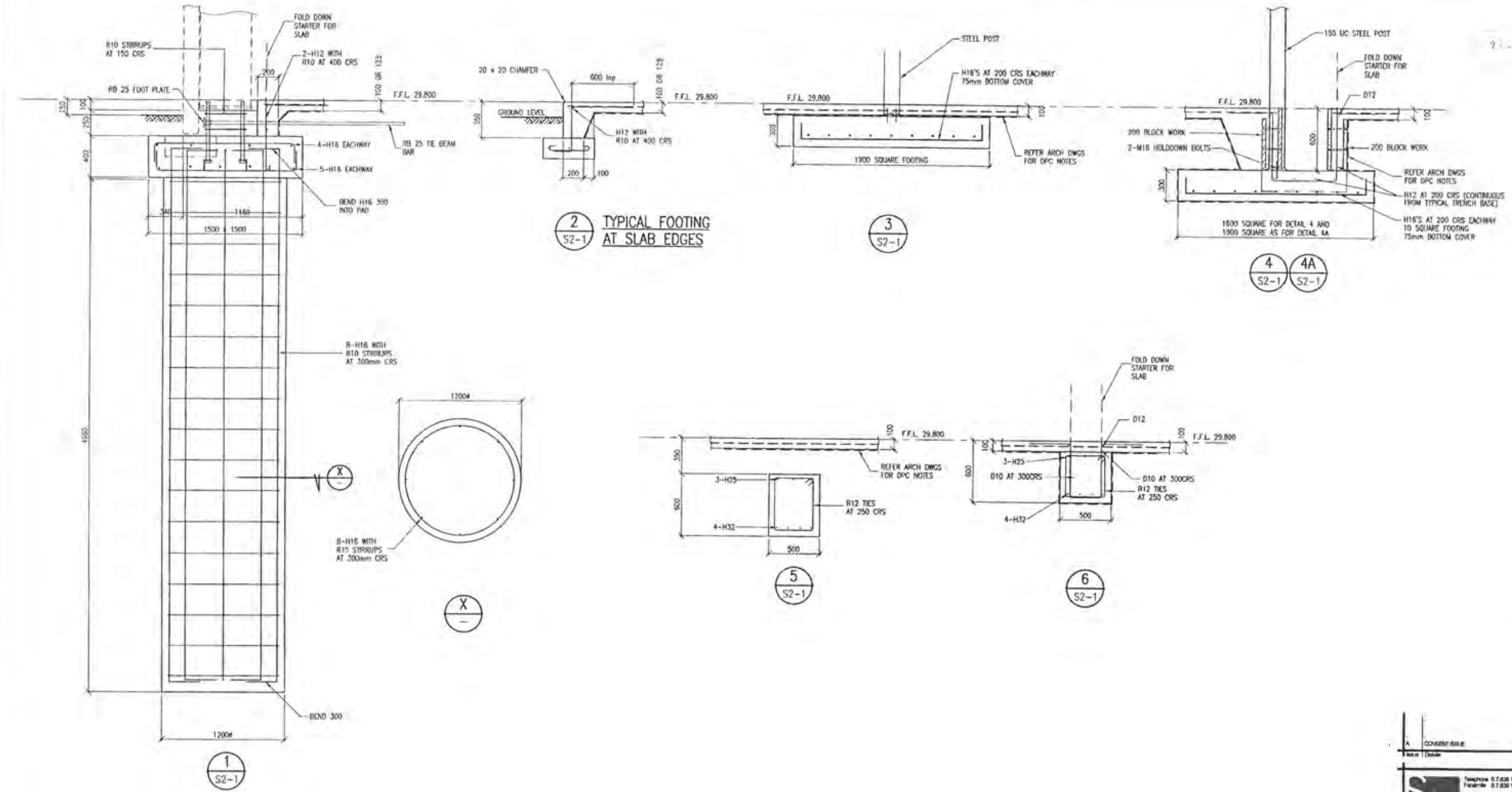
StilesandHooker
Architects.Engineers

Client: PROGRESSIVE countdown

Project: BETHLEHEM SUPERMARKET PROJECT

Drawing Title: SLAB and FOUNDATION DETAILS SHEET 1

Designed	R.B.	Date	MAY 2003	Drawn	A.R.P.
Approved		Scale	1:20	Original Size	A1
Job No	7015	Drawing No	S2-3	Issue	A



ORIGINAL

A	CONSENT ISSUE	A.R.		7.05.03
Issue	Details	By	Chkd	Date

StilesandHooker Architects.Engineers

Telephone 07 838 1254 Facsimile 07 838 1255 — Hamilton Office: 214 Collingwood Street, PO Box 718, Hamilton, New Zealand

Telephone 09 520 1094 Facsimile 09 520 2990 — Auckland Office: Building B, Level 1, 2 Nuffield Street, PO Box 109170, Newmarket, Auckland, New Zealand

Email admin@stilesandhooker.co.nz

TELARC REGISTERED SUPPLIER ISO 9001

Client: PROGRESSIVE countdown

Project: BETHLEHEM SUPERMARKET PROJECT

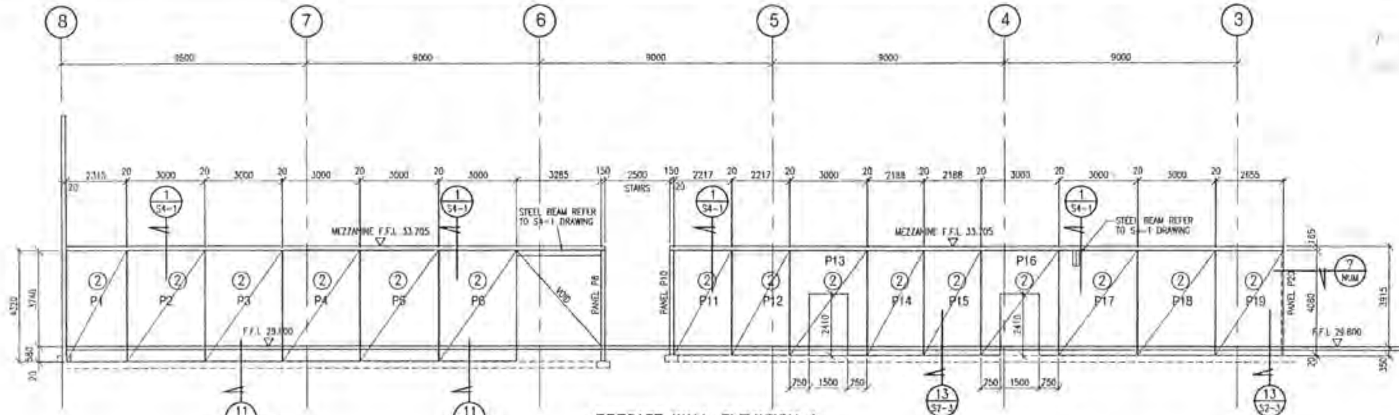
Drawing Title: SLAB and FOUNDATION DETAILS SHEET 2

Designed R.B.	Date MAY 2003	Drawn A.R.K.
Approved	Scale 1:20	Original Size A1
Job No. 7015	Drawing No. S2-4	Issue A

APPROVED

TCC180153

CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE



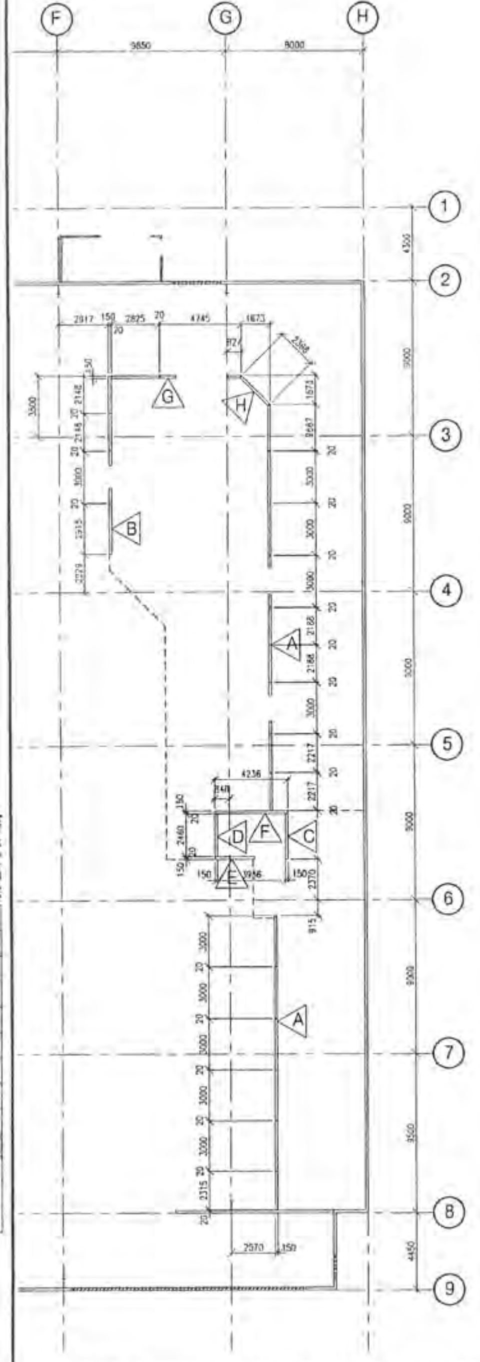
PRECAST WALL ELEVATION A

PRECAST PANEL NOTES

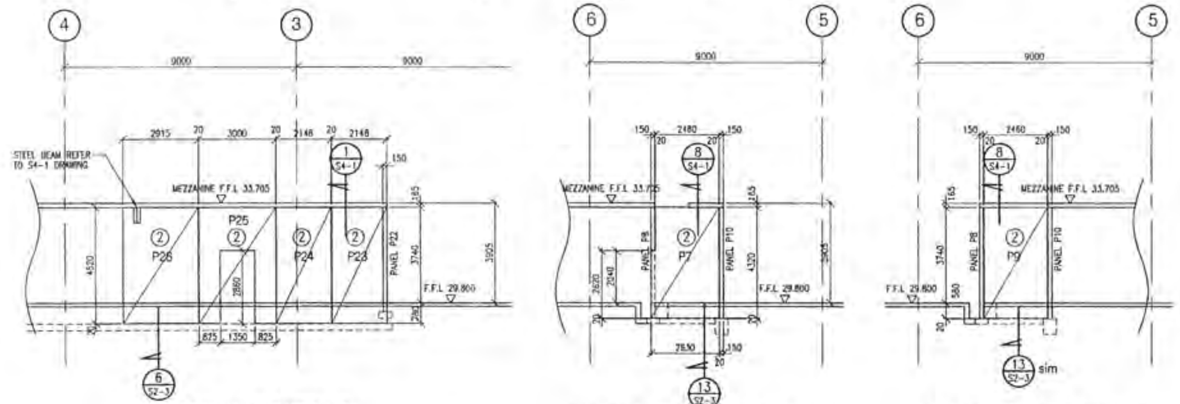
ALL PRECAST PANELS SHALL HAVE A MINIMUM CONCRETE STRENGTH OF 30MPa AT 28 DAYS

① = TYPE 1 WALL PANEL 150mm THICK REINFORCED WITH H16 AT 300 CRS VERTICAL AND H12 AT 300 CRS HORIZONTAL PROVIDE H16 PERIMETER BARS TO ALL PRECAST PANEL EDGES

② = TYPE 2 WALL PANEL 150mm THICK REINFORCED WITH H12 AT 250 CRS VERTICAL AND H12 AT 300 CRS HORIZONTAL PROVIDE H16 PERIMETER BARS TO ALL PRECAST PANEL EDGES



PLAN - MEZZANINE FLOOR SUPPORT WALL PANELS

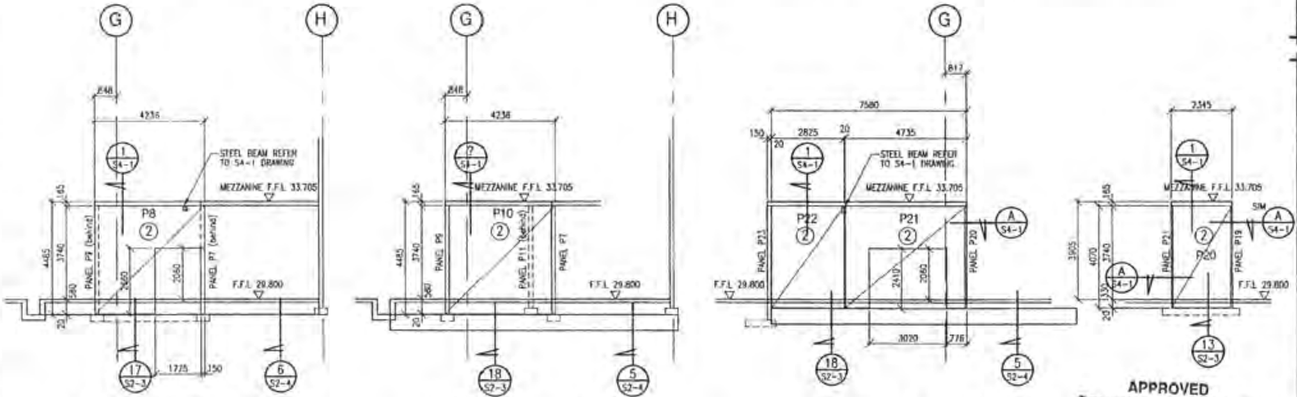


PRECAST WALL ELEVATION B

PRECAST WALL ELEVATION C

PRECAST WALL ELEVATION D

ORIGINAL



PRECAST WALL ELEVATION E

PRECAST WALL ELEVATION F

PRECAST WALL ELEVATION G

WALL ELEVATION H

APPROVED

BAY BUILDING CERTIFIERS

TCC180165

CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE

Issue	Details	By	Chkd	Date
A	CONSENT ISSUE	A.R.P.		11/05/2003

StilesandHooker Architects.Engineers

Hamilton Office: 214 Collingwood Street, PO Box 218, Hamilton, New Zealand

Auckland Office: Building B, Level 1, 2 Nuffield Street, PO Box 109170, Newmarket, Auckland, New Zealand

TELARC REGISTERED SUPPLIER ISO 9001

Client: PROGRESSIVE countdown

Project: BETHLEHEM SUPERMARKET PROJECT

Drawing Title: MEZZANINE FLOOR SUPPORT WALL PANEL PLAN & ELEVATIONS

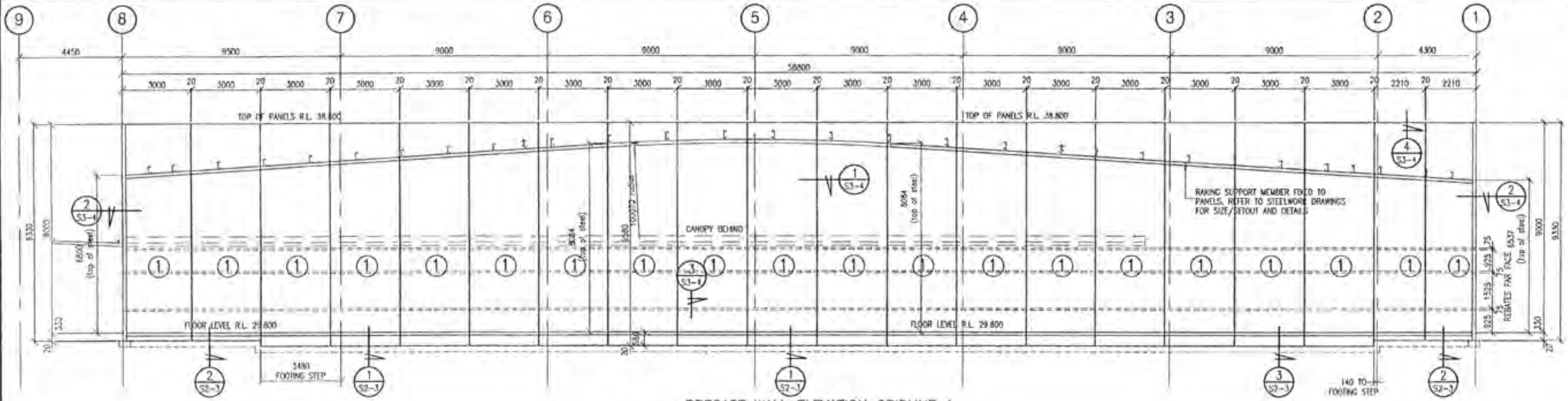
Designed	Date	Drawn
B.A.W.	APRIL 2003	A.R.P.
Approved	Scale 1:150 1:100	Original Size A1
Job No 7015	Drawing No S3-1	Issue A

PRECAST PANEL NOTES

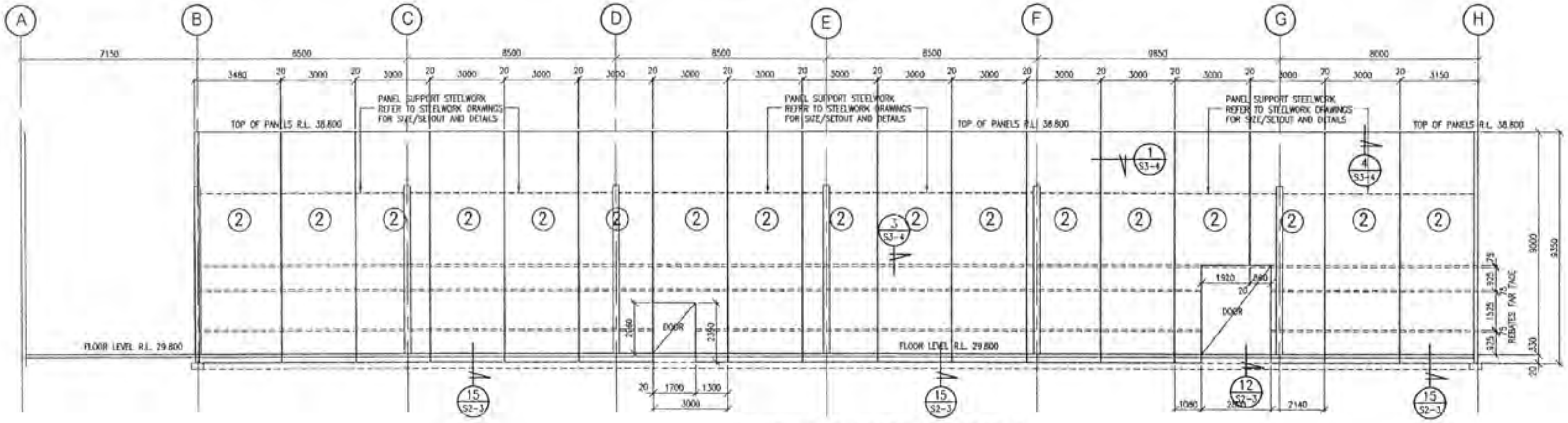
ALL PRECAST PANELS SHALL HAVE A MINIMUM CONCRETE STRENGTH OF 30MPa AT 28 DAYS

① = TYPE 1 WALL PANEL 150mm THICK REINFORCED WITH H16 AT 300 CRS VERTICAL AND H12 AT 300 CRS HORIZONTAL PROVIDE H16 PERIMETER BARS TO ALL PRECAST PANEL EDGES

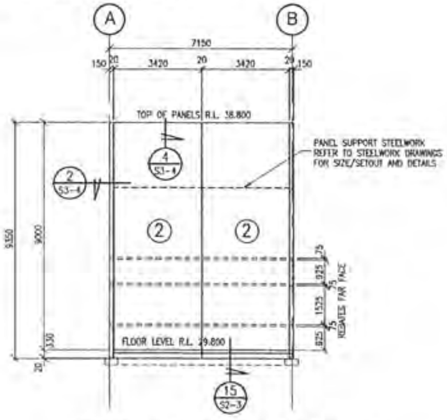
② = TYPE 2 WALL PANEL 150mm THICK REINFORCED WITH H12 AT 250 CRS VERTICAL AND H12 AT 300 CRS HORIZONTAL PROVIDE H16 PERIMETER BARS TO ALL PRECAST PANEL EDGES



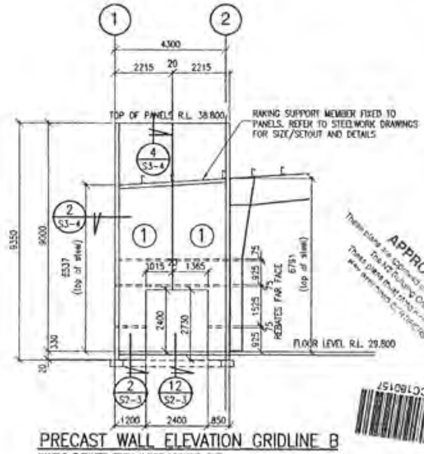
PRECAST WALL ELEVATION GRIDLINE A
PANELS ELEVATED FROM INSIDE LOOKING OUT



PRECAST WALL ELEVATION GRIDLINE 2
PANELS ELEVATED FROM INSIDE LOOKING OUT



PRECAST WALL ELEVATION GRIDLINE 1
PANELS ELEVATED FROM INSIDE LOOKING OUT



PRECAST WALL ELEVATION GRIDLINE B
PANELS ELEVATED FROM INSIDE LOOKING OUT

APPROVED

CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE

Issue	Details	By	Chkd	Date
A	CONSENT ISSUE	A.R.P.		

StilesandHooker Architects.Engineers

Hamilton Office, 214 Collingwood Street, PO Box 718, Hamilton, New Zealand

Auckland Office, Building B, Level 1, 2 Nuffield Street, PO Box 109170, Newmarket, Auckland, New Zealand

TELARC REGISTERED SUPPLIER ISO 9001

Client: PROGRESSIVE countdown

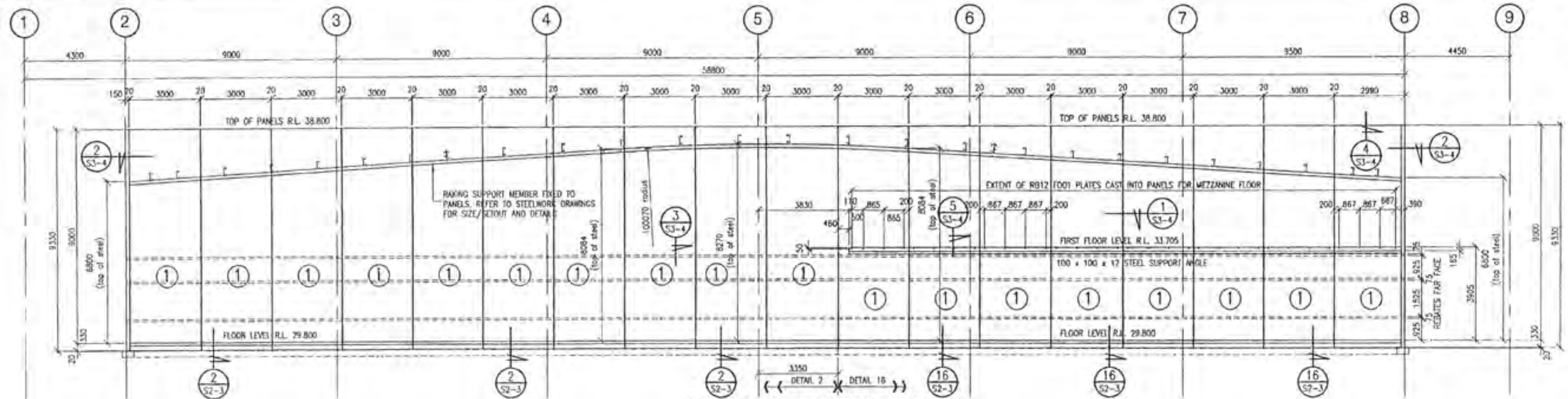
Project: BETHLEHEM SUPERMARKET PROJECT

Drawing Title: WALL PANEL ELEVATIONS GRIDLINES A & 2

Designed	Date	Checked
B.A.W.	MAY 2005	A.R.P.
Approved	Scale 1:100	Original Size A1
Job No 7015	Drawing No S3-2	Issue A

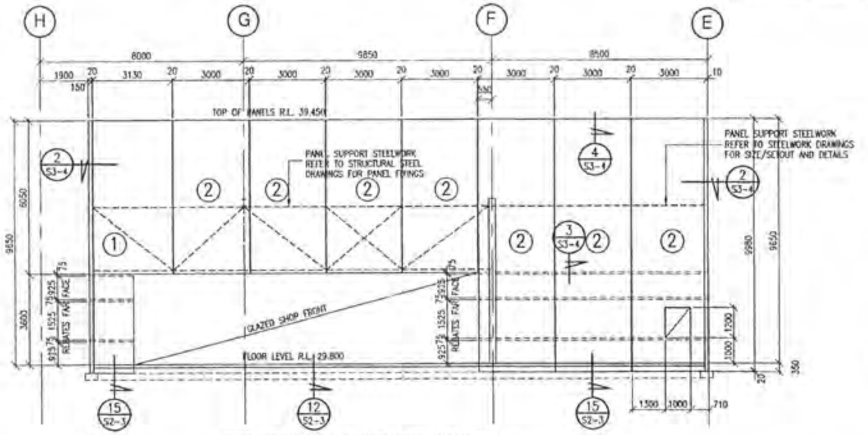
ORIGINAL ORIGINAL

TCC180157



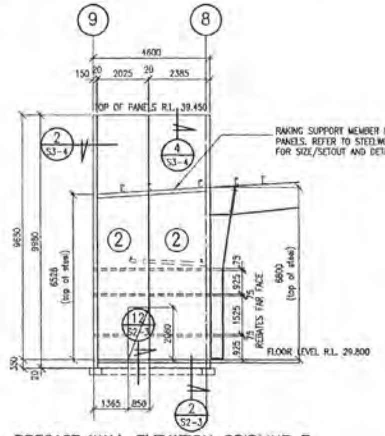
PRECAST WALL ELEVATION GRIDLINE H

PANELS ELEVATED FROM INSIDE LOOKING OUT



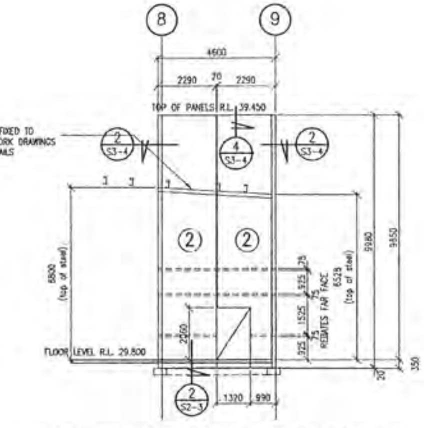
PRECAST WALL ELEVATION GRIDLINE 9

PANELS ELEVATED FROM INSIDE LOOKING OUT



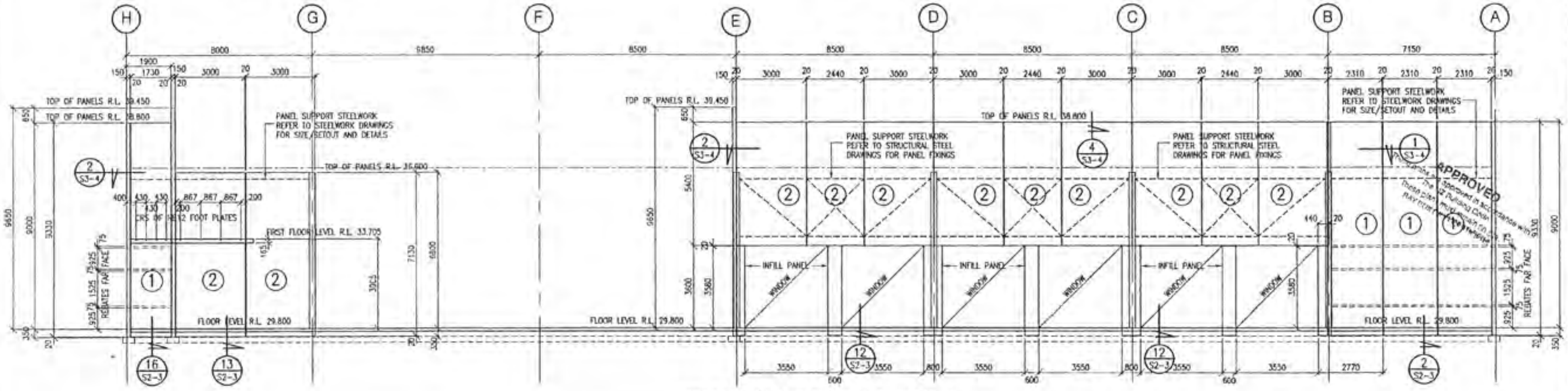
PRECAST WALL ELEVATION GRIDLINE E

PANELS ELEVATED FROM INSIDE LOOKING OUT



PRECAST WALL ELEVATION ADJACENT GRIDLINE H

PANELS ELEVATED FROM INSIDE LOOKING OUT



PRECAST WALL ELEVATION GRIDLINE 8

PANELS ELEVATED FROM INSIDE LOOKING OUT

CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE

PRECAST PANEL NOTES

ALL PRECAST PANELS SHALL HAVE A MINIMUM CONCRETE STRENGTH OF 30MPa AT 28 DAYS

1 = TYPE 1 WALL PANEL 150mm THICK REINFORCED WITH H16 AT 300 CRS VERTICAL AND H12 AT 300 CRS HORIZONTAL PROVIDE H16 PERIMETER BARS TO ALL PRECAST PANEL EDGES

2 = TYPE 2 WALL PANEL 150mm THICK REINFORCED WITH H12 AT 250 CRS VERTICAL AND H12 AT 300 CRS HORIZONTAL PROVIDE H16 PERIMETER BARS TO ALL PRECAST PANEL EDGES

TCC180158

Issue	Details	By	Chkd	Date
A	CONSENT ISSUE	A.R.P.		

StilesandHooker
Architects.Engineers

Hamilton Office
214 Collingwood Street
PO Box 715
Hamilton, New Zealand

Auckland Office
Building B, Level 1
2 Nuffield Street
PO Box 109170
Newmarket
Auckland, New Zealand

TELARC REGISTERED SUPPLIER ISO 9001

Client: PROGRESSIVE countdown

Project: BETHLEHEM SUPERMARKET PROJECT

Drawing Title: WALL PANEL ELEVATIONS GRIDLINES H & 8

Designed	Date	Drawn
B.A.W.	MAY 2002	A.R.P.
Approved	Scale 1:100	Original Size A1
Job No 7015	Drawing No S3-3	Issue A

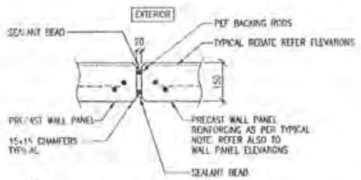
ORIGINAL

PRECAST PANEL NOTES

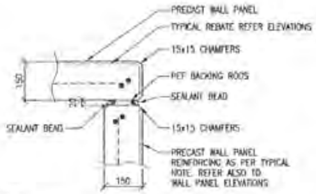
ALL PRECAST PANELS SHALL HAVE A MINIMUM CONCRETE STRENGTH OF 30MPa AT 28 DAYS

1 = TYPE 1 WALL PANEL 150mm THICK REINFORCED WITH H16 AT 300 CRS VERTICAL AND H12 AT 300 CRS HORIZONTAL PROVIDE H16 PERIMETER BARS TO ALL PRECAST PANEL EDGES

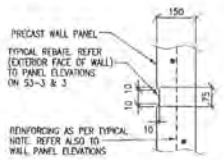
2 = TYPE 2 WALL PANEL 150mm THICK REINFORCED WITH H12 AT 250 CRS VERTICAL AND H12 AT 300 CRS HORIZONTAL PROVIDE H16 PERIMETER BARS TO ALL PRECAST PANEL EDGES



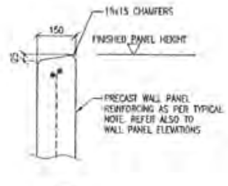
1 TYPICAL PANEL JOINT



2 TYPICAL CORNER DETAIL



3 TYPICAL REBATE



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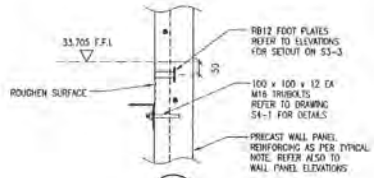

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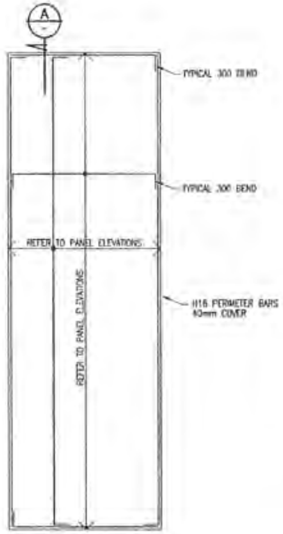
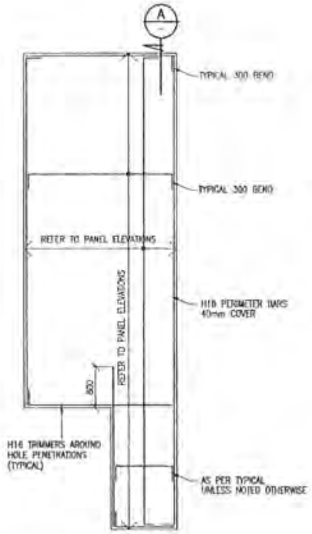


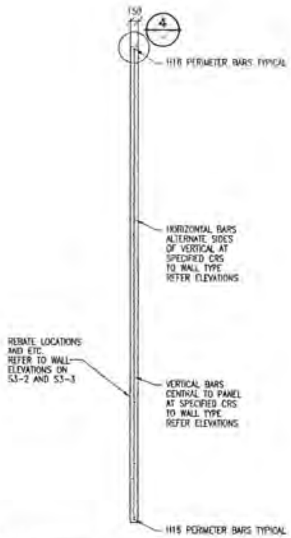
TYPICAL WALL PANEL

REFER TO WALL ELEVATIONS FOR PANEL SIZES AND PANEL TYPE (1 2)



TYPICAL WALL PANEL PENETRATION

REFER TO WALL ELEVATIONS FOR PANEL SIZES AND PANEL TYPE (1 2)



A TYPICAL WALL SECTION

ORIGINAL

A	CONSENT ISSUE	A.B		MAY03
Issue	Details	By	Chkd	Date

StilesandHooker
Architects.Engineers

Telephone 07 839 1254 Facsimile 07 839 1256 — Hamilton Office, 214 Collingwood Street, PO Box 718, Hamilton, New Zealand

Telephone 09 520 1094 Facsimile 09 520 2888 — Auckland Office, Building B, Level 1, 2 Nuffield Street, PO Box 104170, Newmarket, Auckland, New Zealand

Email admin@stilesandhooker.co.nz

TELARC REGISTERED SUPPLIER ISO 9001

Client: PROGRESSIVE countdown

Project: BETHLEHEM SUPERMARKET PROJECT

Drawing Title: WALL PANEL DETAILS

Designed	Date MAY2003	Drawn A.R.P
Approved	Scale 1:10	Original Size A1
Job No 7015	Drawing No S3-4	Issue A

APPROVED

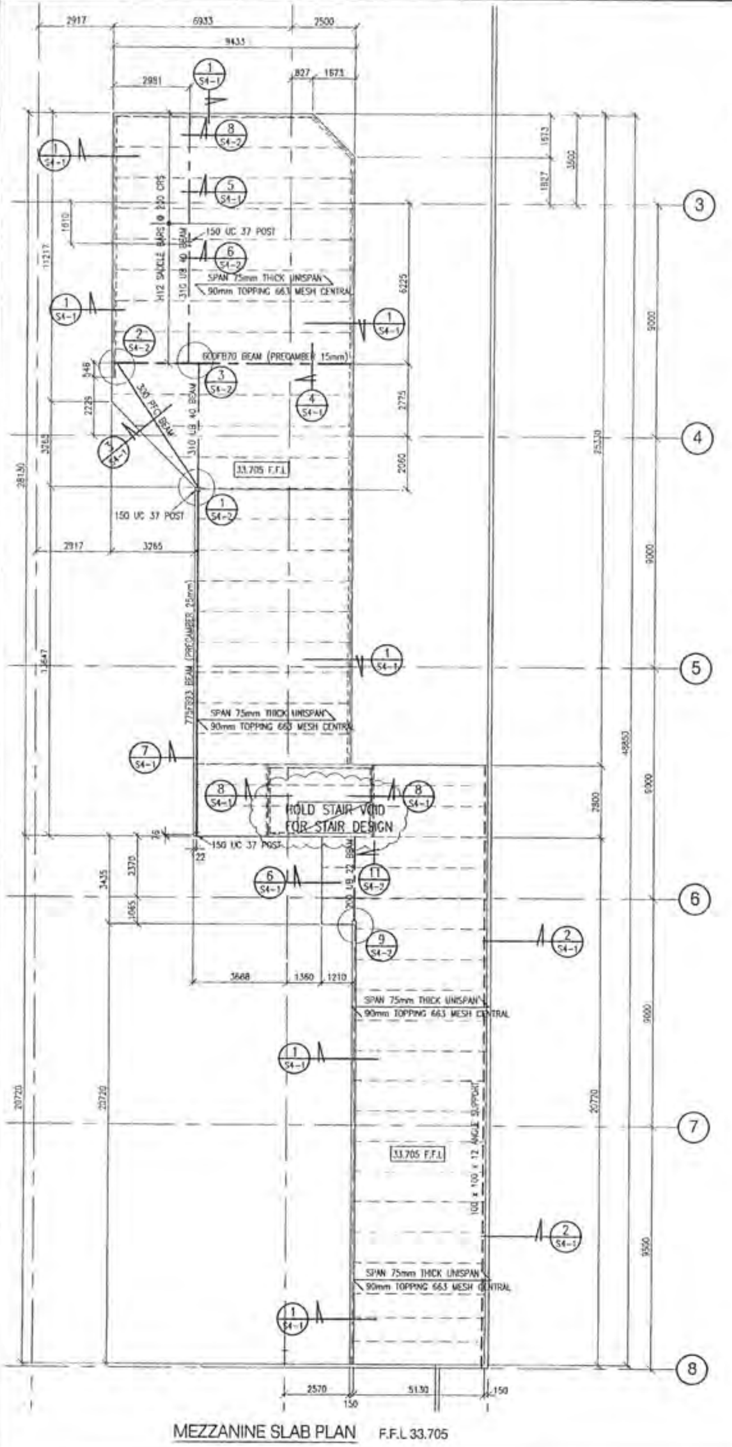
These plans are approved in accordance with the NZ Building Code. These plans must remain on site. BAY BUILDING CERTIFIERS

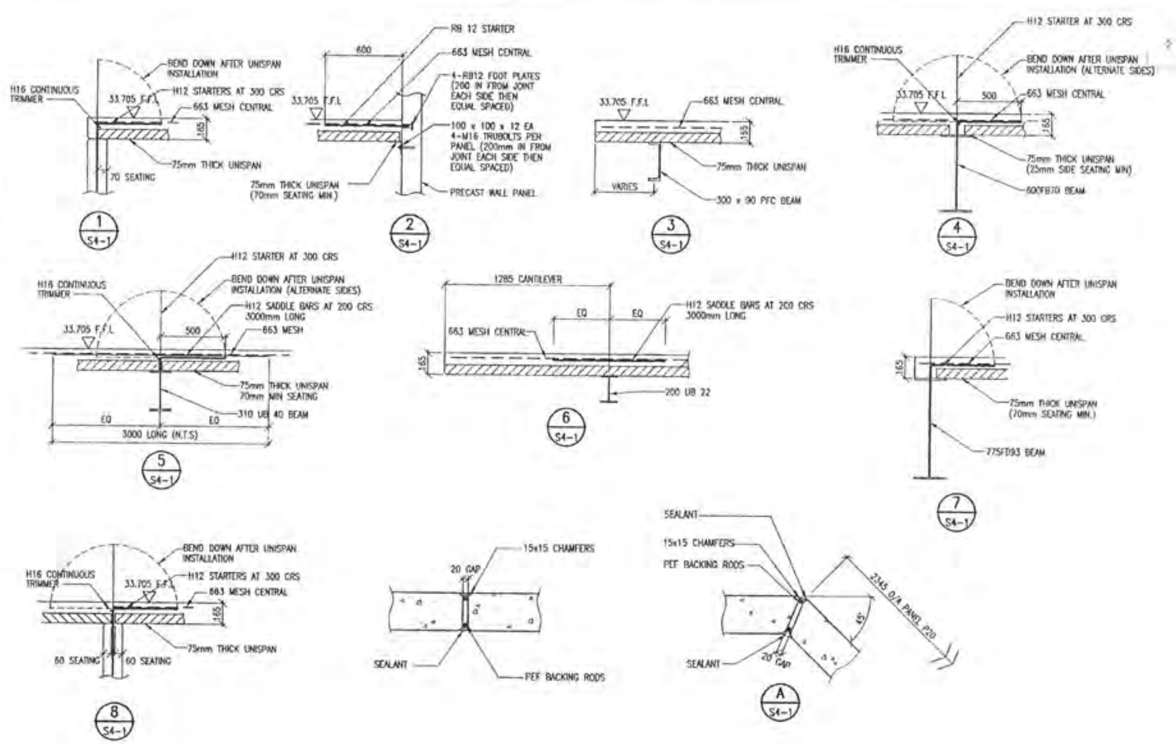
TCC180159

CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE

Original Scale

A.B
5/8/03 8:58 PM
7015-S3-4 PANEL DETAILS.dwg





ORIGINAL

CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE

APPROVED

Issue	Details	By	Chkd	Date
A	CONSENT ISSUE	A.R.P.		07/05/2003

StilesandHooker
Architects.Engineers

Hamilton Office: 214 Collingwood Street, PO Box 718, Hamilton, New Zealand
Auckland Office: Building B, Level 1, 2 Nuffield Street, PO Box 109170, Newmarket, Auckland, New Zealand

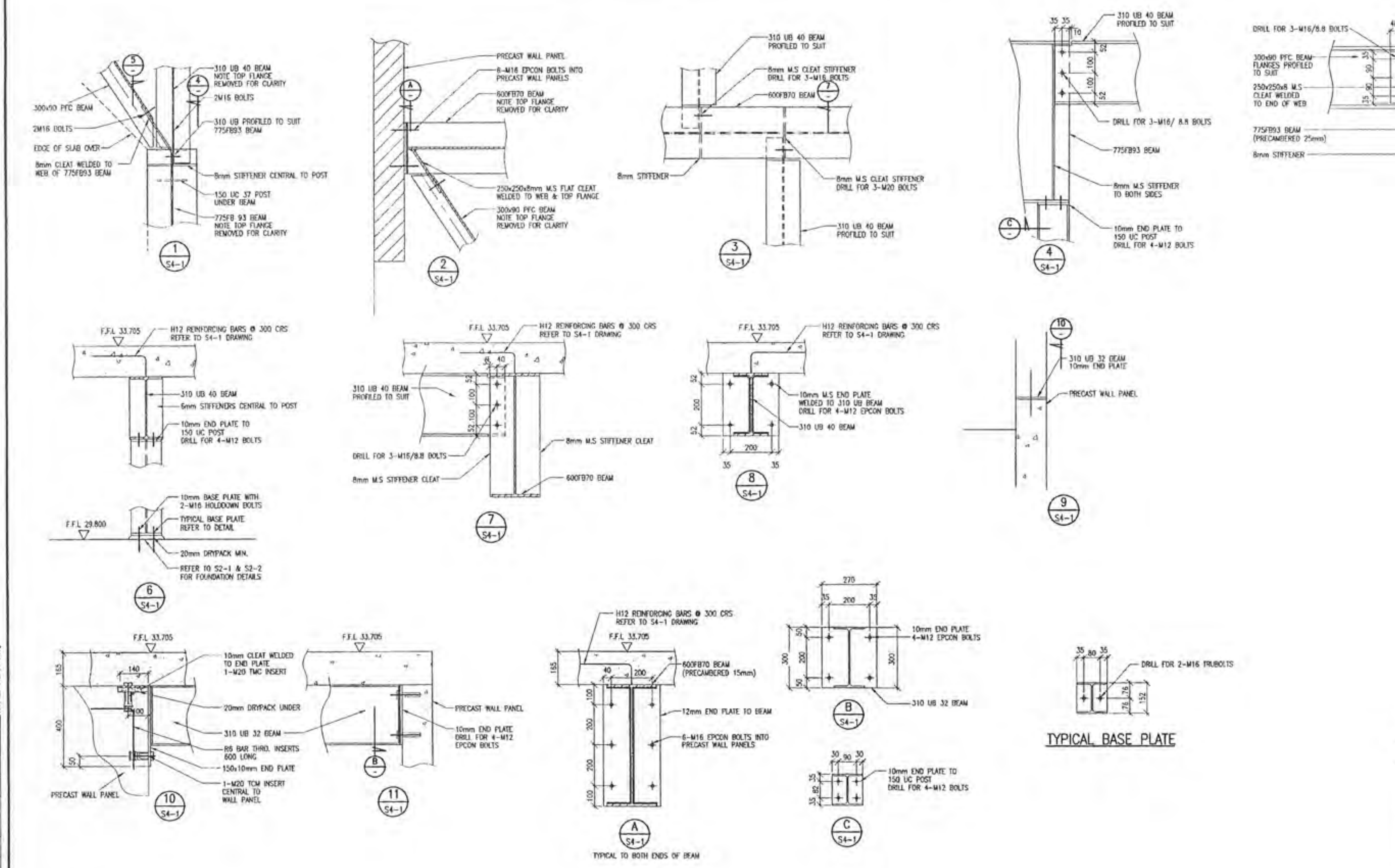
TELARC REGISTERED SUPPLIER ISO 9001

Client: PROGRESSIVE countdown

Project: BETHLEHEM SUPERMARKET PROJECT

Drawing Title: MEZZANINE FLOOR PLAN AND DETAILS

Designed	Date	Drawn
	APRIL 2003	A.R.P.
Approved	Scale	Original Size
	1:100 1:20 1:10	A1
Job No	Drawing No	Issue
7015	S4-1	A



CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE

Issue	Details	By	Chkd	Date
A	CONSENT ISSUE	A.P.P.		05/06/2003

StilesandHooker Architects.Engineers

Telephone 07 839 1254 Facsimile 07 839 1255 Hamilton Office 214 Collingwood Street PO Box 718 Hamilton, New Zealand

Telephone 09 520 1094 Facsimile 09 520 2569 Auckland Office Building B, Level 1 2 Nuffield Street PO Box 109170 Newmarket Auckland, New Zealand

Email admin@stilesandhooker.co.nz

TELARC REGISTERED SUPPLIER ISO 9001

Client: PROGRESSIVE countdown

Project: BETHLEHEM SUPERMARKET PROJECT

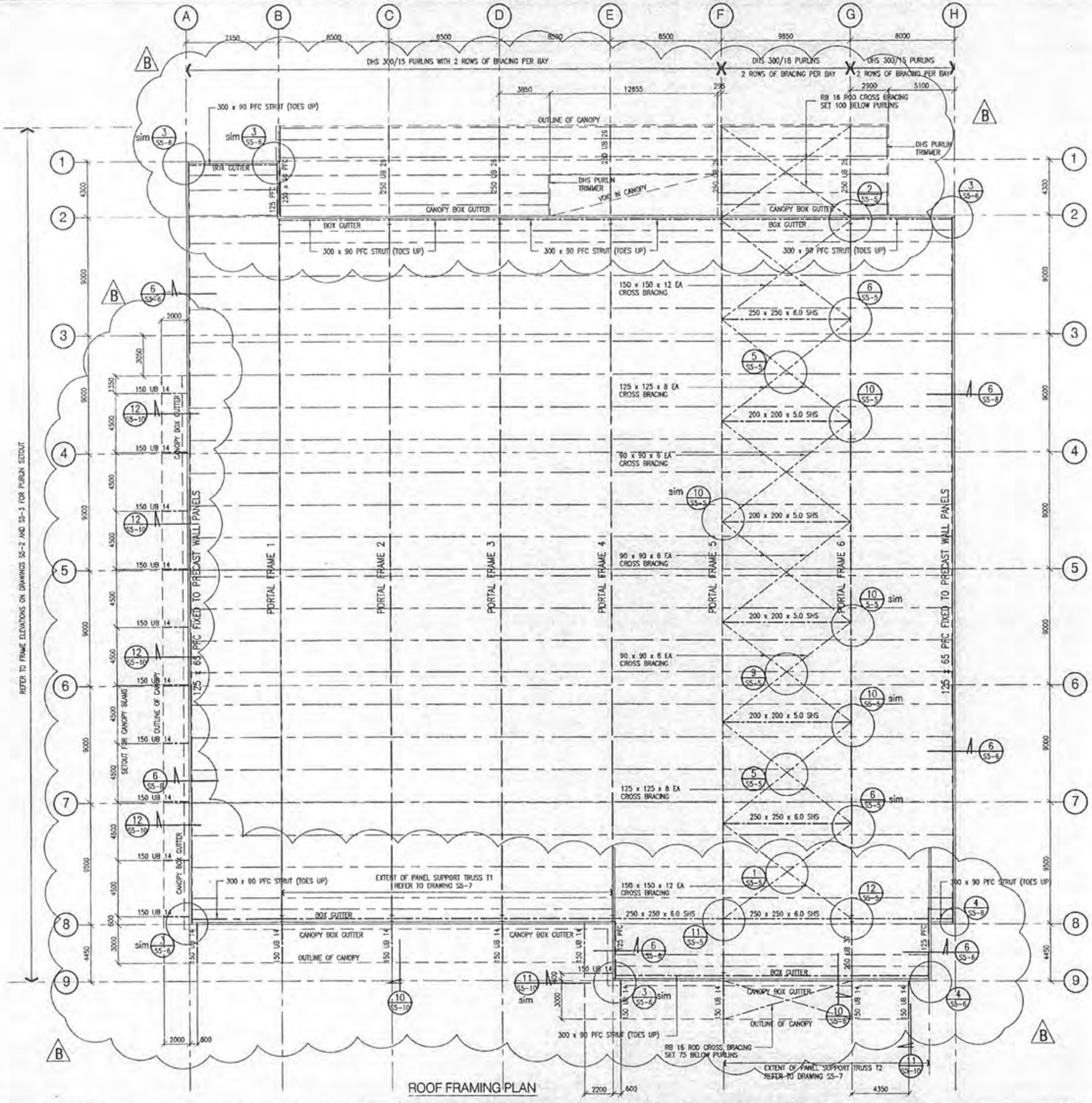
Drawing Title: MEZZANINE STEEL DETAILS

Designed	Date	Drawn
B.A.W.	MAY 2003	A.P.P.
Approved	Scale 1:10	Original Size A1
Job No 7015	Drawing No S4-2	Issue A

ORIGINAL

Original Scale

TCC160160



ROOF FRAMING PLAN

APPROVED
These plans are approved in accordance with The NZ Building Code. These plans must remain on site. BAY BUILDING CERTIFIERS

CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE

Issue	Details	By	Chkd	Date
B	CONSENT ISSUE - CANOPIES ADDED	A.R.P.		21/05/2003
A	CONSENT ISSUE	A.R.P.	B.A.W.	14/05/2003

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Architects.Engineers

Hamilton Office, 214 Collingwood Street, PO Box 718, Hamilton, New Zealand
Auckland Office, Building B, Level 1, 2 Nuffield Street, PO Box 109170, Newmarket, Auckland, New Zealand

TELARC REGISTERED SUPPLIER ISO 9001

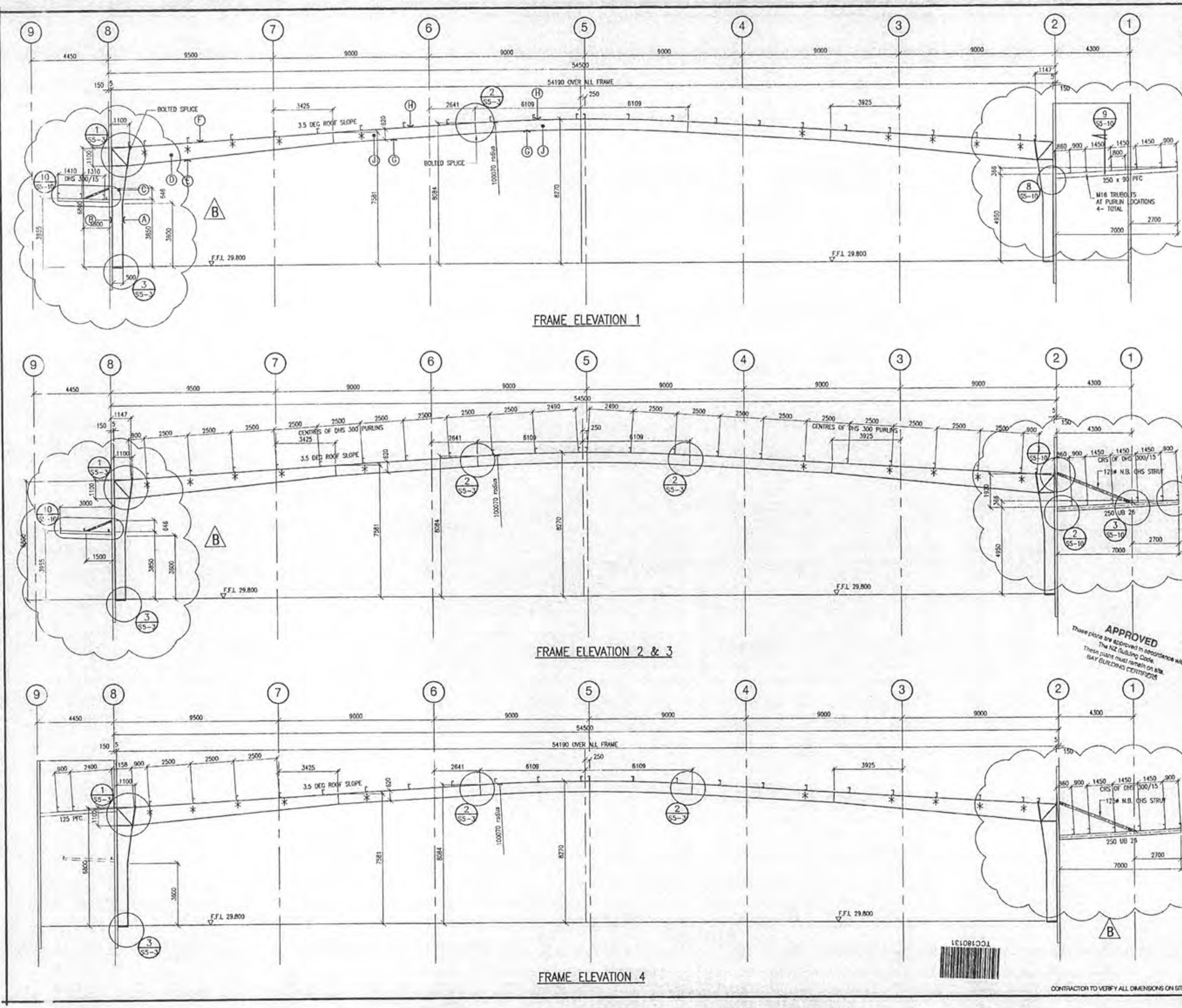
Client: PROGRESSIVE countdown

Project: BETHLEHEM SUPERMARKET PROJECT

Drawing Title: ROOF FRAMING PLAN

Designed	Date MAY 2003	Drawn A.R.P.
Approved	Scale 1:150	Original Size A1
Job No 7015	Drawing No S5-1	Issue B

ORIGINAL



NOTES

- (A) = 295 x 25 FLANGE
- (B) = 295 x 25 FLANGE
- (C) = 16mm PLATE WEB
- (D) = 10mm PLATE WEB
- (E) = 295 x 18 FLANGE
- (F) = 295 x 12 FLANGE
- (G) = 295 x 12 FLANGE
- (H) = 295 x 12 FLANGE
- (J) = 6mm PLATE WEB

* = 65 x 65 x 5 ANGLE FLANGE BRACING

Issue	Details	By	Chkd	Date
B	CONSENT ISSUE - CANOPIES ADDED	A.R.P.		21/05/2003
A	CONSENT ISSUE	A.R.P.	R.A.W.	14/05/2003

StilesandHooker Architects.Engineers

Hamilton Office: 214 Collingwood Street, PO Box 716, Hamilton, New Zealand. Telephone 07 839 1254, Facsimile 07 839 1256

Auckland Office: Building B, Level 1, 2 Nuffield Street, PO Box 109170, Newmarket, Auckland, New Zealand. Telephone 09 520 1004, Facsimile 09 520 2850

Email admin@stilesandhooker.co.nz

TELARC REGISTERED SUPPLIER ISO 9001

Client: PROGRESSIVE countdown

Project: BETHLEHEM SUPERMARKET PROJECT

Drawing Title: PORTAL FRAME ELEVATIONS FRAMES 1 TO 4

Designed	Date	Drawn
	APRIL 2003	A.R.P.
Approved	Scale	Original Size
	1:100	A1
Job No	Drawing No	Issue
7015	S5-2	B

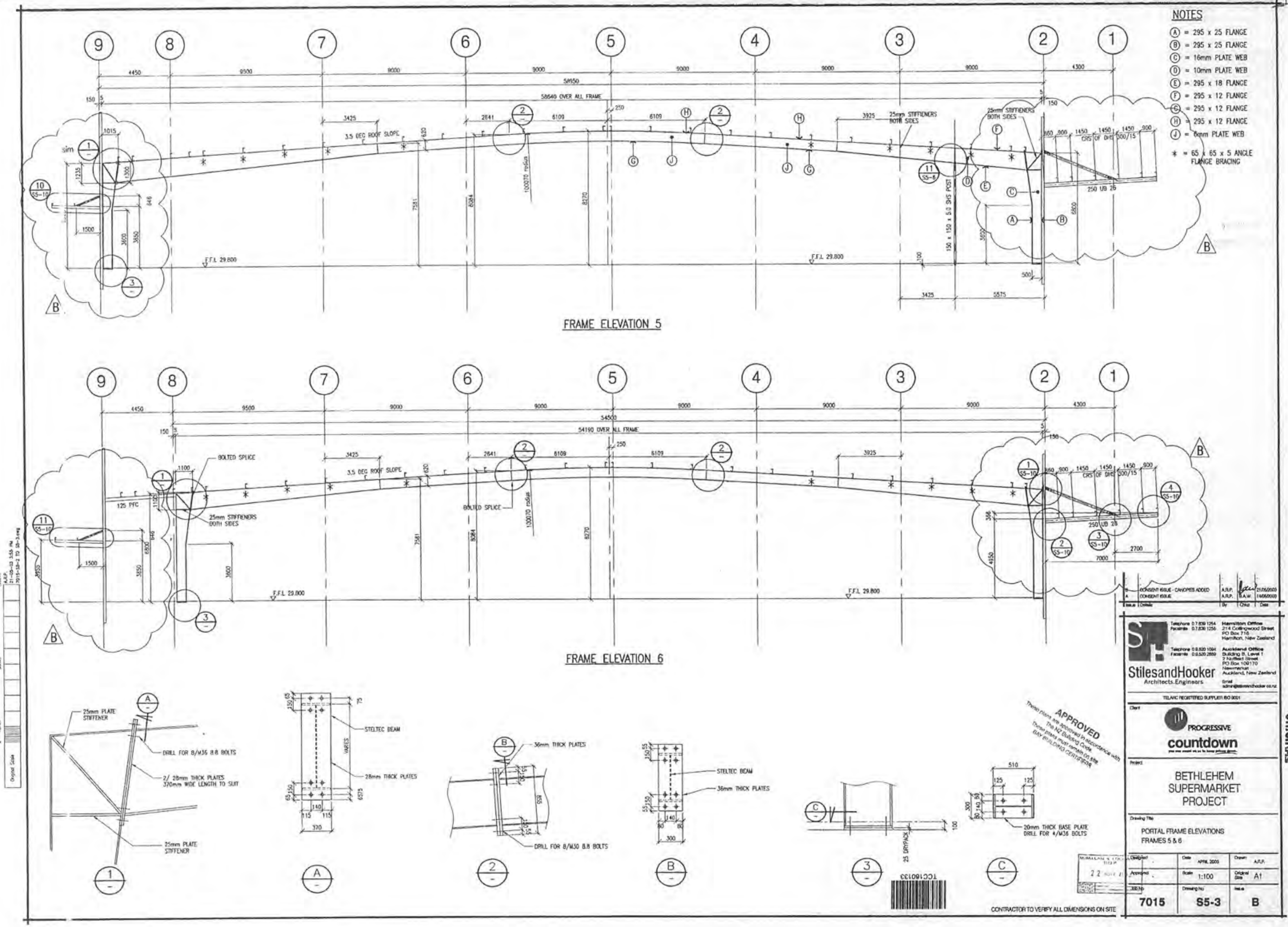
CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE

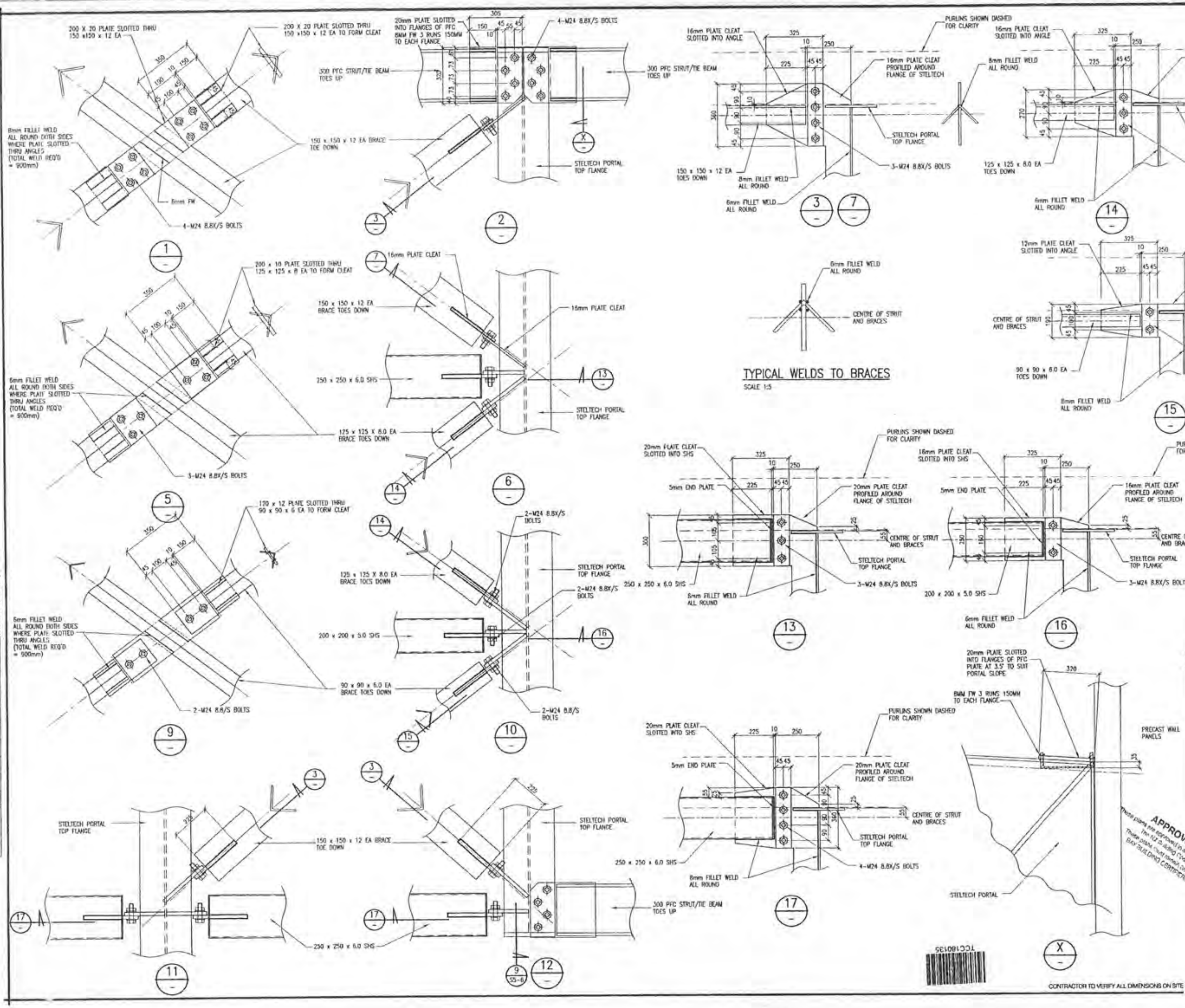
ORIGINAL

TCC180131

Original Scale 0 10mm 50mm 100mm

A.R.P. 21-05-03 3:55 PM 7015-S5-2 TO S5-3.dwg


NOTES
A = 295 x 25 FLANGE
B = 295 x 25 FLANGE
C = 16mm PLATE WEB
D = 10mm PLATE WEB
E = 295 x 18 FLANGE
F = 295 x 12 FLANGE
G = 295 x 12 FLANGE
H = 295 x 12 FLANGE
J = 6mm PLATE WEB
* = 65 x 65 x 5 ANGLE FLANGE BRACING
FRAME ELEVATION 5
58640 OVER ALL FRAME
3.5 DEG ROOF SLOPE
25mm STIFFENERS BOTH SIDES
150 x 150 x 5.0 SHS POST
250 UB 25
100070 radius
F.F.L 29.800
FRAME ELEVATION 6
54190 OVER ALL FRAME
BOLTED SPLICE
125 PFC
25mm PLATE STIFFENER
DRILL FOR 8/M36 8.8 BOLTS
2/ 28mm THICK PLATES 370mm WIDE LENGTH TO SUIT
STELTEC BEAM
28mm THICK PLATES
36mm THICK PLATES
DRILL FOR 8/M30 8.8 BOLTS
25 DRYPACK
20mm THICK BASE PLATE DRILL FOR 4/M36 BOLTS
APPROVED
CONSENT ISSUE - CANOPIES ADDED
CONSENT ISSUE
StilesandHooker
Architects.Engineers
Hamilton Office
Auckland Office
PROGRESSIVE
countdown
BETHLEHEM SUPERMARKET PROJECT
PORTAL FRAME ELEVATIONS FRAMES 5 & 6
APRIL 2003
1:100
A1
7015
S5-3
B
CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE
ORIGINAL



Issue	Details	By	Chkd	Date
A	CONSENT ISSUE	A.R.P.		14/05/2003

StilesandHooker
Architects.Engineers

Hamilton Office
214 Collingwood Street
PO Box 718
Hamilton, New Zealand

Auckland Office
Building B, Level 1
2 Nuffield Street
PO Box 109170
Newmarket
Auckland, New Zealand

TELARC REGISTERED SUPPLIER ISO 9001

Client: PROGRESSIVE countdown

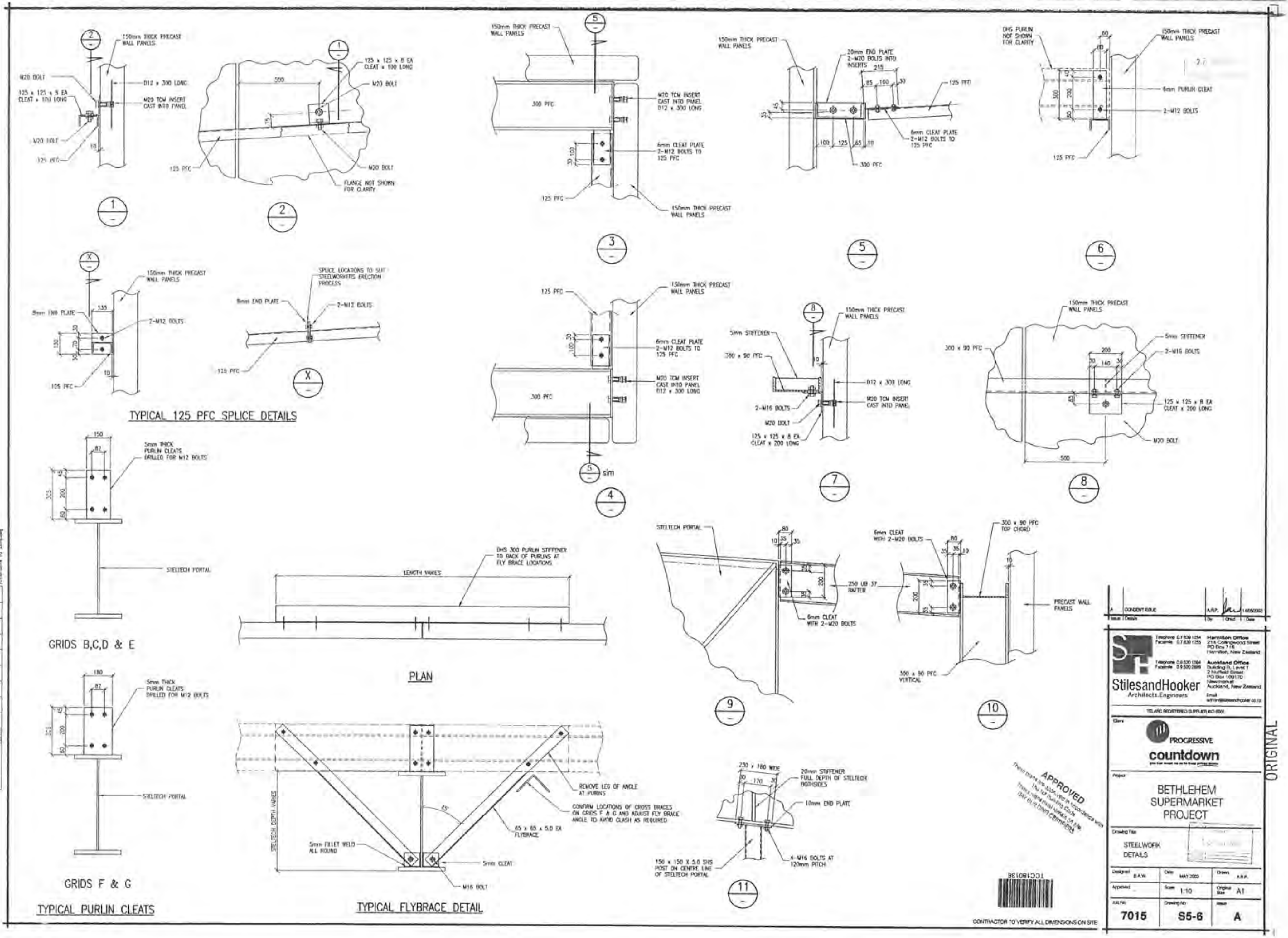
Project: BETHLEHEM SUPERMARKET PROJECT

APPROVED

Drawing Title: STEELWORK DETAILS

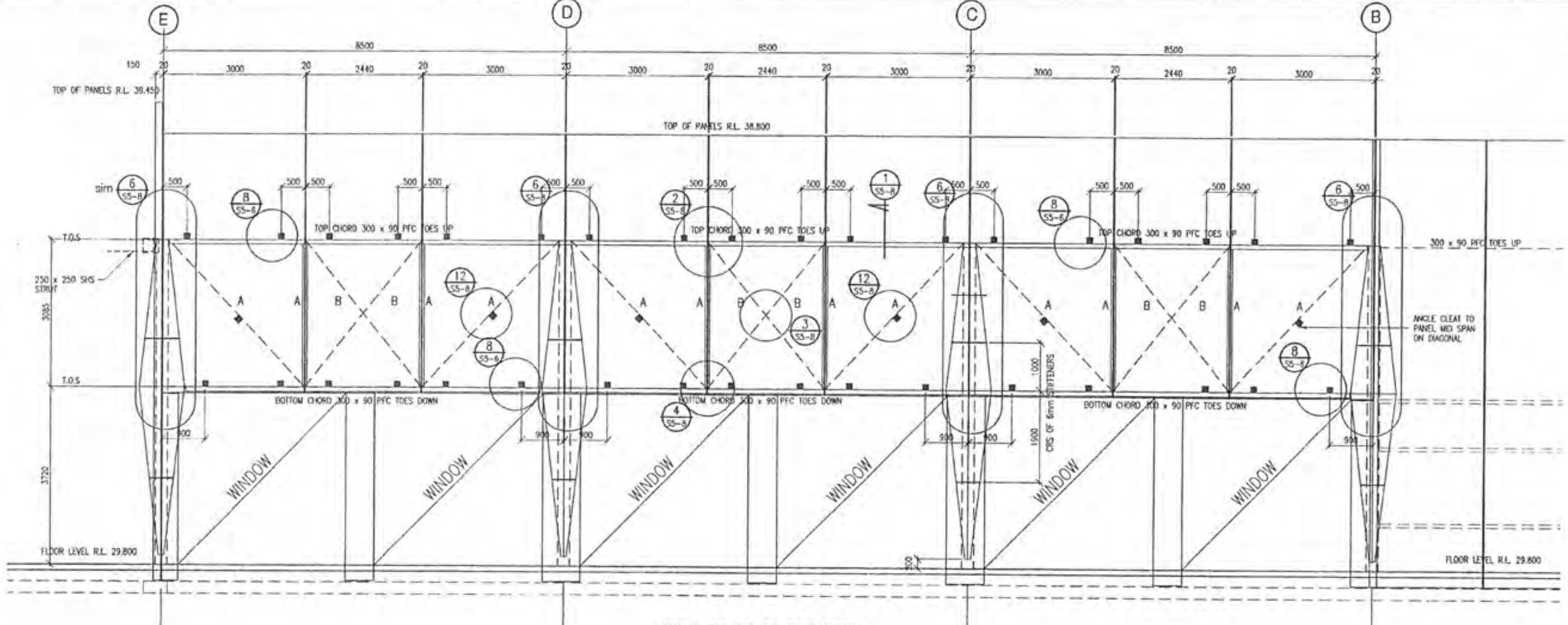
Designed	Date	Drawn
B.A.W.	MAY 2003	A.R.P.
Approved	Scale 1:10	Original Size A1
Job No. 7015	Drawing No. S5-5	Issue A

TCC180135


TYPICAL 125 PFC SPLICE DETAILS
TYPICAL PURLIN CLEATS
GRIDS B,C,D & E
GRIDS F & G
PLAN
TYPICAL FLYBRACE DETAIL
150mm THICK PRECAST WALL PANELS
M20 BOLT
125 x 125 x 8 EA CLEAT x 100 LONG
D12 x 300 LONG
M20 TCM INSERT CAST INTO PANEL
125 PFC
FLANGE NOT SHOWN FOR CLARITY
300 PFC
6mm CLEAT PLATE 2-M12 BOLTS TO 125 PFC
20mm END PLATE 2-M20 BOLTS INTO INSERTS
DHS PURLIN NOT SHOWN FOR CLARITY
6mm PURLIN CLEAT
2-M12 BOLTS
8mm END PLATE
SPLICE LOCATIONS TO SUIT STEELWORKERS ERECTION PROCESS
5mm STIFFENER
300 x 90 PFC
2-M16 BOLTS
125 x 125 x 8 EA CLEAT x 200 LONG
5mm THICK PURLIN CLEATS DRILLED FOR M12 BOLTS
STELTECH PORTAL
DHS 300 PURLIN STIFFENER TO BACK OF PURLINS AT FLY BRACE LOCATIONS
LENGTH VARIES
250 UB 37 RAFTER
6mm CLEAT WITH 2-M20 BOLTS
300 x 90 PFC TOP CHORD
PRECAST WALL PANELS
300 x 90 PFC VERTICAL
REMOVE LEG OF ANGLE AT PURLINS
CONFIRM LOCATIONS OF CROSS BRACES ON GRIDS F & G AND ADJUST FLY BRACE ANGLE TO AVOID CLASH AS REQUIRED
65 x 65 x 5.0 EA FLYBRACE
5mm FILLET WELD ALL ROUND
5mm CLEAT
M16 BOLT
STELTECH DEPTH VARIES
230 x 180 WIDE
20mm STIFFENER FULL DEPTH OF STELTECH BOTHSIDES
10mm END PLATE
4-M16 BOLTS AT 120mm PITCH
150 x 150 X 5.0 SHS POST ON CENTRE LINE OF STELTECH PORTAL
APPROVED
StilesandHooker Architects.Engineers
PROGRESSIVE countdown
BETHLEHEM SUPERMARKET PROJECT
STEELWORK DETAILS
MAY 2003
1:10
A1
7015
S5-6
A
CONSENT ISSUE
ORIGINAL
CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE
TCC160136

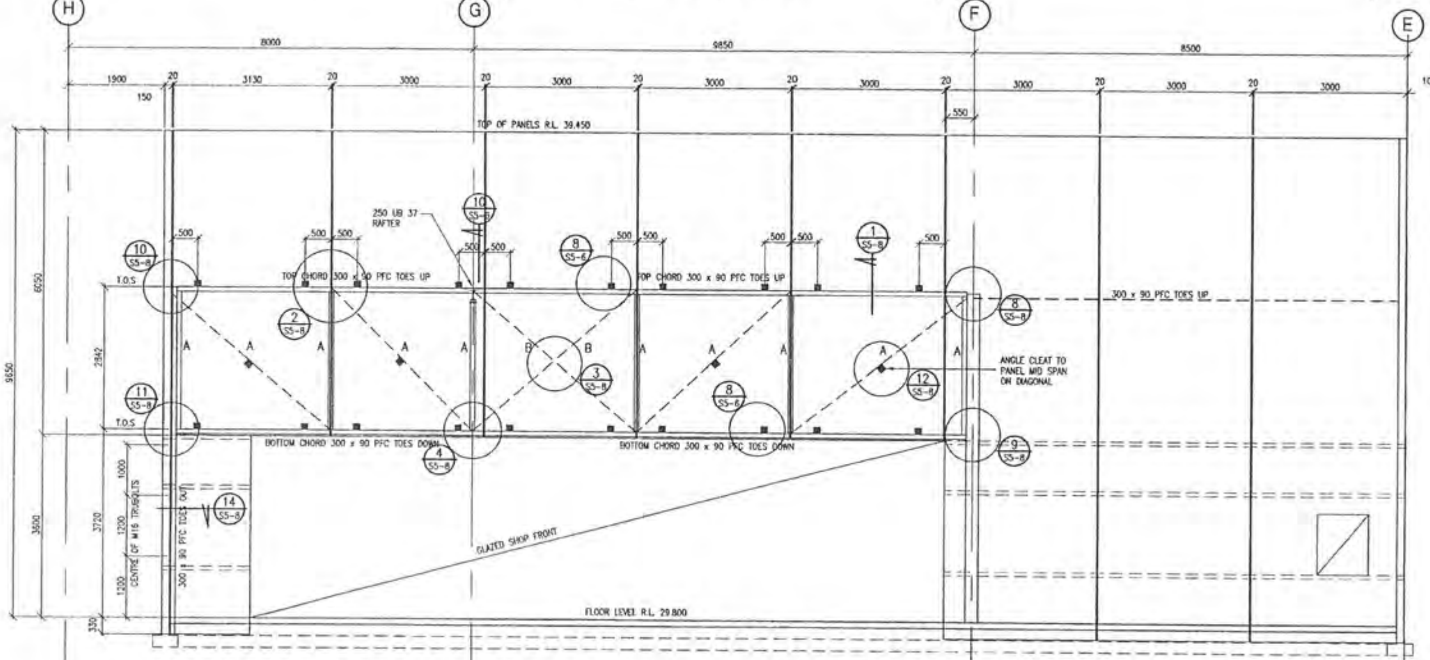
NOTES

A – INDICATES 300 X 90 PFC
B – INDICATES 100 X 100 X 12 EA



WALL TRUSS T1 ELEVATION

TRUSS ELEVATED FROM INSIDE LOOKING OUT



WALL TRUSS T2 ELEVATION

TRUSS ELEVATED FROM INSIDE LOOKING OUT

CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE

TCC16013?

APPROVED
These plans are approved in accordance with The NZ Building Code. These plans must remain on site. BAY BUILDING CERTIFIERS

ORIGINAL

Issue	Details	By	Chkd	Date
A	CONSENT ISSUE	A.R.P.		14/05/2003

StilesandHooker
Architects.Engineers

Hamilton Office: 214 Collingwood Street, PO Box 718, Hamilton, New Zealand. Telephone 07 838 1254, Facsimile 07 838 1255

Auckland Office: Building B, Level 1, 2 Nuffield Street, PO Box 109170, Newmarket, Auckland, New Zealand. Telephone 09 520 1084, Facsimile 09 520 2989

Email admin@stilesandhooker.co.nz

TELARC REGISTERED SUPPLIER ISO 9001

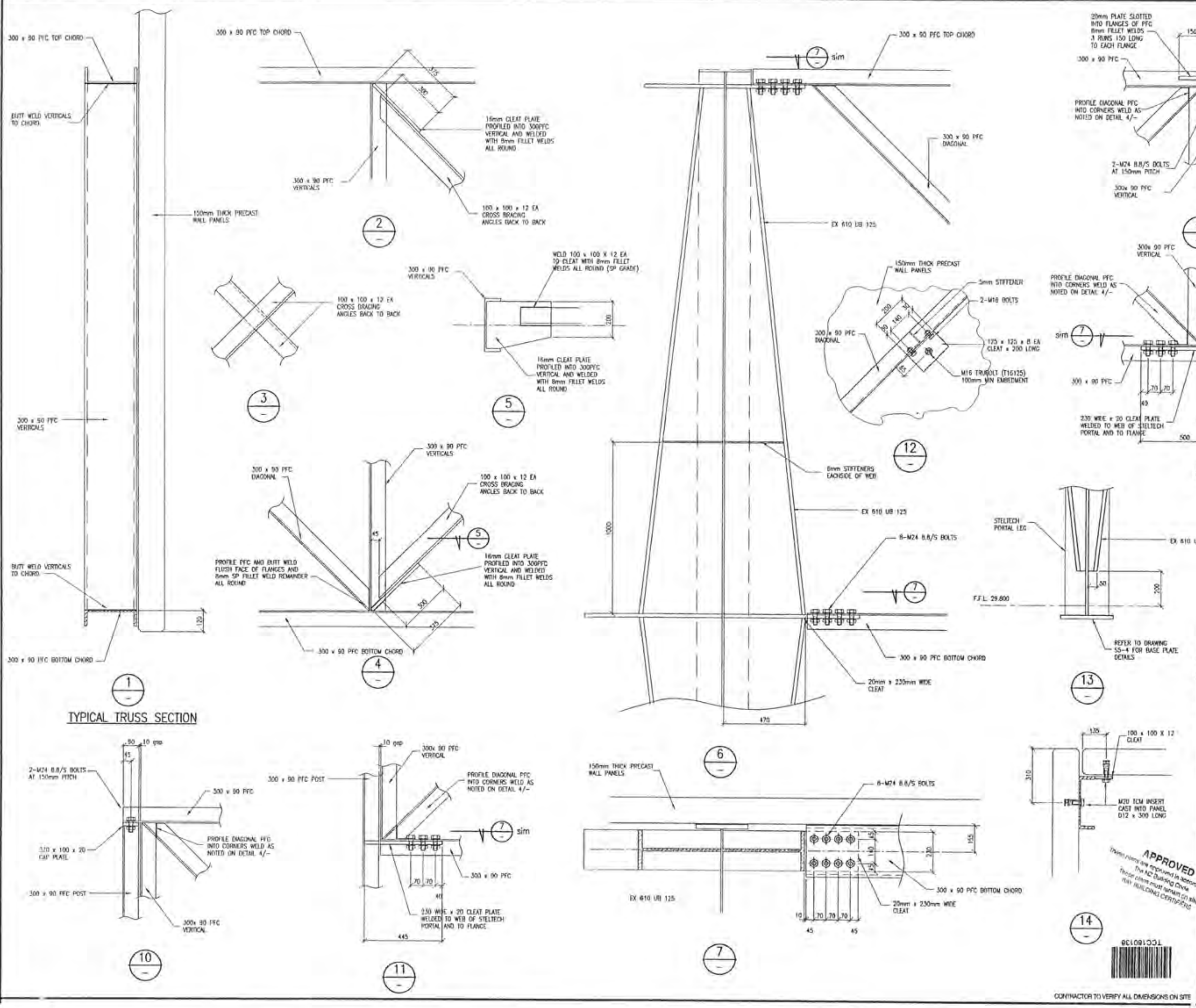
Client: PROGRESSIVE countdown

Project: BETHLEHEM SUPERMARKET PROJECT

Drawing Title: TRUSSES T1 & T2 ELEVATIONS

Designed	Date	Drawn
B.A.W.	MAY 2003	A.R.P.
Approved	Scale 1:50	Original Size A1
Job No 7015	Drawing No S5-7	Issue A

Original Scale 0 10mm 50mm 100mm
A.R.P. 14-05-03 3:51 PM 7015-S5-7.dwg



ORIGINAL

Issue	Details	By	Chkd	Date
A	CONSENT ISSUE	A.R.P.		14/05/2003

StilesandHooker Architects.Engineers

Hamilton Office, 214 Collingwood Street, PO Box 718, Hamilton, New Zealand

Auckland Office, Building D, Level 1, 2 Nuffield Street, PO Box 109170, Newmarket, Auckland, New Zealand

TELARC REGISTERED SUPPLIER ISO 9001

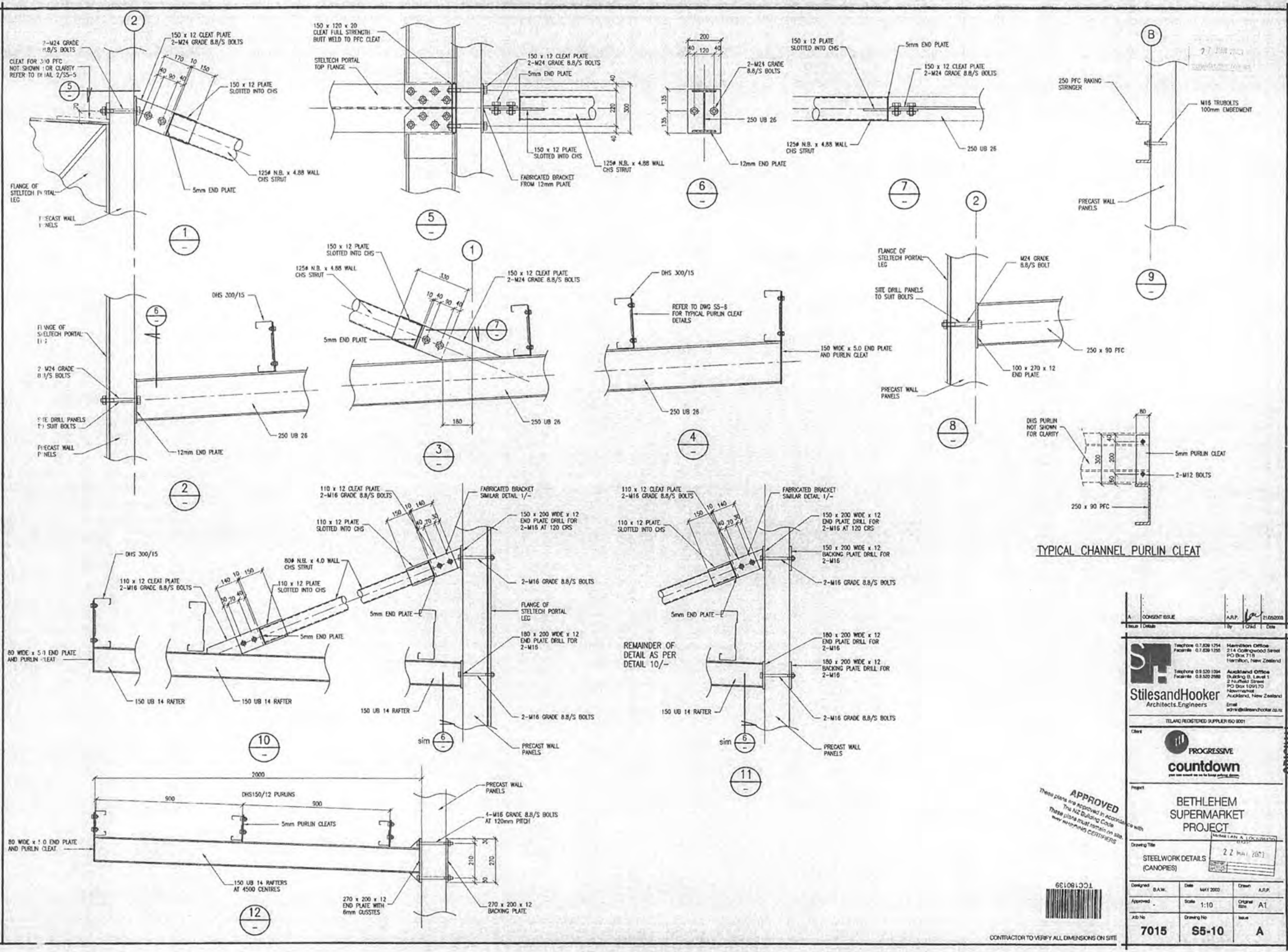
Client: PROGRESSIVE countdown

Project: BETHLEHEM SUPERMARKET PROJECT

Drawing Title: TRUSSES T1 & T2 DETAILS

Designed	Date	Drawn
B.A.W.	MAY 2003	A.R.P.
Approved	Scale 1:10	Original Size A1
Job No 7015	Drawing No S5-8	Issue A

TCC160138



Issue	Details	By	Chkd	Date
A	CONSENT ISSUE	A.P.P.		21/05/2003

StilesandHooker
Architects.Engineers

Hamilton Office: 214 Collingwood Street, PO Box 719, Hamilton, New Zealand. Telephone 07 839 1254, Facsimile 07 839 1255

Auckland Office: Building B, Level 1, 2 Nuffield Street, PO Box 109170, Newmarket, Auckland, New Zealand. Telephone 09 520 1594, Facsimile 09 520 2080

Email admin@stilesandhooker.co.nz

TELARC REGISTERED SUPPLIER ISO 9001

Client: PROGRESSIVE countdown

Project: BETHLEHEM SUPERMARKET PROJECT

Drawing Title: STEELWORK DETAILS (CANOPIES)

Designed	B.A.W.	Date	MAY 2003	Drawn	A.P.P.
Approved	-	Scale	1:10	Original Size	A1
Job No	7015	Drawing No	S5-10	Issue	A

ORIGINAL

APPROVED
These plans are approved in accordance with The NZ Building Code. These plans must remain on site. www.approved-certifiers

22 MAY 2003

TCC180139

CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE